



Pyralidae and Microlepidoptera
of the Marquesas Archipelago

J.F. GATES CLARKE

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ABSTRACT

Clarke, J.F. Gates. Pyralidae and Microlepidoptera of the Marquesas Archipelago. *Smithsonian Contributions to Zoology*, number 416, 485 pages, 319 figures, 1 table, 1986.—In this publication 82 genera and 260 species and subspecies are treated. The following genera, species and subspecies are described as new (each new genus is noted with its type species): *Neoxychirota* (type-species: *N. isolata*); *Stangeia distantia*; *Ernophora iospila*, *lechriogramma*, *aphanoptera*, *palassoptera*; *Zamagiria exedra*; *Cateremna decipula*; *Delcina* (type-species: *D. diaspora*); *Psara orphnopeza*; *Tessema* (type-species: *T. sensilis*); *Bradina fidelia*, *stricta*, *emphasis*, *eremica*; *Cangetta eschatia*; *Idioblasta transversata*, *stenogramma*, *amydrosoma*, *acrogramma*, *linearis*; *Eudonia clavula*, *achlya*, *ara*, *aplysia*, *dupla*, *munroei*; *Dichelopa amorpha*, *flexura*, *hadrotis*, *chionogramma*; *platyxantha*, *dorsata*, *phalaranthes aporrhagma*, *ochroma*, *gnoma*, *paragnoma*, *meligma*, *zona*, *canitia*, *argema*; *Duessa marquesana*; *Cydia pseudomalesana*; *Orneodes pterochroma*, *xanthozona*; *Autosticha leucoptera*; *Chelophoba melaina*; *Pitycona attenuata*; *Ephesteris longicornis*; *Asymphorodes macrogramma*, *didyma*, *plemmelia*, *trigrapha*, *diamphidius*, *aporia*, *hypostema*, *brevimacula*, *hemileucus*, *cuneatus*, *seminiger*, *albicoma*, *semiluteus*, *nigricornis*, *cicatricula*, *amblysoma*, *chalcoptera*, *lenticula*, *chrysophanes*, *mesoxanthus*, *adynatus*, *melanosoma*, *chalcocoma*, *homosoma*, *bipunctatus*, *remigiata*, *emphereia*, *regina*, *poliopterus*, *canicoma*, *lucidus*, *diffidentia*, *culminis*, *fractura*, *lucerna*, *phalarogramma*, *leucoloma*, *paraporia*, *chalcosoma*, *aenigma*, *montomeryi*, *nuciferae*, *favilla*, *trichogramma*, *sericeus*, *acritopterus*, *spodogramma*, *honoraria*, *phaeodelta*, *leptotes*, *mediostriatus*, *nebrias*, *ochrogramma*; *Herlinda* (type-species: *H. phaeoxantha*), *fasciola*, *iota*, *oligoria*; *Adeana* (type-species: *Labdia leucoxantha* Meyrick); *Iressa microsema*; *Melnea* (type-species: *Ascalenia armigera* Meyrick); *Cosmopterix nonna*, *diandra*; *Acanthophlebia* (type-species: *A. argentea*); *Imma philomena*, *gloriana*, *feaniensis*, *rotia*, *assita*, *impariseta*, *heppneri*; *Choreutis chelaspis euthenia*; *Prays ignota*; *Eftichia* (type-species: *E. chrysoleuca*); *Terithroptera astochia*; *Epicephala spinula*; *Caloptilia insidia*; *Decadarchis celestra*, *incongrua*, *aspera*, *tritogramma*; *Wyoma* (type-species: *W. dysgnoia*); *Comodica signata*; *Opogona discordia*. Many new combinations are made. Male and female genitalia are figured where possible and wings of all species are illustrated.

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Pyralidae and Microlepidoptera of the Marquesas Archipelago

J.F. Gates Clarke

Introduction

As far as I have been able to ascertain, the earliest descriptions of Pyralidae from the Marquesas Islands were those of *Idioblasta lacteata* Warren and *I. straminata* Warren (1891:62) followed by *Bradina perlucidalis* Hampson (1897:201). It was not until 1929 and 1934 that more pyralids and some of the true microlepidoptera were recorded from the Marquesas Islands by Meyrick. During the Pacific Entomological Survey, conducted by the Bernice P. Bishop Museum, Honolulu, 1929–1932, Mr. G. Le-Bronnec collected a considerable quantity of pyralids and microlepidoptera. These were described by Meyrick (1934c). The preponderance of pyralids and microlepidoptera, up to the present, was described by Meyrick (1929a,b) from specimens collected during the British “St. George” Expedition, 1924–1925. Of these Meyrick states (1929a:489):

Over 1000 specimens were included in the present consignment, of which about two-thirds are from Pacific Islands, the remaining third being from small islands closely adjacent to the American coast; these two sections are entirely unrelated, and are treated separately. The majority of the specimens were collected by Mr. C.L. Collenette and Miss C.E. Longfield, including all these where no captor is specially mentioned; but a proportion was taken by Miss L.E. Cheesman, and in the case of these her name is always recorded.

In 1968, from 13 January to 14 April, my wife and I made extensive collections on the islands

of Nuku Hiva, Hiva Oa, and Fatu Hiva, facilitated by Smithsonian Research Foundation Grant SG 0636056. The results of this expedition are recorded in the following pages. Following our expedition, S.L. Montgomery of Honolulu visited the Marquesas Islands in 1977 and collected 347 specimens. These are recorded here also. Altogether, this report is based on well over 7300 specimens, exclusive of types.

Comparatively few of the species of microlepidoptera and pyralids occurring in the Marquesas Islands have been figured previously (Walsingham, 1907; Shibuya, 1928a; Clarke, 1958 [in 1955–1970], 1971). In most cases no illustrations or only the adult or the genitalia of one sex have been figured. In this work adult wings are figured, but even here sometimes the genitalia of only one sex is illustrated because of the absence of the opposite sex in the collections at hand.

As usual, my color descriptions are based on Ridgway, 1912, *Color Standards and Color Nomenclature*. Some colors and hues I have used are not in Ridgway. In situations where I considered some term more appropriate than one found in Ridgway, I have used it.

A map showing the relative positions of the various Marquesas Islands is given (Figure 1). As additional background material on these islands, I recommend Adamson, 1939. Also, I have presented maps of Nuku Hiva, Hiva Oa, and Fatu Hiva showing the locations of our collecting sites (Figures 2,3). In addition, maps showing the known distribution of some of the genera and species are included.

J.F. Gates Clarke, Department of Entomology, National Museum of Natural History, Smithsonian Institution, Washington, D.C. 20560.

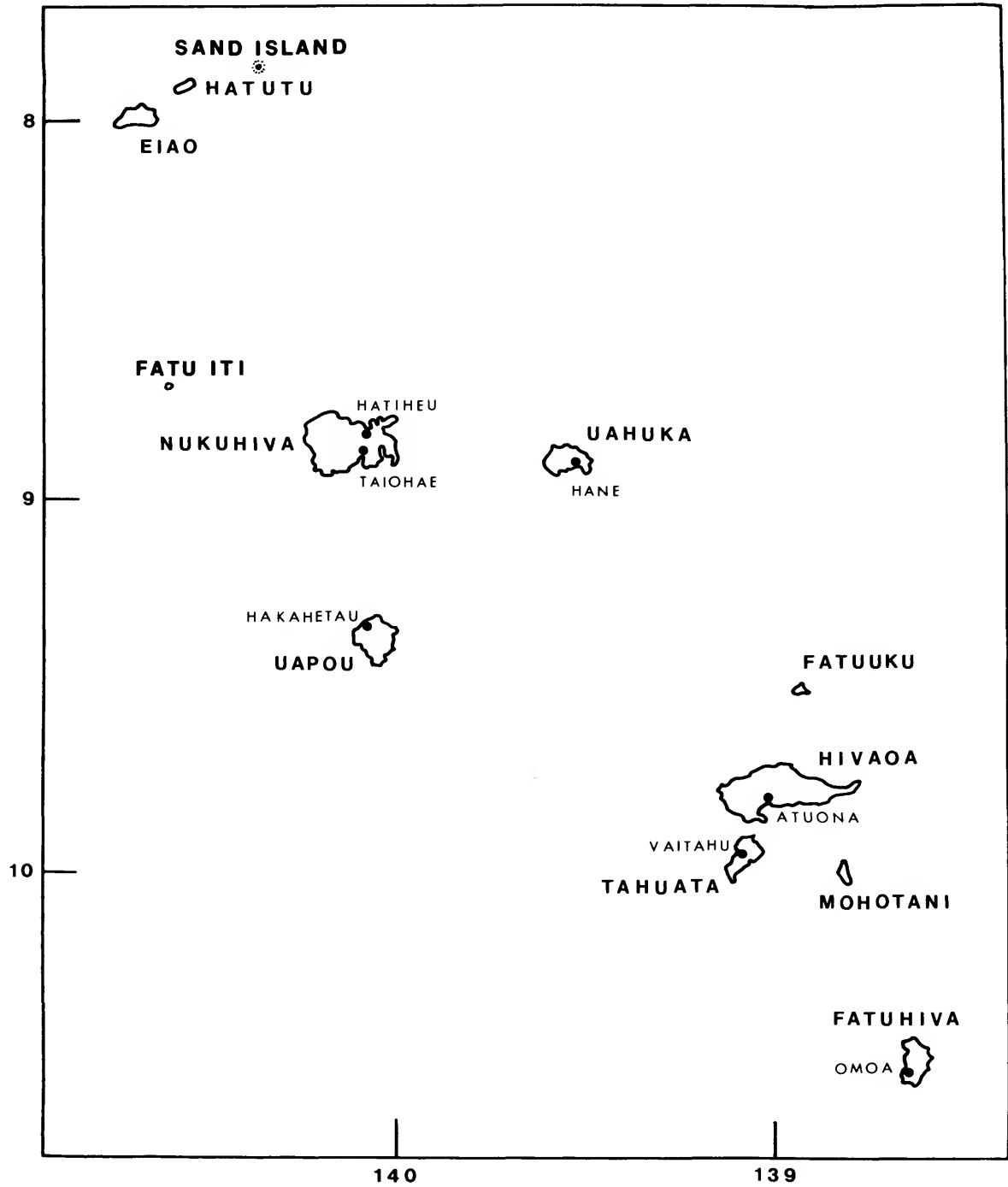


FIGURE 1.—The Marquesas Islands (after Adamson, 1936).

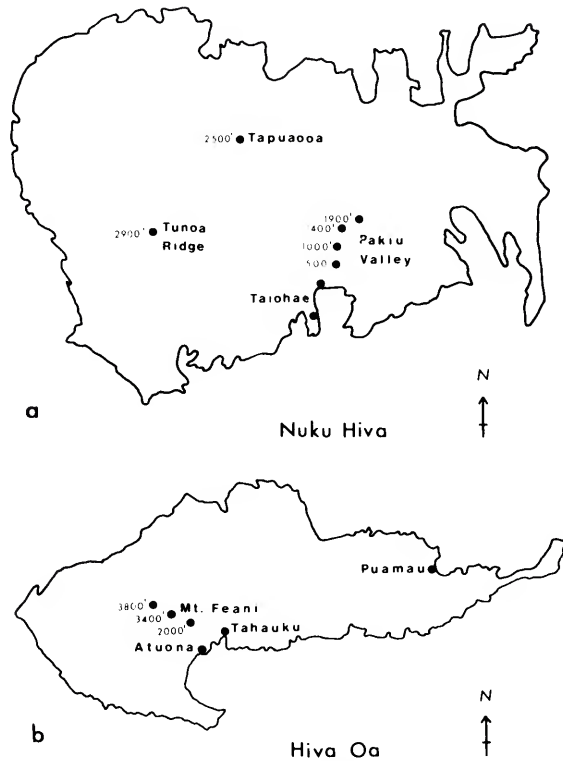


FIGURE 2.—Clarke collecting localities (elevations in feet): a, Nuku Hiva; b, Hiva Oa.

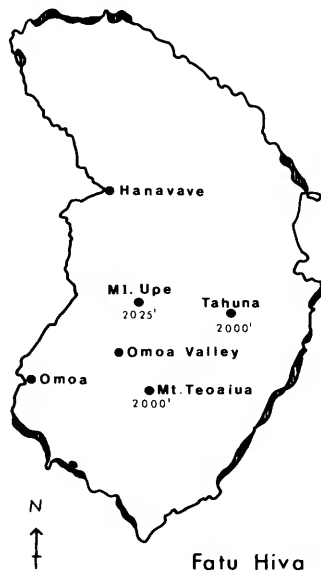


FIGURE 3.—Clarke collecting localities on Fatu Hiva (shaded area indicates cliffs).

The distribution maps are based on specimens in the British Museum (Natural History), the Bernice P. Bishop Museum, Honolulu, Hawaii, and USNM collections of the National Museum of Natural History, Smithsonian Institution.

I have already discussed (Clarke, 1971:2-5) Meyrick's explanation for the peculiarities of the fauna of Rapa and some of the neighboring islands. In the work cited above, I stated (1971:5): "The evidence of zoological and botanical relationships between the Australian, southern South American, and South African regions is already well established. These relationships are carried to some of the Southern Hemisphere oceanic islands, but as far as I am able to ascertain, from a study of the material at hand, there is *no connection between the fauna of Rapa and that of the Americas* . . ." In the case of the Marquesas Islands there is some evidence of a relationship between the Marquesas and the Americas by the presence of the genus *Zamagiria* (*Z. exedra*, new species) an American genus found in Central America, Cuba, and Florida. Also, the presence of *Tinea oxymora* Meyrick, with the type-locality of Chosica, Peru, is further evidence of a connection. It is possible, however, that the presence of the latter species in the Marquesas is the result of an accidental introduction. The suggestion of a Marquesan-American connection probably is not unreasonable in view of botanical findings in Sacht (1975:1-2).

The climate of the region is tropical oceanic, constantly warm, with high atmospheric humidity, local sporadic rain showers, and heavy orographic rainfall where the mountainous islands interfere with the prevailing easterly trade winds. However, the simple pattern of windward-leeward trade-wind effect in the Marquesas is very much complicated by the dissected topography and other factors. The "backbones" of the islands are usually bathed in mists and crowned with very mossy "cloudforest." But on low lying areas, the trade winds exert a dessicating effect. The lower uninhabited islands, the "desert" islands, appear quite arid and there are years of prolonged drought. On the western "plateaus" of Nukuhiwa and Hivaoa stretch arid areas, with a vegetation of grasses and scattered woody plants, including very interesting species, such as sandalwood and *Cordia lutea*, a shrub otherwise known from dry Ecuador, Chile, and the Galapagos Islands. The deep valleys contain streams, many of which are frequently dry; and the high waterfalls tumbling down the cliffs of the higher cirques often disappear.

The Marquesas are closely related to Tahiti and Rapa by the presence of the genus *Dichelopa*, especially through *D. argosphen*a (Marquesas), *D. fulvistrigata* (Tahiti), and *D. iochorda* (Rapa), all with a divided uncus, and the presence of *Cryptoblabes ardescens* (Meyrick).

Several groups, or species, of microlepidoptera that one might expect to find in the Marquesas are absent. At present there are not records of the occurrence of the Chlidanotidae in these islands, although the family is frequently found in the Pacific region. The Carposinidae appear to be absent, but the family is common in the Pacific area. The Oecophoridae, an uncommon family in the Pacific islands, are also absent. (Some workers will dispute this based on the presence of *Stoerberhinus testaceus* Butler and *Autosticha pelodes* (Meyrick); I consider these two to be Gelechiidae). Another common, widely distributed migrant, *Phthorimaea operculella* (Zeller) is also absent. The widely distributed genus *Monopis* (Tineidae) is apparently absent. The genus *Bactra* is commonly represented in the Pacific islands by a considerable number of species, ranging from Japan and the Bonin Islands in the north (Kawabe and Kusui, 1978) through the Caroline and Society Islands all the way south and east to Rapa (Clarke, 1971:13, 131). Although Cyperaceae, the food plants of *Bactra* species, are abundant in the Marquesas, a diligent search failed to disclose the presence of any *Bactra* species. The genus *Choropleca* is found in South America, Hawaii, Fiji, and Rapa but, apparently, has failed to reach the Marquesas. Despite the obvious relationship between Rapa and the Marquesas, and the presence of *Coprosma*, the food plant of *Tanaoctena*, the genus does not appear to be present in the Marquesas.

THE ISLANDS

The Marquesas Islands (Figure 1; Table 1) lie between latitudes 7°50' and 10°35'S, and longitudes 138°25' and 140°50'W. The Hawaiian Islands lie approximately 3220 kilometers (2000 miles) north-northwest, the Society Islands 1368

TABLE 1.—Approximate areas and maximum elevations of the 12 islands of the Marquesas (from northwest to southeast) (measurements in square miles and feet are from Admonson, 1936:10).

Island	Approx. area		Maximum elevation	
	sq km	(sq mi)	m	(ft)
Sand Island	—	(?)	—	(?)
Hatutu	18.13	(7.0)	400	(1380)
Eiao	51.80	(20.0)	610	(2000)
Fatu Iti	—	(?)	—	(?)
Nuku Hiva	336.70	(30.0)	1219	(4000)
Uahuka	77.70	(30.0)	854	(2805)
Uapou	103.60	(40.0)	1231	(4040)
Fatuuku	1.29	(0.5)	359	(1180)
Hiva Oa	323.75	(25.0)	1258	(4130)
Tahuata	51.80	(20.0)	999	(3280)
Mohotani	15.54	(6.0)	518	(1700)
Fatu Hiva	77.70	(30.0)	1118	(3670)

kilometers (850 miles) southwest and the nearest land, the Tuomotu Islands, is 483 kilometers (300 miles) distant. When we visited the islands, a survey was being conducted, and we were informed that the actual elevation of Mt. Temetiu (Figure 8), the highest point on Hiva Oa, was not known. The islands are remnants of ancient volcanoes, with steep slopes and deep valleys.

The Marquesas Islands consist of a Southern group and a Northern group. Former, or synonymous, names are given in parentheses. The Southern group consist of: Fatuuku, Hiva Oa (Dominica), Tahuata (Santa Cristana), Mohotani (Motane, San Pedro), Fatu Hiva (Magdalena, Fatuiva), and was discovered in 1595 by the navigator Alvaro Mendana. He named the group *Islas Marquesas de Mendoza* in honor of the wife of his patron, Don Garcia Hurtad de Mendoza, Viceroy of Peru. The Northern group consists of Sand Island, Hatutu (Hatutaa), Eiao, Fatu Iti (Motu Iti), Nuku Hiva, Uahuka, and Uapou. This group was discovered in 1791 by Captain Joseph Ingraham of the American brig *Hope of Boston*, when he visited Nuku Hiva.

Of all the islands in the group, we have numerous records of microlepidoptera from only

three, Nuku Hiva, Hiva Oa, and Fatu Hiva. From Tahuata, Eiao, and Uapou we have a few records, but from the other islands we have nothing. Therefore, we can only conclude that we know little of the fauna of the Marquesas.

As is the case with many Pacific islands, much devastation has occurred because of deforestation, slashing, burning (Figure 10) and the introduction of horses (Figure 7), cattle, and pigs. Rats also occur, having been introduced by the ancient colonizers and through modern commerce. There are no endemic mammals.

In spite of the damage that has been done, there are many pockets of original vegetation, and at the higher elevations (Figures 6–8) much of the natural flora remains. At the lower elevations (Figures 4, 5), however, mostly introduced plants replace the native flora. Here are such plants as *Mangifera indica* L. (mango), *Thespesia populnea* (L.), *Tamarindus indica* L., *Pandanus tectorius* Solander, *Cocos nucifera* L. (coconut), *Musa* sp., banana, *Carica papaya* L. (papaya), *Artocarpus* sp. (bread-fruit), *Hibiscus tiliaceus* L., *Psidium guajava* L., the grass *Paspalum paniculatum* L. (Figure 5, lower right), Cyperaceae, lichens, and mosses. At the higher elevations one encounters a rich flora of *Pandanus* sp., numerous shrubs, ferns, mosses and lichens (Figure 6), *Cheirodendron marquesense* F. Brown, *Vaccinium cerueum* (L.f.) Forster f. and *Bidens henryi* Scherff.

On the high plateau area of Nuku Hiva, at Tapuaooa, 762 m (Figure 7) there are abundant grasses, scattered trees of *Metrosideros collina* (Forster) A. Gray var., and mixed shrubs including *Glochidion ramiflorum* (Forster f.) Mueller-Argovensis I have mentioned only a tiny fraction of the flora and suggest that those who are interested consult Sachet, 1975, and subsequent papers by this author.

THE FAUNA

Fifteen (15) families of pyraloids and microlepidoptera are recorded in the following pages. In these families I have recognized 81 genera as follows: Oxychirotidae (1), Pterophoridae (2),

Pyralidae (28), Tortricidae (1), Olethreutidae (8), Orneodidae (1), Gelechiidae (5), Cosmopterigidae (11), Blastobasidae (1), Heliodinidae (1), Immidae (1), Choreutidae (1), Yponomeutidae (5), Gracillariidae (2), and Tineidae (13). (*Phthorimaea* (Gelechiidae) is treated in the text as a possible component of the Marquesan fauna but is not included in the above tabulation).

As indicated above, the Marquesas are distant from any land masses and their diverse and peculiar fauna has multiple origins. As in the case of Rapa Island, the fauna demonstrates again the facility with which lepidoptera and other organisms become distributed to oceanic islands.

The Oxychirotidae are represented in Australia by two species: *Oxychirota paradoxa* Meyrick and *Cenoloba oblitalis* (Walker), one species on Christmas Island and one on Ceylon (Sri Lanka) (Figure 12). Yet, many thousands of miles east of Australia, a new genus and species (*Neoxychirota isolata*) appears and indicates an ancient origin. So far, no other species of this family has appeared in the area between Australia and the Marquesas, but the family Lathrotelidae from Rapa (Clarke, 1971:58) may be synonymous; additional material of this latter family may settle this problem. *Oxychirota paradoxa* was recorded at low elevation at Sydney, and presumably *C. oblitalis* was also taken at low elevation; *N. isolata* occurs at high altitudes in the Marquesas.

The Pterophoridae are represented by only two species, but *Stangeia distantia*, new species, provides a great extension of the range of this genus. Geographically and structurally, the nearest species to *distantia* is *S. rapae* Clarke from Rapa, but *distantia* is a smaller species. We did not discover the food plant of *distantia*, but *rapae* feeds on *Siegesbeckia orientalis* L., so we can expect to find *distantia* on some other composite.

The Pyralidae are one of the dominant families in the Marquesas with 28 genera and 63 species. Of these genera only three (*Delcina* and *Tessema*, new genera, and *Chrysophyllis* Meyrick) appear to be endemic. All the others are wide ranging. *Achroia*, *Cadra*, *Spoladea*, *Maruca*, and *Diaphania* are especially common and widely distributed.



FIGURES 4, 5.—Nuku Hiva: 4, Taiohae, ancient house platform and unidentified leguminous trees; 5, Pakiu Valley.



FIGURES 6, 7.—Nuku Hiva: 6, *Pandanus* grove, ~548 m (1800 ft); 7, Tapuaooa, 762 m (2500 ft), tree in right foreground is of *Metrosideros* sp.



FIGURE 8.—Hiva Oa, Mt. Temetiu, ~1219 m (4000 ft), highest point in the Marquesas; right rear, Mt. Feani, 1158 m (3800 ft).

Achroia grisella (Fabricius) and *Cadra cautella* (Walker) are stored-products pests and are generally distributed throughout most of the world. The larva of *Maruca testulalis* (Geyer) feeds on a multitude of hosts and is a serious pest of legumes in some areas. *Diaphania indica* (Saunders), the notorious "cucumber moth" also attacks other cucurbits. *Chrysophyllis lucivaga* Meyrick is of

special interest because of the extraordinary male aedeagus (Figure 52b).

There is only a single genus of Tortricidae currently known from the Marquesas Islands: *Dichelopa*. In this genus I recognize 26 species and one new subspecies. Undoubtedly, when more is known about the islands, other species will be discovered. The presence of this genus in



FIGURE 9.—Hiva Oa, webs of *Microzestis inelegans* Meyrick in association with webs of a species of Embioptera (probably *Oligotoma (Aposthonia) oceana* Ross, 1955:3).

the Marquesas indicates a close relationship to Rapa (15 species), Tahiti (2), and Australia (6). Previously only 13 species of *Dichelopa* were known from the Marquesas. From Tahiti only two species are currently known, but only incidental collecting has been done there, and that only below 1500 feet. Careful and thorough

collecting will, unquestionably, reveal more species in this genus and perhaps, the same can be said for neighboring Morea, Huahini, and other islands in the vicinity.

Eight genera with 10 species of Olethreutidae are currently known from the Marquesas Islands. The genus *Cryptophlebia*, with three species, is



FIGURE 10.—Fatu Hiva, lower slope badly cut-over, containing many weed species of plants.

found all the way from Argentina to Japan and is common in the Pacific region. *C. pallifimbriana* is endemic; *C. chaomorpha*, described from the Marquesas, has been recorded from the distant Seychelles and Maké Island by Diakonoff (1969), and *C. rhynchias* is widely distributed. *Dudua eumenica* is endemic and is closely related to the common *D. aprobola*. Another endemic species,

Duessia marquesana, is strikingly similar and closely related to *D. pleurogramma* Clarke from Kosrae (Kusaie) in Micronesia, and suggests an ancient zoological connection between the Marquesas and Micronesia. *Cydia pseudomalesana* has its counterpart in the Indian *Cydia malesana* (Meyrick), new combination, and probably had its origin in India. With *Tritopterna eocnephaea*



FIGURE 11.—Fatu Hiva, lower Omoa Valley (Omoa village hidden by trees).

we have another example indicating an entomological connection between the island of Rapa and the Marquesas. For a discussion of *Crocidosema plebejana*, see Clarke, 1971.

The Orneodidae are represented by two species, both previously unknown.

The Gelechiidae are represented by only five genera, although I have included a sixth, *Phthorimaea*, in the key as a possible component of the fauna. *Stoeberhinus* with its single species, *S. testaceus*, is strictly a Pacific taxon. The genus *Autosticha* is encountered frequently in the Pacific

and presents no problems. The genus *Ephysteris*, however, raises some interesting zoogeographical questions. So far, North America has not produced a species of this genus, but Europe has no less than three, and the genus is recorded from Africa. In 1965 I recorded *Echinoglossa trinota* from the Juan Fernandez Islands which, currently, is referred to *Ephysteris*; and in this report I describe *Ephysteris longicornis*, new species, from the Marquesas. Moreover, in the British Museum (Natural History), there is an additional species of Pacific *Ephysteris* from the Gilbert Islands. *Chelophoba melaina*, new species, shows distinct affinities to Asiatic species of Gelechiidae as discussed under the species. Also, *Pitycona attenuata*, new species, appears to be derived from the Asiatic fauna.

There is no question in my mind that the center of development of the Cosmopterigidae is in the Pacific region. One has to consider only the enormous radiation that has occurred in the Hawaiian Islands in the genus *Hyposmocoma* and that of the genus *Asymphorodes* in the Marquesas Islands. The latter genus has two species in the Hawaiian Islands (Zimmerman, 1978:1061). In the Marquesas there are 75 species currently known in the genus *Asymphorodes*, 53 of which are described as new; one of these, *A. trichogramma*, new species, also occurs on Easter Island. In this study I have included at least 10 other genera, some far ranging, such as *Cosmopterix* and *Labdia*, and others apparently confined to the Pacific region. *Trissodoris* is widespread in the Pacific (Figure 213) and probably will be found wherever its food plant, *Pandanus*, grows. Other genera of this family, recorded here, undoubtedly will be found ultimately in other Pacific islands.

In the case of *Herlinda*, new genus, and *Asymphorodes* we have an example of convergence in that the structure of the genitalia of the two genera are identical. *Herlinda* differs from *Asymphorodes*, however, by the absence of the thorn-like projections from the metasuctum and the lack of modification of the 6th and 7th abdominal segments of the males.

The Blastobasidae are poorly represented in the Pacific. It is, therefore, surprising that a species in this family has reached the Marquesas. *Blastobasis inana* (Butler) was formerly known from such widely separated places as India and Hawaii, and its presence in the Marquesas suggests distribution through commerce.

Only one species of Heliodinidae, *Lissocnemitis argolyca* Meyrick, originally was found in these islands; it also occurs on Rapa (Clarke, 1971:182).

The Immidae are widespread in the warmer regions of the world, Indo-Australia, South America, and Oceania. It is not surprising, therefore, that the Marquesas support a fauna of at least 11 species. When the faunas of more of the islands are known, undoubtedly additional species will appear. The closely related Choreutidae, with a worldwide distribution, are represented by only a single species.

The Yponomeutidae do not present any real surprises. The ubiquitous *Plutella xylostella* (L.) is established as expected, and other species indicate a relationship to more western taxa.

Two genera of Gracillariidae are present: *Epicephala* and *Caloptilia*. The former genus was previously known only from Australia and New Guinea, but *Caloptilia* is widespread.

Twenty-nine species in 13 genera of Tineidae are recorded in these pages. Of the 14 species of *Decadarchis*, *D. simulans* (Butler), *D. flavistriata* (Walsingham), and *D. minuscula* (Walsingham) are widespread, and *D. penicillata* (Swezey) occurs in Hawaii, suggesting a relationship with the Marquesas as in the case of the two species of *Asymphorodes* (*A. dimorpha* (Busck) and *A. triaula* (Meyrick)).

Robinson (1983:306) synonymized 13 genera with *Erechthias*, including *Nesoxena* and *Caryolestis*, as well as *Decadarchis*. Of these, only *Erechthias* has a simple harpe (valve) but the others all have a cluster of stout setae on the costa of harpe (Clarke, 1971, figs. 153, 155; Robinson, 1983, fig. 3). The female genitalia of all are similar, but the venation of *Erechthias* is quite different from the others. In this work I am retaining

Decadarchis, and temporarily including *Nesoxena* and *Caryolestis* as synonyms. In the *Nesoxena-Caryolestis* complex there are four described "species" which I consider synonyms: *Decadarchis strangulata* (Meyrick, 1929a), new combination; *Decadarchis praedatrix* (Meyrick, 1934a), new combination, new synonym; *Decadarchis semifusca* Bradley, 1961, new synonym; and *Decadarchis pandani* (Clarke, 1971), new combination, new synonym. In addition to the above, I have specimens from two populations of this species from the Caroline Islands: Kosrae (Kusaie) and Kapingamarangi. This species group is not recognized from the Marquesas; but since the larvae feed on dead tissue of coconut and *Pandanus*, and the species occurs in the nearby Tuomotu Islands, it can be expected.

In the genus *Opogona* there are four species. *O. aurisquamosa* is widespread; *regressa* and *discordia* have limited distribution outside the Marquesas, and *trissostacta* appears to be endemic.

The remaining genera in the family each have one species and only *Wyoma*, new genus and species, appears to be endemic.

In my Rapa study (Clarke, 1971:21) I indicated a peculiar feature of some of the species: the black or gray-tipped hindwing. No such feature is detectable in any of the Marquesan species.

ENDEMISM

Endemism, like distribution, is often an artifact of collecting. Actually, we know so little about the faunas of the Pacific islands, that reported endemism gives us only a suggestion of what the real situation is.

In my paper on the Juan Fernandez Islands (Clarke, 1965) I reported 75 percent endemism for the 71 species of microlepidoptera known to exist on those islands. Rapa Island (Clarke, 1971), which is remote from other land areas, exhibited comparatively low endemism. The entire known lepidopterous fauna was considered. Of the macrolepidoptera only 25 percent are endemic but 60 percent of the microlepidoptera appear to be endemic. In my paper on the Tor-

tricoidea of Micronesia (Clarke, 1976) I treated only a fraction of the fauna that must occur in those islands. Only 67 forms were recorded and of these 55.2 percent appear to be endemic. In this report I have recorded 279 species and subspecies of which 208 currently appear to be confined to the Marquesas Islands or, 74.4 percent. Of the genera *Asymphorodes* (except one species on Easter Island) and *Dichelopa*, 100 percent of each are endemic, but of the 29 species of Tineidae recorded only 8 species, or 23 percent, are endemic.

DISPOSITION OF SPECIMENS

The holotypes of the species described as new are in the National Museum of Natural History, Smithsonian Institution, Washington, D.C., unless indicated otherwise. Where possible, paratypes will be placed in the United States National Museum collections of the National Museum of Natural History, the Museum d'Histoire Naturelle, Paris, the British Museum (Natural History), London, and the Bernice P. Bishop Museum, Honolulu, Hawaii. Specimens of previously described species, where series are sufficiently large, will also be placed in the museums listed above.

ACKNOWLEDGMENTS

In any undertaking of this size many individuals contribute to its completion. Dr. S. Dillon Ripley made the entire project possible through a grant from the Smithsonian Research Foundation. Dr. Ripley also authorized several grants from the Smithsonian Fluid Research Fund to support contracts with illustrators for the production of many of the line drawings.

I am also indebted to many of the Marquesans who helped my wife and me on the three islands we visited; but especially to Mr. Francis Herault who was of great assistance on Fatu Hiva.

I wish to express my appreciation to the authorities of the British Museum (Natural History) for permission to examine and study pertinent

types, and for the photographs of *Eucosma agriochlora* Meyrick (Figure 291*b*) and *Cryptophlebia rhynchias* (Meyrick) (Figure 293*a*). I am especially grateful to Dr. Klaus Sattler and Michael Shaffer for the loan of specimens and the answers to many questions that arose during this study; and to Dr. D.S. Fletcher for the use of his manuscript catalog of genera and type citations.

Dr. Frank J. Radovsky, chairman, and Mr. Gordon Nishida, Department of Entomology, Bernice P. Bishop Museum, Honolulu, Hawaii, have been particularly helpful. Through them I have been able to study all of the types of Marquesan microlepidoptera in their possession.

I wish, also, to thank Dr. Eugene Munroe who segregated all of the *Eudonia* species and helped me with other pyralids. Dr. Alex Diakonoff of Leiden, Netherlands, provided translations of some of the references in Dutch, and Dr. Hiroshi Inoue of Iruma City, Japan, aided with articles in Japanese. To both I am greatly indebted.

As usual, my colleagues at the Smithsonian Institution always support me in many ways. I wish to thank Donald R. Davis and Ronald W. Hodges, especially, for reviewing the manuscript, and for other matters in connection with this study. Also, I wish to thank George C. Steyskal, research associate, Systematic Entomology Laboratory, U.S. Department of Agriculture, for checking many of the names.

For botanical names I am indebted to Dan H. Nicholson, Raymond Fosberg, and Marie-Hélène Sacht. This work has required much library work, and without the help of Jack F. Marquardt, Carolyn Sue Hahn, Ruth F. Schallert, and Karen Drescher, many of the required references would not have been forthcoming. They are exceptional librarians.

A considerable number of able illustrators have produced the drawings. The late André del Campo Pizzini, and Jung Lea Smith produced some of the figures, previously published, which are repeated here. Elaine R.S. Hodges has produced the bulk of the figures and has done all of the Cosmopterigidae. Molly K. Ryan and Vishai Malikul have worked primarily with the pyra-

loids; Ann R.P. Richardson did the Immidae, Choreutidae, and Tineidae; and three volunteers, Catherine A. Baer, Eva Dorfman, and Sally Parker have contributed miscellaneous figures. To all of the above I am deeply grateful. To Mrs. Nancy McIntyre I am deeply indebted for carefully helping with reading the galley and page proofs.

I thank Victor Kranz, Smithsonian staff photographer, for the care he has taken in making the photographs of the moth wings. The illustrations of scenes on the islands are reproduced from photographs by my wife and me.

In conclusion, I wish to express my sincere appreciation to my wife, Thelma. As on several other expeditions, she accompanied me to the Marquesas Islands as a volunteer aid. As usual, she cared for the livestock and undertook all the household tasks, freeing me for more extended fieldwork. I owe her a lasting debt of gratitude.

Family OXYCHIROTIDAE

Neoxychirota, new genus

FIGURE 12

TYPE-SPECIES.—*Neoxychirota isolata*, new species, by monotypy and present designation.

The gender of this generic name is feminine.

Labial palpus nearly twice as long as head, strongly compressed; third segment greatly reduced, obscured by long scales of second. Maxillary palpus well developed, about $\frac{1}{3}$ length of labial palpus, clothed with loose scales. Head flattened dorsally with closely appressed scales; side tufts posteriorly spreading; ocellus absent. Antenna with short projecting scales at end of each segment; finely ciliated; scape without pecten. Forewing pointed, costa straight, termen very oblique, 11 veins; 1b simple, obsolete; 1c absent; 2 and 3 very short, well before angle of cell; 4 from angle; 5 distant from 4; 5, 6, 7 about equidistant, well separated; 8 and 9 coincident to costa; 10 out of the stalk of 8 and 9; 11 from near end of cell. Hindwing linear, pointed, with 9 veins; 2, 3, and 4 very short, well separated, 4

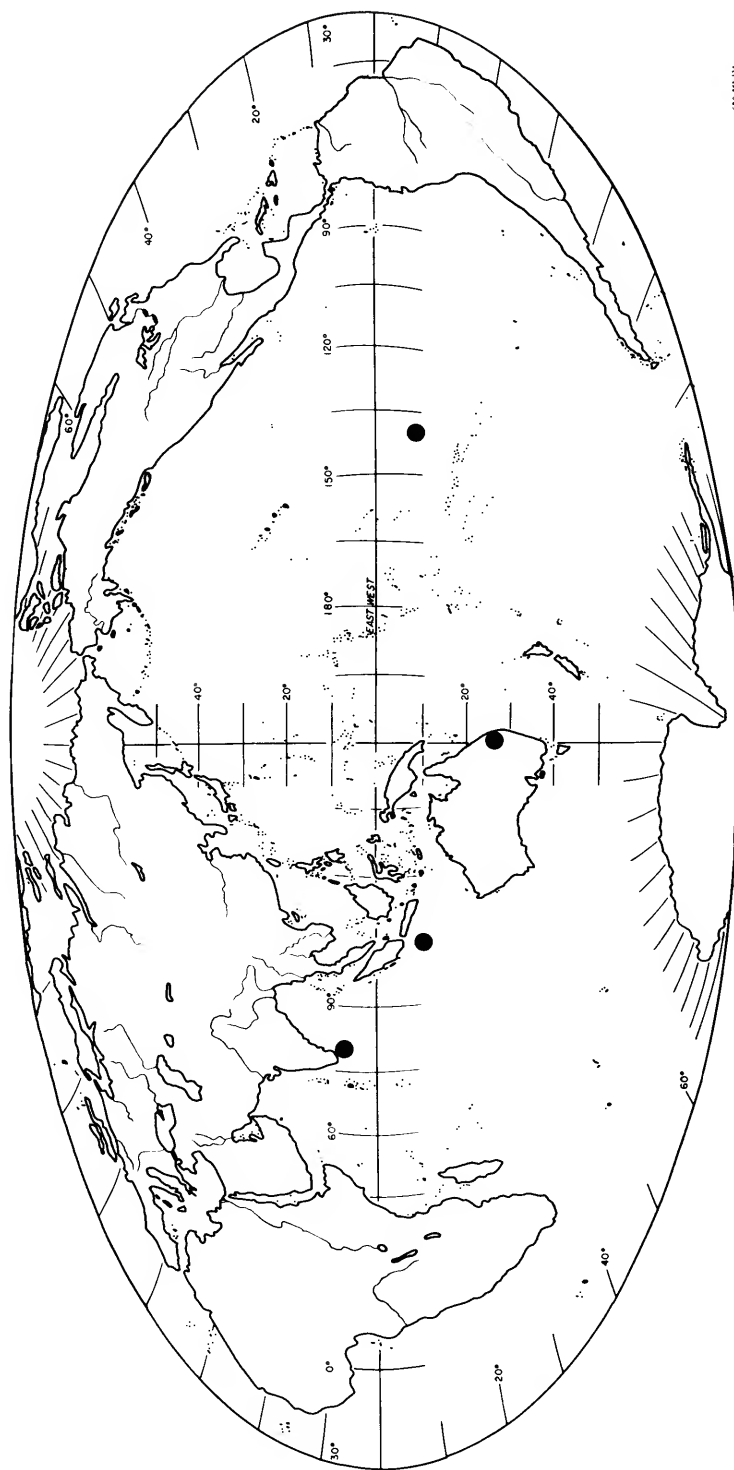


FIGURE 12.—Distribution of the family Oxychirotidae.

from angle of cell; 4, 5, 6 equidistant and well separated, parallel; 7 and 8 stalked, 7 to termen slightly below apex; 9 free. Hindleg tibia slender, smooth. Abdomen smooth.

Male genitalia with ganthos and uncus present.

Female genitalia without signum; accessory bursa present.

Neoxychirota is very near *Oxychirota* but lacks the short cone of scales of forehead. *Neoxychirota* also differs in forewing by vein 5 distant from 4, and 7 separate from stalk of 8 + 9: also in hindwing vein 5 is separate from 4, not connate, 6 is separate from the stalk of 7 and 8.

***Neoxychirota isolata*, new species**

FIGURES 13, 274a

Alar expanse 10–13 mm.

Labial palpus ochraceous on inner surface, grayish fuscous on outer side. Antenna grayish with darker annulations toward base; scape fuscous. Head pale grayish; on vertex a large patch of metallic scales. Thorax grayish overlaid with metallic scales; collar, tegula and posterior tuft mostly metallic scales. Forewing ground color grayish fuscous to fuscous, the scales with buff bases giving an irrorate effect; base of dorsum, a streak in fold, a blotch on tornus and a subapical spot metallic; on costa and at apical fourth, buff spots; on dorsum, at basal third, a buff spot and across end of cell a transverse buff streak followed by fuscous scales; in middle of cell an ill-defined fuscous spot; cilia ochraceous buff, mixed with grayish fuscous. Hindwing fuscous; cilia ochraceous buff, mixed with grayish fuscous. Foreleg light buff; tibia and tarsal segments fuscous on outer side; midleg light buff; tibia suffused grayish; hindleg light buff. Abdomen fuscous dorsally, ventrally pale buff, each segment with a small tuft posterodorsally; first segment buff posterodorsally.

Male genitalia slide USNM 24021. Harpe broadest toward cucullus; cucullus rounded; at basal third a small papillalike point. Gnathos a slender semicircle with a membranous area ventrad and covered densely with filament-like setae. Uncus bluntly rounded. Vinculum a narrow scler-

rotized band. Tegumen about twice as long as wide. Anellus V-shaped, the arms dilated posteriorly. Aedeagus short, stubby, pointed.

Female genitalia slides USNM 24015, 24545, 24547, 24605, 24608, 25066, 25067, 25068, 25099. Ostium U-shaped, small. Inception of ductus seminalis well before ostium. Ductus bursae very slender, membranous. Bursa copulatrix rather small, oval, membranous; appendix bursae from posterior end of bursa copulatrix. Signum absent.

HOLOTYPE.—USNM 100751.

TYPE-LOCALITY.—Fatu Hiva, Mt Teoaiua, 610 m (2000 ft).

DISTRIBUTION.—Marquesas Islands.

FOOD PLANT.—Unknown.

Described from the ♂ holotype (27 Mar 1968) and 37 paratypes as follows. 12 ♀ paratypes with same data as holotype. Fatu Hiva: Mt. Teoaiua, 2000 ft (610 m), 22 Mar 1968, 16 ♀ paratypes; Mt. Upe, 2025 ft (167 m), 3 Apr 1968, 5 ♀ paratypes; Teavapuhiau, Ouia, 750 m, 1–3 Aug 1977, 2 ♀ paratypes (Montgomery). Hiva Oa: Mt. Feani, 3400 ft (1036 m), 1 Mar 1968, 1 ♀ paratype. Nuku Hiva: Tovii, Ooumu, 900 m, 16–19 July 1977, 1 ♀ paratype (Montgomery).

In appearance *isolata* is similar to *Oxychirota paradoxa* Meyrick but broader winged and generically distinct.

The occurrence of this species in the Marquesas Islands provides a very great extension of the range of this family.

Family PTEROPHORIDAE

Genus *Stangeia* Tutt

Stangeia Tutt, 1906:492.—Chapman, 1908:53.—Adamczewski, 1951:309, 382, pl. 12: fig. 62.—Bigot, 1966:284, 285 [figs.], 286.—Clarke, 1971:96.

TYPE-SPECIES.—*Pterophorus siceliota* Zeller, 1847:907, by monotypy.

***Stangeia distantia*, new species**

FIGURES 14, 274b

Alar expanse 11–12 mm.

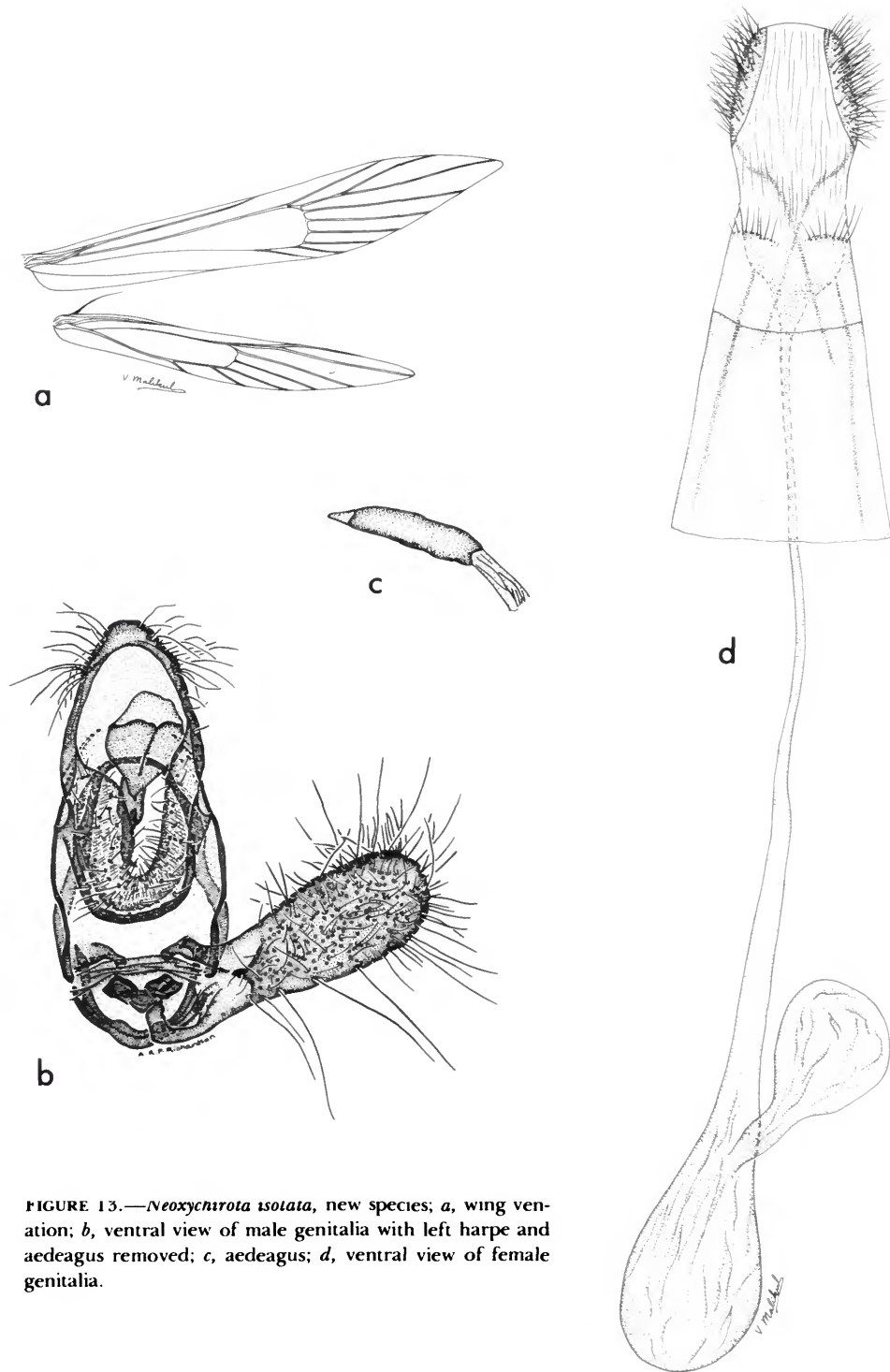


FIGURE 13.—*Neoxychirota isotata*, new species; *a*, wing venation; *b*, ventral view of male genitalia with left harpe and aedeagus removed; *c*, aedeagus; *d*, ventral view of female genitalia.

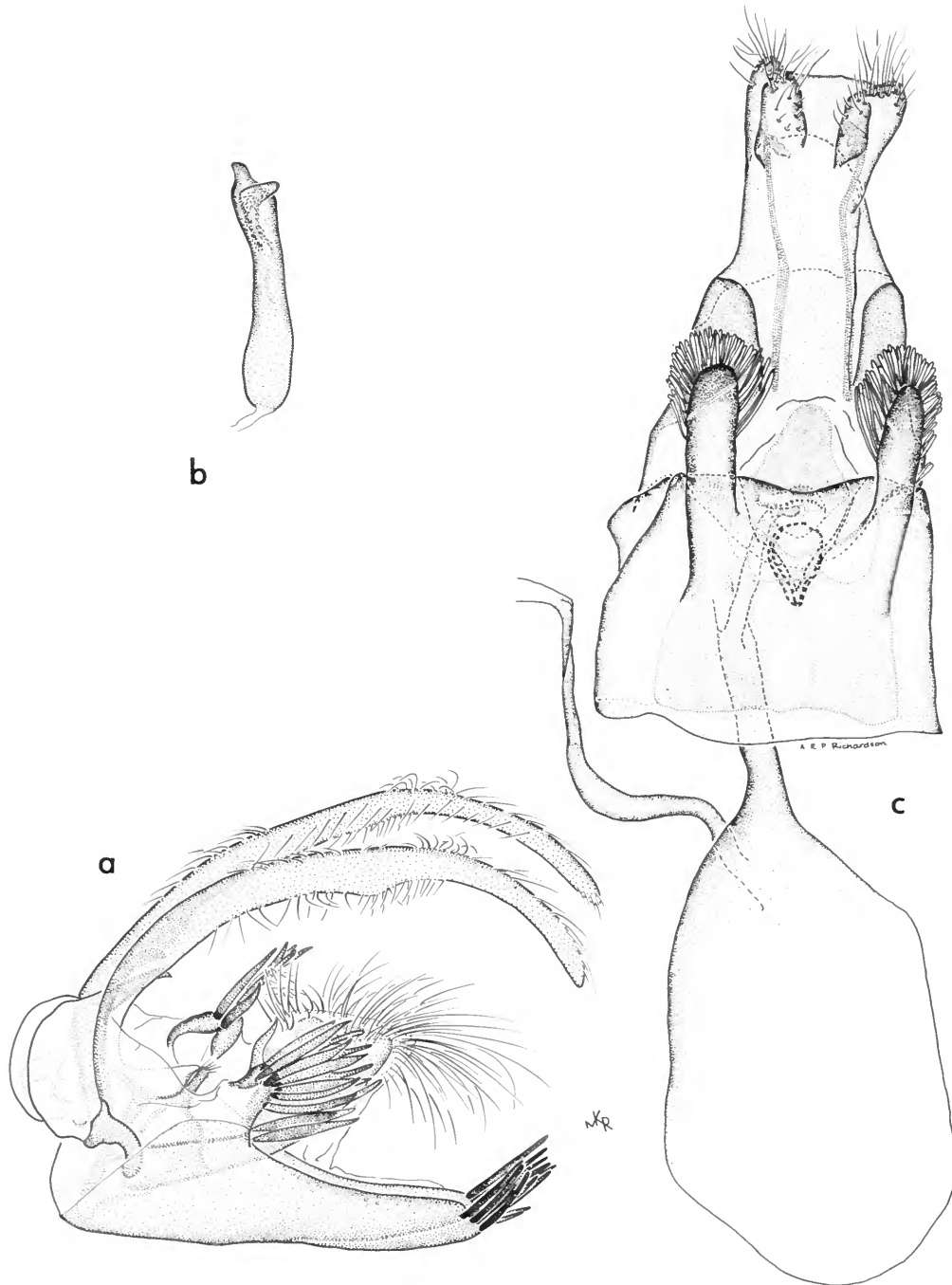


FIGURE 14.—*Stangeia distantia*, new species; *a*, lateral aspect of male genitalia with aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.

Labial palpus white; outer side of second segment olive buff; apical tuft half white, half black; third segment with longitudinal black line on each side ventrolaterally. Antenna black, spotted white; scape olive buff, ventrally black, with a white spot dorsally. Head olive buff. Thorax olive buff; posteriorly buff; tegula olive buff basally, sordid white distally. Forewing ground color olive buff, somewhat darker costad; outer half of costa very narrowly edged white; from second feather of forewing a conspicuous group of white cilia. Hindwing fuscous; cilia grayish. Legs ocherous white longitudinally streaked with fine black lines. Abdomen dorsally and narrowly olive buff, bordered on each side with a buff longitudinal line; laterally fuscous; ventrally olive buff with a median longitudinal buff line; on each side of buff median line a series of small black spots.

Male genitalia slides USNM 24064, 24548, 24549. Harpe long, slender, crescentic, base irregular, dilated; both harpes considerably narrowed beyond middle. Gnathos and socii absent. Uncus consisting of a pair of slender digitate processes. Vinculum long, narrow, with a broad flat flange around periphery. Tegumen short, broad. Anellus a narrow, transverse, sclerotized plate with a long slender arm posteriorly attached to aedeagus. Aedeagus moderately stout, terminating in a ventral beaklike process and a dorso-lateral, short, digitate process.

Female genitalia slide USNM 24065. Ostium oval. Antrum conical, sclerotized. Inception of ductus seminalis dorsolateral from bursa copulatrix slightly before junction with ductus bursae. Ductus bursae membranous. Bursa copulatrix membranous, short. Signum absent. Lamella antevaginalis triangular, transverse; lamella postvaginalis triangular, rounded posteriorly.

HOLOTYPE.—USNM 100752.

TYPE-LOCALITY.—Fatu Hiva, Omoa.

DISTRIBUTION.—Fatu Hiva.

FOOD PLANT.—Unknown.

Described from the ♂ holotype, 2 ♂ and 5 ♀ paratypes, all from Omoa, collected 11–16 Mar to 8 Apr 1968.

This species is closely related to *S. rapae* Clarke (1971), (13–16 mm), but is a smaller species (11–12 mm) and is generally lighter in color. The genitalia of *distantia* are strikingly similar to those of other species of this genus, and are, in themselves, not reliable for specific separation.

As far as I am able to ascertain, this is the easternmost record for this genus.

Genus *Marasmarcha* Meyrick

Marasmarcha Meyrick, 1886a:11.

TYPE-SPECIES.—*Alucita phaeodactyla* Hübner [1805] 20 June 1813 [1796–1838], pl. 3: figs. 14, 15 (only named included species, Article 69(a)i).

Marasmarcha pumilio (Zeller)

FIGURES 15, 274c

Mimeseoptilus pumilio Zeller, 1873:324.

Marasmarcha pumilio (Zeller).—Barnes and Lindsey, 1921:348, pl. 42: fig. 7, pl. 49: fig. 13.—Forbes, 1923:646.—Meyrick, 1927a:69; 1929a:491.—Forbes, 1931:345.—Hori, 1933:394.—Wolcott, 1936:480.—McDunnough, 1939:38 [No. 6504].—Viette, 1949a:325.

Marasmarcha liophanes Meyrick, 1886a:19; 1906:136; 1910:18, fig. 15; 1913:27; 1914:47.—Nohira, 1916:38.

Stenoptilia pumilio (Zeller).—Fernald, 1891:87 [No. 4566]; 1898:58.—Smith, 1903:100 [No. 5382].—Fernald in Dyar, 1903:447 [No. 4991].—Meyrick, 1910:18; 1913b:28.—Barnes and McDunnough, 1917:151 [No. 5945].

Stenoptilia (?) *pumilio* (Zeller).—Walsingham, 1892:495, 542; 1897:58.

Mimaeseoptilus gilvidorsis.—Hedemann, 1896:8 [not *Mimaeseoptilus gilvidorsis* Zeller].

Leioptilus (?) *griseodactylus* Pagenstecher, 1900:240.

Exelestis liophanes (Meyrick).—Fletcher, 1909:33, pl. A12; 1910a:313 [No. 149], 321; 1910b:403; 1919:81; 1921a:26; 1926:610.

Exelestis pumilio (Zeller).—Fletcher, 1921a:46, pl. 5A–C; 1931:38.—Viette, 1957:171.

Male genitalia slides USNM 24062, 25161. Harpe very narrow basally; broadened distad, from slightly beyond middle a prominent ridge is armed with long, curved, deciduous setae. Uncus divided. Vinculum V-shaped, with ventral

FIGURE 15.—*Marasmarcha pumilio* (Zeller): *a*, ventral view of male genitalia with aedeagus in situ; *b*, ventral view of female genitalia.

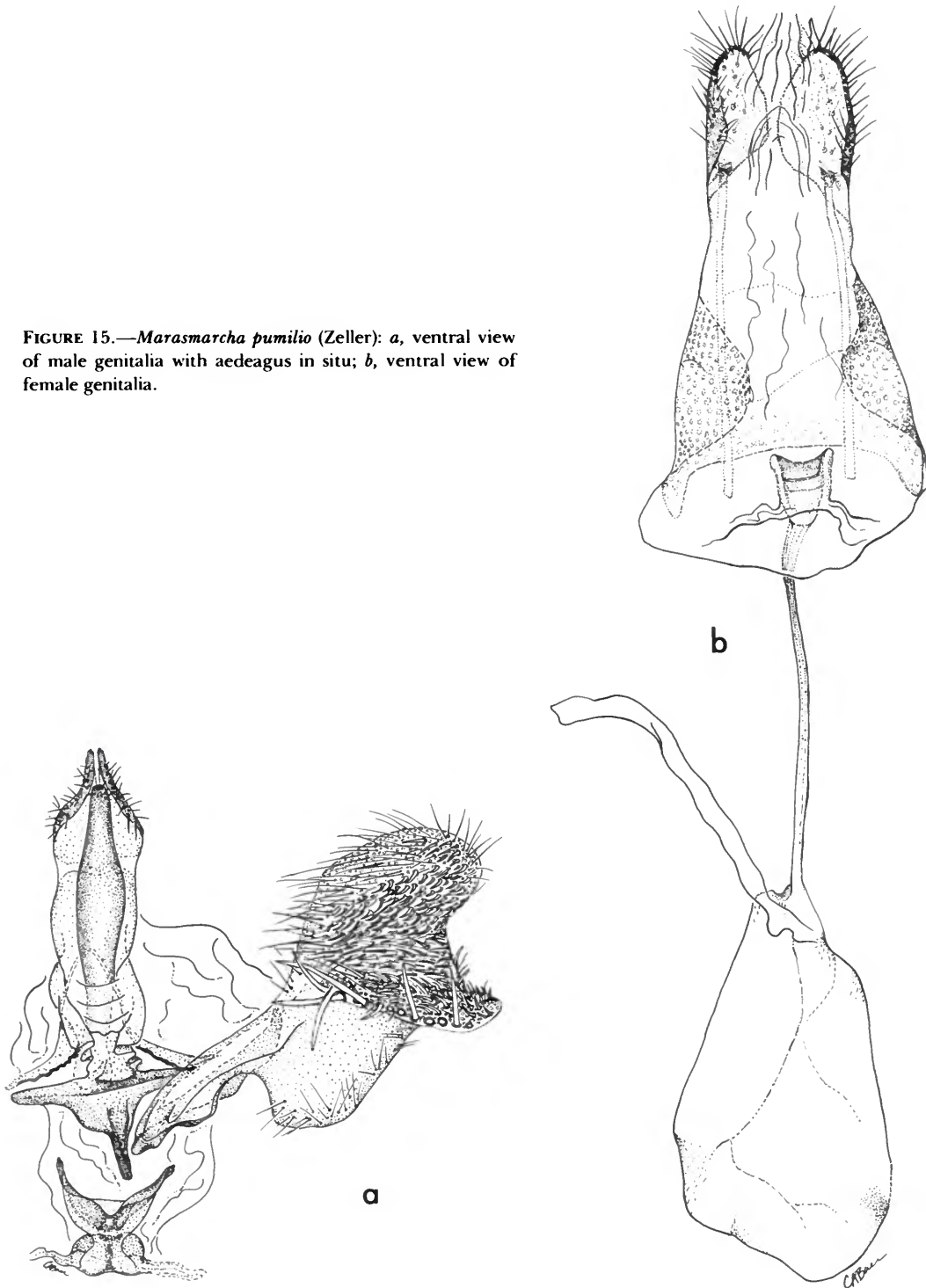


plate. Tegumen slender, lightly sclerotized. Anellus membranous. Aedeagus slender, slightly enlarged beyond middle.

Female genitalia slide USNM 24063. Ostium funnel-shaped. Antrum not differentiated. Inception of ductus seminalis from posterior end of bursa copulatrix. Ductus bursae very slender, threadlike. Bursa copulatrix membranous, finely granular. Signum absent.

HOLOTYPE.—In the Museum of Comparative Zoology, Cambridge (*pumilio*); in the British Museum (Natural History) (*liophanes*); (?) (*griseodactylus*).

TYPE-LOCALITIES.—Texas (USA) (*pumilio*); Reunion (*liophanes*); Bismarck Archipelago (?) (*griseodactylus*).

DISTRIBUTION.—Barbadoas, Grenada, St. Vincent, St. Croix, Jamaica, North America (New Jersey south to Florida west to Missouri and Texas), Sri Lanka (Ceylon), Borneo, Bismarck Archipelago, Japan (Ryukyu Islands), Taiwan (Formosa), Tahiti, China, India, Reunion, Fiji, Seychelles, Africa, Marquesas Islands.

From the Marquesas I have the following 21 specimens. Nuku Hiva: Pakiu Valley, 1800 ft (548 m), 17–28 Jan 1968, 8 ♂, 1 ♀. Fatu Hiva: Omoa Valley, 16 Mar to 5 Apr 1968, 9 ♂, 3 ♀.

FOOD PLANTS.—*Oxalis* sp., Alyce clover (*Alysicarpus vaginalis* (L.) de Candolle).

I have dissected the types of *pumilio* and *liophanes* and there is no doubt about the identity of the Marquesas specimens.

Family PYRALIDAE

Key to the Subfamilies of Pyralidae of the Marquesas Only

1. Tongue and ocelli absent **GALLERIINAE**
Tongue and ocelli present 2
2. Forewing with vein 7 absent **PHYCITINAE**
Forewing otherwise 3
3. Hindwing with veins 7 and 8 free **PYRALINAE**
Hindwing otherwise 4
4. Hindwing with pecten **CRAMBINAE**
Hindwing without pecten 5
5. Forewing with vein 1a forming loop and joining vein 1b . . . **PYRAUSTINAE**
Forewing not as above; labial palpus porrect, beaklike . . . **SCOPARIINAE**

Subfamily GALLERIINAE

Genus *Achroia* Hübner

Achroia Hübner, 1819 [1816–1826]:163.

TYPE-SPECIES.—*Galleria alvearia* Fabricius, 1798:463; subsequent designation by Westwood, 1840:113 (= *Achroia cinercola* Hübner, 1819[1816–1826]:163).

Achroia grisella (Fabricius)

FIGURES 16, 274d

Tinea grisella Fabricius, 1794, 3(2):289 [No. 10].

Achroea [sic] *grisella* (Fabricius).—Zeller, 1848:583.—Stain-

ton, 1849a:3; 1849b:1.—Heinemann, 1865 [1863–1870]: 204 [No. 296].—Wocke, 1871:231 [No. 647].—Meyrick, 1879a:216.—Snellen 1882:120.—Ragonot, 1885:22.—Leech, 1886:110, pl. 13: fig. 6.—Bethune-Baker, 1894:586.—Spuler, 1910:189.

Achroia grisella (Fabricius).—Stephens, 1852:24.—Westwood, 1854:207 [No. 1435].—Stainton, 1859:169 [No. 859].—Hampson, 1896 [1894–1896], 4:6.—Rebel, 1901, 2:1 [No. 3].—Ragonot, 1901:497.—Dyar, 1903:413 [No. 4636].—Maxwell-Lefroy and Howlett, 1909:509.—Dupont, 1913:35 [No. 215].—Shiraki, 1913:377.—Hampson, 1917:44.—Barnes and McDunnough, 1917:141 [No. 5454].—Britton, 1920:108.—Fletcher, 1920:81, 84, pl. 7a–e.—Ghosh, 1923:14.—Forbes, 1923:535.—Meyrick, 1934c:333, 343.—Lhomme, 1935:161 [No. 2111].—Le Marchand, 1935:311.—Pierce and Metcalf, 1938:12, pl. 7.—Rebel, 1939:6.—McDunnough, 1939:25 [No. 5995].—Adam-

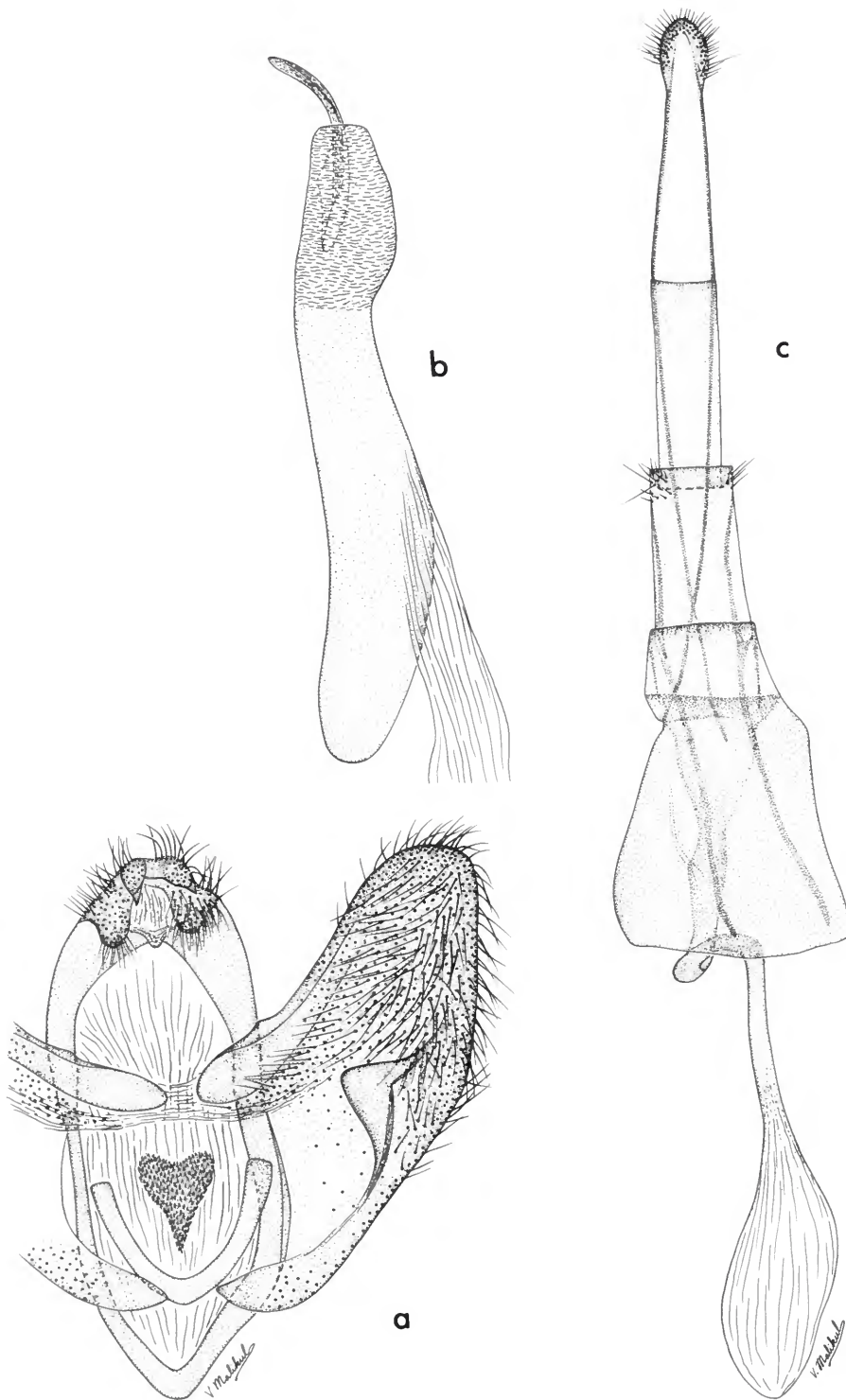


FIGURE 16.—*Achromia grisella* (Fabricius): *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.

son, 1943:45.—Corbet and Tams, 1943a:29, fig. 7, pl. 1, fig. 10; 1943c:72, 92, figs. 26, 81, 82, 127, 163, pl. 2: figs. 9, 10.—Kloet and Hincks, 1945:114.—Lamont and Callan: 1950:205.—Hartig and Amsel, 1951:45.—Inoue, 1955:122 [No. 675].—Bollmann, 1955:610, fig. 1.—Elton, 1956:12–14.—Hartig, 1956:93.—Peterson, 1956:200, figs. L45, D-H.—Zimmerman, 1958b:27, figs. 11–13.—MacNay, 1959c:141.—Razowski and Śliwinski, 1961:31, 33, 49.—Whalley, 1964:566.—Gentry, 1965:175.—Kloet and Hincks, 1972:44.—Balachowsky, 1972:1230.—Emmet, 1979:213 [No. 1390].—Leraut, 1980:109 [No. 2620].—Inoue et al., 1982:374, pl. 44: figs. 62, 63.—Hodges et al., 1983:79 [No. 5623].—Brower, 1983:14 [No. 5995].—Shin et al., 1983:394.

Bombyx cinereola Hübner, 1803 [1796–1838] (Bombyces), pl. 23; fig. 91.

Galleria alvearia (Stephens.)—Latreille, 1809:231.—Stephens, 1829:213 [No. 7410].—Curtis, 1831 [1824–1839]:176.—Duponchel in Godart and Duponchel, 1842(4):127, pl. 60; fig. 10; 1844:326.—Westwood, 1854:207 [No. 1433].

Achroia alvearia (Stephens.)—Stephens, 1834:294.—Curtis, 1837:205 [No. 981].—Herrich-Shäffer, 1849, 4:112, pl. 21: figs. 149, 150.

Meliphora alveariella Guenée, 1845:308; [1846]:70.

Tinea anticella Walker, 1863 [1856–1866], 483.

Achroia grisella.—Ragonot, 1885:18 [misspelled].

Meliphora grisella (Fabricius).—Meyrick, 1895:384; 1899:197; 1928:400; 1929b: 160.—Philpott, 1929:474, fig. 6.

Achroia obscurevittella Ragonot.—Leech, 1901:388.

Achroia obscurovittella.—Matsumura, 1908:190 [No. 1585] [misspelled.].

Achroia [sic] *grisella* (Fabricius).—Wolcott, 1936:475.

Meliphora (*Achroia*) *grisella* (Fabricius).—Ford, 1949:17 [No. 55].

Achroia grisella infranella Lucas, 1955:251.

Male genitalia slide USNM 25274. Harpe broad basally, tapered to a bluntly pointed cucullus; inside sacculus, near middle, a triangular prominence. Socius a fleshy lobe. Uncus bilobed. Vinculum bluntly pointed. Tegumen arched. Anellus a broadly U-shaped plate. Aedeagus stout, longer than harpe; vesica armed with a single long, curved cornutus.

Female genitalia slides USNM 25272, 25273. Ostium broad, transverse, emerging from a broad, granulated posterior portion of ductus bursae. Inception of ductus seminalis from posterior part of ductus bursae. Ductus bursae slender, membranous. Bursa copulatrix membranous. Signum absent.

TYPES.—In the British Museum (Natural History) (*anticella*); in the Carnegie Museum, Pittsburgh (*obscorevittella*); location unknown (*grisella*, *alvearia*, *cinereola*); in the Museum National d’Histoire Naturelle (*infranella*).

TYPE-LOCALITIES.—Australia (*anticella*); Japan (*obscorevittella*); unknown (*grisella*, *alvearia*, *cinereola*); Morocco (*infranella*).

DISTRIBUTION.—Africa, Australia, Croatia, Sicily, Germany, France, Madagascar, Trinidad, Jamaica, Japan, Colombia, Porto Rico, North America, Marquesas Islands, Tahiti, Sikkim, Bengal, Ceylon.

FOODS.—Comb of honeybee, dried fruits (apples, raisins).

Subfamily PHYCITINAE

Key to the Genera of Phycitinae

- 1. Forewing with 11 veins 3
 Forewing with fewer than 11 veins 2
- 2. Forewing with 9 veins; 4 and 9 absent **Cadra**
 Forewing with 10 veins; 4 absent **Ernophthora**
- 3. Labial palpus straight, directed upwards; second segment 3 times length of third **Phycita**
 Labial palpus otherwise 4
- 4. Forewing with veins 4 and 5 closely approximate at bases 5
 Forewing with veins 4 and 5 otherwise 7
- 5. Forewing vein 10 connate with stalk of 8 and 9 **Ctenomeristis**
 Forewing otherwise 6

6. Hindwing with veins 4 and 5 connate from angle of cell . . . *Cryptoblabe*
 Hindwing with veins 4 and 5 anastomosing for half their length
 *Zamagiria*
7. Forewing with veins 8 and 9 coincident *Delcina*, new genus
 Forewing with veins 8 and 9 stalked *Cateremna*

Genus *Cryptoblabe* Zeller

Cryptoblabe Zeller, 1848:644.

TYPE-SPECIES.—*Cryptoblabe rutilella* Zeller, 1848:645, by monotypy.

***Cryptoblabe ardescens* (Meyrick), new combination**

Figures 17, 18, 274e

Eurhodope ardescens Meyrick, 1929b:160.—Viette, 1949a:321.—Clarke, 1971:91, fig. 81, pl. 12c,d.

TYPE.—In the British Museum (Natural History).

TYPE-LOCALITY.—Society Islands, Raiatea.

DISTRIBUTION.—Society Islands (Tahiti, Raiatea); Austral Islands (Rurutu, Rapa): Marquesas Islands: Nuku Hiva: Pakiu Valley, 1000–1700 ft (304.8–518 m), 30 Jan to 14 Feb 1968, 12♂, 4♀; Taiohae, 17 Jan to 2 Feb 1968, 6♂, 5♀; Tunoa Ridge, 2900 ft (884 m), 23 Jan 1968, 1♂, 3♀. Hiva Oa: Atuona, 12 Feb to 14 Mar 1968, 6♂, 44♀; Tahauku, 2–12 Mar 1968, 2♂, 4♀. Fatu Hiva: Omoa, 11–20 Mar 1968, 21♂, 36♀; Mt.

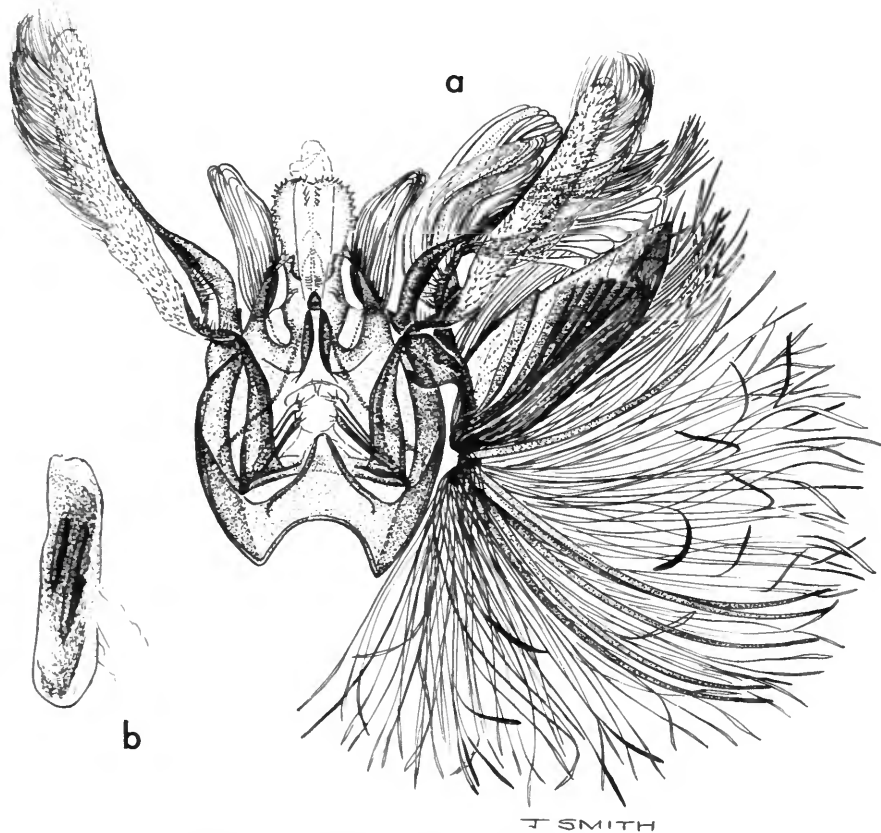


FIGURE 17.—*Cryptoblabe ardescens* (Meyrick): a, ventral view of male genitalia with aedeagus removed, and showing expanded right corema; b, aedeagus.

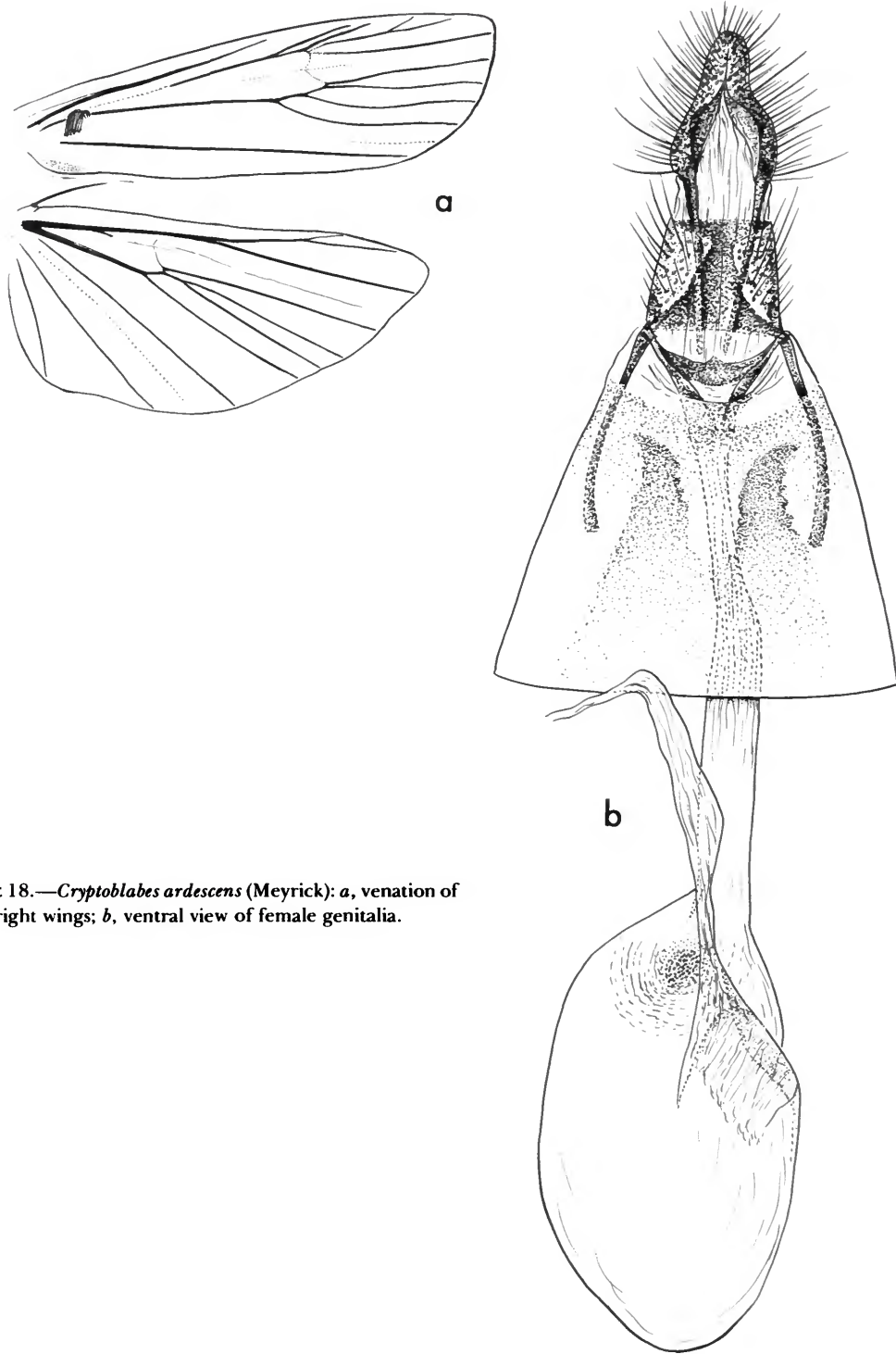


FIGURE 18.—*Cryptoblates ardescens* (Meyrick): *a*, venation of right wings; *b*, ventral view of female genitalia.

Teoaiua, 2000 ft (610 m), 22 Mar 1968, 3♀; Teavapuhiau, Ouia, 750 m, 1–3 Aug 1977, 1♂, 3♀ (Montgomery).

Eiao: Northern highlands, 400 m, 7 Aug 1977, 1♀ (Montgomery).

FOOD PLANTS.—*Mangifera indica* L. (inflorescence); *Pandanus tectorius* Parkinson (fruit stalk); *Oparanthus rapensis* (F. Brown) Sherff; *Psidium guajava* L. (fruit); *Tamarindus indica* L. (dead and living leaflets); *Eugenia uniflora* L. (fruit).

This species is probably widely distributed throughout the Pacific islands since the larvae seem to have a great tolerance for a variety of foods.

Although figured in Clarke (1971, figs. 81, 82) the figures are repeated here for completeness.

Genus *Ernophthora* Meyrick

Ernophthora Meyrick, 1887:263.

TYPE-SPECIES.—*Ernophthora phoenicias* Meyrick, 1887:263, by monotypy.

Ernophthora denticornis (Meyrick)

FIGURES 19, 274f,g

Aspithra denticornis Meyrick, 1929b:156.

Ernophthora denticornis (Meyrick).—Meyrick, 1934:335.

Male genitalia slide USNM 24774. Harpe costa concave, narrowly sclerotized, cucullus rounded. Transtilla three branched, the posterior arm indented distally. Uncus elongate, triangular, pointed; on each side, near base, a slender hooked process. Vinculum broadly rounded. Tegumen much broader than long. Anellus a subquadrate plate with a digitate process from each side posteriorly. Aedeagus stout, simple; vesica apparently unarmed.

Female genitalia slides USNM 24775, 24810, 24862. Ostium broad, transverse, funnel-shaped. Much heavy scaling around ostium. Inception of ductus seminalis at posterior third of ductus bursae. Ductus bursae ornamented with numerous, very fine longitudinal ridges. Bursa copulatrix mostly granular. Signum an oval dentate plate.

LECTOTYPE.—Male, 21 mm, "Hiva Oa, Marquesas, at light, 3500 ft. 28.1.25. St. George Expedn. C.L. Collenette." The specimen bears the usual British Museum "Type" label. In addition, a white rectangular label reads "*Aspithra denticornis*, Meyrick, Holotype." There is also a label in Meyrick's hand "*Aspithra denticornis* Meyr." Slide JFGC No. 11948. Lectotype hereby designated.

Lectotype is in the British Museum (Natural History).

TYPE-LOCALITY.—Hiva Oa, 3500 ft (1067 m).

DISTRIBUTION.—Marquesas Islands.

We have 33 specimens from two islands as follows. Nuku Hiva: Tunoa Ridge, 2900 ft (884 m), 23 Jan 1968, 1♀. Hiva Oa: Mt. Feani, 3400 ft (1036 m), 1 Mar 1968, 9♀, and 3800 ft (1158 m), 20 Feb 1968, 11♂, 12♀.

FOOD PLANT.—Unknown.

Meyrick (1934C:335) lists this species also from the islands of Tahuata and Uapou and from Fatu Hiva (1929b:157).

Ernophthora iospila, new species

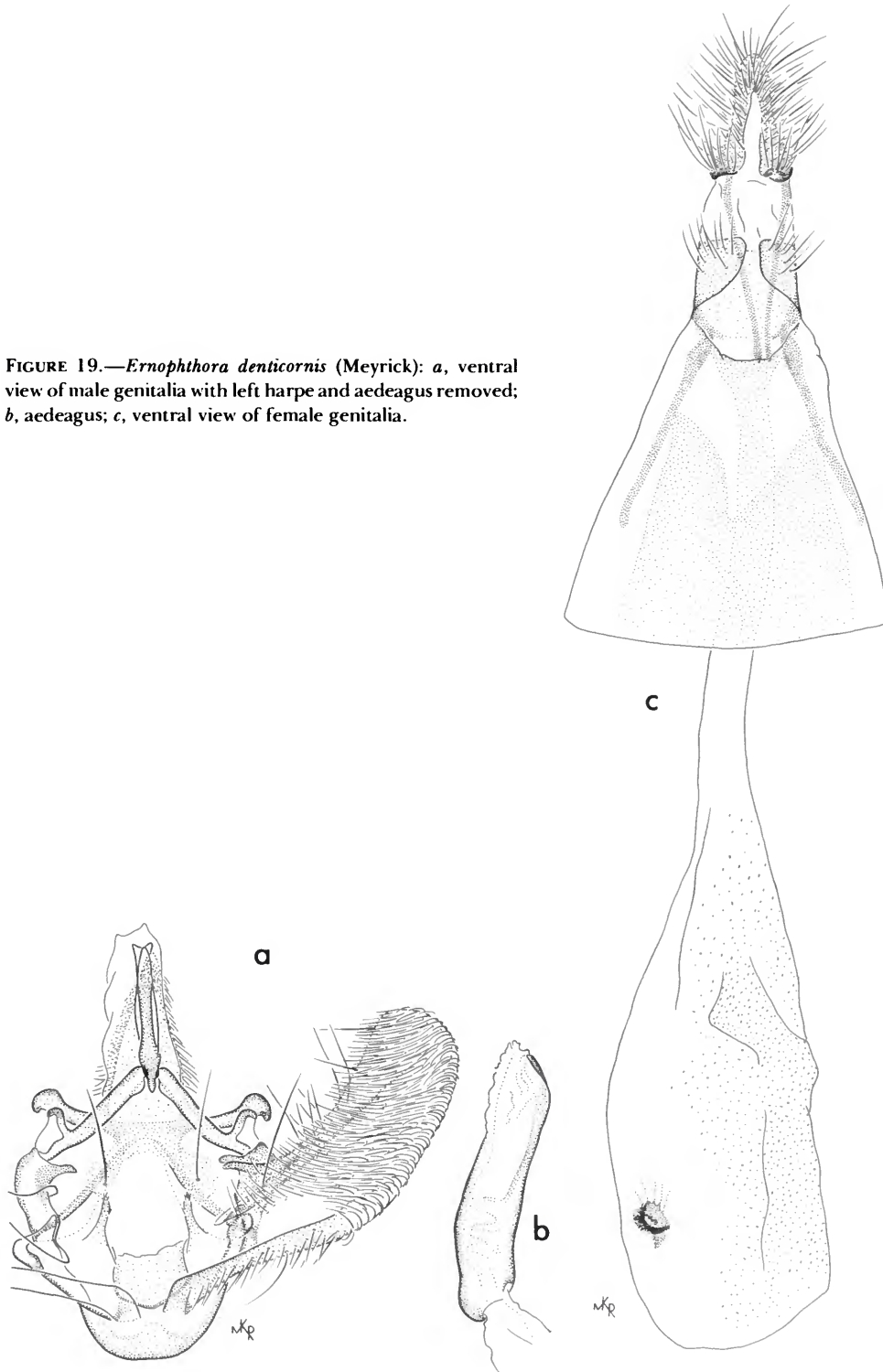
FIGURES 20, 274h

Alar expanse 22–28 mm.

Labial palpus sorghum brown mixed with fuscous scales. Antenna sorghum brown with buff spots dorsally. Head, thorax, and forewing ground color sorghum brown, the forewing slightly paler toward dorsum, and with very fine fuscous irroration; from near base, along cell, a faint buff stripe extends nearly to termen; near apical third, inside costa, a small but well-defined blackish spot; cilia sorghum brown. Hindwing grayish fuscous; cilia with reddish tinge. Fore-, mid-, and hindlegs sorghum brown with fine fuscous irrorations; hindleg tibia mostly ochraceous buff. Abdomen ochraceous buff dorsally, sorghum brown ventrally.

Female genitalia slide USNM 24776. Ostium broad, transverse, funnel-shaped. Inception of ductus seminalis lateral, from ductus bursae slightly posterior to bursa copulatrix. Ductus bur-

FIGURE 19.—*Ernophthora denticornis* (Meyrick): *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.



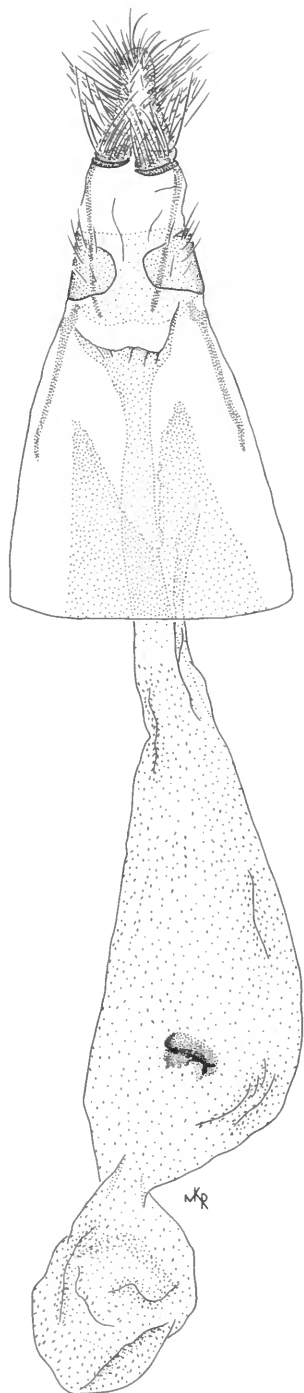


FIGURE 20.—*Ernophthora iospila*, new species, ventral view of female genitalia.

sae membranous. Bursa copulatrix very finely granular. Signum a curved, sclerotized rod with a triangular, dentate plate anteriorly.

HOLOTYPE.—USNM 100729.

TYPE-LOCALITY.—Hiva Oa, Mt. Feani, 3800 ft (1158 m).

DISTRIBUTION.—Hiva Oa.

FOOD PLANT.—Unknown.

Described from the ♀ holotype (20 Feb 1968) and 7♀ paratypes with the same data.

This species has an almost unicolorous forewing. The only contrasting feature is the small black dot inside costa at about apical third. One specimen, the largest of the series, has a somewhat darker hindwing than the other examples.

Ernophthora dryinandra (Meyrick)

FIGURES 21, 275a-d

Aspithra dryinandra Meyrick, 1929b:157.

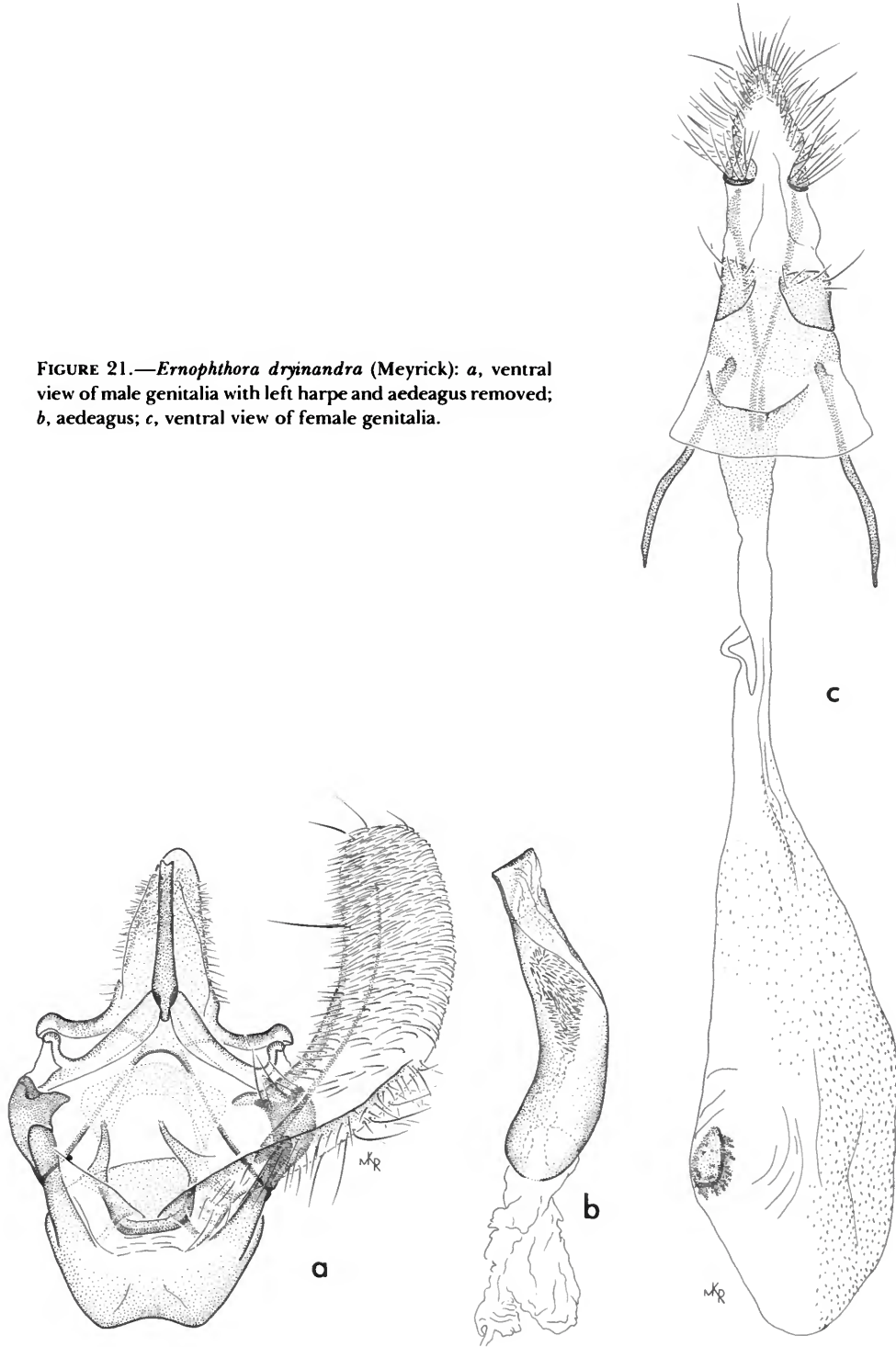
Ernophthora dryinandra (Meyrick).—Meyrick, 1934c:335.

Male genitalia slides USNM 24780, 24817. Harpe slightly broader at middle, evenly curved; costa sclerotized; cucullus rounded. Transtillar arms converging to form a long, sclerotized, median rod. Uncus narrowed distally, with basal lateral arms. Vinculum a broad band. Tegumen broader than long. Anellus a quadrate plate with posterior pointed processes laterally. Aedeagus smooth, curved; vesica armed with an irregular patch of spiculate cornuti.

Female genitalia slides USNM 24777, 24778, 24779, 24784. Ostium very broad, funnel-shaped. Inception of ductus seminalis lateral, from anterior third of ductus bursae. Ductus bursae membranous except finely granular before ostium. Bursa copulatrix mostly membranous but partly finely granular. Signum an oval, sclerotized plate armed with dentate processes.

LECTOTYPE.—Male, 18 mm., "Hiva Oa, Marquesas. At light, 3500 ft 28.1.25 St. George Expedn. C.L. Collenette." The specimen is marked "Allotype" on a yellow-bordered, round label. A rectangular label reads, "*Aspithra dryinandra* Meyrick. Allotype." A third, small rectan-

FIGURE 21.—*Ernophthora dryinandra* (Meyrick): *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.



gular label bears the inscription "Brit. Mus. 1925-488." Slide JFGC No. 11951. Lectotype hereby designated.

Lectotype is in the British Museum (Natural History).

TYPE-LOCALITY.—Hiva Oa, 3500 ft (1067 m).

DISTRIBUTION.—Marquesas Islands.

I have 50 specimens from the following localities. Nuku Hiva: Tapuaooa, 2500 ft (762 m), 30 Jan 1968, 1♀. Hiva Oa: Mt. Feani, 3700–3800 ft (1028–1158 m), 20 Feb to 20 Mar 1958, 9♂, 28♀ (11–20 Mar dates for reared specimens). Ootua, 800 m, 27–30 July 1977, 1♀ (Montgomery). Fatu Hiva: Mt. Teoaiua, 2000 ft (610 m), 22 Mar 1968, 6♀; Tahuna, 2000 ft (610 m), 27 Mar 1968, 1♀. Teavapuhiau, Ouia, 750 m, 1–3 Aug 1977, 1♂ (Montgomery). Uapou: above Haka-hetau, 800 m, 23–24 July 1977, 2♂ 1♀ (Montgomery).

FOOD PLANT.—*Vaccinium cereum* (L.f.) Forster f. (HO8).

The *Vaccinium* was growing alongside the trail at 3700 ft (1028 m), in the cloud forest, among thick moss, fern, and other plants, and was recumbent and vinelike. The larvae of *dryinandra* feed in the leaves, tying them together, skeletonizing large areas.

Ernophthora lechriogramma, new species

FIGURES 22, 275e–g

Alar expanse 16–24 mm.

Male: Labial palpus prout's brown mixed with very fine fuscous irrorations. Antenna light grayish brown with prout's brown spots dorsally. Head, thorax, and forewing ground color prout's brown, the whole finely speckled with fuscous; center of thorax with a warm buff patch; tegula fuscous posteriorly; from near base of costa to middorsum a slender buff line with a parallel fuscous shade inwardly; in outer third of forewing a perceptible, outwardly oblique, fuscous shade; termen with a slender blackish fuscous line; cilia reddish. Hindwing gray with modified scales centrally, some toward costa metallic; an elongate light buff patch subcostally; margins

light buff; terminal line, narrow, blackish fuscous; cilia light buff to ochraceous buff. Fore- and midlegs prout's brown, suffused fuscous; hindleg mostly ochraceous buff; femur shaded prout's brown. Abdomen gray dorsally shading to buff posteriorly; buff ventrally suffused brownish.

Female: Essentially the same as male except hindwing pale buff, slightly darker toward apex; cilia buff except darker around apical portion of termen. Abdomen ochraceous buff dorsally; ventrally shaded prout's brown.

Male genitalia slides USNM 24809, 24816. Harpe simple, broadest at middle; costa narrowly sclerotized; cucullus rounded. Transtilla with a slender, sclerotized median process indented distally. Uncus narrowly triangular with a knobbed process basally on each side. Vinculum broadly rounded. Tegumen broader than long. Anellus a subquadrate plate with digitate process posteriorly on each side. Aedeagus stout, simple, curved; vesica armed with a few weak spiculate cornuti.

Female genitalia slides USNM 25182, 25183, 25184. Ostium transverse, broad, funnel-shaped. Inception of ductus seminalis lateral, about middle of ductus bursae. Ductus bursae membranous. Bursa copulatrix membranous, with some weak granulation. Signum a small oval plate with an anterior extension on one side, the whole comblike on inner edge.

HOLOTYPE.—USNM 100727.

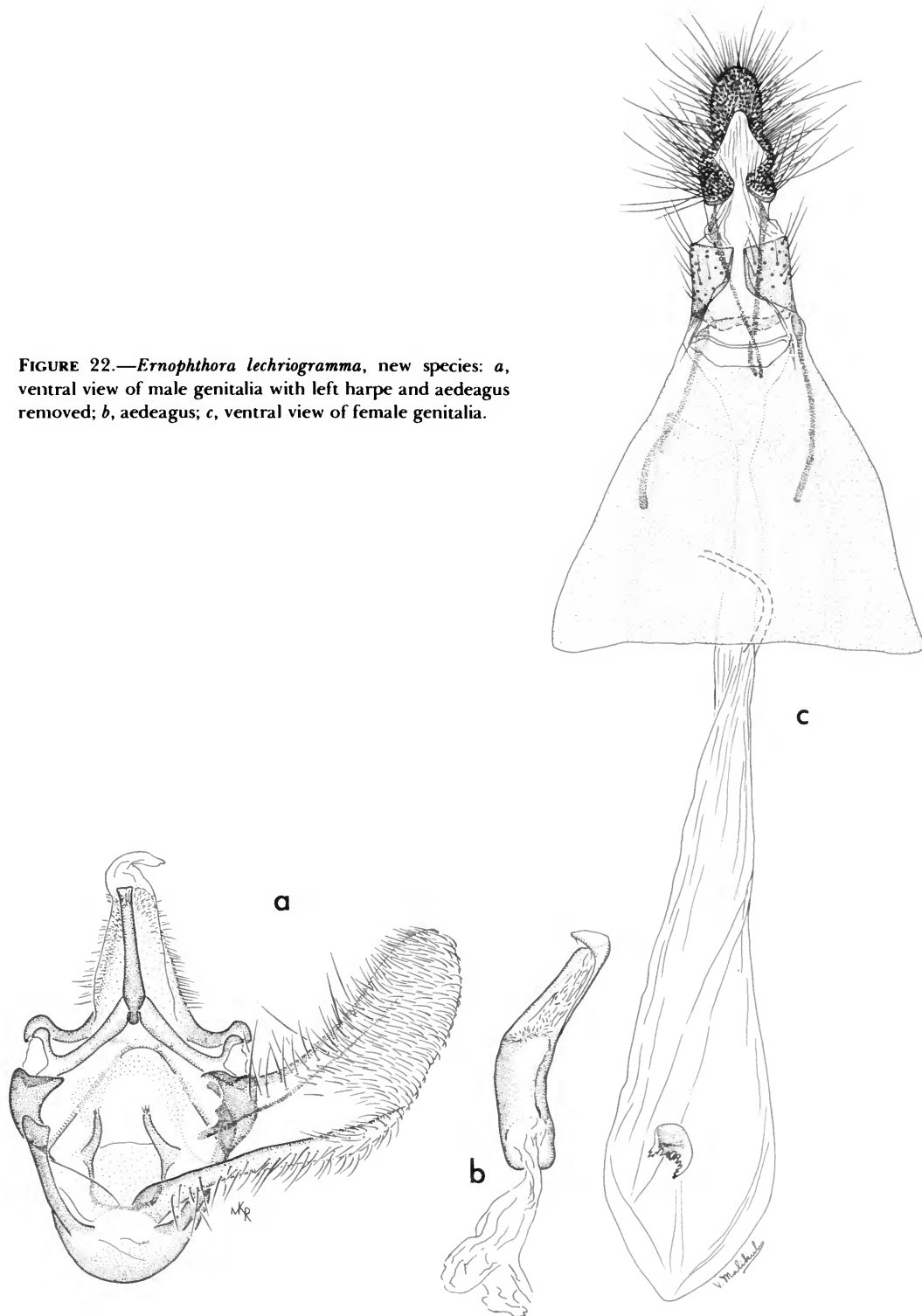
TYPE-LOCALITY.—Hiva Oa, Mt. Feani, 3800 ft (1158 m).

DISTRIBUTION.—Marquesas Islands.

Described from the ♂ holotype (20 Feb 1968), 30 ♂ and 69♀ paratypes from the following localities. Nuku Hiva: Tapuaooa, 2500 ft (762 m), 30 Jan 1968, 1♂; Tunoa Ridge 2900 ft (884 m), 23 Jan 1968, 12♂, 17♀.

Hiva Oa: Mt. Feani, 3800 ft (1158 m), 20 Feb 1968, 9♂, 13♀, and 3400 ft (1036 m), 1 Mar 1968, 22♀; Ootua, 800 m, 27–30 Jul 1977, 4♀; Toovii, Ooumu, 900 m, 16–19 July 1977, 1♀ (Montgomery). Fatu Hiva: Tahuna, 2000 ft (610 m), 27 Mar 1968, 6♀; Mt. Teoaiua, 2000 ft (610

FIGURE 22.—*Ernophthora lechriogramma*, new species: *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.



m), 22 Mar 1968, 5♀; Mt Upe, 2025 ft (617 m), 3 Apr 1968, 1♀. Teavapuhiau, Ouia, 150 m, 1–3 Aug 1977, 1♀ (Montgomery). Uapou: above Hakahetau, 800 m, 23–24 Jul 1977, 8♂, 4♀ (Montgomery).

FOOD PLANT.—Unknown.

Ernophthora lechriogramma is similar, and closely related to *denticornis*, but lacks the pale transverse fascia well before termen and also lacks the light outwardly oblique dash slightly beyond middle.

The females collected in March and April are lighter colored (considerably more reddish) than those collected in January and February.

***Ernophthora aphanoptera*, new species**

FIGURES 23, 276a,b

Alar expanse 15–20 mm.

Labial palpus deep olive buff; second and third segments each with a patch of mixed fuscous and reddish scales on outer side. Antenna deep olive buff spotted fuscous dorsally. Head and thorax a mixture of deep olive buff, fuscous and reddish scales. Forewing ground color blackish fuscous but largely obscured by olive buff, white, and reddish scales; usually from basal fourth of costa a poorly defined, transverse fascia indicated by mixed white and reddish scales; on middle of costa a more-or-less well-defined, large triangle of ground color; much of dorsum broadly marked by white and reddish scales; along termen a series of 6 or 7 blackish fuscous spots; cilia mixed deep olive buff, fuscous, and reddish. Hindwing of ♂ silvery gray; cilia deep olive buff with a grayish subbasal line; ♀ deep olive buff, cilia a shade lighter. Fore- and midleg a mixture of blackish fuscous, reddish, and deep olive buff; hindleg deep olive buff with some grayish suffusion. Abdomen of ♂ gray, mixed olive buff dorsally, deep olive buff ventrally; ♀ deep olive buff, ventrally with some grayish fuscous scaling.

Male genitalia slides USNM 24781, 24782. Harpe simple, curved, costa broadly sclerotized; cucullus rounded. Median arm of transtilla reaching end of uncus, distal end indented. Un-

cus long, slender, bluntly pointed. Vinculum broadly rounded. Tegumen broader than long. Anellus a subquadrate plate with a slender, digitate process from each side posteriorly. Aedeagus stout, curved; vesica armed with a cluster of very fine cornuti.

Female genitalia slide USNM 24783. Ostium transverse, funnel-shaped. Inception of ductus seminalis from anterior end of ductus bursae. Ductus bursae membranous. Bursa copulatrix finely spiculate to granular. Signum an oval, sclerotized plate with serrate edge.

HOLOTYPE.—USNM 100730.

TYPE-LOCALITY.—Nuku Hiva, Tapuaooa, 2500 ft (762 m).

DISTRIBUTION.—Marquesas Islands.

FOOD PLANT.—*Bidens heneyi* Scherff. (HO9).

Described from the ♂ holotype (30 Jan 1968), 9♂ and 6♀ paratypes as follows. Nuku Hiva: Tapuaooa, 2500 ft (762 m), 30 Jan 1968, 3♂, 4♀; Tunoa Ridge, 2900 ft (884 m), 23 Jan 1968, 2♂, 1♀. Hiva Oa: Mt. Feani, 3400 ft (1036 m), 1 Mar and Em 15 Mar 1968, 2♂; and 3800 ft (1158 m), 20 Feb 1968, 2♂. Fatu Hiva: Mt. Teoaiua, 2000 ft (610 m), 22 Mar 1968, 1♀.

The genitalia of *E. aphanoptera* are, for all practical purposes, identical to those *E. dryinandra*, but the coloring of both males and females of the former is different from that of the latter.

The larvae were feeding on the leaves of the yellow flowered composite shrub *Bidens heneyi* growing alongside trail (cloud forest). The larvae fed mainly in the terminals. Webbing between the leaves was conspicuous. Some feeding takes place among dead leaves attached to the plant. One pupa was found in a rolled dead leaf.

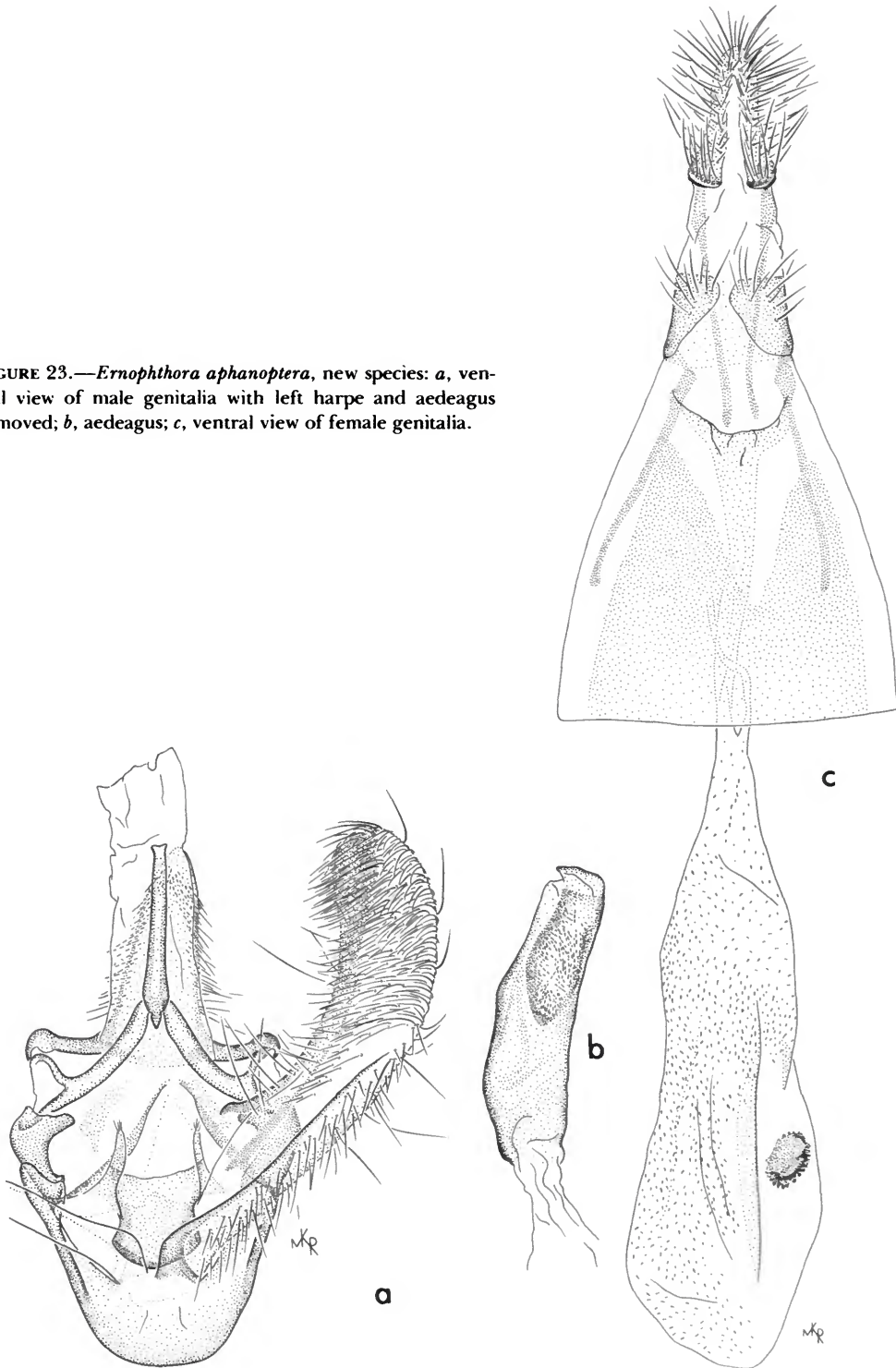
***Ernophthora palassopectera*, new species**

FIGURES 24, 275h

Alar expanse 16 mm.

Labial palpus clay color speckled fuscous. Antenna clay color with grayish fuscous annulations. Head and thorax clay color mixed with fuscous scales. Forewing ground color clay color abundantly speckled fuscous; from basal third of costa,

FIGURE 23.—*Ernophthora aphanoptera*, new species: *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.



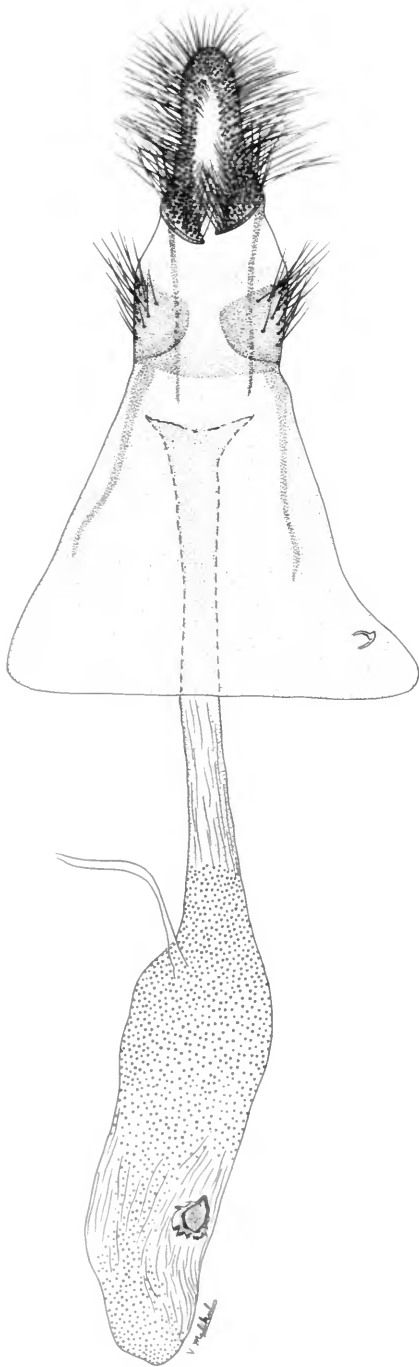


FIGURE 24.—*Ernophthora palassopectera*, new species, ventral view of female genitalia.

an outwardly oblique pale clay color transverse line extends to middorsum; a very faint pale clay color transverse line extends subapically from costa to tornus; slightly beyond middle, inside costa, a blackish fuscous spot; subterminally, a series of four blackish fuscous spots; cilia clay color with grayish fuscous subbasal line. Hindwing buff, slightly infuscated toward margins; cilia pale clay color with darker subbasal line. Legs buff variously marked with fuscous. Abdomen light ochraceous buff dorsally with a sprinkling of fuscous scales; ventrally profusely irrorate fuscous.

Female genitalia slide USNM 25245. Ostium rather small, transverse. Inception of ductus seminalis lateral, from posterior end of bursa copulatrix. Ductus bursae membranous. Bursa copulatrix membranous, finely granular. Signum a small, sclerotized plate, irregularly dentate anteriorly.

HOLOTYPE.—USNM 100728.

TYPE-LOCALITY.—Fatu Hiva, Tahuna, 2000 ft (610 m).

DISTRIBUTION.—Fatu Hiva.

FOOD PLANT.—Unknown.

Described from the unique ♀ holotype (27 Mar 1968).

Of all the *Ernophthora* species recorded from the Marquesas, *palassopectera* is the only one that has a uniform ground color speckled with blackish fuscous. The signum places *palassopectera* near *dryinandra*.

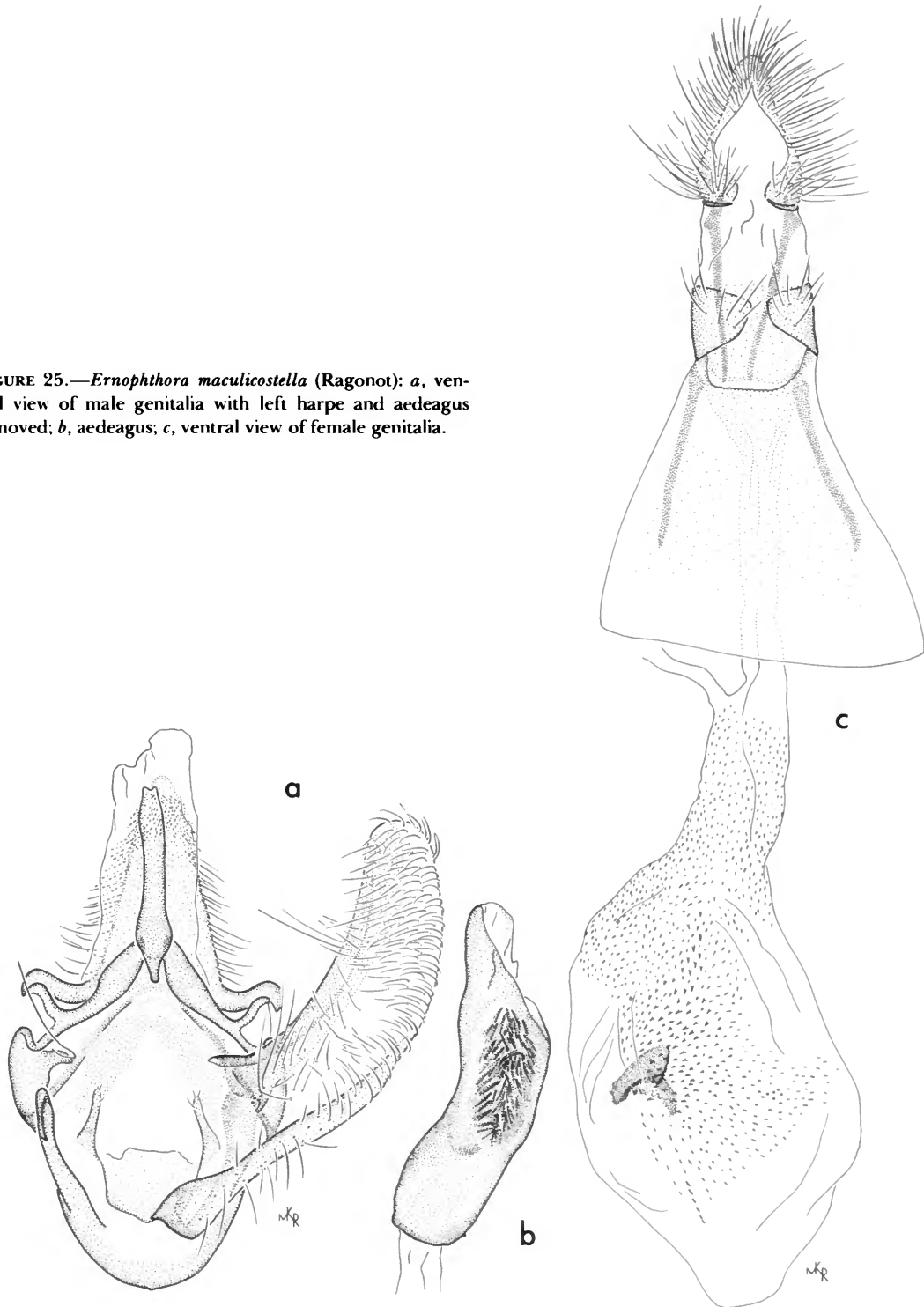
***Ernophthora maculicostella* (Ragonot),
new combination**

FIGURES 25, 276c

Aspithra maculicostella Ragonot, 1888: 37.—Meyrick, 1929b:157.

Male genitalia slide USNM 24867. Harpe simple, costa strongly sclerotized. Transtilla 3-branched, the median branch very long, slightly indented distally. Uncus very long, bluntly pointed. Vinculum broadly rounded. Tegumen broader than long. Anellus a subquadrate plate

FIGURE 25.—*Ernophthora maculicostella* (Ragonot): *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.



with digitate process on each side posteriorly. Aedeagus stout, slightly bent; vesica armed with a large, dense cluster of small cornuti.

Female genitalia slide USNM 24868. Ostium broad, transverse. Inception of ductus seminalis from anterior third of ductus bursae. Ductus bursae membranous. Bursa copulatrix mostly membranous, with some fine to coarse granulations. Signum a subtriangular sclerotized plate with a large toothlike projection from one end, the latter with dentate inner edge.

HOLOTYPE.—In the Museum d'Histoire Naturelle, Paris.

TYPE-LOCALITY.—"Iles Marquises."

DISTRIBUTION.—Marquesas Islands.

FOOD PLANT.—Unknown.

I did not find this species on our expedition, and it is known to me only from the type and the series in the British Museum (Natural History).

Ernophthora chrysur (Meyrick)

FIGURES 26, 276*d, h*

Aspithra chrysur Meyrick, 1929b:158.

Ernophthora chrysur (Meyrick).—Meyrick, 1934c:336.

Male genitalia slide USNM 25219. Harpe simple, widest at middle, weak; cucullus rounded. Median arm of transtilla slender, pointed. Uncus twice as long as wide at base; narrowly rounded at apex. Vinculum V-shaped with strong scaletuft from each side. Tegumen broader than long. Anellus a quadrate plate with long, fleshy, digitate lobe from each side posteriorly. Aedeagus moderately stout; vesica apparently unarmed.

Female genitalia slide USNM 25216. Ostium moderately broad, funnel-shaped. Inception of ductus seminalis lateral, from anterior part of ductus bursae. Ductus bursae membranous, with some granulation posteriorly. Bursa copulatrix membranous with some small granulations. Signum an oval plate with a large serrate tooth from one end.

ORIGINAL MATERIAL.—"♂♀. 15–18 mm . . . Marquesas, Nuku Hiva, Hiva Oa, to 300 feet, January, February; 3 ex." (Meyrick, 1929b:158).

LECTOTYPE.—A large white data label contains the following: "Nuku Hiva, Marquesas, at light, 300 ft., 24.1.25, St. George Expedn. C. L. Collenette." A small white label reads "Brit. Mus. 1925-488." A third white label bears "Aspithra chrysur, Meyrick. Holotype." A long, narrow white label, in Meyrick's hand, reads "Aspithra chrysur Meyr." Above all these labels is the British Museum, red-bordered, circular "type" label. Lectotype hereby designated.

Lectotype is in the British Museum (Natural History).

TYPE-LOCALITY.—Nuku Hiva, 300 ft (91 m).

DISTRIBUTION.—Marquesas Islands.

Our four specimens are all from low elevation and are as follows. Hiva Oa: Atuona, 16 Feb 1968, 2♂, and 24 Feb 1968, 1♀. Fatu Hiva: Omoa, 15 Mar 1968, 1♂.

This species is unlike most species of *Ernophthora*, resembling more closely such species as *Cadra cautella* (Walker).

The large anal tufts of the male immediately identify it.

Genus *Zamagiria* Dyar

Zamagiria Dyar, 1914:329."

TYPE-SPECIES.—*Zamagiria dixolophella* Dyar, 1914:329, by monotypy and original designation.

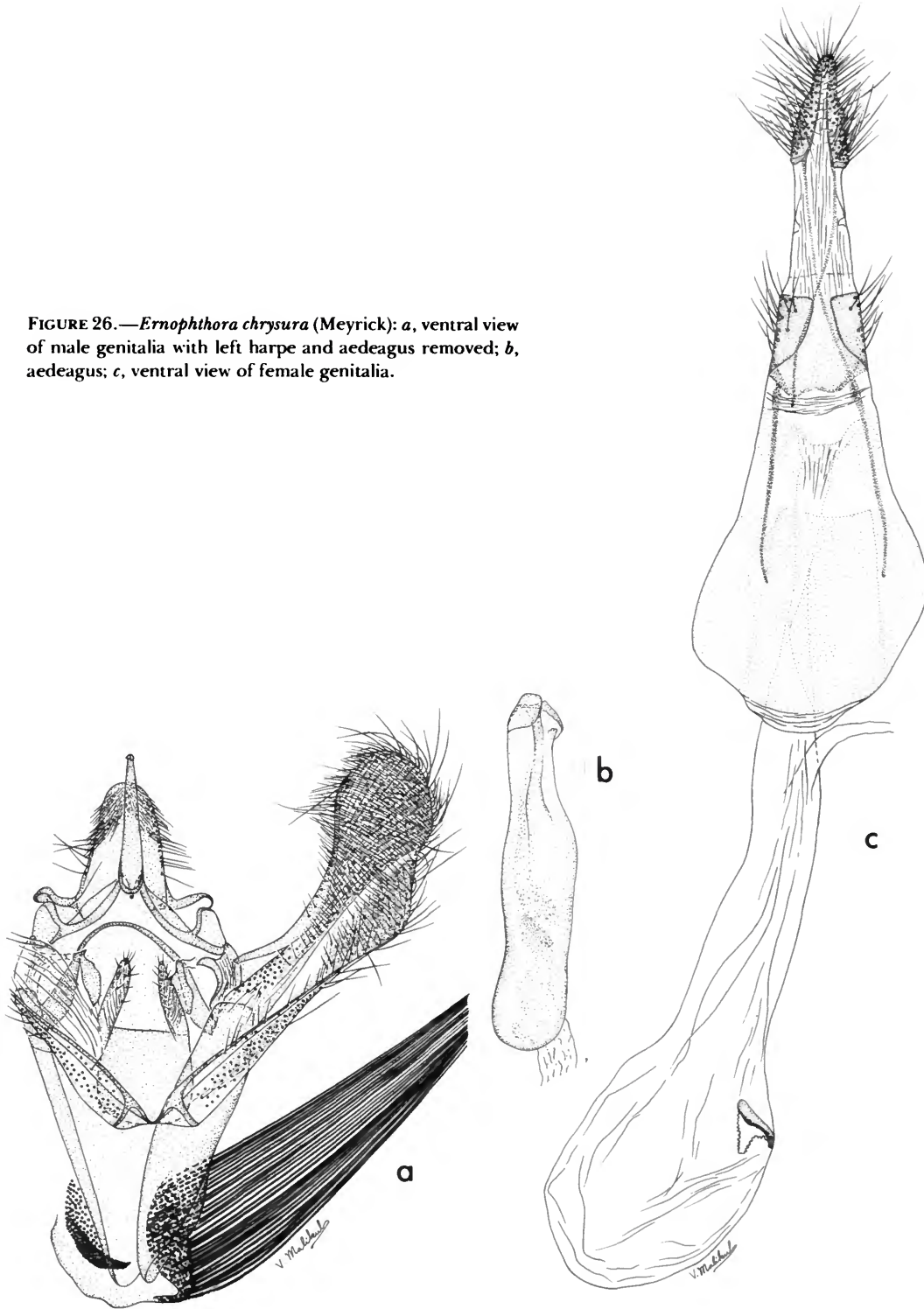
Zamagiria exedra, new species

FIGURES 27, 276*e*

Alar expanse 17 mm.

Labial palpus cinereous; second segment dark gray anteriorly; third segment almost wholly dark gray. Antenna dark gray. Head cinereous. Thorax cinereous with scattered darker scales. Forewing ground color cinereous, largely overlaid with dark gray scales; from basal third of costa to middorsum an outwardly oblique dark gray fascia; from apical fifth of costa to tornus an irregular dark gray fascia edged outwardly by an irregular line of ground color; between the two transverse lines a pair of dark gray spots;

FIGURE 26.—*Ernophthora chrysura* (Meyrick): *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.



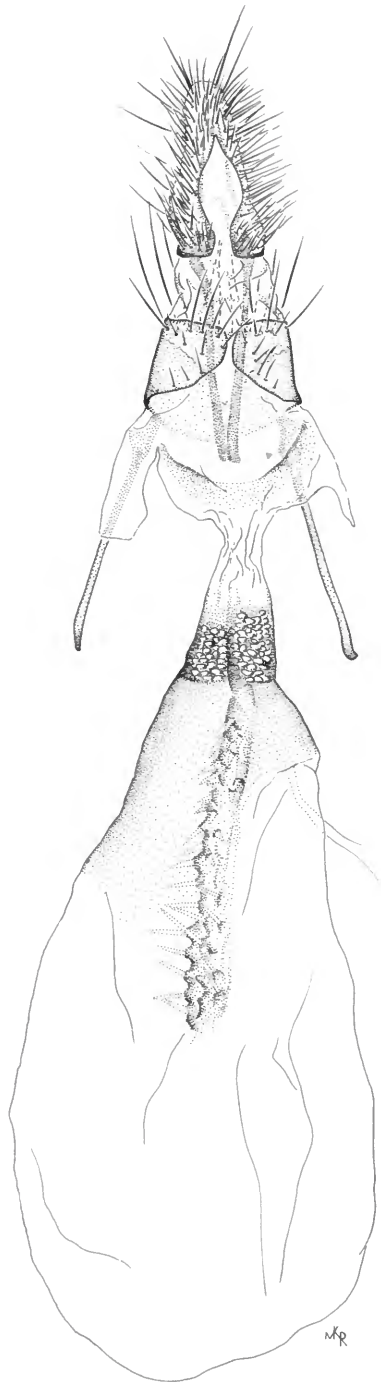


FIGURE 27.—*Zamagiria exedra*, new species, ventral view of female genitalia.

along termen a series of 7 small dark spots; cilia gray, with whitish tips. Hindwing light gray, darker along margin; cilia gray with darker sub-basal line. Fore- and midleg gray; hindleg cinereous marked dark gray. Abdomen gray.

Female genitalia USNM 24818. Ostium very broad, transverse. Inception of ductus seminalis dorsolateral from posterior end of bursa copulatrix, opposite posterior end of signum. Ductus bursae very short, membranous posteriorly, with a coarsely granular section at junction with bursa copulatrix. Bursa copulatrix membranous anteriorly, sclerotized posteriorly. Signum a long, spinous, sclerotized rod.

HOLOTYPE.—USNM 100726.

TYPE-LOCALITY.—Nuku Hiva, Taiohae.

DISTRIBUTION.—Nuku Hiva.

FOOD PLANT.—Unknown.

Described from the unique ♀ holotype (18 Jan 1968).

In placing this species in the Neotropical genus *Zamagiria* I do so with considerable misgiving. All of the previously described species of this genus are Neotropical, and one, *Z. laidion* (Zeller), reaches Florida in the United States. Nevertheless, the signum, venation, and labial palpi match those of the genus and *exedra* has a signum almost identical to that of *Z. dixolophella*, the type of that genus. Superficially, *exedra* is nearest *dixolophella*. Of the Marquesan species of Phycitinae, *exedra* superficially resembles most closely *Ernophthora chrysur*a (Meyrick).

I suggest that *exedra* represents an unknown Neotropical species introduced into Nuku Hiva.

Genus *Cateremna* Meyrick

Cateremna Meyrick 1882:156.

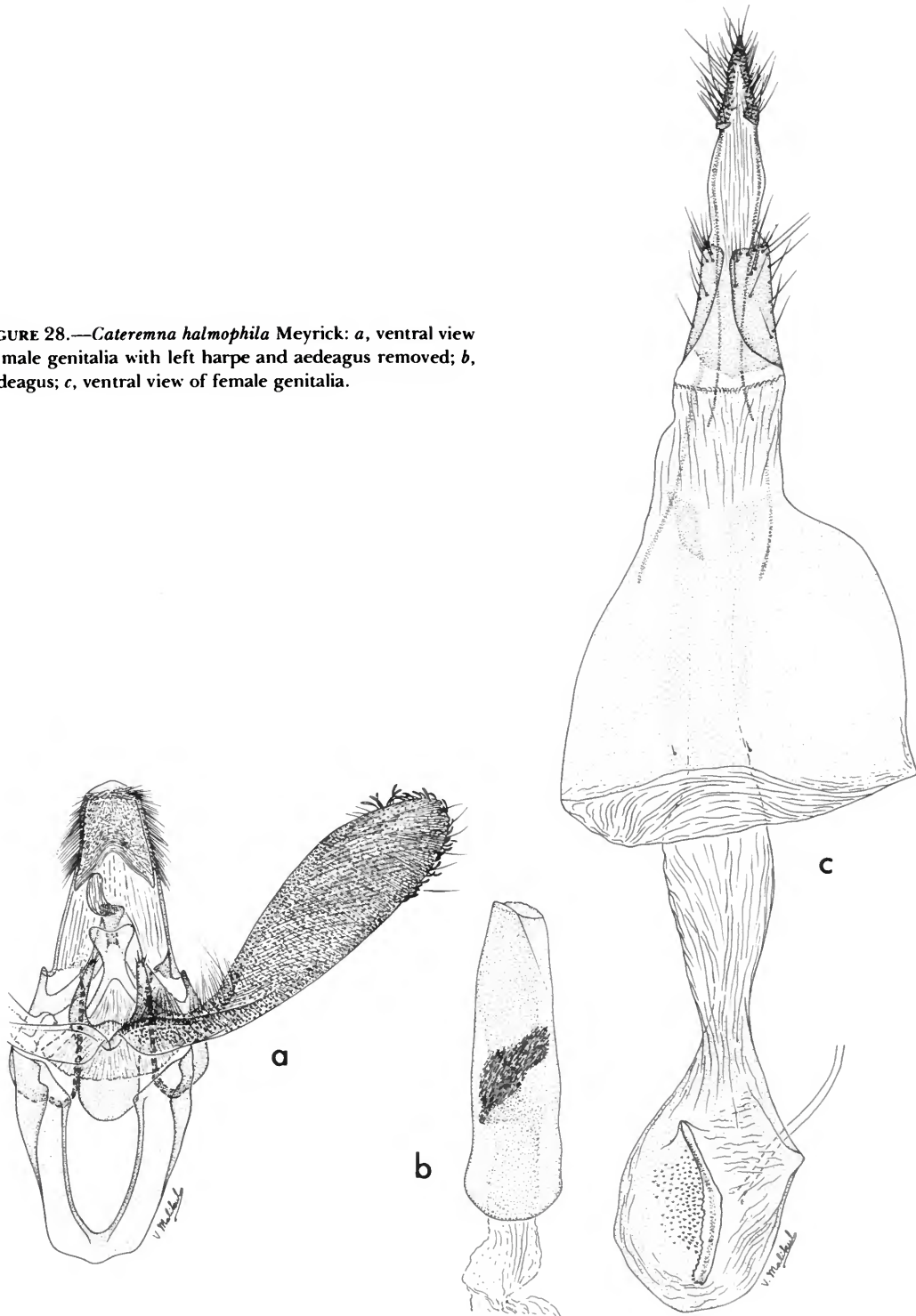
TYPE-SPECIES.—*Euzophera microdoxa* Meyrick, 1879b:231, subsequent designation by Hampson, 1912a:1252.

Cateremna halmophila Meyrick

FIGURES 28, 276f

Cateremna halmophila Meyrick, 1929b:159.

FIGURE 28.—*Cateremna halmophila* Meyrick: *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.



Male genitalia slides USNM 24793, 25173, 25176. Harpe broadest beyond middle; costa narrowly, but strongly sclerotized; cucullus rounded. Gnathos terminating in a sharply pointed hook. Uncus rounded and densely clothed with setae distally. Transtilar elements fused forming a Y-shaped distal end. Vinculum U-shaped. Tegumen shorter than broad. Anellus a rectangular plate with a digitate process on each side posteriorly. Aedeagus short and stout; vesica armed with a swirl of spiculate cornuti.

Female genitalia slides USNM 24792, 25174, JFGC 11953. Ostium transverse, funnel-shaped. Inception of ductus seminalis from bursa copulatrix, near signum. Ductus bursae rather broad, membranous. Bursa copulatrix finely granular over most of its inner surface. Signum a narrow, curved, folded rod with dentate edges.

ORIGINAL MATERIAL.—“♂♀. 18–22 mm . . . Marquesas, Hiva Oa, Tahuata, Fatu Hiva, to 850 feet. December, January; Society Is., Raiatea, May (*Miss Cheesman*); 26 ex.”

LECTOTYPE.—Female, 19 mm. “Tahuata, Marquesas, at light, 850 ft., 12.1.25. St. George Espedn. C.L. Collenette.” There is a white rectangular label with “*Cateremna halmophila* Meyrick. Allotype.” A yellow bordered round label bears the words “Paratype” and “Allotype.” In addition a small white label bears “Brit. Mus. 1925-488.” Slide JFGC. No. 11953.

I have selected the female because the male, marked “Type,” is in poor condition. The female is clearly marked and matches perfectly the fresh material in hand. Lectotype hereby designated.

Lectotype is in the British Museum (Natural History).

TYPE-LOCALITY.—Tahuata.

DISTRIBUTION.—Marquesas Islands, Society Islands.

I have before me the following 30 specimens. Nuku Hiva: Taiohae, 16–28 Jan 1968, 1♂, 4♀. Hiva Oa: Atuona, 22 Feb to 7 Mar 1968, 5♀. Fatu Hiva: Omoa, 14–29 Mar 1968, 7♂, 11♀, and 6–8 Apr 1968, 1♂, 1♀.

FOOD.—Unknown.

The 8th tergum and sternum of the male are modified. Apparently this species is associated

with human habitation since all of the specimens were collected at low elevations in the above-named villages.

Meyrick's specimen of *Cateremna albicostalis* in the British Museum is *halmophila*.

Cateremna decipula, new species

FIGURES 29, 276g

Alar expanse 13–16 mm.

Labial palpus white; second segment shaded grayish fuscous distally on outer side; third segment grayish fuscous. Antenna grayish fuscous. Head grayish fuscous; face whitish. Thorax grayish fuscous. Forewing ground color grayish fuscous; costa white from near base to apex; at inner edge of white costal streak, at apical third, a small fuscous spot; subterminally, a suggestion of a grayish transverse line; extreme termen narrowly fuscous; cilia grayish fuscous. Hindwing light gray, darker around margin; cilia grayish. Legs sordid white suffused and marked grayish fuscous. Abdomen grayish dorsally, sordid white ventrally.

Male genitalia slides USNM 24787, 25178. Harpe simple, broadest distad; cucullus narrowly rounded. Gnathos terminating in a slender, curved process. Transtilla Y-shaped, distally deeply incised. Uncus triangular; posterior half clothed with setae. Vinculum broadly rounded. Tegumen short and broad. Anellus a lightly sclerotized curved plate with a digitate process posteriorly on each side. Aedeagus short, stout, thickest about middle; vesica armed with a large group of spicules.

Female genitalia slides USNM 24789, 24799. Ostium oval, small. Inception of ductus seminalis from anterior half of bursa copulatrix. Ductus bursae short, gradually widening and merging with bursa copulatrix. Bursa copulatrix granular posteriorly, membranous anteriorly. Signum a slender, curved, sclerotized plate with median ridge.

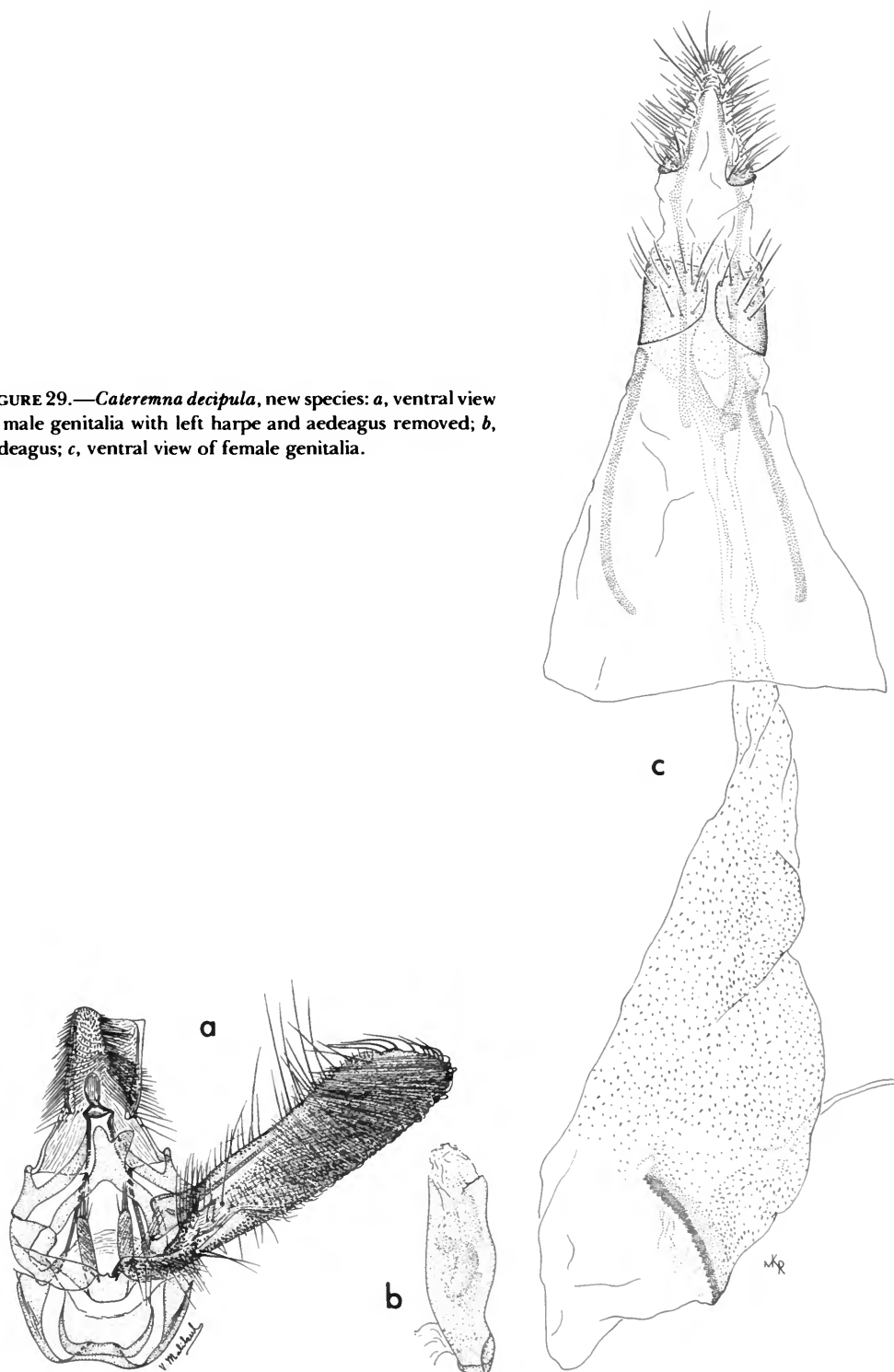
HOLOTYPE.—USNM 100732.

TYPE-LOCALITY.—Fatu Hiva, Omoa.

DISTRIBUTION.—Hiva Oa, Fatu Hiva.

FOOD PLANT.—Unknown.

FIGURE 29.—*Cateremna decipula*, new species: *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.



Described from the ♂ holotype (11 Mar 1968), 1♂, 2♀ paratypes from Omoa, 13–18 Mar 1968; 1♀, Hiva Oa, Atuona, 27 Feb 1968. In addition to the above there are 2 small ♂ (9 and 11 mm) from Atuona, 15 and 18 Feb 1968, which may be conspecific but which are not included in the type series. The male genitalia are indistinguishable from those of the holotype.

This species is closely related to *C. halmophila* Meyrick but lacks the transverse fascia at basal third and the oblique apical shade of forewing.

Genus *Ctenomeristis* Meyrick

Ctenomeristis Meyrick, 1929b:159.

TYPE-SPECIES.—*Ceroprepes almella* Meyrick, 1879a:210, original designation by Meyrick, 1929b:159.

Ctenomeristis ochrodepta Meyrick

FIGURES 30, 277a,b

Ctenomeristis ochrodepta Meyrick, 1929b:159; 1934c:336.

Male genitalia slide USNM 25214. Harpe of about equal width throughout; from base, near middle, a sclerotized bar extends diagonally to fuse with sacculus and terminates in one or two sharp spines; costa strongly curved; cucullus rounded. Gnathos short, terminating in a point. Uncus very broad, rounded. Vinculum rounded. Tegumen broader than long. Anellus a broadly oval plate. Aedeagus short and stout; vesica armed with several long, strong cornuti and a cluster of shorter ones.

Female genitalia slide USNM 25215. Ostium broad, transverse. Inception of ductus seminalis lateral from near posterior end of bursa copulatrix. Ductus bursae short, about half the length of bursa copulatrix; membranous. Bursa copulatrix membranous. Signa two large, sclerotized, irregular plates.

ORIGINAL MATERIAL.—“♂♀. 18–22 mm . . . Marquesas, Hiva Oa, Tahuata, Fatu Hiva, to 850 feet, December, January; 144 ex.”

LECTOTYPE.—Male, “Marquesas, Hiva Oa, at

light, 26.12.24. St. George Expedition. C.L. Collette.” A large white label is inscribed, “*Ctenomeristis ochrodepta* Meyrick. Holotype.” A small label reads “Brit. Mus. 1925-488.” An elongate label, in Meyrick’s hand, reads “*Ctenomeristis ochrodepta* Meyr.” Below this is a black-bordered orange label with “Original specimen for color slide no. fotogr. 1959. U. Roesler/Holotypus.” Below these labels is the British Museum circular “lectotype” label and at the top of all the labels is the usual British Museum circular, red-bordered “type” label. Lectotype hereby designated.

Lectotype is in the British Museum (Natural History).

TYPE-LOCALITY.—Hiva Oa.

DISTRIBUTION.—Marquesas Islands.

I have 27 specimens from the following localities. Nuku Hiva: Taiohae, 17 Jan 1968, 1♂; Tunoa Ridge, 2900 ft (884 m), 23 Jan 1968, 3♂, 7♀; Tapuaooa, 2500 ft (762 m), 30 Jan 1968, 1♂, 1♀. Toovii, Ooumu, 900 m, 16–19 Jul 1977, 1♂, 2♀ (Montgomery). Hiva Oa: Atuona, 12 Feb to 7 Mar 1968, 1♂, 9♀. Ootua, 800 m, 27–30 Jul 1977, 1♂ (Montgomery).

FOOD PLANT.—Unknown.

The genitalia immediately distinguish *ochrodepta* from other phycitid species and it does not appear to have any close relatives in these islands.

Delcina, new genus

TYPE-SPECIES.—*Delcina diaspora*, new species, by monotypy and present designation.

The gender of the generic name is feminine.

Antenna of male pectinate, nearly as long as forewing; basal segment notched (female unknown). Labial palpus obliquely upturned, scarcely reaching middle of frons; maxillary palpus minute. Head slightly roughened. Tongue well developed, scaled. Thorax with posterior tuft. Hind tibia loosely scaled above. Forewing smooth, costa straight, apex rounded, termen oblique, 11 veins, 1b simple; 2 from before angle of cell; 3 well separated from 2; 4 and 5 stalked; 6 connate with 8 + 9; 8 and 9 coincident; 10

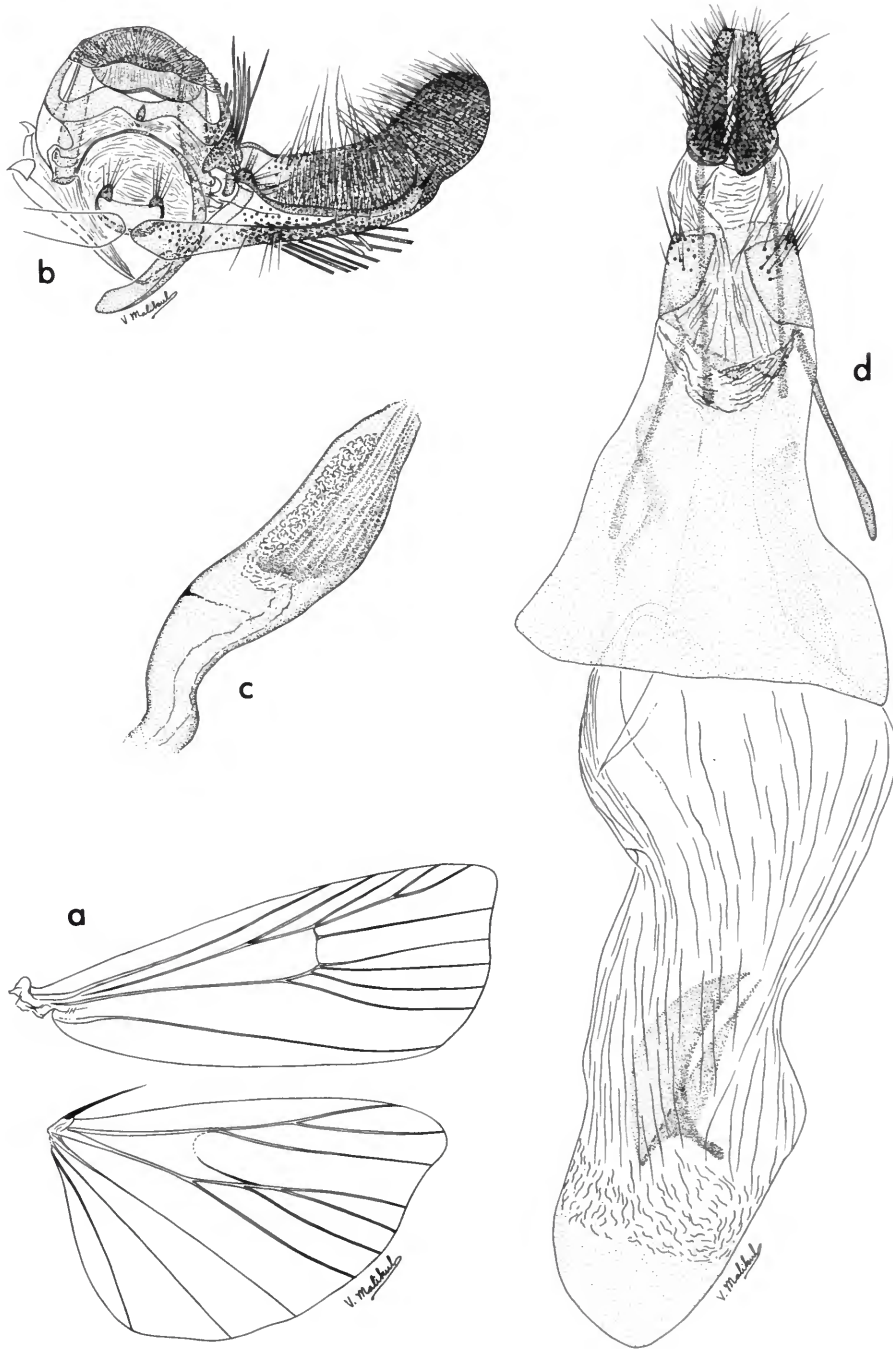


FIGURE 30.—*Ctenomeristis ochrodepta* Meyrick: *a*, venation of right wings; *b*, ventral view of male genitalia with left harpe and aedeagus removed; *c*, aedeagus; *d*, ventral view of female genitalia.

approximate to 8 + 9; 11 from well before 10; 12 from near base. Hindwing with 7 veins; 2 from cell, well before 3; 4 and 5 coincident; 3 approximate to 4 + 5; 6 anastomosed with stalk of 7 and 8; 7 and 8 very longstalked.

Male genitalia symmetrical. Uncus and gnathos present; socius absent.

Female genitalia unknown.

Delcina is reminiscent of *Monoptilota* Hulst (1900:13), both having a pectinate antenna in the male, but in the forewing of *Delcina* veins 8 and 9 are coincident, in *Monoptilota* 8 and 9 are stalked. In the hindwing veins 4 and 5 are coincident in *Delcina*, stalked in *Monoptilota*.

Delcina diaspora, new species

FIGURES 31, 277c

Alar expanse 30 mm.

Labial palpus fuscous, with whitish scales at the distal ends of the second and third segments. Antenna fuscous. Head fuscous between antennae, grayish posteriorly; frons grayish. Thorax grayish, but many scales suffused grayish fuscous. Forewing ground color grayish; basal third fuscous, followed by an irregular band of ground color, this preceding a broad transverse, dentate, blackish fuscous fascia; at end of cell a blackish fuscous, bilobed spot; from apical fourth of costa to tornus an ill-defined transverse fascia; around termen a series of 6 blackish fuscous spots; cilia grayish with a darker basal line. Hindwing grayish fuscous, darker toward margins. Legs mixed grayish and fuscous. Abdomen grayish fuscous above, grayish ventrally.

Male genitalia slide USNM 24898. Harpe simple, widest before middle; costa strongly sclerotized; sacculus very short, sclerotized, terminating in a sharp point. Gnathos terminating in a point. Uncus broad, hood-shaped, profusely clothed with setae. Vinculum wide, broadly rounded. Tegumen lightly sclerotized, narrowed posteriorly. Anellus a narrow, sclerotized, transverse plate with a narrow, curved process on each side posteriorly. Aedeagus stout, straight; vesica apparently unarmed.

HOLOTYPE.—USNM 100731.

TYPE-LOCALITY.—Hiva Oa, Mt. Feani, 3800 ft (1158 m).

DISTRIBUTION.—Hiva Oa.

FOOD PLANT.—Unknown.

Described from the unique ♂ holotype (20 Feb 1968).

As in *Ctenomeristis ochrodepta* Meyrick (1929b:159) the antennae of the male of *diaspora* are pectinated, but the latter species has a narrower, longer forewing than the former. Moreover the basal fourth of the forewing of *diaspora* is wholly fuscous, not so in *ochrodepta*.

Genus *Phycita* Curtis

Phycita Curtis, 1828 [1824–1839], part 2, 5(68) [No. 233].

TYPE-SPECIES.—*Tinea spiciella* Fabricius, 1798:420, by original designation.

Phycita orthoclina Meyrick

FIGURES 32, 277d

Phycita orthoclina Meyrick, 1929b:158; 1934c:336.

Male genitalia slide USNM 24891. Harpe very slender; from ventral edge, at base, a cluster of modified scales. Gnathos an elongate oval plate with ventral keel. Uncus subtriangular; distally bluntly pointed. Vinculum broad basally, narrowed and rounded distally. Tegumen broad basally, narrowed posteriorly. Anellus a subquadrate, sclerotized plate. Aedeagus stout, straight, about as long as harpe; vesica armed with a cluster of strong cornuti.

Female genitalia slide USNM 24892. Ostium very broad, transverse. Inception of ductus seminalis dorsal, from bursa copulatrix. Ductus bursae very short, membranous. Bursa copulatrix with a granular band posteriorly, preceded by a broad, strongly sclerotized section from which dorsoanteriorly is emitted an elongate, sclerotized, curved plate armed with stout spines; anterior half of bursa membranous.

ORIGINAL MATERIAL.—“♂♀. 17–20 mm . . . Marquesas, Hiva Oa, Nuka Hiva, Tahuata, to 1200 feet, December, January; 15 ex.”

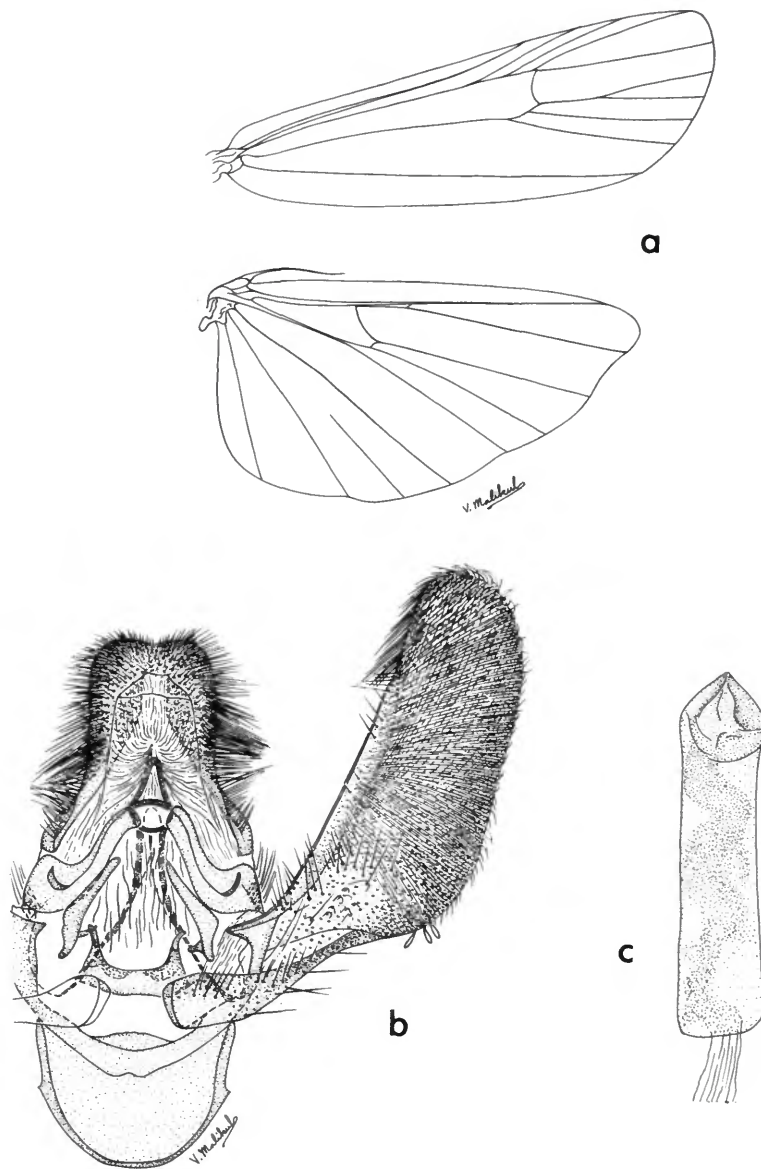


FIGURE 31.—*Delcina diaspora*, new species: *a*, venation of right wings; *b*, ventral view of male genitalia with left harpe and aedeagus removed; *c*, aedeagus.

LECTOTYPE.—Male; a white label reads “Hiva Oa, Marquesas, at light, 800 ft. 2.1.25. St. George Expedn. C.L. Collenette.” A second white label bears the inscription, “*Phycita orthoclina* Meyrick. Holotype.” A narrow white label, in Meyrick’s hand reads “*Phycita orthoclina*

Meyr.” A small white label has printed “Brit. Mus. 1925–488.” The usual British Museum red-bordered “Type” label appears immediately below specimen. Lectotype hereby designated.

Lectotype is in the British Museum (Natural History).

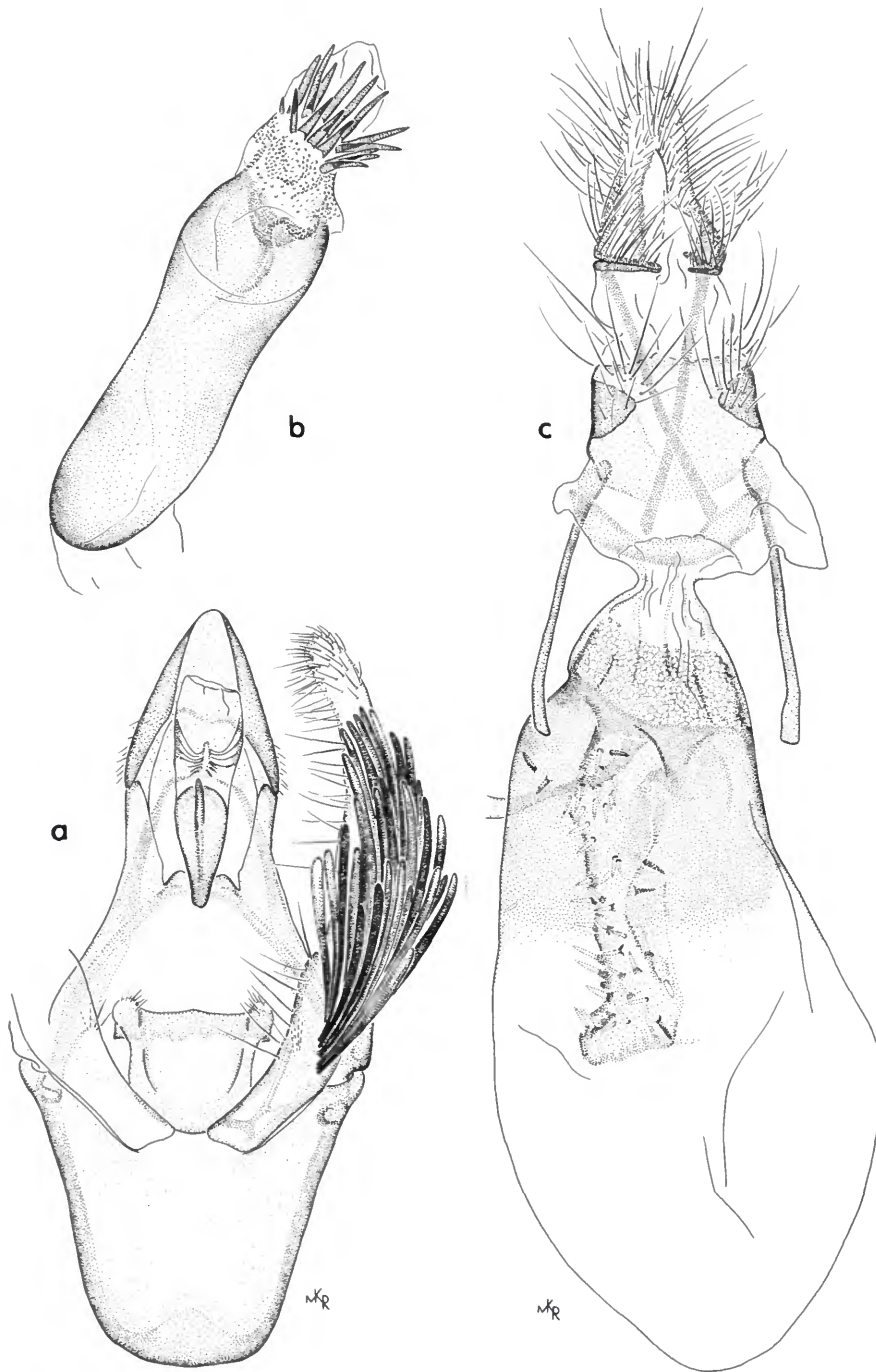


FIGURE 32.—*Phycita orthoclina* Meyrick: *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.

TYPE-LOCALITY.—Hiva Oa, 800 ft (244 m).

DISTRIBUTION.—Marquesas Islands.

Our specimens are from the following localities. Hiva Oa: Atuona, 12 Feb 1968, 2♀. Fatu Hiva: Omoa, 14 Mar 1968, 1♂; Mt Teoaiua, 2000 ft (610 m), 22 Mar 1968, 1♀. Teavapuhiau, Ouaia, 250m, 23–24 Jul 1977, and 1♀; 750 m, 1–3 Aug 1977, 1♀ (Montgomery).

FOOD PLANT.—Unknown.

In addition to the localities listed above, Meyrick (1929b:158) recorded the species from Nuku Hiva and Tahuata. The species is probably well established throughout the Marquesas.

Genus *Cadra* Walker

Cadra Walker, 1864 [1856–1866]:961.

TYPE-SPECIES.—*Cadra defectella* Walker, 1864 [1856–1866]:962; by monotypy.

Cadra cautella (Walker)

FIGURES 33, 277e,f

Pempelia cautella Walker, 1863 [1856–1866]:73.—Moore 1886 [1884–1887]:369.

Cadra cautella (Walker).—Whalley, 1960:183.—Sweeney, 1963:164.—Aitken, 1963:179, fig. 6.—Hannemann, 1964:219, fig. 145.—Takahashi and Mutuura, 1964:129, figs. 1–3.—Okumura, 1966:183.—Boles and Marzke, 1966:260.—Issiki et al., 1969:66, pl. 32: fig. 128.—Clarke, 1971:93, fig. 84, pl. 12h.—Press and Flaherty, 1973:147–148.—Cogburn, 1973a:401; 1973b:427.—Hagstrum and Tomblin, 1973:809–812; 1975:358–363.—Brower, 1976:1011–1015.—Leraut, 1980:113 [No. 2798].—Inoue et al., 1982:388, pl. 46: fig. 73.—Shin et al., 1983:422, pl. 29: fig. 469.

Cadra defectella Walker, 1864 [1856–1866]:962.

Nephopteryx desuetella Walker, 1866 [1856–1866]:1719.

Ephestia cahiritella Zeller, 1867:384.—Ragonot, 1885:24, 25.—South, 1890:304.—Pearce, 1891:18.—Meyrick, 1895:373.—Chittenden, 1897:7, 39, fig. 1.—Van Deventer, 1904:80.—Maxwell-Lefroy, 1906:256, fig. [312].—Maxwell-Lefroy and Howlett, 1909:512, fig. 340.

Ephestia passulella Barrett, 1875:271.—Porritt, 1882:142.—Buckler, 1882:104.—Porritt, 1883:41.—Atmore, 1884:258.

Salebria cautella (Walker).—Swinhoe and Cotes, 1889 [1887–1889]:675 [No. 4586].—Hampson, 1891:41.

Ephestia cautella (Walker).—Hampson, 1896 [1894–1896],

4:66.—Ragonot, 1901:292, pl. 34: fig. 23.—Leech, 1901:406.—Rebel, 1901:16 [No. 271].—Dyar, 1903:435 [No. 4875].—Holland, 1903:414, figs. 234, 235.—Hulst, 1903:434.—Matsumura, 1908:195 [No. 1631].—Maxwell-Lefroy and Howlett, 1909:512.—Fletcher, 1910a:298 [No. 98], 321.—Spuler, 1910:202.—Chittenden, 1911:1–40.—de Joannis, 1913:317.—Dupont, 1913:35 [No. 224].—Dyar, 1914:345.—Zacher, 1916:199.—Fletcher, 1917:107.—Rebel and Zerny, 1917:437 [No. 85].—Barnes and McDunnough, 1917:149.—Janse, 1917:151 [No. 2389].—Essig, 1920:121.—d'Emmerez de Charmoy and Gebert, 1921:186.—Forbes, 1923:635.—Essig, 1926:711.—Curran, 1926:386.—Meyrick, 1928:388.—Shibuya, 1928b:77.—Auctorum, 1928:6.—de Joannis, 1930 [1929–1930]:[379] 617.—Richards and Herford, 1930:380.—Noyes, 1930:80.—Simmons, Reed, and McGregor, 1931:36.—Keifer, 1931:619.—Richards and Thompson, 1932:197.—Pemberton, 1932:126.—Bovington, 1933:1–88.—Norris, 1934:333–360.—Tams, 1935:274.—Lhomme, 1935:8 [No. 1686].—Zerny, 1935:112.—Dickins, 1936:342.—Swezey, 1936:196.—Lehmensick and Liebers, 1937:443.—Pierce and Metcalfe, 1938:7, pl. 4.—Yatomi and Yamashita, 1938:133.—McDunnough, 1939:35.—Fukaya, 1939:96.—Bondar, 1940:125.—Ghosh, 1940c:196.—Hinton, 1942:21–25, fig. 4, 12, pl. 1: fig. 2; 1943:193.—Corbet and Tams, 1943c:64, figs. 56, 62, 110, 147, pl. 3: figs. 8–9.—Hinton and Corbet, 1943:31, figs. 53, 74, 78.—Swezey, 1944:143.—Essig and Hoskins, 1944:65.—Kloet and Hincks, 1945:113.—Fraenkel and Blewett, 1946a:162–171; 1946b:172–190.—Ford, 1949:13.—DeLucca, 1949:148.—Cotton, 1950:733.—Hartig and Amsel, 1951:51.—Beirne, 1952:82, figs. 62, 70; pl. 6: fig. 5.—van Deurs, 1952:280.—Rungs, 1953:68.—Auctorum, 1953:9.—Kalshoven, 1954:6.—Paulian and Viette, 1955:188.—Wise, 1955:527, 528.—Burgess, 1956:813.—Fujimoto, 1956:20, pl. 6: fig. 5.—Hartig, 1956:95.—Takahashi, 1956:179.—Heinrich, 1956:298, 302–304, figs. 125, 629, 1121.—Wiltshire, 1957:115 [No. 594].—Janjua and Haque, 1958:144 [No. 108].—Zimmerman, 1958b: 20, 379, figs. 317, 318, 323.—Abraham, 1958:540.—Sømme, 1959:20, fig. 1.—Jensen, 1959:64, figs. 1(3, 4), 2(3, 4).—Wolff, 1959:124, figs. 5, 8.—Inoue et al., 1959:236, pl. 166: fig. 22.—Wattal and Kalra, 1960:79.—Whalley, 1960:183–184.—Thomas et al., 1960:114.—Beardsley, 1961:354.—Mathlein, 1961:36.—Butler, 1961:384.—Takahashi: 1963:117.—Takahashi and Mutuura, 1964:129, figs. 1–3.—Tuli and Mookherjee, 1963:379.—Knocke, 1963:7, fig. 3(2–6); pl. 1A–E.—Patel et al., 1964:366.—Zaguliaev, 1965:32.—Comstock, 1966:52.—Tello, 1968:228.—Steele, 1970:229–245.—Balachowsky, 1972:1237.—Chiu and Chien, 1974:50, 57, fig. 4.—Mullen and Arbogast,

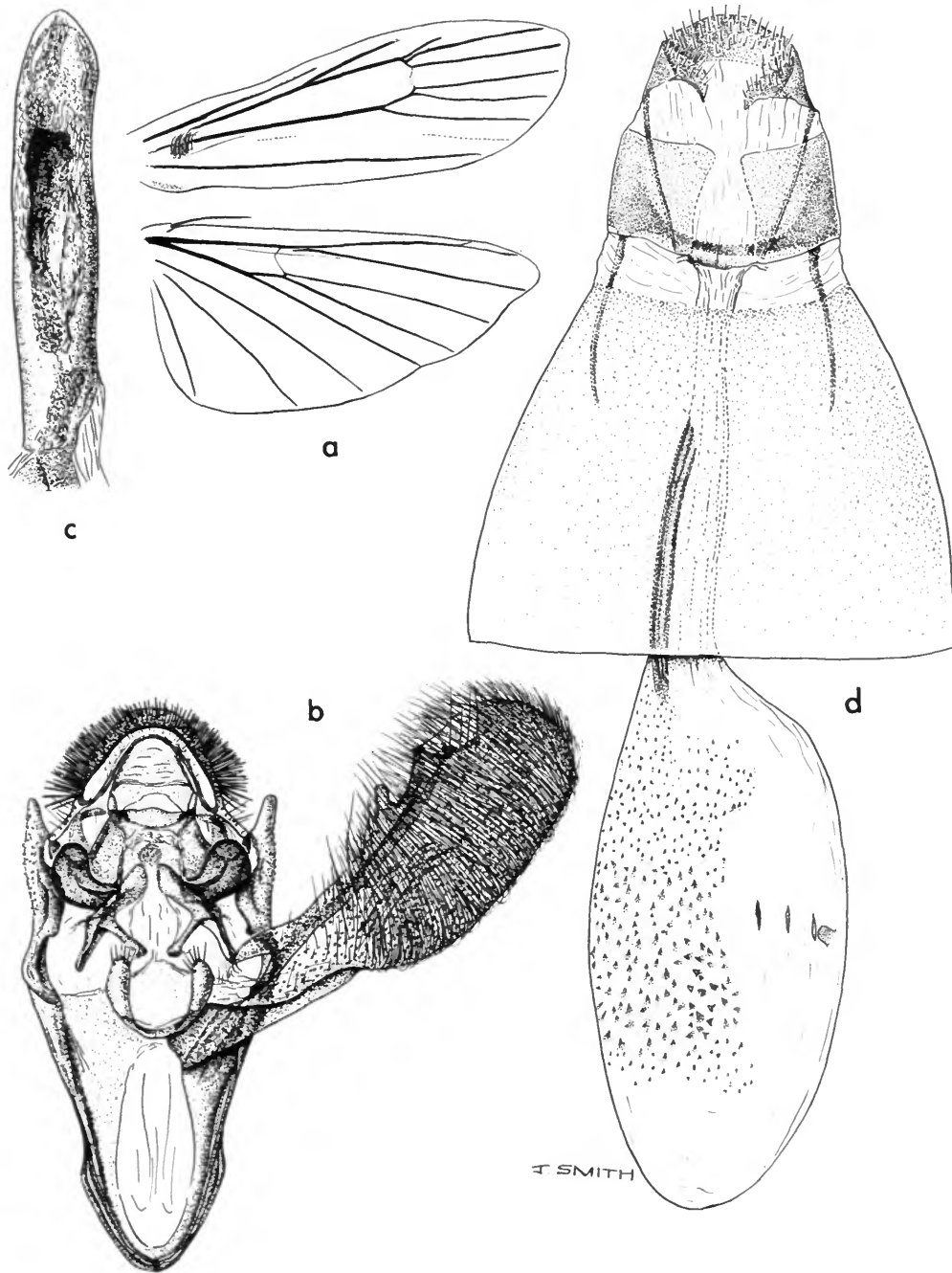


FIGURE 33.—*Cadra cautella* (Walker): *a*, venation of right wings; *b*, ventral view of male genitalia with left harpe and aedeagus removed; *c*, aedeagus; *d*, ventral view of female genitalia.

1977:641.—Shaffer, 1978:23.—Brower, 1983:21 [No. 6403].
Cryptoblabes formosella Wileman and South, 1918:219.—
 Shibuya, 1928b:17, 88.
Xenephestia cautella (Walker).—Gozmány, 1958:223, fig. 1E.
Ephestia (Cadra) cautella (Walker).—Hannemann, 1964:222
 [No. 145].

TYPE-LOCALITY.—Ceylon.
 DISTRIBUTION.—Cosmopolitan.

Our series from the Marquesas consists of 26 specimens as follows. Nuku Hiva: Taiohae, 27 Jan 1968, 1♂. Hiva Oa: Atuona, 10–29 Feb 1968, 8♂, 17♀.

FOODS.—Dried and stored vegetable products.
 This common, cosmopolitan species is carried in commerce throughout the world and is seen commonly flying around the copra boats that ply between the islands of the Pacific. In American economic literature it is known as the “almond moth,” but in economic literature generally it is referred to as the “fig moth” or “dried currant moth.”

I have figured the genitalia for completeness; but for a comprehensive treatment of this species and allies, see Heinrich 1956.

Subfamily PYRAUSTINAE

Key to the Genera of Pyraustinae

1. Hindwing semihyaline or partly so 2
 Hindwing not as above 3
2. Third segment of labial palpus clearly exposed *Maruca*
 Third segment of labial palpus scarcely visible *Diaphania*
3. Antenna as long, or nearly as long, as forewing 4
 Antenna considerably shorter than forewing 7
4. Forewing with 11 veins *Cangetta*
 Forewing with 12 veins 5
5. Forewing vein 10 approximate to stalk of 8 and 9 . *Tessema*, new genus
 Forewing vein 10 out of stalk of 8 and 9 6
6. Hindwing vein 6 connate with stalk of 7 and 8 at cell *Bradina*
 Hindwing vein 6 from stalk of 7 and 8, removed from cell . . *Tatobotys*
7. Labial palpus porrect 8
 Labial palpus otherwise 9
8. Forewing with two hyaline spots *Piletocera*
 Forewing without hyaline spots 10
9. Hindwing veins 3 and 4 connate 11
 Hindwing veins 3 and 4 otherwise 12
10. Labial palpus with rough projecting hairs beneath *Chrysophyllis*
 Labial palpus otherwise *Herpetogramma*
11. Labial palpus 3rd segment prominently exposed *Spoladea*
 Labial palpus 3rd segment scarcely visible *Stemorrhages*
12. Labial palpus 3rd segment exposed 13
 Labial palpus 3rd segment scarcely visible 14
13. Forewing vein 7 connate with stalk of 8 and 9 *Marasmia*
 Forewing vein 7 distant from stalk of 8 and 9 *Glyphodes*
14. Hindwing vein 6 out of stalk of 7 and 8 15
 Hindwing vein 6 approximate to stalk of 7 and 8 *Aulacodes*
15. Forewing vein 11 closely approximate to vein 10 *Aethaloessa*
 Forewing vein 11 removed from vein 10 *Psara*

Genus *Spoladea* Guenée

Spoladea Guenée, 1854:224.

TYPE-SPECIES.—*Phalaena recurvalis* Fabricius, 1775:644; subsequent designation by Shibuya, 1928b:178.

Spoladea recurvalis (Fabricius)

FIGURES 34, 35, 277g

Phalaena recurvalis Fabricius, 1775:644; 1781:274; 1787:22; 1794 [1793–1794]:2:237.—Aurivillius, 1898:169.

Spoladea recurvalis (Fabricius).—Guenée, 1854:225, pl. 8: fig. 5; 1862:62.—Hering, 1901:324.—Clarke, 1971:69, figs. 66, 67.—Auctorum, 1975:8.

Phalaena Pyralis fascialis Cramer, 1782 [1777–1782]:1 and 236, pl. 398, fig. 0.

Phalaena angustalis Fabricius, 1787:22 [No. 309].

Pyralis fascialis Cramer.—Stoll, 1791:163, pl. 36: fig. [13][text fig. 12 in error].

Piralis recurvalis Anonymous, 1802:28.

Phycis recurvella Zincken, 1818:143.

Hymenia diffascialis Hübner, 1825 [1816–1826]: 361 [No. 2453].

Hydrocampa albifascialis Boisduval, 1833b:119, pl. 16: fig. 7.

Zinckenia recurvalis (Fabricius).—Zeller, 1852 [1854]:55.—Lederer, 1863:437.—Walker, 1866 [1856–1866]:1321.—Wocke, 1871:214 [No. 273].—Snellen, 1872:95.—Meyrick, 1884:308.—Pagenstecher, 1884:280.—Snellen, 1884:43.—Meyrick, 1885:105; 1886b:252.—Pagenstecher, 1888:198 [No. 661].—Meyrick, 1888b:217.—Möschler, 1891:312.—Gundlach, 1891:362.—Snellen, 1891:629.—Rebel, 1892:247.—Snellen, 1892:75.—von Hedemann, 1894:294.—Pagenstecher, 1894:43.—Rebel, 1896:112; 1898:380.—Fletcher, 1910a:301 [No. 112].—Holland, 1920:327.—Marumo, 1923:189, 203.

Spoladea animalis Guenée, 1854:226.

Hymenia recurvalis (Fabricius).—Walker, 1859 [1856–1866]:396.—Wallace and Moore, 1866:364.—Wollaston, 1879:332.—Moore, 1885 [1884–1887]:293.—Swinhoe and Cotes, 1888 [1887–1889]:5:627 [No. 4262].—Druce, 1888a:229.—Warren, 1888:333.—Swinhoe, 1890:277; 1900:455.—Stebbing, 1903:83.—Swezey, 1910:136.—Fullaway, 1914:20.—Swezey, 1915a:107; 1919:13.—Auctorum, 1919:4.—Bridwell, 1919a:22; 1919b:115.—Auctorum, 1922:11.—Swezey, 1926a:296.—Ogilvie, 1926:44.—Auctorum, 1927:348.—Williams, 1927:460.—Shibuya, 1928b:179, pl. 7: fig. 12.—Illingworth, 1928:44; 1929:251.—Swezey, 1929a:276; 1929b:281; 1929c:283.—Shibuya, 1929:161.—de Joannis, 1930 [1929–1930]:[421]659.—Matsumura,

1931:1037.—Esaki, 1932:1395.—Tams, 1935:274.—Klima, 1939a:31.—Ghesquière, 1940:119, pl. 4: fig. 7.—Vesey-Fitzgerald, 1941:157.—Swezey, 1942b:208; 1946:178.—Auctorum, 1947:6, 19; 1948:209.—Viette, 1949a:322.—Cockayne, 1952:71, pl. 3: figs. 12–14.—Mere, 1952:57.—Auctorum, 1952:355; 1953:5.—Pemberton 1954:49.—Marion, 1954:44; 1955:76.—Paulian and Viette, 1955:174, fig. 33.—Inoue, 1955:163 [No. 909].—Batra, 1956:22.—Rungs, 1957:297.—Viette, 1957:178; 1958:8.—Zimmermann, 1958a:8; 1958b:52, figs. 37–40.—Mathur, 1959:190, figs. 22–29.—Singh, 1960:35, unnumbered figs.—Batra and Bhattacharjee, 1961:128.—Butler, 1961:383.—Martin, 1961:6, pl. C4.—Bhattacharjee and Menon, 1963:252, pl. 1: figs. 1–14.—Nazmi, 1963:205, 216, fig. 7A–D.—Patel et al. 1964:366.—Pak, 1964:58.—Azuma, 1965:55.—Gentry, 1965:137.—Kimball, 1965:200, pl. 24; fig. 25.—Beardsley, 1966:174, 181.—Comstock, 1966:55.—Inoue and Maenami, 1968:532.—Issiki et al., 1969:76 [No. 148], pl. 37: fig. 148.—Balachowsky, 1972:1173, 1174.—Sugerman, 1972:279.—Fox, 1978:368, 374.—Gressitt and Nadkarni, 1978:87.—Inoue et al., 1982, 1:331; pl. 38: figs. 60, 61.—Shin, et al., 1983:358, pl. 22: fig. 350.

Hymenia fascialis (Cramer).—Butler, 1880:683; 1883:117; 1884b:500; 1886a:384.—Swinhoe, 1884:524; 1885:867; 1886:457.—Moore, 1889:59.—Hampson, 1891:39.—Dyar, 1903:373.—Marsh, 1911:1–15; figs. 1, 2, pl. 1.—Chittenden, 1913:2, pl. 4: fig. 2.—Meyrick, 1913b:39.—Fletcher, 1914:431, fig. 307.—Zacher, 1916:198, fig. 61.—Watson, 1917:59.—Fletcher, 1917:296.—Barnes and McDunnough, 1917:129.—Pillai, 1921:46.—Forbes, 1923:545.—Simmonds, 1924:8.—Tams and Hampson, 1924:285.—Hutson, 1926:D15–D17.—Swezey, 1926b:720.—Poos, 1926:491, fig. 90.—Hudson, 1928:179, pl. 20: fig. 41.—Simmonds, 1932:10 [facialis, sic].—Miller, 1932:11, 39.—Ghosh, 1932:4.—Russell, 1934:31.—McDunnough, 1939:9.—Ghosh, 1940c:151.—Krauss, 1944:89.—Roonwal and Bhasin, 1954:32.—Amsel, 1956 [1954–1957]:201, pl. 26: fig. 2, pl. 83: fig. 6.—Wiltshire, 1957:129 [No. 742].—Thomas, 1958:223.—Butani, 1958:182.—Agenjo, 1963b:24, fig. 1.—Tello, 1968:228.—Brower, 1983:3 [No. 5354].

Zinckenia [sic] *recurvalis* (Fabricius).—Gundlach, 1881:420, 434.—Hering, 1901:324.

Zinckenia fascialis (Cramer).—Butler, 1883:117.—Swinhoe, 1884:524; 1886:437.—Hampson, 1896 [1894–1896], 4:262, fig. 158[δ]; 1898:623, fig. 21[δ].—Pagenstecher, 1900:188.—Snellen, 1901:259.—Leech, 1901:449.—Holland, 1903:392, pl. 47: fig. 28.—Rebel, 1906:43.—Maxwell-Lefroy, and Howlett, 1909:516.—de Joannis, 1930:640.—Zimmermann, 1958a:8; 1958b:52, figs. 37–40.—Mathur, 1959:190, figs. 22–29.—Singh, 1960:35, unnumbered figs.—Batra and Bhattacharjee, 1961:128.—Butler, 1961:383.—Martin, 1961:6, pl. C4.—Bhattacharjee and Menon, 1963:252, pl. 1: figs. 1–

- 14.—Nazmi, 1963:205,216, fig. 7A-D.—Patel et al. 1964:366.—Pak, 1964:58.—Azuma, 1965:55.—Gentry, 1965:137.—Kimball, 1965:200, pl. 24; fig. 25.—Beardsley, 1966:174, 181.—Comstock, 1966:55.—Inoue and Maenami, 1968:532.—Issiki et al., 1969:76 [No. 148], pl. 37: fig. 148.—Balachowsky, 1972:1173, 1174.—Sugerman, 1972:279.—Fox, 1978:368, 374.—Gressitt and Nadkarni, 1978:87.—Inoue et al., 1982, 1:331; pl. 38: figs. 60, 61.—Shin et al., 1983:358, pl. 22: fig. 350.
- Hymeneia* [sic] *recurvalis* (Fabricius).—Schaus and Clements, 1893:45.
- Hymenia exodias* Meyrick, 1904:130.
- Zinchenia* (*Pyralis*) *fascialis* (Cramer).—Matsumura, 1908:207 [No. 1728].
- Odezia hecate* var. *formosana* Shiraki, 1910:146, pl. 35: fig. 5.
- Zinchenia fascialis* (Cramer).—Shiraki, 1913:365 [misspelled].
- Hymeria* [sic!] *fascialis* (Cramer).—Fullaway, 1913:49.

Male genitalia slide USNM 25157. Harpe elongate oval, fleshy, with small tuft of scales near middle and one from base of costa. Gnathos absent. Transtilla a sclerotized band. Uncus

short, clothed with stout setae. Vinculum rounded. Tegumen broader than long. Anellus a sclerotized plate, forked posteriorly. Aedeagus moderately long, curved, with a strong sclerotized bar ventrally.

Female genitalia slide USNM 25158. Ostium round, membranous. Inception of ductus seminalis dorsal from posterior end of bursa copulatrix at base of ductus bursae. Ductus bursae membranous posteriorly with a sclerotized collar anteriorly. Bursa copulatrix lightly rugose anteriorly; posteriorly armed with strong spines on inner surface. Signum a diamond-shaped plate with a median ridge.

TYPES.—Lost (*recurvalis*); lost? (*fascialis*); Vienna? (*angustalis*); Museum d'Histoire Naturelle, Paris? (*albifascialis*); British Museum (Natural History) (*exodias*, *animalis*); Entomological Institute, Taipeh (*formosana*).

TYPE-LOCALITIES.—East Indies (*recurvalis*); Japan (*fascialis*); Tranquebar, Southeast India

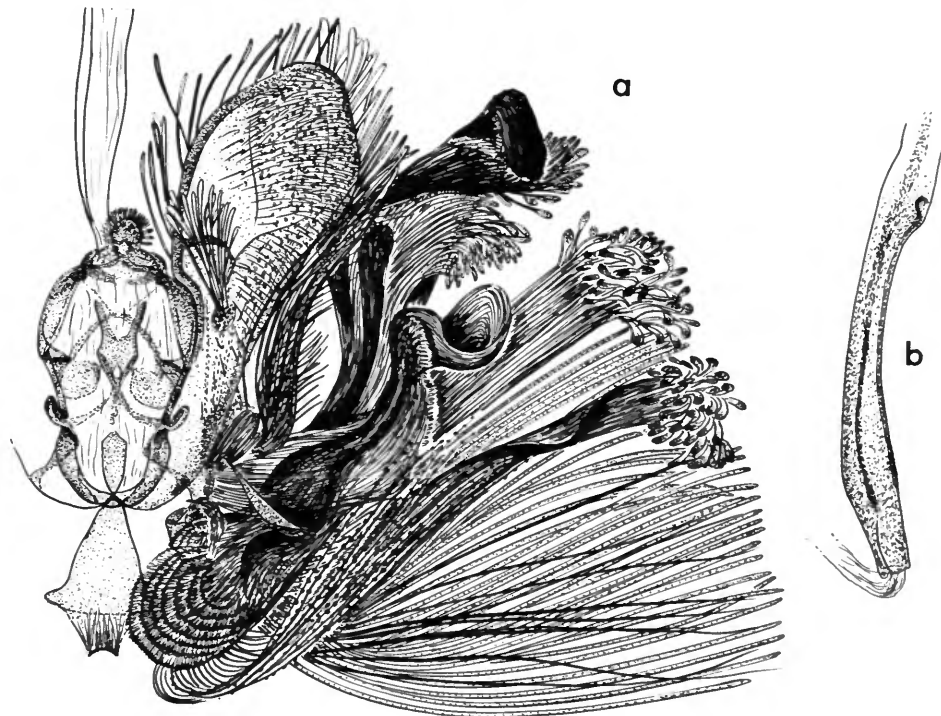


FIGURE 34.—*Spoladea recurvalis* (Fabricius): a, ventral view of male genitalia, showing corema, with left harpe and aedeagus removed; b, aedeagus.

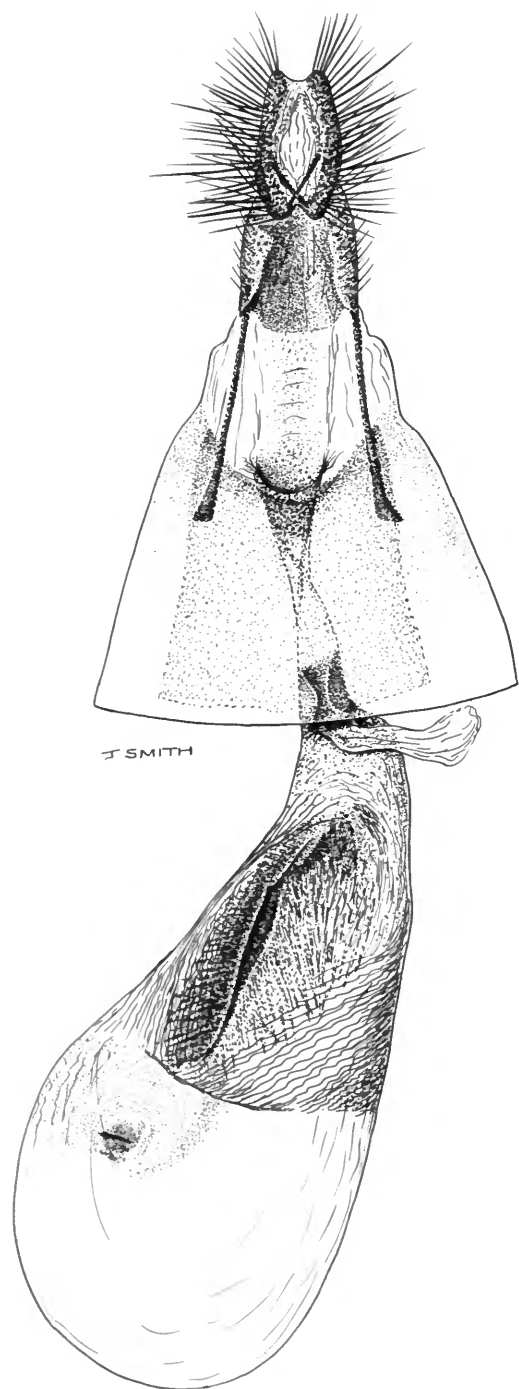


FIGURE 35.—*Spoladea recurvalis* (Fabricius), ventral view of female genitalia.

(*angustalis*); Madagascar (*albifascialis*); Molokai, Hawaii (*exodias*); Pernambuco, Brazil (*animalis*); Formosa (*formosana*).

DISTRIBUTION.—Cosmopolitan except in very cold climates.

From the Marquesas we have specimens from three islands. Nuku Hiva: Taiohae, 17 Jan to 6 Feb 1968, 4♂, 56♀. Hiva Oa: Atuona, 12–16 Feb 1968, 10♀. Fatu Hiva: Omoa, 13–21 Mar 1968, 4♀; 9 Apr 1968, 1♀; Mt. Upe, 2025 ft (617 m), 3 Apr 1968, 1♀.

FOOD PLANTS.—Numerous. Among the most important are: beets, cotton, tomato, carrot, spinach, eggplant, purslane, cucumber, corn, sugarbeets, chenopodiaceous weeds, *Amaranthus*, *Helianthus*, and *Celosia cristata* L.

This species is known as the “Hawaiian beet webworm.” In some areas, particularly India and Ceylon, it is a serious pest of leafy vegetables.

The Marquesan specimens of *recurvalis* show none of the extraordinary variation such as that found in Hawaiian examples of this species.

Genus *Marasmia* Lederer

Marasmia Lederer, 1863:385.

TYPE-SPECIES.—*Marasmia cicatricosa* Lederer, 1863:386, by monotypy.

Marasmia trapezalis (Guenée)

FIGURES 36, 277h

Salbia trapezalis Guenée, 1854:200.—Lederer, 1863:381.

Marasma [sic!] *trapezalis* (Guenée).—Green, 1903:141, pl. 14: fig. 3.

Botys creonalis Walker, 1859[1856–1866]:579.—Moore, 1885[1884–1887]:284, pl. 180: fig. 10.—Meyrick, 1887:217.

Botys neoclesalis Walker, 1859 [1856–1866]:635.—Meyrick, 1887:217.

Botys suspicalis Walker, 1859[1856–1866]:667.

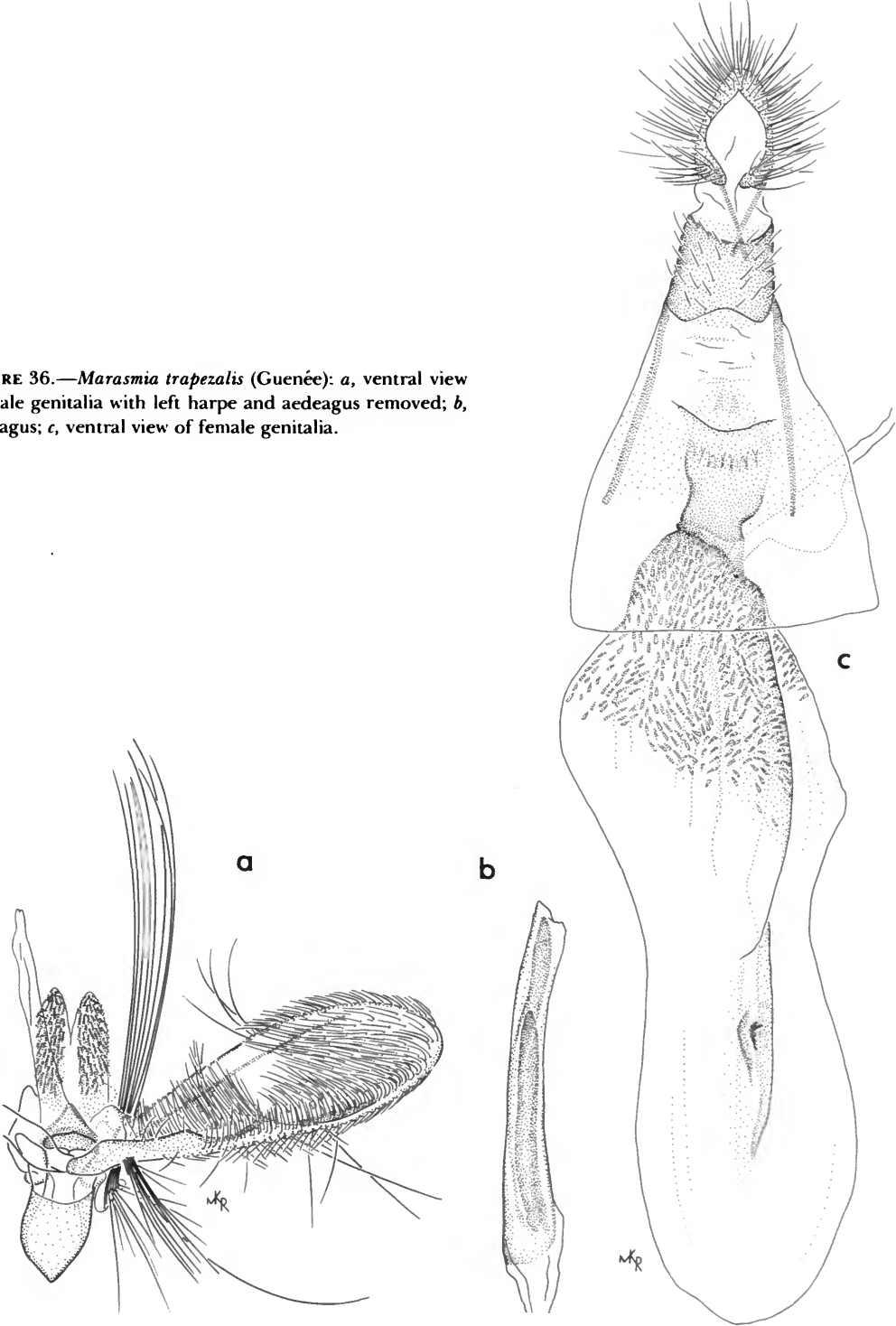
Botys convectalis Walker, 1866[1856–1866]:1411.

Cnaphalocrocis bifurcalis Snellen, 1880:219; 1883:136, pl. 8: figs. 5, 5a.—Meyrick, 1886b:237.

Rovanoa creonalis (Walker).—Moore, 1885[1884–1887]: 284, pl. 180: fig. 10.

Dolichosticha perinephes Meyrick, 1886b:236; 1887:217.

FIGURE 36.—*Marasmia trapezalis* (Guenée): *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.



Dolichosticha trapezalis (Guenée).—Meyrick, 1887:217.—Hampson, 1891:40.—Schaus and Clements, 1893:46.

Marasmia trapezalis (Guenée).—Hampson, 1898:639.—Maxwell-Lefroy and Howlett, 1909:516.—Fletcher, 1910a:303 [No. 118], 316.—Duport, 1913:36 [No. 242], 50, 51.—Fletcher, 1914:432, pl. 33: figs. 1–5.—Janse, 1917:158 [No. 2197].—Fletcher, 1917:149, 180, 187, 190, 199.—Ghosh, 1925:6.—Shibuya, 1928b:192.—Meyrick, 1929b:163.—de Joannis, 1930[1929–1930]:[427]665.—Ghosh, 1932:3, 4.—Meyrick, 1934c:337.—van der Goot, 1934:22.—Sevastopulo, 1935:205.—Tams, 1935:276.—Wolcott, 1936:458.—Harris, 1937:483.—Klima, 1939a:65–67.—Schaus, 1940:337.—Ghosh, 1940b:74, pl. 25.—Ghesquière, 1942:125.—Swezey, 1942b:209; 1943:280; 1946:179.—Viette, 1949a:322; 1951:15.—Dick, 1951:390.—Pemberton, 1954:50.—Paulian and Viette, 1955:175.—Venkatraman and Chacko, 1961:73, fig. 1.—Comstock, 1966:56.—Clarke, 1971:65, figs. 63, 64, pl. 10h.—Inoue et al., 1982, 1:335.—Hodges et al., 1983:75 [No. 5288].

Epimima trapezalis (Guenée).—Swinhoe, 1900:464.

Marasmia trapezalis Guérin [sic].—Sharma, 1964:30.

Male genitalia slides USNM 24873, 24874. Harpe elongate oval, three times as long as wide; small projection from sacculus at basal third; sacculus narrowly rolled inwardly at middle. Uncus triangular with elongate, setose, lateral elements. Vinculum shield-shaped. Tegumen greatly reduced, wider than long; laterally swollen forming a nodule emitting hairlike scales. Anellus membranous. Aedeagus long, straight; vesica armed with two strong, large cornuti.

Female genitalia slide USNM 24875. Ostium transverse, membranous. Inception of ductus seminalis from posterior edge of bursa copulatrix. Ductus bursae short, flattened, sclerotized except for very narrow section where it joins bursa copulatrix. Bursa copulatrix membranous, posterior third studded with small spines. Signum a very small, scobinate plate.

TYPES.—British Museum (Natural History) (*creonalis*, *noeclesalis*, *suspicalis*, *convectalis*, *perinephes*, *trapezalis*); Rijksmuseum van Natuurlijke, Leiden (*bifurcalis*).

TYPE-LOCALITIES.—Santo Domingo (*creonalis*); Cape of Good Hope (*noeclesalis*); Ceylon (*suspicalis*); South Hindostan (*convectalis*); Fiji (*perinephes*); Sierra Leone (*trapezalis*); Celebes (*bifurcalis*).

DISTRIBUTION.—Pantropical: West Indies, Africa, Ceylon, South India, Fiji, Celebes, Marquesas Islands, Society Islands, Tuamotus, Austral Islands (Rapa), Java, Ellice Islands.

In this present collection there are 50 specimens as follows. Nuku Hiva: Pakiu Valley, 1000 (304.8 m), 17 and 19 Jan 1968, 2♂, 5♀; Taiohae, 19 Jan 1968, 2♀; Tapuaooa, 2500 ft (762 m), 30 Jan 1968, 2♀; Tunoa Ridge, 2900 ft (884 m), 23 Jan 1968, 5♂. Hiva Oa: Atuona, 12 Feb to Mar 1968, 1♂, 15♀; Puamau, 8 Feb 1968, 1♀. Fatu Hiva: Omoa, 11–25 Mar 1968, 10♂, 7♀.

FOOD PLANTS.—*Paspalum paniculatum* L., *P. conjugatum* Bergius, *P. scrobiculatum* L., *Miscanthus floridulus* (Labillardière) Warburg, Indian corn, millet, sorghum, sugarcane.

Meyrick recorded this widespread species also, from Uapou and Tahuata Islands. Unquestionably it will be found on most, if not all, the Marquesan Islands.

Genus *Maruca* Walker

Maruca Walker, 1859 [1856–1866]:540.

TYPE-SPECIES.—*Hydrocampe aquatilis* Boisduval, in Guérin-Méneville, 1844 [1829–1844]:524, pl. 90: fig. 9, by monotypy.

Maruca testulalis (Geyer)

FIGURES 37, 280d

Crochiphora testulalis Geyer in Hübner, 1832 [1818–1837], 4:12 [No. 315], figs. 629, 630.—Gundlach, 1891:359.—Möschler, 1891:307.—Hampson, 1891:40.—Schaus and Clements, 1893:46.—Swinhoe, 1900:522 [No. 3552].—Schaus, 1940:365.—Paulian and Viette, 1955:184, fig. 41.—Viette, 1957:182; 1958:10.

Maruca testulalis (Geyer).—Moore, 1885 [1884–1887]:298.—Swinhoe and Cotes, 1888 [1887–1889], 5:622 [No. 4229].—Swinhoe, 1890:284.—Hampson, 1896 [1894–1896]:393, fig. 211; 1899:194, fig. 104.—Swinhoe, 1900:523.—Pagenstecher, 1900:219.—Leech, 1901:482.—Hering, 1901:309.—Matsumura, 1901:22 [No. 116]; 1908:214 [No. 1787].—Maxwell-Lefroy and Howlett, 1909:519, fig. 342.—Rebel, 1910b:431; 1910c:431.—Shiraki, 1910, 1:123, pl. 32: fig. 11; 1913:363.—Duport 1913:37 [No. 262], 52, 53, 55.—Fletcher, 1914, figs. 1–6, pl. 36.—Rebel, 1915:146.—

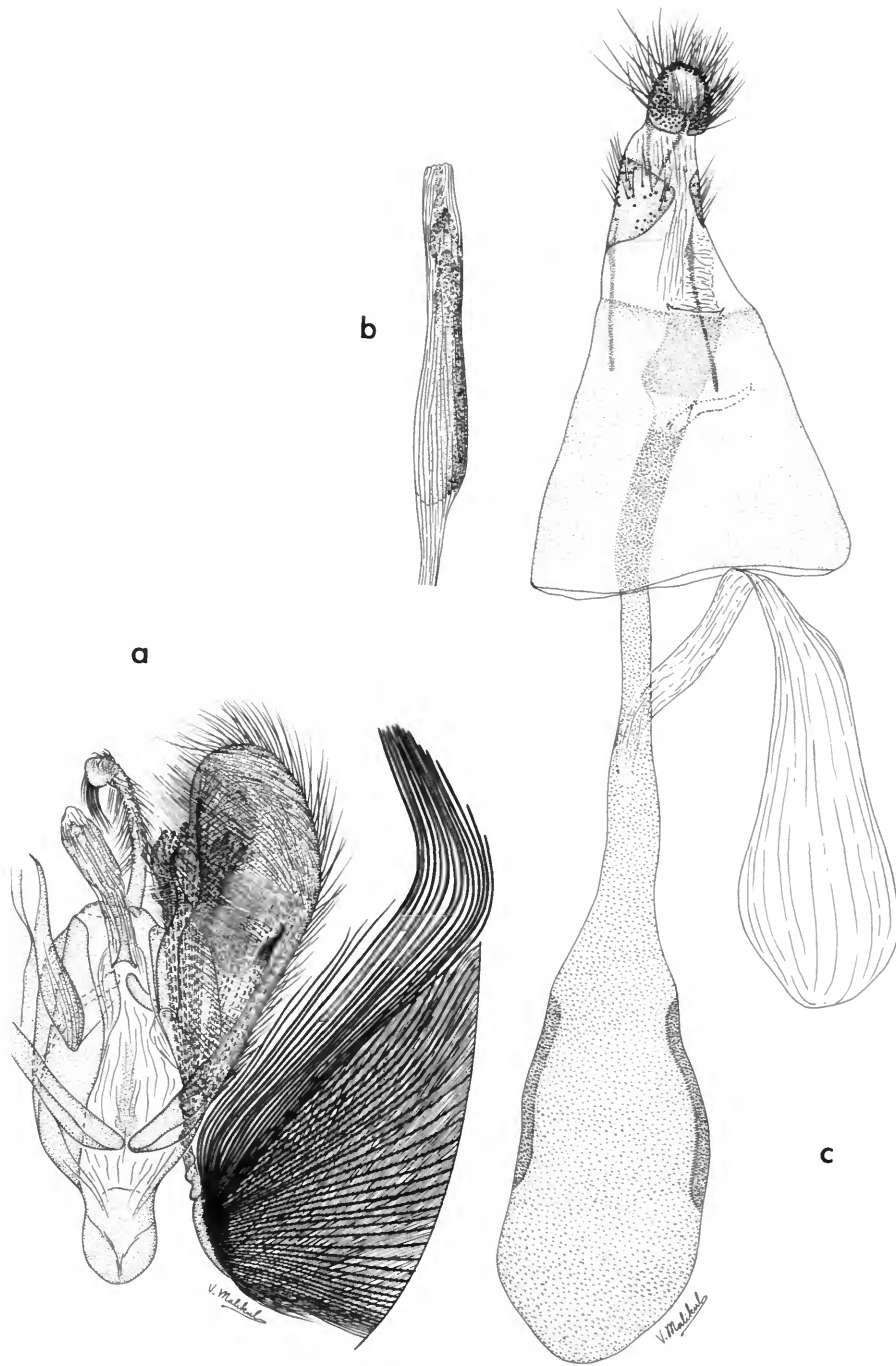


FIGURE 37.—*Maruca testulalis* (Geyer): *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.

- de Bussy, 1916:112-121.—Andrews, 1916:19.—Fletcher, 1917:44, 52, 56, 60, 65.—Janse, 1917:162[No. 2546].—Cotton, 1918:279.—Holland, 1920:331.—Hutton, 1920:C8-C10.—Pillai, 1921:40.—Wolcott, 1923:186.—Ghosh, 1924a:12; 1924b:2.—McKerral, 1924:14.—Tams and Hampson, 1924:288.—Gater, 1925a:222; 1925b:327.—Light, 1927:20.—Hopkins, 1928a:29; 1928b:47.—Shibuya, 1929:153, 203.—Bruner et al., 1930:31-36.—de Joannis, 1930[1929-1930]:694[456], pl. 4: fig. 16.—Leonard and Mills, 1931:467.—Mills and Leonard, 1931:763.—Mackie, 1931:234-235.—Bruner, 1931:13, fig. 4.—Esaki, 1932:1370.—Miller, 1932:11, 29, 30.—Fleury, 1932:796.—Moutia, 1932:10.—Ghosh, 1932:4.—Wolcott, 1933:242, 254.—Hargreaves, 1933:53.—Bruner, 1935:1-52.—Corbett, 1935:52.—Tams, 1935:286.—Sevastopulo, 1935:205.—Wolcott, 1936:457.—Krishnamurth, 1936:25, 29, 33.—Issac, 1936:170.—Swezey, 1936:197.—Klima, 1939b:367.—Scott, 1940:35-47.—Ghosh, 1940:100, pl. 39.—Ghesquière, 1942:175.—Holdaway, 1942:254.—Swezey, 1943:281; 1944:143; 1946:183.—Williams, 1951:64.—Mutuura, 1953:3, pl. 1: fig. 2, pl. 3: fig. 6 [in Japanese].—Amsel, 1954-1957:204, pl. 31: fig. 5, pl. 82: fig. 3.—Gressitt, 1954:172, 185.—Swaine, 1954:54.—Pemberton, 1954:50.—Marion, 1954:47.—Weber, 1955:635.—Inoue, 1955:181[No. 1000].—Davis, 1958:358.—Thomas, 1958:227.—Zimmerman, 1958b:56, figs. 41-43.—Dale and Herring, 1959:12, 13.—Thevasagayam and Canagasingham, 1960:288, 289.—Rainwater, 1963:305.—Appert, 1964:790, 791, 797, 799.—Gentry, 1965:158.—Comstock, 1966:61.—Tello, 1968:229.—Schmid and Endicott, 1968:41.—Balachowski, 1972:1171, 1172.—Gressitt and Nadkarni, 1978:87.—Inoue et al., 1982, 1:352; 2: pl. 41: fig. 44.—Mohanty and Nayak, 1982:87, 91, figs. 37-39.—Shin et al., 1983:p. 332, pl. 19: fig. 291.
- Hydrocampe aquatilis* Boisduval in Guérin-Méneville, 1832[1829-1844], pl. 90: fig. 9; 1844[1829-1844]:524.
- Stenia testulalis* Guenée, 1854:247[No. 230].—Walker, 1859[1856-1866]:420.—Guenée, 1862:63.
- Maruca aquatilis* (Boisduval).—Walker, 1859 [1856-1866]:540.—Moore, 1867:93.—Butler, 1880:685.—Swinhoe, 1885:870.—Druce, 1888b:579.
- Siriocauta testulalis* (Geyer).—Lederer, 1863:424.—Snellen, 1872:94.—Gundlach, 1881:419, 432.—Snellen, 1884:39, pl. 3: figs. 9, 9a,b.—Meyrick, 1884:299; 1886b:225.—Pagenstecher, 1888:195[No. 642].—Snellen, 1891:623.—Meyrick, 1894a:10; 1894b:468.
- Botys bifenestralis* Mabille, 1880:25.—Marion, 1954:47; 1955:78.—Paulian and Viette, 1955:184.
- Manica* [sic] *testulalis* (Geyer).—Swinhoe and Cotes, 1888[1887-1889], 5:622[No. 4229].
- Siriocauta simialalis* Snellen, 1892:73.
- Maruca testulalis* [sic] Ghosh, 1924a:12[unjustified emendation].
- Maruca nigroapicalis* de Joannis, 1930[1929-1930]:695[457], pl. 4: fig. 17.
- Maruca testularis* [sic] Matsumura, 1931:1040[unjustified emendation].
- Maruca telulalis* [sic] Viette, 1951:15[unjustified emendation].
- Male genitalia slide USNM 25162. Harpe scarcely sclerotized; cucullus rounded; on sacculus a small sclerotized hook. Uncus slender, strongly curved; distodorsally a cluster of short, stout setae; at extreme distal end a cluster of fine setae. Vinculum rounded. Tegumen very slightly sclerotized. Anellus a very small, elongate plate. Aedeagus nearly straight, strongly sclerotized on one side; cornuti two, weak. Corema very strong, thick.
- Female genitalia slide USNM 25163. Ostium transverse, short. Antrum sclerotized. Inception of ductus seminalis dorsal, slightly before antrum. Ductus bursae slender, granular, nearly twice as long as bursa copulatrix. Bursa copulatrix oval, granular. Accessory bursa present. Signa a pair of lateral rods.
- HOLOTYPE.—Location unknown.
- TYPE-LOCALITIES.—Buenos Aires (*testulalis*); Tonkin (*nigroapicalis*); Madagascar (*bifenestralis*); Sumatra (*simialalis*); Java (*aquatilis*).
- DISTRIBUTION.—Indo-Australian Region, Oriental Region, Neotropical and Ethiopian Regions, Oceania (Caroline and Marquesas Islands).
- Nuku Hiva: Taiohae, 16 Jan to 6 Feb 1968, 36♂, 20♀; Pakiu Valley, 1800 ft (548 m), 19 and 28 Jan 1968, 5♂, 7♀; Tapuaooa, 2500 ft (762 m), 30 Jan 1968, 2♀. Hiva Oa: Atuona, 12 and 19 Feb. 1968, 15♂, 24♀. Fatu Hiva: Omoa, 11 and 13 Mar 1968, 17♂, 8♀; Mt. Teoaiua, 2000 ft (610 m), 22 Mar 1968, 1♀.
- FOOD PLANTS.—*Arachis hypogaea* L. (peanut), *Cajanus cajan* (L.) Millspaugh, *Cannabis sativa* L. (hemp), *Delonix regia* (Bojer) Rafinesque, *Derris elliptica* (Roxburgh) Benthham, *Gliricidia sepium* (Jacquin) Walpers, *Hibiscus rostellatus* Guillemain and Perrottet, *Mucuna urens* (L.) de Candolle, *Oryza sativa* L. (rice), *Phaseolus vulgaris* L. (beans), *Phaseolus multiflorus* Willdenow, *Pisum sativum* L. (peas), *Nicotiana tabacum* L. (tobacco), *Sesbania grandiflora* (L.) Persoon, *S. aculeata*

(Willdenow) Persoon, *S. tomentosa* Hooker and Arnott, *Stizolobium pruriens* (L.) Medicus, *Tephrosia vogelii* Hooker f., *T. candida* de Candolle, *Vigna unguiculata* (L.) Walpers (cowpea).

Genus *Psara* Snellen

Psara Snellen, 1875:239.

TYPE-SPECIES.—*Psara pallicaudalis* Snellen, 1875:240, pl. 13: figs. 13, 14, by monotypy.

Psara jasiusalis (Walker), new combination

FIGURES 38, 278a,b

Botys jasiusalis Walker, 1859[1856–1866]:708.—Hampson, 1899:204.

Botys basistrigalis Walker, 1866[1856–1866]:1443.—Hampson, 1899:204.

Pachyzancla stultalis.—Meyrick, 1929b:164 [not *Botys stultalis* Walker]; 1934c:340.

Male genitalia slide USNM 24835. Harpe costa strongly arched and narrowly, but strongly sclerotized; cucullus rounded. Transtilla two elongate triangular elements. Uncus narrow, pointed, distally clothed with setae. Vinculum a moderately broad band; saccus short, pointed. Tegumen longer than broad. Anellus a narrow, lightly sclerotized plate. Aedeagus straight, slightly swollen distad; vesica armed with a series of densely packed dentate cornuti.

Female genitalia slide USNM 25836. Ostium funnel-shaped. Inception of ductus seminalis from posterior edge of ridged portion of ductus bursae. Ductus bursae posterior third membranous; anterior two-thirds much broader than posterior third and ornamented with a series of slender longitudinal ridges. Bursa copulatrix mostly membranous, finely granular posteriorly. Signum a small diamond-shaped plate.

TYPES.—In the British Museum (Natural History) (*basistrigalis*); in the Hope Museum, Oxford (*jasiusalis*).

TYPE-LOCALITIES.—Java (*basistrigalis*); Sarawak (*jasiusalis*).

DISTRIBUTION.—Australia (Queensland), Andamans, Burma, China, Fergusson Island, Ma-

laya, Marquesas Islands, New Guinea, Philippines, Samoa, Sarawak.

Our Marquesas examples are from the following localities. Nuku Hiva: Pakiu Valley, 1800 ft (548 m), 19 Jan 1968, 1♂; Taiohae, 1, 2, Jan 1978, 1♂, 3♀. Hiva Oa: Ootua, 800 m, 27–30 Jul 1977, 1♀ (Montgomery). Fatu Hiva: Omoa, 7 Mar 1968, 1♂.

FOOD PLANT.—Unknown.

Meyrick (1929b:164) recorded *Pachyzancla stultalis* (Walker) from the Marquesas (Hiva Oa), but his specimens, based on a comparison of the genitalia with those of the type, are *Psara jasiusalis*, as is our series. Walker's *stultalis* is very different from the males of *jasiusalis* having flaring lateral fans of modified scales from the 8th abdominal segment. Another species, *Psara maledicta* (Warren), described as *Acharana maledicta* Warren (1892:435) from Pitcairn Island, is very closely related to *jasiusalis*, if it is not conspecific, but more material from that island is needed before this matter can be settled.

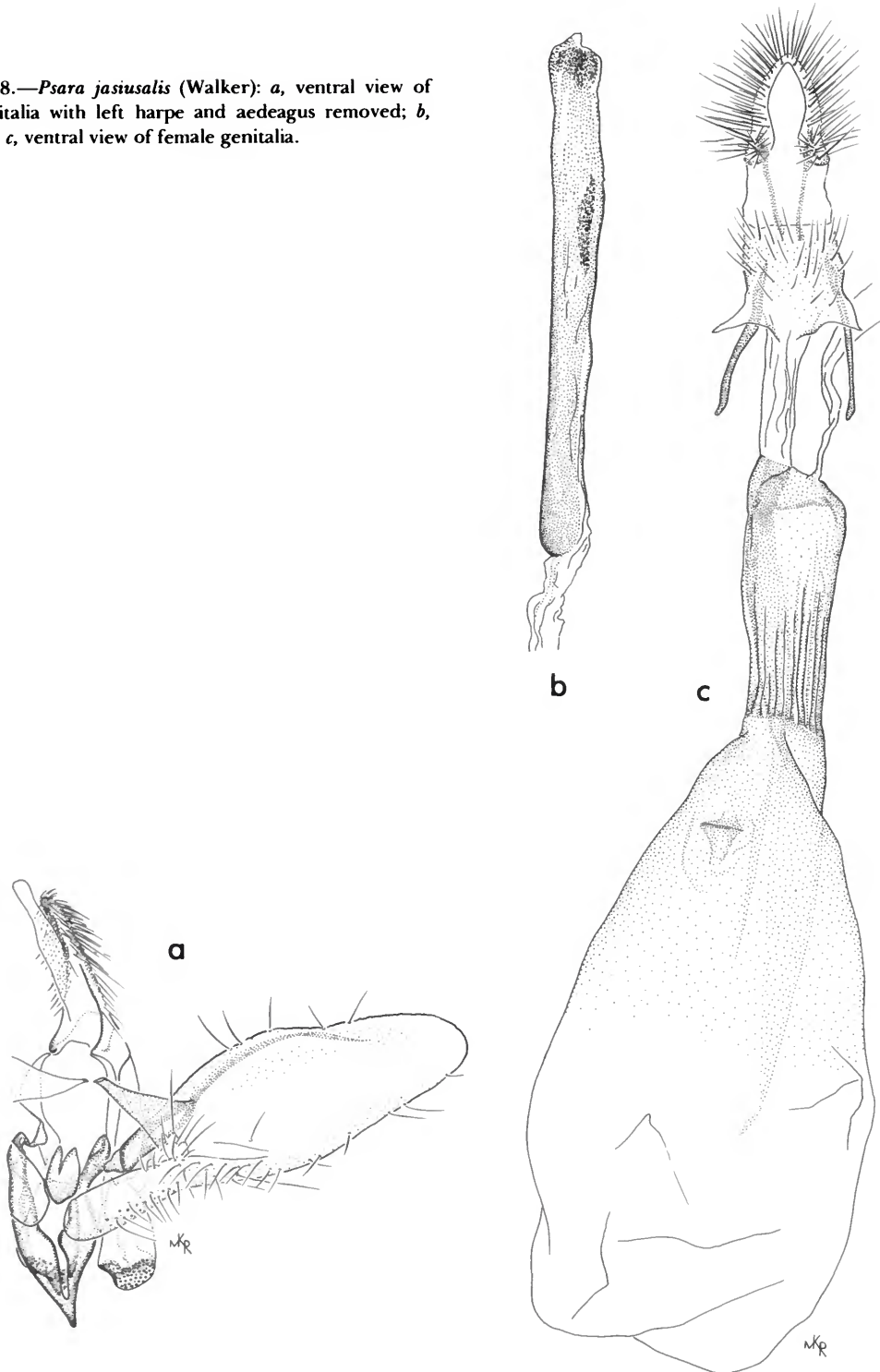
Psara orphnopeza, new species

FIGURES 39, 278c

Alar expanse 25 mm.

Labial palpus second segment light buff below, dresden brown above; third segment dresden brown. Antenna light ochraceous buff; scape shaded dresden brown. Head light ochraceous buff. Thorax light ochraceous buff suffused brownish. Forewing ground color pale ochraceous buff suffused brownish, especially toward margins; at basal fifth of costa a fuscous spot continued faintly to dorsum as an irregular antemedian line; slightly beyond the costal spot, a small fuscous spot in cell, followed by a larger one of the same color at end of cell; from slightly beyond middle of dorsum, a faint, irregular, fuscous transverse line extends to vein 2; postmedian line fuscous, broadest on costa, extending irregularly to tornus; at base of dorsum a small fuscous spot; cilia light ochraceous buff mixed with grayish fuscous. Hindwing pale ochraceous buff, suffused brownish toward mar-

FIGURE 38.—*Psara jasiusalis* (Walker): *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.



gins; at basal third a fuscous spot in cell; a post-median fuscous line extends to vein 5, then outwardly to form three "teeth" between veins 2 to 5, then inwardly and transversely to margin of wing; cilia light ochraceous buff mixed with grayish fuscous. Foreleg pale ochraceous buff suffused brownish; tarsal segments marked fuscous; midleg pale ochraceous buff suffused brownish; tarsal segments marked fuscous; hindleg pale ochraceous buff. Abdomen pale ochraceous buff, suffused brownish.

Female genitalia slide USNM 25246. Ostium very broad, funnel-shaped. Antrum narrowly sclerotized. Inception of ductus seminalis dorsal, from near posterior end of ductus bursae. Ductus bursae narrow before ostium, broadening anteriorly, ribbed, and strongly sclerotized before bursa copulatrix. Bursa copulatrix very finely granular. Signum a diamond-shaped plate with central ridge.

HOLOTYPE.—USNM 100734.

TYPE-LOCALITY.—Fatu Hiva, Tahuna, 2000 ft (610 m).

DISTRIBUTION.—Fatu Hiva.

FOOD PLANT.—Unknown.

Described from the unique ♀ holotype (27 Mar 1968).

This species is similar to *Psara jasiusalis* but is larger, the tegulae are shorter and the transverse lines are not as well defined. In pattern it is almost identical to what Ghesquière (1940, pl. 3: fig. 8; 1942:141) treated as the African *Lamprosema indicata* (F.) (Fabricius, 1775:640).

Genus *Herpetogramma* Lederer

Herpetogramma Lederer, 1863:430.

TYPE-SPECIES.—*Herpetogramma servalis* Lederer, 1863:430, by monotypy.

Herpetogramma phthorosticta (Meyrick), new combination

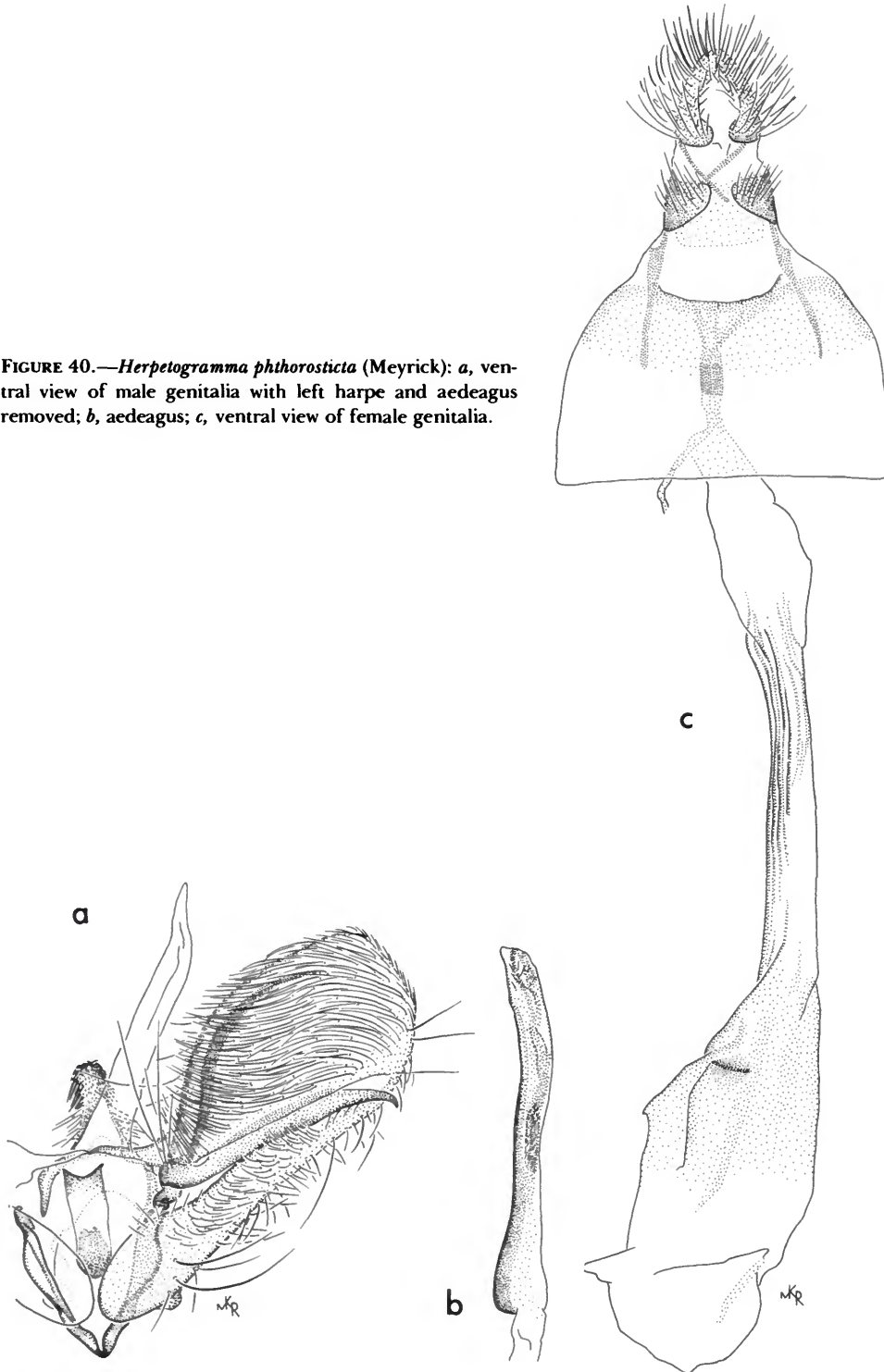
FIGURES 40, 278d

Pyrausta phthorosticta Meyrick, 1929b:166.

Oeobia phthorosticta (Meyrick).—Meyrick, 1934:340.

FIGURE 39.—*Psara orphnopeza*, new species, ventral view of female genitalia.

FIGURE 40.—*Herpetogramma phthorosticta* (Meyrick): *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.



Male genitalia slide USNM 24881. Harpe narrow basally; cucullus broadly rounded; from base of costa a strongly sclerotized bar crosses harpe and terminates in a pointed process; sacculus strongly sclerotized. Uncus short, broad basally; apex armed with a dense patch of strong setae. Vinculum triangular. Tegumen broader than long. Anellus a rectangular plate; posterior edge concave. Aedeagus slender, slightly curved; ventral side strongly sclerotized; vesica armed with a cluster of moderately short cornuti.

Female genitalia slide USNM 24882. Ostium funnel-shaped. Antrum narrowly sclerotized. Inception of ductus seminalis well before antrum. Ductus bursae membranous and swollen posteriorly, narrowed anteriorly and ornamented with longitudinal, slender, sclerotized ridges. Bursa copulatrix very finely granular. Signum a short, narrow, sclerotized ridge.

HOLOTYPE.—In the British Museum (Natural History).

TYPE-LOCALITY.—Hiva Oa, 3500 ft (1067 m).

DISTRIBUTION.—Hiva Oa.

Our specimens are from Hiva Oa: Mt. Feani, 3400 ft (1036 m), 1 Mar 1968, 2♂, 1♀; 3800 ft (1158 m), 20 Feb 1968, 2♀.

FOOD PLANT.—Unknown.

Apparently the species is confined to the island of Hiva Oa.

***Herpetogramma cleoropa* (Meyrick),
new combination**

FIGURES 41, 278e

Oeobia cleoropa Meyrick, 1934c:340.—Klima, 1939b:312.

Male genitalia slide USNM 25221. Harpe broadest about middle; from base of costa, across harpe to ventral edge, a sclerotized rod terminating in a point; cucullus rounded. Transtilla a sclerotized band. Uncus long, narrow; terminal half clothed with strong setae. Vinculum pointed. Tegumen broader than long. Anellus a rectangular plate. Aedeagus as long as harpe, moderately slender; vesica armed with a long, very weak cornutus.

Female genitalia slide USNM 25241. Ostium

broad, transverse, funnel-shaped. Inception of ductus seminalis at junction of ductus bursae and bursa copulatrix. Ductus bursae sclerotized in posterior half, granular anteriorly. Bursa copulatrix very long, constricted at middle, granular in posterior three-fifths. Signum a diamond-shaped concentration of fine granules.

HOLOTYPE.—In the Bernice P. Bishop Museum.

TYPE-LOCALITY.—Hiva Oa, Kaava Ridge, 2460 ft (750 m).

DISTRIBUTION.—Hiva Oa, Nuku Hiva.

FOOD PLANT.—Unknown.

In addition to the holotype we have a series from Nuku Hiva: Tunoa Ridge, 2900 ft (884 m), 23 Jan 1968, 7♂.

I do not hesitate to associate the seven males from Nuku Hiva with the holotype female from Hiva Oa. As can be seen from a comparison of the figures of the genitalia with those of the males of *cleoropa* and *phthorosticta*, the species are very closely related. In the female holotype, the spermatophore was so large that the bursa copulatrix was ruptured.

Genus *Tatobotys* Butler

Tatobotys Butler, 1880:686.

TYPE-SPECIES.—*Tatobotys argillacea* Butler, 1880:686, by monotypy.

***Tatobotys vibrata* Meyrick**

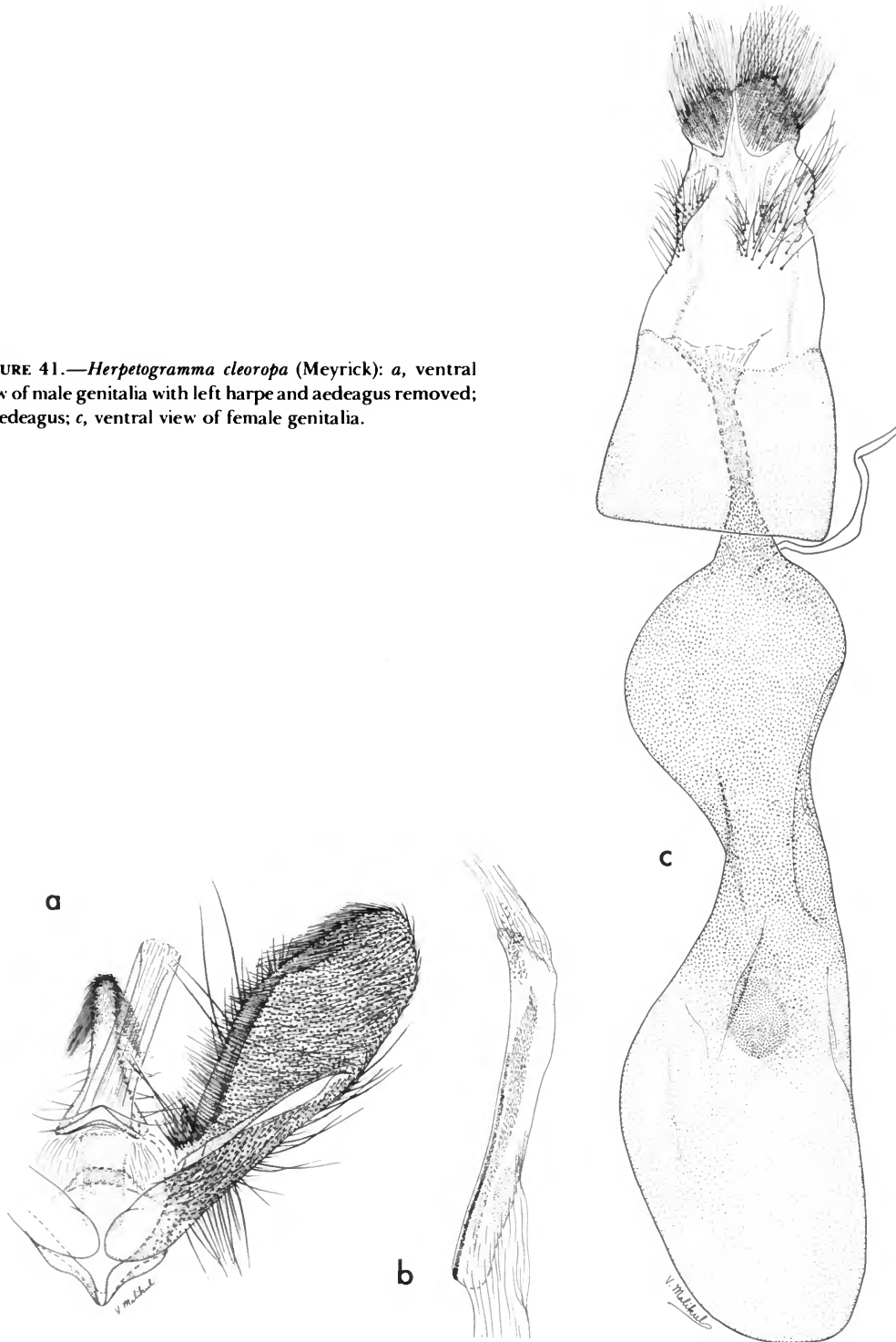
FIGURES 42, 278f

Tatobotys vibrata Meyrick, 1929b:161; 1934c:337.

Male genitalia slide USNM 25166. Harpe broadly oval; cucullus bluntly pointed; inside costa an elongate sclerotized rib; near base, ventrad, a triangular projection. Uncus stout, sharply curved, armed with thick setae distally. Vinculum very lightly sclerotized. Tegumen longer than broad. Anellus a U-shaped plate. Aedeagus slender, pointed distally, bulbous proximally.

HOLOTYPE.—In the British Museum (Natural History).

FIGURE 41.—*Herpetogramma cleoropa* (Meyrick): *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.



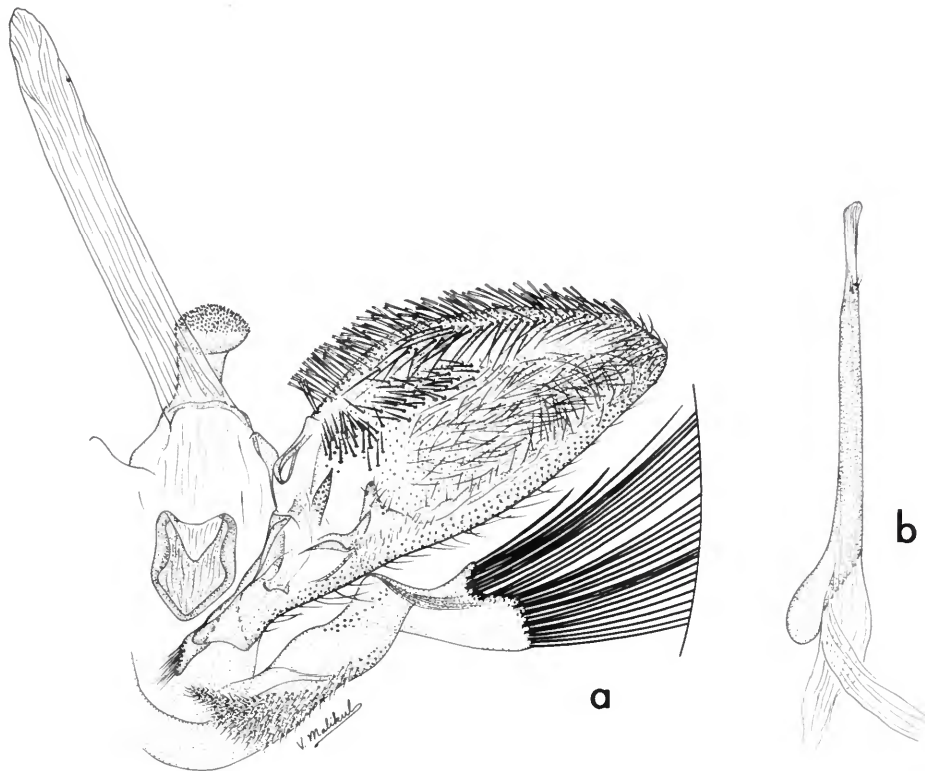


FIGURE 42.—*Tatobotys vibrata* Meyrick: *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus.

TYPE-LOCALITY.—Hiva Oa, 3500 ft (1067 m).

DISTRIBUTION.—Hiva Oa.

I have before me specimens from Hiva Oa: Mt. Feani, 3800 ft (1158 m), 1♂; 3400 ft (1036 m), 1 Mar 1968, 1♂.

FOOD PLANT.—Unknown.

Meyrick described *vibrata* from two specimens and recorded a third from Hiva Oa (1934c:337) but did not indicate the sex. Our two males bring to five the total number of specimens known.

No female was available for study.

Tessema, new genus

TYPE-SPECIES.—*Tessema sensilis*, new species, by monotypy and present designation. The gender of the generic name is feminine.

Antenna of male pubescent (female unknown), as long as forewing. Labial palpus squamiform;

maxillary palpus minute, simple, porrect. Head slightly roughened. Tongue well developed, scaled. Thorax smooth. Legs very long; hind tibia smooth. Forewing smooth, costa straight, apex bluntly pointed, termen oblique, 12 veins; 1b simple; 2 distant from 3; 3, 4, and 5 approximate at bases; 6 parallel to 5 and approximate to 7; 8 and 9 long-stalked, 8 to apex, 9 to costa; 10 anastomosing with stalk of 8 and 9; 11 from about outer fourth of cell; 12 from base. Hindwing with 8 veins; 2 distant from 3; 3, 4, and 5 approximate at their bases; 7 and 8 anastomosed for some distance beyond cell; 6 out of the base of 7.

Male genitalia symmetrical. Uncus present. Gnathos and socius absent.

Female genitalia unknown.

Tessema is similar to *Pilocrosis* Lederer (1863:431) but in the latter genus the labial

palpus is upturned, and veins 7 and 8 of the hindwing are stalked, not anastomosed as in *Tessema*. Moreover, the legs and antennae of *Tessema* are much longer than those in *Pilocrosis*.

***Tessema sensilis*, new species**

FIGURES 43, 278g

Alar expanse 36 mm.

Labial palpus dresden brown, white ventrally. Antenna grayish with dresden brown spots basally; between base of scape and upper edge of eye a small crescentic group of white scales. Head and thorax dresden brown; underside of thorax white; tegula with paler scaling posteriorly. Forewing ground color dresden brown; at the outer end of cell a short, fuscous, transverse dash; cilia dresden brown. Hindwing dresden brown; cilia concolorous. Foreleg coxa white; femur white on innerside, brownish on outside; tibia shaded brownish; tarsal segments buff; midleg femur white; tibia shaded brownish; tarsal segments buff; hindleg femur white; tibia shaded brownish, tarsal segments buff, basal segment suffused brownish. Abdomen grayish fuscous dorsally except 8th segment white anteriorly, fuscous posteriorly; ventrally whitish; posterior anal tuft fuscous-tipped buff scales, but fuscous ventrally.

Male genitalia slide USNM 25220. Harpe very lightly sclerotized; cucullus broadly rounded; costa with a narrow sclerotized ridge; sacculus narrowly sclerotized; from center of harpe a curved sclerotized process. Uncus slender, curved, dilated and clothed with setae distally. Vinculum broad, truncate, with a median protuberance. Tegumen arched. Anellus a small subtriangular plate with lightly sclerotized posterolateral extensions. Aedeagus stout, with a heavily sclerotized rod ventrally.

HOLOTYPE.—USNM 100735.

TYPE-LOCALITY.—Nuku Hiva, Tunoa Ridge, 2900 ft (884 m).

DISTRIBUTION.—Nuku Hiva.

FOOD PLANT.—Unknown.

Described from the unique ♂ holotype (23 Jan 1968).

This species resembles superficially what Hampson (1896 [1894–1896], 4:351) described as *Glyphodes cypripennalis* (Perak, Burma) and *Glyphodes argyritis* (1912c:570) from British and Dutch New Guinea.

The Marquesan species has a less contrastingly colored costa than *cypripennalis* and has a more strongly marked subcostal mark on the forewing than that of *argyritis*. In addition *sensilis* is also similar to the Peruvian *Pilocrosis fimbrialis* (Dognin) (1904:130) but the latter has a pure white anal tuft.

As can be seen from the photograph of the wings, the type specimen is somewhat rubbed. If more material in good condition is obtained, a revised description is in order.

Genus *Glyphodes* Guenée

Glyphodes Guenée, 1854:292.

TYPE-SPECIES.—*Glyphodes stolalis* Guenée, 1854:354; subsequent designation by Hampson, 1896 [1894–1896], 4:345.

***Glyphodes phormingopa* (Meyrick), new combination**

FIGURES 44, 278h

Margaronia phormingopa Meyrick, 1934c:339.

Male genitalia slides USNM 24821, 25165. Harpe rather short; cucullus broadly rounded. Gnathos anchor-shaped. Uncus slender, sharply bent basally, terminally armed with setae. Vinculum a truncated V with a bulbous process anterodorsally. Tegumen weak, elongate. Anellus a small triangular plate. Aedeagus long, slender, with sclerotized bar on one side; vesica armed with a single, very long, slender cornutus.

Female genitalia slide USNM 24822. Ostium funnel-shaped. Antrum constricted, heavily sclerotized. Inception of ductus seminalis dorsal, from ductus bursae and anterior to antrum. Ductus bursae sclerotized, with one loop anterior to middle at junction with bursa. Bursa copulatrix granular. Signum a slightly curved line of coarse granules.

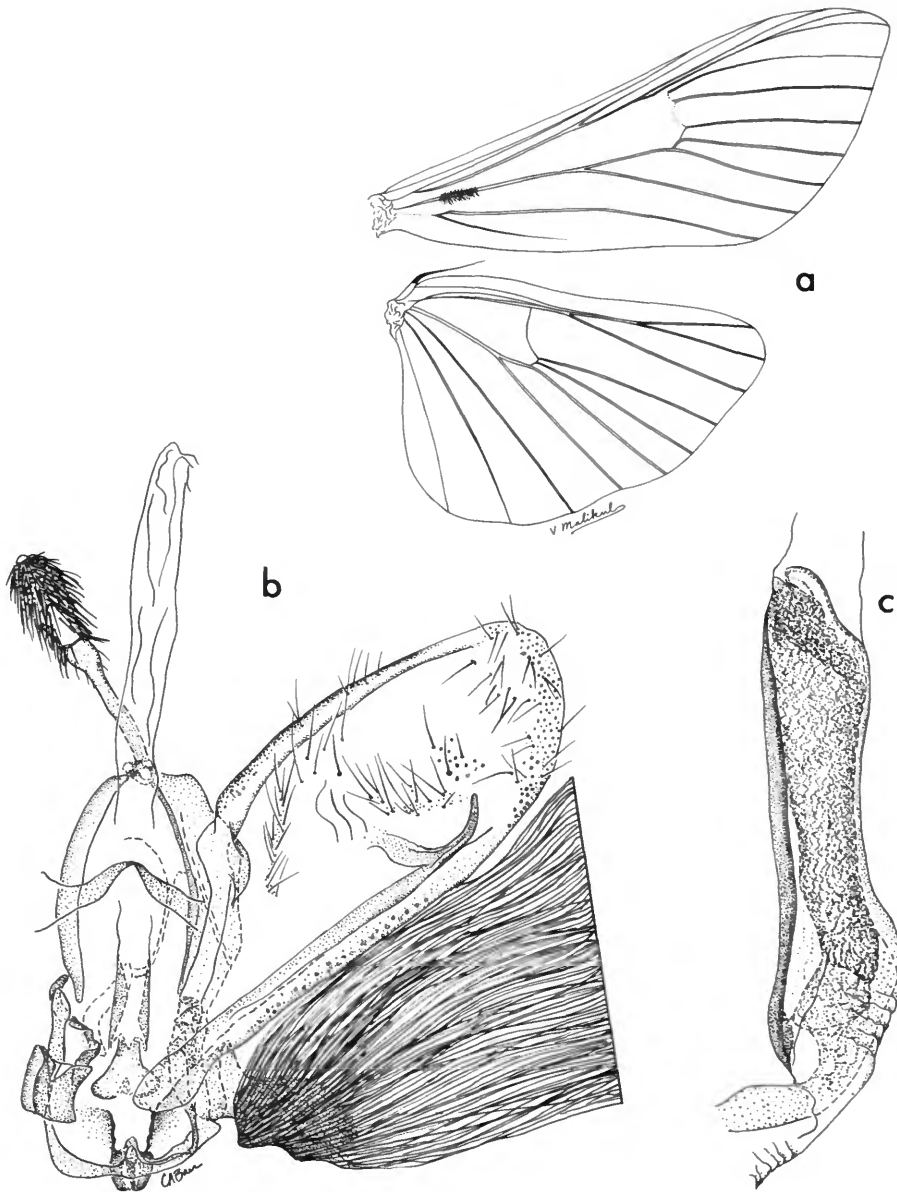


FIGURE 43.—*Tessema sensilis*, new species: *a*, venation of right wings; *b*, ventral view of male genitalia with left harpe and aedeagus removed; and showing right corema; *c*, aedeagus.

HOLOTYPE.—In the Bernice P. Bishop Museum.

TYPE-LOCALITY.—Feani Ridge, 3970 ft (1210 m).

DISTRIBUTION.—Nuku Hiva, Hiva Oa.

Nuku Hiva: Tunoa Ridge, 2900 ft (884 m),

23 Jan 1968, 1♂, 1♀; Tapuaooa, 2500 ft (762 m),

30 Jan 1968, 1♂. Hiva Oa: Mt. Feani, 3400 ft

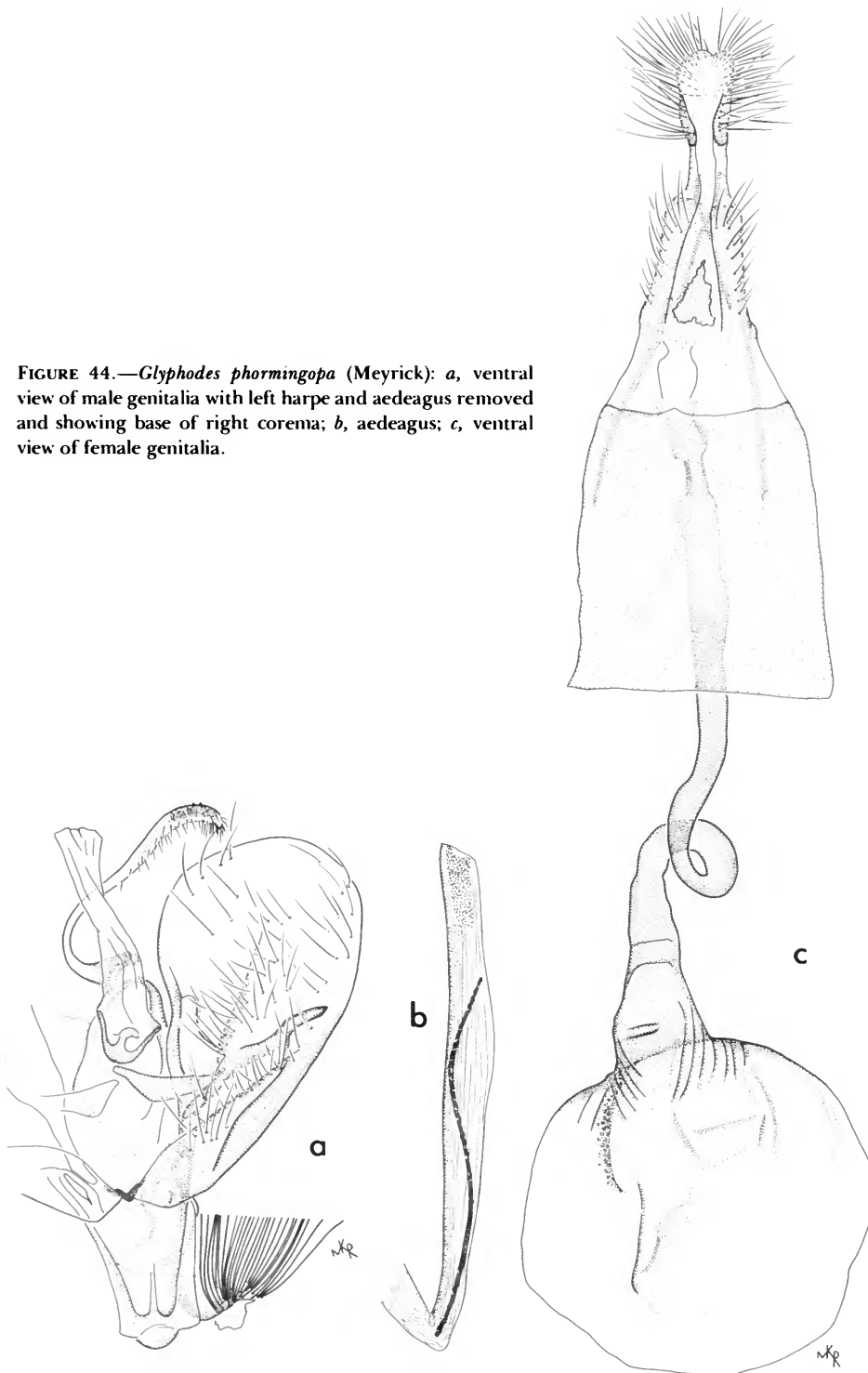
(1036 m), 1 Mar 1968, 1♀; 3800 ft (1158 m), 20

Feb 1968, 2♂, 4♀. Fatu Hiva: Tahuna, 2000 ft

(610 m), 27 Mar 1968, 1♀.

FOOD PLANT.—Unknown.

FIGURE 44.—*Glyphodes phormingopa* (Meyrick): *a*, ventral view of male genitalia with left harpe and aedeagus removed and showing base of right corema; *b*, aedeagus; *c*, ventral view of female genitalia.



Meyrick described *phormingopa* from Hiva Oa and placed it in the genus *Margaronia*, but it is clearly referable to the genus *Glyphodes*.

Although currently recognized from only three islands, *phormingopa* will probably be found elsewhere in the Marquesas.

Genus *Bradina* Lederer

Bradina Lederer, 1863:424.

TYPE-SPECIES.—*Bradina impressalis* Lederer, 1863, pl. 15: fig. 16; designated by Hampson, 1896 [1894–1896], 4:226.

Key to the Species of *Bradina*

- 1. Ground color of forewing white or whitish 2
 Ground color of forewing light ochraceous buff *fidelia*, new species
- 2. Alar expanse 19 mm or less 3
 Alar expanse 23–27 mm *tormentifera* Meyrick
- 3. Alar expanse 18–19 mm 4
 Alar expanse 16 mm or less *perlucidalis* Hampson
- 4. Thorax fuscous 5
 Thorax white *eremica*, new species
- 5. Dorsum strongly marked fuscous; markings strong
 *emphasis*, new species
 Dorsum not strongly marked; markings narrow, weak
 *stricta*, new species

***Bradina tormentifera* Meyrick**

FIGURES 45, 279a

Bradina tormentifera Meyrick, 1929b:161; 1934c:336.—
 Klima, 1937:156.

Male genitalia slide USNM 24863. Harpe broadest at middle; costa strongly arched. Uncus short, stubby; apical half densely clothed with setae. Vinculum rounded, with two anterior protuberances. Tegumen slightly longer than broad. Anellus a subquadrate plate. Aedeagus long, slender, terminating in two bladelike structures.

Female genitalia slide USNM 24864. Ostium broadly crescentic. Antrum narrowly sclerotized. Inception of ductus seminalis dorsal and slightly anterior to antrum. Ductus bursae membranous with a row of teeth anterior to antrum. Bursa copulatrix spiculate. Signum triangular with opposite points produced and anterior edge dentate.

HOLOTYPE.—In the British Museum (Natural History).

TYPE-LOCALITY.—Hiva Oa, 3500 ft (1067 m).

DISTRIBUTION.—Hiva Oa.

The following 46 specimens are before me. Hiva Oa: Mt. Feani, 3400–3800 ft (1036–1158 m), 20 Feb and 1 Mar 1968, 6♂, 40♀.

FOOD PLANT.—Unknown.

Apparently this high elevation taxon is confined to Hiva Oa, all of our series and those described by Meyrick being from that island.

***Bradina fidelia*, new species**

FIGURES 46, 279b

Alar expanse 23–26 mm.

Labial palpus buff; second segment fuscous dorsally; third segment wholly fuscous. Antenna light ochraceous buff. Head light ochraceous buff; face fuscous. Thorax light ochraceous buff laterally, grayish fuscous dorsally; tegula fuscous anteriorly. Forewing ground color light ochraceous buff; costa fuscous; at basal fourth a fuscous blotch confluent with costal shade; from middle of costa an outwardly oblique fuscous bar extends half way across wing; from costa at apical fourth, an outwardly curved grayish-fuscous fascia reaches tornus; termen narrowly fuscous; a

FIGURE 45.—*Bradina tormentifera* Meyrick: *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.

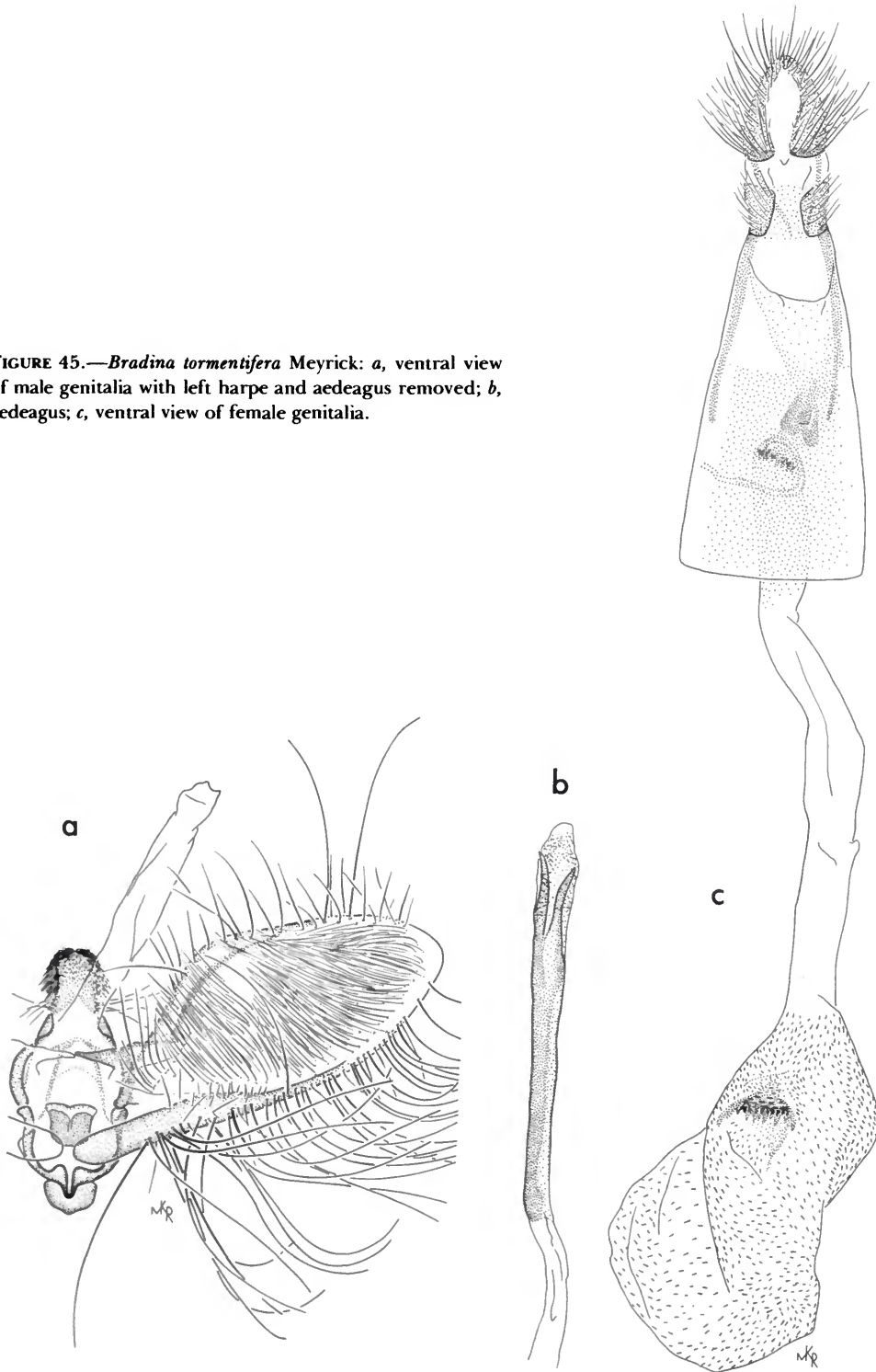
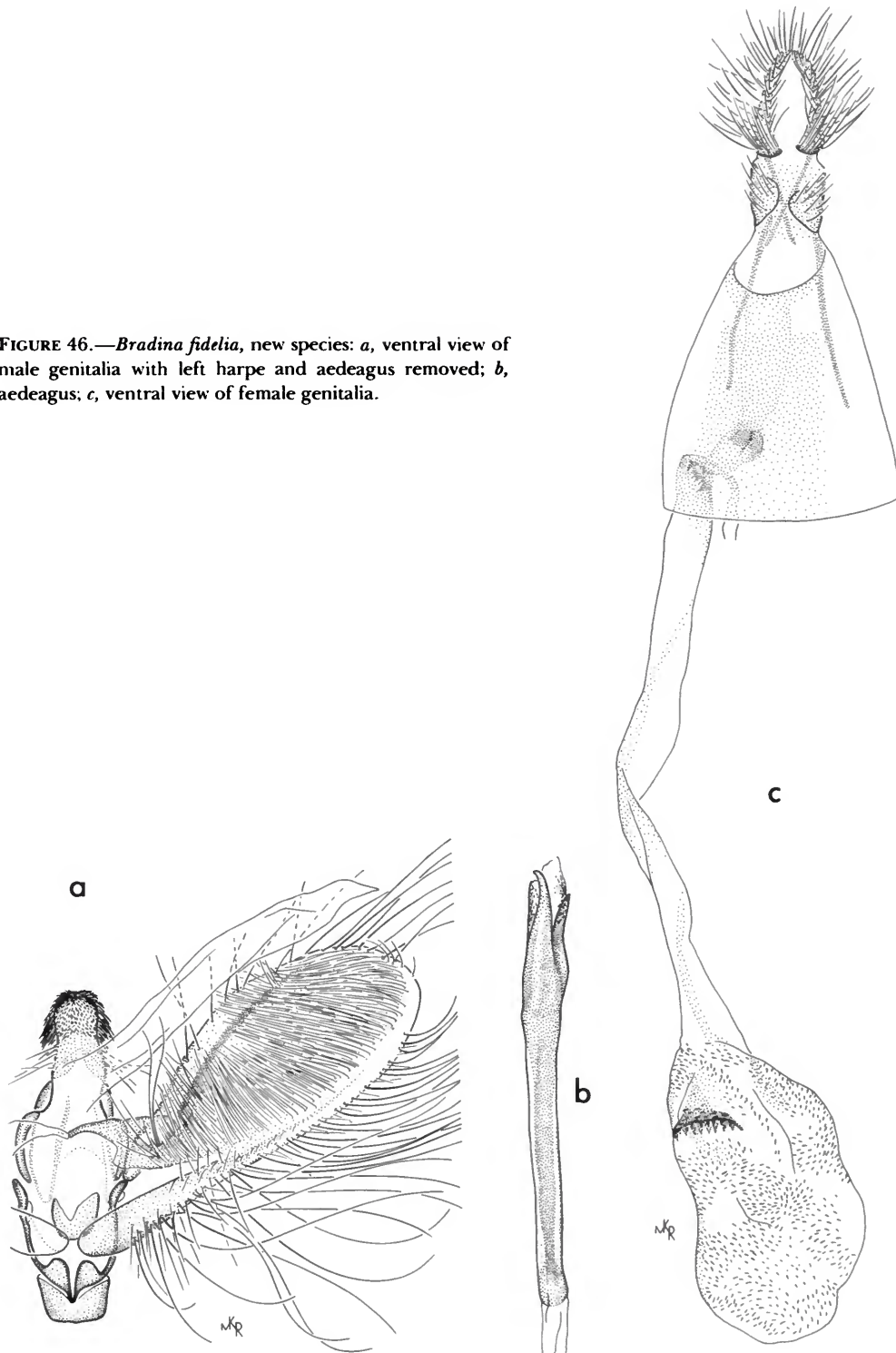


FIGURE 46.—*Bradina fidelia*, new species: *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.



few scattered grayish scales in dorsal part of wing; cilia fuscous. Hindwing light ochraceous buff; slightly before middle of wing, toward costa, a grayish-fuscous triangular spot; from outer third of costa a transverse grayish-fuscous fascia extends to anal angle; termen and cilia fuscous. Foreleg pale ochraceous buff; tibia and tarsal segments suffused grayish fuscous; midleg and hindleg pale ochraceous buff. Abdomen light ochraceous buff dorsally with fuscous, median longitudinal line; ventrally pale ochraceous buff.

Male genitalia slide USNM 24865. Harpe narrow basally, widening toward the broadly rounded cucullus; costa arched. Uncus short, stout, dorsoposteriorly densely clothed with stout setae. Vinculum U-shape with two protuberances posteriorly. Tegumen longer than broad. Anellus a small sclerotized plate deeply cleft posteriorly. Aedeagus long, slender, terminating in a pair of bladellike structures.

Female genitalia slide USNM 24866. Ostium transverse, funnel-shaped. Antrum narrowly sclerotized, slightly swollen. Inception of ductus seminalis dorsoanterior to antrum. Ductus bursae slender, membranous, with cluster of teeth posteriorly. Bursa copulatrix spiculate. Signum subtriangular with comb of teeth anteriorly.

HOLOTYPE.—USNM 100737.

TYPE-LOCALITY.—Nuku Hiva, Tunoa Ridge, 2900 ft (884 m).

DISTRIBUTION.—Nuku Hiva.

FOOD PLANT.—Unknown.

Described from the ♂ holotype (23 Jan 1968), 2♂ and 3♀ paratypes as follows. Nuku Hiva: Tunoa Ridge, 2900 ft (884 m), 23 Jan 1968, 2♂, 2♀; Tapuaooa, 2500 ft (762 m), 30 Jan 1968, 1♀.

In size this species is similar to *tormentifera* but is easily distinguished from it by the light ochraceous buff ground color of the forewing.

***Bradina perlucidalis* Hampson**

FIGURES 47, 279c

Bradina perlucidalis Hampson, 1897:201.—Meyrick, 1929b:161; 1934c:336.—Klima, 1937:155.

Male genitalia slides USNM 24849, 24851, 24853. Harpe simple, broadest at cucullus. Un-

cus stout, narrowest at middle, clothed with stout setae distally. Vinculum approximately U-shaped with two protuberances medianly. Tegumen slightly longer than broad. Anellus a subquadrate plate. Aedeagus slender; apical third broader than basal two-thirds; distal end with two blade-like structures.

Female genitalia slides USNM 24850, 24852. Ostium broadly crescentic. Antrum sclerotized, constricted. Inception of ductus seminalis, dorsal, from anterior end of antrum. Ductus bursae membranous, Bursa copulatrix membranous, clothed with fine spicules. Signum a triangular plate with comblike teeth on anterior edge.

HOLOTYPE.—In the British Museum (Natural History).

TYPE-LOCALITY.—Taou-ata (Tahuata) Island, Marquesas.

DISTRIBUTION.—Marquesas Islands.

We have the following 83 specimens from the Marquesas. Hiva Oa: Atuona, 12–29 Feb 1968, 2♂, 7♀; trail to Mt. Feani, 1200–2500 ft (365–762 m), 20 Feb and 6 Mar 1968, 5♂, 1♀; Tahauku, 26 Feb 1968, 2♂. Fatu Hiva: Omoa, 11 Mar to 8 Apr 1968, 20♂, 18♀; Omoa Valley, 16–25 Mar 1968, 19♂, 7♀; Mt. Upe, 1025 ft (617 m), 3 Apr 1968, 1♂, 1♀.

FOOD PLANT.—Unknown.

Meyrick also recorded this species from Uapou (1934c:336).

This is the smallest of the *Bradina* species found in the Marquesas Islands.

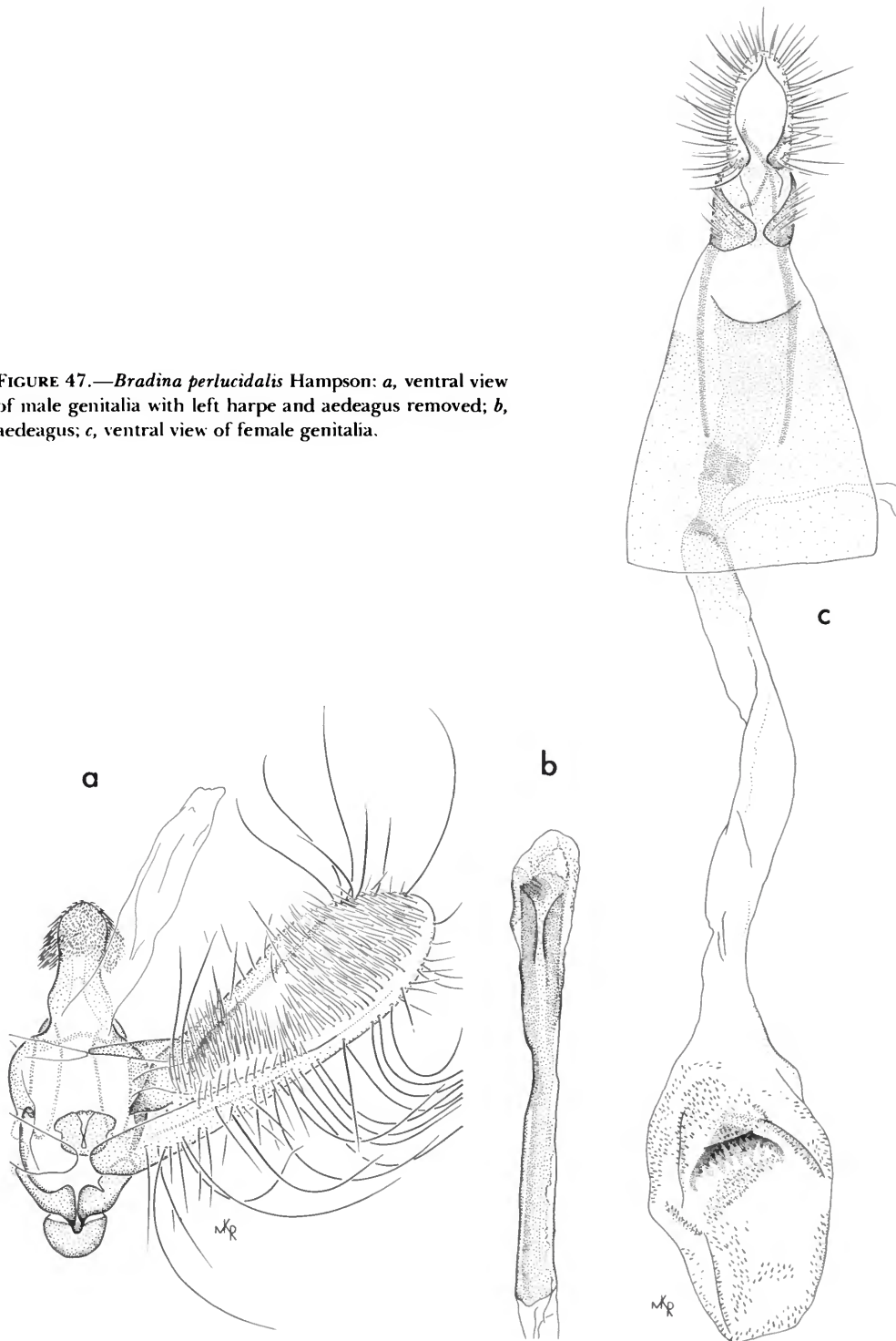
***Bradina stricta*, new species**

FIGURES 48, 279d

Alar expanse 18 mm.

Labial palpus white; second segment with grayish fuscous spot on outer side distally. Antenna grayish buff; scape white. Head white. Thorax white laterally, grayish fuscous dorsally; tegula white, grayish fuscous at extreme base. Forewing ground color white; costa narrowly pale grayish fuscous; at base of cell a small fuscous spot; beyond this spot a short transverse fuscous bar; from apical third of costa to termen a slender transverse fuscous fascia; from near base, anal

FIGURE 47.—*Bradina perlucidalis* Hampson: *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.



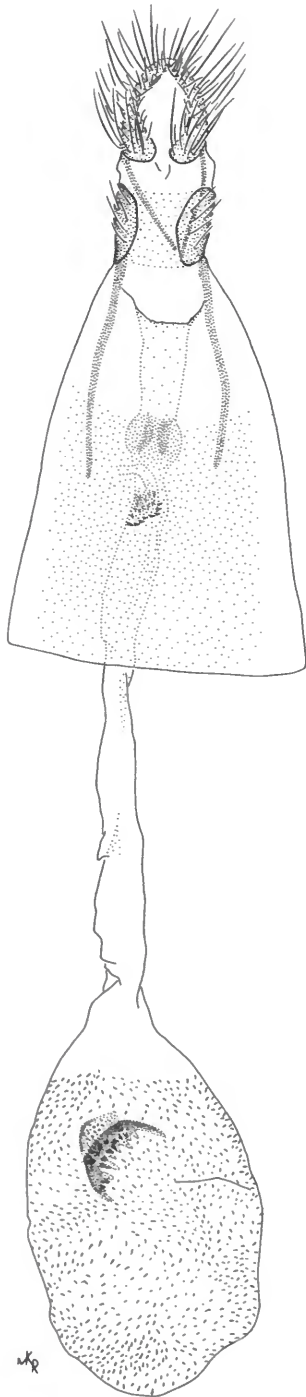


FIGURE 48.—*Bradina stricta*, new species, ventral view of female genitalia.

vein marked grayish fuscous to anal angle; cilia sordid white. Hindwing white; at basal third a short grayish fuscous bar and from costa a straight grayish fuscous bar reaches anal angle. Foreleg, midleg, and hindleg white; tarsal segments with very pale grayish suffusion. Abdomen sordid white, segments marked grayish fuscous dorsally.

Female genitalia slide USNM 24884. Ostium transverse, crescentic. Antrum swollen, partly sclerotized. Inception of ductus seminalis dorsal, well before antrum. Ductus bursae membranous with cluster of teeth posteriorly. Bursa copulatrix spiculate. Signum crescentic with long outer points and comb of teeth anteriorly.

HOLOTYPE.—USNM 100738.

TYPE-LOCALITY.—Hiva Oa, trail to Mt. Feani, 1200 ft (365 m).

DISTRIBUTION.—Hiva Oa.

FOOD PLANT.—Unknown.

Described from the unique ♀ holotype (6 Mar 1968).

This taxon is similar in size to *emphasis*, new species, but is easily distinguished from it by the much narrower and lighter markings than those found in that species.

Bradina emphasis, new species

FIGURES 49, 279e

Alar expanse 18–19 mm.

Labial palpus white; second segment pale ochraceous buff posterolaterally. Antenna grayish fuscous. Head white. Thorax white laterally, fuscous dorsally; tegula white except narrowly fuscous anteriorly. Forewing ground color white with slight yellowish tinge toward costa and termen; costa broadly fuscous; at basal fourth a fuscous bar extends to base of vein 2; veins 2, 3, 4 basally streaked fuscous; from outer third of costa a moderately broad transverse fuscous bar reaches tornus; dorsum fuscous from slightly beyond base; termen fuscous; cilia white with fuscous basal band. Hindwing white; at basal third an irregular fuscous blotch; from outer third of costa a curve fuscous line extends to anal angle;

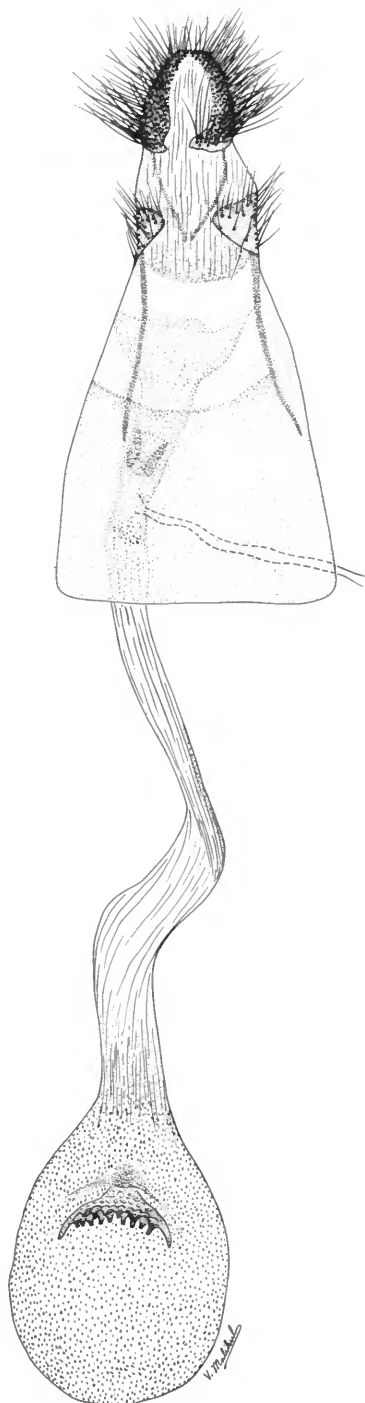


FIGURE 49.—*Bradina emphasis*, new species, ventral view of female genitalia.

termen fuscous; cilia white with fuscous basal line. Foreleg white suffused grayish fuscous; midleg and hindleg sordid white. Abdomen white; anteriorly segments broadly fuscous.

Female genitalia slide USNM 25169. Ostium transverse, funnel-shaped. Antrum narrowly sclerotized, with a lobe on right side. Inception of ductus seminalis anterior to antrum. Ductus bursae membranous with a small ring of teeth posteriorly. Bursa copulatrix spiculate. Signum triangular, strongly dentate anteriorly.

HOLOTYPE.—USNM 100739.

TYPE-LOCALITY.—Fatu Hiva, Mt. Upe, 2025 ft (617 m).

DISTRIBUTION.—Fatu Hiva.

FOOD PLANT.—Unknown.

Described from the ♀ holotype (3 Apr 1968).

In size, this species is similar to *eremica*, new species, and *stricta*, new species, but is distinguished from both by the strongly marked wings.

Bradina eremica, new species

FIGURES 50, 279f

Alar expanse 19 mm.

Labial palpus white, second segment fuscous dorsolaterally. Antenna light ochraceous buff with slightly darker annulations; scape whitish on inner side. Head white with yellowish tinge. Thorax white, suffused yellowish; tegula fuscous anteriorly. Forewing ground color white with faint yellowish suffusion; costa grayish fuscous; at basal fourth a small fuscous spot fused with grayish fuscous of costa; from costa, a fuscous, outwardly oblique bar extends to bases of veins 2 and 3; from outer third of costa a slightly outwardly curved transverse fascia extends to tornus; dorsum light ochraceous buff with scattering of grayish fuscous scales; termen fuscous, the color suffused inwardly between veins; cilia grayish with darker subbasal line. Hindwing white with faint yellowish suffusion toward termen; at basal third a short fuscous dash; from costa a curved fuscous fascia reaching anal angle; cilia grayish with darker subbasal line. Foreleg light ochraceous buff suffused grayish fuscous;

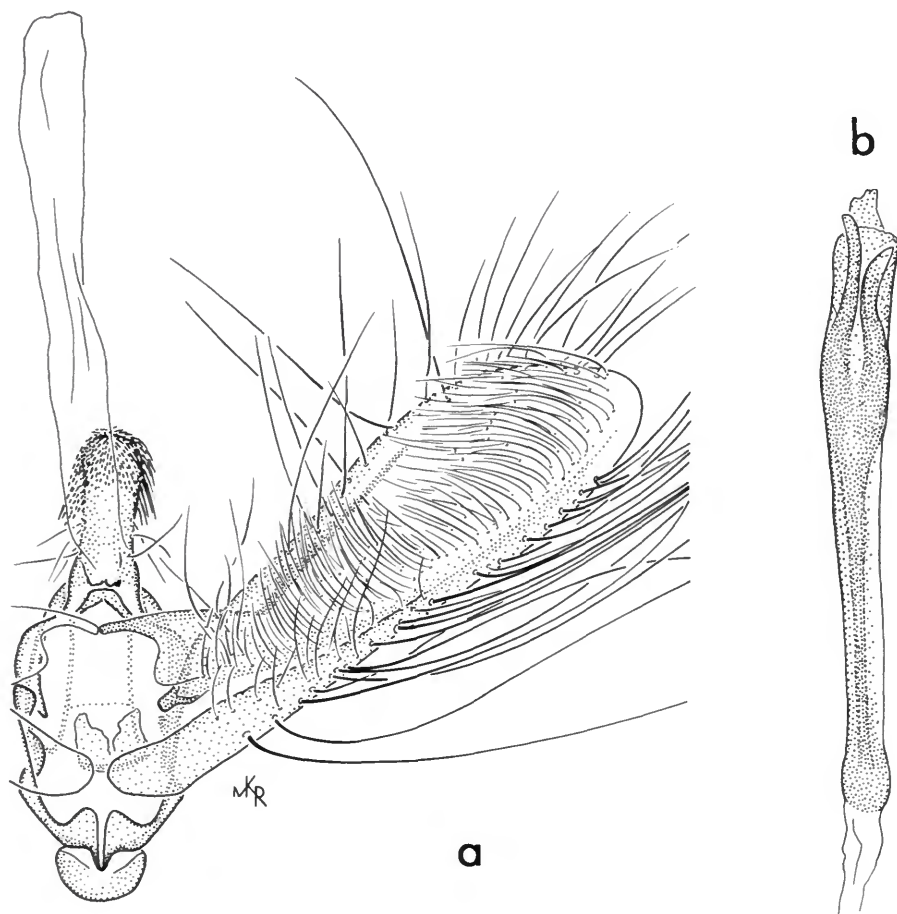


FIGURE 50.—*Bradina eremica*, new species: *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus.

midleg and hindleg white. Abdomen white strongly overlaid grayish fuscous on each segment dorsally.

Male genitalia slide USNM 24883. Harpe broadest beyond middle, simple; cucullus broadly rounded. Uncus short, stout; distally densely clothed with long setae. Vinculum rounded, with two protuberances inwardly. Tegumen longer than broad. Anellus a subquadrate plate, posterior edge indented. Aedeagus slender proximally, broader distally and armed distally with two bladelike structures.

HOLOTYPE.—USNM 100740.

TYPE-LOCALITY.—Nuku Hiva, Tunoa Ridge, 2900 ft (884 m).

DISTRIBUTION.—Nuku Hiva.

FOOD PLANT.—Unknown.

Described from the unique ♂ holotype (23 Jan 1968).

Very similar in size to *emphasis*, new species, *eremica* is distinguished from it by the distinctly differently marked labial palpus, the more slender markings and differently colored cilia of both fore- and hindwings. Unfortunately the female

of *eremica* is unknown and cannot be compared with that of *emphasis*.

Genus *Stemorrhages* Lederer

Stemorrhages Lederer, 1863:397.

TYPE-SPECIES.—*Phalaena sericea* Drury, 1770 [1773], 2:9, pl. 6: fig. 1; by monotypy.

Stemorrhages euthalassa (Meyrick), new combination

FIGURES 51, 279g

Margaronia euthalassa Meyrick, 1934c:338.

Diaphania euthalassa (Meyrick).—Klima, 1939b:272.

Male genitalia slide USNM 25247. Harpe very wide, lightly sclerotized; cucullus broadly rounded; from inner face of harpe, near ventral edge, a small, thornlike process. Uncus basal half slender, curved; outer half tubular, clothed with fine setae. Vinculum rounded. Tegumen three times as long as broad. Anellus rodlike. Aedeagus slightly longer than harpe; narrowly, but strongly, sclerotized dorsally.

Female genitalia slide USNM 25248. Ostium transverse, broad. Antrum strongly sclerotized. Inception of ductus seminalis lateral from ductus bursae, slightly before antrum. Ductus bursae granular for most of its length. Bursa copulatrix finely granular. Signa two cones.

HOLOTYPE.—In the Bernice P. Bishop Museum.

TYPE-LOCALITY.—Hiva Oa, Feani Ridge, Tenatinaei.

DISTRIBUTION.—Hiva Oa, Fatu Hiva.

I have before me specimens from the following localities. Hiva Oa: Atuona, 25 Feb 1968, 1♂; Mt. Feani, 3400–3800 ft (1036–1158 m), 20 Feb to 1 Mar 1968, 7♀. Fatu Hiva: Mt. Teoaiua, 2000 ft (610 m), 22 Mar 1968, 5♂, 3♀; Tahuna, 2000 ft (610 m), 27 Mar 1968, 3♂, 1♀.

FOOD PLANT.—Unknown.

This is the largest and most attractive pyralid so far recorded from the Marquesas Islands, and

probably occurs on islands other than Hiva Oa and Fatu Hiva.

Genus *Chrysophyllis* Meyrick

Chrysophyllis Meyrick, 1934c:337.

TYPE-SPECIES.—*Chrysophyllis lucivaga* Meyrick, 1934c:338, by monotypy.

Chrysophyllis lucivaga Meyrick

FIGURES 52, 279h

Chrysophyllis lucivaga Meyrick, 1934c:338.—Klima, 1939b:287.

Male genitalia slide USNM 25242. Harpe very broad and short; cucullus rounded; inside base of costa a dense cluster of setae; about middle of harpe a sclerotized, curved process; sacculus lightly sclerotized, terminating in a curved, sclerotized process. Uncus very long, slender, curved. Vinculum rounded. Tegumen longer than wide, truncate posteriorly. Anellus a slender, curved sclerotized plate. Aedeagus extremely long, coiled, slender.

HOLOTYPE.—In the Bernice P. Bishop Museum.

TYPE-LOCALITY.—Hiva Oa, Kaava Ridge, 2460 ft (750 m).

DISTRIBUTION.—Hiva Oa.

FOOD PLANT.—Unknown.

Unfortunately, the holotype of *lucivaga* is the only specimen known. The aedeagus of the male is extraordinary (Figure 52b). Dr. Eugene Munroe, world authority on the Pyralidae, always generous with his information, referred me to Janse (1935), who illustrated East Indian species of the genus *Talanga*. The species of this genus have the same extraordinary development of the aedeagus as that found in *Chrysophyllis*, and are obviously related. *Pygospila tyres* Guenée, from Darjiling, India, is also closely related according to Munroe. In the Smithsonian National Museum of Natural History there is a specimen labeled *imitalis* Guenée (no generic name) from

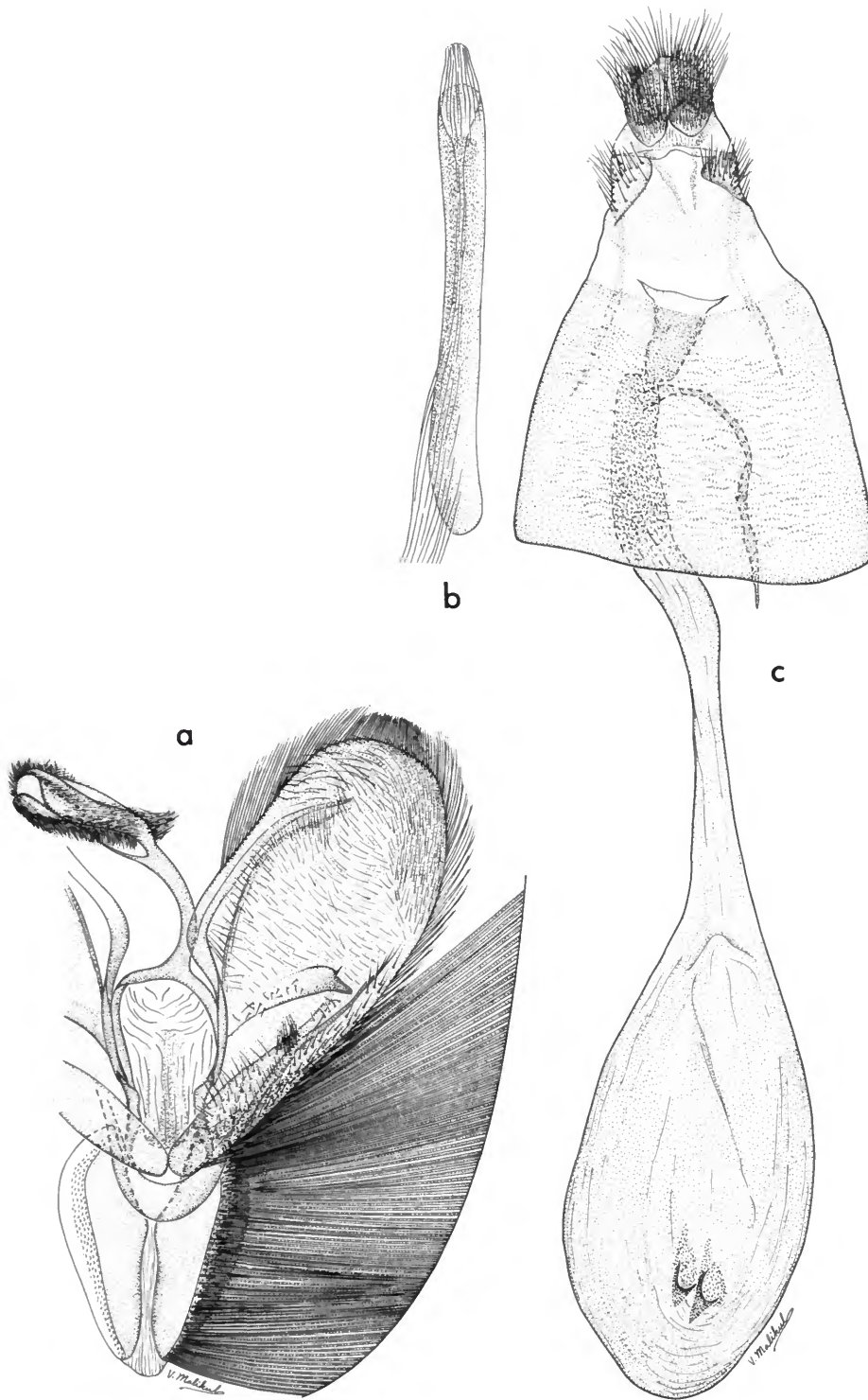


FIGURE 51.—*Stemorrhages euthalassa* (Meyrick): *a*, ventral view of male genitalia with right harpe and aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.

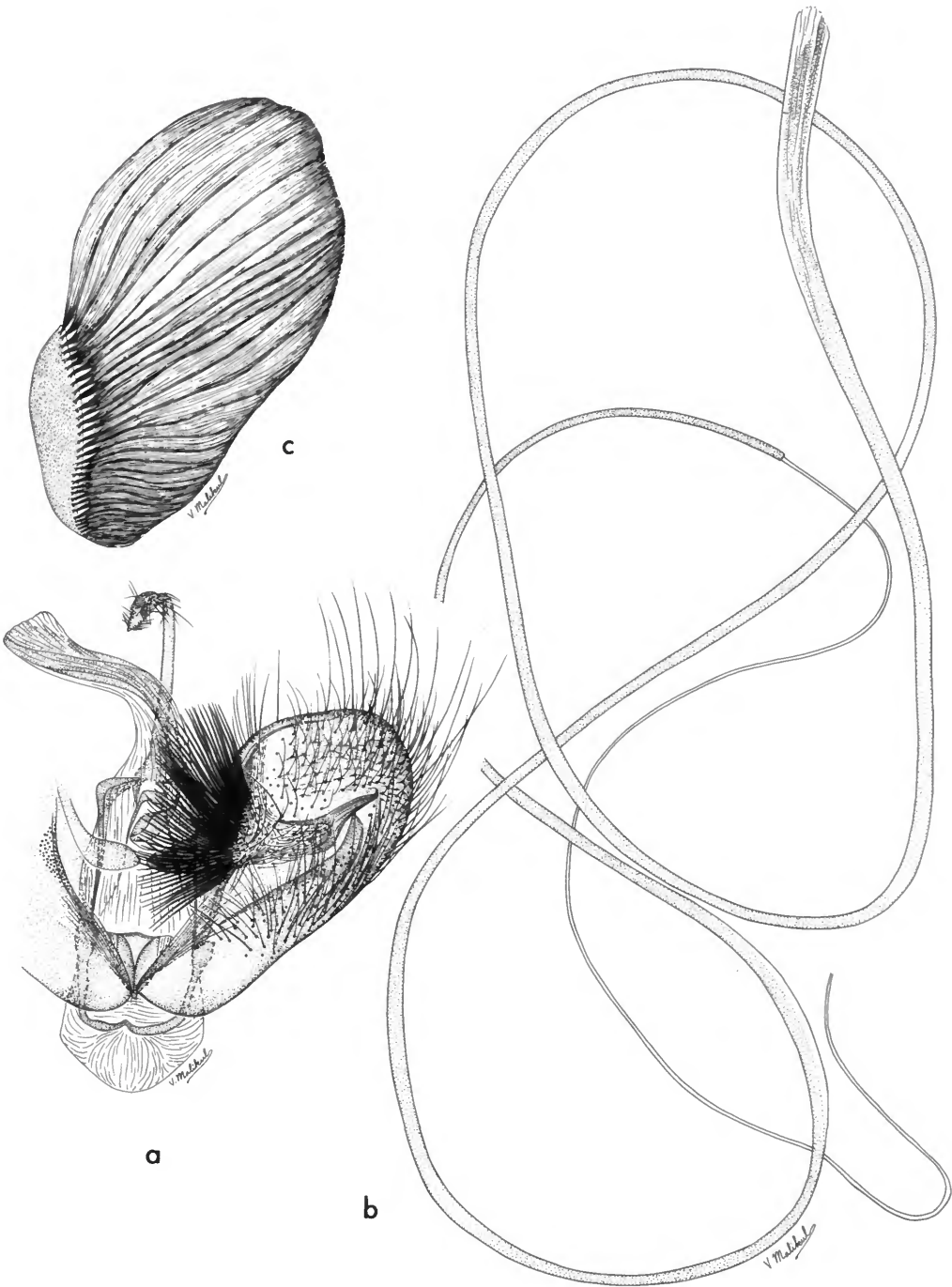


FIGURE 52.—*Chrysophyllis lucivaga* Meyrick: a, ventral view of male genitalia with left harpe and aedeagus removed; b, aedeagus; c, right corema.

Cuba with the same type of genitalia, and there are other related American species. The ductus bursae of the female is likewise lengthened to accommodate the aedeagus.

As far as I know, such a development of the aedeagus is found outside the pyraustinae, elsewhere in the lepidoptera, only in the Arrenophanidae (see Bradley, 1951).

Genus *Diaphania* Hübner

Diaphania Hübner, 1818 [1818–1837], 1:20, pl. [18]: figs. 101, 102.

TYPE-SPECIES.—*Diaphania vitralis* Hübner, 1818 [1818–1837], 1:20; by subsequent designation by Klima, 1939b:237.

Diaphania indica (Saunders)

FIGURES 53, 280a

Eudioptes indica Saunders, 1851a:163, pl. 12: figs. 5–7; 1851b:71.—Cotes, 1894:136.

Eudioptis indica (Saunders).—Moore, 1886 [1884–1887]:324.—Hampson, 1891:37 [No. 1031].—Schaus and Clements, 1893:44.—Hampson, 1893:47 [No. 1228].—Cotes, 1894:136.—Hampson, 1896 [1894–1896]:360; 1898:738.—Swinhoe, 1900:511 [No. 3515].—Pagenstecher, 1900:211.—Hering, 1901:260; 1906:132, 133.—Pillai, 1921:33.—Buxton and Hopkins, 1927, p. 29.

Margaronia indica (Saunders).—Fletcher, 1917:307.—Simmonds, 1922:23.—Tams and Hampson, 1924:287.—Hutson, 1924:289.—Shibuya, 1928b:236; 1929:191.—de Joannis, 1930 [1929–1930]:680 [442].—Ghosh, 1932:3.—Miller, 1932:11, 33, 34.—Esaki, 1932:1376.—Tams, 1935:282.—Ghosh, 1940c:146, pl. 71.—Swezey, 1946:181.—Pemberton, 1954:48, 50.—Patel and Kulkarny, 1956:118–127.—Janjua and Haque, 1958:140 [No. 90].—Whalley, 1962:114 [No. 53].—Nazmi, 1963 [1964]:218, fig. 8 A–C.—Comstock, 1966:59.—Balachowsky, 1972:1131, 1134, 1135.

Margaronia [sic] *indica* (Saunders).—Dale and Herring, 1959:13.

Margarina [sic] *indica* (Saunders).—Mohanty and Nayak, 1982:87, 89, figs. 34–36.

Margarodes indica (Saunders).—Ghosh, 1925:7.

Margaronia (*Glyphodes*) *indica* (Saunders).—Fletcher, 1917:303, figs. 1–5.—Ramchandra and Cherian 1926:48.

Margaronia (*Diaphania*) *indica* (Saunders).—Wilkinson, 1931:397.

Diaphania indica (Saunders).—Hutson, 1931:70.—Klima, 1939b:239, 252.—Ghesquière, 1942:157, pl. 6: fig. 2.—Inoue, 1955:177 [No. 977].—Thomas, 1958:224.—Mathur and Singh, 1963:117, 118, 131, figs. 32–37.—Wang, 1963:361, pl. 1: fig. 6.—Gentry, 1965:148.—Inoue et al., 1982, 1:346, 2: pl. 40, fig. 42.—Hodges et al. 1983:74 [No. 5207].

Diaphania (*Margaronia*) *indica* (Saunders).—Ferrière, 1929:415.

Diaphana indica (Saunders).—Paulian and Viette, 1955:180.—Viette, 1957:180; 1958:9.

Diaphana (*Phacellura*) *indica* (Saunders).—Marion, 1954:46.

Glyphodes indica (Saunders).—Meyrick, 1895:509.—Hampson, 1896 [1894–1896], 4:360; 1898:738.—Pagenstecher, 1900:211 [No. 399].—Matsumura, 1901:22 [No. 115].—Rebel, 1901:54 [No. 997].—Leech, 1901:471.—Maxwell-Lefroy and Howlett, 1909:518.—Rebel, 1910c:431.—Duport, 1913:36 [No. 252], 59, 86.—Rebel, 1915:146.—Janse, 1917:160 [No. 2525].—Senior-White, 1917:121.—Strand, 1918:59.—Pillai, 1921:33.—d'Emmerez de Charmoy and Gebert, 1921:181–190.—Swezey, 1924:219.—Vayssière and Mismeur, 1925:255–268.—Buxton and Hopkins, 1927, p. 29.—Monteil, 1934:14.—Sevastopulo, 1935:205.—Meyrick, 1935a:38.

Glyphodes (*Phakellura*) *indica* (Saunders).—Rebel, 1906:43.—Matsumura, 1908:213 [No. 1773].

Glyphodes (*Phakellula*) [sic] *indica* Sound [sic].—Okada, 1915:497.

Glyphodes (*Phacellura*) *indica* (Saunders).—Hill, 1915:3.

Phacellura indica (Saunders).—Meyrick, 1884:297; 1886b:223.—Ribbe, 1886:89.—Meyrick, 1934c:333, 338.—May, 1946:144, pl. 43.

Phakellura indica (Saunders).—Walker, 1859 [1856–1866]:514.—Snellen, 1875:228.—Wollaston, 1879:332.—Butler, 1880:685.—Snellen, 1883:141.—Butler, 1884b:501.—Swinhoe, 1884:525; 1885:870; 1886:459.—Pagenstecher, 1886:171 [No. 153]; 1888:191 [No. 612].—Swinhoe and Cotes, 1888 [1887–1889]:5:616 [No. 4197].—Swinhoe, 1890:279.—Snellen, 1891:611.—Pagenstecher, 1894:42.—Rebel, 1896:112; 1898:380.

Palpita indica (Saunders).—Shin et al., 1983:379, pl. 25: fig. 399.

Phakellura indicialis Moore, 1867:93 [unjustified emendation by Moore].

Phakellura gazoralis Guenée, 1854:297 [No. 304].—Semper, 1867:702.

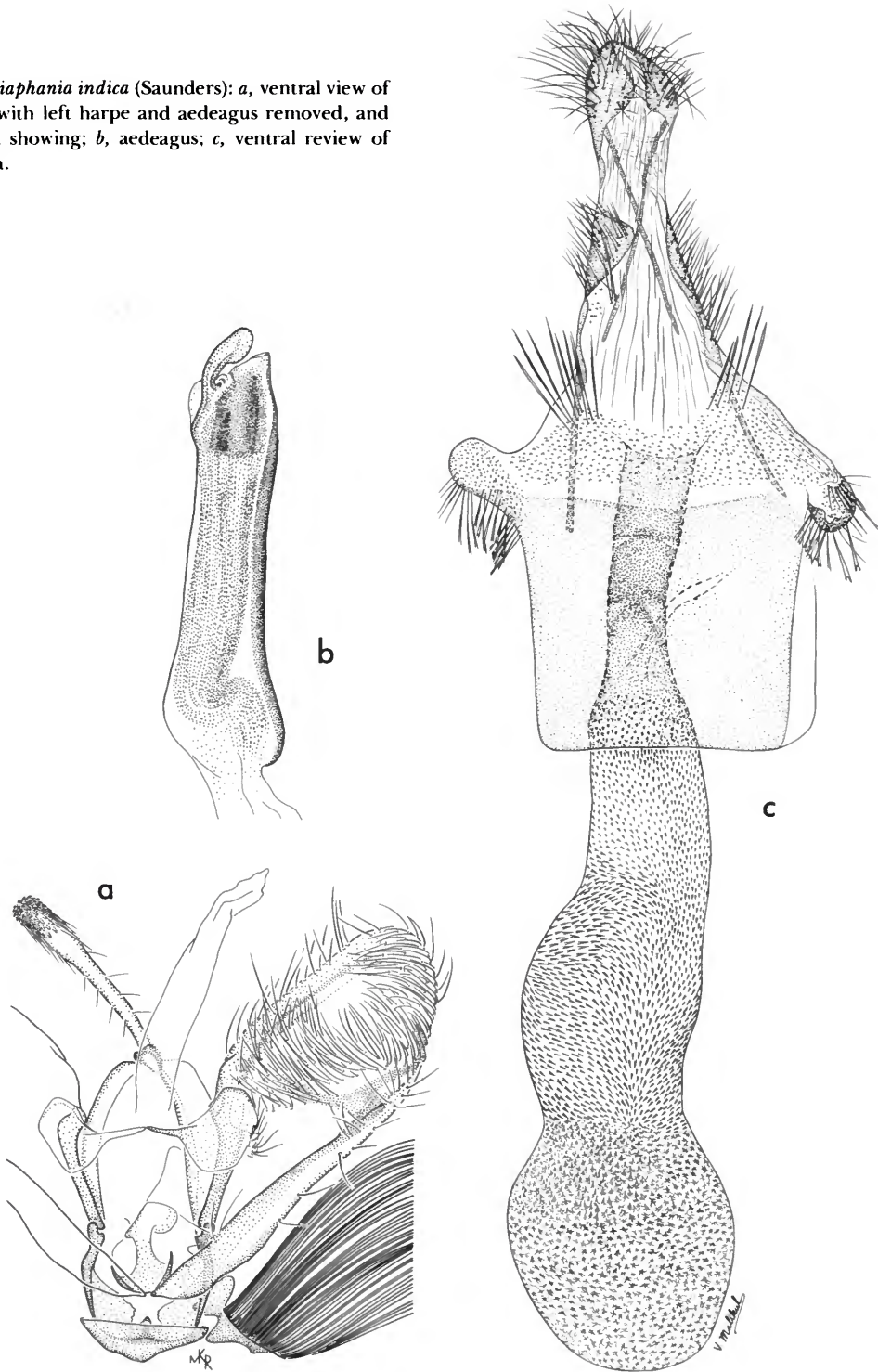
Phacellura gazoralis (Guenée).—Lederer, 1863:400.

Phakellura zyaenalis Guenée, 1854:297 [No. 305].—Walker, 1859 [1856–1866]:515.—Snellen, 1875:229.

Endioptis [sic] *hyalinata*.—Shiraki, 1913:362 [not *Phalaena Geometra hyalinata* Linnaeus].

Margaronia hyalinata.—Wolcott, 1936:462 [not *Phalaena Geometra hyalinata*.—Linnaeus].

FIGURE 53.—*Diaphania indica* (Saunders): *a*, ventral view of male genitalia with left harpe and aedeagus removed, and part of corema showing; *b*, aedeagus; *c*, ventral view of female genitalia.



Botys hyalinalis Boisduval, 1833a:265; 1833b:117.
Eudiotis capensis Zeller, 1852 [1854]:52.
Phacellura capensis (Zeller).—Lederer, 1863:400.
Phakellura cepensis (Zeller).—Snellen, 1875:228.
Phakellura cucurbitalis Guenée, 1862:64.

Male genitalia slide 24872. Harpe half as broad as long; costa and sacculus nearly parallel, each strongly sclerotized; from middle a lightly sclerotized, narrow plate terminating in a weak spine; cucullus rounded. Uncus slightly longer than tegumen, tubular terminally and clothed with setae. Vinculum subquadrate. Tegumen about as long as broad. Anellus a small, sclerotized triangular plate. Aedeagus nearly straight, strongly sclerotized ventrally and with a distal, flattened curved process.

Female genitalia slide USNM 25517. Ostium transverse, oval. Antrum broadly sclerotized. Inception of ductus seminalis dorsal, from slightly before anterior edge of antrum. Ductus bursae very short, scarcely differentiated from posterior part of bursa copulatrix. Bursa copulatrix long, slender, constricted at anterior third; wall of bursa profusely armed with short spines. From posterior edge of 7th segment, laterally, an eversible sac clothed with long scales.

LECTOTYPE.—In the Hope Museum, Oxford, England (*indica*).

TYPE-LOCALITIES.—Java (*indica*, *gazorialis*), Judea? (*zygaenalis*), South Africa (*capensis*); Réunion (*cucurbitalis*).

DISTRIBUTION.—Java, India, Ceylon (Sri Lanka), China, Fiji, Mauritius, Sula, Siam (Thailand), Ceram, Caroline Islands (Ponape), Marquesas Islands, Formosa (Taiwan), Africa.

Through the courtesy of Mr. Michael Shaffer of the British Museum (Natural History), I quote the following from his letter of 31 May, 1984 concerning *indica* and its synonyms.

With reference to your letter concerning *Diaphania indica* (Saunders), 1851. I am afraid there is very little information available concerning the type material of the many synonyms. No one has made a serious study of this species as yet and I have not seriously examined the available BM material for research/curation purposes. What little information I can provide concerns mostly *indica*, though I have no doubt that detailed study of available material, which is very con-

siderable, may reveal some syntypic material of at least the three Guenée taxa.

For *indica* I was fortunate some years ago to discover two specimens in the University Museum of Oxford which I am satisfied are Saunders syntypes. I labelled them lectotype and paralectotype respectively. This lectotype designation still awaits publication. If you would like to undertake this designation and somehow add it to your forthcoming Marquesas paper, please feel free to do so. Here are the label details: Lectotype ♂; *Eudiotis indica* Java, E. Ind. Aust. reg. Dr. Horsfield ♀; Lectotype *Eudiotis indica* Saunders det. M. Shaffer, 1979 [lectotype hereby designated].

Paralectotype ♂; *Eudiotis* Hb. *Phakellura* L. Gueld. *E. indica* Saunders Trans. Ent. Soc. NS. 1. p. 163 pl. 12 f. 7 ♀ Java; Paralectotype *Eudiotis indica* Saunders det. M. Shaffer, 1979. Both specimens are set, the lectotype is mounted upside down and neither specimen has been dissected. Full reference for this name is Saunders, 1851. Trans. Ent. Soc. London new series 1850–51 1:163 pl. 12 figs. 5, 6, 7 *Eudiotis*, type locality Java.

Phakellura indicialis Moore would appear to be an emendation of *indica*.

Phakellura gazorialis Guenée, 1854. Lepid. Het. 8 Delt. & Pyr. :297 Java 1 male coll. Lefebvre. Type could be in Paris or even Leiden.

Phakellura zygaenalis Guenée, 1854. ditto :297 Judea ? 1 male coll. Roux (doubtful locality) 1 male from unknown locality. Type possibly in Paris.

Eudiotis capensis Zeller, 1852. Lepid. Caffr. :52 ♂♂ South Africa, Limpopo and Gariep rivers. Syntypes not yet traced but could very well turn up in the BM accessions.

Phakellura cucurbitalis Guenée, 1862. Annexe G de L'ouvrage intitulé: Notes sur l'île de la Réunion. Lépidoptères: 64 ex number from Réunion. 1 specimen possibly male labelled as type in MNHN, Paris.

FOOD PLANTS.—*Gossypium herbaceum* L., *Erythrina corallodendron* L., *Luffa aegyptiaca* Miller, *Luffa acutangula* (L.) Roxburgh, *Trichosanthes anguina* L., *Trichosanthes palmata* Roxburgh, *Cucurbita lagenaria* (L.) L. (= *Lagenaria siceraria* (Molina) Standby), "pumpkin and mellon leaves."

This is the common "cucumber moth" of the Indo-Australian region, but the species probably attacks other cucurbits more than it does cucumber.

With regard to "pumpkin," Dr. Raymond Fosberg, Department of Botany, Smithsonian Institution, provided the following note.

Bailey, Hortus Third gives the common name "pumpkin" to four species of *Cucurbita*—*C. maxima*, *C. mixta*, *C. moschata*, and *C. pepo*. The typical "jack-o-lantern" pumpkin is a

cultivar of *Cucurbita pepo* L. This is the sense in which I have used *C. pepo*, but it also includes a number of other cultivars. If you can describe the one you are calling pumpkin, perhaps I can give you a more precise or reliable determination. Most cultivars may be hybrids of two or more of the above species.

Genus *Aulacodes* Guenée

Aulacodes Guenée, 1854:258.

TYPE-SPECIES.—*Aulacodes aechmialis* Guenée, 1854:258, by monotypy.

Aulacodes eupselias Meyrick

FIGURES 54, 280b

Aulacodes eupselias Meyrick, 1929b:161; 1934c:336.

Male genitalia slide USNM 24819. Harpe simple, heavily clothed with long fine setae; cucullus slightly wider than the remainder of harpe. Uncus two digitate processes armed with short stout setae. Vinculum triangular. Tegumen subquadrate with two groups of long, strong setae posterodorsally. Anellus a small, sclerotized plate. Aedeagus stout, nearly straight; vesica armed with two strong cornuti.

Female genitalia slide USNM 24820. Ostium V-shaped. Inception of ductus seminalis dorsolateral from anterior end of ductus bursae. Ductus bursae sclerotized, enlarged anteriorly and with two conspicuous digitate processes ventrally. Bursa copulatrix finely granular. Signum a small sclerotized cone.

HOLOTYPE.—In the British Museum (Natural History).

TYPE-LOCALITY.—Tahuata.

DISTRIBUTION.—Marquesas Islands.

I have before me the following specimens. Hiva Oa: Mt. Feani, 3400 ft (1036 m), 2♀. Fatu Hiva: Omoa, 11 Mar to 25 Mar 1968, 1♂, 2♀; Tahuna, 2000 ft (610 m), 27 Mar 1968, 1♂; Mt. Teoaiua, 2000 ft (610 m), 22 Mar 1968, 3♂, 1♀; Mt. Upe, 2025 ft (617 m), 3 Apr 1968, 2♂, 1♀. Teavapuhiau, Ouia, 1-3 Aug 1977. 1♂ (Montgomery).

FOOD PLANT.—Unknown.

Although present records indicate that distribution is confined to three islands, further search will undoubtedly reveal the presence of *eupselias* elsewhere in the Marquesas.

Genus *Cangetta* Moore

Cangetta Moore, 1886:314.

TYPE-SPECIES—*Cangetta rectilinea* Moore, 1886:314, pl. 182: Fig. 8, by monotypy.

Cangetta eschatia, new species

FIGURES 55, 280c

Alar expanse 11–12 mm.

Labial palpus white with two grayish fuscous spots on outer side of second segment. Antenna pale grayish with darker annulations. Head, thorax, and forewing ground color wood brown; antemedian and postmedian transverse lines fuscous, the postmedian line irregular; between the two transverse lines, near costa, a fuscous blotch; from costa, just before apex, a fuscous line curves outwardly along termen, thence to tornus; beyond this subterminal line, apex and termen pale ochraceous buff; cilia buff to brownish with fuscous subbasal line. Hindwing wood brown; transverse lines fuscous; subterminal line fuscous; cilia wood brown, basal line fuscous. Legs pale ochraceous buff, suffused grayish. Abdomen brown dorsally, ventrally pale ochraceous buff suffused grayish.

Female genitalia slide USNM 25172. Ostium slitlike, transverse, entering an elongate, sclerotized lateral sac. Inception of ductus seminalis dorsal, from posterior end of ductus bursae. Ductus bursae membranous, slender. Bursa copulatrix elongate, oval, membranous, with suggestion of granulations. Signum a small, lightly sclerotized plate with a slender hooklike process from posterior edge.

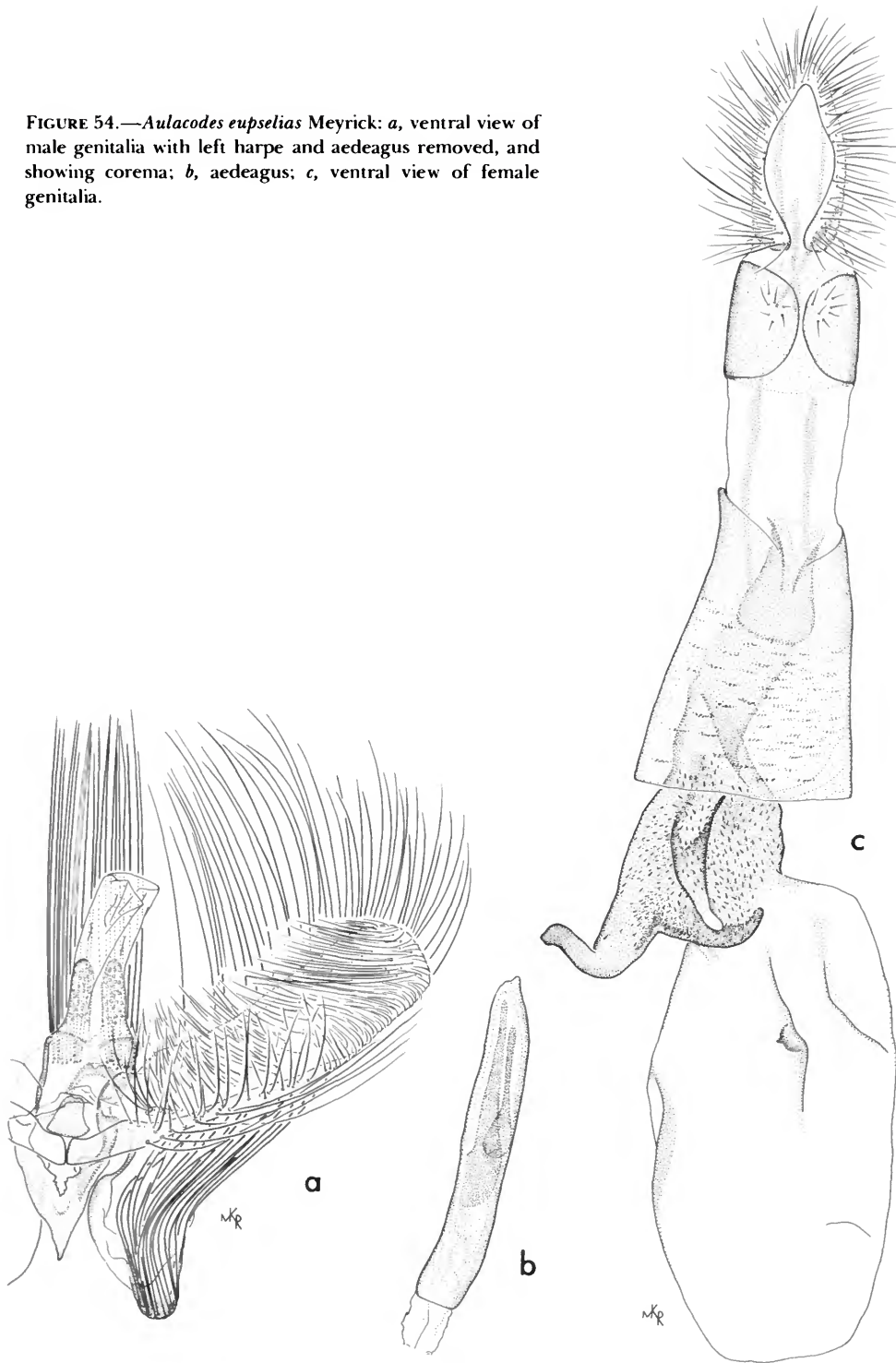
HOLOTYPE.—USNM 100736.

TYPE-LOCALITY.—Fatu Hiva, Tahuna, 2000 ft (610 m).

DISTRIBUTION.—Fatu Hiva.

FOOD PLANT.—Unknown.

FIGURE 54.—*Aulacodes eupselias* Meyrick: *a*, ventral view of male genitalia with left harpe and aedeagus removed, and showing corema; *b*, aedeagus; *c*, ventral view of female genitalia.



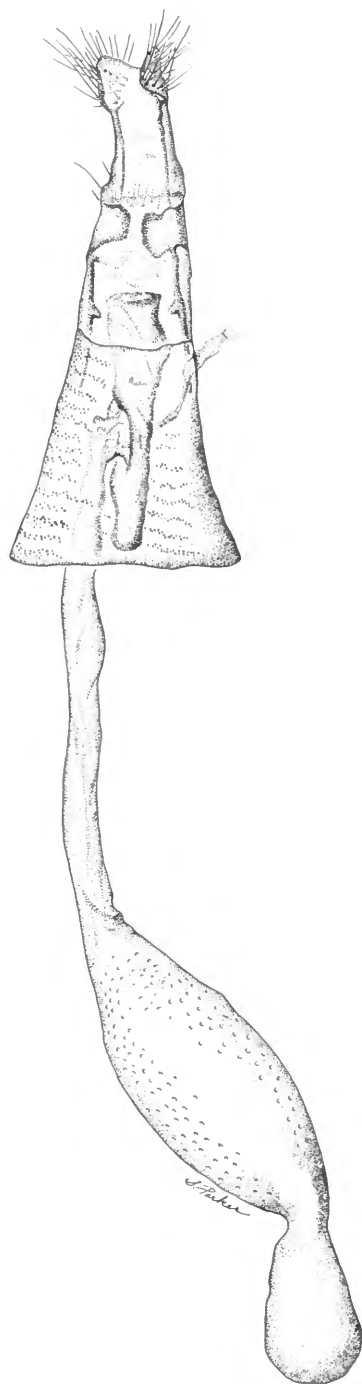


FIGURE 55.—*Cangetta eschatia*, new species, ventral view of female genitalia.

Described from the ♀ holotype (27 Mar 1968) and one ♀ paratype Fatu Hiva, Mt. Upe, 2025 ft (617 m), 3 Apr 1968.

This species is similar to *C. rectilinea* Moore, but is smaller, with the forewing more uniformly colored and lacks the white legs of *rectilinea*.

Genus *Piletocera* Lederer

Piletocera Lederer, 1863:431.

TYPE-SPECIES.—*Piletocera violalis* Lederer, 1863:431, pl. 16: fig. 15, by monotypy.

Piletocera signiferalis (Wallengren)

FIGURES 56, 57, 280e-h

Isopteryx signiferalis Wallengren, 1860:175.

Piletocera signiferalis (Wallengren).—Hampson, 1897: 210.—Rebel, 1910b:430; 1915:146.—Meyrick, 1929b: 162; 1934c:337.—Tams, 1935:269.—Klima, 1937: 175.—Swezey, 1946:178.—Viette, 1949a:322.—Kraus, 1953b:219.—Comstock, 1966:55.—Clarke, 1971:83, figs. 76, 77.

Ceratoclasia barbicornis Felder and Rogenhofer, 1874 [1864-1875]:6, pl. 136: fig. 1.

Rinocera mirabilis Butler, 1884a:95; 1886b:424.

Strepsimela signiferalis (Wallengren).—Meyrick, 1886b:250; 1887:222.—Druce, 1888a:230.

Rinocera nigrescens Butler, 1886b:424.

Types.—Depository unknown (*signiferalis*); in the British Museum (Natural History) (*barbicornis*, *mirabilis*, *nigrescens*).

TYPE-LOCALITIES.—Tahiti (*signiferalis*); Caroline Islands (*mirabilis*); Viti Islands (*nigrescens*); Fiji (*barbicornis*).

DISTRIBUTION.—Loyalty Islands, Cook Islands, New Hebrides, Fiji, Elice Islands, Tonga, Society Islands, Austral Islands, Marquesas Islands, Micronesia; Southeast Asia? also recorded from Natal.

Our records from the Marquesas Islands are as follows. Nuku Hiva: Pakiu Valley, 1000-1800 ft (305-549 m), 17-28 Jan 1968, 9♀; Taiohae, 15 Jan to 3 Feb 1968, 8♂, 15♀; Tapuaooa, 2000 ft (610 m), 1♂; Tunoa Ridge, 2900 ft (884 m), 23 Jan 1968, 2♀. Hiva Oa: Atuona, 11 Feb to 8 Mar 1968, 11♀; Puamau, 8 Feb 1968, 3♀; Ta-

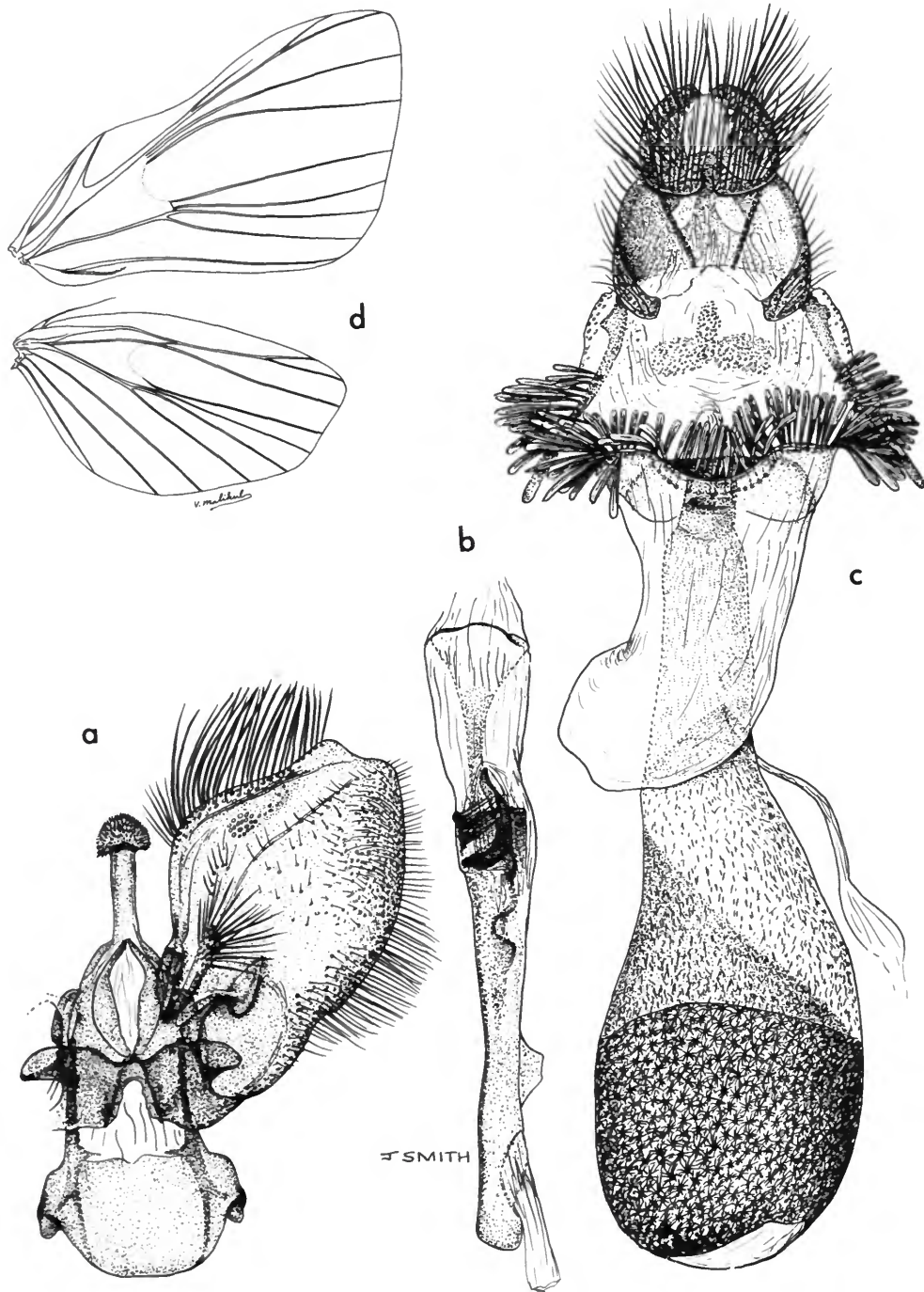


FIGURE 56.—*Pileocera signiferalis* (Wallengren): *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia; *d*, venation of right wings, ♂.

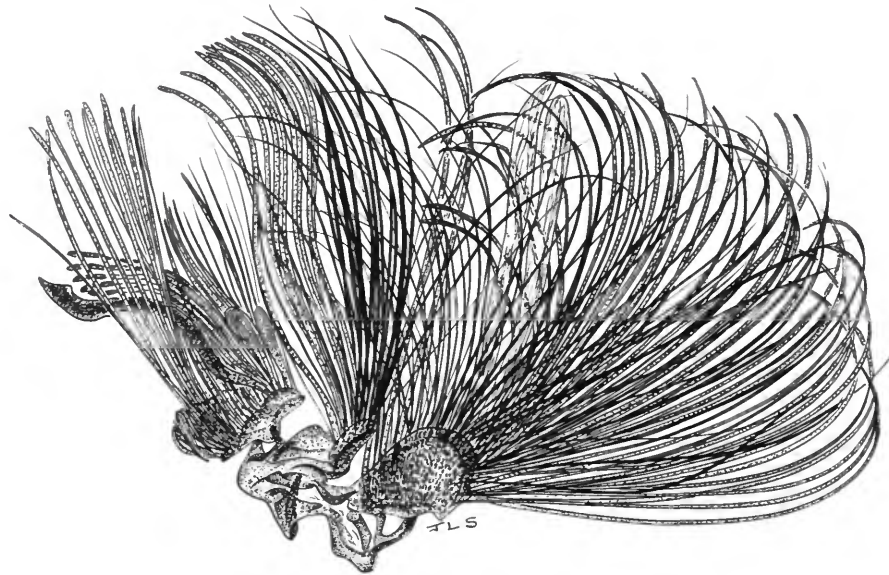


FIGURE 57.—*Piletocera signiferalis* (Wallengren), male corema.

hauku, 26 Feb 1968, 1♀. Fatu Hiva: Omoa, 11-21 Mar 1968, 4♂, 15♀; Omoa Valley, 16 Mar 1968, 1♀; Teoaiua, 2000 ft (610 m), 22 Mar 1968, 1♂. Uapou: above Hakahetau, 800 m, 23-24 Jul 1977, 1♂ (Montgomery). Eiao: N. highlands, 400 m, 7 Aug 1977, 1♀ (Montgomery).

FOOD PLANT.—Unknown.

I have compared our series of *signiferalis* with a series from Tahiti, the type-locality, and the two appear to be identical. Undoubtedly, some populations from other localities throughout the range of this species will vary from the typical as does the population from Rapa (Clarke, 1971:83).

Although widely distributed in the Pacific, *signiferalis* apparently has not reached the Hawaiian Islands.

Genus *Aethaloessa* Lederer

Aethaloessa Lederer, 1863:435.

TYPE-SPECIES.—*Stenia floridalis* Zeller, 1852 [1854]:60; subsequent designation by Shibuya, 1928b:192.

Aethaloessa calidalis tiphalis (Walker)

FIGURES 58, 281a

Syngamia tiphalis Walker, 1859 [1856-1866]:335.

Aethaloessa calidalis tiphalis (Walker).—Whalley, 1961:106, fig. 3a,b, pl. 4: fig. 3.

Syngamia octavialis Walker, 1859 [1856-1866]:334.

Hyalea fulvidalis Wallengren, 1860:174.

Chnaura octavialis (Walker).—Lederer, 1863:435.

Syngamia secutalis Walker, 1866 [1856-1866]:1291.

Botys witalis Felder in Felder et al., 1875 [1864-1875], pl. 135: fig. 8.

Syngamia floridalis.—Hampson 1898:644 [not *Syngamia floridalis* Zeller].

Syngamia aurantiaca Hampson, 1912b:254.

Male genitalia slide USNM 24834. Harpe very lightly sclerotized; near base of costa a cluster of fine setae and another near outer end; a slender sclerotized longitudinal rod well inside costa extends nearly to cucullus; slightly beyond middle of sacculus a small papilla followed by a strong single seta. Uncus two spined lobes. Vinculum subquadrate; saccus elongate. Tegumen very narrow. Anellus a very lightly sclerotized plate. Aedeagus moderately stout, nearly straight; vesica armed with one strong cornutus, a series of

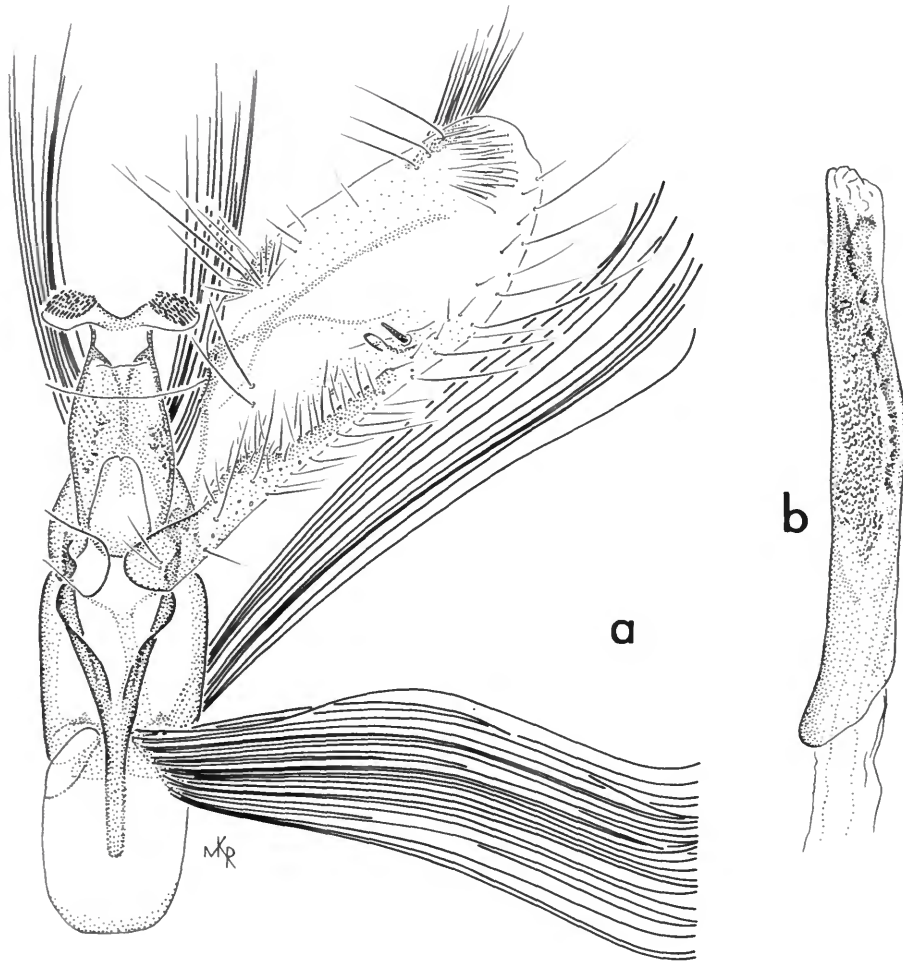


FIGURE 58.—*Aethaloessa calidalis tiphalis* (Walker): *a*, ventral view of male genitalia with left harpe and aedeagus removed, and showing corema; *b*, aedeagus.

thornlike cornuti and an elongate patch of granules.

TYPES.—In the British Museum (Natural History) (*tiphalis*, *secutalis*, *octavialis*, *aurantiaca*); depositories unknown (*fulvidalis*, *witalis*).

TYPE-LOCALITIES.—Celebes (*tiphalis*); Siam (*secutalis*); Tahiti (*fulvidalis*); Sumatra (*octavialis*); “Insulae vitiani” (*witalis*); Singapore (*aurantiaca*).

DISTRIBUTION.—Malaya, Burma, Formosa, Java, Sumatra, Borneo, Celebes, New Guinea, Solomon Islands, New Ireland, Bali, New Britain, Ceram, Sudest Island, Rook Island, Tabora,

Philippines, Samoa, Tahiti, Tenimber, Warri, Australia (Queensland and New South Wales) according to Whalley, 1961. Marquesas Islands.

We have one specimen from Fatu Hiva: Omoa, 15 Mar 1968, 1♂.

FOOD PLANT.—Unknown.

Unfortunately I do not have a female available for study.

Subfamily PYRALINAE

Genus *Pyralis* Linnaeus

Pyralis Linnaeus, 1758:1–533.

TYPE-SPECIES.—*Phlaena Pyralis farinalis* Linnaeus, 1758:533; by subsequent designation by the International Commission on Zoological Nomenclature, 1957, Opinions, Declarations, International Commission on Zoological Nomenclature, 15 (Opinion 450):254.

***Pyralis pictalis* (Curtis)**

FIGURES 59, 281b

Asopia pictalis Curtis, 1834 [1824–1839], pl. 503; 1837:205 [No. 981].—Herrich-Schäffer, 1849 [1843–1856], 4:123 [No. 9].—Lederer, 1863:343.—Snellen, 1883:122.

Pyralis pictalis (Curtis).—Stephens, 1834:395.—Guenée, 1854, 8:120, No. 9.—Walker, 1859, 17: 267.—Snellen, 1883:122.—Swinhoe and Cotes, 1888 [1887–1889], 5:657 [No. 4458].—Swinhoe, 1890:291.—Ragonot, 1891:38.—Meyrick, 1894a:12; 1895:428.—Hampson, 1896 [1894–1896], 4:150; 1896:508.—Swinhoe, 1900:431.—Rebel, 1901:45 [No. 839].—Leech, 1901:423.—Matsumura, 1908:202 [No. 1685].—Duponot, 1913:36 [No. 237], 46.—Strand, 1919:58.—Shibuya, 1928a:150; 1928b:120.—Meyrick, 1928:445.—de Joannis, 1930 [1929–1930]: [400] 638.—Matsumura, 1931:1048.—Meyrick, 1935a:30.—Sevastopulo, 1935:205.—Pierce and Metcalf, 1938:39, pl. 22.—Ghosh, 1940c:196.—Ghesquière, 1942:209.—Corbet and Tams, 1943c:64, 80, figs. 46, 104, 141.—Kloet and Hincks, 1945:116.—Amsel, 1954b:310.—Inoue, 1955:150 [No. 843].—Wattal and Kalra, 1960:77–79, pl. 1a,b.—Kloet and Hincks, 1972:44.—Auctorum, 1979:212 [No. 1383].—Inoue et al., 1982, 1:381, 2: pl. 43: fig. 3.

Pyralis pronoealis Walker, 1859 [1856–1866]:906.

Asopia pronoealis (Walker).—Lederer, 1863:343, 458.

Myelois bractiatella Walker, 1863 [1856–1866]:36.

Pyralis suggeralis Walker, 1866 [1856–1866]:1237.

Pyralis elachia Butler, 1879:70, pl. 58: fig. 3.

Pyralis bractiatella (Walker).—Moore, 1885 [1884–1887]:262, pl. 178: fig. 5.

Female genitalia slide USNM 24880. Ostium rather small, funnel-shaped. Antrum sclerotized. Inception of ductus seminalis at anterior margin of antrum. Ductus bursae mostly membranous, with a coarsely granular area at about posterior third. Bursa copulatrix membranous. Signum absent.

TYPES.—In the British Museum (Natural History) (*pronoealis bractiatella*, *suggeralis*, *elachia*); Australia? (*pictalis*).

TYPE-LOCALITIES.—Great Britain? (*pictalis*);

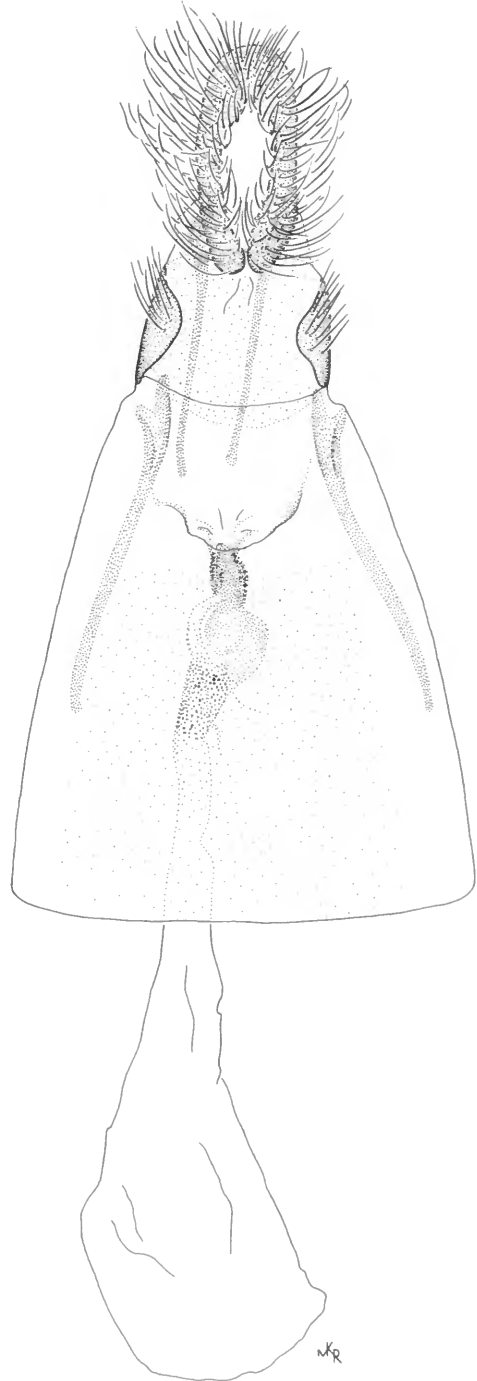


FIGURE 59.—*Pyralis pictalis* (Curtis), ventral view of female genitalia.

Sarawak (*pronoelalis*); Ceylon (*bractiatella*); Sarawak (*suggeralis*); Japan (*elachia*).

DISTRIBUTION.—Southern India, Ceylon (Sri Lanka), Philippine Islands, New Guinea, Java, Khasi Hills, Formosa, Japan, Accra, England, Marquesas Islands, Europe, Burma, Sumatra, Gilbert Islands, Belgian Congo, South Africa, Fiji, Siam (Thailand), West Africa, Northwest Himalaya, Central and Western China.

We have only a single record from the Marquesas Islands. Hiva Oa: Atuona, 15 Feb 1968, 1♀.

FOOD.—Grains; eggs of bedbug.

This widely distributed species is undoubtedly spread through commerce.

Subfamily CRAMBINAE

Genus *Idioblasta* Warren

Idioblasta Warren, 1891:62.

TYPE-SPECIES.—*Idioblasta lacteata* Warren, 1891:62, by original designation.

Following is a quote from Zimmerman (1958b:296) in which he discusses the separation of *Idioblasta* from the Hawaiian *Mestolobes*.

There have been several species of *Mestolobes* described from the Marquesas, but this has been done in error. The Marquesan species belong to *Idioblasta* Warren (1891:62, type *Idioblasta lacteata* Warren). Hampson (1899:239) sank *Idioblasta* as a synonym of *Pionea* in the Pyraustinae. He ignored the fact that *Idioblasta* bears the typical Crambinae pecten in the hind wing. Hampson's latest arrangement in the British Museum has the species in *Hapalia*, also in the Pyraustinae. Meyrick (1929[b]:165) noted Hampson's sinking *Idioblasta* under *Pionea*, and he pointed out that it is very distinct and redescribed it. Meyrick later (1934[c]:340) sank *Idioblasta* as a synonym of *Mestolobes*. In his personal collection, now in the British Museum, Meyrick put *Idioblasta* in front of *Mestolobes* under the title "*Idioblasta* Meyr." [sic]. It would be most helpful if Meyrick's conclusion that the two genera were the same could be substantiated, because we would then know extra-Hawaiian *Mestolobes* and might be able to say whence the genus came, but *Idioblasta* is not a synonym of *Mestolobes*. A careful examination will reveal quickly obvious differences between the genera. *Idioblasta* has a developed pecten on the hind wing, and the genitalia of both sexes are very different from *Mestolobes*. On *Idioblasta lacteata*, the type of *Idioblasta*, the male genital valves are of a basically distinct form from *Mestolobes*, and the uncus resembles an arm and hand with five long, outstretched fingers; the gnathos is a broad, apically truncated, subspatulate organ. The female genitalia show no resemblance to *Mestolobes*. Instead of the short, broad ovipositor of *Mestolobes*, *Idioblasta* has a narrow, greatly elongated ovipositor which exceeds the length of the remainder of the genitalia combined, there is no trace of the peculiar paired accessory sacs, and the female genitalia somewhat resemble those of *Orthomecyna*.

Key to the Species of *Idioblasta*

- 1. Hindwing white with fuscous margin 2
Hindwing otherwise 3
- 2. Forewing with several dark, contrasting lines *lacteata* Warren
Forewing without such contrasting lines *linearis*, new species
- 3. Hindwing almost wholly blackish fuscous *procellaris* (Meyrick)
Hindwing otherwise 4
- 4. Forewing with at least two highly contrasting lines
. *transversata*, new species
Forewing otherwise 5
- 5. Forewing with one highly contrasting transverse line
. *stenogramma*, new species
Forewing without highly contrasting lines 6
- 6. Hindwing apex only blackish fuscous; forewing light orange yellow
. *acrogramma*, new species
Hindwing otherwise 7

- 7. Fore- and hindwing without contrasting markings . . . *acleropa* (Meyrick)
Fore- and hindwing otherwise 8
- 8. Entire margin of hindwing blackish fuscous *isoterma* (Meyrick)
Apical half of hindwing and streak on anal angle blackish fuscous 9
- 9. Forewing with no indication of transverse line
. *amydrosoma*, new species
Forewing with two weakly indicated transverse lines
. *straminata* Warren

***Idioblasta straminata* Warren**

Idioblasta straminata Warren, 1891:62.

HOLOTYPE.—In the British Museum (Natural History).

TYPE-LOCALITY.—“Marquesas Islands.”

DISTRIBUTION.—Tahuata.

FOOD PLANT.—Unknown.

Unfortunately, the abdomen of the type is missing and no comparison of the genitalia with those of other species can be made. The weakly indicated lines of the forewing are similar to those of *procellaris*, but the latter species has an almost completely black hindwing, is from a different island, and most certainly is distinct.

The type-locality was given as “Marquesas Islands” in the original description, but the label data indicate that the type is actually from the island of Tahuata.

***Idioblasta lacteata* Warren**

FIGURES 60, 281*d,e*

Idioblasta lacteata Warren, 1891:62—Zimmerman, 1958b: 296.

Mestolobes lacteata (Warren).—Meyrick, 1929b:165; 1934c: 341.

Male genitalia slide USNM 24876. Harpe very thick and strongly sclerotized, this area produced as a sharp point at outer part of costa; near base of costa a C-shaped process followed by a dentate spur; from ventral edge of sclerotized part a series of hooked setae; sacculus narrow, membranous; cucullus bluntly pointed. Gnathos spoon-shaped. Uncus distally divided into five-pointed, curved processes. Vinculum broadly M-shaped.

Tegumen about as long as uncus. Anellus a fleshy pad. Aedeagus slender, curved; vesica armed with a series of spiculate cornuti.

ORIGINAL MATERIAL.—“One female, two males, Marquesas Islands.”

LECTOTYPE.—Male, “Nuku Hiva I. Marquesas I. BM. slide No. 1012,” hereby designated. The usual red-circled type label is attached to the pin.

TYPE-LOCALITY.—“Nukahiva I. Marquesas Islands.”

Lectotype is in the British Museum (Natural History).

DISTRIBUTION.—Nuku Hiva, Uapou.

Before me are six specimens as follows. Nuku Hiva: Tapuaooa, 2500 ft (762 m), 30 Jan 1968, 1♂; Tunoa Ridge, 2900 ft (884 m), 23 Jan 1968, 5♂.

FOOD PLANT.—Unknown.

Originally described from Nuku Hiva, this species was recorded from Uapou by Meyrick (1934c:341), and probably occurs elsewhere in the Marquesas.

***Idioblasta procellaris* (Meyrick), new combination**

FIGURES 61, 282*a*

Mestolobes procellaris Meyrick, 1934c:341.

Male genitalia slide USNM 24890. Harpe base broad, rather strongly sclerotized, this part produced on costa as a sharply pointed, curved process; at base of costa a deep excavation forming a curved process proximally, and a toothlike point distally; cucullus slender, fleshy. Gnathos spoon-shaped. Uncus elongate, terminating in five sharply pointed, curved processes. Vinculum

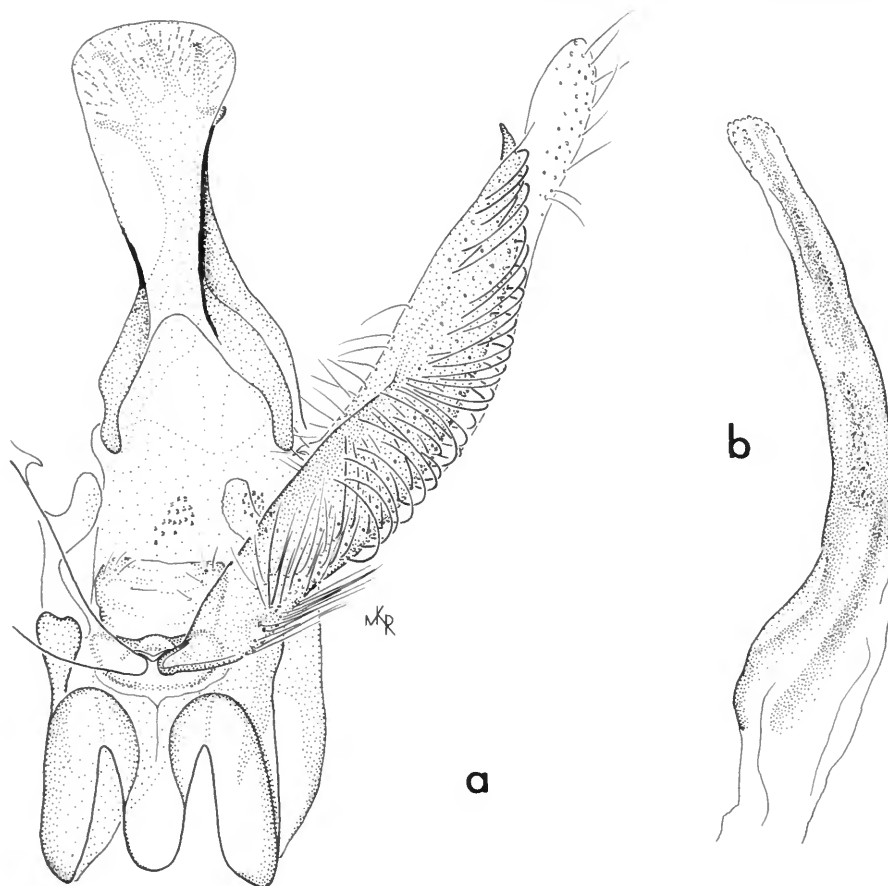


FIGURE 60.—*Idioblasta lacteata* Warren: *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus.

M-shaped. Tegumen longer than broad. Anellus a small sclerotized plate produced posteriorly on each side. Aedeagus slender, curved; vesica armed with a series of strong cornuti.

Female genitalia slide USNM 25177. Ostium oval, transverse, ventral edge produced. Inception of ductus seminalis about middle of membranous portion of ductus bursae. Ductus bursae posterior half flattened, strongly sclerotized, curved; from anterior end of sclerotized part a membranous section is directed dorsad, turns laterally then folds and is directed anteriorly to bursa. Bursa copulatrix granular. Signum absent.

HOLOTYPE.—In the Bernice P. Bishop Museum.

TYPE-LOCALITY.—Fatu Hiva, Omoa Valley, 1500 ft (457 m).

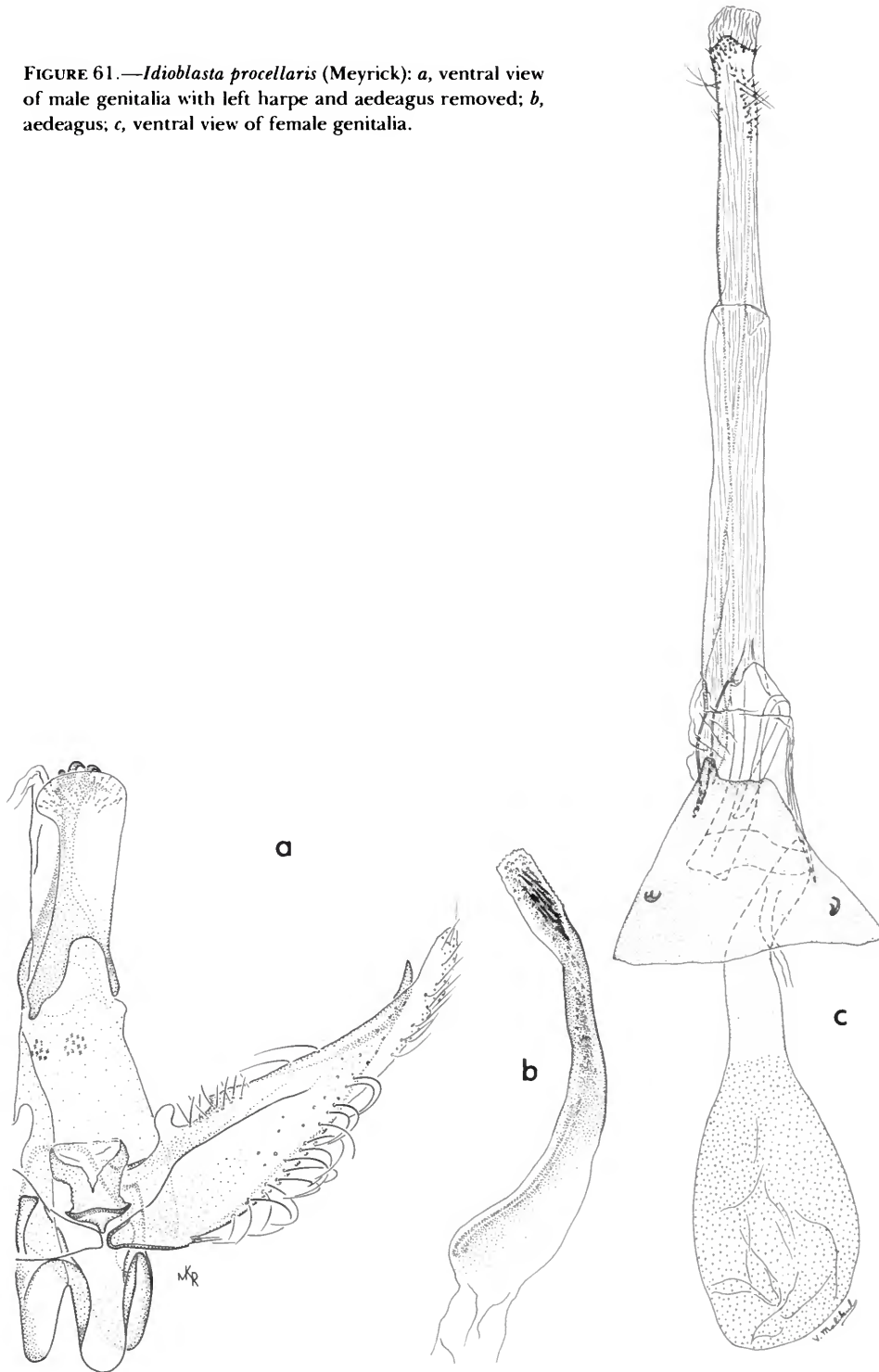
DISTRIBUTION.—Fatu Hiva.

Fatu Hiva: Mt. Teoaiua, 2000 ft (610 m), 22 Mar 1968, 1♂.

FOOD PLANT.—Unknown.

When Meyrick described this species he stated (1934c:341): "The forewings in this insect are also partially rubbed, but apparently the absence of lines is natural. . . ." The transverse lines of the forewing are obvious in our specimen, which

FIGURE 61.—*Idioblasta procellaris* (Meyrick): *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.



is in excellent condition (Figure 282a). These lines have the same conformation as those of *straminata*. The hindwings are characteristic. The male is smaller (18 mm) than the female type (20 mm).

***Idioblasta transversata*, new species**

FIGURES 62, 282b

Idioblasta straminata.—Meyrick, 1929b:165 [not *Idioblasta straminata* Warren.]

Alar expanse 20–22 mm.

Labial palpus pale ochraceous buff interspersed with blackish fuscous scales, especially dorsally. Antenna ochraceous buff dorsally, fuscous ventrally; scape ochraceous buff. Head ochraceous buff. Thorax ochraceous buff with scattered blackish fuscous scales anteriorly; tegula ochraceous buff with scattered blackish fuscous scales. Forewing ground color ochraceous buff; in basal angle a blackish fuscous dash; in basal third a roughly S-shaped transverse line of loosely arranged blackish fuscous scales; across middle of wing a pair of highly contrasting blackish fuscous lines; between these lines blackish fuscous irroration; terminal line slender, blackish fuscous; cilia pale ochraceous buff marked with groups of fuscous scales. Hindwing ochraceous buff to orange buff; apex with a large subtriangular blackish fuscous spot; anal angle marked with blackish fuscous dash. Foreleg pale ochraceous buff; tibia and tarsal segments marked fuscous; midleg similar but only tarsal segments marked fuscous; hindleg pale ochraceous buff. Abdomen ochraceous buff dorsally, light ochraceous buff ventrally.

Male genitalia USNM slide 24833. Harpe broad basally and strongly sclerotized, this area narrowed distad and costa terminating in a sharply pointed, curved process; on ventral edge of sclerotized part a series of strong, curved setae; cucullus narrow, fleshy, weak; at base of costa a fleshy process. Gnathos spoon-shaped, broadened distally. Uncus terminating in a five-pointed claw. Vinculum M-shaped. Tegumen about as long as broad. Anellus a sclerotized

plate. Aedeagus slender, slightly curved; vesica armed with numerous spiculate cornuti.

Female genitalia USNM slide 25240. Ostium oval, transverse. Inception of ductus seminalis near junction of ductus bursae and bursa copulatrix. Ductus bursae posterior three-fourths sclerotized, flattened, curved, broadened anteriorly; anterior quarter at right angles to posterior part, ridged. Bursa copulatrix finely granular, long, slender. Signum absent.

HOLOTYPE.—USNM 100741.

TYPE-LOCALITY.—Hiva Oa, Mt. Feani, 3800 ft (1158 m).

DISTRIBUTION.—Hiva Oa.

Described from the ♂ holotype (20 Feb 1968), 1♂ and 1♀ paratypes with same data as holotype, and 14♂ and 4♀ paratypes as follows. Hiva Oa: 7♂, 2♀, 27 Jan 1925, 3000–3500 ft (914–1067 m), beaten from herbage; 3♂, 2♀, 31 Dec 1924, 3000 ft (914 m), sheltering in *Pandanus*; 2♂, Jan 1925, 3500 ft (1067 m) at light; 1♂, Dec 1924, 3000 ft (914 m), all collected by C.L. Collenette. Ootua, 800 m, 27–30 Jul, 1977, 1♂ (Montgomery).

FOOD PLANT.—Unknown.

Meyrick misidentified this species as *straminata* Warren and redescribed but did not name it. It is much larger and more contrastingly marked than *straminata*, even though the abdomen of *straminata* is missing, and the genitalia cannot be compared, I am certain that *transversata* is distinct.

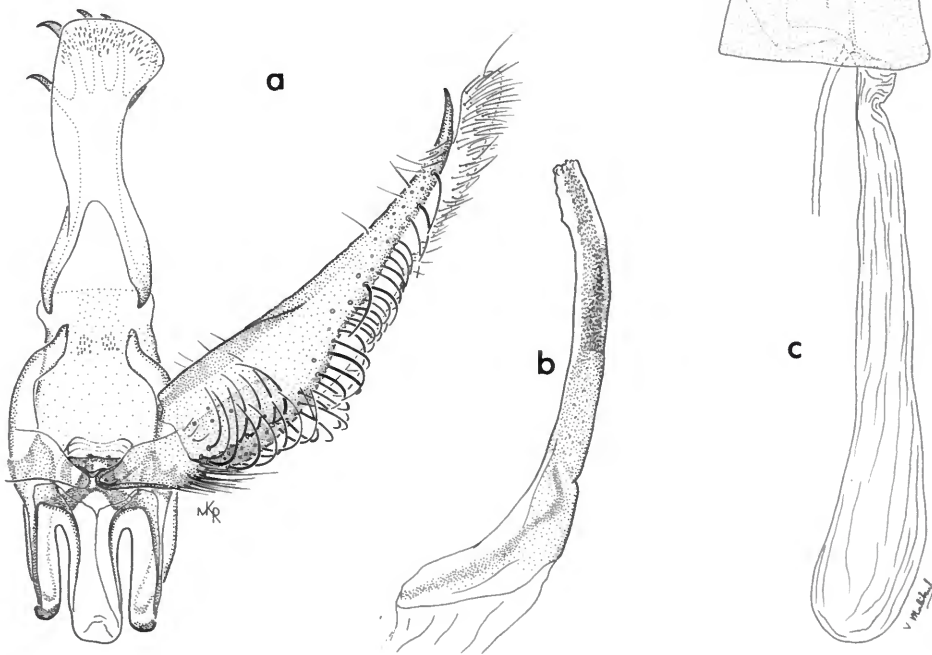
***Idioblasta isoterma* (Meyrick), new combination**

FIGURES 63, 281c

Mestolobes isoterma Meyrick, 1934c:340.

Female genitalia slide USNM 25189. Ostium irregular, transverse. Inception of ductus seminalis from anterior part of ductus bursae. Ductus bursae strongly sclerotized posteriorly, then a granular section at right angles to the sclerotized part, followed anteriorly by a short membranous section. Bursa copulatrix mostly membranous, finely granular anteriorly. Signum absent.

FIGURE 62.—*Idioblasta transversata*, new species: *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.



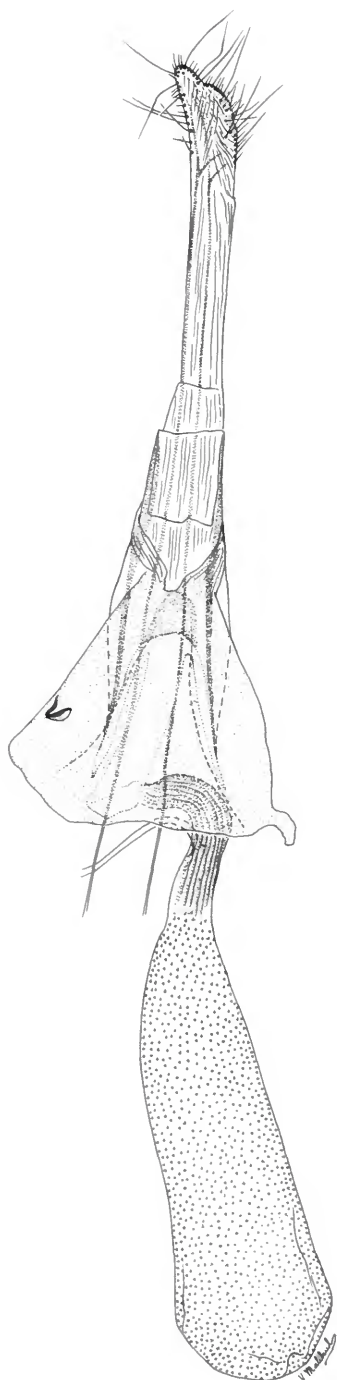


FIGURE 63.—*Idioblasta isoterma* (Meyrick), ventral view of female genitalia.

HOLOTYPE.—In the Bernice P. Bishop Museum.

TYPE-LOCALITY.—Fatuuku, 860 ft (262 m).

DISTRIBUTION.—Fatuuku.

FOOD PLANT.—Unknown.

The entire series of this species is in deplorable condition, as indicated by Meyrick, but one thing is certain, there is a grayish or fuscous terminal area on the forewing bordered on the inner edge by a whitish or yellowish transverse line. The entire margin of the hindwing is blackish fuscous as in *lacteata* and *linearis*, new species.

***Idioblasta acleropa* (Meyrick), new combination**

FIGURES 64, 281f

Mestolobes acleropa Meyrick, 1934c:340.

Male genitalia USNM 25190. Harpe broadly sclerotized and thickened, this part terminating in a curved, pointed process; costa arched before middle, with a dentate process before middle and a finger-like process near base; ventral edge with strongly curved setae. Gnathos subspatulate, broadened and granular distally. Uncus terminating in a five-fingered claw, the fingers short. Vinculum M-shaped. Tegumen long and narrow. Anellus a subquadrate plate with a thick, short process on each side posteriorly. Aedeagus slender, curved; vesica armed with a cluster of spinulate cornuti.

HOLOTYPE.—In the Bernice P. Bishop Museum.

TYPE-LOCALITY.—Eiao, above Vaituha, 1200 ft (366 m).

DISTRIBUTION.—Eiao.

FOOD PLANT.—Unknown.

The holotype is the only specimen of this species that I have seen, and it is quite distinct from any others we encountered.

***Idioblasta stenogramma*, new species**

FIGURES 65, 282c

Alar expanse 18 mm.

Labial palpus light ochraceous buff; second segment with some gray scales apically on outer

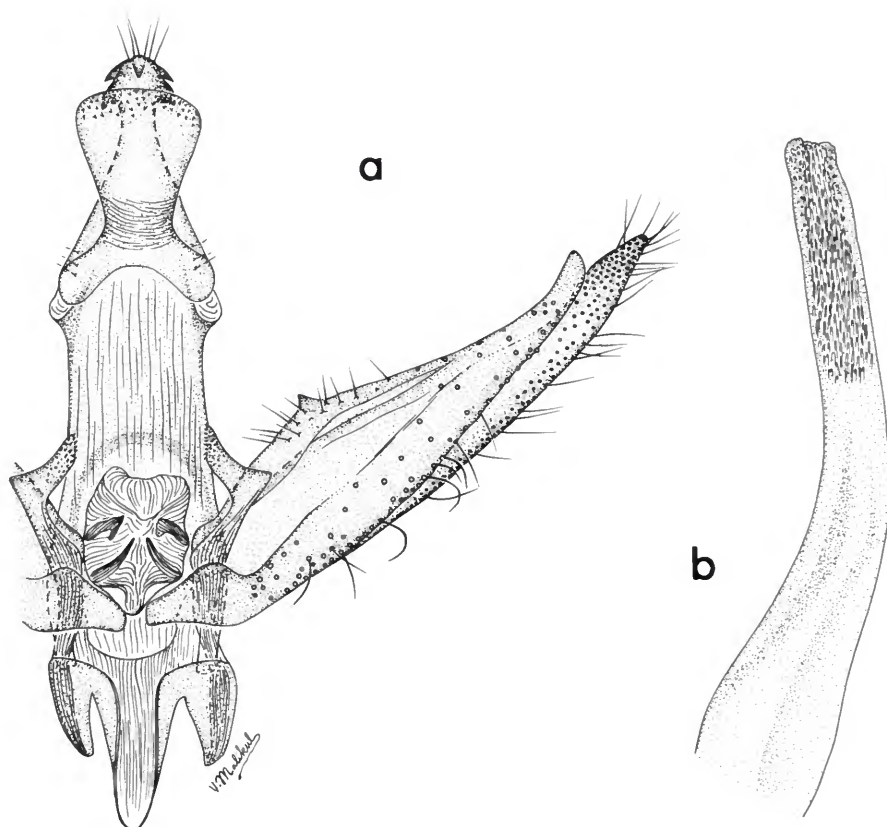


FIGURE 64.—*Idioblasta acleropa* (Meyrick): *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus.

side; third segment almost wholly gray on outer side. Antenna grayish fuscous; scape light orange yellow. Head, thorax, and forewing ground color light orange yellow; at basal fifth, inside costa, an ill-defined fuscous spot; at two-fifths of costa a short, outwardly oblique, slender, transverse line; from apical third of costa to tornus a prominent, blackish fuscous transverse line; extreme edge of termen narrowly fuscous; cilia light ochraceous buff. Hindwing light orange yellow, slightly paler basally; apex a blackish fuscous triangle; cilia mixed light orange yellow and light ochraceous buff. Fore-, mid-, and hindlegs light buff; hindleg suffused yellowish. Abdomen light orange yellow dorsally; ventrally light buff suffused yellowish.

Male genitalia slide USNM 24877. Harpe swollen and strongly sclerotized, costa terminat-

ing in a curved, sharp point; saccular edge clothed with strong, recurved setae; cucullus fleshy, pointed; at base of harpe a fleshy finger-like process with a sharp tooth beyond. Gnathos spoon-shaped, distally broadened. Uncus broad basally, constricted at middle, terminating in five-pointed claw. Vinculum M-shaped. Tegumen long and narrow. Anellus a fleshy plate with two dentate processes basally. Aedeagus slender, curved; vesica armed with numerous small, dentate cornuti.

HOLOTYPE—USNM 100742.

TYPE-LOCALITY.—Nuku Hiva, Tapuaooa, 2500 ft (762 m).

DISTRIBUTION.—Nuku Hiva.

FOOD PLANT.—Unknown.

Described from the unique ♂ holotype (30 Jan 1968).

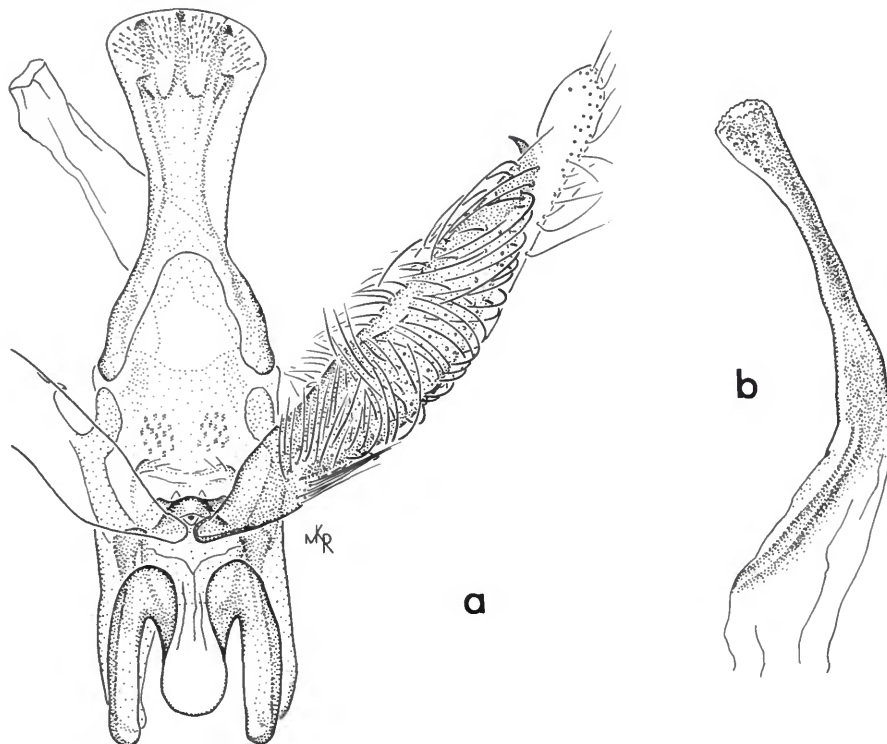


FIGURE 65.—*Idioblasta stenogramma*, new species: *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus.

Idioblasta stenogramma is similar to *transversata* but has only a single prominent transverse line on the forewing, the latter has two prominent lines. Also *transversata* measures 20–22 mm; but *stenogramma* measures only 18 mm. The female is unknown.

***Idioblasta amydrosona*, new species**

FIGURES 66, 282d

Alar expanse 14 mm.

Labial palpus cream white; second segment dorsolaterally fuscous; third segment fuscous. Antenna grayish fuscous; basal segments of flagellum pale orange yellow dorsally; scape pale orange yellow. Head, thorax, and forewing ground color pale orange yellow; forewing without any distinguishing markings; cilia concolorous. Hindwing pale orange yellow; most of apical half of wing fuscous; a fuscous dash in anal

angle; cilia mixed fuscous and pale orange yellow apically, others pale orange yellow. Foreleg cream white suffused yellowish; tarsal segments marked fuscous; midleg missing; hindleg cream white suffused yellowish. Abdomen pale orange yellow dorsally; cream white ventrally.

Female genitalia slide USNM 24879. Ostium transverse, oval. Inception of ductus seminalis from anterior part of ductus bursae. Ductus bursae posteriorly heavily sclerotized for nearly half its length; anterior section granular. Signum absent.

HOLOTYPE.—USNM 100743.

TYPE-LOCALITY.—Nuku Hiva, Tapuaooa, 2500 ft (762 m).

DISTRIBUTION.—Nuka Hiva.

FOOD PLANT.—Unknown.

Described from the unique ♀ holotype (30 Jan 1968).

Although similar to *acrogramma*, new species,

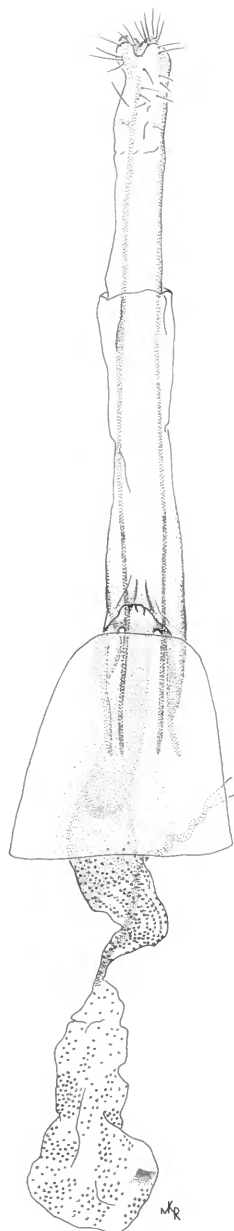


FIGURE 66.—*Idioblasta amydrosoma*, new species, ventral view of female genitalia.

amydrosoma has a paler forewing without any trace of transverse lines, and a greater area of the hindwing is marked by blackish fuscous. Furthermore, there is a blackish fuscous dash in the

anal angle of hindwing of *amydrosoma* that is absent in *acrogramma*.

***Idioblasta acrogramma*, new species**

FIGURES 67, 282e

Alar expanse 15 mm.

Labial palpus light ochraceous buff; second segment with grayish fuscous scaling on outer side apically; third segment almost wholly grayish fuscous. Antenna grayish fuscous; scape light orange yellow. Head, thorax, and forewing ground color light orange yellow; from apical third of costa to tornus a somewhat darker shade indicating an ill-defined transverse line; terminal line very slender, grayish fuscous; cilia light orange yellow, slightly darker distad. Hindwing light orange yellow, slightly paler basally; apex a small blackish fuscous triangle; cilia light orange yellow; apical cilia with fuscous basal line. Fore-, mid-, and hindlegs light buff, suffused yellowish; foretarsi spotted fuscous. Abdomen light orange yellow dorsally; ventrally light buff suffused yellowish.

Male genitalia slide USNM 24878. Harpe thick, broadly sclerotized; base of costa with finger-like, fleshy lobe, tooth beyond very small; costa terminating in a curved, pointed process; cucullus small, fleshy; ventral edge of harpe armed with a series of long, strong, curved setae. Gnathos subspatulate, curved; dorsodistally armed with spiculate setae. Uncus terminating in a five-pointed claw. Vinculum M-shaped. Tegumen long and narrow. Anellus subsquadrate with a fleshy lobe on each side. Aedeagus slender, curved; vesica armed with a series of spiculate cornuti.

HOLOTYPE.—USNM 100744.

TYPE-LOCALITY.—Nuku Hiva, Tapuaooa, 2500 ft (762 m).

DISTRIBUTION.—Nuku Hiva.

FOOD PLANT.—Unknown.

Described from the unique ♂ holotype (30 Jan 1968).

This is similar to, but smaller than *stenoacrogramma*, and lacks the prominent transverse line of forewing found in that species.

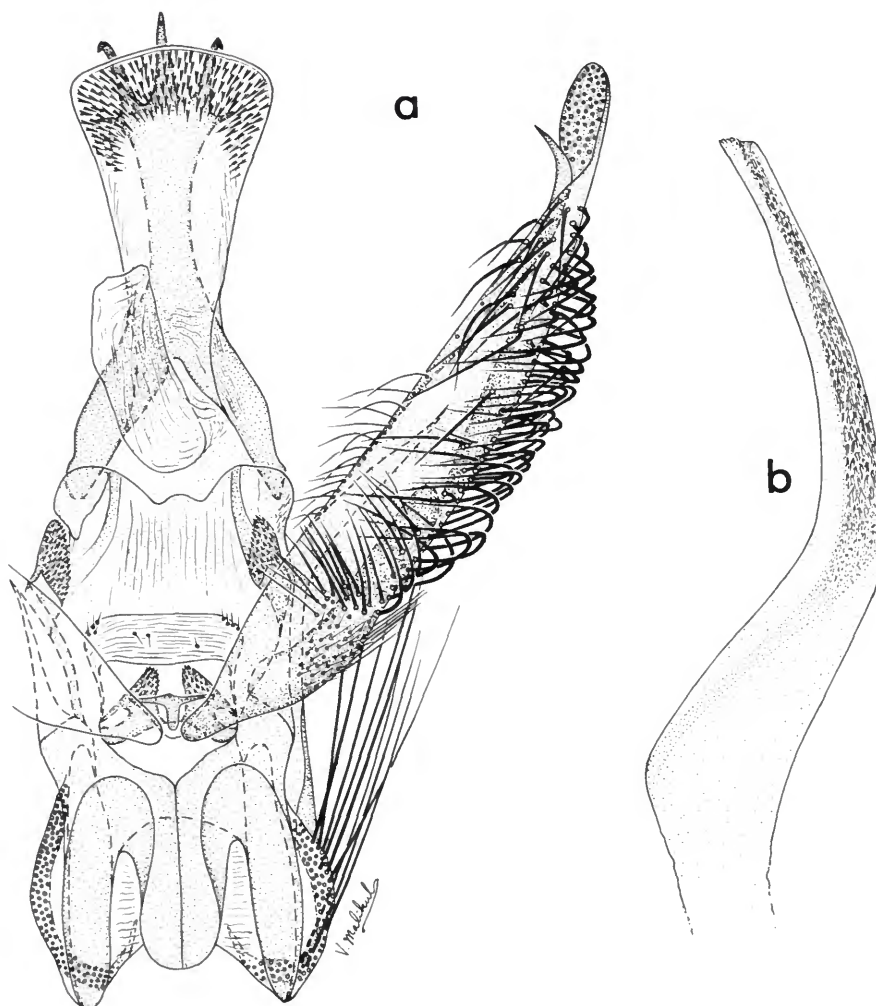


FIGURE 67.—*Idioblasta acrogramma*, new species: *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus.

***Idioblasta linearis*, new species**

FIGURES 68, 282*f*

Alar expanse 16 mm.

Labial palpus white; second segment light clay color dorsolaterally; third segment grayish fuscous. Antenna grayish fuscous. Head sordid white with median grayish suffusion. Thorax sordid white; tegula grayish fuscous anteriorly. Forewing ground color sordid white with scattered light clay color scales over entire surface;

from slightly before middle of costa an ill-defined, broken grayish fuscous line extends to middorsum; from apical third of costa an irregular, narrow, grayish fuscous, transverse line extends to tornus; between the two lines, at end of cell, a short grayish fuscous dash; around termen 8 grayish fuscous spots; extreme termen narrowly grayish fuscous; cilia white with grayish fuscous basal band. Hindwing shining white; margin entirely fuscous; cilia white. Foreleg sordid white; tarsal segments marked grayish fus-



FIGURE 68.—*Idioblasta linearis*, new species, ventral view of female genitalis.

cous. Mid- and hindlegs sordid white with very pale grayish suffusion. Abdomen smoke gray dorsally; ventrally sordid white.

Female genitalia slide USNM 25213. Ostium irregular. Inception of ductus seminalis from near junction of ductus bursae and bursa copulatrix. Ductus bursae posterior two-thirds strongly sclerotized, curved; anterior third granular, at right angles to sclerotized section, then directed anteriorly. Bursa copulatrix finely granular. Signum absent.

HOLOTYPE.—USNM 100745.

TYPE-LOCALITY.—Nuku Hiva, Tunoa Ridge, 2900 ft (884 m).

DISTRIBUTION.—Nuku Hiva.

FOOD PLANT.—Unknown.

Described from the unique ♀ holotype (23 Jan 1968).

This species has the same kind of hindwing that is found in *lacteata*, but none of the dark, strongly contrasting transverse lines of the forewing of that species.

Subfamily SCOPARIINAE

Genus *Eudonia* Billberg

Eudonia Billberg, 1820:93.

TYPE-SPECIES.—*Phalaena Tinea mercurella* Linnaeus, 1758:538, [No. 269]; by monotypy.

Munroe (1972:47–72) presents an excellent description of the genus and treats the North American species. Regarding the Marquesan species, Munroe states the following (in litt. 8 Sept. 1982):

All the species belong to the genus *Eudonia*. They appear close to the Hawaiian and Rapa species, also the Tahitian, but this genus is very uniform around the world, and the genitalia are just like those of Holarctic, Neotropical, Indo-Malayan, Papuan, Australian, Afrotropical and some New Zealand species. As you noted, there are representative forms, usually not identical, in the different islands . . .

The genitalia of the species of *Eudonia* are monotonously similar and are of little help in distinguishing most species. The males have sim-

ple harpes, strikingly similar aedeagi, and the vesica in all species is armed with what appears to be a small disc of concentrated granules. In the females there is always a kink in the ductus bursae where the anterior membranous portion joins the posterior sclerotized half. Where the two parts join there is a heavily sclerotized triangular area armed with small teeth. Usually the

number of teeth is obscured and is useless for diagnosis.

Concerning the Rapa species (Clarke, 1971:86–89), which I placed in the genus *Scoparia*, they become: *Eudonia exterminata* (Meyrick), new combination, *Eudonia psednopa* (Meyrick), new combination, and *Eudonia tivira* (Clarke), new combination.

Key to the Species of *Eudonia*

1. Ground color of forewing yellow or yellowish . . . *citrocosma* (Meyrick)
Ground color otherwise 2
2. Forewing with yellowish scales scattered over surface 3
Forewing otherwise 9
3. Alar expanse 15 mm or less 4
Alar expanse over 15 mm 6
4. Basal transverse line obsolete, ill-defined *officialis* (Meyrick)
Basal transverse line clearly defined 5
5. From Nuku Hiva *aplysia*, new species
From Hiva Oa *spectacularis* (Meyrick)
6. Basal transverse line ill-defined *opostactis* (Meyrick)
Basal transverse line clearly defined 7
7. Labial palpus white at base ventrally 8
Labial palpus buff at base ventrally (from Fatu Hiva)
. *clavula*, new species
8. Forewing profusely covered with yellow ochre scales
. *munroei*, new species
Forewing sparsely covered with yellowish scales
. *chrysonicta* (Meyrick)
9. Forewing ground color white 10
Forewing ground color fuscous or blackish fuscous 11
10. Basal transverse line broad (from Nuku Hiva) *ara*, new species
Basal transverse line slender (Hiva Oa, Fatu Hiva) . . . *clerica* (Meyrick)
11. On costa, preapical white spot present *dupla*, new species
On costa, preapical white spot absent *achlya*, new species

Eudonia citrocosma (Meyrick), new combination

FIGURES 69, 283a

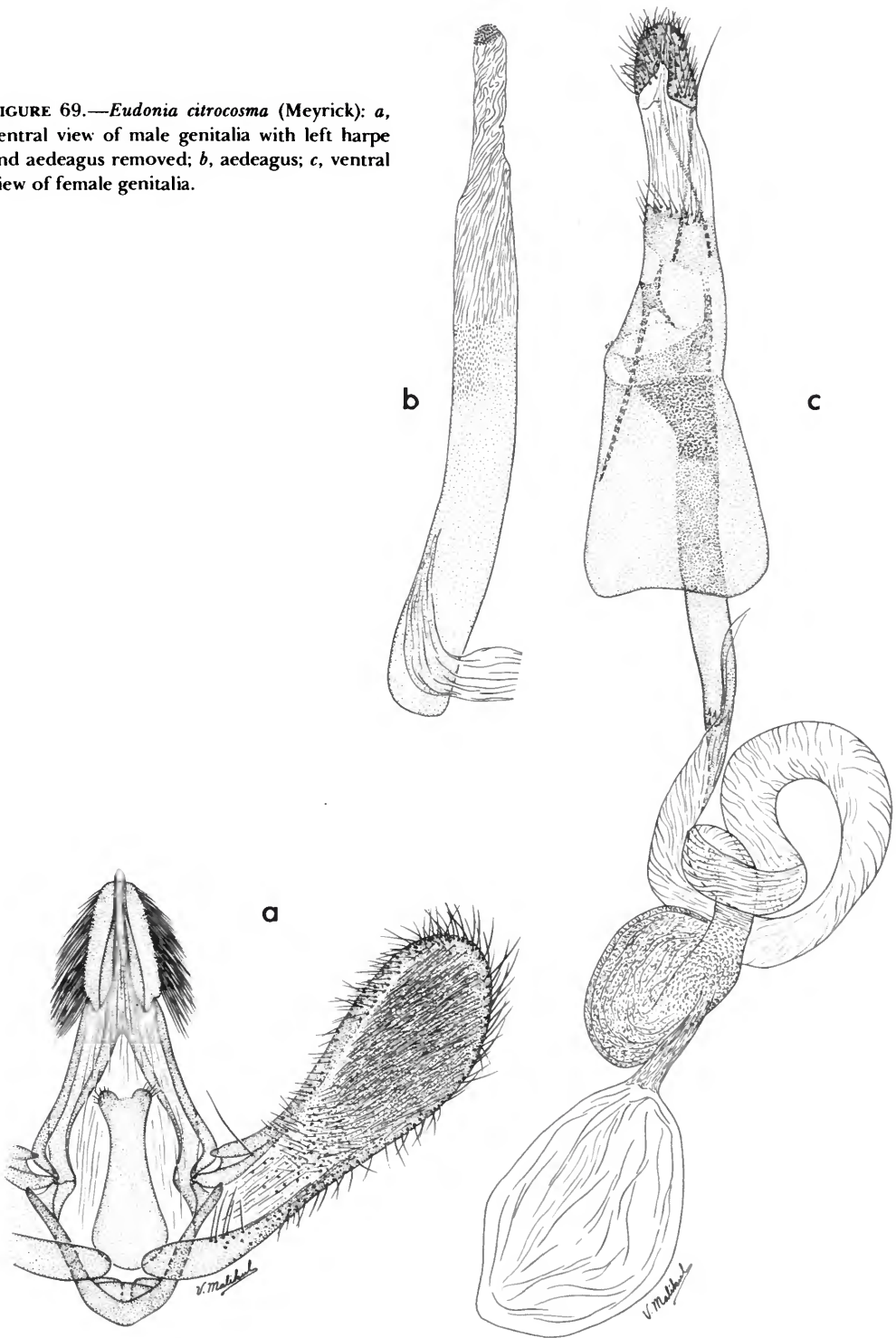
Scoparia citrocosma Meyrick, 1929b:166.

Male genitalia slides USNM 25369, 25385. Harpe simple, cucullus broadly rounded. Gnathos curved, bladellike. Uncus narrow, densely clothed with setae on each side. Vinculum

rounded. Tegumen broad basally, narrowed posteriorly. Anellus pyriform. Aedeagus about as long as harpe, gently curved; vesica armed with a very finely dentate round disc.

Female genitalia slides USNM 25368, 25386. Ostium broad, funnel-shaped. Inception of ductus seminalis at junction of sclerotized and membranous parts of ductus bursae. Ductus bursae posterior half sclerotized; anterior half coiled,

FIGURE 69.—*Eudonia citrocossa* (Meyrick): *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.



membranous; at junction of the two parts a series of about 10 teeth. Bursa copulatrix finely granular. Appendix bursae membranous. Signum an oval, sclerotized, finely dentate plate.

ORIGINAL MATERIAL.—“♂♀. 18–20 mm Marquesas, Hiva Oa, 3500 feet, January; 21 ex.”

LECTOTYPE.—Label data are as follows: A large white label with “Hiva Oa, Marquesas, at light. 3500 ft. 28.1.25. St. George Expedn. C.L. Collenette.” A small white label with “Brit. Mus. 1925-488.” A narrow white label with “Scoparia citrocossa Meyr.” A large white label reads “Scoparia citrocossa Meyrick.” BM Slide No. 9694♂. At the top above all the other labels is a circular purple-bordered “type” label. Lectotype hereby designated.

Lectotype is in the British Museum (Natural History).

TYPE-LOCALITY.—Hiva Oa, 3500 ft (1067 m).

DISTRIBUTION.—Hiva Oa.

Our series of 18 specimens is as follows. Hiva Oa: Mt. Feani, 3400 and 3800 ft (1036 and 1158 m), 20 Feb and 1 Mar 1968, 9♂, 9♀.

FOOD PLANT.—Unknown.

The yellow ground color of the forewing distinguishes *citrocossa* from any other known Marquesan *Eudonia*.

Eudonia clavula, new species

FIGURES 70, 283b

Alar expanse 16–18 mm.

Labial palpus grayish fuscous; ventrally, at base, very pale buff. Antenna fuscous. Head grayish fuscous and buff mixed. Thorax fuscous; tegula fuscous mixed with buff. Forewing ground color buff, strongly marked by blackish fuscous blotches and scattered light ochraceous-buff scales; from basal fourth of costa an irregular transverse line of ground color extends to basal third of dorsum; beyond this line an irregular blackish fuscous blotch; on tornus a blackish fuscous blotch; before apex a fuscous shade; on terminal edge a series of small blackish fuscous spots; subterminally, an ill-defined, irregular, transverse buff line; cilia mixed grayish and buff. Hindwing grayish fuscous, paler toward base;

cilia grayish. Legs buff suffused grayish fuscous and marked with fuscous. Abdomen grayish fuscous dorsally; buff ventrally.

Male genitalia slides USNM 25370, 25371, 25403. Harpe broadest before cucullus; cucullus broadly rounded. Gnathos claviform. Uncus profusely clothed with setae. Vinculum U-shaped. Tegumen narrowed posteriorly. Anellus pyriform. Aedeagus nearly as long as harpe, stout, curved; vesica armed with a small granular disc.

Female genitalia slides USNM 25372, 25373. Ostium funnel-shaped. Inception of ductus seminalis near junction of sclerotized posterior and membranous sections of ductus bursae. Ductus bursae lightly sclerotized in posterior half, membranous and coiled in anterior half. Bursa copulatrix finely granular; appendix bursae membranous. Signum an oval patch of granules.

HOLOTYPE.—USNM 100733.

TYPE-LOCALITY.—Fatu Hiva, Mt. Teoaiua 2000 ft (610 m).

DISTRIBUTION.—Fata Hiva.

FOOD PLANT.—Unknown.

Described from the ♂ holotype, 4♂ and 7♀ paratypes as follows. Fatu Hiva: Mt. Teoaiua, 2000 ft (610 m), 22 Mar 1968, 2♂, 2♀; Tahuna, 2000 ft (610 m), 27 Mar 1968, 1♂. Teavapuhiau, Ouia, 23–24 Jul and 1–3 Aug 1977, 1♂, 5♀ (Montgomery).

Eudonia clavula is similar to *citrocossa* but lacks the yellow markings of that species. The males of *clavula* are easily distinguished from those of *citrocossa* by the claviform gnathos.

Eudonia spectacularis (Meyrick), new combination

FIGURES 71, 283c

Scoparia spectacularis Meyrick, 1929b:167, 1934c:342.

Male genitalia slides USNM 25374, 25395. Harpe simple, rather narrow; cucullus rounded. Gnathos with distal third abruptly narrowed. Uncus subtriangular, laterally densely clothed with setae. Vinculum rounded. Tegumen narrowed posteriorly. Anellus pyriform. Aedeagus about as long as harpe, curved, stout; vesica armed with a very small, granular disc.

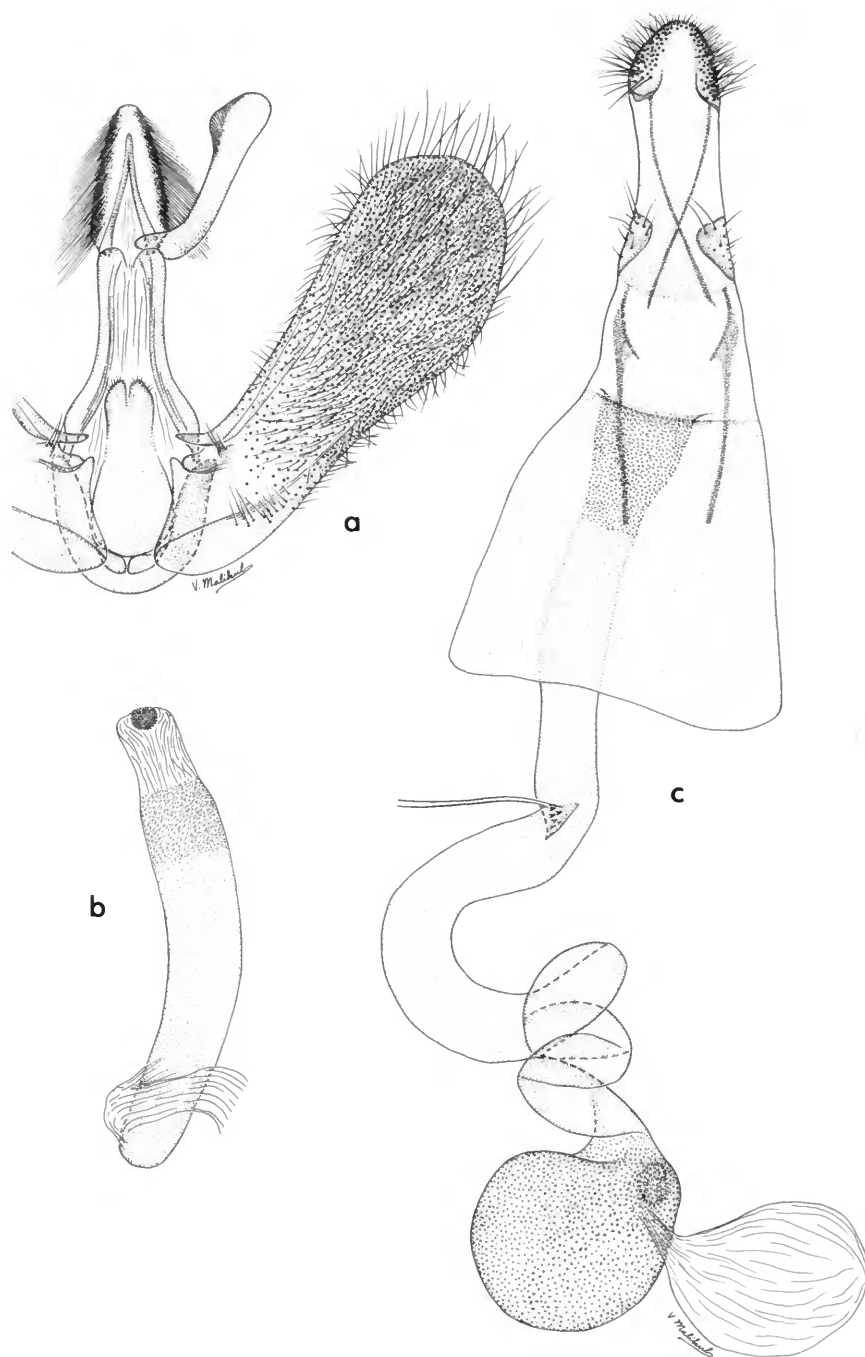
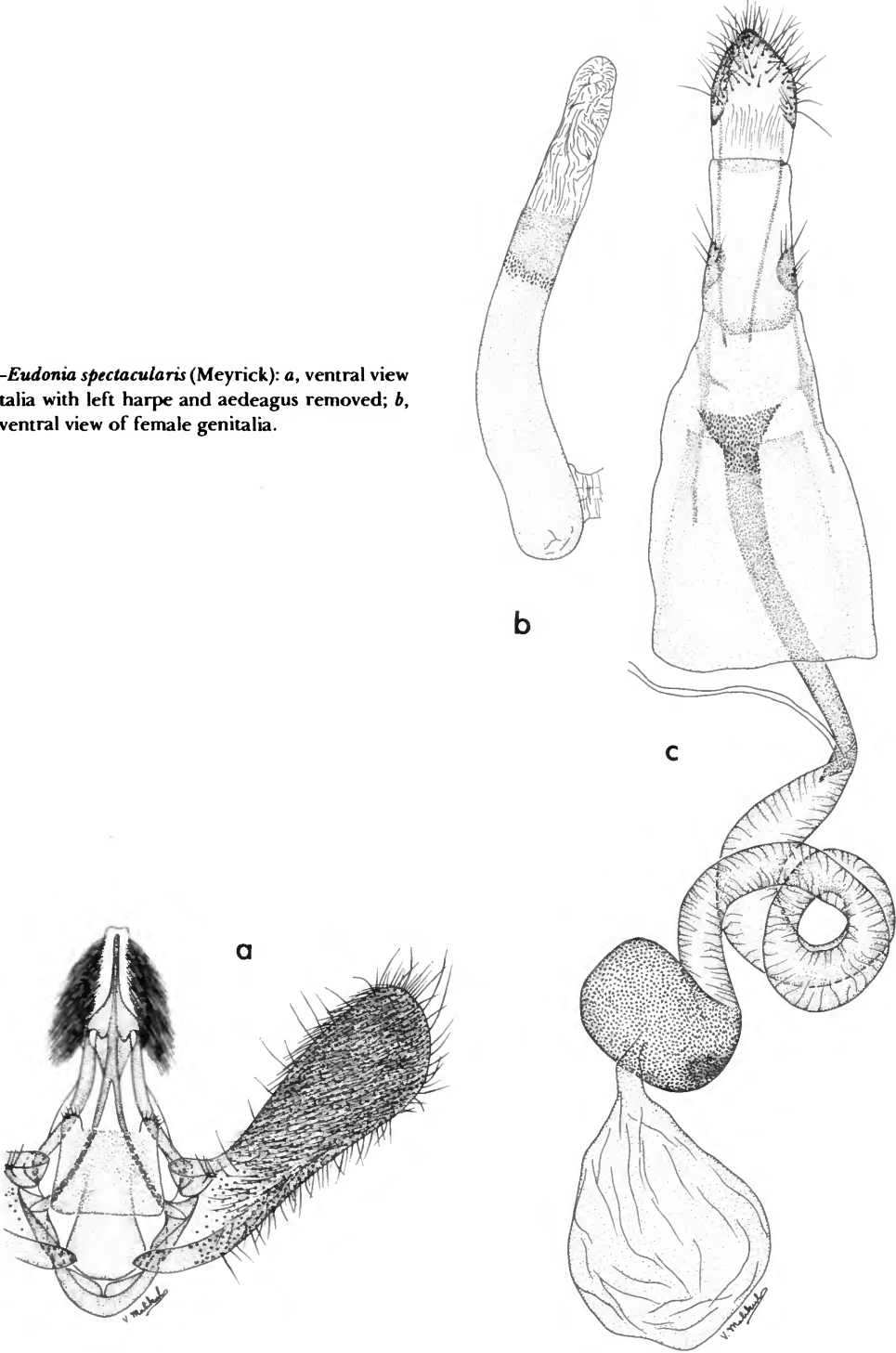


FIGURE 70.—*Eudonia clavula*, new species: *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.

FIGURE 71.—*Eudonia spectacularis* (Meyrick): *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.



Female genitalia slides USNM 25377, 25396. Ostium broad, transverse, funnel-shaped. Inception of ductus seminalis at junction of sclerotized and membranous parts of ductus bursae. At the point of inception of ductus seminalis two clusters of small teeth. Ductus bursae posterior half sclerotized, anterior half membranous, coiled. Bursa copulatrix oval, granular. Appendix bursae membranous. Signum an oval granular plate.

ORIGINAL MATERIAL.—“♂♀. 13–15 mm . . . Marquesas, Hiva Oa (3500 feet), Fatu Hiva (2000 feet), January; 30 ex.”

LECTOTYPE.—A large white label reads “Hiva Oa, Marquesas, at light. 3500 ft. 28.1.25. St. George Expedn. C.L. Collenette.” Then, a small white label “Brit. Mus. 1925-488.” Another small white label reads “Original body. teste WHTT.” A large white label has the inscription “Scoparia spectacularis Meyrick. Holotype.” Then, a narrow label in Meyrick’s hand “Scoparia spectacularis Meyr.” BM slide No. 9696♂. Lectotype hereby designated.

LECTOTYPE is in the British Museum (Natural History).

TYPE-LOCALITY.—Hiva Oa, 3500 ft (1067 m).

DISTRIBUTION.—Hiva Oa.

Our series of 25 specimens is from the following localities. Hiva Oa: Mt. Feani, 3400 and 3800 ft (1036 & 1158 m), 20 Feb and 1 Mar 1968, 9♂, 15♀; Atuona, 12 Feb 1968, 1♂.

FOOD PLANT.—Unknown.

Currently, this species is known only from the island of Hiva Oa. Generally, this species must be considered a high elevation taxon, but I cannot place the Atuona specimen (low elevation) with any other species.

***Eudonia opostactis* (Meyrick),
new combination**

FIGURES 72, 283d

Scoparia opostactis Meyrick, 1929b:168.

Scoparia apostactis [sic].—Meyrick, 1934c:342 [misspelled].

Male genitalia slides USNM 25349, 25393. Harpe simple, gradually widened toward cucullus; cucullus broadly rounded. Gnathos very slender, long. Uncus narrowly triangular, densely clothed with setae laterally. Vinculum broadly

rounded. Tegumen rather abruptly constricted posteriorly. Anellus pyriform. Aedeagus about as long as harpe, stout, curved; vesica armed with a small dentate disc.

Female genitalia slides USNM 25338, 25394. Ostium funnel-shaped. Inception of ductus seminalis from near junction of sclerotized and membranous parts of ductus bursae. Ductus bursae posterior half sclerotized, constricted anteriorly; anterior half membranous, coiled. Bursa copulatrix small, granular; appendix bursae membranous. Signum an oval dentate plate.

ORIGINAL MATERIAL.—“♂♀. 13–16 mm . . . Marquesas, Fatu Hiva, 2000 feet, January; 7 ex.”

LECTOTYPE: Male; the label data are as follows: A large white label with “Fatu Hiva, Marquesas. At light, 2000 ft. 31.1.25. St. George Expedn. C.L. Collenette.” A small white label with “Brit. Mus. 1925-488.” A large label with “Scoparia opostactis Meyrick. Holotype.” A long, slender white label with “Scoparia opostactis Meyr.” and British Museum slide label 9700♂. At the top is a circular purple-bordered “type” label. Lectotype hereby designated.

Lectotype is in the British Museum (Natural History).

TYPE-LOCALITY.—Fatu Hiva, 2000 ft (610 m).

DISTRIBUTION.—Fatu Hiva.

Our series consists of the following. Fatu Hiva: Tahuna, 2000 ft (610 m), 27 Mar 1968, 2♂, 13♀; Mt. Teoaiua, 2000 ft (610 m), 22 Mar 1968, 5♂, 5♀; Mt. Upe, 2025 ft (617 m), 3 Apr 1968, 3♀. Teavapuhiau, Ouia, 750 m, 1–3 Aug 1977, 1♂ (Montgomery).

FOOD PLANT.—Unknown.

This species is similar to *officialis* but is larger, has a longer, more slender gnathos, and a larger signum. Also, *opostactis* appears to be confined to Fatu Hiva.

***Eudonia officialis* (Meyrick), new combination**

FIGURES 73, 283e

Scoparia officialis Meyrick, 1929b:168; 1934c:342.

Male genitalia slide USNM 25389. Harpe simple, narrowest at middle; cucullus rounded. Gnathos very slender. Uncus narrowly triangular, clothed densely with setae laterally. Vinculum

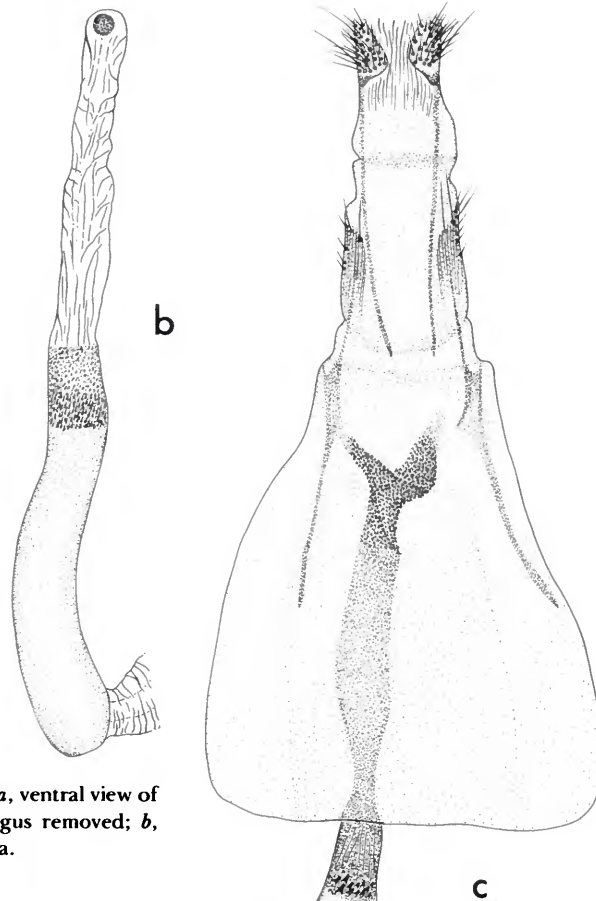
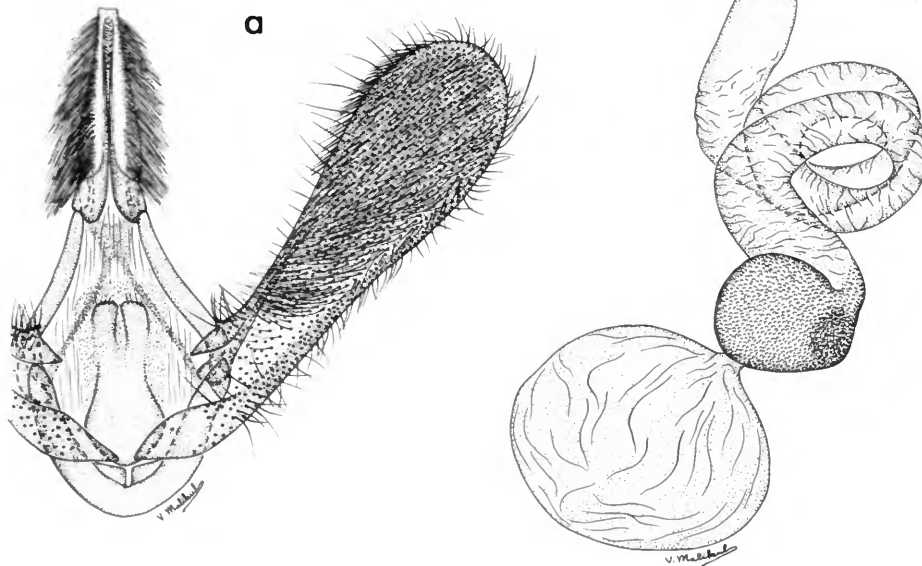


FIGURE 72.—*Eudonia opostactis* (Meyrick): *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.



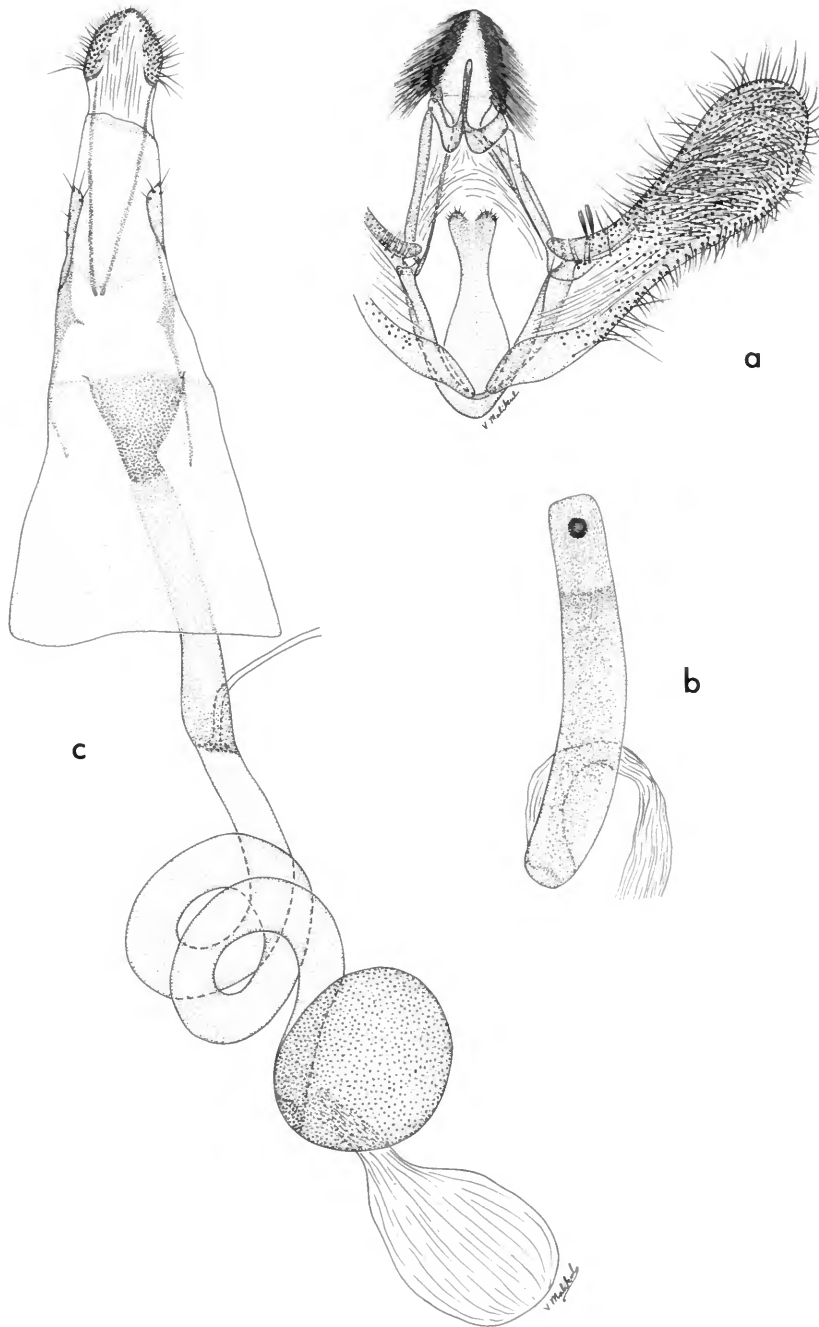


FIGURE 73.—*Eudonia officialis* (Meyrick): *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.

narrowly rounded. Tegumen narrowed posteriorly. Anellus pyriform. Aedeagus as long as harpe, curved, stout; vesica armed with a small granular disc.

Female genitalia slide USNM 25390. Ostium transverse, funnel-shaped. Inception of ductus seminalis at junction of sclerotized and membranous parts of ductus bursae. Ductus bursae posterior half sclerotized, anterior half membranous, coiled. Bursa copulatrix small, round, granular; appendix bursae membranous. Signum a small, oval, dentate plate.

ORIGINAL MATERIAL.—“♂♀. 13–15 mm. Marquesas, Hiva Oa, 3500 feet. January; 25 ex.”

LECTOTYPE. Male; label data are as follows: A large white label with “Hiva Oa, Marquesas at light. 3500 ft. 28.1.25. St. George Expedn. C.L. Collenette.” Below this a small white label with “Brit. Mus. 1925-488.” Then a large white label with “Scoparia officialis Meyrick. Holotype”, followed by a narrow white label with “Scoparia officialis Meyr.” BM slide label No. 9697♂. Above all the foregoing is a circular, purple-bordered “type” label. Lectotype hereby designated.

Lectotype is in the British Museum (Natural History).

TYPE-LOCALITY.—Hiva Oa, 3500 ft (1067 m).

DISTRIBUTION.—Hiva Oa.

We have 38 specimens as follows. Hiva Oa: Mt. Feani, 3400 and 3800 ft (1036 and 1158 m), 20 Feb and 1 Mar 1968, 6♂, 31♀. Uapou: above Hakahetau, 800m, 23–24 Jul 1977, 1♀ (Montgomery).

FOOD PLANT.—Unknown.

This is very similar to *opostactis* but averages a little smaller. Meyrick (1934c:342) records *officialis* from Uapou, and we have an additional specimen from that island.

***Eudonia achlya*, new species**

FIGURES 74, 283f

Alar expanse 12–14 mm.

Labial palpus blackish fuscous, but white ventrally toward base. Antenna fuscous. Head fuscous with a few paler scales laterally. Thorax blackish fuscous; tegula blackish fuscous with

some grayish fuscous scales mixed. Forewing ground color blackish fuscous with scattered white scales; from basal fourth of costa an almost straight white transverse line extends to dorsum; from near apical fourth of costa a fine, irregular, white transverse line extends to dorsum just inside tornus; terminal line, white, dentate, preceded by a series of black spots; between these two lines a group of white scales; cilia grayish with blackish fuscous subbasal line. Hindwing fuscous, slightly paler basally; cilia grayish with fuscous subbasal line. Legs white variously marked with blackish fuscous. Abdomen fuscous above, ventrally pure white.

Male genitalia slides USNM 25346, 25399, Harpe simple, broadest before cucullus; cucullus rounded. Gnathos short and blunt. Uncus rounded posteriorly, densely clothed with setae. Vinculum U-shaped. Tegumen arched. Anellus pyriform. Aedeagus, stout, curved, about as long as harpe; vesica armed with a small disc of granules.

Female genitalia slides USNM 25347, 25400. Ostium transverse, deeply U-shaped. Inception of ductus seminalis from a point near the juncture of the sclerotized posterior half of the ductus bursae and the anterior, membranous, spiraled part. Bursa copulatrix granular; signum an oval granular disc; appendix bursae membranous.

HOLOTYPE.—USNM 100749.

TYPE-LOCALITY.—Nuku Hiva, Tunoa Ridge, 2900 ft (884 m).

DISTRIBUTION.—Nuku Hiva.

FOOD PLANT.—Unknown.

Described from the ♀ holotype (23 Jan 1968), 3♂ and 14♀ paratypes with same data as holotype.

In superficial coloration *achlya* is similar to *officialis* but is immediately distinguished from it by the snow white underparts. The basal transverse line of the forewing of *achlya* is straight and well defined but that of *officialis* is obscure.

***Eudonia clerica* (Meyrick), new combination**

FIGURES 75, 283g,h

Scoparia clerica Meyrick, 1929b:167; 1934c:342.

Male genitalia slides USNM 25350, 25359, 25379. Harpe simple, broadest beyond middle;

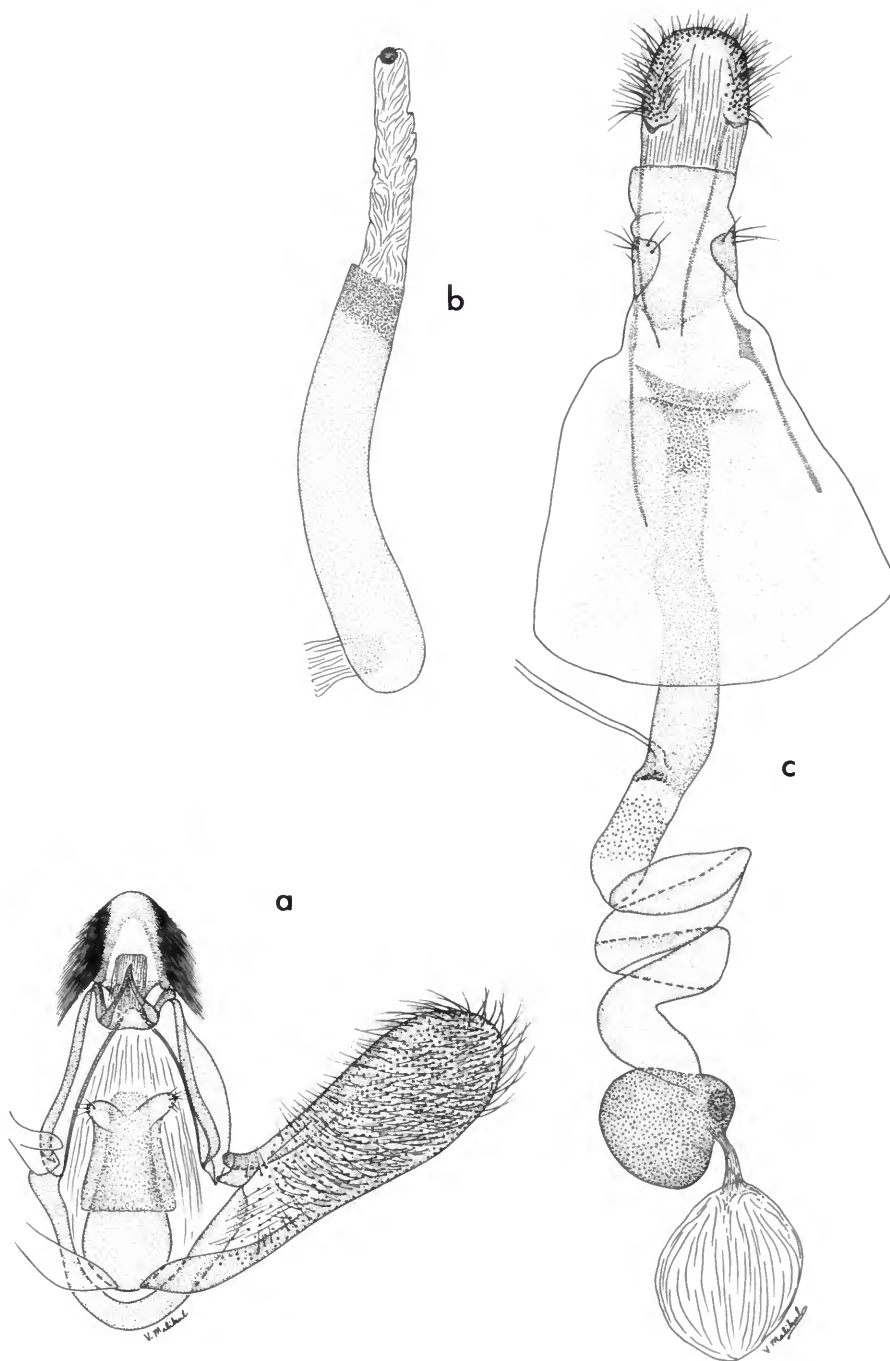
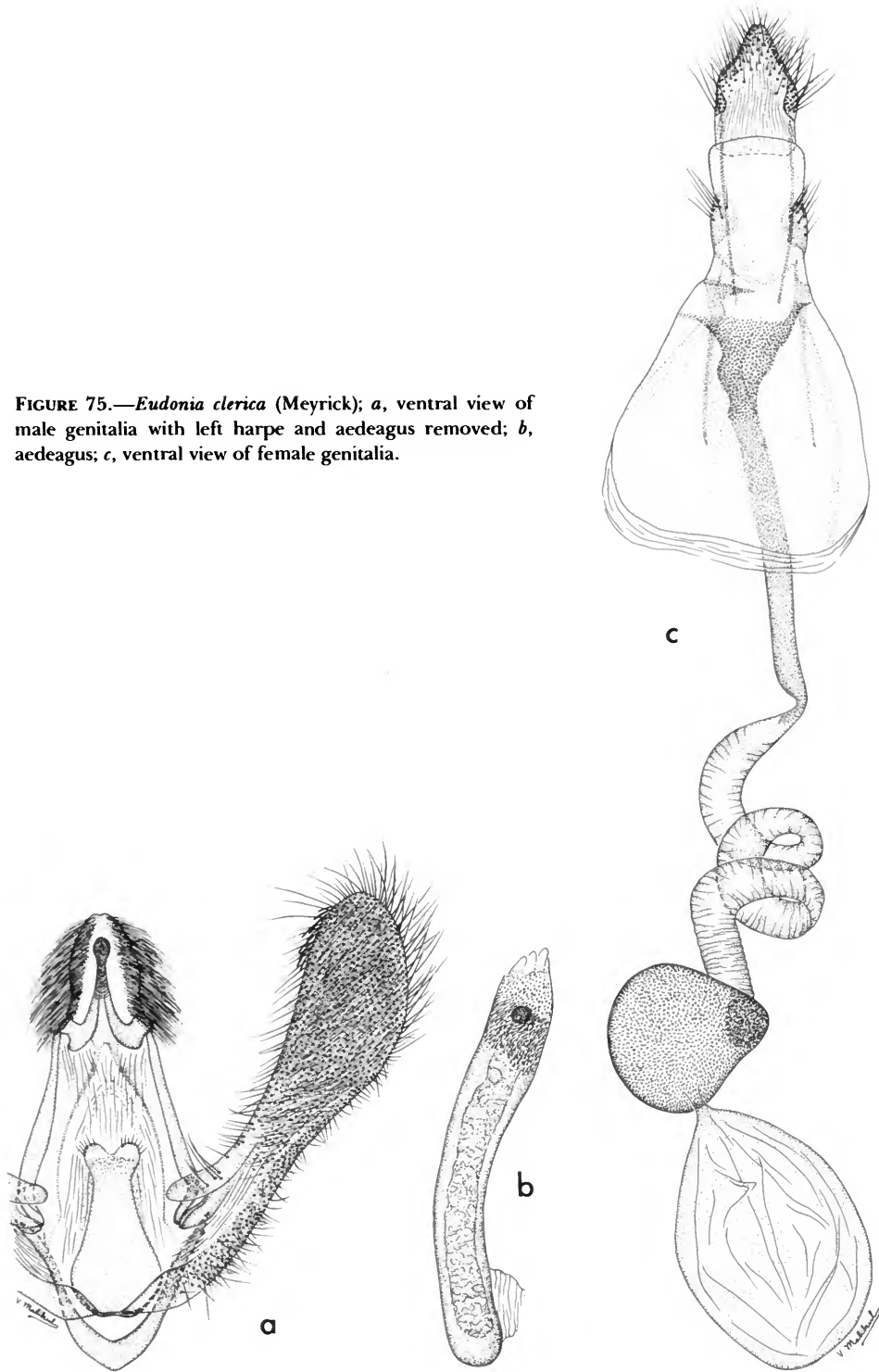


FIGURE 74.—*Eudonia achlya*, new species: *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.

FIGURE 75.—*Eudonia clerica* (Meyrick); *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.



cucullus rounded. Gnathos curved, terminating in a small knob. Uncus oval, heavily clothed with setae. Vinculum narrowly rounded. Tegumen narrowed posteriorly. Anellus pyriform, with a small, fleshy lobe posteriorly. Aedeagus as long as harpe, stout, curved; vesica with a small anterior granular patch.

Female genitalia slides USNM 25351, 25360, 25380. Ostium funnel-shaped, granular. Inception of ductus seminalis from about middle of ductus bursae. Ductus bursae posterior half sclerotized, anterior half coiled, membranous; at junction of the two parts a bend with 5 or 6 small teeth. Bursa copulatrix finely granular; appendix bursae membranous. Signum a small, oval, dentate patch.

ORIGINAL MATERIAL.—“♂♀. 14–17 mm . . . Marquesas, Hiva Oa (3500 feet), Fatu Hiva (2000 feet), January, 13 ex.”

LECTOTYPE.—Male; following are the label data: A white label with “Hiva Oa, Marquesas, at light, 3500 ft. 28.1.25. St. George Expedn. C.L. Collenette.” Next, a small white label “Brit. Mus. 1925-488.” A large white label bears “Scoparia clerica Meyrick. Holotype.” Then, a narrow label with “Scoparia clerica Meyr.” At the top of all labels there is a circular, purple-bordered “type” label. Lectotype hereby designated.

Lectotype is in the British Museum (Natural History).

TYPE-LOCALITY.—Hiva Oa.

DISTRIBUTION.—Hiva Oa, Fatu Hiva.

I have before me the following specimens. Hiva Oa: Mt. Feani, 3400 and 3800 ft (1036 and 1158 m), 20 Feb to 1 Mar 1968, 3♂, 10♀. Ootua, 800m, 27–30 July 1977, 6♂, 3♀ (Montgomery). Fatu Hiva: Mt. Teoaiua, 2000 ft (610 m), 22 Mar 1968, 3♂, 8♀; Tahuna, 2000 ft (610 m), 27 Mar 1968, 4♀.

FOOD PLANT.—Unknown.

The ground color of the forewing of *clerica* is white, but this color is usually obscured by blackish dusting. In the male genitalia the terminal knob of the gnathos distinguishes *clerica* from other species.

Eudonia ara, new species

FIGURES 76, 284a

Alar expanse 12–15 mm.

Labial palpus blackish fuscous except white ventrally and a white spot dorsally on second segment near base. Antenna fuscous. Head gray mixed with whitish scales. Thorax blackish fuscous; tegula white mixed with a few fuscous scales. Forewing ground color white strongly marked and irrorate with blackish fuscous; from basal fourth of costa a well-defined transverse line of the white ground color extends to dorsum at basal third; in cell a blackish fuscous spot; at end of cell a white dash; from apical fourth of costa a wavy, white transverse line extends to dorsum before tornus; on tornus a blackish fuscous spot and a similar spot before apex; terminal area blackish fuscous with two large white spots, and a series of white spots along termen; cilia grayish fuscous with a blackish fuscous basal line. Hindwing grayish basally shading to fuscous toward margins; cilia grayish with darker basal line. Fore- and midleg white strongly marked blackish fuscous; hindleg white; tarsal segments marked fuscous. Abdomen grayish fuscous dorsally, white ventrally.

Male genitalia slides USNM 25332, 25333, 25334, 25335, 25422. Harpe simple, narrowest toward base; cucullus rounded. Gnathos rather stout basally, sharply pointed. Uncus densely clothed with setae. Vinculum rounded. Tegumen narrowed posteriorly. Anellus pyriform. Aedeagus moderately stout, curved, about as long as harpe; vesica armed with a granular disc.

Female genitalia slides USNM 25356, 25357, 25358, 25423. Ostium funnel-shaped. Inception of ductus seminalis ventral, from near junction of sclerotized and membranous portions of ductus bursae. Ductus bursae sclerotized in posterior half, membranous and coiled in anterior half. Bursa copulatrix partly spiculate and partly granular; appendix bursae membranous. Signum a concentration of granules.

HOLOTYPE.—USNM 100746.

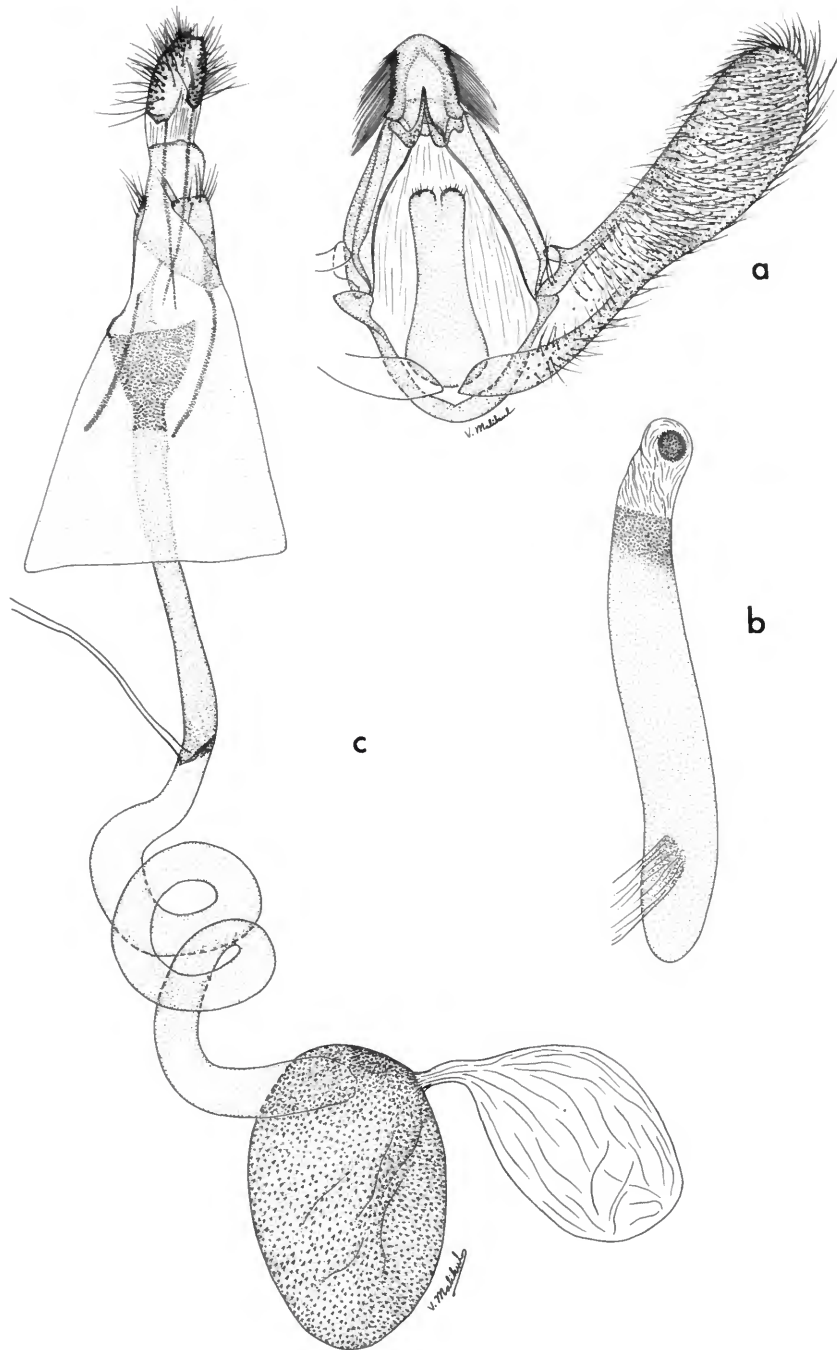


FIGURE 76.—*Eudonia ara*, new species; *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.

TYPE-LOCALITY.—Nuku Hiva, Tunoa Ridge, 2900 ft (884 m).

DISTRIBUTION.—Nuku Hiva.

FOOD PLANT.—Unknown.

Described from the ♂ holotype (23 Jan 1968), 7♂, 9♀ paratypes with same data as holotype; and 3♀ paratypes from Tapuaooa, 2500 ft (762 m), (2♀ 23 Jan 1968 and 1♀, 30 Jan 1968).

Eudonia ara is closely related to *clerica* but has a paler hindwing and the forewing is not so heavily marked with blackish fuscous.

Eudonia aplysia, new species

FIGURES 77, 284b

Alar expanse 13–15 mm.

Labial palpus fuscous on outer surface, buff on inner surface and ventrally. Antenna fuscous. Head fuscous mixed with a few buff scales. Thorax fuscous with slight mixture of buff scales. Forewing ground color fuscous with scattered buff and yellowish scales; from basal fourth of costa a buff, irregular, transverse line extends to dorsum; subapically on costa a small, triangular buff spot; subterminal line, slender, yellowish; terminal line slender, blackish fuscous; cilia grayish fuscous. Hindwing grayish basally shading to fuscous at margins; cilia grayish with darker basal line. Fore- and midleg buff marked with blackish fuscous; hindleg buff; tibia shaded with fuscous; tarsal segments marked fuscous. Abdomen grayish fuscous dorsally, buff ventrally.

Male genitalia slides USNM 25339, 25340, 25341, 25420. Harpe simple; cucullus rounded. Gnathos about as long as uncus; sharply pointed. Uncus densely clothed with setae. Vinculum rounded. Tegumen narrowed posteriorly. Anellus pyriform. Aedeagus about as long as harpe, moderately stout, slightly curved; vesica armed with a small group of granules.

Female genitalia slides USNM 25342, 25344, 25345, 25421. Ostium funnel-shaped. Inception of ductus seminalis ventral, near junction of sclerotized and membranous portions of ductus bursae. Ductus bursae posterior half sclerotized, anterior half membranous, coiled. Bursa copulatrix very finely granular; appendix bursae membra-

nous. Signum a small granular area.

HOLOTYPE.—USNM 100750.

TYPE-LOCALITY.—Nuku Hiva, Tunoa Ridge, 2900 ft (884 m).

DISTRIBUTION.—Nuku Hiva.

FOOD PLANT.—Unknown.

Described from the ♂ holotype (23 Jan 1968), 6♂, 14♀ paratypes with same data as holotype; and 1♂, 2♀ paratypes Nuku Hiva, Tapuaooa, 2500 ft (762 m), 30 Jan 1968.

This species is similar to *clerica* but lacks the distinct irregular transverse line at apical fifth of forewing; also, the subterminal line of *clerica* is whitish, that of *aplysia* is yellowish.

Eudonia dupla, new species

FIGURES 78, 284d,e

Alar expanse 13–14 mm.

Labial palpus basal segment white; second and third segments fuscous, inner side streaked with whitish scales. Antenna fuscous. Head fuscous, mixed with whitish scales. Thorax fuscous, streaked with whitish to buff scales. Forewing ground color fuscous variously marked with buff to whitish; at basal third, from costa to dorsum, a whitish transverse line; at apical third of costa a conspicuous, whitish triangular spot; on dorsum, just before tornus a short transverse dash; in cell some whitish scaling; before apex two small whitish or buff spots and a similarly colored spot just beyond tornus; terminal line slender, buff to whitish; cilia whitish to buff with a fuscous basal line. Hindwing of male grayish fuscous; female fuscous; cilia buff to whitish with grayish fuscous (♂) or fuscous (♀) basal line. Legs buff to whitish variously marked with fuscous or grayish fuscous. Abdomen fuscous dorsally, whitish ventrally.

Male genitalia slides USNM 25345, 25378, 25397, 25398, 25407. Harpe narrowest at base, gradually broadening to a rounded cucullus. Gnathos slender, slightly dilated distally. Uncus narrowly triangular, truncated; densely clothed with setae distally. Vinculum rounded. Tegumen narrow posteriorly. Anellus pyriform. Aedeagus as long as harpe, stout, curved; vesica armed with a small granulated disc.

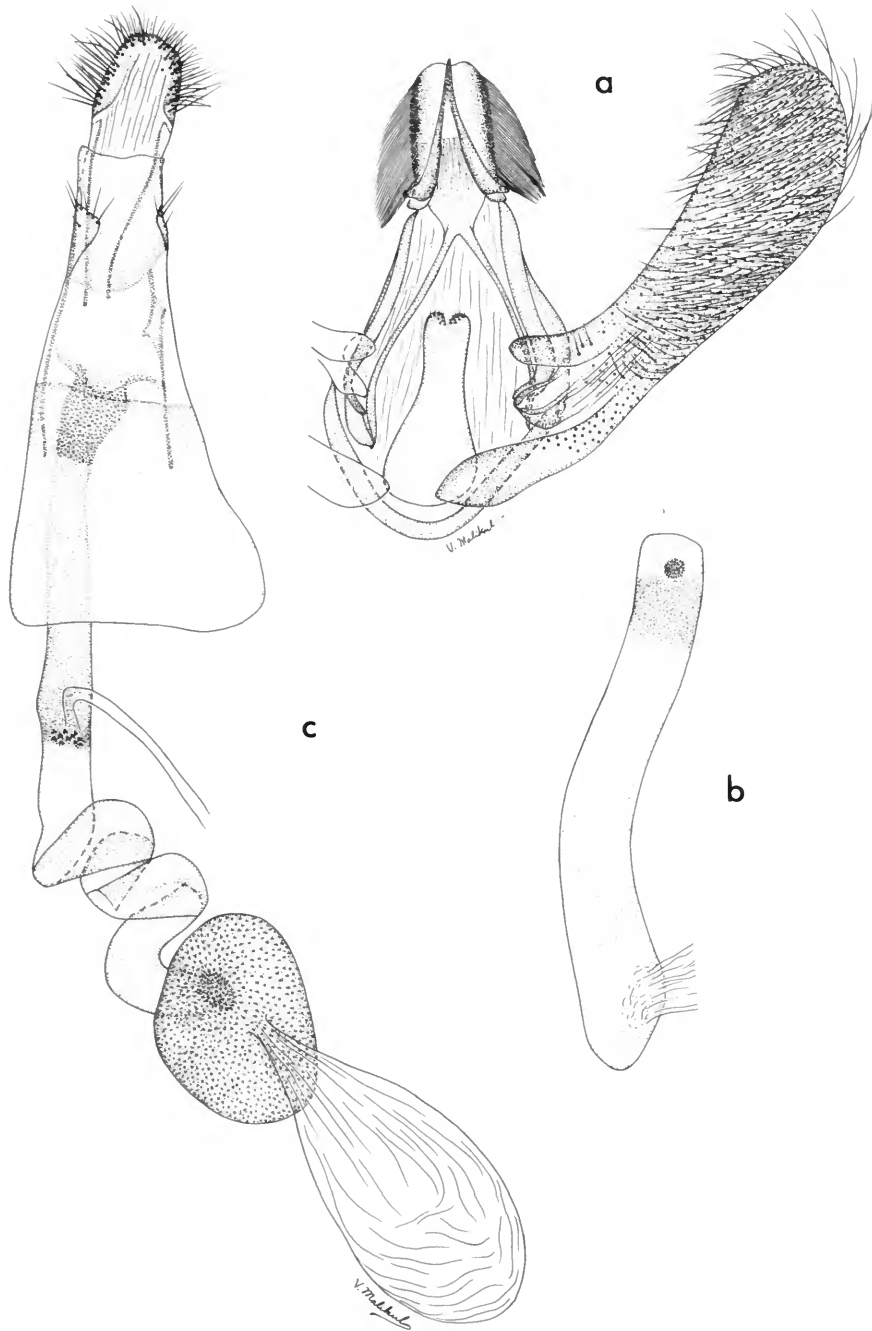
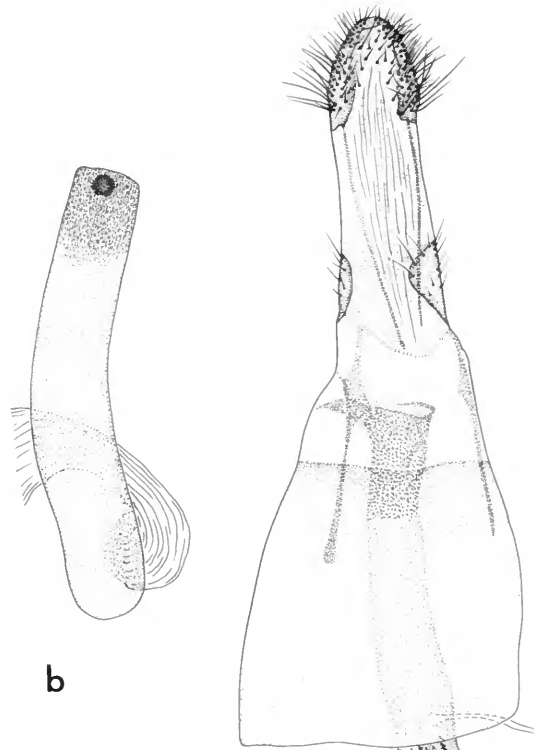
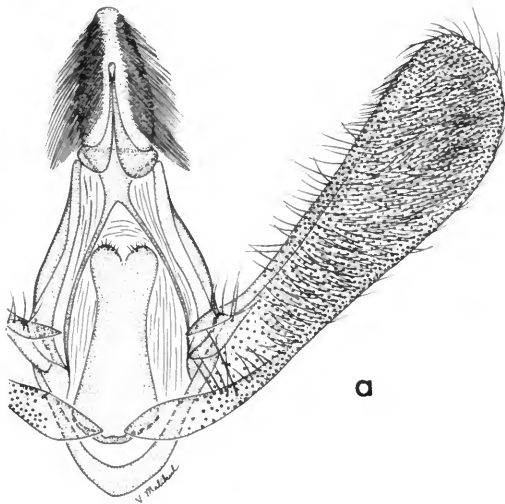


FIGURE 77.—*Eudonia aplysia*, new species: *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.

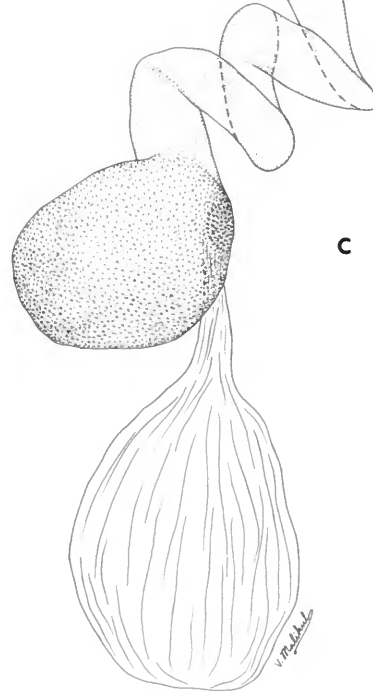


b

FIGURE 78.—*Eudonia dupla*, new species: a, ventral view of male genitalia with left harpe and aedeagus removed; b, aedeagus; c, ventral view of female genitalia.



a



c

Female genitalia slide USNM 25348, 25408. Ostium broad, transverse, funnel-shaped. Inception of ductus seminalis at junction of sclerotized and membranous parts of ductus bursae. Ductus bursae posterior half sclerotized; anterior half membranous, coiled. Bursa copulatrix membranous, finely granular; appendix bursae membranous. Signum an oval, finely dentate plate.

HOLOTYPE.—USNM 100747.

TYPE-LOCALITY.—Fatu Hiva, Mt. Teoaiua, 2000 ft (610 m).

DISTRIBUTION.—Fatu Hiva, Hiva Oa.

FOOD PLANT.—Unknown.

Described from the ♂ holotype, 28♂ and 28♀ paratypes as follows. Fatu Hiva: Mt. Teoaiua, 2000 ft (610 m), 22 Mar 1968, 23♂, 10♀; Tahuna, 2000 ft (610 m), 27 Mar 1968, 3♂, 9♀; Mt. Upe, 2025 ft (617 m), 3 Apr 1968, 2♂, 2♀; Omoa, 11–16 Mar 1968, 3♀. Teavapuhiau, Ouia, 750m, 1–3 Aug 1977, 2♀ (Montgomery). Hiva Oa, Ootua, 800m, 27–30 Jul 1977, 2♀ (Montgomery).

The males of *dupla* are similar to *clerica* but the females of *dupla* are darker and more like *spectacularis*. Both *clerica* and *spectacularis* lack the prominent whitish subapical spot on costa. The anellus of *officialis* is much narrower than that of *dupla*.

Eudonia munroei, new species

FIGURES 79, 284g

Alar expanse 18 mm.

Labial palpus fuscous mixed with grayish scales on outer side distally; white ventrally toward base. Antenna fuscous. Head fuscous mixed with yellow ochre scales. Thorax blackish fuscous; tegula mixed fuscous, golden ochre and buff. Forewing ground color blackish fuscous profusely covered with yellow ochre scales, obscuring most of ground color; from basal fourth of costa an outwardly oblique, jagged, buff transverse line extends to basal third of dorsum; beyond this line, in cell, a spot of the blackish fuscous ground color; at about apical fourth of costa a pair of buff marks, which join to form an ill-defined buff, irregular, transverse line; on tornus a large blackish fuscous spot with streaks of

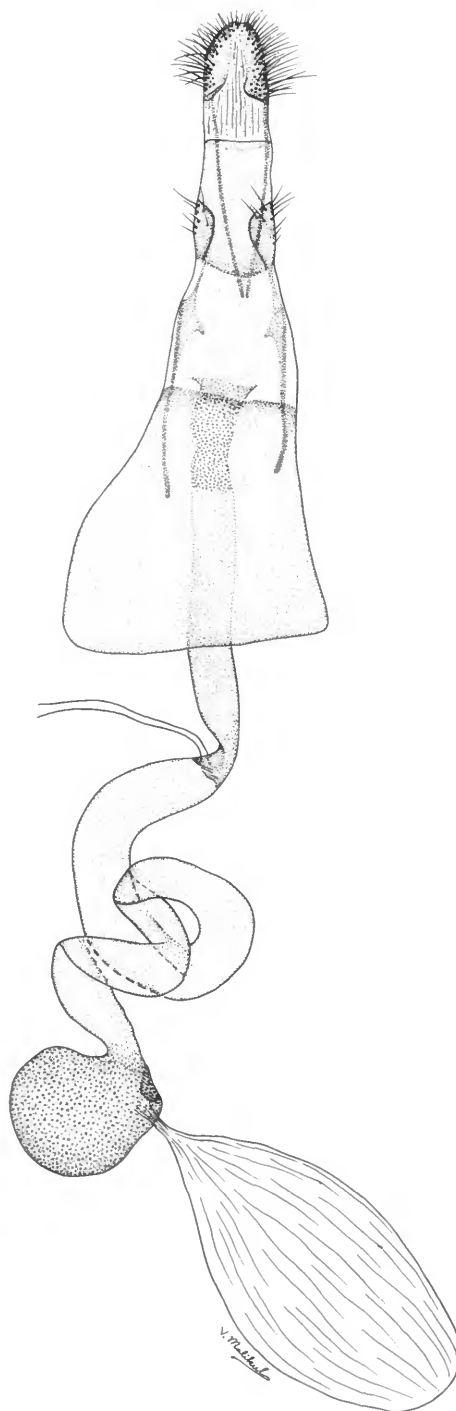


FIGURE 79.—*Eudonia munroei*, new species, ventral view of female genitalia.

yellow ochre; along termen a series of six small blackish fuscous spots; cilia mixed grayish fuscous and buff, with a grayish fuscous basal line. Hindwing fuscous, but paler basally; cilia grayish with fuscous basal line. Foreleg buff; tibia blackish fuscous on outer side; tibia and tarsal segments blackish fuscous marked with buff; midleg similar but femur almost wholly buff; hindleg buff; tibia suffused fuscous; tarsal segments blackish fuscous marked buff. Abdomen grayish fuscous dorsally, each segment edged buff posteriorly; ventrally buff.

Female genitalia slides USNM 25362, 25417. Ostium funnel-shaped. Inception of ductus seminalis at junction of sclerotized and membranous portions of the ductus bursae. Ductus bursae posterior two-fifths sclerotized; anterior three-fifths membranous, coiled. Bursa copulatrix granular; appendix bursae membranous. Signum an oval granular plate.

HOLOTYPE.—USNM 100784.

TYPE-LOCALITY.—Hiva Oa, Mt. Feani, 3800 ft (1158 m).

DISTRIBUTION.—Hiva Oa.

FOOD PLANT.—Unknown.

Described from the ♀ holotype (20 Feb 1968), and 1♀ paratype from Hiva Oa: Mt. Feani, 3400 ft (1036 m), 1 Mar 1968.

Probably *munroei* is most closely related to *chrysomicta* but the forewing of *munroei* is profusely covered with yellow ochre scales, a character lacking in *chrysomicta*. Moreover, the basal transverse line of *munroei* is jagged, not so in *chrysomicta*.

It gives me much pleasure to name this species for Dr. Eugene Munroe, the world's leading authority on the Pyralidae, who is always willing to help those less knowledgeable in this group.

***Eudonia chrysomicta* (Meyrick), new combination**

FIGURES 80, 284c,f

Scoparia chrysomicta Meyrick, 1929b:166; 1934c:341.

Scoparia commercialis Meyrick, 1929b:167.

Male genitalia slides USNM 25366, 25381. Harpe simple; narrowest before middle; cucullus rounded. Gnathos curved, compressed distally.

Uncus elongate, strongly clothed with setae laterally. Vinculum rounded. Tegumen broad basally, narrowed posteriorly. Anellus pyriform, small lobes lateroposteriorly. Aedeagus as long as harpe, stout, curved; vesica with a small granular disc.

Female genitalia slides USNM 25367, 25382. Ostium broad, funnel-shaped. Inception of ductus seminalis at junction of sclerotized and membranous parts of ductus bursae. Ductus bursae posterior half sclerotized, granular before ostium; anterior portion membranous, coiled; at junction of the two parts a series of 5 or 6 teeth. Bursa copulatrix granular; appendix bursae membranous. Signum a small, dentate oval plate.

ORIGINAL MATERIAL OF *Eudonia chrysomicta*.—“♂♀. 16–18 mm . . . Marquesas, Hiva Oa, 3500 feet, January; 29 ex.”

LECTOTYPE.—Male; following are the label data: A white label bearing “Hiva Oa, Marquesas, at light. 3500 ft. 28.1.25 St. George Expedn. C.L. Collenette.” Then, a small white label bears “Brit. Mus. 1925-488.” A large white label has the inscription “*Scoparia chrysomicta* Meyrick. Holotype.” A narrow white label in Meyrick's hand reads “*Scoparia chrysomicta* Meyr.” Brit. Mus. slide No. 9695♂. Above all of the labels indicated is a circular, purple bordered “type” label. Lectotype hereby designated.

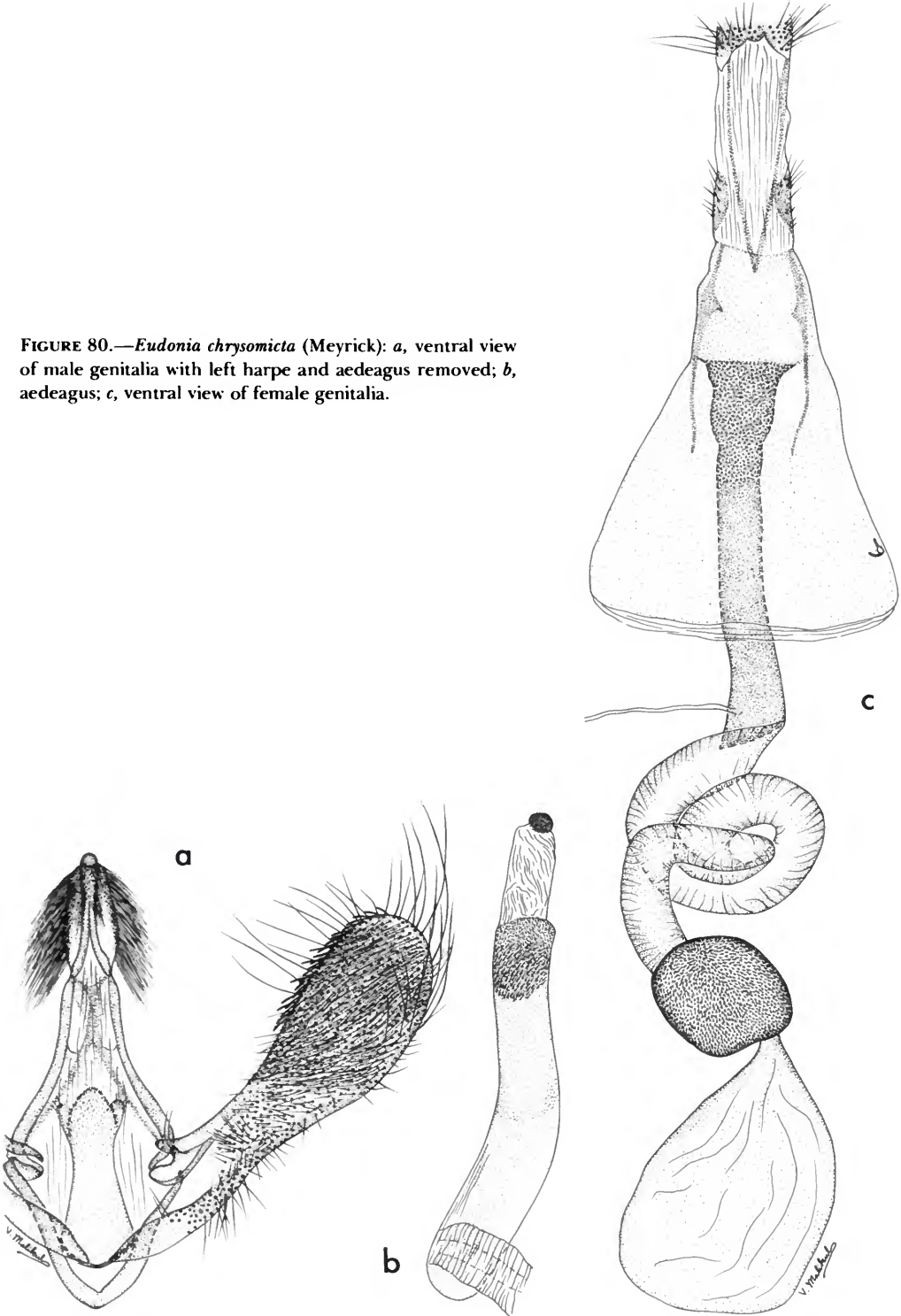
ORIGINAL MATERIAL OF *Eudonia commercialis*.—“♂♀. 15–17 mm . . . Marquesas, Hiva Oa, 3500 feet, January; 12 ex.”

LECTOTYPE.—Male; label data are as follows: A white label with “Hiva Oa, Marquesas, at light, 3500 ft. 25.1.25. St. George Expedn. C.L. Collenette.” A small white label reads “Brit. Mus. 1925-488.” A third label is inscribed, “*Scoparia commercialis* Meyrick. Holotype.” Then, a narrow white label in Meyrick's hand, “*Scoparia commercialis* Meyr.” Brit. Mus. slide No. 9698♂. At the top of all the labels is a circular, purple-bordered “type” label. Lectotype hereby designated.

Lectotypes are in the British Museum (Natural History).

TYPE-LOCALITIES.—Hiva Oa, 3500 ft (1067 m).

FIGURE 80.—*Eudonia chrysomicta* (Meyrick): *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.



DISTRIBUTION.—Hiva Oa. Our series consists of 26 specimens as follows: Hiva Oa, Mt. Feani, 3400–3800 ft (1036–1158 m), 20 Feb and 1 Mar 1968, 10♂, 14♀. Ootua, 800m, 27–30 Jul 1977, 2♂ (Montgomery).

FOOD PLANT.—Unknown.

Under *S. chrysomicta*, Meyrick (1934c:341) stated “I am satisfied that *S. commercialis* Meyrick is not specifically distinct from this.”

In addition to the specimens listed above, we have 10 specimens (1♂, 9♀) from the same locality, which average a little larger and are more

contrastingly marked than typical *chrysomicta*, but are indistinguishable on genitalia.

Family TORTRICIDAE

Genus *Dichelopa* Lower

FIGURE 81

Dichelopa Lower, 1901:76.

TYPE-SPECIES.—*Dichelopa dichroa* Lower, 1901:76; by monotypy.

Key to the Species of *Dichelopa*

1. Underside of hindwing moderately to strongly mottled 15
 Underside of hindwing not mottled 2
2. Ground color of forewing gray or cinereous 3
 Ground color of forewing otherwise 5
3. Forewing with conspicuous fuscous or dark brown triangle based on
 costa *choleranthes* Meyrick
 Forewing without conspicuous triangle 4
4. Forewing with transverse fascia *harmodes* Meyrick
 Forewing without transverse fascia *hadrotis*, new species
5. Alar expanse 11 mm or less 6
 Alar expanse 12 mm or more 9
6. Forewing with conspicuous transverse banding 7
 Forewing without conspicuous transverse banding 8
7. Forewing with whitish spot on tornus and one transverse fascia
 *pachymeta* Meyrick
 Forewing with two whitish transverse fasciae *pyrsogramma* Meyrick
8. Alar expanse 11 mm; forewing with purplish reflections
 *dryomorpha* Meyrick
 Alar expanse 8 mm; forewing without purplish reflections
 *gnoma*, new species
9. Forewing with yellowish markings 10
 Forewing without yellowish markings 11
10. Forewing with two yellowish transverse fasciae *ochroma*, new species
 Forewing otherwise *cirrhodoris* Meyrick
11. Forewing with conspicuous dark shade on dorsum *dorsata*, new species
 Forewing otherwise 12
12. Hindwing fuscous 13
 Hindwing gray 14
13. Forewing marked with numerous ochraceous-buff scales
 *meligma*, new species
 Forewing not so marked *paragnoma*, new species
14. Basal patch of forewing extending to middorsum *praestrigata* Meyrick

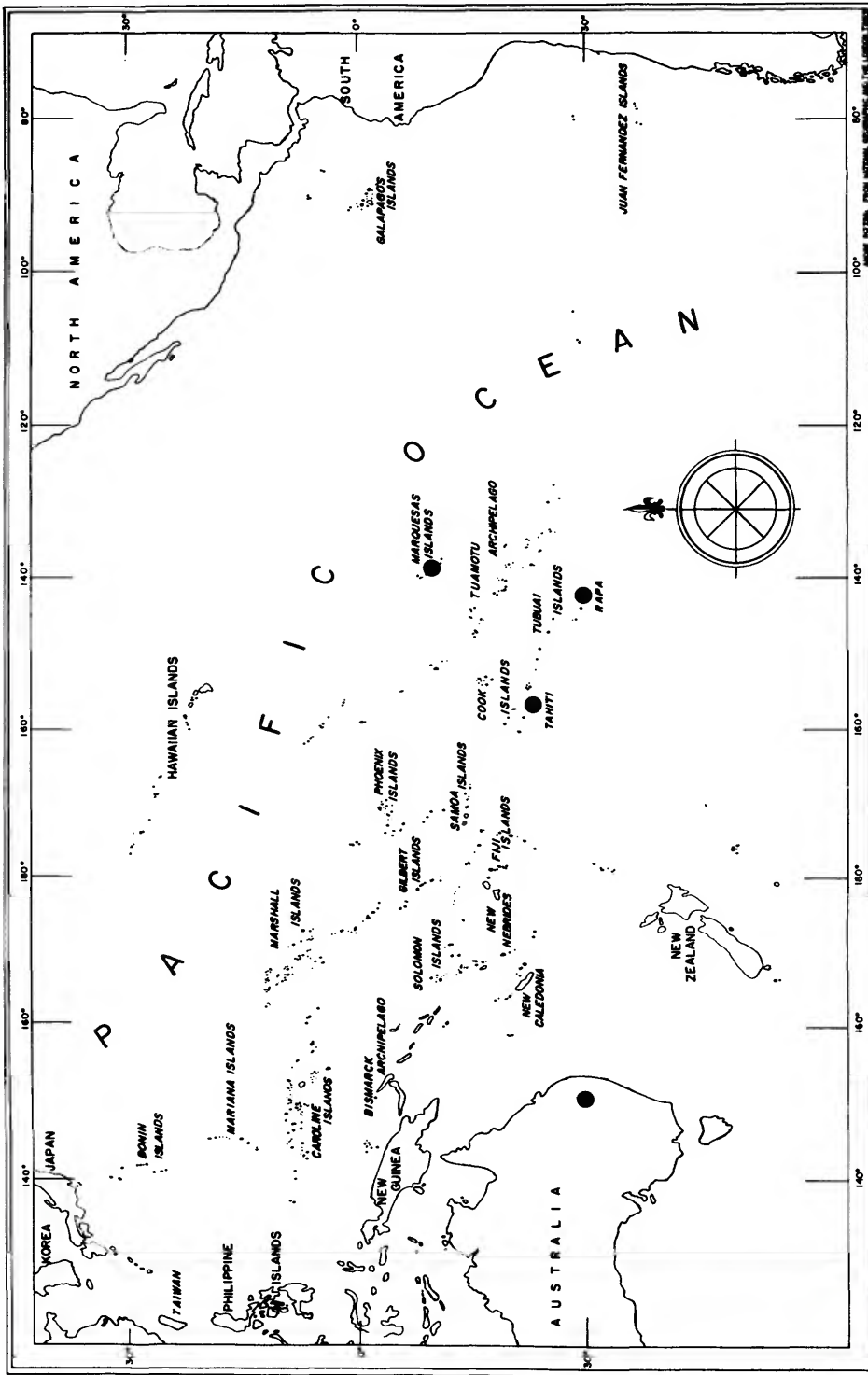


FIGURE 81.—*Dichelopa* distribution map.

- Basal patch not extending beyond one-third of dorsum *zona*, new species
15. Forewing conspicuously marked with white transverse lines *chionogramma*, new species
Forewing otherwise 16
16. Forewing ground color dark brown to fuscous strongly marked, mottled, or with yellowish or whitish on costa (from Fatu Hiva) [Figure 288 *a-c*] *peropaca* Meyrick
Forewing ground color otherwise 17
17. Forewing ground color drab or grayish or buffy brown 18
Forewing ground color more ferruginous or tawny, or buff 19
18. Forewing with 10 or 11 tiny white spots around apex and termen *argosphena* Meyrick
Forewing not so marked 20
19. Forewing and hindwing with conspicuous costal whitish mark (from Fatu Hiva) *argema*, new species
Forewing and hindwing without such mark (from Nuku Hiva) *canitia*, new species
20. Forewing ground color buff or ochraceous buff 21
Forewing ground color otherwise 23
21. Large species, 22–28 mm (from Fatu Hiva) *platyxantha*, new species
Small species, 10–15 mm 22
22. Forewing dorsal light spot marked with ferruginous; outer half of wing marked purplish metallic *phalaranthes phalaranthes* Meyrick
Forewing not marked as above *phalaranthes aporrhagma*, new subspecies
23. Forewing with outer edge of basal patch, oblique, straight, reaching middorsum 24
Forewing otherwise 25
24. Forewing dorsum marked with whitish spots *castanopsis* Meyrick
Forewing not so marked *porphyrophanes* Meyrick
25. Forewing with outer edge of basal patch generally irregular (from Nuku Hiva) *amorphia*, new species
Forewing with outer edge of basal patch generally evenly convex (from Hiva Oa) *flexura*, new species

Dichelopa castanopsis Meyrick

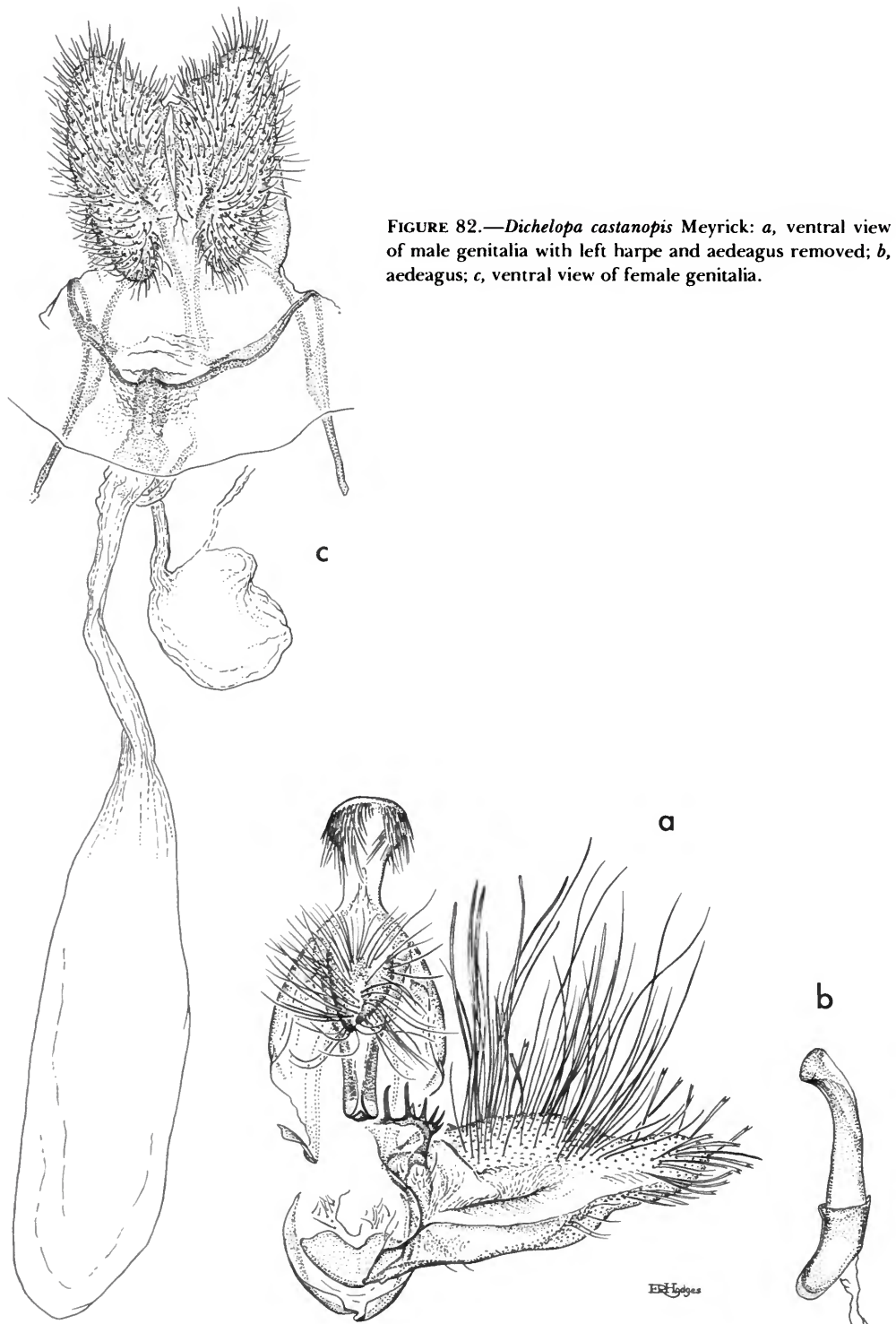
FIGURES 82, 285a

Dichelopa castanopsis Meyrick, 1934c:345.—Clarke, 1955 [1955–1970]: 75.

Male genitalia slides USNM 24314, 24325. Harpe of about equal width to just before cucullus; costa slightly arched; cucullus spatulate, bluntly pointed. Gnathos narrow, constricted about middle, curved, pointed. Socius slender,

digitate, clothed with fine setae. Uncus clavate, curved, armed with stout setae distally. Transtilar lobe strongly developed, armed posteriorly with antler-like spines. Vinculum rounded. Tegumen about as broad as long. Anellus a reniform, sclerotized plate. Aedeagus stout, curved and dilated distally; vesica unarmed.

Female genitalia slide USNM 24326. Ostium transverse, oval. Sterigma a narrow sclerotized band. Antrum sclerotized. Inception of ductus



seminalis well before antrum. Ductus bursae membranous. Bursa copulatrix membranous. Signum absent. Papillae anales rather broad, flat pads.

HOLOTYPE.—In the Bernice P. Bishop Museum.

TYPE-LOCALITY.—Uapou, Tekohepu Summit, 3200 ft (975 m).

DISTRIBUTION.—Uapou.

FOOD PLANT.—Unknown.

Meyrick's type series is mixed and most of the specimens are in very poor condition. With the specimen labeled "type" by Meyrick, I associate 13 specimens, all from Uapou. All of the specimens in Meyrick's series from Hiva Oa that I have seen (20) are referable to *D. flexura*, new species, which follows.

Obviously, *castanopsis* is closely related to the two new species *flexura* and *amorpha*, and the three are not easily separated by superficial characters; however, a comparison of the figures of the genitalia and the island localities will suffice.

Dichelopa amorpha, new species

FIGURES 83, 285b-d

Alar expanse 18–25 mm.

Labial palpus light ochraceous buff; second segment dresden brown, mixed with ochraceous buff scales on outer side; third segment dresden brown except apex. Antenna light ochraceous buff, each segment edged dresden brown outwardly; scape light ochraceous buff below, dresden brown above. Head ochraceous tawny. Thorax dresden brown; tegula tawny basally. Forewing ground color dresden brown overlaid with ochraceous tawny scales; from about basal fourth of costa a rectangular, oblique, ochraceous buff mark extends to cell, broadens and extends to dorsum; from middle of costa an outwardly curved, similarly colored mark extends to cell, then broadens to tornus; these marks are bordered by slender, irregular, fuscous lines and the pale portions are usually mottled; in the females these marks are frequently

paler or are obscured (Figure 285d); cilia dresden brown mixed with ochraceous tawny. Hindwing gray, paler basally and very strongly mottled grayish fuscous; cilia grayish. Foreleg ochraceous buff; femur and tibia overlaid dresden brown on outer sides; tarsal segments fuscous, narrowly annulated ochraceous buff distally; midleg similar but tarsal segments not so strongly marked; hindleg ochraceous buff, suffused grayish. Abdomen gray dorsally, ochraceous buff ventrally.

Male genitalia slides USNM 24318, 24322, 24524. Harpe with costa moderately arched; cucullus produced, bluntly pointed; sacculus sclerotized to base of cucullus and with a small pointed process ventrally near base. Gnathos pointed. Transtillar lobe armed posteriorly with six to ten slender spines. Uncus spoon-shaped distally, bluntly pointed. Vinculum U-shaped. Tegumen about as long as wide. Anellus kidney-shaped. Aedeagus slightly curved and with a conspicuous point ventrally on distal end. Vesica armed with a cluster of three or four slender cornuti.

Female genitalia slides USNM 24525, 24526. Ostium small, oval. Sterigma very narrow. Antrum sclerotized a short distance on each side. Inception of ductus seminalis well before antrum. Ductus bursae membranous. Bursa copulatrix membranous. Signum absent.

HOLOTYPE.—USNM 100755.

TYPE-LOCALITY.—Nuku Hiva, Tapuaooa, 2500 ft (762 m).

DISTRIBUTION.—Nuku Hiva.

FOOD PLANT.—Unknown.

Described from the male holotype, 6♂ and 23♀ paratypes (30 Jan 1968) all with the same data; and 1♀ paratype Nuku Hiva, Toovii, Ooumu, 900 m, 16–19 Jul 1977 (Montgomery).

Dichelopa amorpha is very closely related to *castanopsis* from Uapou but can be distinguished from it by the weaker spines on the transtilla, the more pointed uncus and the rather sharply pointed projection on the ventral surface at the distal end of the aedeagus. In the female the sclerotization of the antrum is more extensive in

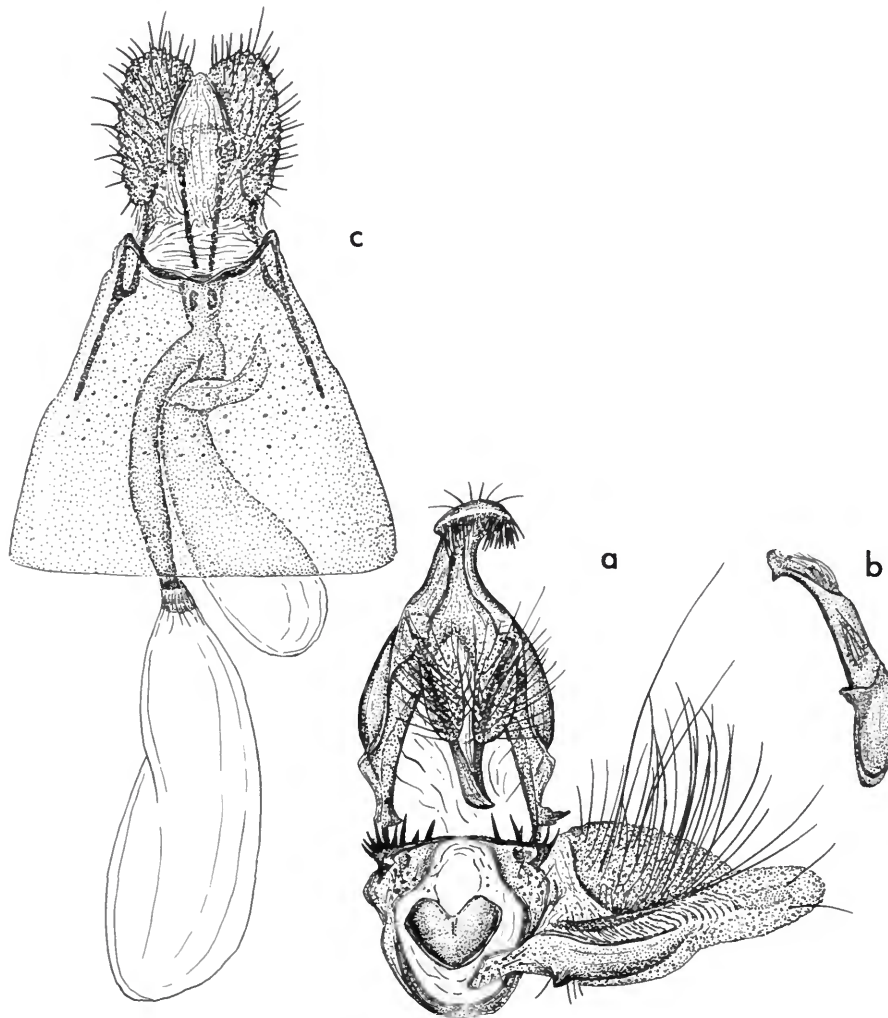


FIGURE 83.—*Dichelopa amorpha*, new species: *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.

castanopsis than in *amorpha* and the posterior ends of the papillae anales more pointed in the former than in the latter. Superficially the two are nearly indistinguishable, particularly because they are both variable, but the two whitish costal marks of the forewing of *castanopsis* almost always suffice to separate the two.

The males of *amorpha* measure 18–20 mm, the females 21–25 mm.

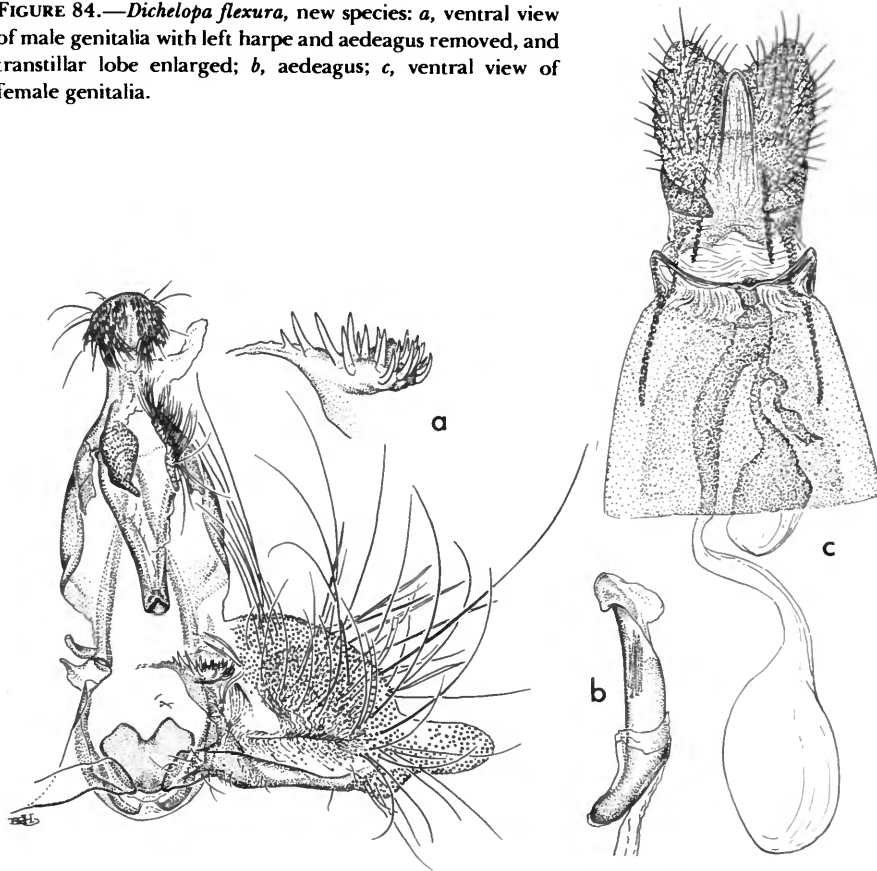
Dichelopa flexura, new species

FIGURES 84, 285*e–h*, 288*h*

Alar expanse 16–23 mm.

Labial palpus ochraceous buff; second segment strongly overlaid ochraceous tawny and cinnamon brown on outer side; third segment ochraceous tawny on outer side. Antenna ochraceous tawny, each segment narrowly edged outwardly

FIGURE 84.—*Dichelopa flexura*, new species: *a*, ventral view of male genitalia with left harpe and aedeagus removed, and transtillar lobe enlarged; *b*, aedeagus; *c*, ventral view of female genitalia.



cinnamon brown; scape ochraceous tawny. Head ochraceous tawny. Thorax ochraceous tawny; tegula seal brown distally. Forewing ground color seal brown but so heavily overlaid ochraceous tawny the ground color is largely obscured; from basal fourth of costa an outwardly oblique rectangular ochraceous-buff mark extends to cell and continues as a slender line, on inner side, nearly to dorsum; from middle of costa an outwardly curved, similarly colored mark extends to end of cell; both of these marks are narrowly edged with fuscous when present but in some specimens these marks are either obsolete or are absent (Figure 285*h*); cilia seal brown mixed with a few ochraceous-tawny scales. Hindwing grayish, lighter basally, strongly mottled grayish fus-

cous. Foreleg ochraceous buff; femur and tibia ochraceous tawny on outer sides; tarsal segments fuscous narrowly edged ochraceous buff distally; midleg similar but tarsal segments ochraceous tawny; hindleg ochraceous buff suffused grayish. Abdomen buckthorn brown dorsally, ochraceous buff laterally, ochraceous tawny ventrally.

Male genitalia slides USNM 24316, 24317, 24320, 24321. Harpe broad basally, costa highly arched; cucullus fleshy, digitate; sacculus strongly sclerotized. Gnathos a strong hook. Transtillar lobe armed with about a dozen strong spines. Uncus curved, spoon-shaped; inner distal surface clothed with stout setae. Vinculum rounded. Tegumen slightly longer than broad. Anellus reniform. Aedeagus moderately stout,

slightly curved distally; on ventral surface a short hook; vesica armed with a cluster of slender cornuti.

Female genitalia slides USNM 24323, 24523. Ostium transverse. Sterigma very narrow. Antrum narrowly sclerotized. Inception of ductus seminalis dorsal, slightly before antrum. Ductus bursae membranous. Bursa copulatrix membranous. Signum absent.

HOLOTYPE.—USNM 100756.

TYPE-LOCALITY.—Hiva Oa, Mt. Feani, 3800 ft (1158 m).

DISTRIBUTION.—Hiva Oa.

FOOD PLANT.—Unknown.

Described from the ♂ holotype (20 Feb 1968), 42♂ and 13♀ with the same data as holotype; and 2♂ and 2♀ paratypes, Mt. Feani, 3400 ft (1036 m), 1 Mar 1968.

As indicated under *castanopsis*, it and *flexura* are very closely related. A comparison of the figures of the genitalia, particularly those of the males (Figure 84) will demonstrate the differences. In the males it will be seen that the transillar lobes of *flexura* have many more spines than do those of *castanopsis*; *flexura* is also closely related to *amorpha* but the transillar spines are much more numerous and smaller in *flexura* than in *amorpha*.

The alar expanse of the males and females of *flexura* averages about the same.

Dichelopa harmodes Meyrick

FIGURES 85, 286a-f

Dichelopa harmodes Meyrick, 1929a:494; 1934c:345.—Clarke, 1955 [1955-1970]:153; 1958 [1955-1970]:100, pl. 50: figs. 4-4b.

Male genitalia slides USNM 24363, 24365, 24367, 25275, 25278. Harpe broad basally, costa strongly arched; cucullus short, rounded; sacculus sclerotized. Gnathos curved, terminating in a blunt point. Socius an elongate flat pad clothed with fine setae. Uncus short, strongly curved; distal end very broad, heavily clothed with setae on inner surface. Transtillar lobe clothed with short stout spines. Vinculum nar-

rowly rounded. Tegumen narrow, slightly longer than harpe. Anellus reniform. Aedeagus slender, curved, outer half very slender; vesica armed with four or five long, hairlike cornuti.

Female genitalia slides JFGC 11955, 12165, 12167; USNM 24366, 24368, 24369, 25276, 25277, 25279. Ostium small, round. Sterigma very narrow; median anterior edge convex. Antrum a narrow sclerotized ring. Inception of ductus seminalis dorsal, slightly before antrum. Ductus bursae slender, membranous. Bursa copulatrix elongate, oval, membranous. What appears to be a signum is a tiny, thornlike, slightly curved external process in some specimens.

TYPE.—In the British Museum (Natural History).

TYPE-LOCALITY.—Fatu Hiva, 2000 ft (610 m.)

DISTRIBUTION.—Fatu Hiva, Hiva Oa, Nuku Hiva, Uapou.

Our series of *harmodes* consists of the following. Nuku Hiva: Pakiu Valley, 1800 ft (548 m), Em. 20 Jan to 22 Feb 1968, 10♂, 8♀ (all reared); Tapuaooa, 2500 ft (762 m), 30 Jan 1968, 44♂, 34♀, Tunoa Ridge, 2900 ft (884 m), 23 Jan 1968, 2♀. Hiva Oa: Mt. Feani, 3800 ft (1158 m), 20 Feb 68, 1♂, 31♀. Fatu Hiva: Tahuna, 2000 ft (610 m), 23 Mar 1968, 27♂, 17♀; Mt. Teaoaiua, 2000 ft (610 m), 22 Mar 1968, 21♂, 66♀; Mt. Upe, 2025 ft (617 m), 3 Apr 1968, 34♂, 8♀.

FOOD PLANT.—*Metrosideros collina* (Forster), var?

In Meyrick's original description he recorded *harmodes* from the three islands listed above. In the Bishop Museum there are also specimens from Uapou Island.

This species is rather variable, the series including specimens with highly contrasting markings and those almost uniformly gray.

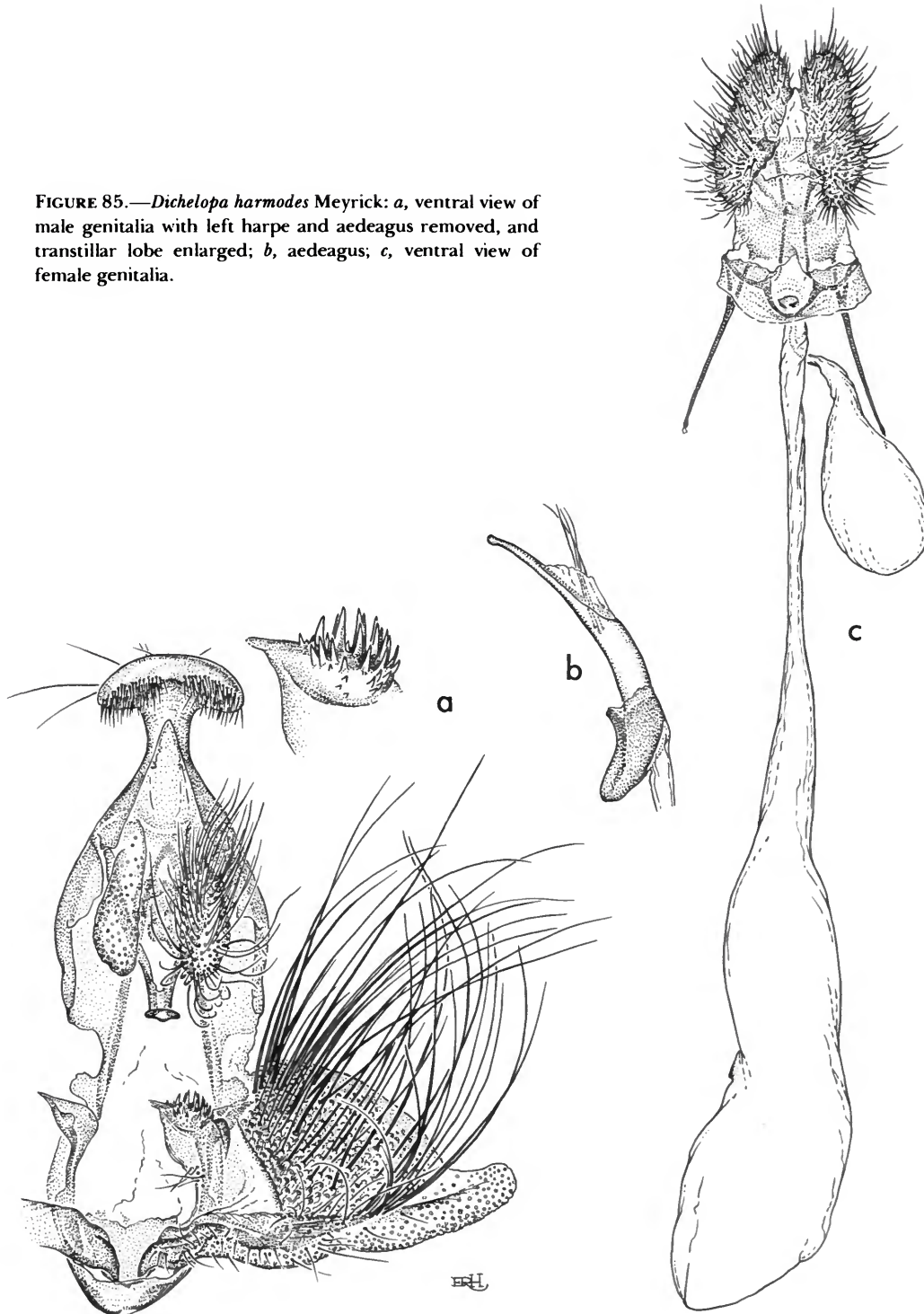
Dichelopa hadrotes, new species

FIGURES 86, 286g,h

Alar expanse 14 mm.

Labial palpus sordid white on inner side, gray on outer side. Antenna grayish fuscous. Head gray. Thorax gray, suffused grayish fuscous.

FIGURE 85.—*Dichelopa harmodes* Meyrick: *a*, ventral view of male genitalia with left harpe and aedeagus removed, and transtillar lobe enlarged; *b*, aedeagus; *c*, ventral view of female genitalia.



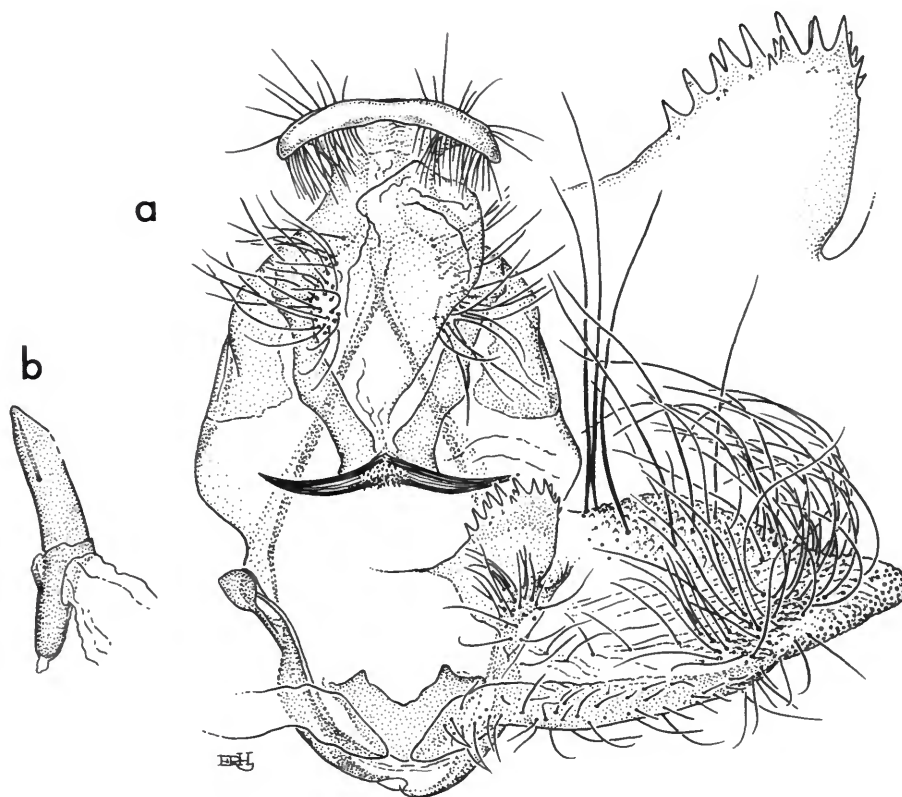


FIGURE 86.—*Dichelopa hadrotis*, new species: *a*, ventral view of male genitalia with left harpe and aedeagus removed, and transtillar lobe enlarged; *b*, aedeagus.

Forewing ground color gray; base of costa grayish fuscous; most of forewing speckled grayish fuscous; cilia gray. Hindwing grayish fuscous, darker toward margins. Fore- and midleg sordid white strongly suffused fuscous on outer side; hindleg sordid white slightly suffused grayish fuscous. Abdomen grayish fuscous dorsally, sordid white ventrally.

Male genitalia slide USNM 25265. Harpe with costa slightly arched; sacculus narrowly sclerotized; cucullus bluntly pointed. Gnathos expanded distally into a broad plate. Transtillar lobe broad and flat; posterior edge armed with a series of spines. Uncus short, curved, very broad, Vinculum rounded. Tegumen arched, as broad as long. Anellus a transverse, curved plate deeply indented posteriorly. Aedeagus nearly straight; vesica armed with a single slender cornutus.

HOLOTYPE.—USNM 100757.

TYPE-LOCALITY.—Nuku Hiva, Tunoa Ridge, 2900 ft (884 m).

DISTRIBUTION.—Nuku Hiva.

FOOD PLANT.—Unknown.

Described from the unique ♂ holotype (23 Jan 1968).

This species is similar to *harmodes* but lacks the oblique, transverse fascia of the forewing of that species, and the genitalia easily distinguish *hadrotis* from *harmodes*.

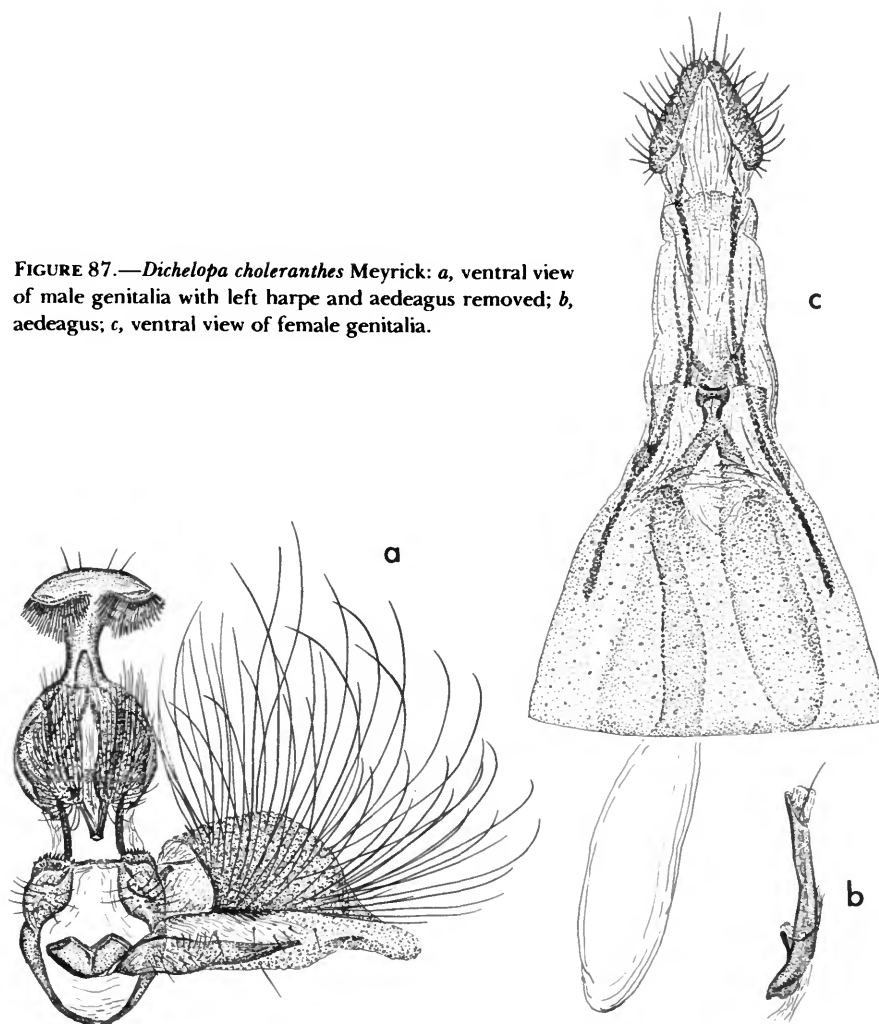
We have a female from Tunoa Ridge that may be the female of *hadrotis*, but it is somewhat rubbed, so there is no way of knowing.

Dichelopa choleranthes Meyrick

FIGURES 87, 287a-f

Dichelopa choleranthes Meyrick, 1929a:493.—Clarke, 1955 [1955-1970]:87; 1958 [1955-1970]: 99, pl. 49: figs. 3-3b.

FIGURE 87.—*Dichelopa choleranthes* Meyrick: *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.



Male genitalia slides USNM 24337, 24338, 25266, 25267. Harpe nearly as broad as long; costa very highly arched, inner surface densely clothed with fine, long setae; cucullus slender, spatulate; sacculus broadly sclerotized. Gnathos rather weak, curved, pointed. Socius an elongate pad densely clothed with fine setae. Uncus curved, reniform distally, each lobe clothed with a dense cluster of setae. Transtillar lobe armed with very small, fine spines. Vinculum rounded. Tegumen nearly as long as harpe, constricted basally, Anellus a reniform, sclerotized plate. Aedeagus nearly straight, slender; vescia armed

with one or two long, spiculate cornuti.

Female genitalia slides USNM 25268, 25269. Ostium round, small. Sterigma scarcely differentiated. Antrum, a narrow sclerotized ring. Inception of ductus seminalis dorsal, slightly before antrum. Ductus bursae membranous. Bursa copulatrix membranous. What appears to be a signum is a tiny sclerite posteroventrally on the bursa copulatrix.

HOLOTYPE.—In the British Museum (Natural History).

TYPE-LOCALITY.—Hiva Oa, 3500 ft (1067 m).

DISTRIBUTION.—Marquesas Islands.

Before me are the following specimens. Nuku Hiva: Tapuaooa, 2500 ft (762 m), 30 Jan 1968, 7♀. Hiva Oa: Mt. Feani, 3800 ft (1158 m), 20 Feb 1968, 4♂, 39♀. Fatu Hiva: Tahuna, 2000 ft (610 m), 27 Mar 1968, 8♀; Mt. Teoaiua, 2000 ft (610 m), 22 Mar 1968, 4♀.

FOOD PLANT.—Unknown.

This species is very similar to *harmodes* but the median, triangular, fuscous spot on costa of forewing and the male genitalia with the two dense clusters of setae on the uncus of *choleranthes* immediately distinguish it from *harmodes*. In the females of both *harmodes* and *choleranthes* there is a tiny sclerite posteroventrally on the bursa copulatrix, that of *harmodes* slightly more prominent than that of *choleranthes*.

Both species are found at the higher altitudes on the islands.

Dichelopa chionogramma, new species

FIGURES 88, 287g

Alar expanse 22 mm.

Labial palpus mars yellow; second segment fuscous on outer side; third segment fuscous. Antenna fuscous, spotted with mars yellow. Head mars yellow. Thorax mars yellow. Forewing ground color mars yellow; costa narrowly fuscous; several scattered fuscous lines, blotches and spots dispersed over the wing surface; from basal fifth of costa a pure white, broken, inverted Y extends almost to dorsum; from near middle of costa a pure white transverse line extends outwardly to tornus; extreme terminal edge and cilia fuscous. Hindwing grayish fuscous, mottled on underside; cilia grayish to fuscous. Foreleg mars yellow suffused fuscous; midleg and hindleg sordid buff, suffused grayish fuscous. Abdomen fuscous, dusted with mars yellow scales.

Male genitalia slide USNM 25282. Harpe short and broad; cucullus bluntly pointed. Gnathos short, pointed. Uncus very broad distally, clothed with fine setae. Vinculum rounded. Transtillar lobe oblongovate, densely clothed with short setae. Tegumen arched, longer than broad. Anellus a broadly oval sclerotized plate.

Aedeagus longer than harpe, pointed distally.

HOLOTYPE.—In the Bernice P. Bishop Museum.

TYPE-LOCALITY.—Nuku Hiva, Toovii, Ooumu, 900 m.

DISTRIBUTION.—Nuku Hiva.

FOOD PLANT.—Unknown.

Described from the ♂ holotype (16–19 Jul 1977, Montgomery).

The genitalia suggest a relationship to *harmodes* and *choleranthes* but *chionogramma* has none of the coloring of those species and is easily distinguished by the conspicuous white markings of the forewing.

Dichelopa peropaca Meyrick

FIGURES 89, 288a–c

Dichelopa peropaca Meyrick, 1929a:493.—Clarke, 1955 [1955–1970]: 242; 1958 [1955–1970]: 104, pl. 52: figs. 1–1b.

Male genitalia slides USNM 24379, 25257, 25258, 25259, 25260. Harpe very slightly sclerotized except for sacculus; basal half very broad with costa highly arched; cucullus broadly digitate. Gnathos very long, nearly reaching transtilla, curved, pointed distally. Uncus claviform, profusely clothed with setae anteriorly. Transtilla well developed, armed with long, strong spines posteriorly. Vinculum a narrow band. Tegumen broad basally, narrow posteriorly. Anellus a reniform plate. Aedeagus rather slender, slightly curved, slightly hooked distally; vesica unarmed in the four specimens examined.

Female genitalia unknown.

TYPE.—In the British Museum (Natural History).

TYPE-LOCALITY.—Fatu Hiva, 2000 ft (610 m).

DISTRIBUTION.—Fatu Hiva.

Our series is from several localities. Fatu Hiva: Mt. Upe, 2025 ft (617 m), 3 Apr 1968, 12♂; Mt. Teoaiua, 2000 ft (610 m), 22 Mar 1968, 30♂; Omoa, 20 ft (6 m), 11 Mar 1968, 1♂; Tahuna, 2000 ft (610 m), 27 Mar 1968, 20♂. Teavapuhiau, Ouia, 750 m, 1–3 Aug 1977 (Montgomery).

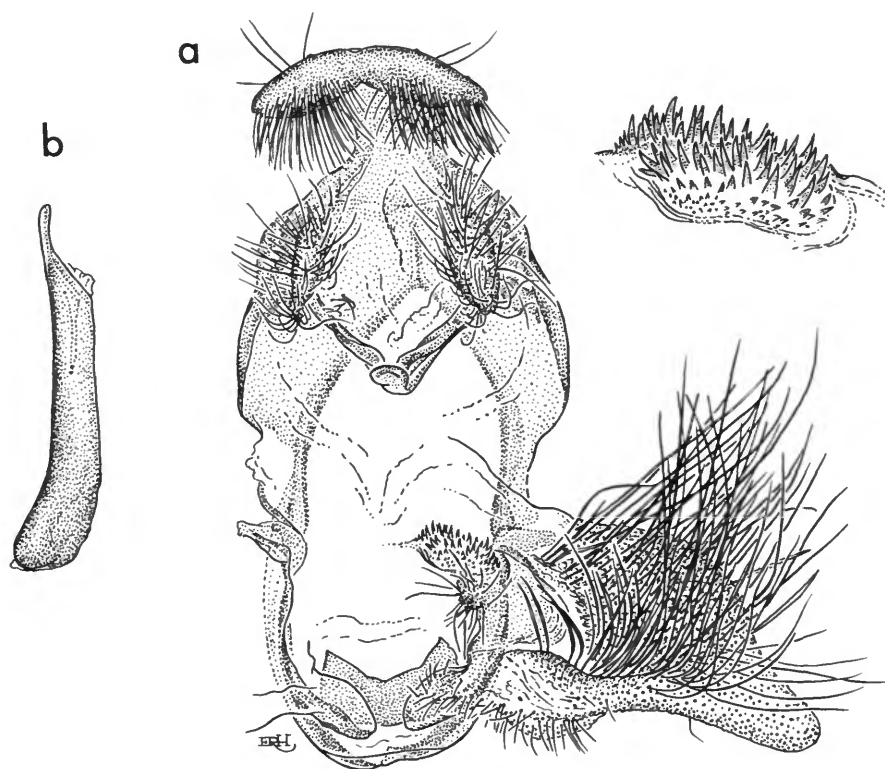


FIGURE 88.—*Dichelopa chionogramma*, new species: *a*, ventral view of male genitalia with left harpe and aedeagus removed, and transtillar lobe enlarged; *b*, aedeagus.

FOOD PLANT.—Unknown.

This is essentially a high altitude species, although we collected one male at Omoa, which had apparently been blown down from the mountains.

Meyrick described the species from a single specimen, but it is a common species. As will be seen from the illustrations *peropaca* is extremely variable. The type shows only a single conspicuous costal light spot, but the majority of specimens exhibit well-developed yellowish or silvery transverse fasciae and a pale pretornal spot. The ground color of the forewing varies from a light brown to fuscous.

***Dichelopa platyxantha*, new species**

FIGURES 90, 288d-f

Alar expanse 22–28 mm.

Labial palpus light ochraceous buff; second

segment with some fuscous suffusion on outer side; third segment tipped with fuscous. Antenna buckthorn brown. Head light ochraceous buff. Thorax buckthorn brown with some light ochraceous buff scales mixed. Forewing ground color light ochraceous buff; basal patch well defined, buckthorn brown with some ground color in center; outer edge of basal patch irregular; from just before middle of costa a buckthorn brown transverse fascia broadens and extends to tornus; before termen, between veins 2 and 6, a transverse buckthorn brown dash, followed in terminal area by a series of ill-defined spots of same color; terminal edge narrowly buckthorn brown; cilia light ochraceous buff except beyond tornus, buckthorn brown; underside strongly mottled grayish fuscous. Hindwing drab, paler basally; cilia drab; underside mottled grayish fuscous. Foreleg light ochraceous buff; tibia and tarsi annulated blackish fuscous; midleg similar;

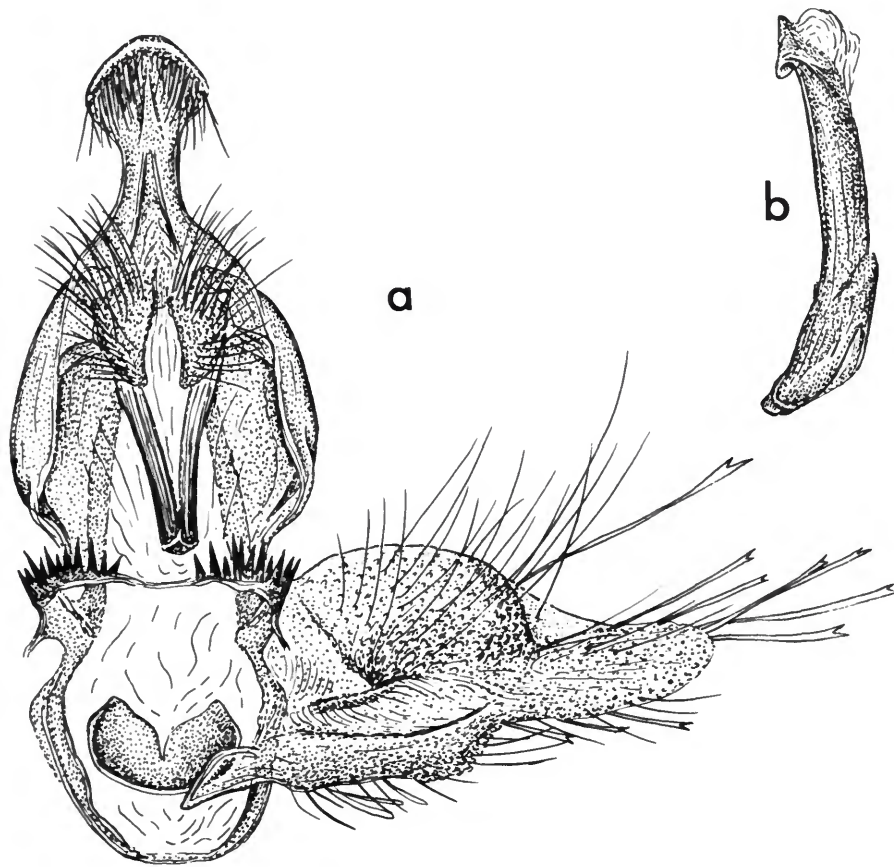


FIGURE 89.—*Dichelopa peropaca* Meyrick: *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus.

hindleg light ochraceous buff; tarsi spotted light brownish. Abdomen fuscous dorsally, light ochraceous buff ventrally.

Female genitalia slide USNM 25256. Ostium slitlike, transverse. Antrum sclerotized. Inception of ductus seminalis lateral, slightly before antrum. Ductus bursae membranous. Bursa copulatrix membranous. Signum absent.

HOLOTYPE.—USNM 100758.

TYPE-LOCALITY.—Fatu Hiva, Mt. Teoiaua, 2000 ft (610 m).

DISTRIBUTION.—Fatu Hiva.

FOOD PLANT.—Unknown.

Described from the ♀ holotype and 17 ♀ paratypes as follows: Mt. Teoiaua, 2000 ft (610 m),

22 Mar 1968, 9♀; Tahuna, 2025 ft (617 m), 27 Mar 1968, 8♀.

This, and *Dichelopa exulcerata* Meyrick (1926:273) from Rapa, are the largest species known in *Dichelopa*.

It is interesting to note that *platyxantha* and *peropaca* were collected in the same localities on the same dates, and that all specimens of *peropaca* are males and all specimens of *platyxantha* are females. If it were not for the larger size and much paler color of *platyxantha* I should think these were opposite sexes of the same species, and they may be, but we have no way of knowing at this time.

This is also a variable species, the transverse

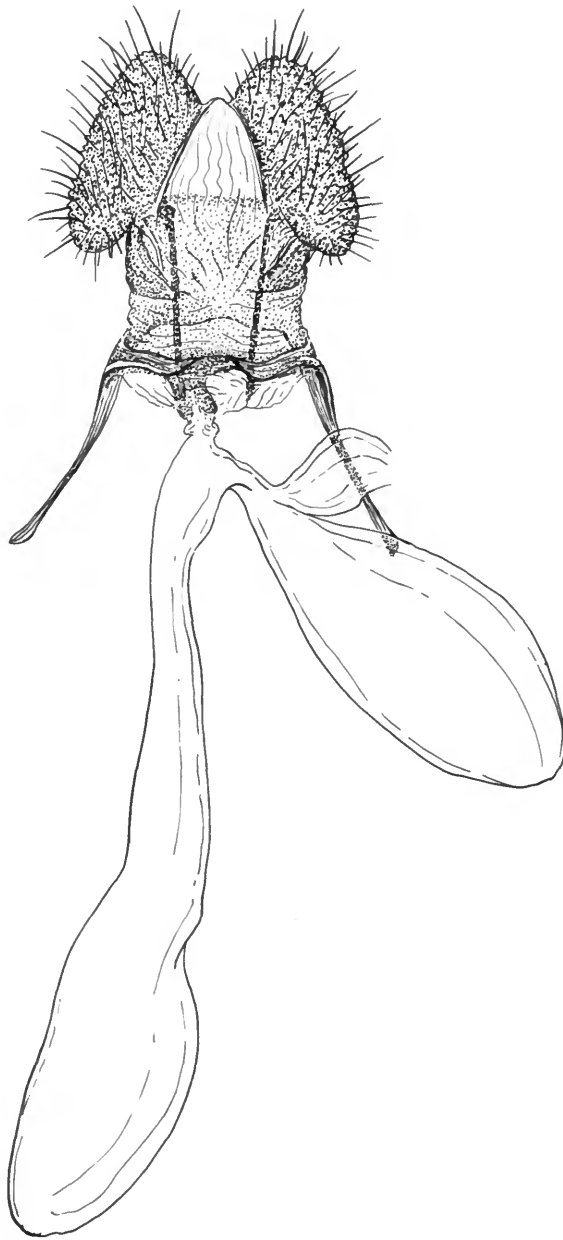


FIGURE 90.—*Dichelopa platyantha*, new species, ventral view of female genitalia.

fasciae of the forewing being obsolete in some specimens and the range of ground color varies from light ochraceous buff to buckthorn brown.

***Dichelopa dryomorpha* Meyrick**

Dichelopa dryomorpha Meyrick, 1929a:492.—Clarke, 1955 [1955–1970]:121; 1958[1955–1970]:100, pl. 50: figs. 1–1a.

TYPE.—In the British Museum (Natural History)

TYPE-LOCALITY.—Tahuata.

DISTRIBUTION.—Tahuata.

FOOD PLANT.—Unknown.

The 16 original specimens (♂, ♀) are the only known examples of this species. The male wings and genitalia are figured by Clarke (1958[1955–1970], pl. 50); the figures are not repeated here.

***Dichelopa orthiostyla* Meyrick**

FIGURES 91, 288g

Dichelopa orthiostyla Meyrick, 1934C:343.—Clarke, 1955 [1955–1970]:228.

Female genitalia slides USNM 24371, 24373. Ostium conical. Sterigma a very narrow, sclerotized band. Antrum not differentiated. Inception of ductus seminalis well before ostium. Ductus bursae rather short, membranous. Bursa copulatrix oval, membranous. Signum absent.

TYPE.—In the Bernice P. Bishop Museum.

TYPE-LOCALITY.—Hiva Oa, Temetiu, slope north of summit, altitude 3860 ft (1176 m).

DISTRIBUTION.—Hiva Oa.

The only specimens of this species that I have seen are from the original series. Even though we collected on Mt. Feani, a northward extension of Mt. Temetiu, we did not encounter *orthiostyla*.

***Dichelopa dorsata*, new species**

FIGURES 92, 287h

Alar expanse 18 mm.

Labial palpus dark grayish brown, slightly paler on inner surface. Antenna dark grayish

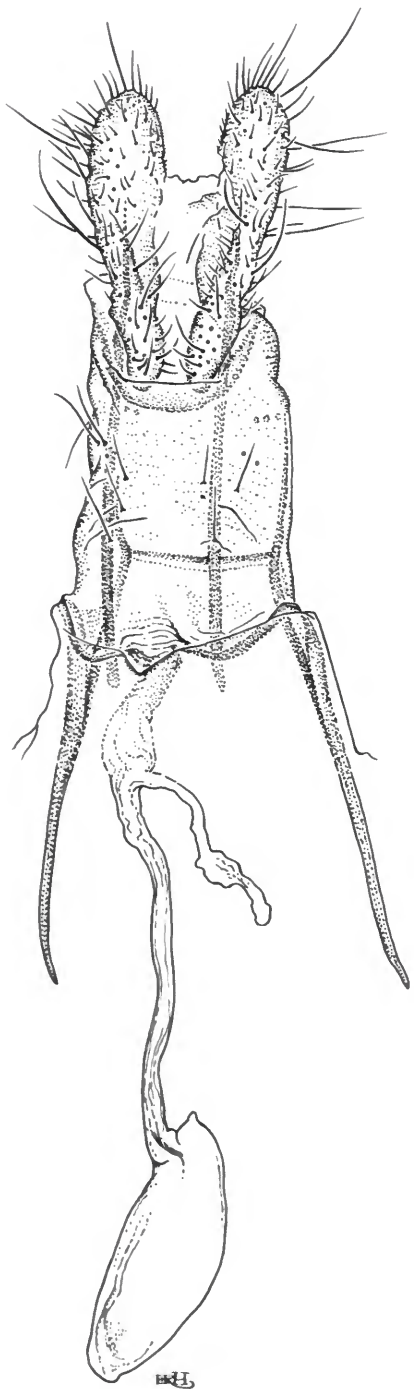


FIGURE 91.—*Dichelopa orthiostyla* Meyrick, ventral view of female genitalia.

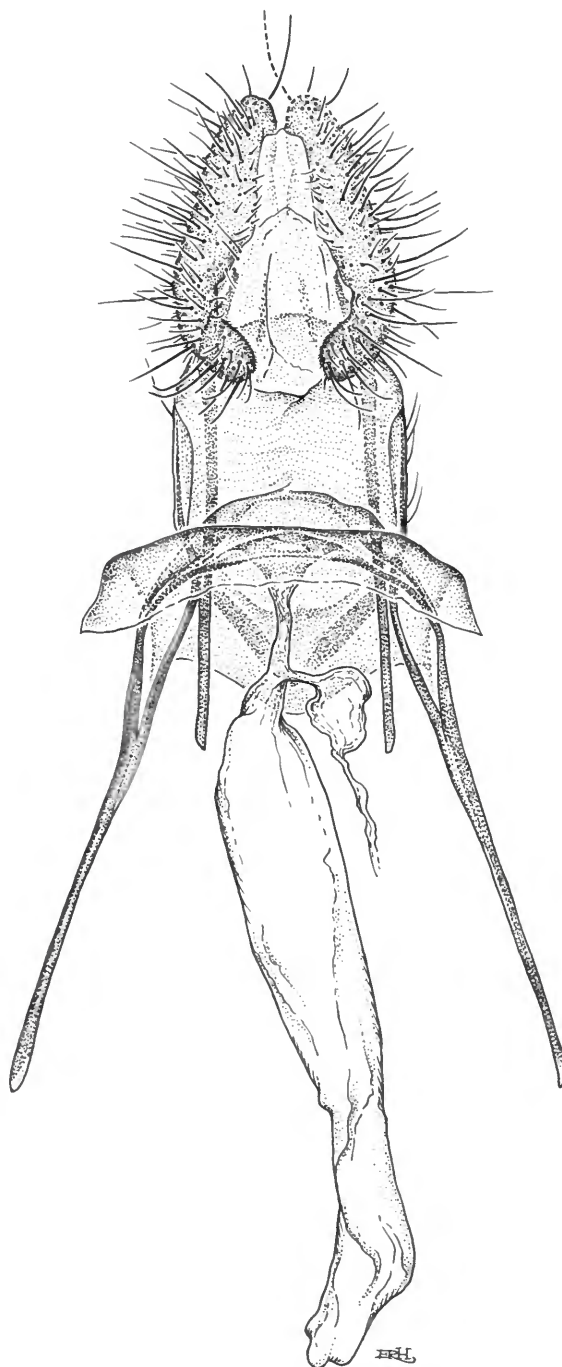


FIGURE 92.—*Dichelopa dorsata*, new species; ventral view of female genitalia.

brown. Head dark grayish brown. Thorax fuscous; tegula dark grayish brown. Forewing ground color grayish brown overlain by grayish ocherous scales; on dorsum a large, conspicuous blackish brown blotch, the inner edge of which is outwardly oblique; this blackish brown blotch fades outwardly and merges with ground color; on middle of costa an ill-defined quadrate fuscous spot; from costa, at vein 10, a slender, outwardly oblique fuscous line extends to vein 7, then continues to termen slightly beyond tornus; cilia mixed grayish ocherous and grayish brown. Hindwing light dusky drab; cilia concolorous. Foreleg ocherous white on inner surface of femur and tibia, grayish drab outwardly; tarsal segments fuscous on outer surface; midleg similar except all outer surfaces fuscous; hindleg ocherous white with very slight grayish suffusion. Abdomen grayish fuscous dorsally, ocherous white ventrally.

Female genitalia slide USNM 24386. Ostium transverse, oval. Sterigma a very narrow band. Inception of ductus seminalis dorsolateral, well before ostium. Ductus bursae very short, membranous. Bursa copulatrix membranous, four times the length of ductus bursae. Signum absent.

HOLOTYPE.—USNM 100759.

TYPE-LOCALITY.—Hiva Oa, Mt. Feani, 3400 ft (1036 m).

DISTRIBUTION.—Hiva Oa.

FOOD PLANT.—Unknown.

Described from the unique ♀ holotype. The dark dorsal blotch of forewing readily distinguishes *dorsata* from any other described species of this genus, but judging from the female genitalia *dorsata* is probably closely related to *orthiosyla*.

***Dichelopa phalaranthes phalaranthes* Meyrick**

FIGURES 93, 289a

Dichelopa phalaranthes Meyrick, 1934c:344.—Clarke, 1955[1955–1970]:245.

Female genitalia slide USNM 24400. Ostium a very small transverse slit. Antrum a very nar-

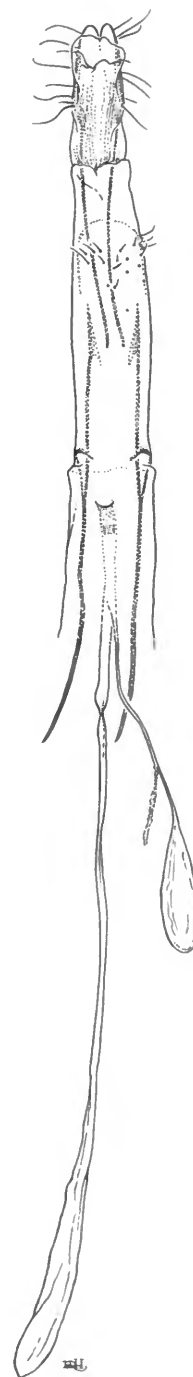


FIGURE 93.—*Dichelopa phalaranthes phalaranthes* Meyrick, ventral view of female genitalia.

row sclerotized ring. Inception of ductus seminalis well before antrum. Ductus bursae very long, membranous. Bursa copulatrix membranous. Signum absent. Anterior apophyses sharply pointed; lamella antevaginalis and lamella postvaginalis membranous.

TYPE.—In the British Museum (Natural History).

TYPE-LOCALITY.—Hiva Oa, Kaava Ridge, 2460 ft (750 m).

DISTRIBUTION.—Hiva Oa.

FOOD PLANT.—Unknown.

Meyrick described this species from three females from Hiva Oa. Of these, two, the type (Figure 289a) and one other still exist, but the second specimen is unrecognizable.

As can be seen from the illustrations of *phalaranthes* and *aporrhagma*, new subspecies (Figure 289a,b), they are very similar. The buff spots of *phalaranthes* are strongly marked with ferruginous but those of *aporrhagma* are nearly unmarked. The costal edge on the underside of the hindwing is strongly marked with grayish fuscous in *phalaranthes* but only slightly marked in *aporrhagma*.

The female genitalia of *phalaranthes* and *aporrhagma* are, as they should be, strikingly similar. In the absence of male genitalia of *phalaranthes* I cannot justify specific separation based on female genitalia alone.

***Dichelopa phalaranthes aporrhagma*, new subspecies**

FIGURES 94, 289b,c

Alar expanse 10–15 mm.

Labial palpus light buff; second segment with few slightly infuscated scales on outer side. Antenna scape buff; flagellum light ochraceous buff. Head buff. Thorax buff. Forewing ground color light buff; basal fourth of costa buckthorn brown; from middle of costa an outwardly oblique incomplete fascia, mixed with light

ochraceous-buff scales, extends to tornus where it joins a buckthorn brown shade, the latter extending around termen to apex; extreme termen, from vein 4 to vein 7, light buff; on costa, before apex, two or three small buckthorn brown spots; from middle of cell to middle of dorsum, some buckthorn brown and light ochraceous-buff scales indicating a poorly defined, incomplete, transverse fascia; underside of forewing almost wholly grayish fuscous except for a large buff spot astride veins I0 and II; cilia buff except at tornus grayish fuscous. Hindwing grayish fuscous, paler toward base; cilia grayish. Foreleg buff; tarsal segments strongly marked fuscous; midleg similar; hindleg light buff. Abdomen grayish fuscous dorsally; light buff ventrally.

Male genitalia slides USNM 24527 24528. Harpe broad basally; costa very strongly arched; sacculus strongly sclerotized basally, cucullus pointed. Gnathos arms slender, joined distally as a blunt point. Uncus curved ventrad, very broad distally; apically, inner surface profusely clothed with setae. Vinculum rounded. Tegumen narrow, as long as harpe. Anellus an oval, sclerotized plate, indented posteriorly. Aedeagus broad basally, tapering gradually to a sharp point; vesica unarmed.

Female genitalia slides USNM 24336, 24529. Ostium small, round. Sterigma lightly sclerotized. Antrum slightly and narrowly sclerotized. Inception of ductus seminalis left lateral, from well before antrum. Ductus bursae slender, long, membranous. Bursa copulatrix membranous.

HOLOTYPE.—USNM 100760.

TYPE-LOCALITY.—Nuku Hiva, Tapuaooa, 2500 ft (762 m).

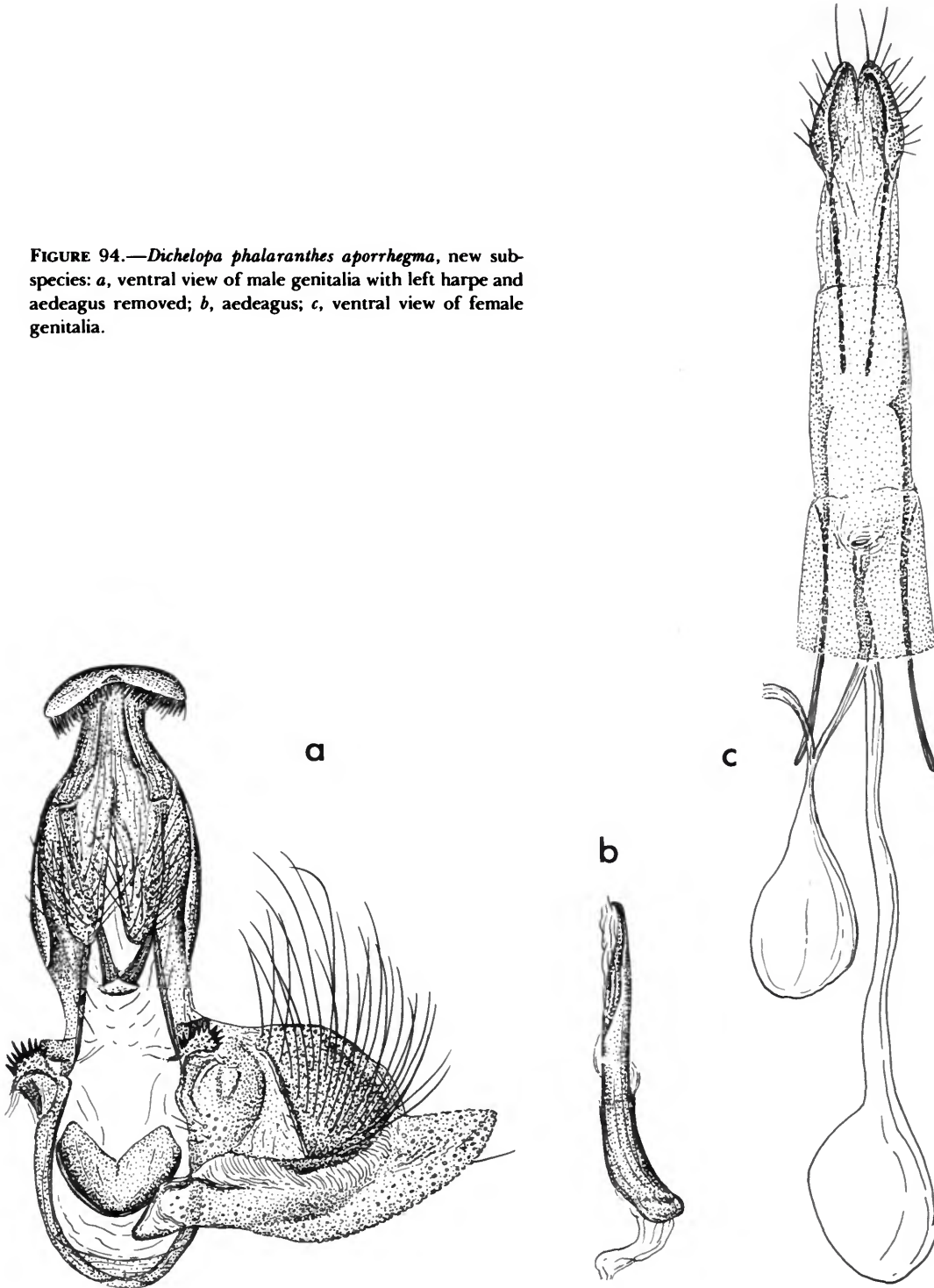
DISTRIBUTION.—Nuku Hiva.

FOOD PLANT.—Unknown.

Described from the ♂ holotype, II♂ and 5♀ paratypes all with the same data (30 Jan 1968).

In pattern *aporrhagma* is similar to *Dichelopa fulvistrigata* Meyrick (1929a:494) but the uncus is not divided in *aporrhagma* as it is in the latter species. Obviously; *aporrhagma* is no more than a subspecies of *phalaranthes* with differences as indicated under the nominate race.

FIGURE 94.—*Dichelopa phalaranthes aporrhagma*, new sub-species: *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.



***Dichelopa ochroma*, new species**

FIGURES 95, 289d

Alar expanse 14 mm.

Labial palpus light buff. Antenna ochraceous tawny. Head light buff. Thorax ochraceous tawny; tegula light buff except base ochraceous tawny. Forewing ground color ochraceous tawny; at extreme base a small buff spot; from basal fourth of costa a broad, outwardly oblique, transverse fascia extends to fold, narrows and continues to dorsal third; outer edge of fascia irregular, narrowly edged slightly more ochraceous than ground color; from costa, beyond middle, a broad, outwardly oblique buff transverse fascia extends to vein 7, narrows and continues to vein 2 at tornus; underside fuscous except where fasciae show through; cilia buff except grayish fuscous around tornal edge. Hindwing grayish fuscous, lighter basally. Foreleg ochraceous tawny; tarsal segments annulated fuscous; midleg buff with two grayish fuscous patches on outer side of tibia; tarsal segments with slight infuscation; hindleg buff. Abdomen grayish fuscous dorsally; light buff ventrally.

Male genitalia slide USNM 24335. Harpe broadest at base, tapered to a bluntly pointed cucullus, costa not strongly arched; sacculus strongly sclerotized. Gnathos elements strong, curved, joined terminally as a sharp point. Socius long, slender, digitate. Uncus as long as tegumen, clavate, distally anterior surface clothed with strong setae. Transtillar lobe well developed; posterior margin armed with a comb of strong spines. Vinculum rounded. Tegumen nearly twice as long as wide. Anellus an oval sclerotized plate with median indentation posteriorly. Aedeagus slender, thickened basally, terminating in a point; vesica unarmed.

HOLOTYPE.—USNM 100761.

TYPE-LOCALITY.—Nuku Hiva, Tapuaooa, 2500 ft (762 m).

DISTRIBUTION.—Nuku Hiva.

FOOD PLANT.—Unknown.

Described from the unique ♂ holotype (30 Jan 1968).

This species has somewhat the coloring of the

subspecies *aporrhagma* but the banding of forewing is clearcut in *ochroma* and not broken as in the former. The harpe of *ochroma* is narrower and longer than that of *aporrhagma* and the costa is not as highly arched.

***Dichelopa gnoma*, new species**

FIGURES 96, 289e

Alar expanse 8 mm.

Labial palpus grayish fuscous; third segment tawny. Antenna scape grayish fuscous distally; flagellum grayish proximally, shading to fuscous distally, each segment ochraceous white-scaled dorsally. Head grayish fuscous. Thorax grayish fuscous. Forewing ground color grayish fuscous with faint golden luster; basal patch fuscous; on costa, just before middle, a pair of fuscous bars indicating an ill-defined transverse fascia; from outer third of costa a fine, fuscous line extends outwardly to vein 5 near termen, then continues along termen to near tornus; entire surface sprinkled with tawny scales; cilia grayish fuscous mixed with tawny. Hindwing fuscous; cilia grayish fuscous. Foreleg and midleg grayish fuscous; tarsal segments fuscous with paler annulations; hindleg grayish fuscous. Abdomen fuscous dorsally; ochraceous white ventrally.

Male genitalia slide USNM 24387. Harpe nearly as broad as long; costal edge gently arched; cucullus small, triangular; sacculus sclerotized. Gnathos spoonshaped distally. Transtillar lobe large, armed with 5 or 6 strong spines. Uncus bilobed, each lobe clothed with stout, short setae. Vinculum broadly rounded. Tegumen about as broad as long. Anellus transverse, oval; posterior edge concave. Aedeagus short, stout, curved, distally abruptly pointed; vesica armed with a single, long slender cornutus.

HOLOTYPE.—USNM 100762.

TYPE-LOCALITY.—Fatu Hiva, Hanavave, 10 ft (3 m).

DISTRIBUTION.—Fatu Hiva.

FOOD PLANT.—Unknown.

Described from the unique ♂ holotype (12 Apr 1968).

This species is similar to *dryomorpha* but is

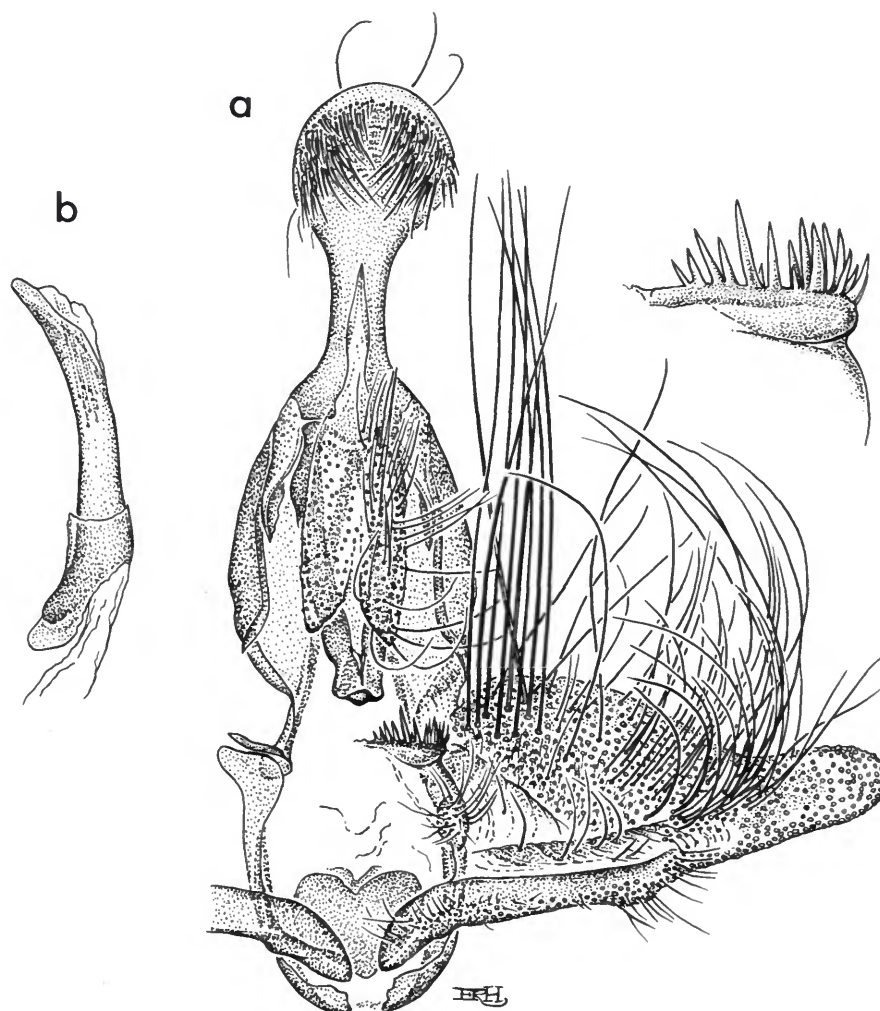


FIGURE 95.—*Dichelopa ochroma*, new species: *a*, ventral view of male genitalia with left harpe and aedeagus removed, and transtillar lobe enlarged; *b*, aedeagus.

much smaller. Also, *gnoma* is a much lighter species than *dryomorpha* and lacks the purplish reflections of the forewing of the latter species.

***Dichelopa paragnoma*, new species**

FIGURES 97, 289f

Alar expanse 12 mm.

Labial palpus grayish fuscous on outer side; ochereous white on inner side; apex of third segment ochereous white. Antenna scape grayish fus-

cous except ochereous white apex; flagellum ochereous white, with a few grayish spots basally, shading to grayish fuscous distally. Head grayish fuscous; side tufts grayish fuscous mixed with dull ochereous scales. Thorax grayish fuscous with ochereous scales mixed anteriorly. Forewing ground color grayish fuscous with scattered ochereous scales; from costa, at about basal two-fifths, an outwardly oblique fuscous fascia extends to dorsum; the inner margin of the fascia terminates on middorsum, the outer edge on tornus; from

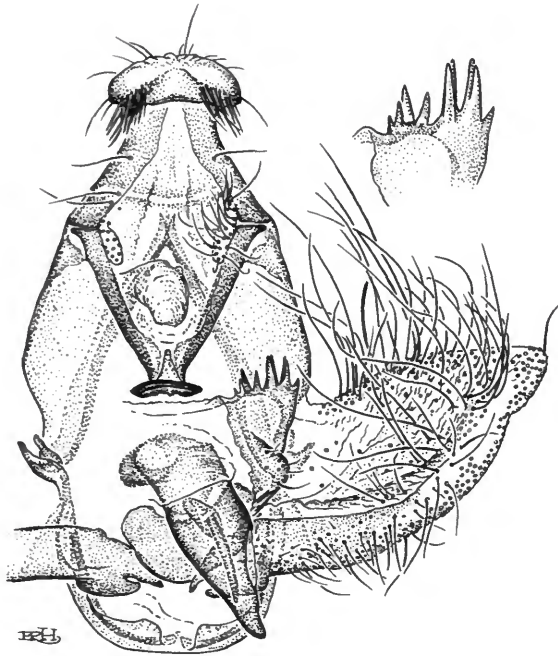


FIGURE 96.—*Dichelopa gnoma*, new species, ventral view of male genitalia with left harpe removed, aedeagus in situ and transtillar lobe enlarged.

apical fourth of costa an outwardly oblique, irregular line extends to termen just beyond tornus; the line is edged inwardly by irregular dull ochereous scaling; cilia grayish ochereous mixed with dull ochereous. Hindwing fuscous; cilia pale grayish with a fuscous basal line. Foreleg grayish fuscous, tarsal segments annulated ochereous white; midleg similar; hindleg dull ochereous white; outer surface suffused grayish. Abdomen fuscous dorsally; cinereous ventrally.

Female genitalia slide USNM 24388. Ostium transverse oval. Sterigma a narrow band. Antrum dilated, sclerotized, with a protuberance ventrally on left side. Inception of ductus seminalis dorsal from antrum. Ductus bursae rather short, membranous. Bursa copulatrix membranous. Signum absent.

HOLOTYPE.—USNM 100763.

TYPE-LOCALITY.—Hiva Oa, Puamau.

DISTRIBUTION.—Hiva Oa.

FOOD PLANT.—Unknown.
Described from the unique ♀ holotype (8 Feb 1968).

This species is very closely related to *gnoma*

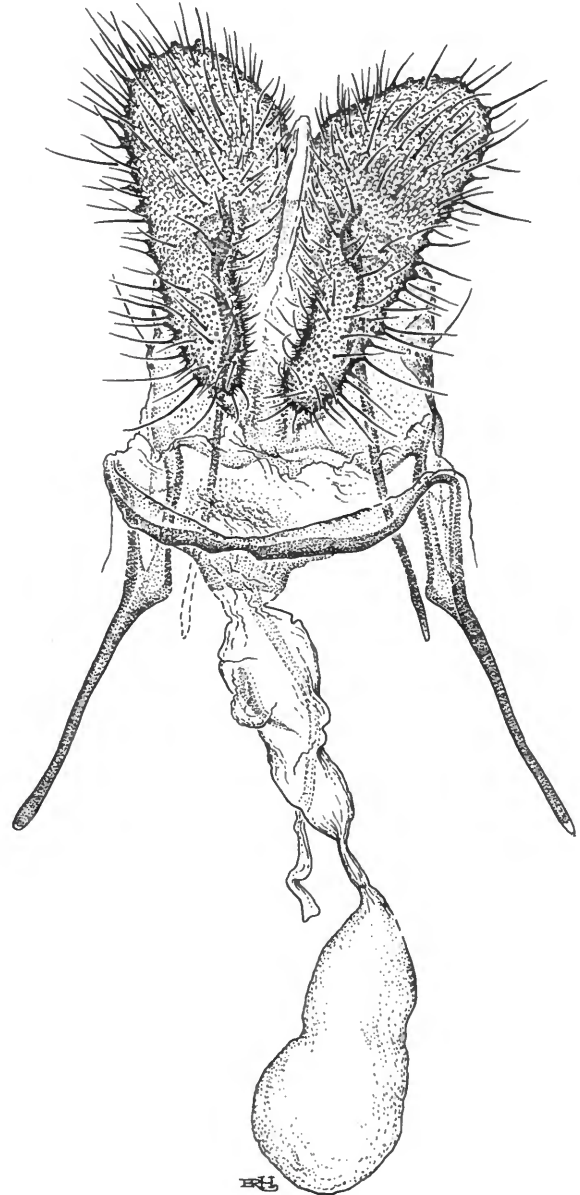


FIGURE 97.—*Dichelopa paragnoma*, new species, ventral view of female genitalia.

but it is a much larger moth. Moreover, the median transverse fascia of forewing is complete in *paragnoma* and scarcely indicated in *gnoma*. Also, the two species are from different islands and, therefore, are unlikely to be conspecific.

***Dichelopa praestrigata* Meyrick**

FIGURES 98, 289g

Dichelopa praestrigata Meyrick, 1929a:492.—Clarke, 1955 [1955–1970]:257; 1958[1955–1970]:104, pl. 52: figs. 2–2b.

Male genitalia slides USNM 24393, 25263. Harpe broad basally, lightly sclerotized except for sacculus; cucullus bluntly rounded. Gnathos short, curved, pointed. Uncus broad distally; on each side, anteriorly, a tuft of setae. Transtillar lobe fleshy with numerous tiny spines posteriorly. Vinculum rounded. Tegumen nearly as broad as long. Anellus subtriangular with deep cleft on posterior edge. Aedeagus slender, curved, distal end spatulate; vesica unarmed.

Female genitalia slide USNM 24394. Ostium oval, transverse; papillae anales slender. Antrum slightly rugose. Inception of ductus seminalis dorsal at antrum. Ductus bursae slender, membranous. Bursa copulatrix membranous. Signum absent.

TYPE.—In the British Museum (Natural History).

TYPE.—LOCALITY.—Hiva Oa, 3500–4000 ft (1067–1219 m).

DISTRIBUTION.—Hiva Oa.

We have 8♂ from our expedition as follows. Hiva Oa: Mt. Feani, 3800 ft (1158 m), 20 Feb 1968, 3♂; 3400 ft (1036 m), 1 Mar 1968, 5♂.

FOOD PLANT.—Unknown.

Meyrick described *praestrigata* from 30 examples, including males and females, all from Hiva Oa. *Dichelopa praestrigata* can be distinguished from other members of this genus, except the new species *meligma*, by the yellowish flagellum and fuscous scape, and also by the nearly smooth transtillar lobes. From *meligma* it can be distinguished by its much paler hind wing.

***Dichelopa meligma*, new species**

FIGURES 99, 289h

Alar expanse 12–18 mm.

Labial palpus fuscous; inner surface slightly paler. Antenna scape fuscous; flagellum ochraceous buff. Head fuscous. Thorax fuscous; tegula concolorous. Forewing ground color fuscous; surface marked by numerous, scattered ochraceous-buff scales; from basal fifth of costa to dorsum an ill-defined blackish fuscous transverse line; a similar line from middle of cell to tornus; both these lines bordered, in part, by ochraceous-buff scales; from costa, at outer fourth, a broken blackish fuscous line extends outwardly to vein 6 then parallels termen nearly to tornus; cilia grayish fuscous mixed with ochraceous-buff scales. Hindwing grayish fuscous with slight brassy shine; cilia grayish fuscous. Fore- and midlegs grayish fuscous; darker on outer side; hindleg grayish. Abdomen fuscous.

Male genitalia slide USNM 24389. Harpe short and broad; costa moderately arched; cucullus short and bluntly rounded; sacculus sclerotized to base of cucullus. Gnathos sharply pointed. Transtillar lobe fleshy, distally clothed with very fine spines. Uncus dilated distally, with median cleft; anterior surface clothed with setae. Vinculum rounded. Tegumen slightly longer than harpe, rather broad. Anellus cordiform. Aedeagus slender, slightly curved; vesica unarmed.

Female genitalia USNM 24391. Ostium small, round. Sterigma a narrow sclerotized band. Antrum slightly rugose and very lightly sclerotized. Inception of ductus seminalis well before antrum. Ductus bursae membranous. Bursa copulatrix membranous. Signum absent. Papillae anales slender, sparsely clothed with setae.

HOLOTYPE.—USNM 100764.

TYPE.—LOCALITY.—Fatu Hiva, Tahuna, 2000 ft (610 m).

DISTRIBUTION.—Fatu Hiva.

FOOD PLANT.—Unknown.

Described from the ♂ holotype, 3♂ and 1♀

FIGURE 98.—*Dichelopa praestrigata* Meyrick: *a*, ventral view of male genitalia with left harpe and aedeagus removed, and transtillar lobe enlarged; *b*, aedeagus; *c*, ventral view of female genitalia.

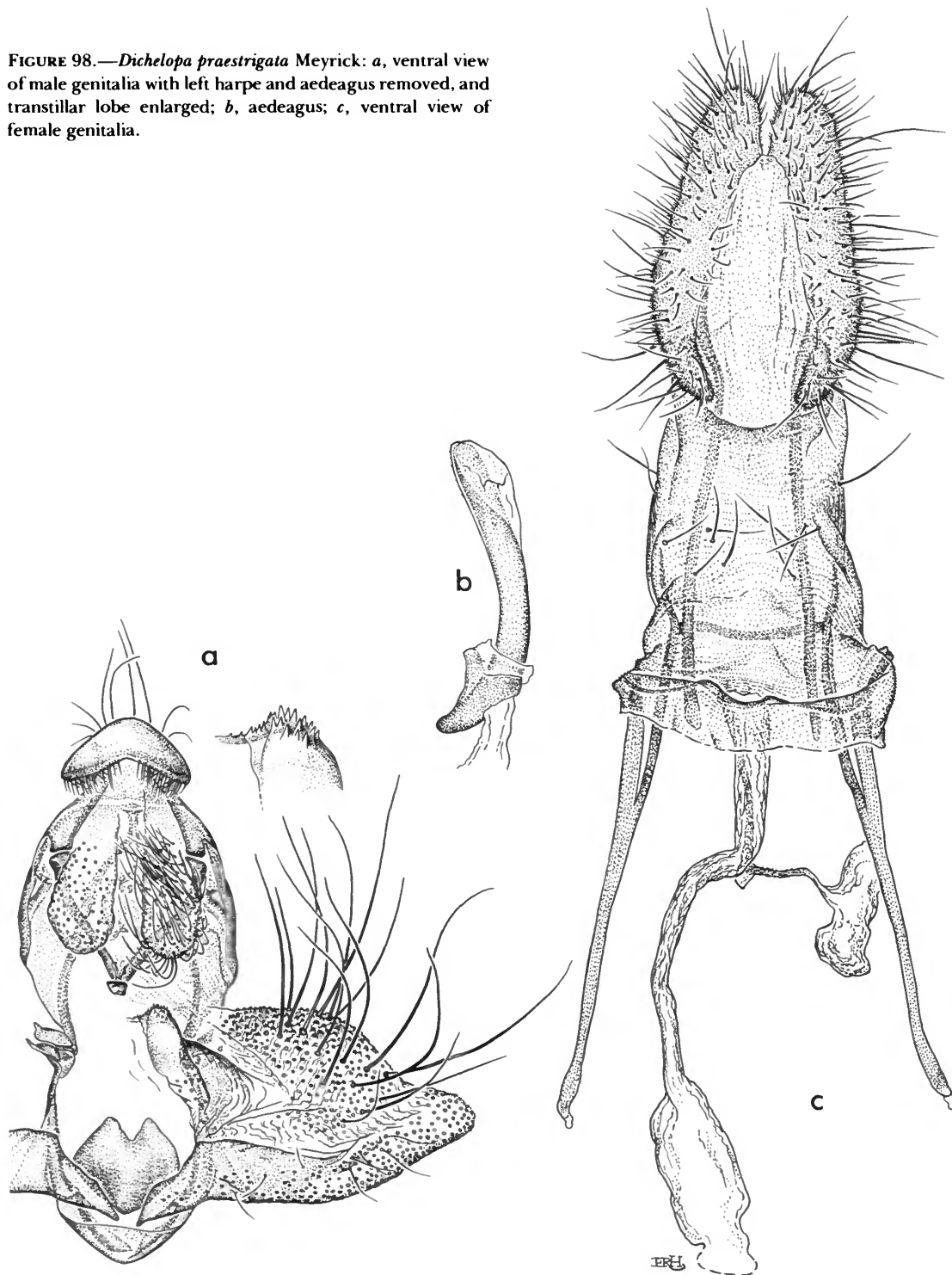


FIGURE 99.—*Dichelopa meligma*, new species: *a*, ventral view of male genitalia with left harpe and aedeagus removed, and transtillar lobe enlarged; *b*, aedeagus; *c*, ventral view of female genitalia.



paratypes with identical data (22 Mar 1968), and 1♂ paratype from Fatu Hiva, Mt. Upe, 2025 ft (617 m) 3 Apr 1968.

This species might be confused with *praestrigata* but has a much darker hindwing than that species, the forewing shows only a trace of transverse fascia and is marked by numerous ochraceous-buff scales. The male genitalia of *praestrigata* and *meligma* are similar, but the cucullus and aedeagus of the latter are shorter than those of the former.

The female of *meligma* is considerably larger than the male.

***Dichelopa zona*, new species**

FIGURES 100, 290a

Alar expanse 12 mm.

Labial palpus cinnamon brown; inner surface clay color. Antenna clay color, shading to sepia distally; scape sepia. Head sepia. Thorax sepia; tegula mostly clay color. Forewing ground color sepia but so heavily overlaid with clay color that the ground color is largely obscured; basal patch small, outer edge from basal fifth of costa, outwardly oblique to fold then inwardly straight to dorsum; from near middle of costa a fascia extends obliquely to tornus; cilia pale grayish brown. Hindwing grayish brown, paler toward base; cilia light grayish brown. Foreleg blackish fuscous on outer side; buff on inner side; midleg similar, but not so strongly marked; hindleg buff with some grayish suffusion. Abdomen drab dorsally, somewhat paler ventrally.

Male genitalia slide USNM 24395. Harpe about as long as tegumen; costa moderately arched; cucullus rather long, broad, sacculus sclerotized for most of its length. Gnathos a sharply pointed hook. Socius a fleshy lobe clothed with very fine, weak setae. Uncus dilated distally, with median cleft; anterior surface clothed with fine setae. Vinculum U-shaped. Tegumen about as broad as long, constricted basally. Anellus a sclerotized, cordate plate. Aedeagus slender, slightly curved, about as long as harpe; vescia unarmed.

HOLOTYPE.—USNM 100765.

TYPE-LOCALITY.—Nuku Hiva, Tapuaooa, 2500 ft (762 m).

DISTRIBUTION.—Nuku Hiva.

FOOD PLANT.—Unknown.

Described from the unique ♂ holotype (30 Jan 1968).

Dichelopa zona is closely related to *praestrigata* from Hiva Oa, but differs from it by the reduced basal patch of forewing and darker hindwing (Figures 289g, 290a). Also, the cucullus of *zona* is longer than that of *praestrigata* and the costa of harpe is not so strongly arched.

***Dichelopa porphyrophanes* Meyrick**

FIGURES 101, 290b

Dichelopa porphyrophanes Meyrick, 1934c:344.—Clarke, 1955[1955-1970]:255.

Female genitalia slide USNM 24399. Ostium transverse, oval. Antrum a slender sclerotized cylinder. Inception of ductus seminalis well before antrum, left lateral. Ductus bursae membranous. Bursa copulatrix membranous. Signum absent; lamella antevaginalis and lamella postvaginalis membranous. Distal end of anterior apophyses dilated.

TYPE.—In the Bernice P. Bishop Museum.

TYPE-LOCALITY.—Uapou, Teoatea, Hakahe-tau Valley, 1950 ft (579 m).

DISTRIBUTION.—Uapou, Hiva Oa.

FOOD PLANT.—Unknown.

The type of *porphyrophanes* is the only specimen of this species I have seen. The second specimen mentioned by Meyrick, from Hiva Oa, is missing but is doubtfully the same as the type.

***Dichelopa pyrrogramma* Meyrick**

FIGURES 102, 290c

Dichelopa pyrrogramma Meyrick, 1934c:343.—Clarke, 1955 [1955-1970]:267.

Male genitalia slide USNM 24312. Harpe broadset about middle; costa strongly arched, cucullus bluntly pointed. Gnathos rather narrow, pointed distally. Socius elongate, weak, sparsely

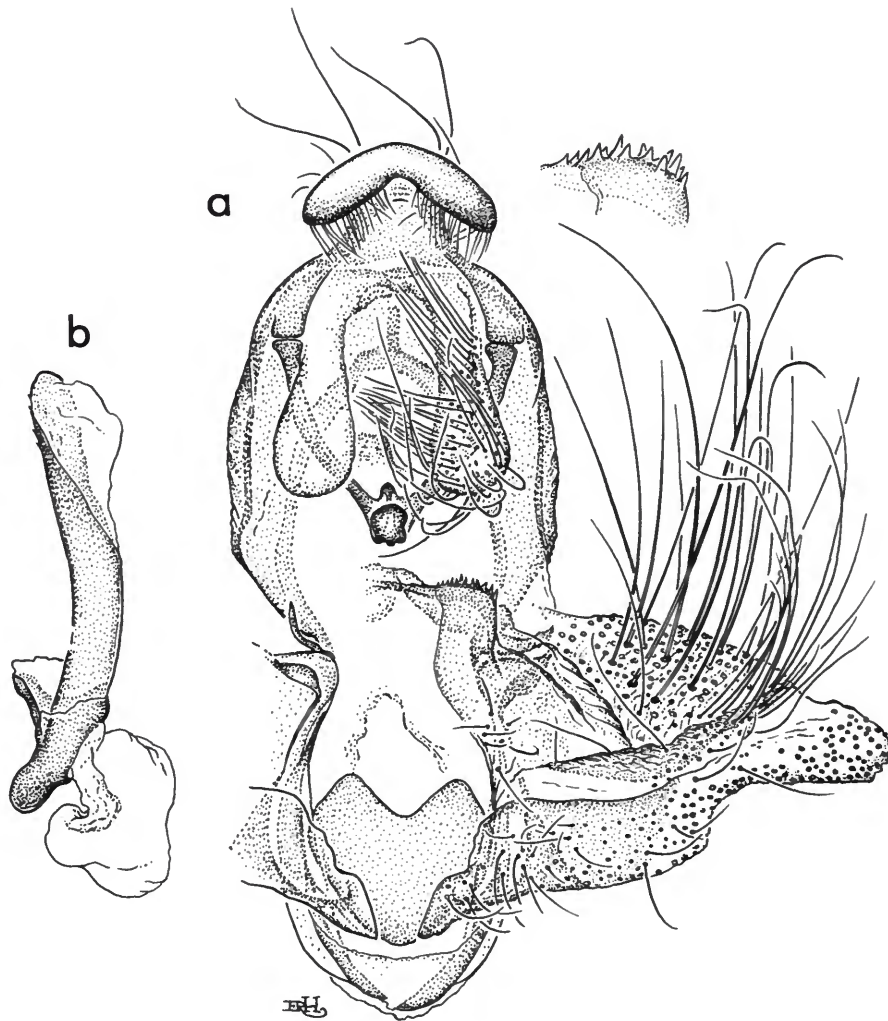


FIGURE 100.—*Dichelopa zona*, new species: *a*, ventral view of male genitalia with left harpe and aedeagus removed, and transtillar lobe enlarged; *b*, aedeagus.

clothed with fine setae. Uncus clavate, distally clothed on each side by a cluster of stout setae. Transtillar lobe fleshy, terminating in a cluster of short spines. Vinculum rounded. Tegumen narrow, slightly longer than harpe. Anellus an oval, sclerotized plate, deeply cleft posteriorly. Aedeagus slender, curved, weak, pointed; vescia unarmed.

Female genitalia slide USNM 24313. Ostium round. Sterigma very narrow, moderately scler-

otized. Antrum narrow, sclerotized. Inception of ductus seminalis well before antrum. Ductus bursae very slender, membranous. Bursa copulatrix membranous. Signum absent.

TYPE.—In the Bernice P. Bishop Museum.

TYPE-LOCALITY.—Nuku Hiva, Ooumu summit, 3890 ft (1186 m).

DISTRIBUTION.—Nuku Hiva.

The following 9 specimens are before me. Nuku Hiva: Tapuaooa, 2500 ft (769 m), 30 Jan

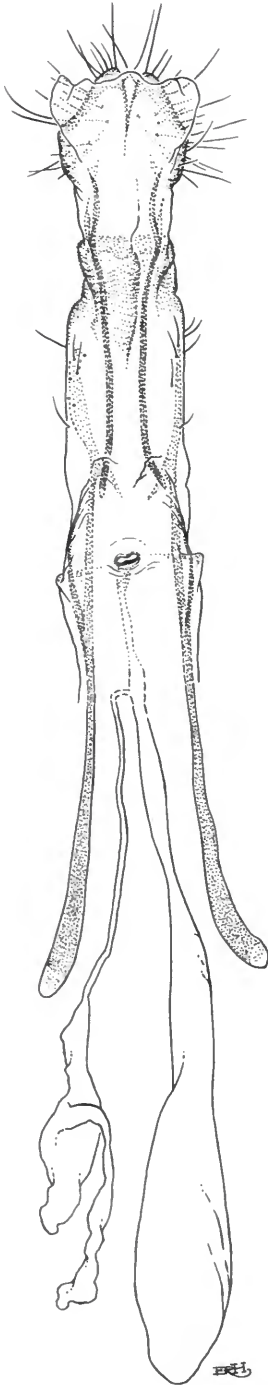


FIGURE 101.—*Dichelopa porphyrophanes* Meyrick, ventral view of female genitalia.

1968, 2♂. Toovii, Ooumu, 900 m, 16–19 Jul 1977, 4♂, 3♀ (Montgomery).

FOOD PLANT.—*Cyrtandra*?

The holotype is a female, and now we are able to associate the sexes.

This is one of the smallest species of *Dichelopa* and is very similar to *Dichelopa honoranda* Meyrick (1926:272) from Rapa. The broad fasciae of the forewing are more contrasting in *honoranda* than in *pyrsogramma*, and the latter is a slightly smaller species.

Although the type is labeled “on *Cyrtandra* sp.,” there is no indication that the species was reared from that plant.

Dichelopa pachymeta Meyrick

FIGURES 103, 290d

Dichelopa pachymeta Meyrick, 1929a:493.—Clarke, 1955 [1955–1970]:232; 1958[1955–1970]:103, pl. 51: figs. 3–3b.

Female genitalia slide USNM 25264. Ostium very small, round. Antrum a small, weakly sclerotized ring. Inception of ductus seminalis slightly before antrum. Ductus bursae membranous. Bursa copulatrix membranous. Signum absent.

TYPE.—In the British Museum (Natural History).

TYPE-LOCALITY.—Hiva Oa, 3500–4000 ft (1067–1219 m).

DISTRIBUTION.—Hiva Oa.

The specimen before me is from Hiva Oa: Mt. Feani, 3400 ft (1036 m), 1 Mar 1968, 1♀.

The genitalia of the male were figured by Clarke (1958[1955–1970]) and are not repeated here. The wings of the type, figured by Clarke (1958[1955–1970], pl 51) are in poor condition and are hardly recognizable; therefore, they are refigured here.

This and *pyrsogramma* are similar in appearance and are about the same size, *pachymeta* being slightly larger. The outer light fascia of the forewing is complete in *pyrsogramma* but covers only the tornal area in *pachymeta*, and the latter has a darker hindwing than that of *pyrsogramma*.

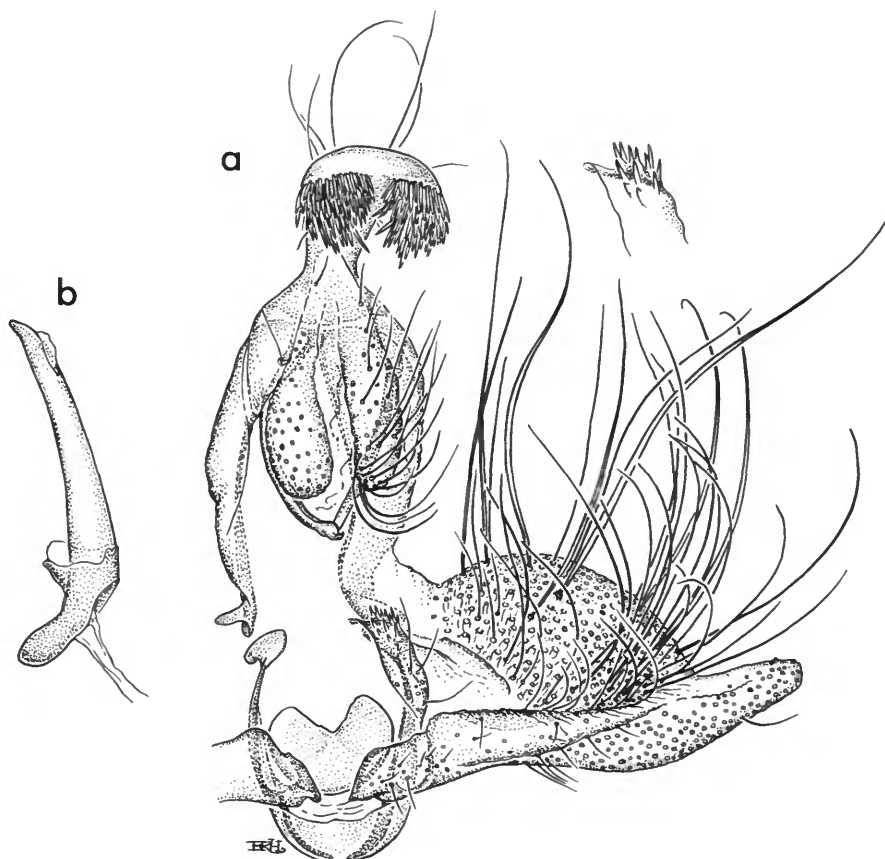


FIGURE 102.—*Dichelopa pyrrogramma* Meyrick; *a*, ventral view of male genitalia with left harpe and aedeagus removed, and transtillar lobe enlarged; *b*, aedeagus.

All specimens of this species were taken at high elevations, where it is rare.

***Dichelopa cirrhodoris* Meyrick**

FIGURES 104, 290e

Dichelopa cirrhodoris Meyrick, 1934c:344.—Clarke, 1955 [1955–1970]:91.

Female genitalia slides USNM 24327, 24328. Ostium transverse, oval. Sterigma narrow, moderately sclerotized. Antrum narrowly sclerotized. Inception of ductus seminalis from posterolateral surface of bursa copulatrix. Ductus bursae mem-

branous. Bursa copulatrix membranous, short. Signum absent.

TYPE.—In the Bernice P. Bishop Museum.

TYPE-LOCALITY.—Hiva Oa.

DISTRIBUTION.—Hiva Oa.

Our collection contains only one specimen Hiva Oa: Atuona, 12 Feb 1968, 1♀.

Presumably this is a high altitude species since the original series came from 1350 and 2460 ft (412 and 750 m), which probably accounts for our finding only one specimen at low altitude.

In wingshape *cirrhodoris* reminds one of *Dichelopa argyrosplioides* Clarke (1971:118) of Rapa, but the forewing contains more yellowish

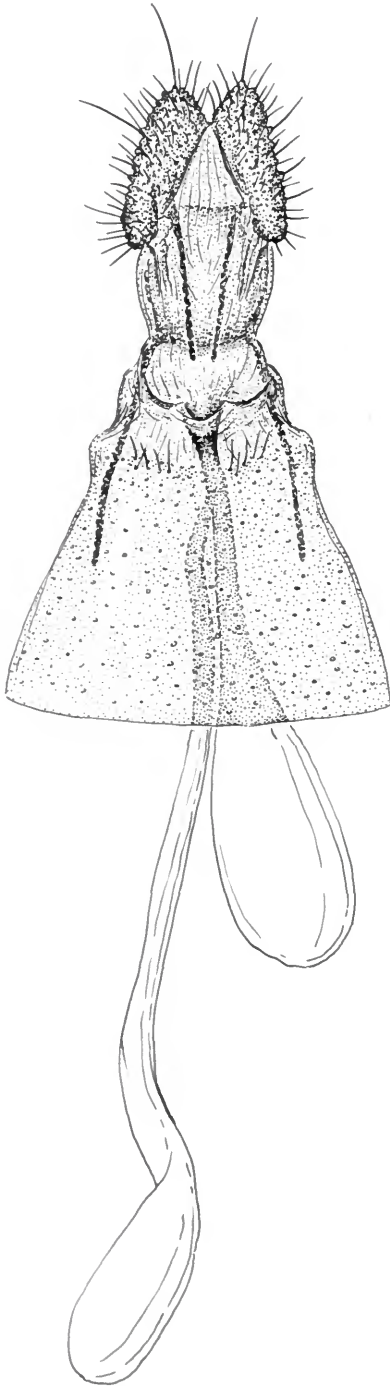


FIGURE 103.—*Dichelopa pachymeta* Meyrick, ventral view of female genitalia.

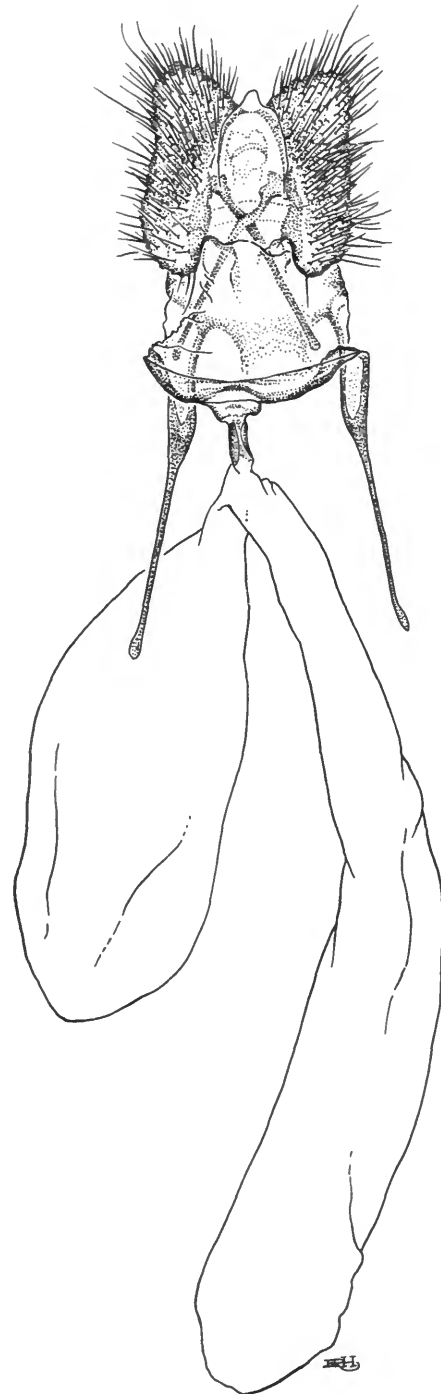


FIGURE 104.—*Dichelopa cirrhodoris* Meyrick, ventral view of female genitalia.

coloring and the hindwing is paler than in that species.

***Dichelopa canitia*, new species**

FIGURES 105, 290f

Alar expanse 18–22 mm.

Labial palpus buffy brown; extreme apex of third segment pale ochraceous tawny. Antenna pale ochraceous tawny, each segment marked with a narrow fuscous bar. Head buffy brown. Thorax olive brown. Forewing ground color buffy brown; basal patch outwardly oblique from basal fifth, olive brown, with outer edge nearly straight, terminating on middorsum; at outer edge of basal patch, near middle, a slender black line; from middle of costa an ill-defined olive brown fascia extends almost to tornus; at outer edge of this fascia a slender black line; midway between this fascia and apex, a slender, oblique, black line; whole surface of forewing irrorate with ochraceous-tawny scales; cilia buffy brown. Hindwing pale grayish strongly mottled darker gray. Foreleg femur and tibia buffy brown; tarsal segments olive brown marked with light ochraceous tawny; midleg similar but tarsal segments not so strongly marked; hindleg buff. Abdomen buffy brown.

Female genitalia slide USNM 24521. Ostium small, round, membranous. Anterior apophyses dilated anteriorly. Papillae anales very broad anteriorly, bluntly pointed posteriorly. Antrum narrowly sclerotized. Inception of ductus seminalis well before antrum. Ductus bursae membranous. Bursa copulatrix membranous; accessory bursa membranous. Signum absent.

HOLOTYPE.—USNM 100766.

TYPE-LOCALITY.—Nuku Hiva, Tapuaooa, 2500 ft (762 m).

DISTRIBUTION.—Nuku Hiva.

FOOD PLANT.—Unknown.

Described from the ♀ holotype (30 Jan 1968) and 5♀ paratypes as follows: 2♀ same data as holotype and 3♀, Nuku Hiva, Tunoa Ridge, 2900 ft (884 m) 23 Jan 1968.

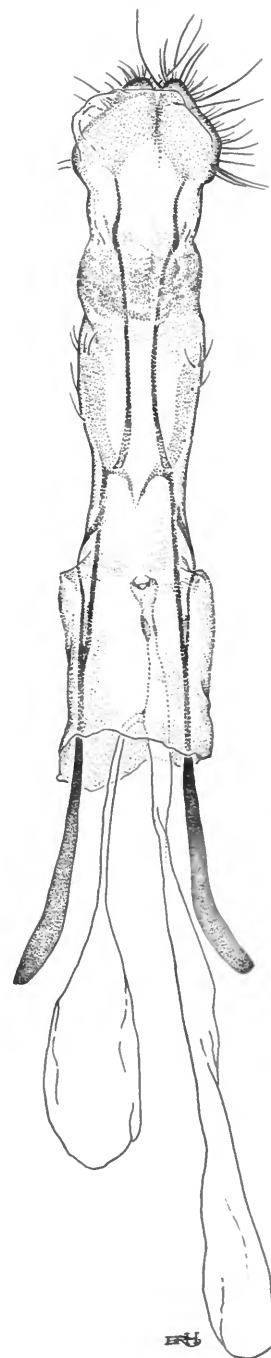
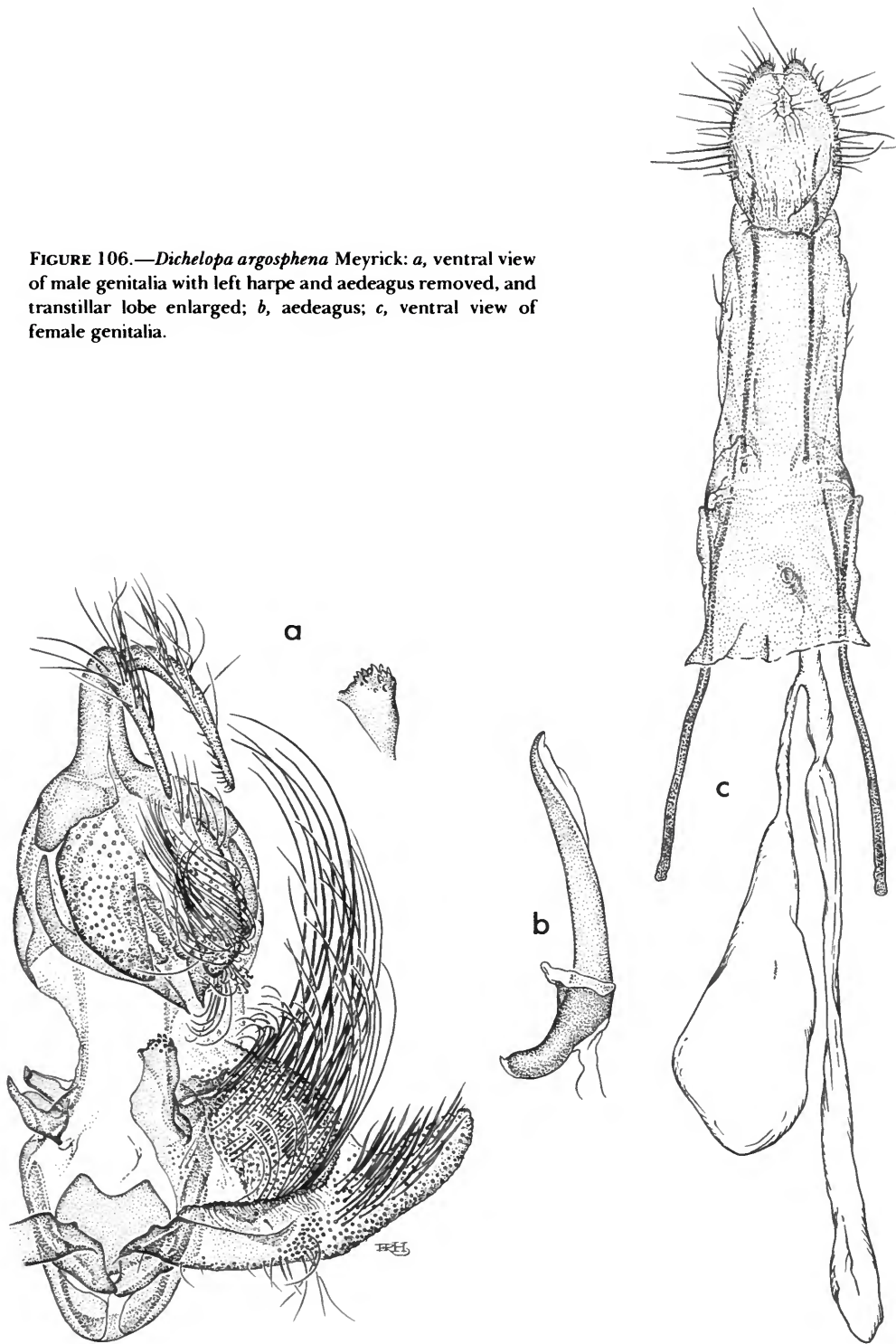


FIGURE 105.—*Dichelopa canitia*, new species, ventral view of female genitalia.

FIGURE 106.—*Dichelopa argosphena* Meyrick: *a*, ventral view of male genitalia with left harpe and aedeagus removed, and transtillar lobe enlarged; *b*, aedeagus; *c*, ventral view of female genitalia.



This species is strikingly similar to *argema*, new species, from Fatu Hiva but lacks the whitish costal spots on the undersides of fore- and hindwings of that species. *Dichelopa canitia* is also related closely to *argosphena* but that species has a series of small white spots around termen of forewing that *canitia* lacks.

***Dichelopa argosphena* Meyrick**

FIGURES 106, 290g,h

Dichelopa argosphena Meyrick, 1934c:343.—Clarke, 1955 [1955–1970]:54.

Male genitalia slide USNM 24613. Harpe very broad basally, costa strongly arched; inner face of harpe clothed with long setae; sacculus moderately sclerotized; cucullus digitate. Gnathos lateral arms forming a "U" terminating in a median point where they meet. Socius elongate, profusely clothed with long setae. Uncus strongly curved ventrad, divided into two long lateral elements, each armed with tiny teeth on inner side. Transtillar lobe elongate, terminating in a cluster of small setae. Vinulum rounded. Tegumen about as long as harpe. Anellus a reniform, sclerotized plate. Aedeagus moderately stout basally, curved gradually, tapering to a slender point; vescia unarmed.

Female genitalia slides USNM 24315, 24333. Ostium very small, round. Sterigma lightly and evenly sclerotized. Antrum slightly sclerotized. Ductus seminalis left lateral, well before antrum. Ductus bursae slender, membranous. Bursa copulatrix membranous. Signum absent.

TYPE.—In the Bernice P. Bishop Museum.

TYPE-LOCALITY.—Hiva Oa, Kaava Ridge, 2460 ft (750 m).

DISTRIBUTION.—Hiva Oa.

Despite the type-locality cited above, the type is labeled "Hivaoa, Marquesas. Kakahopuanui, alt. 2460 feet." Adamson (1936:44) clearly shows Kaava Ridge, but there is no locality "Kakahopuanui" on it. All other data agree.

We have a male, an exact match for the type, from Mt. Feani, 3400 ft (1036 m), 1 Mar 1968, an extension of Kaava Ridge. In addition, I as-

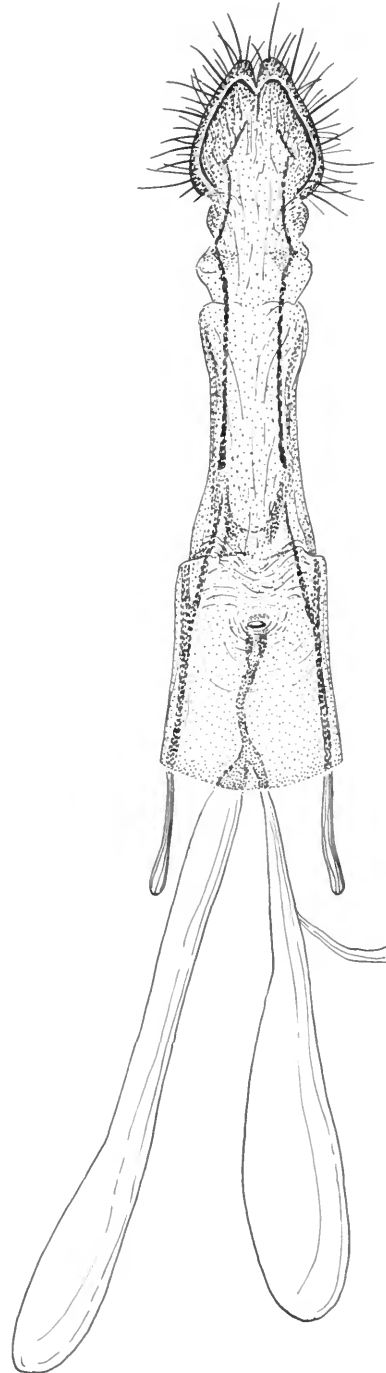


FIGURE 107.—*Dichelopa argema*, new species, ventral view of female genitalia.

sociate with this male the following specimens: Hiva Oa: Mt. Feani, 3800 ft (1158 m), 20 Feb 1968, 5♀ and 3400 ft (1036 m), 1 Mar 1968, 2♀.

The females (15–16 mm) average larger than the males and the costal white spot of fore wing, conspicuous in the males, is mostly obscured by scattered fuscous scales. The series of tiny white spots around apex and termen, so conspicuous in the males, is well preserved in the females. In the females there is a conspicuous pale spot on costa of hindwing absent in the males. The undersides of the wings in both sexes are mottled.

Because of the divided uncus it is obvious that *argosphena* is most closely related to *fulvistrigata* of Tahiti and *Dichelopa iochorda* Meyrick (1926:273) of Rapa.

***Dichelopa argema*, new species**

FIGURES 107, 291a

Alar expanse 19–22 mm.

Labial palpus light grayish buff on inner side, drab on outer side; third segment drab. Antenna scape drab, flagellum slightly darker. Head drab. Thorax drab. Forewing ground color drab with slight leaden appearance; basal patch bordered outwardly with an irregular fuscous line, the latter mixed with ochraceous-buff scales; from two-fifths of costa an outwardly oblique grayish fuscous fascia extends to outer end of cell and edged outwardly and inwardly with fuscous and ochraceous-buff scales; beyond this fascia a subrectangular light buff spot marked with grayish scales; outer edge of this light spot bordered by a fine line of fuscous and ochraceous-buff scales, this latter line extends irregularly to termen at the end of vein 2; costa marked with very short,

transverse fuscous dashes; at apex a few small light buff spots; on middle of dorsum two or three tiny light buff spots; cilia grayish fuscous. Hindwing grayish fuscous; costal edge marked with a conspicuous light buff patch at middle. Foreleg grayish buff on inner surface, grayish fuscous outwardly; tarsal segments marked with ochraceous buff scales; midleg similar; hindleg drab. Abdomen grayish fuscous.

Female genitalia slides USNM 24334, 24522. Ostium very small, round. Sterigma evenly and lightly sclerotized. Antrum narrowly sclerotized. Inception of ductus seminalis lateral and from about anterior two-fifths of ductus bursae. Ductus bursae membranous. Bursa copulatrix membranous. Signum absent.

HOLOTYPE.—USNM 100767.

TYPE-LOCALITY.—Fatu Hiva, Mt. Teoaiua, 2000 ft (610 m).

DISTRIBUTION.—Fatu Hiva.

FOOD PLANT.—Unknown.

Described from the ♀ holotype (22 Mar 68) and 8♀ paratypes, with the same data; and 1♂ and 1♀ paratypes, Fatu Hiva, Teavapuhiau, Ouia, 750 m, 1–3 Aug 1977 (Montgomery).

This species is similar to *argosphena* (female) but is a larger species and lacks the series of small white dots around termen of forewing. Moreover, the whitish costal spot of hindwing of *argema* is larger and more prominent than that of *argosphena*.

The female genitalia of *argosphena* and *argema* are nearly identical. Unfortunately the single male paratype has lost the abdomen. The undersides of both fore- and hindwings of *argema* are only lightly mottled, not strongly so as in *argosphena*.

Family OLETHREUTIDAE

Key to the Genera of Olethreutidae

1. Hindwing with vein 5 straight, almost parallel with 4 6
- Hindwing with vein 5 bent at base, approximate to 4 2
2. Hindwing with veins 3 and 4 connate 3
- Hindwing with veins 3 and 4 stalked or united 4

3. Labial palpus upturned, about as long as head *Dudua*
 Labial palpus porrect, much longer than head *Tritopterna*
4. Hindwing with veins 3 and 4 united *Duessia*
 Hindwing with veins 3 and 4 stalked 5
5. Forewing with veins 4, 5 and 6 convergent at termen *Crociosema*
 Forewing with veins 4, 5 and 6 parallel, not convergent . . . *Strepsicrates*
6. Termen of forewing notched *Cydia*
 Termen of forewing straight or convex *Cryptophlebia*

Eucosma agriochlora Meyrick not included in key.

Genus *Eucosma* Hübner

Eucosma Hübner, 1823 [1818–1837], 2:28.

TYPE-SPECIES.—*Eucosma circulana* Hübner, 1823 [1818–1837]:363; subsequent designation by Fernald, 1908:4.

***Eucosma agriochlora* Meyrick**

FIGURE 291b

Eucosma agriochlora Meyrick, 1929a:495.—Viette, 1949a:320.—Clarke, 1955 [1955–1970]:39; 1958 [1955–1970]:347, pl. 172: fig. 2–2a.

TYPE.—In the British Museum (Natural History).

TYPE-LOCALITY.—Marquesas Islands, Nuka Hiva.

DISTRIBUTION.—Nuku Hiva.

FOOD PLANT.—Unknown.

The only specimen of this species that is known is the type. We did not encounter this species.

Genus *Crociosema* Zeller

Crociosema Zeller, 1847:721 [type-species: *Crociosema plebejana* Zeller, 1847:721; by monotypy].

Parasuleima Clarke, 1965:77 [type-species: *Crociosema(?) insulana* Aurivillius, 1922:267, pl. 11: fig. 20; by original designation]. [New synonymy.]

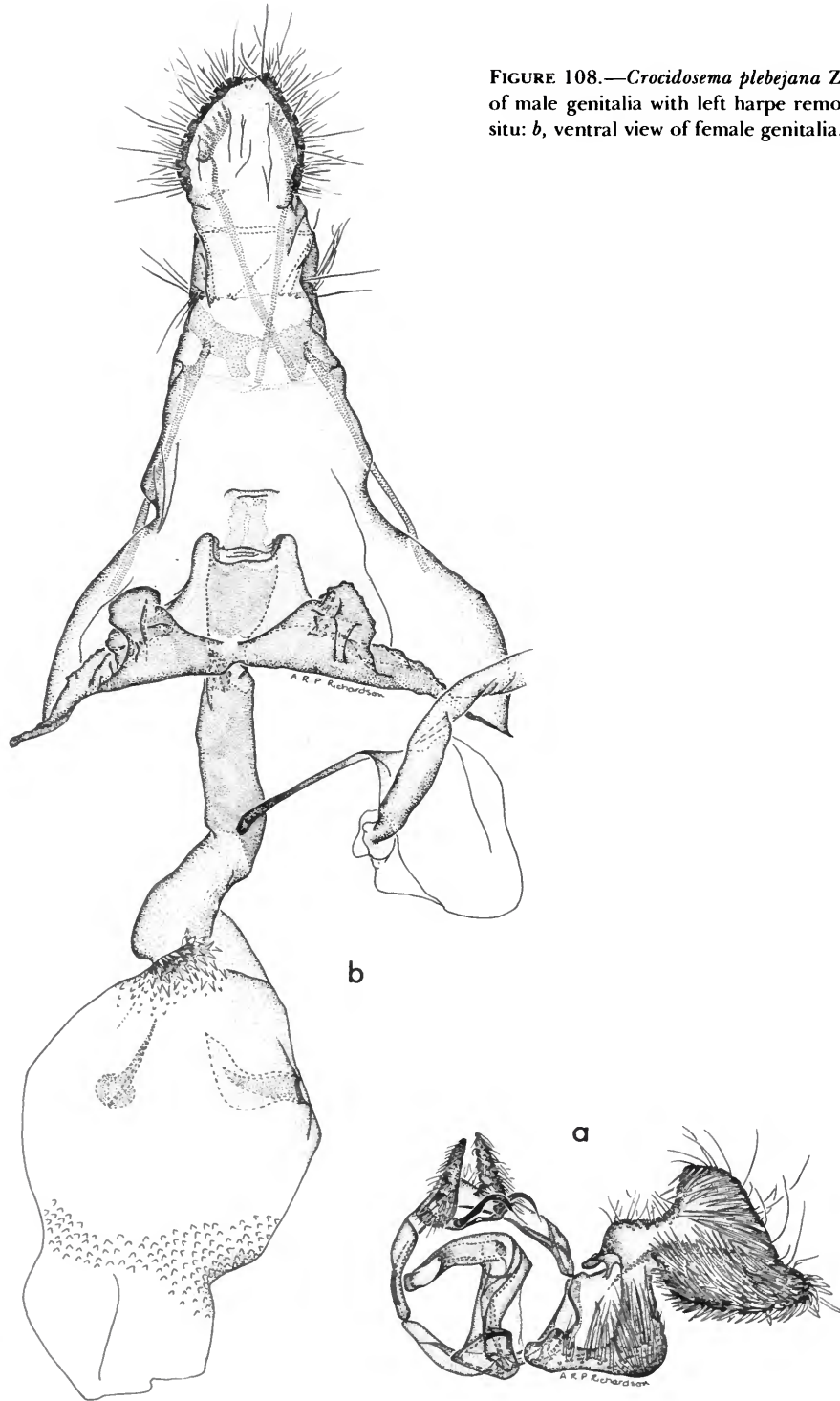
After studying large samples of *Crociosema* Zeller, from Rapa Island, the Marquesas Islands, Caroline Islands, Marshall Islands, and other tropical and temperate areas, I am convinced that *Crociosema(?) insulana* Aurivillius, despite its peculiarities, is a synonym of *C. plebejana* Zeller.

***Crociosema plebejana* Zeller**

FIGURES 108, 291c,d

Crociosema plebejana Zeller, 1847:721.—Lederer, 1859:367.—Wocke, 1871:263 [No. 1269].—Ragonot, 1894b:221 [No. 1221].—Staudinger and Rebel, 1901:110 [No. 1968].—Rebel, 1910a:25; 1911:348 [No. 281]; 1915:140; 1935:262.—Amsel, 1936:351.—Rebel, 1939:6; 1940a:36; 1940b:55.—Hartig and Amsel, 1951:72.—Hartig, 1956:109.—Bradley, 1961:121.—Agenjo, 1963a:5.—Bradley, 1965:93.—Clarke, 1971:126, fig. 104; 1976:44, fig. 16, pl. 4e.—Dugdale, 1977:67.—Kawabe and Kusui, 1978:166.—Bradley et al., 1979:134, pl. 33: figs. 1, 2.—Diakonoff, 1982:38.—Powell in Hodges et al., 1983:36 [No. 3274].

Crociosema plebeiana Zeller.—Meyrick, 1886b:276.—Walsingham, 1892:506, 544; 1897:127; 1907:675, pl. 10: fig. 15; 1908:1002.—Meyrick, 1908:720.—Spuler, 1910:273, pl. 85: fig. 45.—Walsingham, 1914 [1909–1915]:231–232.—Fletcher, 1921a:52.—Heinrich, 1921:822, pls. 99A, 102C, D, 103E; 105G, 106B; 108A–D.—Willcocks, 1922:29, 335.—Heinrich, 1923:190, figs. 10, 29, 29a, 325.—Meyrick, 1924c:546.—Gurney, 1925:231.—Ballard, 1925:521.—Swezey, 1926c:75.—Meyrick, 1926:273.—Bottimer, 1926:817.—Meyrick, 1927a:72.—Buxton and Hopkins, 1927, p. 29; 1928b:47.—Hudson, 1928:248, pl. 49: fig. 10.—Meyrick, 1929a:494.—Forbes, 1930:91.—Meyrick, 1930b:225.—Heinrich, 1931:11, pl. 7: fig. 23.—Forbes, 1931:350.—Bedford, 1931:391; 1932:622.—Fletcher, 1932:20.—Cowland, 1933:583.—Meyrick, 1934a:109; 1934c:346.—Auctorum, 1936b:134.—Swezey, 1936:198.—Wolcott, 1936:482.—McDunnough, 1939:50.—Ghesquière, 1940:96, pl. 5d; 1941:768.—Wells, 1943:265.—Thompson, 1945:163.—Russo, 1947:420.—Viette, 1949a:319.—El Zoheiry and Asem, 1952:472, pls. 1–3; 1953:229.—Swezey, 1954:196.—Clarke, 1958 [1955–1970]: 319, pl. 158: figs. 1–1a, 2–2a.—Kamel and Shazli, 1959:193, figs. 1A–C, 2A–H.—MacKay, 1959:91, fig. 79.—Bretherton, 1960:96.—Bie-



- zanko et al., 1961:33.—Janmouille, 1962:39.—Kimball, 1965:261.—Ragimov and Saleimanov, 1965:41.—Huggins, 1966:256.
- Crociosema plebiana* [sic] Zeller.—Swezey, 1910:141; 1912b:209.—Fullaway, 1914:20.—Willcocks, 1916:vii, 320, pl. 7: figs. 5, 6.—Swezey, 1929a:278; 1942b:211.—Krauss, 1953a:124.—Beardsley, 1961:359.—Butler, 1961:384.—Linsley and Usinger, 1966:163.—Beardsley, 1966:163, 169, 174.
- Crociosema*(?) *insulana* Aurivillius, 1922:267, pl. 11: fig. 20.
- Eucosma plebeiana* (Zeller).—Walsingham, 1914 [1909–1915]:231.—Philpott, 1923:151.—Williams, 1927:459.
- Crociosema ptiladelphia* Meyrick, 1917:18.
- Crociosema synneurota* Meyrick, 1926:276.
- Proteopteryx blackburnii* Butler, 1881:393, 394.
- Penthina altheana* Mann, 1855:555.
- Grapholitha altheana* (Mann).—Lederer, 1859:343.—Heinemann, 1863 [1863–1870]:241.
- Steganoptycha altheana* (Mann).—Wocke, 1871:260.
- Parasuleima insulana* (Aurivillius).—Clarke, 1965:77, figs. 75–77.
- Steganoptycha* [sic] *altheana* (Mann).—Hartmann, 1879:191 [No. 1221].
- Steganoptycha signatana*.—Walsingham, 1894:537, 541 [not *Steganoptycha signatana* Douglas].
- Grapholitha peregrinana* Möscher, 1866:139.
- Steganoptycha obscura* Wollaston, 1879:341.
- Paedisca lavaterana* Millière, 1863:290, pl. 34: figs. 9–13.

TYPES.—In the British Museum (Natural History) (*ptiladelphia*, *synneurota*, *blackburnii*, *plebejana*); Vienna Museum(?) (*altheana*); depository unknown (*signatana*, *peregrinana*, *obscura*, *lavaterana*); Naturhistoriska Riksmuseum, Stockholm (*insulana*).

TYPE-LOCALITIES.—“Syracuse, 10 May” (*plebejana*); Ecuador (*ptiladelphia*) Albermarle, Galapagos Islands (*synneurota*); Hawaiian Islands (*blackburnii*); Madeira (*signatana*); Masatierra (*insulana*); Type-locality unknown (*altheana*, *peregrinana*, *obscura*, *lavaterana*).

DISTRIBUTION.—Circumglobal in warmer areas. Meyrick recorded *plebejana* from Nuku Hiva, Hiva Oa, and Tahuata (1929a:495) and from Eiao, Tahuata, and Fatu Hiva (1934c:346). We have a long series from Fatu Hiva, Hiva Oa, and Nuku Hiva, dates from January to April.

FOOD PLANTS.—Various malvaceous plants, and others: *Crataegus* sp., also *Eucalyptus* sp., *Cucurbita pepo* L., *Abutilon avicennae* Gaertner, *Sida rhombifolia* L.

The male genitalia of the Marquesan specimens show a close relationship to those of the population of Rapa, exhibiting four long setae from the cucullus. Although the genitalia of this species have been figured previously they are repeated here from specimens from the Marquesan population.

Genus *Duessa* Clarke

Duessa Clarke, 1976:26.

TYPE-SPECIES.—*Duessa pleurogramma* Clarke 1976:28; by original designation.

Duessa marquesana, new species

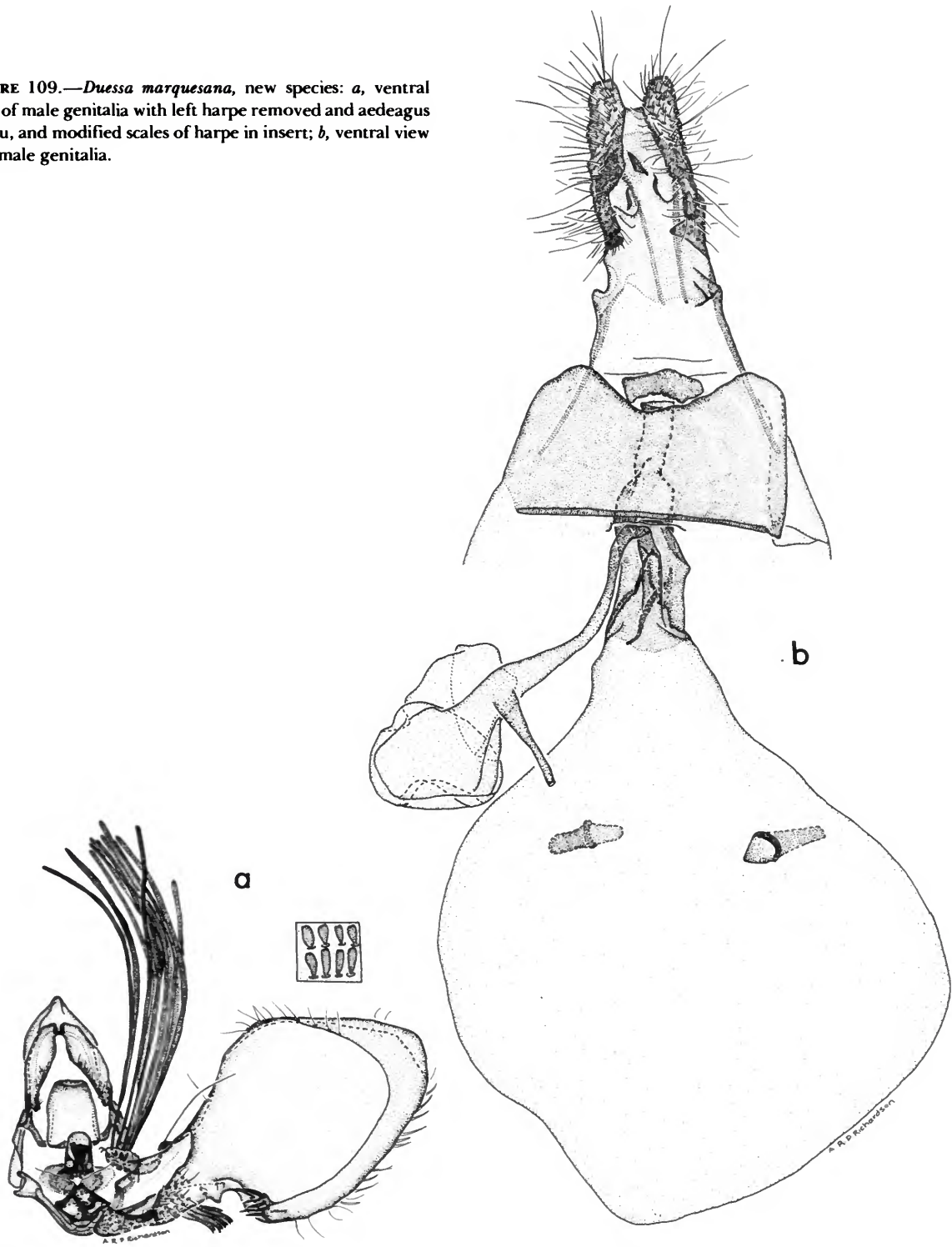
FIGURES 109, 291e,f

Alar expanse 10–11 mm.

Labial palpus sordid white; second segment overlaid grayish fuscous and with a fuscous spot about middle on outer side; third segment fuscous. Antenna pale ochraceous buff; scape fuscous dorsally. Head fuscous anteriorly fading to sordid white posteriorly. Thorax sordid white shaded fuscous anteriorly; tegula sordid white, base fuscous. Forewing ground color sordid white; extreme base of costa narrowly fuscous; on costa, about middle, a subquadrate blotch; apex fuscous; on costa, between the subquadrate blotch and apex, a series of five, short, oblique fuscous dashes; astride end of cell a fuscous, longitudinal dash followed by a similarly colored elongated blotch before termen; on tornus an ill-defined fuscous patch followed by some leaden metallic scales; on dorsum, at basal third, a quadrate fuscous mark (ill-defined or obsolete in some specimens); ochraceous buff scales scattered irregularly over surface of wing; midtermen narrowly fuscous; cilia sordid white, grayish, and fuscous mixed. Hindwing grayish, lighter basally; cilia sordid white to grayish with darker subbasal line. Fore-, mid-, and hindlegs sordid white variously marked fuscous. Abdomen grayish fuscous dorsally, sordid white ventrally.

Male genitalia slides USNM 24606, 24621. Harpe very narrow basally, cucullus very large,

FIGURE 109.—*Duessa marquesana*, new species: *a*, ventral view of male genitalia with left harpe removed and aedeagus in situ, and modified scales of harpe in insert; *b*, ventral view of female genitalia.



expanded; inner surface of cucullus clothed with pear-shaped, bulbous setae; sacculus with a pointed process before cucullus and one near base. Socius pendant, thick basally. Uncus short, triangular. Vinculum rounded. Tegumen narrow, elongate. Anellus triangular. Aedeagus short, stout; vesica armed with a cluster of cornuti.

Female genitalia slide USNM 24546. Ostium small, oval. Inception of ductus seminalis at about middle of ductus bursae ventrally. Ductus bursae midsection strongly sclerotized. Bursa copulatrix finely granular. Signa two truncated thornlike processes. Lamella postvaginalis sclerotized.

HOLOTYPE.—USNM 100768.

TYPE-LOCALITY.—Nuku Hiva, Tunoa Ridge, 2900 ft (884 m).

DISTRIBUTION.—Marquesas Islands.

FOOD PLANT.—Unknown.

Described from the ♂ holotype (23 Jan 1968), 4♂ and 5♀ paratypes as follows: Nuku Hiva: Tunoa Ridge, 2900 ft (884 m), 23 Jan 1968, 3♂, 3♀; Tapuaooa, 2500 ft (762 m) 30 Jan 1968, 1♂; Fatu Hiva: Mt. Teoaiua, 2000 ft (610 m), 22 Mar 1968, 1♀. Hiva Oa: Kakaho Puanui, 2460 ft (750 m), 5 Jan 1932, Le Bronnec, 1♀

Although strikingly similar to *Duessia pleurogramma* Clarke, *marquesana* is a considerably smaller insect. Moreover, the former lacks the pear-shaped setae found on the cucullus of the latter.

Genus *Strepsicrates* Meyrick

Strepsicrates Meyrick, 1881:678 [preoccupied].

Strepsicrates Meyrick, 1888a:73 [replacement name].

TYPE-SPECIES.—*Sciaphila ejectana* Walker, 1863 [1856–1866]:350; subsequent designation by Fletcher, 1929:211.

Strepsicrates holotephras (Meyrick)

FIGURES 110, 291g, h

Spilonota holotephras Meyrick, 1924a:67; 1927a:71 [Microlepidoptera]; 1929a:495; 1932c:307.—Swezey, 1942b:210.—Viette, 1949a:320.—Steiner, 1954:281, 291.—Clarke, 1955 [1955–1970]:161.

Strepsicrates holotephras (Meyrick).—Clarke, 1958 [1955–

1970]:596, pl. 292: figs. 1–1a, 2–2b; 1971:128, fig. 105, pl. 16c,d

Eucosma eumarodes Meyrick, 1924a:68.

Strepsicrates ejectana (Walker).—Clarke, 1976:7, 48 [not *Sciaphila ejectana* Walker].

TYPES.—In the British Museum (Natural History).

TYPE-LOCALITIES.—Fiji, Lautoka (*holotephras*); Fiji, mountains near Lautoka (*eumarodes*).

DISTRIBUTION.—Samoa, Fiji, Marquesas Islands, Tahiti, Rapa, Southern Mariana Islands, Philippine Islands.

Our series consists of 125 specimens from the following three Islands. Nuku Hiva: Pakiu Valley, 1000 to 1800 ft (350 to 548 m), 19 Jan to 3 Feb 1968, 6♂, 11♀; Tapuaooa, 2500 ft (762 m), 30 Jan 1968, 1♂, 1♀; Taiohae, 30 Jan 1968, 1♀. Hiva Oa: Atuona, 11 Feb to 8 Mar 1968, 22♂, 42♀; Tahauku, 26 Feb 1968, 1♂; Mt Feani, 3800 (1158 m), 20 Feb 1968, 1♂. Fatu Hiva: Omoa, 10–21 Mar 1968, 11♂, 27♀; Mt. Teoaiua, 2000 ft (610 m) 22 Mar 1968, 1♀.

FOOD PLANTS.—*Psidium guajava* L., *Psidium littorale* Raddi, *Eugenia jambos* L., *Eugenia uniflora* L., *Metrosideros collina* var. ? *villosa* A. Gray (all Myrtaceae).

Unquestionably this common and widespread species occurs on other of the Marquesas Islands.

In my paper (Clarke 1976:48) I recorded this as *Strepsicrates ejectana* (Walker). Subsequently I examined Walker's type and it is not, in my opinion, conspecific with *holotephras*. I cannot vouch for the synonym shown by Diakonoff (1968:84), so I have eliminated it from this paper.

Genus *Tritopterna* Meyrick

Tritopterna Meyrick, 1921b:151.

TYPE-SPECIES.—*Tritopterna chionostoma* Meyrick, 1921b:152; by monotypy.

Tritopterna eocnephaea (Meyrick), new combination

FIGURES 111, 292a, b

Acroclita eocnephaea Meyrick, 1934c:345.—Viette, 1949a:320.

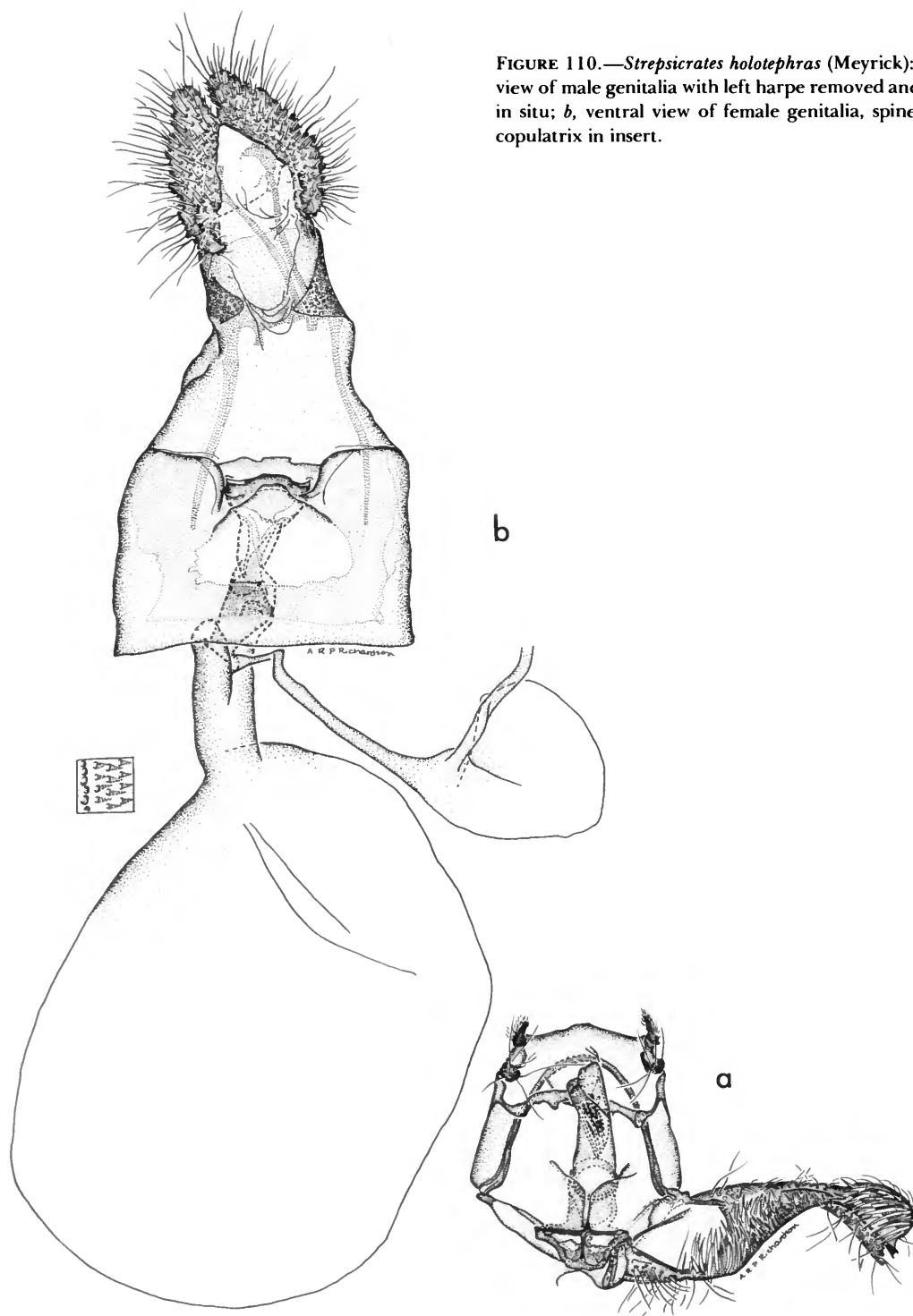


FIGURE 110.—*Strepsicrates holotephras* (Meyrick): *a*, ventral view of male genitalia with left harpe removed and aedeagus in situ; *b*, ventral view of female genitalia, spines of bursa copulatrix in insert.

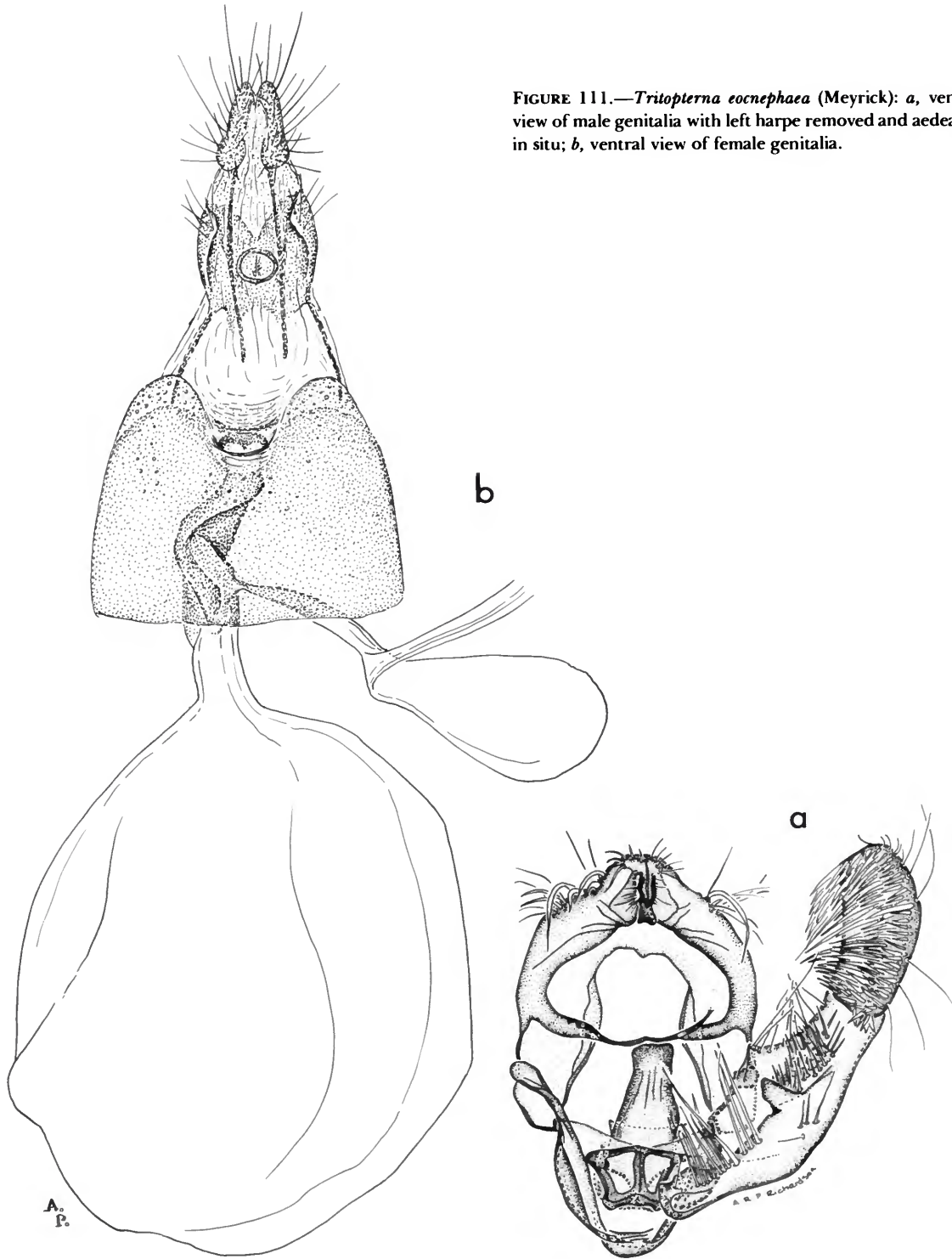


FIGURE 111.—*Tritopterna eocnephaea* (Meyrick): *a*, ventral view of male genitalia with left harpe removed and aedeagus in situ; *b*, ventral view of female genitalia.

Tritopterna galena Clarke, 1971:124, fig. 103, pl. 17c,d [new synonym].

TYPES.—In the Bernice P. Bishop Museum (*eocnephaea*); in the United States National Museum (*galena*).

TYPE-LOCALITIES.—Hiva Oa, Kaava Ridge, 2400 ft (731 m) (*eocnephaea*); Rapa, Teumukopuke (*galena*).

DISTRIBUTION.—Marquesas Islands, Rapa Island. In the Marquesas the known distribution is as follows. Nuku Hiva: Taiohae, 18 Jan 1968, 1♀; Tapuaooa, 2500 ft (762 m), 30 Jan 1968, 4♂, 8♀. Hiva Oa: Kaava Ridge, 2400 ft (731 m), Le Bronnec, 6 specimens? Fatu Hiva: Omoa, 9 Apr 1968, 1♂; Tahuna, 2000 ft (610 m), 27 Mar 1968, 1♂, 2♀; Mt. Teoaiua, 2000 ft (610 m), 22 Mar 1968, 1♂; Mt. Upe, 2025 ft (617 m), 3 Apr 1968, 1♀. Teavapuhiau, Ouia, 750 m, 1–3 Aug 1977, 2♀ (Montgomery).

FOOD PLANT.—Unknown.

Meyrick described this "species" from six specimens of which I have seen four. Although Meyrick did not designate a type in his description, there is one specimen marked "*Acroclita eocnephaea*, type" in his handwriting. I accept this specimen as holotype. The type and two additional males that I have examined definitely belong to the genus *Tritopterna* Meyrick and it is amazing that Meyrick, who had a good "eye," should have missed his own genus. The fourth specimen, in the series before me, is a female of the genus *Duessia* Clarke (1976:26), treated in the preceding discussion.

In our series, collected in 1968, there are several females with a well-defined white spot on dorsum.

When I described *T. galena* from Rapa (1971:124), I did not recognize Meyrick's "*Acroclita eocnephaea*" but examination of his type, and ours from Rapa, leaves no doubt about the synonymy.

Genus *Dudua* Walker

Dudua Walker, 1864 [1856–1866]:1000.

TYPE-SPECIES.—*Dudua hesperialis* Walker, 1864 [1856–1866]:1000; by monotypy.

Dudua eumenica (Meyrick)

FIGURES 112, 292c–e

Argyroploce eumenica Meyrick, 1929a:496.—Viette, 1949a:320.

Platyepplus eumenica (Meyrick).—Clarke, 1955 [1955–1970]:134; 1958 [1955–1970]:572, pl. 285: figs. 1–1a.

Dudua eumenica (Meyrick).—Diakonoff, 1973:420.

TYPE.—In the British Museum (Natural History).

TYPE-LOCALITY.—Hiva Oa, 3500 ft (1067 m).

DISTRIBUTION.—Marquesas Islands.

I have before me the following 29♂ and 55♀. Nuku Hiva: Tapuaooa, 2500 ft (762 m) 23 Jan 1968, 1♂; 30 Jan 1968, 16♂, 22♀; Em. 10–15 Feb 1968, 1♂, 4♀; Tunoa Ridge, 2900 ft (884 m), 23 Jan 1968, 1♂, 1♀; Pakiu Valley, 1800 ft (548 m) 19 Jan 1968, 1♂. Hiva Oa: Mt. Feani, 3800 ft (1158 m), 20 Feb 1968, 2♂, 4♀; 1 Mar 1968, 1♂; Trail to Mt. Feani, 2500 ft (762 m), 20 Feb 1968, 1♂. Ootua, 800 m, 27–30 Jul 1977, 1♂, 2♀. (Montgomery). Fatu Hiva: Mt. Teoaiua, 2000 ft (610 m), 22 Mar 1968, 1♂, 13♀; Tahuna, 2000 ft (610 m), 27 Mar 1968, 2♂, 6♀; Mt. Upe, 2025 ft (716 m), 3 Apr 1968, 1♂, 2♀. Teavapuhiau, Ouia, 750 m, 1–3 Aug 1977, 1♀ (Montgomery).

FOOD PLANT.—*Glochidion ramiflorum* (Forster f.) Mueller-Argovensis. In my field notes I recorded finding the food plant, a small tree, growing on a hillside in mixed forest with *Metrosideros* and other trees and shrubs, ferns, etc.

The larva feeds mainly on leaves but occasionally attacks young fruits. In a late stage (apparently the last instar) the larva cuts the petiole causing wilting and death of the leaf. The larva folds the leaf lengthwise, but apparently drops to the ground to pupate. The hanging, wilted, rolled leaf is conspicuous and characteristic. In the rolled and still green leaves, larvae can almost always be found.

Unlike its near relative *D. aprobola* (Meyrick), *eumenica* comes to light readily. It is common at the higher altitudes.

Dudua eumenica is the first known host for the parasite *Apanteles mendanae* Wilkinson, 1931, according to C.F.W. Muesebeck (personal com-

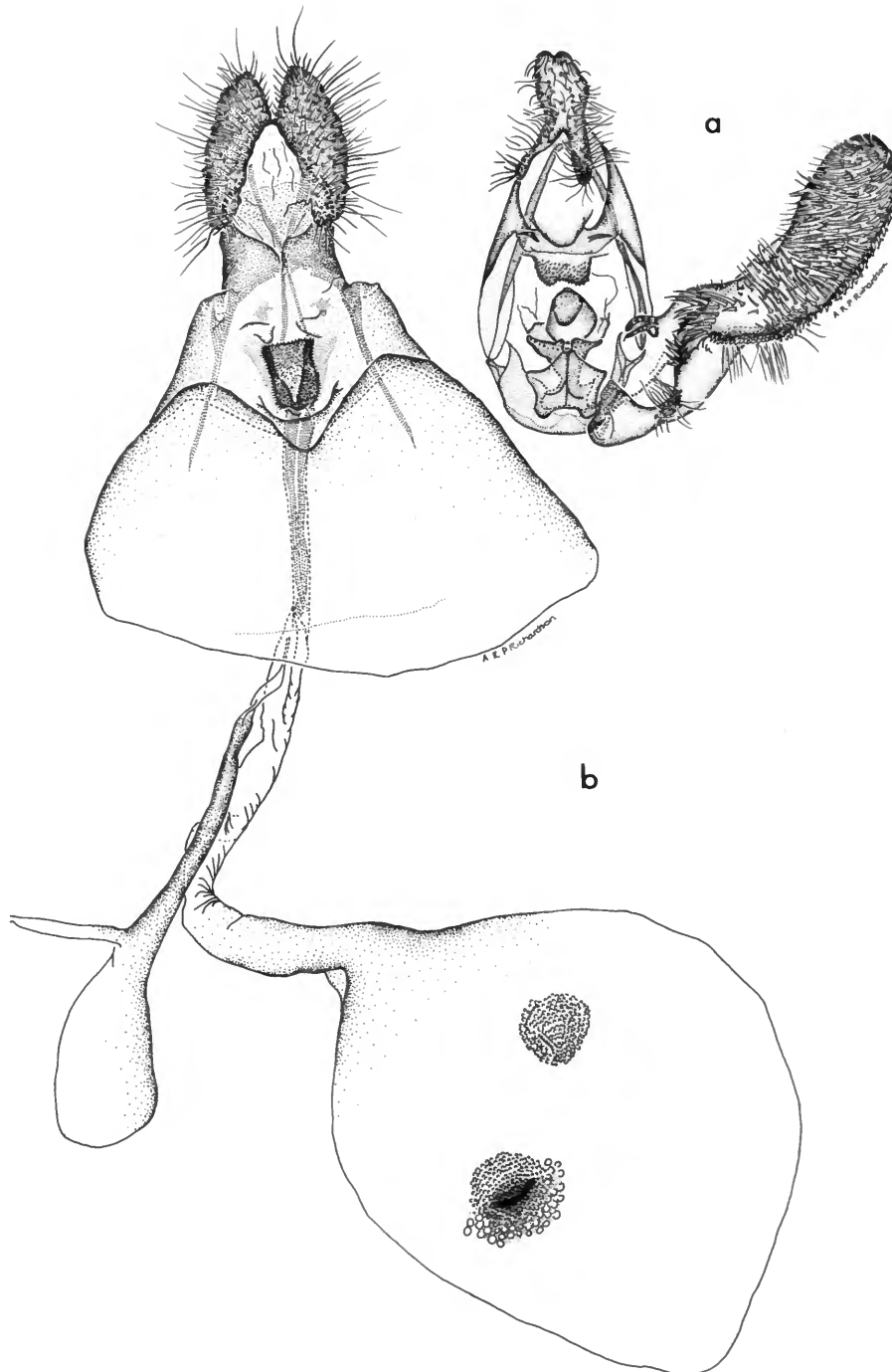


FIGURE 112.—*Dudua eumenica* (Meyrick): *a*, ventral view of male genitalia with left harpe removed and aedeagus in situ; *b*, ventral view of female genitalia.

munication) who determined our reared specimens.

Genus *Cryptophlebia* Walsingham

Cryptophlebia Walsingham, 1899:105 [type-species: *Cryptophlebia carpophaga* Walsingham, 1899:106; by monotypy and original designation].

Metriophlebia Diakonoff, 1969:89 [type-species: *Eucosma chaomorpha* Meyrick, 1929a:495; by monotypy and original designation]. [New synonym.]

Cryptophlebia pallifimbriana Bradley

FIGURES 113, 292f

Cryptophlebia pallifimbriana Bradley, 1952:688, fig. 5, pl. 24: fig. 5.

Female genitalia slide USNM 24307. Ostium funnel-shaped. Antrum a moderately sclerotized band. Inception of ductus seminalis lateral, from left side, at anterior edge of a sclerotized section of ductus bursae. Ductus bursae membranous in anterior half, sclerotized posteriorly. Bursa copulatrix membranous posteriorly, finely spinulate anteriorly. Signa two curved, spinelike processes. Lamella antevaginalis strongly sclerotized.

TYPE.—In the British Museum (Natural History).

TYPE-LOCALITY.—Fiji, Natoo [?Natovu].

DISTRIBUTION.—Marquesas Islands, Austral (Tubuāi) Islands, Society Islands, New Hebrides, Fiji, Tahiti, Vulcan Island, New Guinea.

Our specimens are from Fatu Hiva, Mt. Teoaiua, 2000 ft (610 m), 27 Mar 1968, at light, 5♀.

FOOD PLANT.—*Inocarpus lagifer* (Parkinson) Fosberg, and probably others.

Bradley (1952, fig. 5) figured the male genitalia, but our collection contains no males, so male genitalia are not figured here.

Cryptophlebia chaomorpha (Meyrick), new combination

FIGURES 114, 292g,h

Eucosma chaomorpha Meyrick, 1929a:495.—Viette, 1949a:320.—Clarke, 1955 [1955–1970]:82; 1958 [1955–1970]:352, pl. 175: figs. 3–3a.

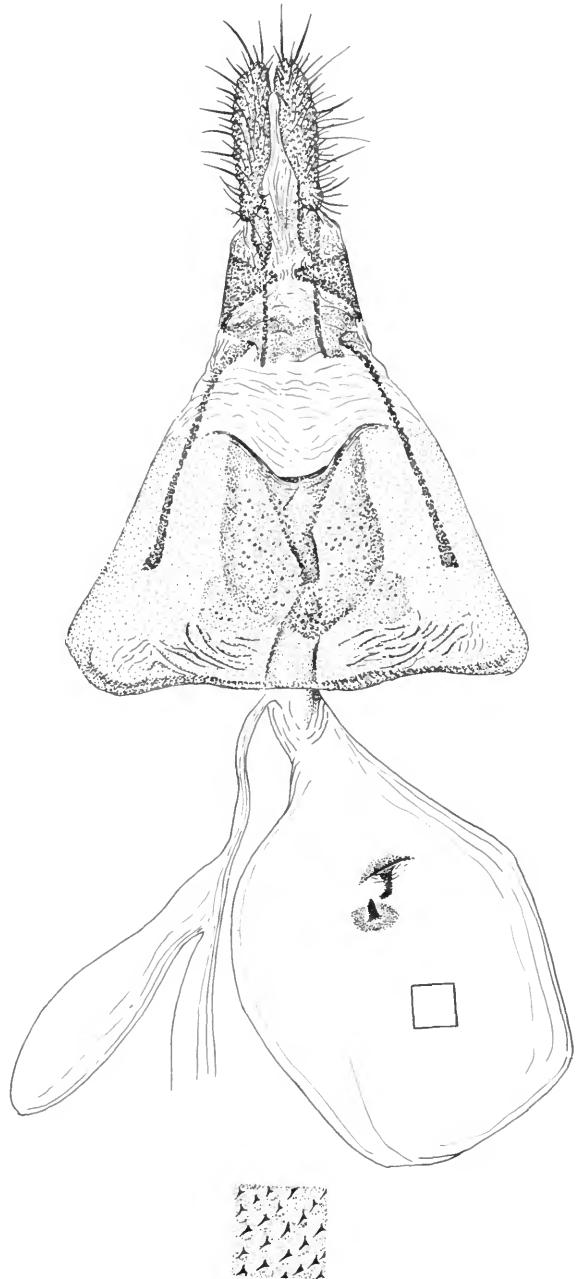
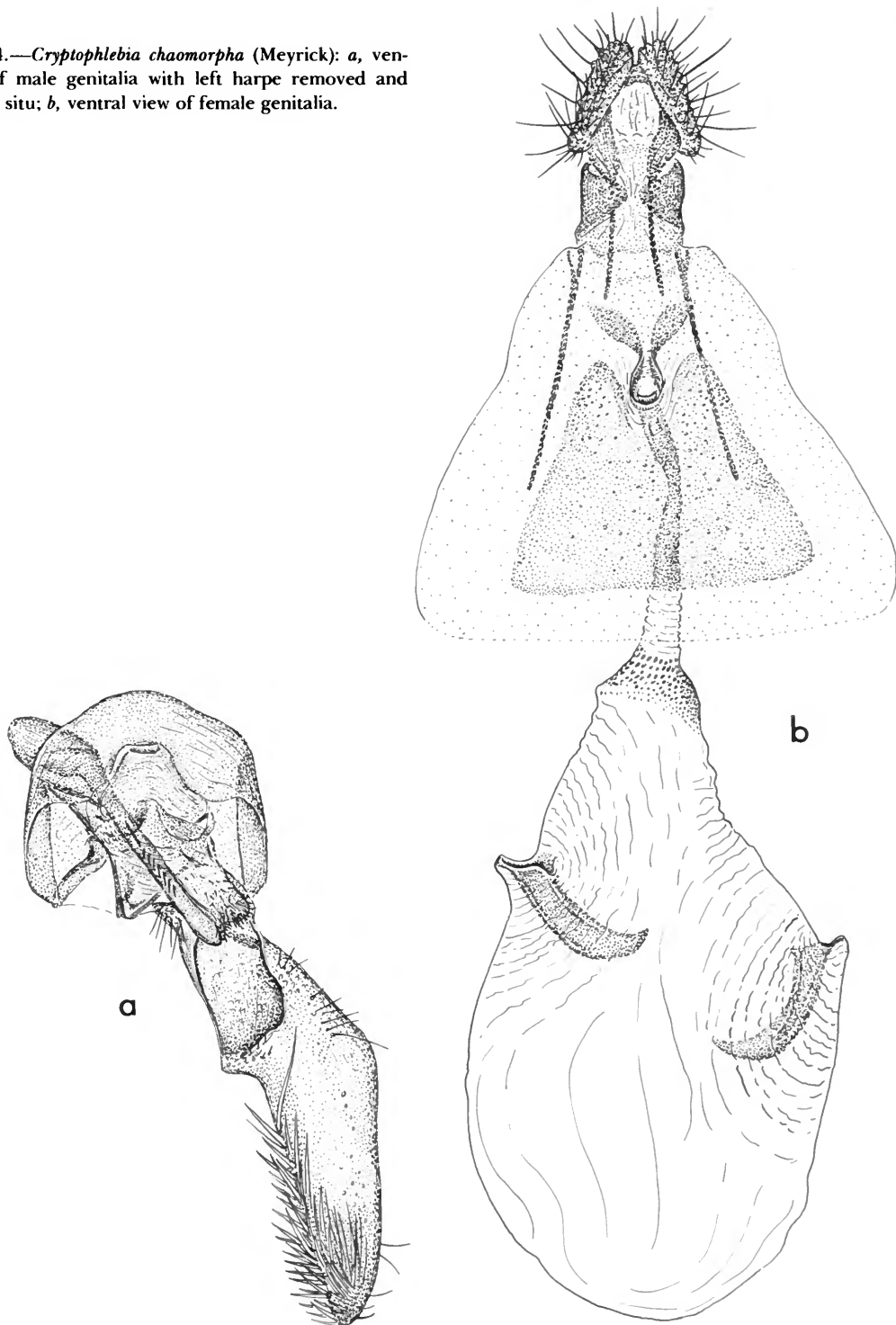


FIGURE 113.—*Cryptophlebia pallifimbriana* Bradley, ventral view of female genitalia with ornamentation of bursa copulatrix in insert.

FIGURE 114.—*Cryptophlebia chaomorpha* (Meyrick): *a*, ventral view of male genitalia with left harpe removed and aedeagus in situ; *b*, ventral view of female genitalia.



Metriophlebia chaomorpha (Meyrick).—Diakonoff, 1969:90, fig. 3, pl. 7: fig. 22.

Male genitalia slides USNM 24301, 24302, 24303. Harpe rather slender, costa angulate; cucullus narrowly pointed, profusely setose on inner surface; sacculus with prominent triangular projection. Uncus triangular, with median excavation. Vinculum a narrow band. Tegumen rounded, lightly sclerotized. Anellus triangular, elongate. Aedeagus slender, bulbous at base; apex clothed with very small, fine spines; vesica armed with a series of dentate cornuti.

Female genitalia slides USNM 24304, 24305, 24306. Ostium pyriform. Antrum very narrowly sclerotized. Inception of ductus seminalis lateral, from posterior fourth of ductus bursae. Ductus bursae very slender posteriorly, broadening anteriorly; at junction with bursa copulatrix conspicuously granular. Bursa copulatrix membranous, very weakly rugose anteriorly. Signa two scimitar-like processes. Lamella antevaginalis strongly sclerotized. Lamella postvaginalis narrowly sclerotized on each side.

TYPE.—In the British Museum (Natural History).

TYPE-LOCALITY.—Nuku Hiva, Marquesas Islands.

DISTRIBUTION.—Marquesas Islands, Seychelles, Mahé Island.

Our collection contains the following. Nuku Hiva: Taiohae, 26 Jan 1968, 5♂; Tunoa Ridge, 2900 ft (884 m) 29 Jan 1968, 4♂, 10♀. Hiva Oa: Atuona, 12 Feb 1968, 1♂.

FOOD PLANT.—Unknown.

Cryptophlebia chaomorpha (Meyrick) is closely related to *C. isomalla* (Meyrick) and *C. batrachopa* Meyrick (= *C. colivora* Meyrick), new synonym, and the three form a species group. If one wishes to separate this group from the remaining species of *Cryptophlebia*, Diakonoff's *Metriophlebia* should be used.

Cryptophlebia rhynchias (Meyrick)

FIGURE 293a

Platypleplus rhynchias Meyrick, 1905:586.—Clarke, 1955 [1955–1970]:273.

Argroploce rhynchias (Meyrick).—Meyrick, 1929a:496.—

Fletcher, 1932:31.—Swezey, 1942b:211.—Viette, 1949a:320.—Comstock, 1966:63.

Olethreutes rhynchias (Meyrick).—Williams, 1951:64.

Cryptophlebia rhynchias (Meyrick).—Bradley, 1952:687, fig. 6, pl. 24: fig. 6, pl. 25: figs. 6, 6a.—Clarke, 1958 [1955–1970]:327, pl. 162: figs. 3–3a.—Comstock, 1966:63.—Dugdale, 1977:67.

TYPE.—In the British Museum (Natural History).

TYPE-LOCALITY.—Ceylon, Yatitantota.

DISTRIBUTION.—Australia, Ceylon (Sri Lanka), India, Southern Mariana Islands, Mauritius, new Hebrides, Fiji, Samoa, Sudest Island, Society Islands, Austral Islands, and Marquesas Islands (?).

FOOD PLANTS.—*Canavalia* (fruits); *Erythrina*; *Cajanus cajan* (L.) Millspaugh (pigeon pea stem borer).

Bradley (1952) did not record *rhynchias* from the Marquesas Islands although Meyrick (1929a) did. We were on three of the Marquesas Islands, over a three months' period, and did not encounter *rhynchias*, which raises some doubt about Meyrick's record.

Genus *Cydia* Hübner

Cydia Hübner, 1825 [1816–1826]:375.

TYPE-SPECIES.—*Phalaena pomonella* L., 1758:538 [No. 270]; subsequent designation by Walsingham, 1897:125, 130.

In previous papers I have used *Laspeyresia* (sensu auct.) for congeners of the species described below. In a recent paper by Brown (1979:566) he has left no doubt about the proper usage of *Cydia*.

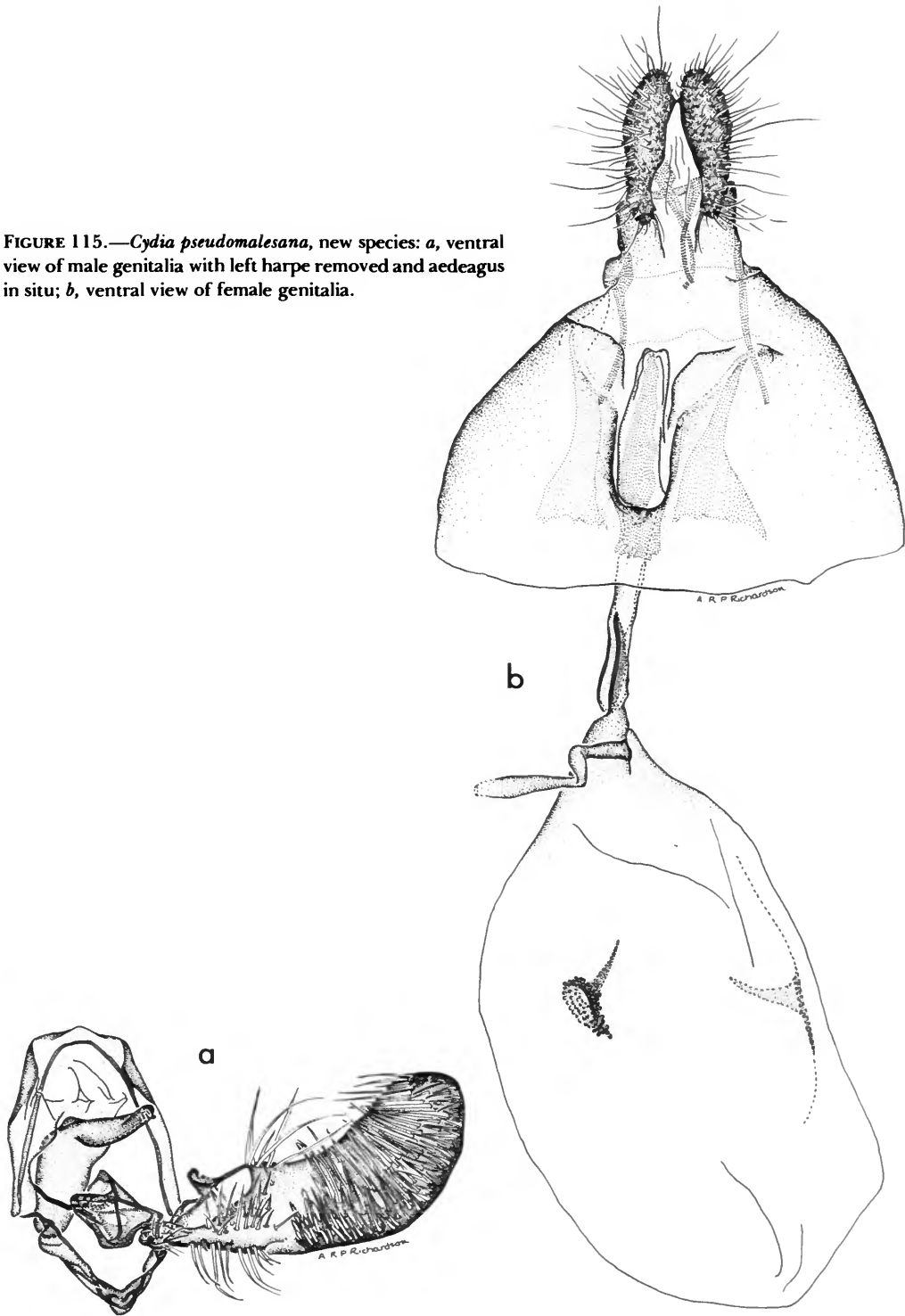
Cydia pseudomalesana, new species

FIGURES 115, 293b,c

Alar expanse 10–14 mm.

Labial palpus light ochraceous buff. Antenna light ochraceous buff. Head and thorax light ochraceous buff, the latter slightly darker posteriorly. Forewing ground color light ochraceous buff heavily overlaid with rust colored or grayish scales, particularly toward dorsum; entire costa marked with prominent oblique rust colored or

FIGURE 115.—*Cydia pseudomalesana*, new species: *a*, ventral view of male genitalia with left harpe removed and aedeagus in situ; *b*, ventral view of female genitalia.



fuscous strigulae, the outer ones alternating with leaden metallic dashes; ocelloid patch marked with two to four short, longitudinal black dashes, and bordered inwardly and outwardly by transverse leaden metallic bars: termen very narrowly fuscous; cilia grayish fuscous. Hindwing fuscous toward margins, much lighter basally; cilia ochraceous buff to grayish fuscous with darker sub-basal line. Hindwing of male with narrow line of modified whitish scales. Fore-, mid-, and hindlegs light ochraceous buff variously marked with fuscous. Abdomen grayish fuscous dorsally, light ochraceous buff ventrally.

Male genitalia slide USNM 24590. Harpe nearly of equal width throughout; cucullus slightly wider, rounded distally. Socius indicated by a few weak setae. Vinculum subtriangular. Tegumen narrowed posteriorly. Anellus triangular. Aedeagus broad basally, narrowed distally.

Female genitalia slides USNM 24543, 24544, 24591. Ostium crescent-shaped. Sterigma with two long, curved sclerotized patches. Antrum elongate, sclerotized. Inception of ductus seminalis slightly posterior to junction with bursa copulatrix. Ductus bursae with posterior two-thirds sclerotized, anterior third membranous and broadened. Bursa copulatrix membranous, except granular at junction with ductus bursae. Signa two, curved, thornlike.

HOLOTYPE.—USNM 100769.

TYPE-LOCALITY.—Fatu Hiva, Omoa.

DISTRIBUTION.—Marquesas Islands.

FOOD PLANT.—Unknown; probably seeds of leguminous plants.

Described from the ♂ holotype (16 Mar 1968), 8♂ and 11♀ paratypes as follows. Fatu Hiva: Omoa, 16–18 Mar 1968, 3♂, 3♀; Tahuna, 2000 ft (610 m), 27 Mar 1968, 1♀; Mt. Teoaiua, 2000 ft (610 m), 22 Mar 1968, 3♀. Eiao: N. Uplands, 400 m, 7 Aug 1977, at light, 4♂, 4♀ (Montgomery); Hiva Oa, Ootua, 800 m, 27–30 Jul 1977, 1♂ (Montgomery).

This is a variable species with the size of the costal strigulae different in different examples and the color of the hindwing varying from specimen to specimen, but the genitalia place them all together.

Meyrick (1920:352, 353) described *Laspeyresia malesana* and *L. pycnochra*, both from Madras and both were reared from pods of leguminous plants. The male of *malesana* and a female of *pycnochra* are extant and it appears very probable that they represent the same species, but without both sexes of each it is impossible to tell. The species described here is very obviously related to the above-named species but differs in several respects: The male sex scaling on the inner margin of the hindwing of *pseudomalesana* shows no evidence of a black line as in *malesana* and the “spine-cluster” near base of cucullus of *malesana* is composed of short, stout setae curved basad. In *pseudomalesana* this “spine-cluster” is composed of longer setae directed transversely. Moreover, the sacculus of *malesana* is notched but entire in *pseudomalesana*. The female *pseudomalesana* has a longitudinal division of the sclerotized patches on each side of the ostium, such as are present in *pycnochra*, but they are not as pronounced. Both male and female of *pseudomalesana* show strongly contrasting costal strigulae, absent in both *malesana* and *pycnochra*.

Cydia pseudomalesana has female genitalia that are very close to the African *Laspeyresia platydryas* Meyrick (Clarke, 1958 [1955–1970] pl. 224: fig. 2–2b). See also *Cydia pycnochra* (Clarke, 1958 [1955–1970], pl. 225: fig. 3–3c).

Family ORNEODIDAE

Genus *Orneodes* Latreille

Orneodes Latreille, 1796:148 [no included species]; 1802:418.

TYPE-SPECIES.—*Phalaena Alucita hexadactyla* Linnaeus, 1758, ed. 10, p. 542, by monotypy by Latreille (as *Pterophorus hexadactylus* F.), 1802:418).

Orneodes pterochroma, new species

FIGURES 116, 294a

Alar expanse 9 mm.

Labial palpus white; second segment faintly marked grayish fuscous apically; third segment

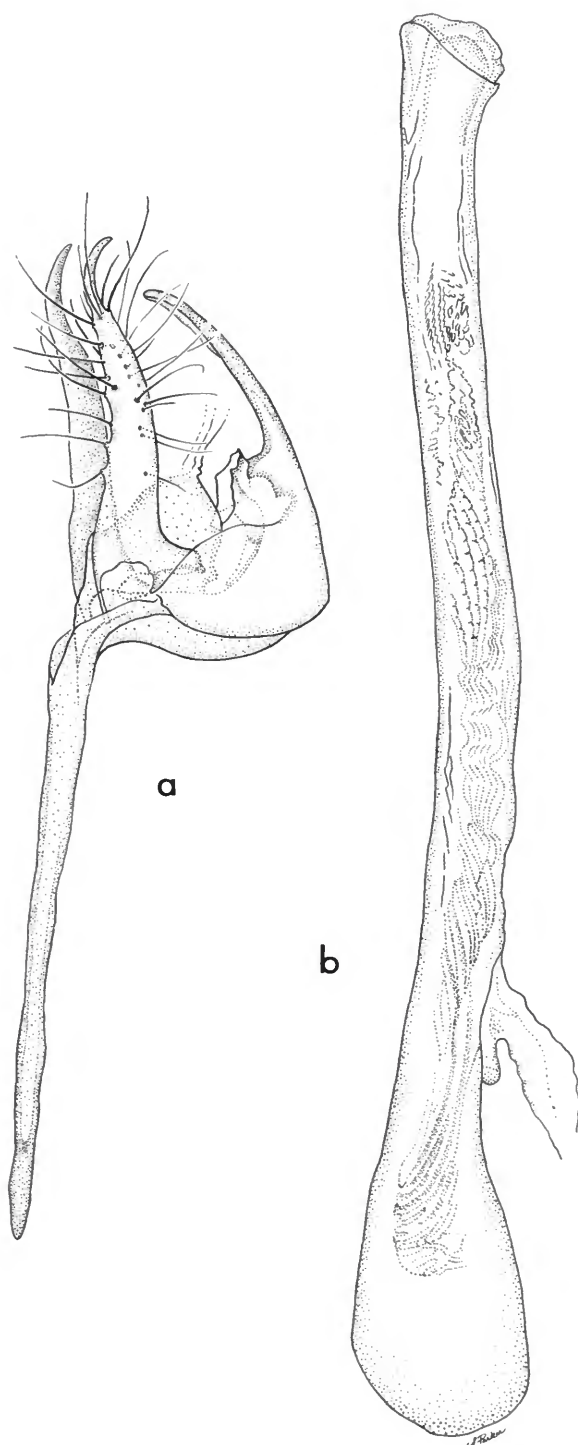


FIGURE 116.—*Orneodes pterochroma*, new species: a, lateral aspect of male genitalia with aedeagus removed; b, aedeagus.

with faint grayish shade subapically on outer side. Antenna light buff. Head white. Thorax white with very faint yellowish suffusion laterally. Forewing ground color white; extreme base of costa pale ochraceous buff, followed by two faint grayish fuscous spots; remaining plumes with three broad light buff fasciae, each preceded and followed by fuscous scales; each plume with fuscous subapical spot; base of sixth plume light ochraceous buff; cilia mixed white and buff. Hindwing first to fifth plumes with six clusters of fuscous scales, some with light buff scales between; sixth plume light ochraceous buff, except outer third with four small fuscous spots. Abdomen white; posterior segments irrorate with fuscous.

Male genitalia slide USNM 25136. Harpe broadest at base terminating in a point distally. Uncus very slender, curved, pointed. Vinculum U-shaped; saccus long, slender, straight. Tegumen shorter than broad. Anellus a sclerotized tube. Aedeagus about four times as long as harpe; vesica armed with a cluster of lightly sclerotized cornuti.

HOLOTYPE.—USNM 100753.

TYPE-LOCALITY.—Hiva Oa, Atuona.

DISTRIBUTION.—Hiva Oa.

FOOD PLANT.—Unknown.

Described from the unique ♂ holotype (23 Feb 1968).

Similar to *O. xanthozona*, new species, *pterochroma* may be distinguished from it by the light ochraceous buff specialized scales of the sixth plume of the hindwing.

Orneodes xanthozona, new species

FIGURES 117, 294d

Alar expanse 8–9 mm.

Labial palpus white; second segment with fuscous apex; third segment with subapical fuscous bar. Antenna pale ochraceous buff; scape white. Head white. Thorax white with a few grayish scales posteriorly; tegula faintly and sparsely marked grayish. Forewing ground color white; base of costa with five small spots of warm buff and fuscous scales mixed, followed by three broad warm buff fasciae, each bordered on inner

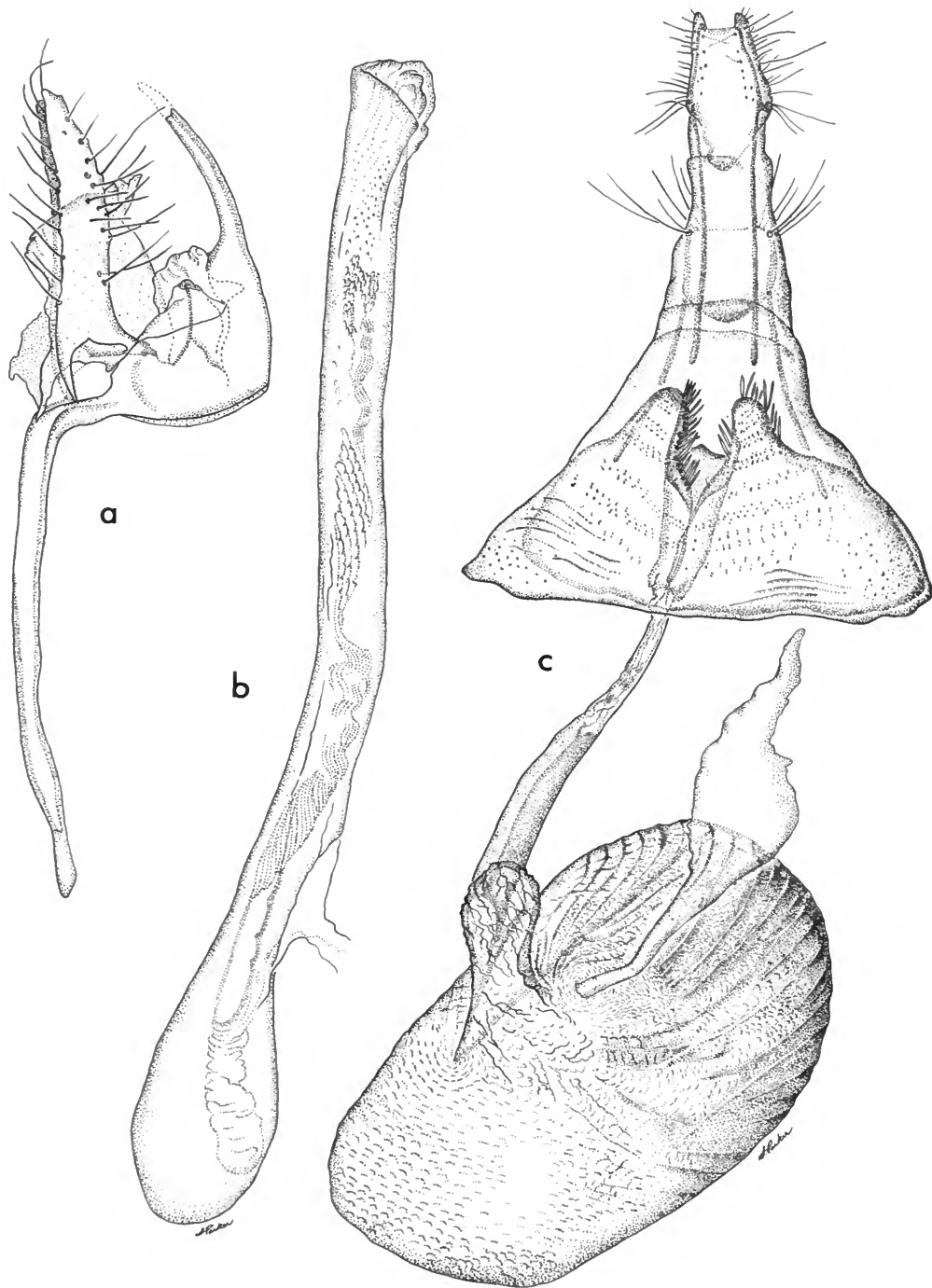


FIGURE 117.—*Orneodes xanthozona*, new species; *a*, lateral aspect of male genitalia with aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.

and outer edges by fuscous scales; remaining five plumes with three broad, warm buff fasciae each preceded and followed by fuscous scales and each with scattered fuscous scales toward their bases; each plume with fuscous apex; cilia white and pale grayish mixed. Hindwing each plume with a series of five pairs of fuscous spots, some with pale yellowish scales between; apex grayish fuscous preceded by a fuscous spot; cilia white and grayish mixed. Foreleg white; tibia and tarsal segments fuscous on outer side; midleg and hindleg white. Abdomen white dorsally with scattered fuscous and warm buff scales; ventrally white.

Male genitalia slide USNM 25137. Harpe slender; costa rough-edged; cucullus bluntly pointed. Uncus long, slender, pointed. Vinculum U-shaped. Tegumen shorter than broad. Anellus a sclerotized tube. Aedeagus about four times the length of harpe; vesica armed with a cluster of fine cornuti.

Female genitalia slide USNM 25138. Ostium V-shaped. Inception of ductus seminalis ventral

from bursa copulatrix. Ductus bursae membranous posteriorly, with an elongate sclerotized area dorsolaterally in anterior half. Bursa copulatrix finely granular anteriorly, rugose in posterior half. Signum absent.

HOLOTYPE.—USNM 100754.

TYPE-LOCALITY.—Fatu Hiva, Omoa Valley.

DISTRIBUTION.—Fatu Hiva.

FOOD PLANT.—Unknown.

Described from the ♂ holotype (20 Mar 1968), and 6 paratypes as follows: Omoa Valley, 5 Apr 1968, 1♂; Tahuna, 2000 ft (610 m) 23 Mar 1968, 2♂; Mt. Teoaiua, 2000 ft (610 m), 22 Mar 1968, 2♀; Mt. Upe, 2025 ft (617 m), 3 Apr 1968, 1♀.

This species is strikingly similar to *O. atomoclastus* Meyrick (1934d:401) from St. Thomé, West Africa, but the midsection of the transverse bands is yellower than in that species. Unfortunately, the abdomen of Meyrick's type is missing, so that a proper comparison cannot be made. The markings of the Fatu Hiva species, however, are darker and more pronounced than those of *atomoclastus*.

Family GELECHIIDAE

Key to the Genera of Gelechiidae

- 1. Third segment of labial palpus acute 2
 Third segment of labial palpus plumose (male only) *Stoerberhinus*
- 2. Forewing with veins 2 and 3 stalked 3
 Forewing with veins 2 and 3 separate 4
- 3. Second segment of labial palpus dilated toward apex *Autosticha*
 Second segment of labial palpus not dilated toward apex (female only) *Stoerberhinus*
- 4. Second segment of labial palpus with apical tuft anteriorly . *Chelophoba*
 Second segment of labial palpus otherwise 5
- 5. Second segment of labial palpus with furrow 6
 Second segment of labial palpus without furrow *Pitycona*
- 6. Forewing with vein 6 out of stalk of 7 and 8 *Ephysteris*
 Forewing with vein 6 separate *Phthorimaea*

Genus *Stoerberhinus* Butler

Stoerberhinus Butler, 1881:402.

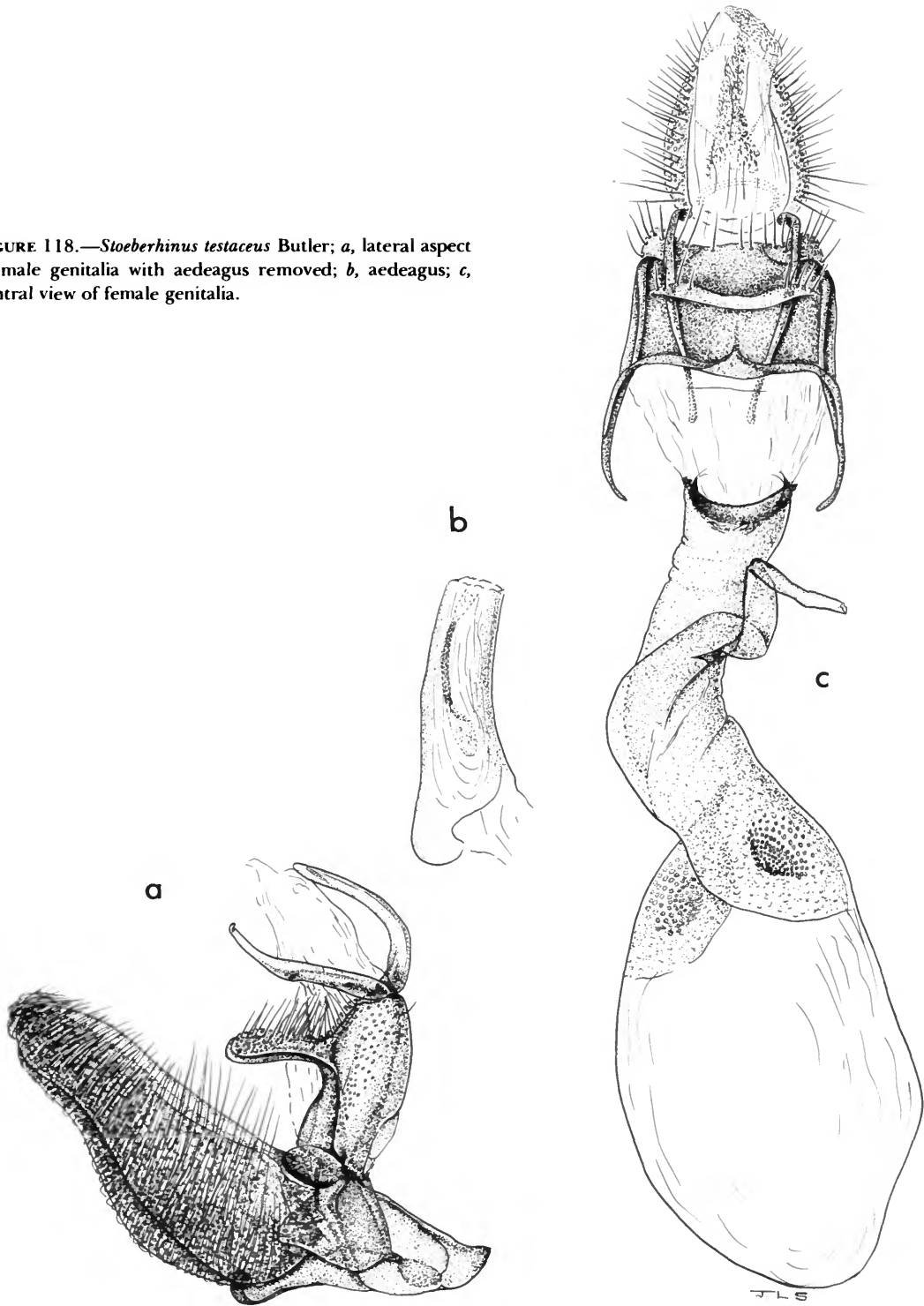
TYPE-SPECIES.—*Stoerberhinus testaceus* Butler, 1881:402; by monotypy.

Stoerberhinus testaceus Butler

FIGURES 118, 293_{e,f}

Stoerberhinus testaceus Butler, 1881:402, fig. 2.—Walsingham, 1887a:171; 1907:486, pl. 13: fig. 28.—Swezey, 1926c:75;

FIGURE 118.—*Stoerberhinus testaceus* Butler; *a*, lateral aspect of male genitalia with aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.



1929a:277.—Williams, 1931:158.—Sakimura and Linford, 1940:453.—Swezey, 1944:144.—Beller, 1948:24.—Krauss, 1953b:219.—Beardsley, 1961:354.—Bradley, 1961:139.—Beardsley, 1966:183.—Clarke, 1971:142, fig. 115, pl. 19a-d.—Sugerman, 1972:279.—Zimmerman, 1978:1806, fig. 1350.

Stoeberhinus testaceus [sic] Swezey, 1910:138 [unjustified emendation].

Stoeberhinus testacea Butler.—Meyrick, 1925:255; 1926:274; 1927a:84; 1929a:497; 1932a:206; 1934c:346.—Gaede, 1937:552.—Viette, 1949a:319; 1949b:103.—Comstock, 1966:64.

TYPE.—In the British Museum (Natural History).

TYPE-LOCALITY.—Honolulu, Hawaii.

DISTRIBUTION.—New Hebrides, Fiji, Samoa, Tutuila, Society Islands, Austral Islands, Marquesas Islands, Tuamotus, Galapagos, Hawaii.

From the Marquesas we have 215 specimens from the three islands, Nuku Hiva, Hiva Oa, and Fatu Hiva, from January through March. Meyrick recorded this species (1934c) also from Tahuata and Uahuka. S.L. Montgomery contributed 5 ♂, 5 ♀ from Nuku Hiva.

FOOD PLANT.—Dry vegetable matter; also *Heritiera littoralis* Dryander (Beller, 1948:24).

Undoubtedly *testaceus* will be found throughout the year on most, if not all, the archipelagoes of the warmer parts of the Pacific.

Genus *Autosticha* Meyrick

Autosticha Meyrick, 1886b:281.

TYPE-SPECIES.—*Automola pelodes* Meyrick, 1883:34; by monotypy.

Autosticha pelodes (Meyrick)

FIGURES 119, 293g,h

Automola pelodes Meyrick, 1883:34.—Clarke, 1955 [1955–1970]:238.

Autosticha pelodes (Meyrick)—Meyrick, 1886b:281.—Walshingham, 1907:487, pl. 14: fig. 1.—Swezey, 1909:21; 1910:138.—Meyrick, 1921b:167; 1925:256 [No. 18]; 1929a:497.—Gaede, 1937:555.—Viette, 1949a:319; 1949b:104.—Clarke, 1955 [1955–1970]: 238; 1969 [1955–1970]: 322, pl. 160: fig. 1–1-d.—Zimmerman, 1978:1797, figs. 1340–1345.

TYPE.—In the British Museum (Natural History).

TYPE-LOCALITY.—“Hawaii.”

DISTRIBUTION.—Hawaii, New Hebrides, Malaya (Selangor), Marquesas Islands, Celebes, Java, Samoa.

Nuku Hiva: Taiohae, 17 Jan 1968, 2♀. Hiva Oa: Atuona, 25 Feb to 6 Mar 1968, 1♂, 9♀. Fatu Hiva: Omoa, 11 Mar 1968 to 8 Mar 1968, 12♂, 42♀; Mt. Upe, 2025 ft (617 m), 3 Apr, 1968, 1♀; Tahuna, 2000 ft (610 m), 27 Mar 1968, 1♂.

FOODS.—Decaying vegetable matter.

Meyrick (1929a:497) recorded *pelodes* from Tahuata and also from Rapa, but the latter seems to have been a misidentification of *Autosticha merista* Clarke (1971:143).

Autosticha leucoptera, new species

FIGURES 120, 293d

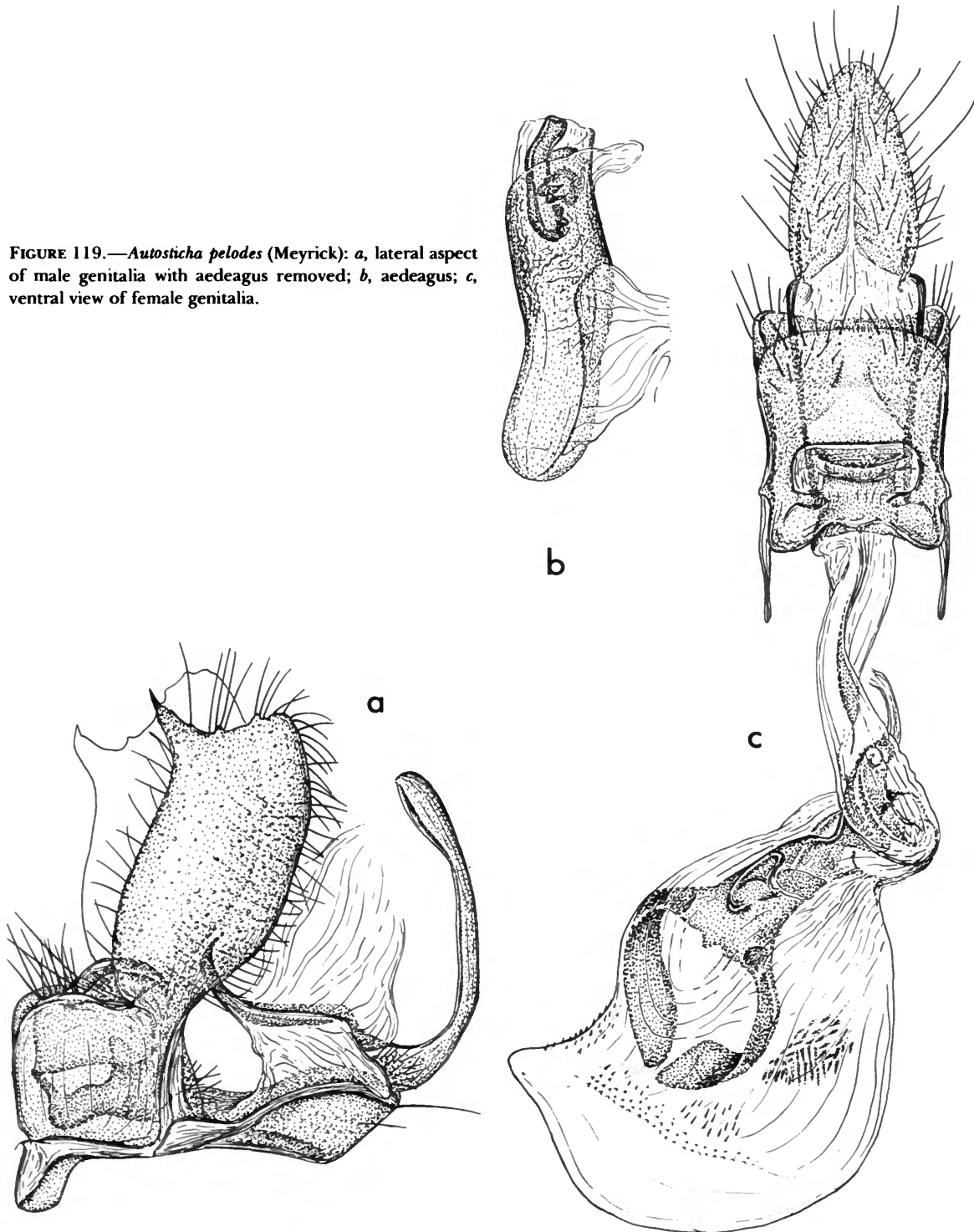
Alar expanse 11 mm.

Labial palpus light buff; second segment pale ochraceous buff on outer side with a few scattered fuscous scales toward apex. Antenna pale ochraceous buff. Head light buff, laterally pale ochraceous buff. Thorax pale ochraceous buff; tegula light buff. Forewing ground color light buff; at two-fifths two small fuscous spots, one on fold and the other in cell; at end of cell a third fuscous spot; on termen, three ill-defined fuscous dots; cilia buff. Hindwing very thinly scaled, light buff with a few scattered brownish scales basally. Fore- and midlegs pale ochraceous buff; hindleg light buff. Abdomen light buff.

Male genitalia slide USNM 24574. Harpe about twice as long as broad, narrowed basally; cucullus narrowly rounded; sacculus with long, curved, spinous process distally. Gnathos slender, curved, sharply pointed. Uncus curved, nearly as long as harpe, slightly dilated distally. Vinculum U-shaped with short median projection. Tegumen U-shaped, broadest at middle, narrow laterally. Anellus a strongly sclerotized curved plate. Aedagus stout, broadest at middle; vesica armed with a single stout cornutus.

HOLOTYPE.—USNM 100770.

FIGURE 119.—*Autosticha pelodes* (Meyrick): *a*, lateral aspect of male genitalia with aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.



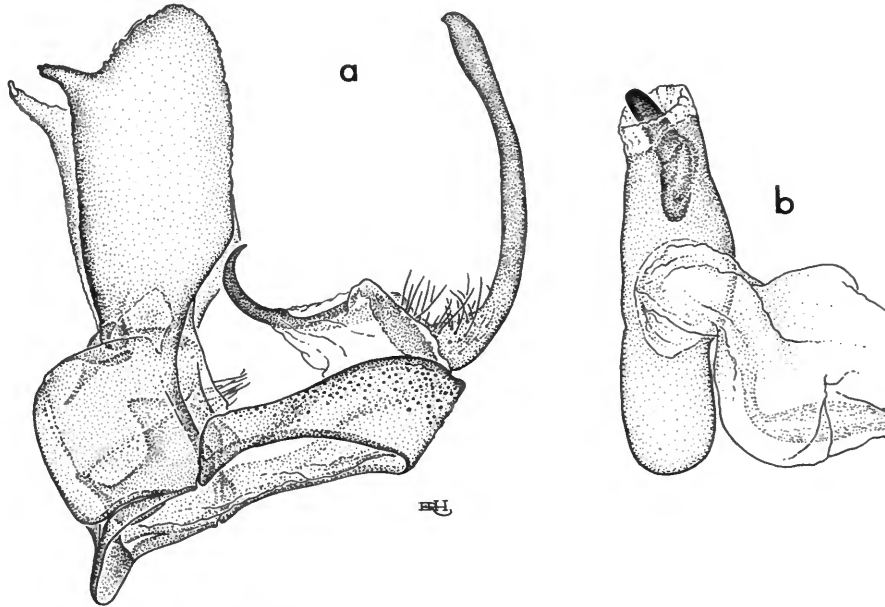


FIGURE 120.—*Autosticha leucoptera*, new species: *a*, lateral aspect of male genitalia with aedeagus removed; *b*, aedeagus.

TYPE-LOCALITY.—Hiva Oa, Atuona.

DISTRIBUTION.—Marquesas Islands.

FOOD PLANT.—Unknown. Probably decaying vegetable matter. Described from the unique ♂ holotype.

Although the male genitalia of *leucoptera* and *pelodes* are strikingly similar, the spinelike projection from the ventral margin of the harpe is longer in *leucoptera* than in *pelodes*, and the harpe of the former is narrower than in the latter. The color of *leucoptera* is much lighter than *pelodes* and texture of the scales of *leucoptera* is similar to species of *Odites*.

Genus *Chelophoba* Meyrick

Chelophoba Meyrick, 1935a:71.

TYPE-SPECIES.—*Chelophoba aganactes* Meyrick, 1935a:72; by monotypy.

Chelophoba melaina, new species

FIGURES 121, 294*b,c*

Alar expanse 10 mm.

Labial palpus sordid white; second segment,

except apex, fuscous on outer side; apex with triangular tuft anteriorly; third segment with four oblique, fuscous annuli. Antenna sordid white, each segment with a fuscous band basally above. Head pale cinereous; face sordid white. Thorax cinereous; tegula black basally, sordid white apically; laterally and posteriorly, in male, black scaling. Forewing ground color in basal half cinereous, outer half sordid white; at outer edge of basal half two or three fuscous blotches; outer half strongly marked with fuscous and cinereous; in fold, near middle, a fuscous spot mixed with light ochraceous-buff scales, at end of cell a similarly marked spot; a few ochraceous-buff scales scattered over wing; at apex and around termen two or three ill-defined fuscous spots; in male, on underside of forewing basally, specialized black scales; cilia mixed cinereous and fuscous. Hindwing very pale gray, whitish basally; in male, in anal angle, an elongate patch of specialized black scales; also in male, along base of costa and costal edge of cell, black scaling; cilia grayish. Fore- and midleg sordid white variously marked with blackish scales; hindleg sordid white; in male, tibia strongly marked with black

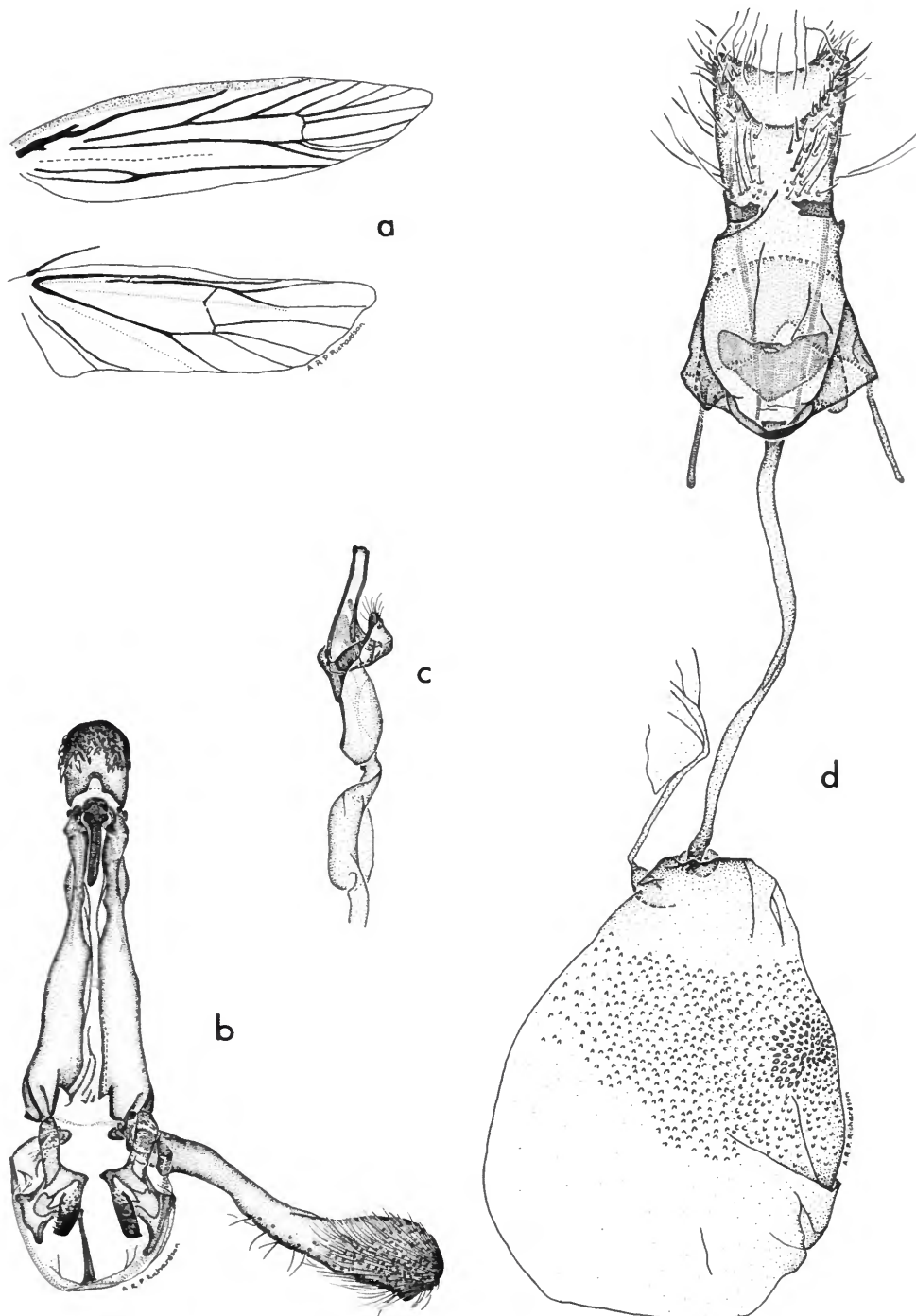


FIGURE 121.—*Chelophoba melaina*, new species; *a*, venation of right wings; *b*, ventral view of male genitalia with left harpe and aedeagus removed; *c*, aedeagus; *d*, ventral view of female genitalia.

scales. Abdomen mixed black and sordid white dorsally; ventrally sordid-white.

Male genitalia slide USNM 24572. Harpe long and slender, broadening to a rounded cucullus. Gnathos a short, slender, curved hook. Uncus a flat, rounded pad strongly armed with setae ventrally. Vinculum a narrow ring with a slender saccus. Tegumen slightly longer than harpe, narrowed posteriorly. Anellus a triangular plate with a lobe on each side. Transtilla(?) an irregular plate with lateral lobe directed anteriorly. Aedeagus bulbous basally, slender distally; vesica unarmed.

Female genitalia USNM 24573. Ostium small, transverse; lamella postvaginalis strongly sclerotized, triangular. Antrum not appreciably differentiated. Inception of ductus seminalis lateral, from posterior end of bursa copulatrix. Ductus bursae membranous except for slight sclerotization posteriorly. Bursa copulatrix membranous except for broad granular area around middle. Signum indicated by a concentration of granules in a disclike area.

HOLOTYPE.—USNM 100771.

TYPE-LOCALITY.—Fatu Hiva, Omoa.

DISTRIBUTION.—Fatu Hiva.

FOOD PLANT.—Unknown.

Described from the holotype ♂ (18 Mar 1968) and 1♀ paratype from the same locality (15 Mar 1968).

In placing this species in *Chelophoba* I do so with some misgiving. The wing venation of this species is identical to that of *C. aganactes*, and the male genitalia appear to be congeneric; in fact they are extremely similar. In the Marquesan species the scape is short, not elongate as in *C. aganactes*, the ocellus is missing and the third segment of the labial palpus is not roughened posteriorly, or certainly not appreciably so. The short scape and the short triangular apical tuft of second segment of labial palpus are like these two details found in *Homoshelas* Meyrick.

Chelophoba melaina is further distinguished from *C. aganactes* by the presence of several small patches of yellow scales of the forewing, and in the male, by the presence of a patch of black scales in the anal angle of hindwing (Figure

294b), on the underside of costa of hindwing and laterally on thorax.

There are several species, described in the genus *Chelaria* by Meyrick, that appear to go with *Chelophoba melaina*. To mention but a few (Clarke, 1955 [1955–1970]), these are *C. antias-tis* Meyrick, *C. corynetis* Meyrick, *C. iophana* Meyrick, *C. isopogon* Meyrick, *C. praemaculata* Meyrick, *C. silvestris* Meyrick, *C. tephroptila* Meyrick and *C. xylotechna* Meyrick, and perhaps others. The last named has a signum identical to that of *Chelophoba melaina*, new species.

Currently, *Chelaria* is considered a junior objective synonym of *Hypatima* Hübner, 1825. (Sattler, 1973:182).

Genus *Pitycona* Meyrick

Pitycona Meyrick, 1918a:116.

TYPE-SPECIES.—*Pitycona xeropis* Meyrick, 1918a:117; by monotypy.

Pitycona attenuata, new species

FIGURES 122, 294e

Alar expanse 6.5 mm.

Labial palpus extremely light buff; second segment grayish posteriorly, toward apex; third segment gray on outer surface and basally on inner surface. Antenna gray with paler annulations toward distal end; scape gray. Head gray; face buff. Thorax gray; tegula pale gray. Forewing ground color gray, somewhat mottled grayish fuscous; on fold a fuscous spot and at end of cell a similarly colored spot; apical portion of wing grayish fuscous with three small clusters of buff scales on costa; cilia gray. Hindwing grayish fuscous; cilia gray. Foreleg buff; tarsal segments marked grayish fuscous; midleg buff; tibia blotched with grayish fuscous on outer side; tarsal segments grayish fuscous on outer side; hindleg similar to midleg. Abdomen grayish fuscous dorsally, paler ventrally.

Female genitalia slide USNM 24575. Ostium minute, round. Sterigma broadly sclerotized. Antrum moderately long, cylindrical. Inception of

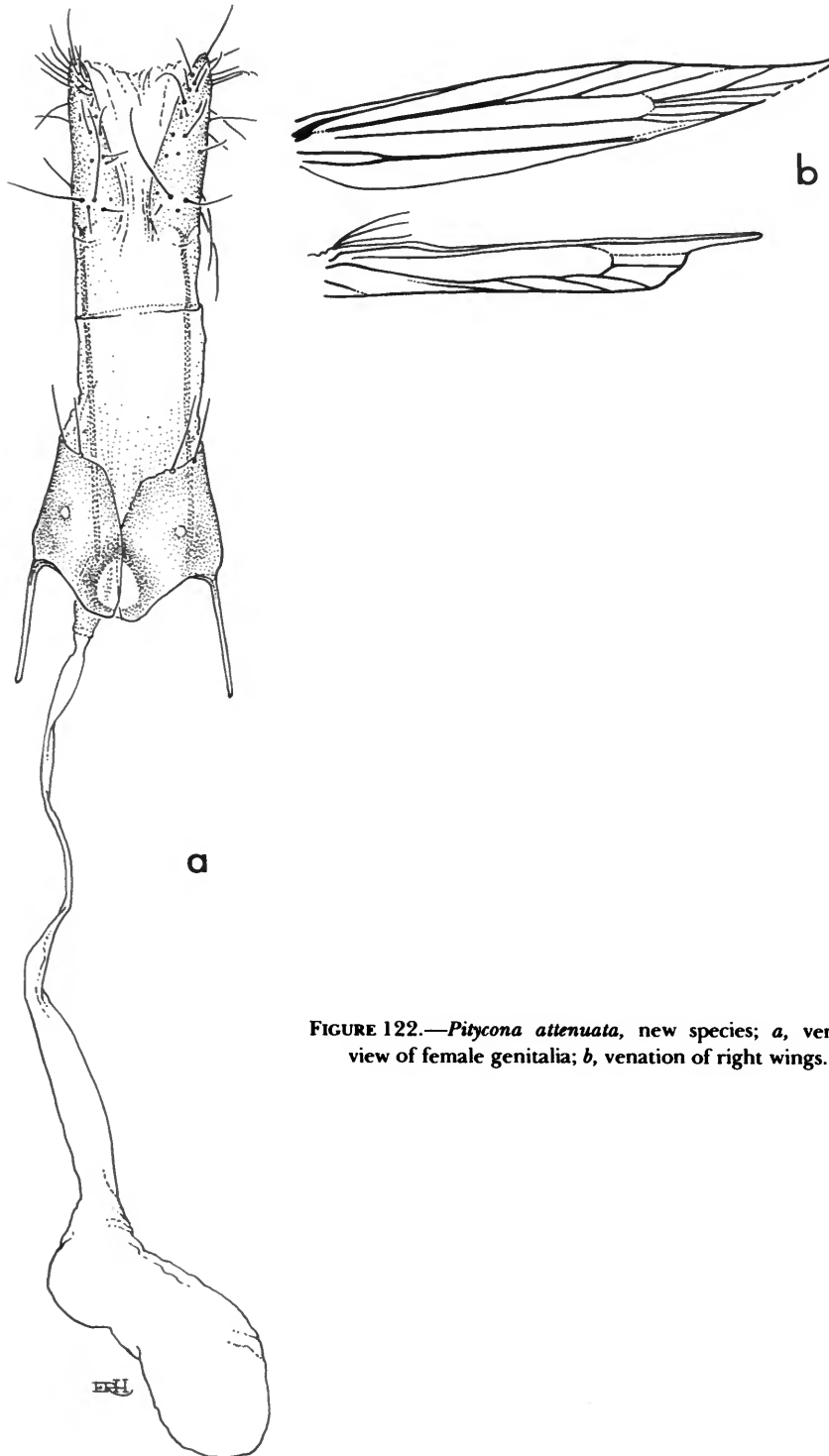


FIGURE 122.—*Pitycona attenuata*, new species; *a*, ventral view of female genitalia; *b*, venation of right wings.

ductus seminalis slightly anterior to antrum. Ductus bursae membranous. Bursa copulatrix membranous, elongate. Signum absent.

HOLOTYPE.—USNM 100772.

TYPE-LOCALITY.—Fatu Hiva, Omoa.

DISTRIBUTION.—Fatu Hiva.

FOOD PLANT.—Unknown.

Described from the unique ♀ holotype (13 Mar 1968).

In *attenuata* vein 2 of the forewing is not as strongly preserved at the margin as it is in the type of the genus, *xeropis*; but in both species it is weak. In *xeropis* vein 6 of hindwing is very weakly indicated but rather well developed in *attenuata*.

Of the three species now recognized as belonging to this genus (*xeropis*, *porphyroscia*, and *attenuata*) the latter is by far the smallest.

Genus *Ephysteris* Meyrick

Ephysteris Meyrick, 1908:724.

TYPE-SPECIES.—*Ephysteris chersaea* Meyrick, 1908:725; by monotypy.

Ephysteris longicornis, new species

FIGURES 123, 294f

Alar Expanse 10–12 mm.

Labial palpus pale ochraceous buff; second segment fuscous on outer side, the color continued apically around second segment to inner side; third segment with broad fuscous annulus. Antenna fuscous; scape with a pale ochraceous-buff spot apically and anteriorly. Head fuscous but base of scales buff; face mostly buff. Thorax fuscous. Forewing ground color grayish heavily overlaid and irrorate with fuscous; from basal third of costa an outwardly oblique fuscous shade extends to fold; on middle of costa a triangular fuscous shade; from tornus, an ill-defined outwardly oblique fuscous bar extends to about vein 9; cilia grayish speckled with fuscous. Hindwing grayish fuscous; cilia concolorous. Foreleg fuscous; tarsal segments with pinkish buff annulations; midleg similar to foreleg; tibia and tarsal

segments with pinkish buff annulations; hindleg pale ochraceous buff marked with fuscous.

Abdomen fuscous dorsally; ventrally fuscous, liberally mixed with pale ochraceous buff.

Male genitalia slides USNM 24571; BM 21336. Harpe strongly curved, broad basally, with basal lobe. Gnathos a sharply curved hook, about as long as uncus. Uncus hood-shaped with median posterior point. Vinculum narrow with prominent saccus. Tegumen slightly longer than harpe; broad basally. Anellus an elongate semi-tubular plate. Aedeagus as long as tegumen and uncus combined, slender, with curved tip and bulbous base.

Female genitalia slide BM 21319. Ostium broad, opening from a sclerotized posterior portion of the ductus bursae. Inception of the ductus seminalis dorsal from about middle of ductus bursae. Ductus bursae membranous. Bursa copulatrix membranous. Signum a cross with a central longitudinal keel.

HOLOTYPE.—USNM 100773.

TYPE-LOCALITY.—Hiva Oa, Mt. Feani, 3800 ft (1158 m).

DISTRIBUTION.—Marquesas Islands.

FOOD PLANT.—Unknown.

Described from the ♂ holotype and 11♂ paratypes all from the same locality and with the same date (20 Feb 1968); also 2♀ paratypes, one Hiva Oa, 4000 ft (1219 m), 31 Dec 1924, beaten from herbage; one, Hiva Oa, 3500 ft (1067 m), 28 Jan 1925, at light, both St. George Expedition, C.L. Collenette.

This is the first species of the genus *Ephysteris* to be definitely recorded from the Pacific Islands. Clarke (1965:85) described the genus *Echinoglossa* (type: *E. trinota* Clarke) from the Juan Fernandez Islands. Subsequently, Povolny (1967:126) placed *trinota* in the genus *Ephysteris* and Sattler (1973:197) accepted this placement. If, in fact, *Echinoglossa* is a synonym of *Ephysteris*, despite several obvious differences, then *longicornis* is the second species recorded from the Pacific. Sattler (in litt., 24 September 1979) informed me that there is an additional unidentified species in the British Museum (Natural History) from the Gilbert Islands.

FIGURE 123.—*Ephysteris longicornis*, new species, *a*, lateral aspect of male genitalia with aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.

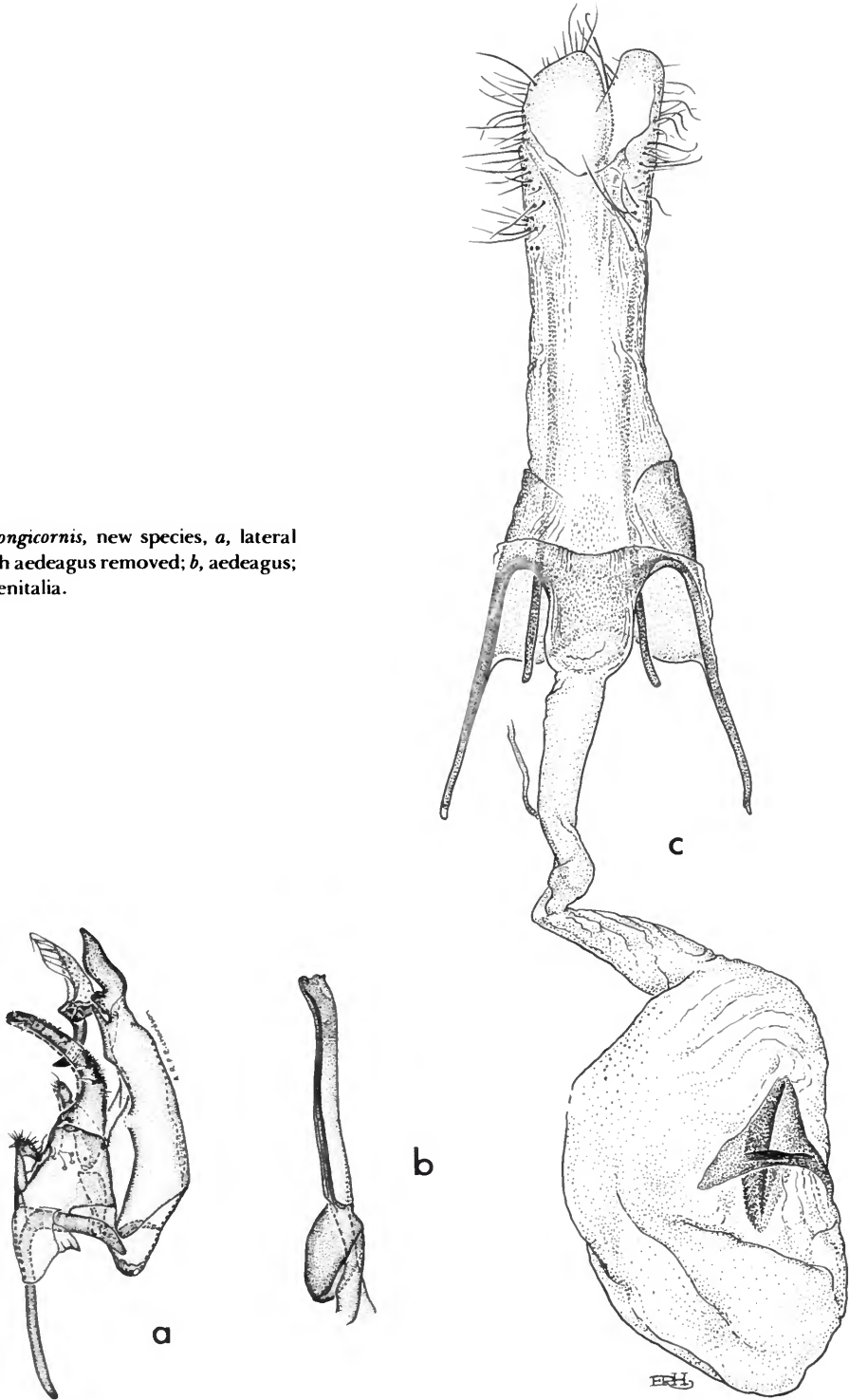
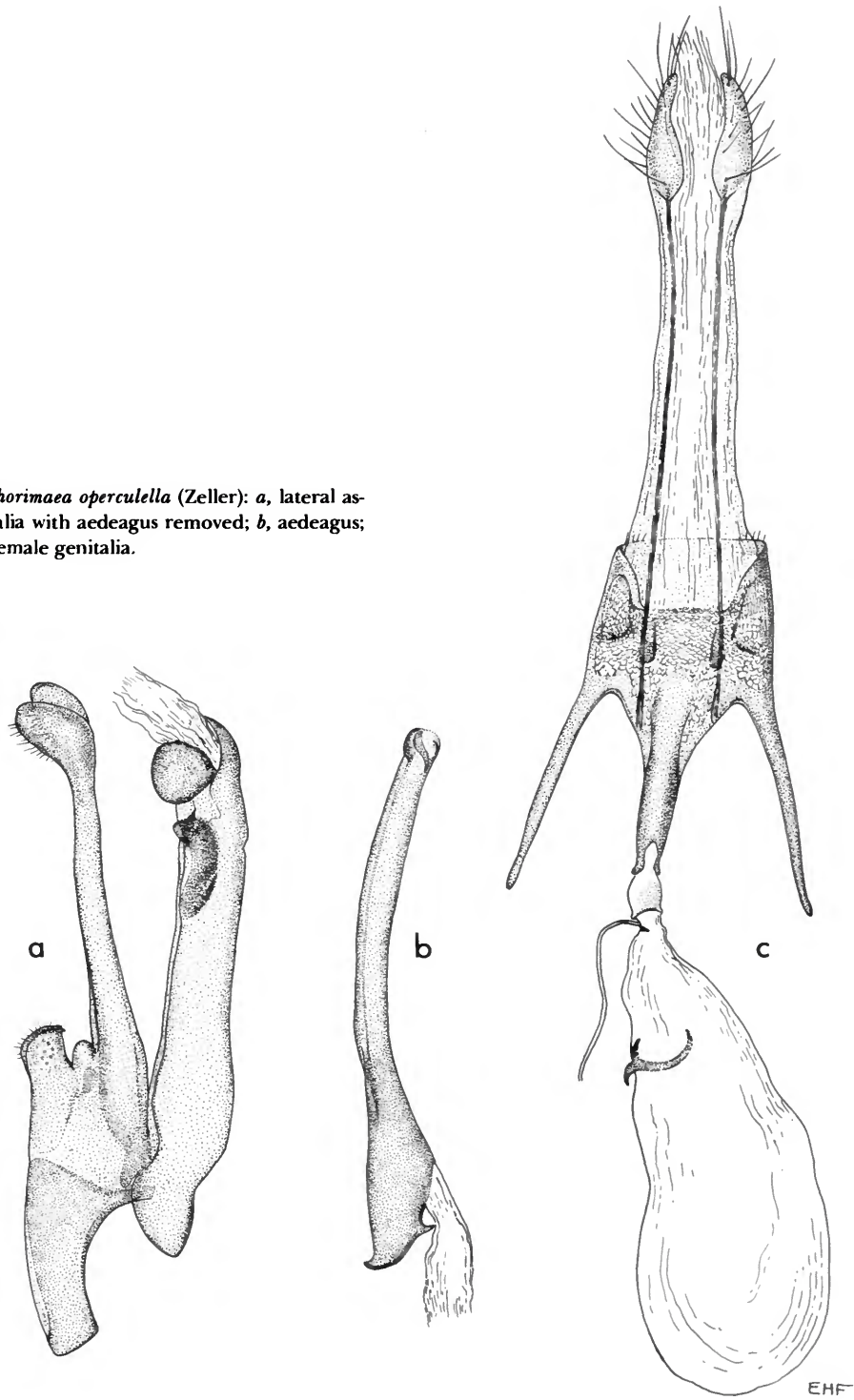


FIGURE 124.—*Phthorimaea operculella* (Zeller): *a*, lateral aspect of male genitalia with aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.



Ephysteris longicornis exhibits a character, vein 6 of the hindwing missing, shared by only one other species in the genus. It also bears a remarkable, though superficial, resemblance to certain species of the Hawaiian genus *Merimnetria* (*xylospila* Meyrick, *nigriciliella* Walsingham).

Genus *Phthorimaea* Meyrick

Phthorimaea Meyrick, 1902:103.

TYPE-SPECIES.—*Gelechia* (?*Bryotropha*) *operculella* Zeller, 1873:262, pl. 3: fig. 17; by original designation and monotypy.

Phthorimaea operculella (Zeller)

FIGURES 124, 294g

Gelechia (?*Bryotropha*) *operculella* Zeller, 1873:262, pl. 3: fig. 17.

Meyrick (1929a:496) erroneously recorded this species from Hiva Oa (3500–4000 ft), but the two female specimens Meyrick recorded as this species are the females of *Ephysteris longicornis*, new species, described in the preceding discussion.

I am including figures of the adult and the male and female genitalia to aid in identification should *operculella* be discovered in the islands; also the genus is retained in the key for the same reason.

Family COSMOPTERIGIDAE

Key to the Genera of Cosmopterigidae

1. Scape with pecten 2
Scape without pecten *Melnea*, new genus
2. Scape as long or longer than head *Cosmopterix*
Scape shorter than head 3
3. Forewing with vein 1b furcate 4
Forewing with vein 1b simple 7
4. Forewing with vein 1c present *Microzestis*
Forewing with vein 1c absent 5
5. Forewing with veins 2 and 3 approximate and parallel . . *Anatrachyntis*
Forewing otherwise 6
6. Forewing with vein 5 connate with stalk of 6, 7, 8 *Labdia*
Forewing with vein 5 distant from stalk of 6, 7, 8 *Asymphorodes*
7. Forewing with veins 3 and 4 coincident 8
Forewing with veins 3 and 4 separate 9
8. Hindwing with 8 veins *Adeana*, new genus
Hindwing with greatly reduced venation . . *Acanthophlebia*, new genus
9. Forewing with vein 6 out of stalk of veins 7 and 8 10
Forewing with veins 6 and 7 stalked out of vein 8 *Trissodoris*
10. Forewing with veins 2 and 3 united *Herlinda*, new genus
Forewing with veins 2 and 3 separate *Iressa*

Genus *Asymphorodes* Meyrick

FIGURE 125

Asymphorodes Meyrick, 1929a:498.

TYPE-SPECIES.—*Asymphorodes valligera* Meyrick, 1929a:498; by original designation.

The genitalia of species of *Asymphorodes* are typically cosmopterigid. Zimmerman (1978:1057) states, "... with epitygmata (genital "flaps") well developed, vinculum well developed and the valvae thus articulated far from base of tegumen; uncus absent; gnathos (?) divided into

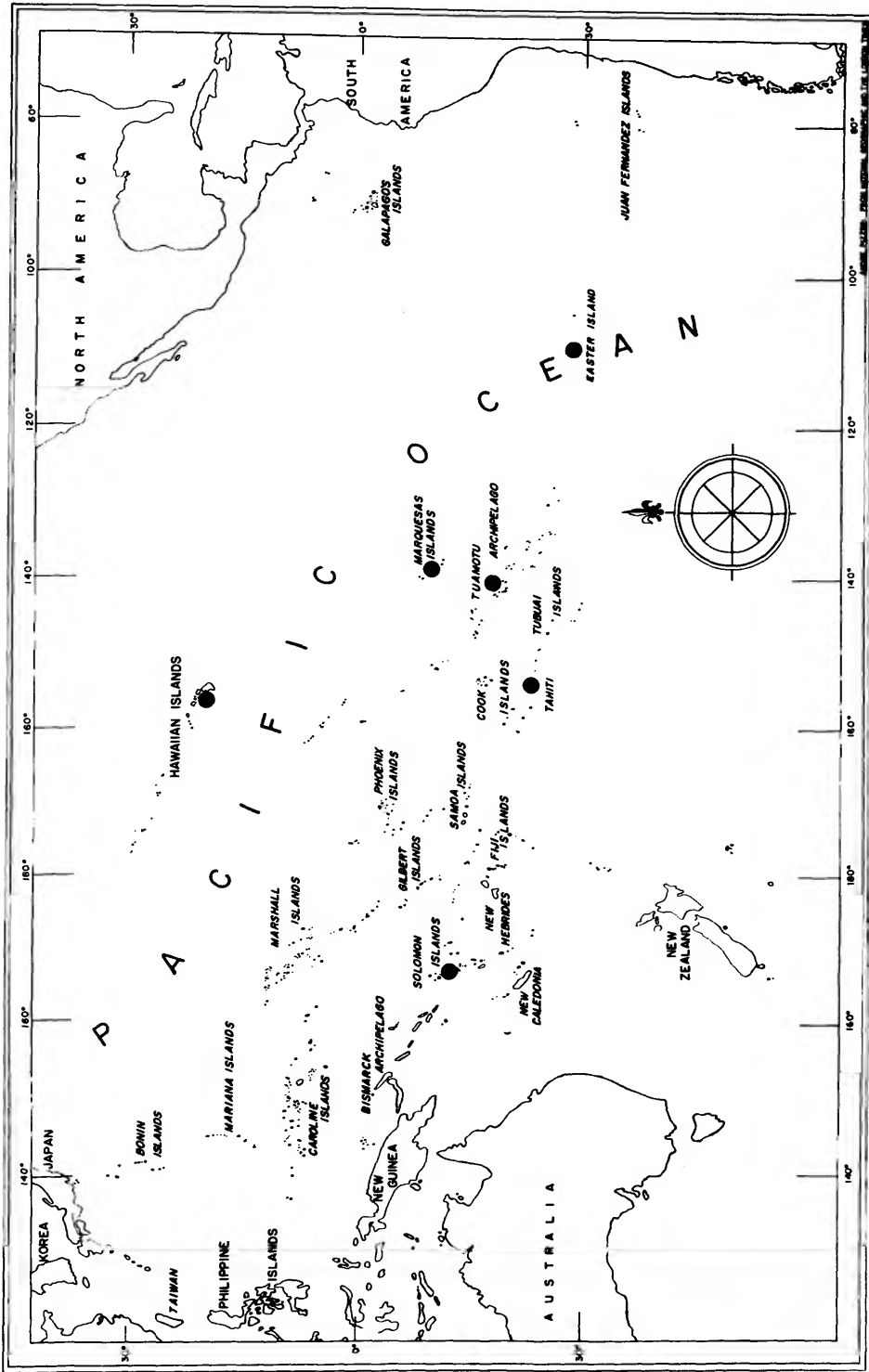


FIGURE 125.—Distribution map of the genus *Asymphorodes*.

two brachia; right lobe of anellus obsolete; left lobe closely appressed to aedeagus. Female with ostium sclerotized, protruding; ovipositor long”

The “genital flaps” result from a modification of the eighth sternum and are generally specific. The males usually exhibit modifications of the fourth to seventh abdominal segments and these modifications are specific.

I cannot view the vinculum as “well developed” but consider the articulation of the harpes (valvae) as approximate to base of the tegumen. The

gnathos generally has two well-developed brachia but sometimes one may be absent, or at most, developed as a small stub. I interpret the “lobe of anellus” of Zimmerman as the manica. The ostium is not always protruding but sometimes may be sunk in a deep pit of the seventh sternum. As far as I am able to ascertain, the signum is usually absent.

In all species that I have examined there is always present in the male a hairpencil on the underside of the hindwing, from base, which fits into a fold along the cell.

Key to the Species of *Asymphorodes*

This key will work for most specimens of a species, but one must take into consideration that some species are quite variable. Also, one must remember that individual workers will interpret coloration differently. Generally, however, errors can be eliminated by the use of the figures of the wings and genitalia.

1. Alar expanse 7 mm or less 2
Alar expanse otherwise 7
2. Forewing basal half black *hemileucus*, new species
Forewing otherwise 3
3. Forewing with fuscous bar from base to end of cell
. *spodogramma*, new species
Forewing without such bar 4
4. Forewing with two whitish or yellowish spots on costa
. *acrophrictis* Meyrick
Forewing otherwise 5
5. Head white *albicoma*, new species
Head not white 6
6. Forewing ground color light buff marked fuscous
. *macrogramma*, new species
Forewing ground color fuscous *ergodes* Meyrick
7. Forewing apical part whitish or yellowish; base blackish 8
Forewing not so marked 10
8. Alar expanse 8 mm *cuneatus*, new species
Alar expanse 10–11 mm 9
9. Antenna whitish or yellowish *seminiger*, new species
Antenna blackish or spotted *leucoterma* Meyrick
10. Alar expanse 17 mm or more 11
Alar expanse less than 16 mm 13
11. Forewing dorsum white or whitish *regina*, new species
Forewing dorsum not white or whitish 12
12. Forewing deep purple *holoporphyra* Meyrick
Forewing prout's brown *didyma*, new species

13. Forewing dorsum narrowly and contrastingly paler than remainder of forewing 14
 Forewing not so 22
14. Alar expanse 12–14 mm 15
 Alar expanse 11 mm or less 17
15. Forewing dorsum whitish 16
 Forewing dorsum gold *montgomeryi*, new species
16. Antenna cream white to buff *remigiata*, new species
 Antenna marked fuscous *cirsodes* Meyrick
17. Forewing dorsum pale ochraceous buff 18
 Forewing dorsum otherwise 19
18. Color of forewing dorsum unbroken *myronotus* Meyrick
 Color of forewing dorsum broken *plemmelia*, new species
19. Forewing ground color grayish or grayish fuscous 21
 Forewing ground color otherwise 20
20. Forewing ground color silvery white *fractura*, new species
 Forewing ground color buffy brown *trichogramma*, new species
21. Forewing with blotched appearance *phaeochorda* Meyrick
 Forewing with smooth appearance *poliopterus*, new species
22. Forewing ground color white, whitish or whitish ochreous 23
 Forewing ground color not as above 33
23. Forewing conspicuously marked 25
 Forewing not conspicuously marked 24
24. Forewing shining white; tiny black dash at base of costa
 *culminis*, new species
 Forewing with small fuscous mark on basal angle *sericeus*, new species
25. Forewing with one or two dark fasciae 26
 Forewing otherwise 29
26. Forewing with two clearly defined fasciae *brevimacula*, new species
 Forewing with one clearly defined fascia 27
27. Forewing with apical streak 28
 Forewing without apical streak *plectographa* Meyrick
28. Forewing streak from basal fascia to apex *adynatus*, new species
 Forewing streak from apical third to apex *emphereia*, new species
29. Forewing with two or three clearly defined spots in outer half
 *pollutus* Meyrick
 Forewing not so marked 30
30. Antenna buff or whitish 31
 Antenna fuscous or spotted *oculisignis* Meyrick
31. Alar expanse 9 mm or less *chrysophanes*, new species
 Alar expanse 11 mm or more 32
32. Forewing strongly marked with fuscous *aporia*, new species
 Forewing not strongly marked *hypostema*, new species
33. Forewing ground color chrome, yellowish, some shade of
 ochraceous 34
 Forewing not so 46

34. Forewing with one or two clearly defined fuscous fasciae 35
 Forewing without such fasciae 36
35. Forewing with one fuscous transverse fascia . *mesoxanthus*, new species
 Forewing with two fuscous transverse fasciae *xanthostola* Meyrick
36. Forewing with median longitudinal streak 37
 Forewing without such streak 38
37. Forewing longitudinal streak extending to apex
 *mediostriatus*, new species
 Forewing longitudinal streak extending to near end of cell
 *leptotes*, new species
38. Forewing some shade of ochraceous buff 39
 Forewing otherwise 44
39. Forewing with large brown triangular patch on costa
 *phaeodelta*, new species
 Forewing without such patch 40
40. Forewing base blackish fuscous *nigricornis*, new species
 Forewing otherwise 41
41. Forewing with fuscous mark on base of costa and basal angle
 *nebrias*, new species
 Forewing otherwise 42
42. Alar expanse 8–9 mm 43
 Alar expanse 10 mm *paraporia*, new species
43. Forewing with several black dashes *admirandus* Meyrick
 Forewing without such dashes *diffidentia*, new species
44. Forewing ground color deep chrome *bipunctatus*, new species
 Forewing ground color otherwise 45
45. Forewing ground color pale yellowish, apex broadly brown
 *coesyrius* Meyrick
 Forewing apex with conspicuous black spot *sphenocopa* Meyrick
46. Forewing some shade of brown 47
 Forewing otherwise 53
47. Forewing with distinct whitish fasciae *nuciferae*, new species
 Forewing without whitish fasciae 48
48. Forewing with distinct blackish spot at end of cell 49
 Forewing without blackish spot 50
49. Antenna blackish fuscous *cicatricula*, new species
 Antenna benzo brown *honoris*, new species
50. Alar expanse 14 mm *phalarogramma*, new species
 Alar expanse 13 mm or less 51
51. Antenna fuscous *chalcopterus*, new species
 Antenna buff 52
52. Forewing ground color dark buffy brown *amblysoma*, new species
 Forewing ground color prout's brown *lenticula*, new species
53. Forewing fuscous, blackish fuscous or purplish fuscous 54
 Forewing otherwise 68

54. Forewing purplish fuscous *porphyrarcha* Meyrick
 Forewing fuscous or blackish fuscous 55
55. Forewing ground color fuscous 56
 Forewing ground color blackish fuscous 63
56. Forewing with three whitish dashes on costa preapically
 *trigrapha*, new species
 Forewing without such dashes 57
57. Forewing lustrous 58
 Forewing not lustrous 59
58. Forewing with brassy hue; 8–9 mm *chalcosoma*, new species
 Forewing with violaceous hue; 10 mm *chalcocoma*, new species
59. Head whitish; frons grayish *canicoma*, new species
 Head otherwise 60
60. Forewing streaked with ochraceous-buff dashes
 *ochrogramma*, new species
 Forewing not so marked 61
61. Forewing marked buff, yellowish; colors suffused; 12–14 mm
 *valligera* Meyrick
 Forewing not so marked 62
62. From Fatu Hiva; alar expanse 9–10 mm *acerbus* Meyrick
 From Nuku Hiva; alar expanse 8–10 mm *homosoma*, new species
63. Forewing marked with one or more white fasciae 64
 Forewing without white fasciae 67
64. Forewing with two white fasciae 65
 Forewing with one white fascia 66
65. Alar expanse 8 mm *astathopis* (Meyrick)
 Alar expanse 12–14 mm *melanosoma*, new species
66. Alar expanse 7–8 mm *diamphidius*, new species
 Alar expanse 10 mm *spintheropus* (Meyrick)
67. Forewing dorsum marked pale orange yellow *semileuteus*, new species
 Forewing dorsum not so marked *balanotis* Meyrick
68. Forewing basal half dark gray to fuscous 69
 Forewing otherwise 70
69. Forewing basal half dark gray; Nuku Hiva *circopis* Meyrick
 Forewing basal half fuscous; Fatu Hiva *acritopterus*, new species
70. Forewing drab 71
 Forewing otherwise 73
71. Alar expanse 7–8 mm *lucidus*, new species
 Alar expanse 10–12 mm 72
72. Forewing costa edge sordid buff; head drab *leucoloma*, new species
 Forewing not so marked; head buff *lucerna*, new species
73. Forewing gray or grayish 74
 Forewing tawny olive *aenigma*, new species
74. Forewing dark gray; markings cloudy, fuscous *nephocirca* Meyrick
 Forewing grayish, unmarked *favilla*, new species

Asymphorodes macrogramma, new species

FIGURES 126, 295a

Alar expanse 6 mm.

Labial palpus light buff; second segment with brownish mark at middle on outer side. Antenna fuscous with paler annulations; scape light buff with fuscous dorsally on distal half. Head light buff. Thorax fuscous with slight light buff posteriorly, tegula fuscous, tip light buff. Forewing ground color light buff variously marked fuscous; base of costa broadly fuscous to fold then extended along fold to middle of wing; at basal third of costa a wedge-shaped fuscous mark; from middle of costa an outwardly oblique fuscous streak that fuses with a fuscous blotch at end of cell; apex fuscous, cilia light buff. Hindwing gray;

cilia a shade lighter. Foreleg light buff; tibia and tarsal segments marked blackish fuscous; midleg light buff; tibia with two fuscous spots; hindleg light buff with ill-defined, small, darker markings. Abdomen fuscous dorsally; ventrally light buff with light grayish suffusion; 8th sternum strongly modified.

Male genitalia slide USNM 25140. Harpe broad basally; neck short and narrow; cucullus moderately expanded. Brachia unequal, the right shorter than the left; left brachium attenuated distally. Tegumen longer than broad. Aedeagus S-shaped with a small barb dorsodistally; manica not appreciably modified.

HOLOTYPE.—USNM 100774.

TYPE-LOCALITY.—Nuku Hiva, Tapuaooa, 2500 ft (762 m).

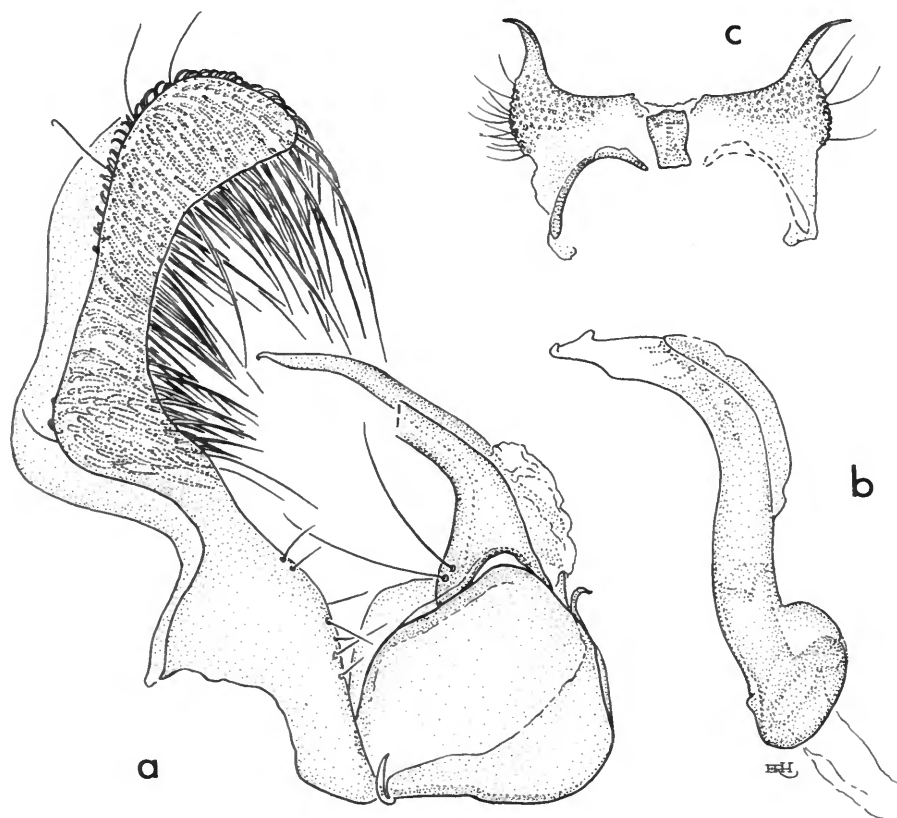


FIGURE 126.—*Asymphorodes macrogramma*, new species: *a*, lateral aspect of male genitalia with aedeagus removed; *b*, aedeagus; *c*, 8th sternum.

DISTRIBUTION.—Nuku Hiva.

FOOD PLANT.—Unknown.

Described from the unique ♂ holotype (30 Jan 1968).

The species is similar to *Herlinda fasciola*, new species, but the markings are not as distinct as in that species.

***Asymphorodes holoporphyra* Meyrick**

FIGURES 127, 295b

Asymphorodes holoporphyra Meyrick, 1934c:352.—Clarke, 1955 [1955–1970]:161.

Female genitalia slides USNM 24230, AB190. Ostium large, round, emerging from a short, sclerotized tube, the tube situated in a deep depression in the posterior margin of the seventh segment. Inception of ductus seminalis from posterior end of bursa copulatrix. Ductus bursae arising at posterior edge of bursa copulatrix, moderately sclerotized in posterior half. Bursa copulatrix very finely rugose.

HOLOTYPE.—In the Bernice P. Bishop Museum.

TYPE-LOCALITY.—Hiva Oa, Mount Temetiu, slope north of Summit, 3860 ft (1176 m).

DISTRIBUTION.—Hiva Oa.

FOOD PLANT.—Unknown.

When Meyrick described this species he recorded a male specimen. This example is in the British Museum (Natural History) and lacks its abdomen. Unfortunately, the genitalia cannot be figured.

***Asymphorodes didyma*, new species**

FIGURES 128, 295c

Alar expanse 18–20 mm.

Labial palpus ochraceous buff; third segment almost wholly suffused fuscous. Antenna ochraceous buff, spotted fuscous; scape ochraceous buff, shaded prout's brown dorsally. Head, thorax, and forewing ground color prout's brown; from basal fifth of costa an outwardly



FIGURE 127.—*Asymphorodes holoporphyra* Meyrick, ventral view of female genitalia.

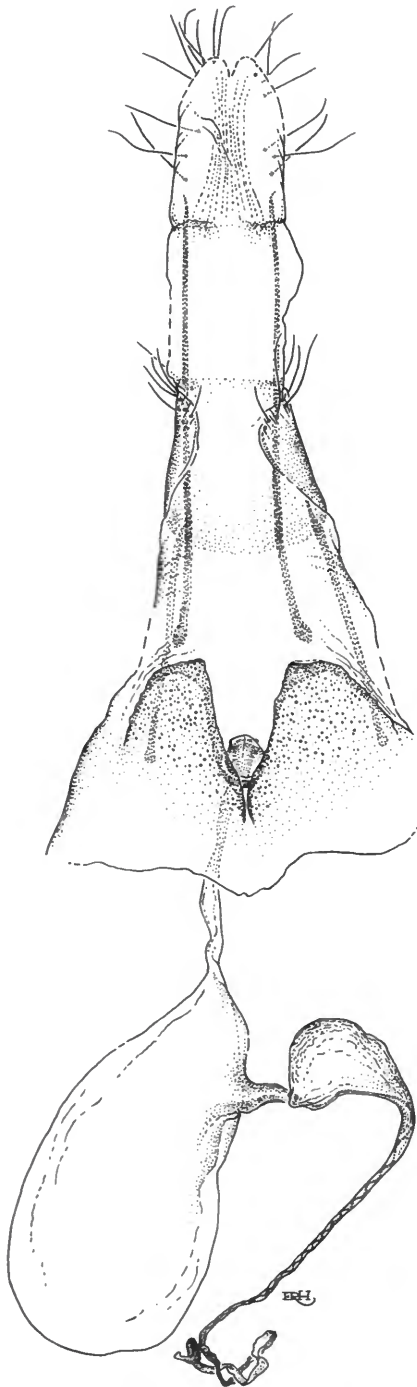


FIGURE 128.—*Asymphorodes didyma*, new species, ventral view of female genitalia.

oblique, ill defined, fascia of color slightly paler than ground color, reaches beyond fold; in middle of cell a small blackish fuscous spot; at end of cell an oblique blackish fuscous mark surrounded by ochraceous buff scales; cilia grayish fuscous in tornal area, prout's brown along termen. Hindwing grayish fuscous, slightly darker apically; cilia concolorous. Foreleg ochraceous buff, blackish fuscous on outer side; midleg ochraceous buff, suffused fuscous on outer side; hindleg ochraceous buff; tarsal segments lightly suffused fuscous. Abdomen first three segments fuscous dorsally, remainder grayish dorsally; ventrally warm buff.

Female genitalia slides USNM 25116, 25117. Ostium emerging from a short sclerotized cylinder, the latter at the base of a deep, V-shaped cleft in the posterior margin of the 7th sternum. Inception of ductus seminalis from posterior portion of bursa copulatrix. Ductus bursae slender, membranous, about as long as bursa copulatrix. Bursa copulatrix membranous.

HOLOTYPE.—In the Bernice P. Bishop Museum.

TYPE-LOCALITY.—Nuku Hiva, Toovii, Ooumu, 900 m.

DISTRIBUTION.—Nuku Hiva.

FOOD PLANT.—Unknown.

Described from the ♀ holotype (16–19 Jul 1977, Montgomery) and 1♀ paratype with identical data.

This species is similar in size to *holoporphyra* from Hiva Oa, but displays none of the purple coloration described by Meyrick. The holotypes of both species are females and the genitalia show striking differences (see Figures 127, 128).

Asymphorodes plemmelia, new species

FIGURES 129, 295d

Alar expanse 10 mm.

Labial palpus light buff. Antenna pale ochraceous buff, becoming darker toward apex. Head pale ochraceous buff. Thorax pale ochraceous buff; anterior part of thorax and tegula infus-

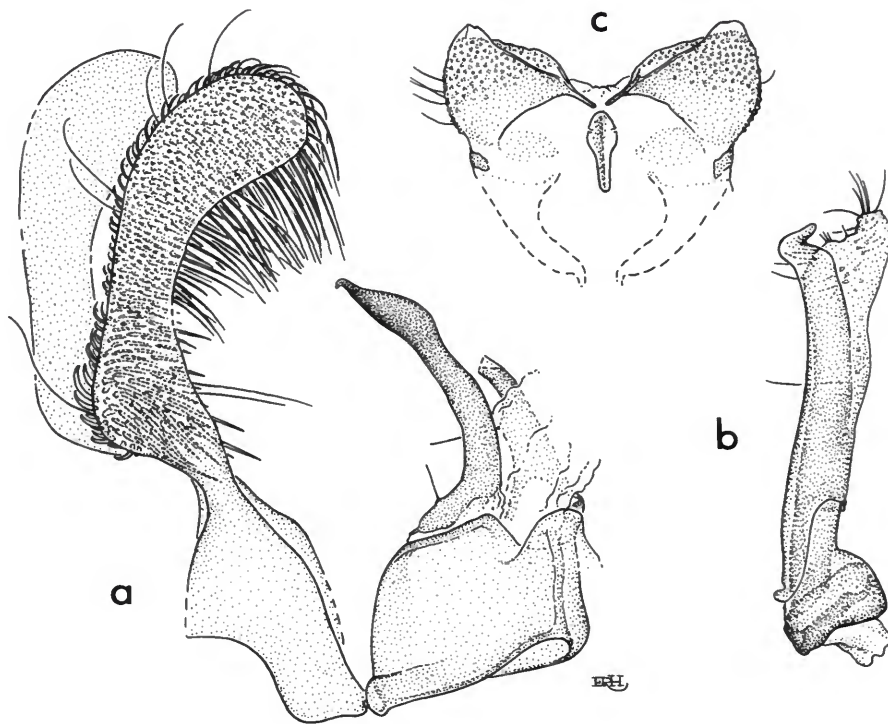


FIGURE 129.—*Asymphorodes plemmelia*, new species: a, lateral aspect of male genitalia with aedeagus removed; b, aedeagus; c, 8th sternum.

cated; processes of male metascutum not appreciably developed. Forewing ground color fuscous; base of costa narrowly light buff; at three-fifths of costa a light buff dash and before apex a triangular spot of the same color; dorsum pale ochraceous buff; cilia grayish fuscous, darker toward apex. Hindwing light gray, darker apically; cilia concolorous. Foreleg light buff; femur, tibia and tarsal segments blackish fuscous on outer side; midleg and hindleg light buff. Abdomen light buff ventrally, grayish fuscous dorsally; 8th sternum modified.

Male genitalia slide USNM 24995. Harpe broad at base; neck moderately slender; cucullus expanded distally. Brachia moderately slender, dilated and nearly black distally. Tegumen shorter than broad. Aedeagus stout, nearly straight; manica with a blunt process dorsodistally.

HOLOTYPE.—USNM 100775.

TYPE-LOCALITY.—Hiva Oa, Mt. Feani, 2000 ft (610 m).

DISTRIBUTION.—Hiva Oa.

FOOD PLANT.—Unknown.

Described from the unique ♂ holotype (1 Mar 1968). This species might easily be confused with *semiluteus*, new species, but the dark markings of the forewing of *plemmelia* do not intrude on the lighter color of the dorsum as in that species. Moreover, the hind tibia and tarsal segments are unmarked in *plemmelia* but marked in *semiluteus*. The genitalia immediately separate the two.

Asymphorodes trigrapha, new species

FIGURES 130, 295e

Alar expanse 13 mm.

Labial palpus light buff; second segment with

broad fuscous apical annulus and fuscous dash basally on outer side; third segment narrowly fuscous anteriorly. Antenna fuscous; scape light buff anteriorly. Head grayish fuscous; face light buff. Thorax fuscous mixed with a few slender light buff scales; metascutum with thornlike processes. Forewing ground color fuscous; from basal fifth of costa a broad, outwardly oblique, irregular buff fascia extends to fold; at three-fifths of

costa a light buff blotch and beyond that a light buff costal dash; on costa, preapically, three short white oblique dashes; entire surface covered with a sprinkling of yellowish scales; cilia grayish fuscous except for two prominent tufts of light scales the bases of which are nearly white. Hindwing grayish fuscous; cilia slightly lighter. Foreleg light buff marked with fuscous; midleg similar; hindleg light buff; tibia with two oblique fuscous

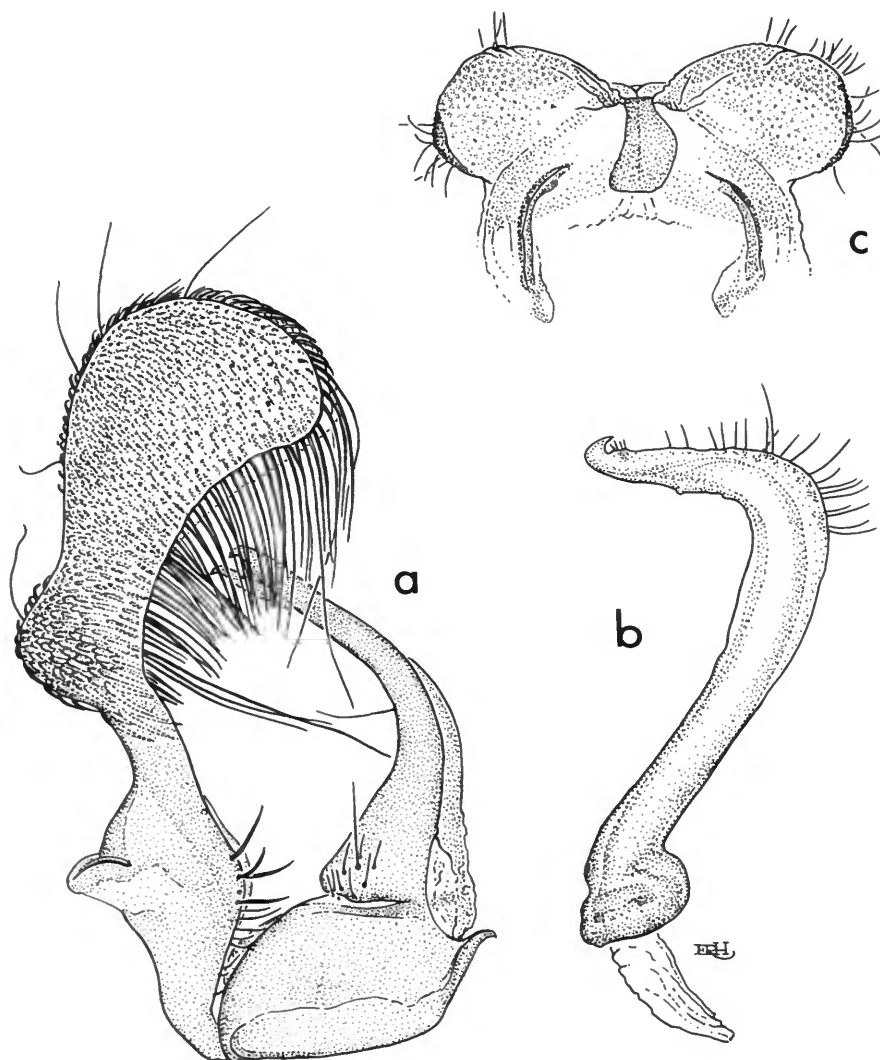


FIGURE 130.—*Asymphorodes trigrapha*, new species: a, lateral aspect of male genitalia with aedeagus removed; b, aedeagus; c, 8th sternum.

bars on outer side; tarsal segments marked fuscous. Abdomen fuscous dorsally, light buff ventrally; 8th sternum consisting of a pair of fleshy flaps.

Male genitalia slide USNM 24854. Harpe broad basally; neck moderately long and wide; cucullus broadly expanded. Brachia long, sharply curved before middle, each terminating in a small but distinct hook. Tegumen shorter than wide. Aedeagus very long, slender, and very sharply curved; manica a long ridge dorsally.

HOLOTYPE.—USNM 100776.

TYPE-LOCALITY.—Nuku Hiva, Tunoa Ridge, 2900 ft (884 m).

DISTRIBUTION.—Nuku Hiva.

FOOD PLANT.—Unknown.

Described from the unique ♂ holotype (23 Jan 1968).

Asymphorodes trigrapha is related to *myronotus* but differs from it by the three pale subapical costal dashes and the absence of the yellow dorsum as found in *myronotus*.

Asymphorodes nephocirca Meyrick

FIGURES 131, 295f,g

Asymphorodes nephocirca Meyrick, 1929a:500.—Clarke, 1955 [1955–1970]:215.

Male genitalia slides USNM 24741, 24837, 25134. Harpe very long in proportion to combined tegumen and brachia; broad basally, neck short and moderately thick, remainder of harpe curved, cucullus expanded. Brachia very short, broad basally, flattened, sharply pointed. Tegumen very short. Aedeagus slender, curved; manica with no appreciable modification dorsodistally.

Female genitalia slides USNM 24742, 24744, 24838. Ostium very small, round, situated at the base of a shallow cleft in the posterior edge of the 7th sternum. Inception of ductus seminalis from near posterior end of bursa copulatrix. Ductus bursae long, slender, membranous, from posterior end of bursa copulatrix. Bursa copulatrix membranous; granular in anterior half.

ORIGINAL MATERIAL.—“♀.9–10 mm. Marque-

sas, Tahuata, Hiva Oa, up to 800 feet, December, January, at light and beaten from herbage; 6 ex.”

LECTOTYPE.—Female, 10 mm. “Tahuata, Marquesas. Beaten from herbage. 10.1.25. St. George Expedn. C.L. Collenette.” A small white label reads “Brits. Mus, 1925–488,” and a smaller one “P595.” A large, black-bordered label bears the inscription “*Asymphorodes nephocirca* Meyr. Tr. Ent. Soc. Lond. 76. p. 500 (1929)” and the word “TYPE”. Slide JFGC No. 12001. Lectotype hereby designated.

Lectotype is in the British Museum (Natural History).

TYPE-LOCALITY.—Tahuata.

DISTRIBUTION.—Marquesas Islands.

Our series of this species consists of 164 specimens as follows. Nuku Hiva: Pakiu Valley 1800 ft (548 m), 19 Jan 1968, 2♂, 5♀; Tapuaooa, 2500 ft (762 m), 30 Jan 1968, 1♂; Tunoa Ridge, 2900 ft (884 m), 23 Jan 1968, 2♂; Taiohae, 15 Jan 1968, 1♂. Hiva Oa: Atuona, 12 Feb to 8 Mar 1968, 17♂, 106♀; Tahauku, 26 Feb 1968, 1♂, 1♀. Fatu Hiva: Omoa, 11 Mar to 8 Apr 1968, 3♂, 22♀; Mt. Upe, 2025 ft (617 m), 3 Apr 1968, ♀; Tahuna, 2000 ft (610 m), 27 Mar 1968, 1♀; Hanavave, 12 Apr 1968, 1♂. Tahuata: As indicated under “Lectotype.”

FOOD PLANT.—Unknown.

Striking features of this species are the disproportionate sizes of the harpe, and the brachia and tegumen complex. Also the eighth sternum of the male consists of very large, simple lateral “flaps.” In the female the ostium is small, weak, and inconspicuous.

Although the food plant is unknown, specimens were beaten from *Eugenia uniflora* L. on which the species may feed, exhibiting habits similar to those of other species of this genus.

Asymphorodes acrophrictis Meyrick

FIGURES 132, 296a,b

Asymphorodes acrophrictis Meyrick, 1934c:351.—Clarke, 1955 [1955–1970]:35.

Male genitalia slides USNM 24808, 24922. Harpe broad basally gradually tapered to a nar-

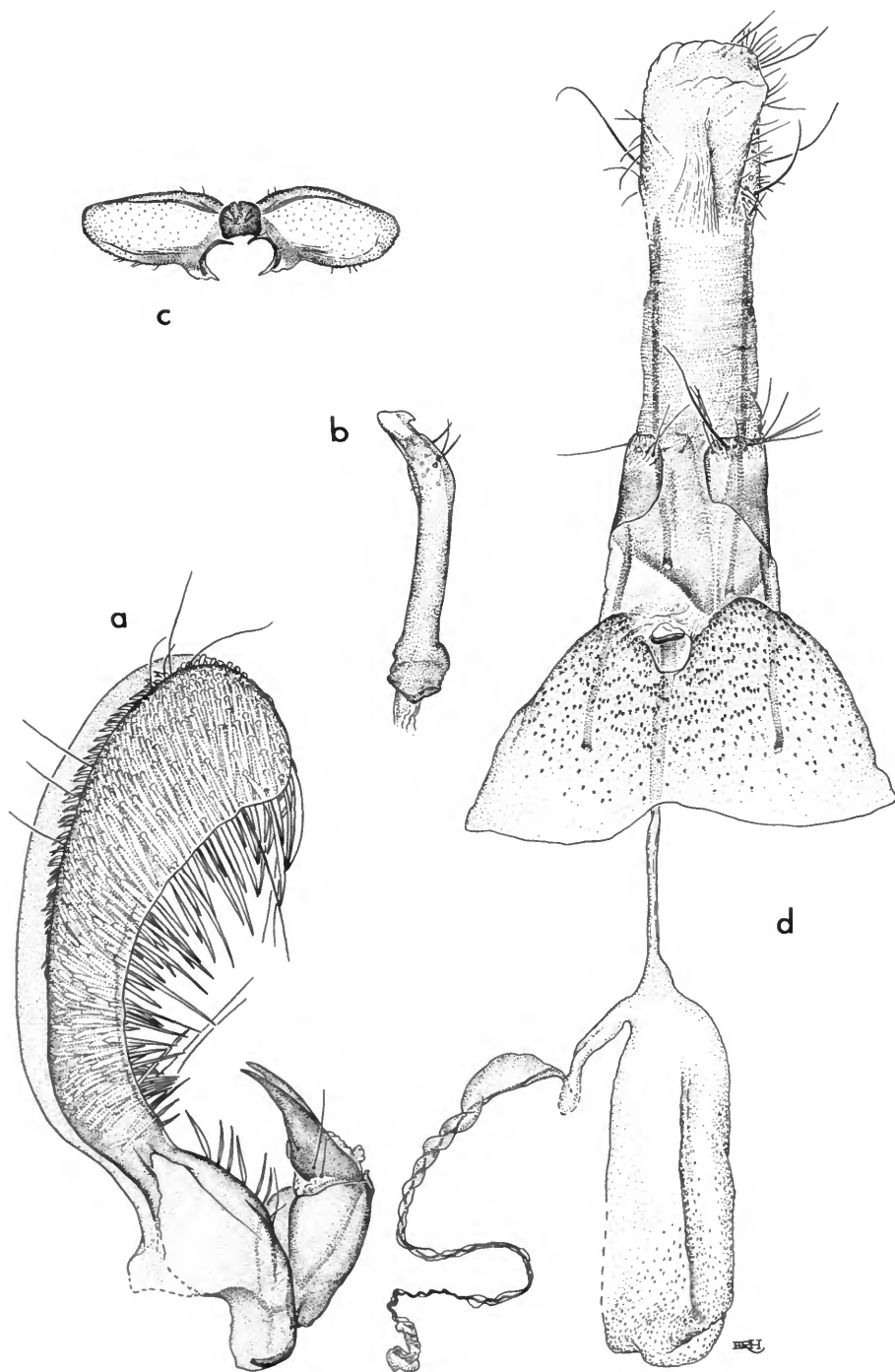


FIGURE 131.—*Asymphorodes nephocirca* Meyrick: *a*, lateral aspect of male genitalia with aedeagus removed; *b*, aedeagus; *c*, 8th sternum; *d*, ventral view of female genitalia.

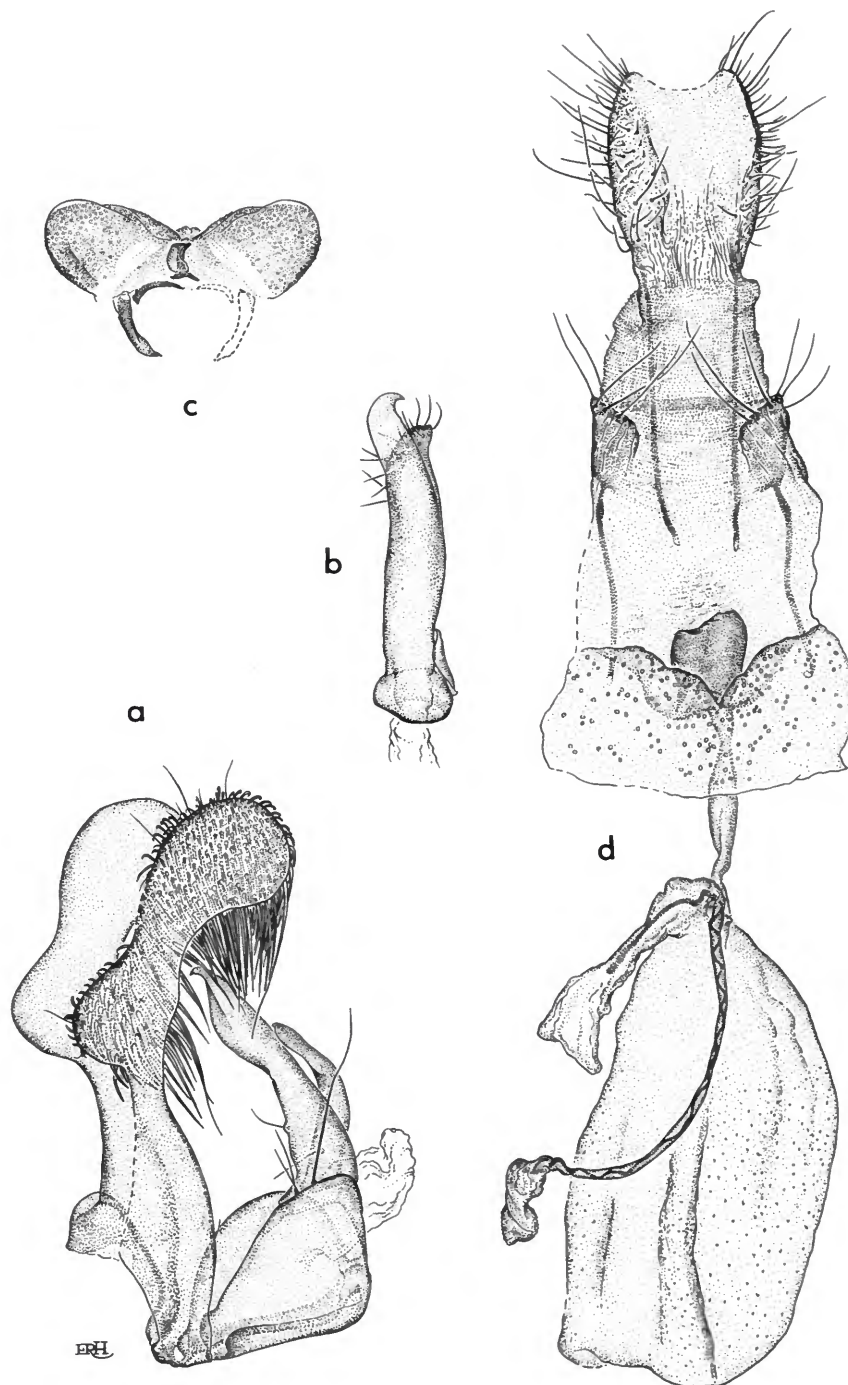


FIGURE 132.—*Asymphorodes acrophrictis* Meyrick: *a*, lateral aspect of male genitalia with aedeagus removed; *b*, aedeagus; *c*, 8th sternum; *d*, ventral view of female genitalia.

row, elongate neck; cucullus broadly expanded. Brachia of unequal length; right brachium broad basally, narrow at middle, dilated and flattened distally; left brachium short, curved, pointed. Tegumen broader than long. Aedeagus thick, slightly curved; manica with pointed process dorsally.

Female genitalia slides USNM 24811, 24923. Ostium rather broad, opening from a stout, short, tubular process, the tubular process arising from the base of the V-shaped margin of the 7th sternum. Inception of ductus seminalis from posterior end of bursa copulatrix. Ductus bursae slender, membranous. Bursa copulatrix membranous, very lightly spiculate in anterior two-thirds. Signum absent.

HOLOTYPE.—In the Bernice P. Bishop Museum.

TYPE-LOCALITY.—Uapou, Teavanui Pass, 2900 ft (884 m).

DISTRIBUTION.—Marquesas Islands.

Nuku Hiva: Tunoa Ridge, 2900 ft (884 m), 23 Jan 1968, 18♂, 20♀; Tapuaooa, 2500 ft (762 m), 30 Jan 1968, 1♀; Taiohae, 26 Jan 1968, 1♀.

FOOD PLANT.—Unknown.

The abdomen of the male type is missing, and we have no additional material from Uapou. There are, however, specimens from Nuku Hiva that appear identical. Most are from high elevation, as are the specimens from Uapou recorded by Meyrick. I place the Nuku Hiva material here with some misgiving because many species that appear to be identical are different on different islands.

The male metascutum of *acrophrictis* lacks the thornlike processes.

***Asymphorodes astathopis* (Meyrick),
new combination**

FIGURE 295*h*

Limnoecia astathopis Meyrick, 1934c:348.—Clarke, 1955 [1955–1970]:57.

HOLOTYPE.—In the Bernice P. Bishop Museum.

TYPE-LOCALITY.—Hiva Oa, Temetiu, slope north of summit.

DISTRIBUTION.—Hiva Oa.

FOOD PLANT.—Unknown.

The type lacks the abdomen and is otherwise in poor condition (See Figure 295*h*). The three whitish transverse bands appear to distinguish this species from any other currently known from the Marquesas. We did not encounter *astathopis* on our expedition.

The type was collected at 3860 ft (1176 m).

As indicated above, the type is in very poor condition but from what can be seen of the venation it does not differ from species of *Asymphorodes*. Moreover, *astathopis* appears to be closely related to the following species (*diamphidius*); therefore, I am transferring *astathopis* to *Asymphorodes*.

***Asymphorodes diamphidius*, new species**

FIGURES 133, 296*c,d*

Alar expanse 7–8 mm.

Labial palpus ocherous white; third segment blackish fuscous anteriorly. Antenna ocherous white basally shading to fuscous on most of the flagellum. Head blackish fuscous, face ocherous white. Thorax blackish fuscous; tegula concolorous. Forewing ground color blackish fuscous; on basal third a white transverse bar; at middle and apical third of costa a white spot; a similarly colored spot on tornus; at apex a small white dot; cilia grayish fuscous but darker along termen. Hindwing fuscous; cilia grayish fuscous. Foreleg ocherous white, heavily overlaid blackish fuscous on outer side; midleg ocherous white with slight grayish fuscous suffusion on outer side of tibia; hindleg ocherous white with tibia and tarsal segments strongly marked with blackish fuscous. Abdomen blackish fuscous dorsally; ocherous white ventrally; 8th sternum modified.

Male genitalia slide USNM 24724. Harpe about twice as long as brachia; neck very short, narrow; cucullus rather broadly dilated. Brachia long, slender, curved, sharply pointed; a cluster

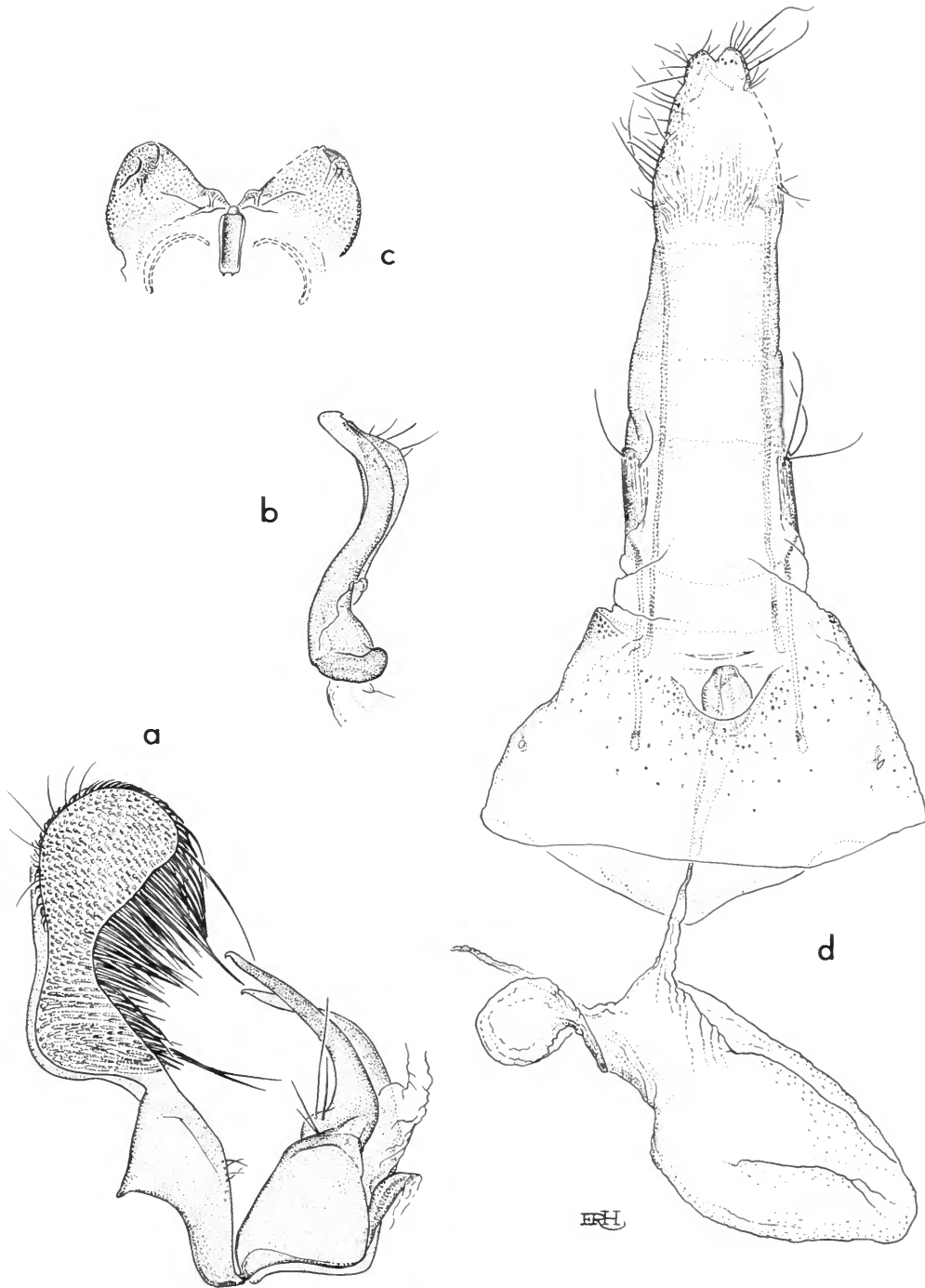


FIGURE 133.—*Asymphorodes diaphidius*, new species; *a*, lateral aspect of male genitalia with aedeagus removed; *b*, aedeagus; *c*, 8th sternum; *d*, ventral view of female genitalia.

of 4 or 5 very slender setae at the base of each brachium. Tegumen very short, scarcely more than half the length of brachia. Aedeagus slender, curved, with a small hook apically; manica with a shallow keel dorsally.

Female genitalia slide USNM 24725. Ostium small, round. Inception of ductus seminalis from posterior end of bursa copulatrix on left side. Ductus bursae relatively short, about as long as bursa copulatrix. Bursa copulatrix membranous.

HOLOTYPE.—USNM 100777.

TYPE-LOCALITY.—Hiva Oa, Mt. Feani, 3400 ft (1036 m).

DISTRIBUTION.—Hiva Oa.

FOOD PLANT.—Unknown.

Described from the ♂ holotype (1 Mar 1968), 18♂ and 41♀ paratypes from the type-locality, dated 20 Feb and 1 Mar 1968.

As indicated under *astathopis* this species is very closely related to it, but *diamphidius* differs from *astathopis* by the blackish fuscous head and thorax and the presence of only one complete white bar on the forewing.

***Asymphorodes spintheropus* (Meyrick), new combination**

FIGURES 134, 296e

Stigmatophora spintheropa Meyrick, 1934c:348.—Clarke, 1955 [1955–1970]: p. 219.

Female genitalia slide USNM 24231. Ostium small, round, emerging from a sclerotized cone, the latter set in a deep excavation of the posterior edge of the 7th sternum. Inception of ductus seminalis from posterior edge of bursa copulatrix. Ductus bursae very slender, membranous, about half the length of bursa copulatrix. Bursa copulatrix membranous.

HOLOTYPE.—In the Bernice P. Bishop Museum.

TYPE-LOCALITY.—Uapou, Tekohepu summit.

DISTRIBUTION.—Uapou.

FOOD PLANT.—Unknown.

The type lacks the left forewing but is in otherwise fair condition. The type is the only specimen known.

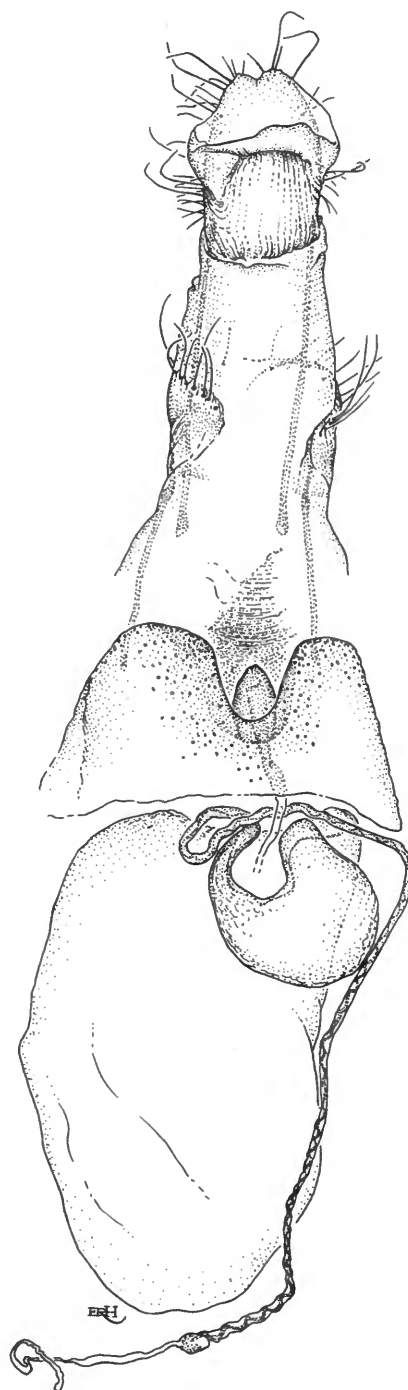


FIGURE 134.—*Asymphorodes spintheropus* (Meyrick), ventral view of female genitalia.

In general structure the female genitalia of *spintheropus* match those of other species of *Asymphorodes*, so I do not hesitate to transfer *spintheropus* to this genus. I do not know what Meyrick saw that prompted him to place *spintheropus* in *Stigmatophora*. From what can be seen of the venation there is nothing to prevent *spintheropus* from being placed in *Asymphorodes* and the labial palpi are right.

Asymphorodes valligera Meyrick

FIGURES 135, 296f-h, 297a-c

Asymphorodes valligera Meyrick, 1929a:498.—Clarke, 1955 [1955-1970]:322.

Asymphorodes ingravescens Meyrick, 1934c:350.—Clarke, 1955 [1955-1970]:171. [New synonym.]

Male genitalia USNM 24653, 24656, 24657. Harpe constricted at neck then slightly broadened, then constricted again before expanded cucullus. Brachia longer than tegumen; right brachium broader than left and somewhat flattened. Tegumen shorter than broad. Aedeagus slender, slightly curved, with small hook dorsally at apex; manica with broad conspicuous hook dorsally.

Female genitalia USNM 24654, 24655. Ostium short, cylindrical, protruding, set in a deep excavation of 7th segment; lamella postvaginalis granular. Inception of ductus seminalis from posterior end of bursa copulatrix. Ductus bursae slender, short, less than half the length of bursa copulatrix. Bursa copulatrix membranous, finely granular.

ORIGINAL MATERIAL.—“♂♀ 12-14 mm . . . Marquesas, Hiva Oa, 3000-3500 feet, December, January, amongst herbage and at light; 15 ex.”

LECTOTYPE.—Male, 11 mm, “Hiva Oa, Marquesas. Beaten from herbage 3000-3500 ft., 27.1.1925. St. George Expedn. C.L. Collenette.” Slide JFGC 11992. Lectotype hereby designated.

Lectotype is in the British Museum (Natural History) (*valligera*); type is in the Bernice P. Bishop Museum (*ingravescens*).

TYPE-LOCALITIES.—Hiva Oa, 3000-3500 ft

(914-1067 m) (*valligera*); Hiva Oa, Mt. Temetiu, altitude 3860 feet (1176 m) (*ingravescens*).

DISTRIBUTION.—Hiva Oa.

In the USNM collection there are before me the following specimens. Hiva Oa: Mt. Feani, 3400 ft (1036 m) 1 Mar 1968, 36♂, 106♀; same locality, 3800 ft (1158 m), 20 Feb 1968, 31♂, 15♀; Tahauku, 27 Feb 1968, 1♂. Ootua, 800 m, 27-30 Jul 1977, 1♂ (Montgomery).

FOOD PLANT.—Unknown.

Obviously, Meyrick had a mixed series as is evident from the specimens in the British Museum.

The specimen I have selected as the lectotype, certainly one of the original series, is slightly smaller than the dimensions given by Meyrick. I have a female, an exact match for the lectotype in color and pattern, measuring 12 mm.

As can be seen from illustrations, the species is extremely variable with sharply defined markings (Figure 296h), or suffused markings (Figures 296g, 297b,c). Obviously this variability in pattern led Meyrick to describe *valligera* and *ingravescens* as separate species. All forms occur together.

Asymphorodes leucoterma Meyrick

FIGURE 297d

Asymphorodes leucoterma Meyrick, 1929a:499.—Clarke, 1955 [1955-1970]:187.

HOLOTYPE.—In the British Museum (Natural History).

TYPE-LOCALITY.—Hiva Oa.

DISTRIBUTION.—Hiva Oa.

FOOD PLANT.—Unknown.

The holotype, the only specimen of this species that is known, is in very poor condition. The type consists of one forewing, head with one antenna, and three legs. The forewing is folded lengthwise so that only the dorsal half is seen as in Figure 297d. Although there are three whitish streaks on costa and termen, the large conspicuous ochreous-white spot on tornus is the most characteristic feature of this species; but it ap-

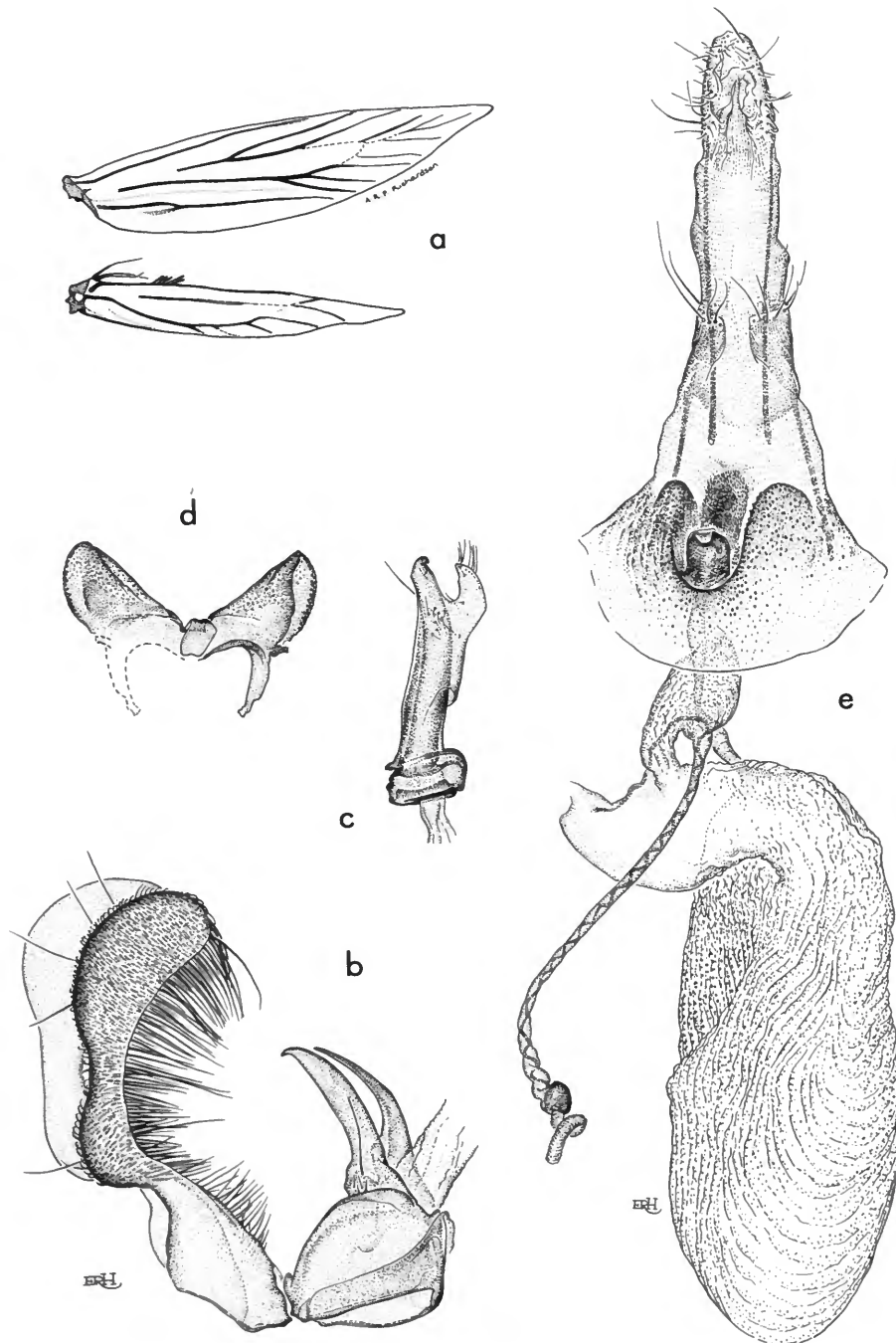


FIGURE 135.—*Asymphorodes valligera* Meyrick: *a*, venation of right wings; *b*, lateral aspect of male genitalia with aedeagus removed; *c*, aedeagus; *d*, 8th sternum; *e*, ventral view of female genitalia.

pears from the description that it was not mentioned by Meyrick.

***Asymphorodes admirandus* Meyrick**

FIGURES 136, 297e

Asymphorodes(?) admiranda Meyrick, 1934c:349.

Asymphorodes admiranda Meyrick.—Clarke, 1955 [1955–1970]:36.

Female genitalia slides USNM 24228 (type), 24234. Ostium small, oval. Sterigma with deep median cleft each edge of cleft strongly sclerotized. Inception of ductus seminalis from posterior part of bursa copulatrix. Ductus bursae short, membranous. Bursa copulatrix membranous.

HOLOTYPE.—In the Bernice P. Bishop Museum.

TYPE-LOCALITY.—Uapou, Vaihakaatiki, Hakahetau Valley.

DISTRIBUTION.—Uapou, Nuku Hiva.

In addition to the specimens recorded by Meyrick we have the following: Nuku Hiva: Tunoa Ridge, 2900 ft (884 m), 23 Jan 1968, 3♀.

FOOD PLANT.—Unknown.

Meyrick described this as *Asymphorodes(?)*, but the species definitely belongs in this genus.

***Asymphorodes pollutus* Meyrick**

FIGURES 137, 297f

Asymphorodes polluta Meyrick, 1929a:500.—Clarke, 1955 [1955–1970]:254.—Bradley, 1957:100.

Male genitalia slide USNM 24731. Harpe very slender; cucullus much broadened. Left brachium broad basally, strongly curved at middle and sharply pointed. Right brachium curved, divergent, flattened in outer two-thirds. Tegumen broader than long. Aedeagus slender, curved distad, with a small dorsal point distally; manica with very large dorsal projection, dilated distally.

Female genitalia slide USNM 24732. Ostium small, subconical, set in a very deep excavation of the posterior margin of 7th segment. Inception of ductus seminalis from posterior end of

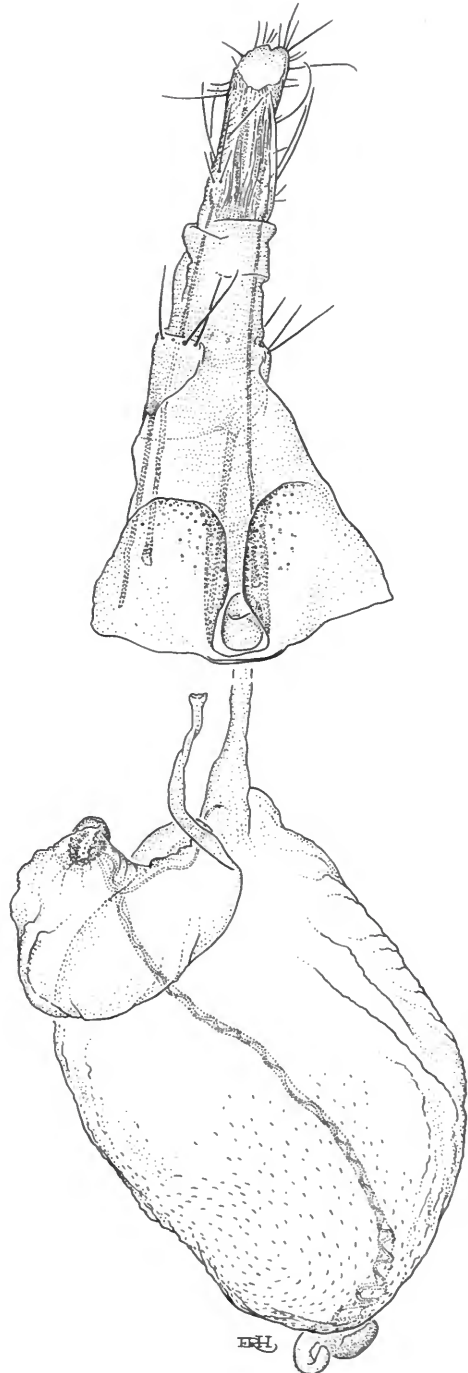


FIGURE 136.—*Asymphorodes admirandus* Meyrick, ventral view of female genitalia.

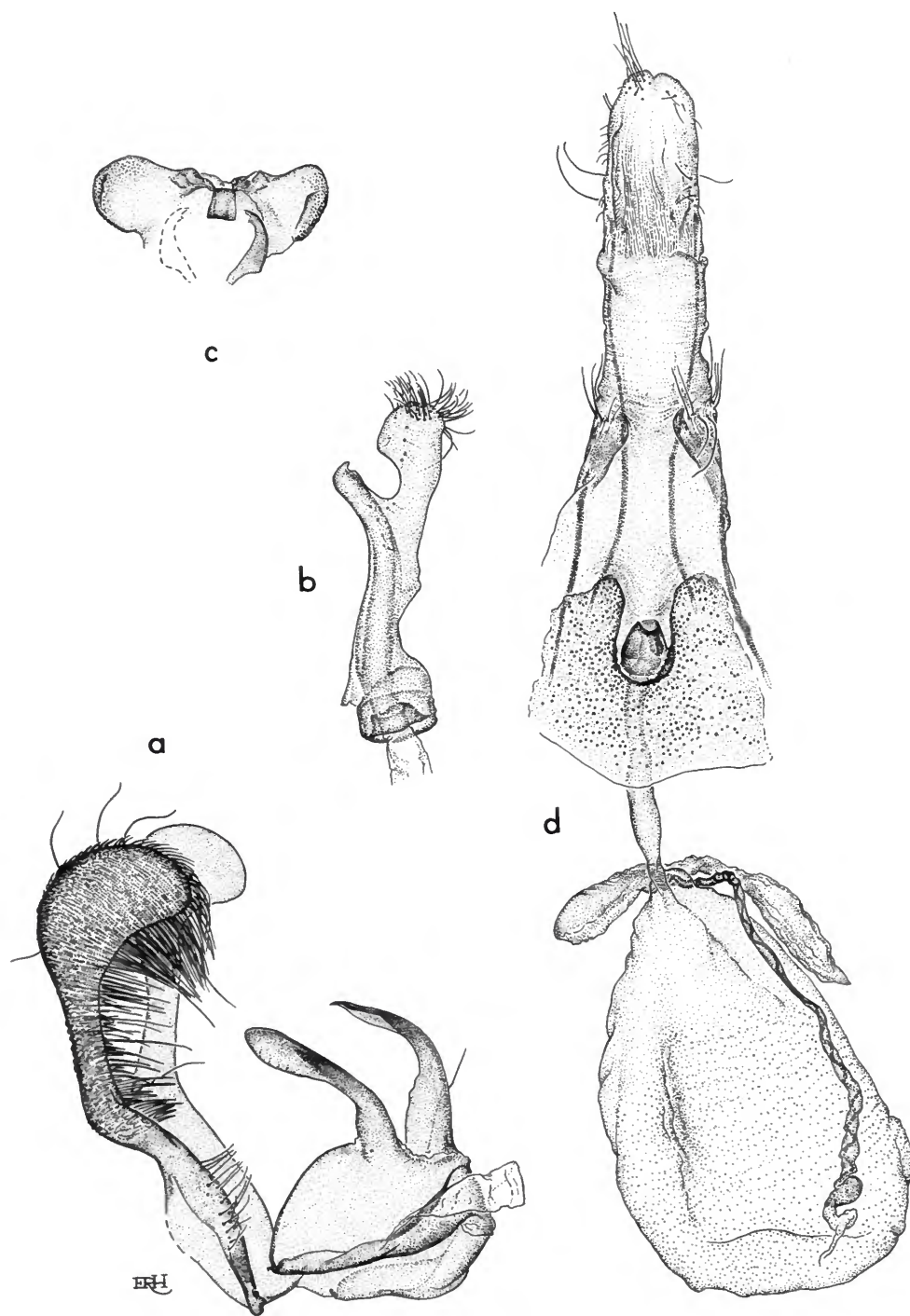


FIGURE 137.—*Asymphorodes pollutus* Meyrick: a, lateral aspect of male genitalia with aedeagus removed; b, aedeagus; c, 8th sternum; d, ventral view of female genitalia.

bursa copulatrix. Ductus bursae slender, membranous. Bursa copulatrix membranous, finely granulate anteriorly.

HOLOTYPE.—In the British Museum (Natural History).

TYPE-LOCALITY.—Hiva Oa, 3500 ft (1067 m).

DISTRIBUTION.—Hiva Oa, Solomon Islands.

We have only four specimens of this apparently uncommon species. Hiva Oa: Trail to Mt. Feani, 2700 ft (823 m), 20 Feb 1968, 1♂; Mt. Feani, 3400 ft (1036 m), 1 Mar 1968, 3♀.

FOOD PLANT.—Unknown.

Although Meyrick described *pollutus* from a defective specimen (lacked the hindwings), he was quite right in stating that it is an easily recognizable form. There is nothing in the genus that can be confused with it.

Fortunately, we now have a male and female so that the genitalia can be figured.

Asymphorodes aporia, new species

FIGURES 138, 297g

Alar expanse 12 mm.

Labial palpus light buff; third segment with slender longitudinal line anteriorly. Antenna pale ochraceous buff. Head light buff with pale ochraceous buff suffusion on crown. Thorax light buff; tegula mottled fuscous; metascutum of male with thornlike processes. Forewing ground color light buff variously streaked and mottled fuscous; in middle of cell a fuscous spot and at end of cell a similar spot; cilia grayish fuscous with mixture of pale ochraceous buff scales at middle of termen. Hindwing grayish fuscous, lighter toward base; cilia grayish fuscous. Foreleg pale buff strongly marked blackish fuscous on outer side; midleg pale buff; hindleg pale buff; tibia with grayish fuscous spot on outer side distally. Abdomen grayish fuscous dorsally, grayish buff ventrally.

Male genitalia slide USNM 24940. Harpe moderately broad, gradually tapered to a short, narrow neck; cucullus moderately expanded. Brachia short, slender, curved. Tegumen shorter than broad. Aedeagus slightly curved; manica

with claviform process dorsally.

Female genitalia slide USNM 24941. Ostium very small, round, emerging from center of a sclerotized ring. Inception of ductus seminalis from posterior margin of bursa copulatrix. Ductus bursae very slender, membranous. Bursa copulatrix rugose in anterior half.

HOLOTYPE.—USNM 100781.

TYPE-LOCALITY.—Nuku Hiva, Tapuaooa, 2500 ft (762 m).

DISTRIBUTION.—Nuku Hiva.

FOOD PLANT.—Unknown.

Described from the ♂ holotype (30 Jan 1968) and 2♀ paratypes with identical data.

Although *aporia* might at first be confused with *nigricornis*, especially in rubbed specimens, they are readily distinguished by a comparison of their antennae. In *aporia* the antenna is pale ochraceous buff but in *nigricornis* the antenna is blackish fuscous. Also, the mottling in *nigricornis* is darker than in *aporia*.

Asymphorodes hypostema, new species

FIGURES 139, 297h

Alar expanse 11 mm.

Labial palpus sordid white; second segment with fuscous longitudinal line posterolaterally. Antenna light buff. Head and thorax sordid white. Forewing ground color sordid white (lustrous) extreme base of costa and basal angle fuscous; at basal third, in fold, a fuscous shade; on middorsum a fuscous spot and another at end of cell; apical part of wing, beyond cell, shaded fuscous; cilia grayish fuscous. Hindwing grayish fuscous; cilia a shade lighter. Foreleg sordid white (tibia and tarsi missing); midleg sordid white; tibia with grayish fuscous spot distally; hindleg sordid white; tibia with grayish fuscous spot distally. Abdomen grayish fuscous dorsally, sordid white ventrally; eighth sternum modified.

Male genitalia USNM 24958. Harpe broadest at base; cucullus slightly expanded. Brachia of about equal length, strongly curved distad and sharply pointed. Tegumen slightly broader than long. Aedeagus slightly bent distad terminating

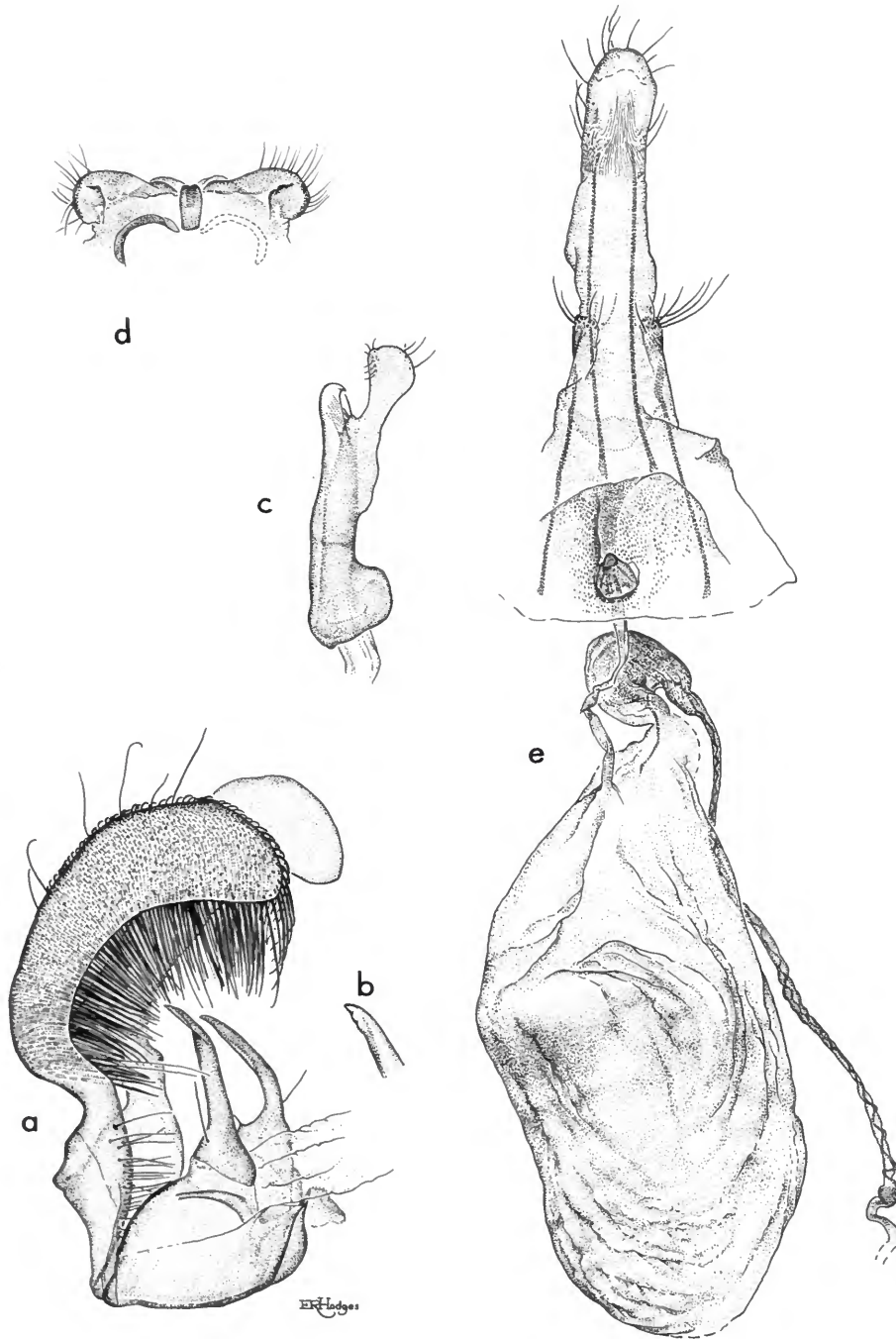


FIGURE 138.—*Asymphorodes aporia*, new species: *a*, lateral aspect of male genitalia with aedeagus removed; *b*, tip of brachium enlarged; *c*, aedeagus; *d*, 8th sternum; *e*, ventral view of female genitalia.

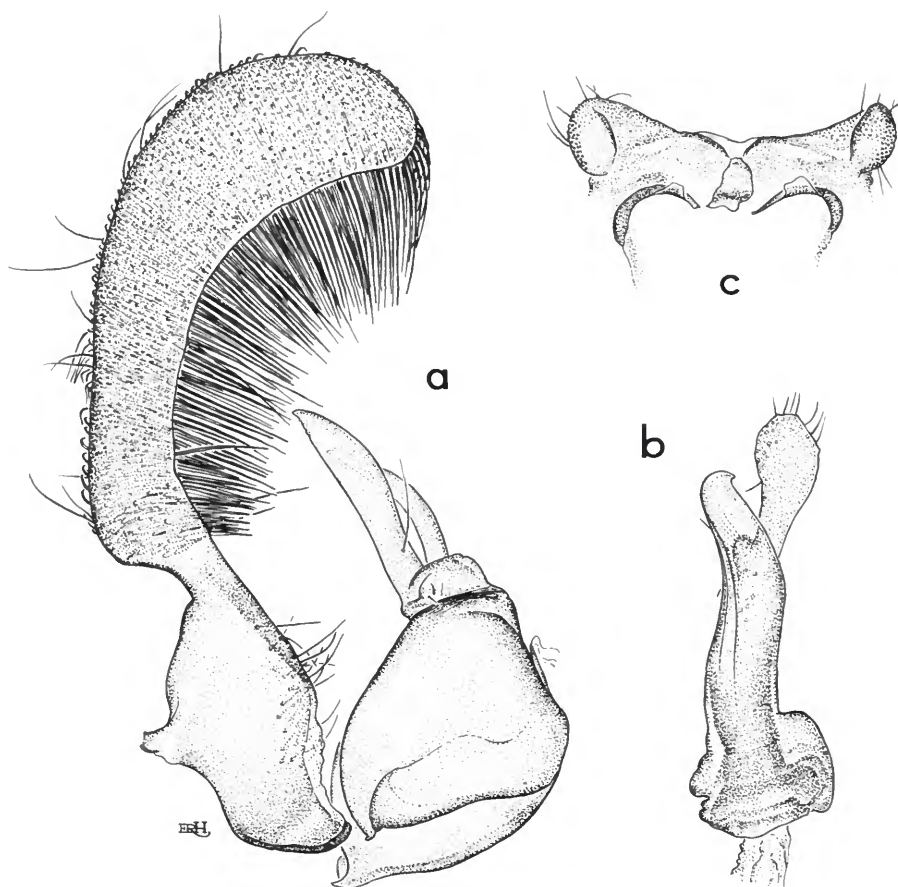


FIGURE 139.—*Asymphorodes hypostema*, new species: *a*, lateral aspect of male genitalia with aedeagus removed; *b*, aedeagus; *c*, 8th sternum.

in a small dorsal hook; manica with a battledore-shaped process dorsodistally.

HOLOTYPE.—USNM 100782.

TYPE-LOCALITY.—Nuku Hiva, Tunoa Ridge, 2900 ft (884 m).

DISTRIBUTION.—Nuku Hiva.

FOOD PLANT.—Unknown.

Described from the unique ♂ holotype (23 Jan 1968).

This moth is closely related to *pollutus*, but lacks the three discal spots of the forewing of that species. Also, the basal angle of *hypostema* and a spot on dorsum are fuscous, but both these features are absent in *pollutus*.

Asymphorodes brevimacula, new species

FIGURES 140, 298a

Alar expanse 10–13 mm.

Labial palpus ochereous white. Antenna fuscous, scape ochereous white anteriorly. Head white, face ochereous white. Thorax white; base of tegula infuscated; thornlike processes from metascutum of male present. Forewing ground color white; at base of costa a fuscous spot, the color continuing very narrowly along extreme costal edge to about two-fifths; at two-fifths a broken, irregular fuscous transverse fascia; on dorsum, just before the fascia, a small fuscous

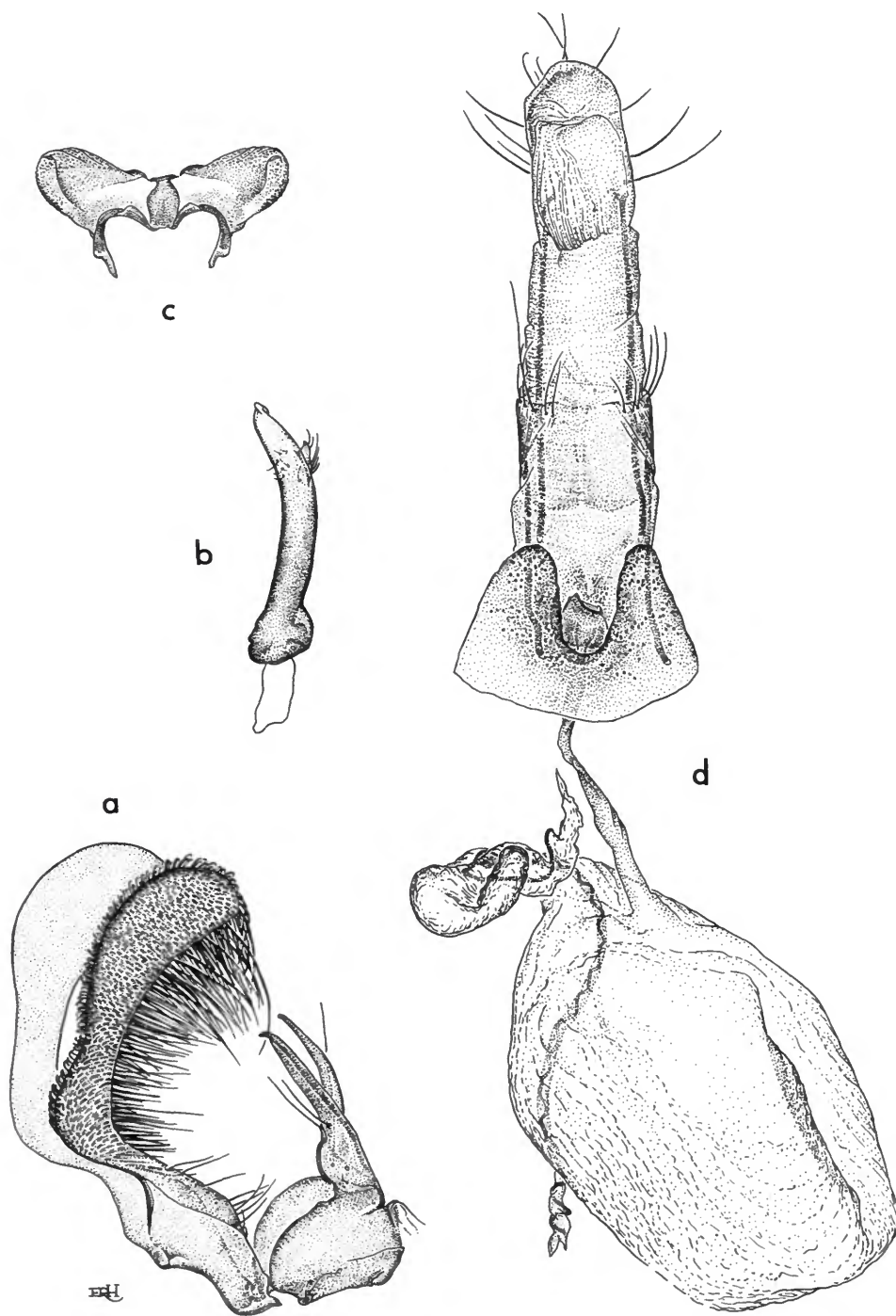


FIGURE 140.—*Asymphorodes brevimacula*, new species: *a*, lateral aspect of male genitalia with aedeagus removed; *b*, aedeagus; *c*, 8th sternum; *d*, ventral view of female genitalia.

spot; at three-fourths of costa a transverse fuscous fascia extends to base of vein two, sometimes continued to tornus and sometimes confluent with a fuscous spot on fold, the latter lying between the two transverse fasciae; cilia light buff, with a few grayish cilia at apex. Hindwing grayish fuscous; cilia buff. Foreleg ochraceous white heavily overlaid fuscous on outer side; midleg and hindleg ochraceous white. Abdomen grayish dorsally, ochraceous white ventrally; 7th tergum and sternum of male not appreciably modified.

Male genitalia slide USNM 24824. Harpe rather elongate basally; neck rather long, slender; cucullus moderately expanded. Brachia stout basally, tapering to a sharp point. Tegumen shorter than broad. Aedeagus moderately stout, gently curved; manica with a small triangular keel dorsodistally.

Female genitalia slide USNM 24825. Ostium small, round, emerging from a short, sclerotized cylinder, the latter set at the base of a deep median excavation of the posterior margin of the 7th sternum. Inception of ductus seminalis from posterior end of bursa copulatrix. Ductus bursae membranous. Bursa copulatrix membranous.

HOLOTYPE.—USNM 100783.

TYPE-LOCALITY.—Hiva Oa, Mt. Feani, 3800 ft (1158 m).

DISTRIBUTION.—Hiva Oa.

FOOD PLANT.—Unknown.

Described from the ♂ holotype (20 Feb 1968), 5♂ and 3♀ paratypes all from Hiva Oa, Mt. Feani, 3400 ft (1036 m) and 3800 ft (1158 m), 20 Feb and 1 Mar 1968.

In superficial appearance *brevimacula* is similar to *xanthostola*, but the ground color of the former is white or whitish but that of the latter is yellowish or ochraceous. The tergum and sternum of the male of *brevimacula* is not modified as in *xanthostola* (Figures 140c, 153c,d).

Asymphorodes hemileucus, new species

FIGURES 141, 298b

Alar expanse 6.5-7 mm.

Labial palpus blackish fuscous except creamy white apex; third segment creamy white. An-

tenna white to buff with some fuscous scaling in male; in one female annulated blackish fuscous toward apex. Head white. Thorax and tegula black. Forewing ground color, slightly less than half, black; beyond that white to creamy white; cilia white to creamy white. Hindwing creamy white with very slight grayish suffusion; cilia creamy white. Foreleg and midleg creamy white; tibia and tarsal segments of both legs marked blackish fuscous; hindleg creamy white, base of tibia and tarsal segments marked with blackish fuscous. Abdomen white to creamy white.

Male genitalia slide USNM 24729. Harpe more than twice the length of tegumen; neck strongly constricted; cucullus slightly dilated. Brachia long, slender, curved, sharply pointed; right brachium slightly longer than left. Tegumen about as long as broad. Aedeagus slender, curved, with small point dorsally at apex; manica with small setaceous pad dorsally.

Female genitalia slide USNM 24730. Ostium round, set in a deep concavity in the 7th sternum. Inception of ductus seminalis from posterior edge of bursa copulatrix. Ductus bursae slender, membranous, about as long as bursa copulatrix. Bursa copulatrix membranous; spiculate on inner surface anteriorly.

HOLOTYPE.—USNM 100784.

TYPE-LOCALITY.—Nuku Hiva, Tapuaooa, 2500 ft (762 m).

DISTRIBUTION.—Nuku Hiva.

FOOD PLANT.—Unknown.

Described from the holotype ♂ (30 Jan 1968) and 2 paratypes as follows: 1♂, 1♀, Nuku Hiva, Tunoa Ridge, 2900 ft (884 m), 23 Jan 1968.

In size this species is slightly smaller than *cuneatus* new species, and the dark basal portion does not extend beyond the middle of forewing. Moreover, *hemileucus* lacks the wedge-shaped pale mark on dorsum of forewing, which is present in *cuneatus*.

Asymphorodes cirsoides Meyrick

FIGURES 142, 298c

Asymphorodes cirsoides Meyrick, 1929a: 500.—Clarke, 1955 [1955-1970]: 91.

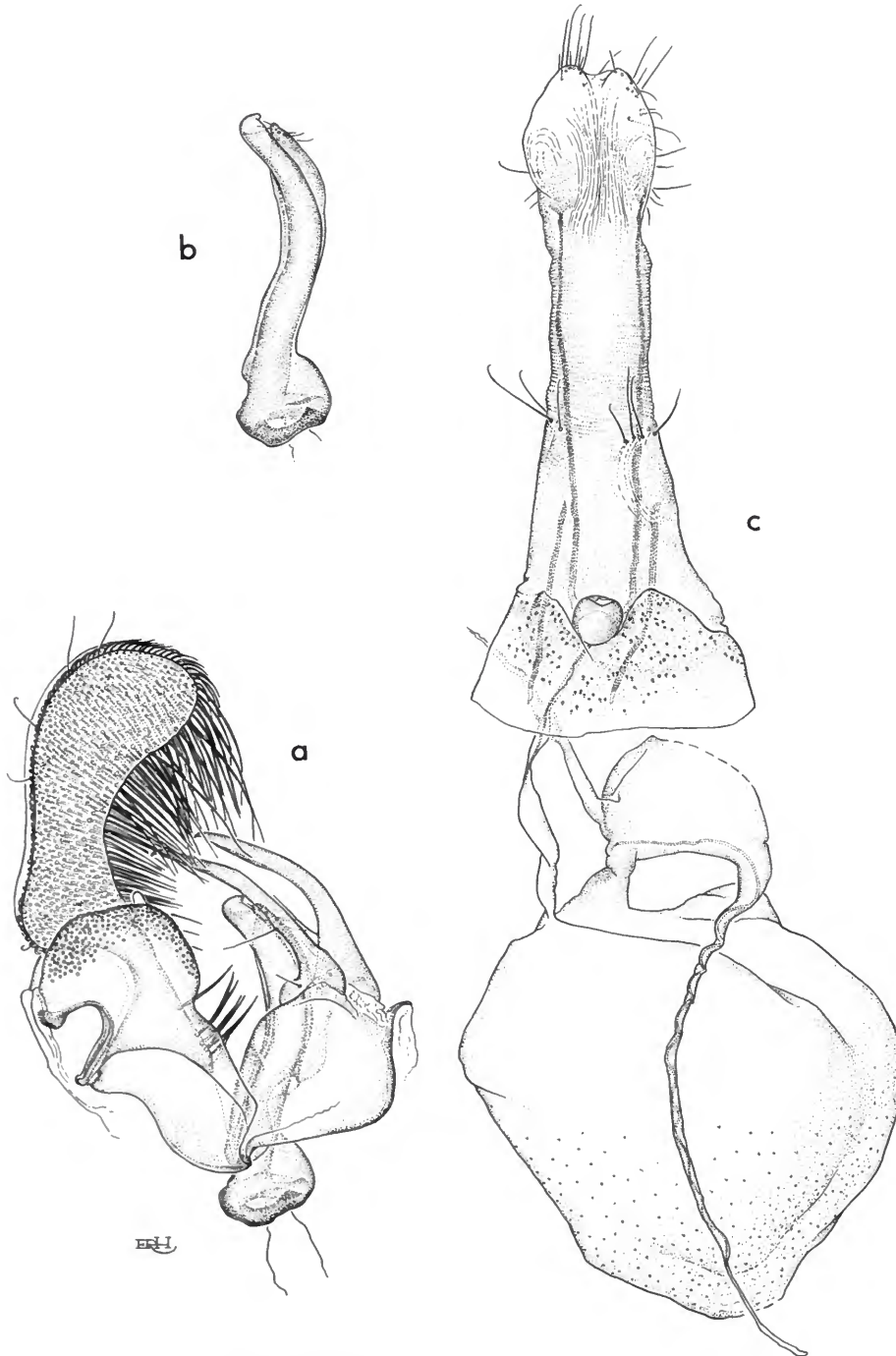


FIGURE 141.—*Asymphorodes hemileucus*, new species: *a*, lateral aspect of male genitalia with aedeagus and 8th sternum in situ; *b*, aedeagus; *c*, ventral view of female genitalia.

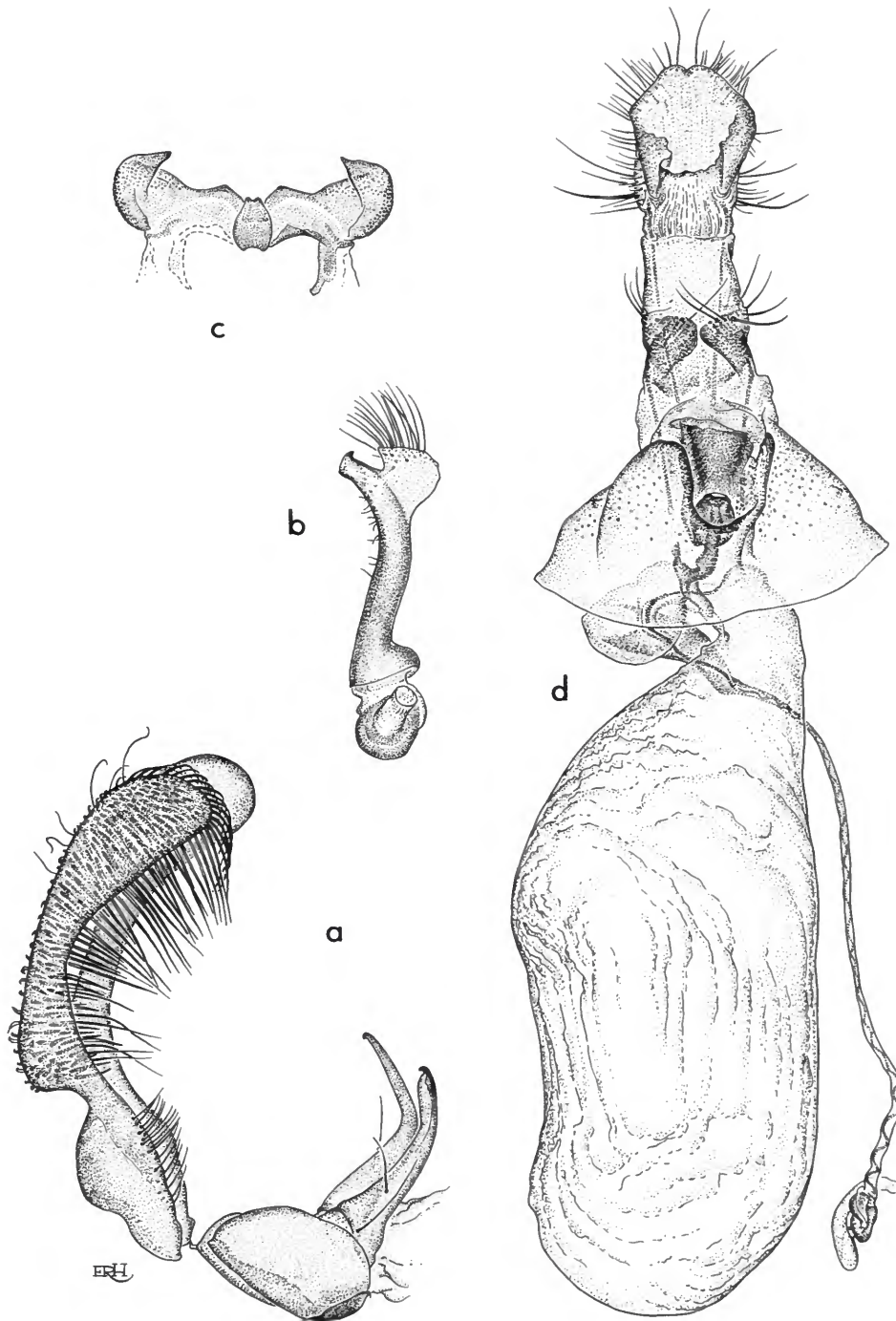


FIGURE 142.—*Asymphorodes cirsoides* Meyrick: *a*, lateral aspect of male genitalia with aedeagus removed; *b*, aedeagus; *c*, 8th sternum; *d*, ventral view of female genitalia.

Male genitalia slide USNM 24701. Harpe broad basally; neck short and very narrow; cucullus slightly expanded distally. Brachia nearly twice as long as tegumen, curved, with slightly hooked point distally. Tegumen very short and broad. Aedeagus moderately slender, curved, with a small dorsal point distally; manica with a prominent, broad dorsal keel.

Female genitalia slides USNM 24700, 24702. Ostium small, round, emerging from a dome-shaped process at base of deep posterior invagination in 7th sternum; lamella postavaginalis granular, clothed with dense, short scales. Inception of ductus seminalis from posterior edge of bursa copulatrix. Ductus bursae membranous, slender. Bursa copulatrix membranous, nearly three times as long as broad.

HOLOTYPE.—In the British Museum (Natural History).

TYPE-LOCALITY.—Hiva Oa, 3500 ft (1067 m).

DISTRIBUTION.—Hiva Oa.

I have before me three specimens as follows. Hiva Oa: Mt. Feani, 3800 ft (1158 m), 20 Feb 1968, 1♂; Mt. Feani, 3400 ft (1036 m) 1 Mar 1968, 2♀.

FOOD PLANT.—Unknown.

There are three species, *cirsodes*, *regina*, new species, and *remigiata*, new species that are strikingly similar in superficial appearance. *Asymphorodes regina* is the larger of the three, *remigiata* the smaller, with *cirsodes* between the two in size, and each occupies a different island. (A comparison of Figures 142, 164, and 166 will facilitate identification.)

Asymphorodes myronotus Meyrick

FIGURES 143, 298d

Asymphorodes myronota Meyrick, 1929a:500.—Clarke, 1955 [1955-1970]:123.

Male genitalia slides USNM 24703, 24706, 24707, 24711, 24761, 24763, JFGC 12004. Harpe broad basally; neck very narrow; cucullus only slightly dilated distally. Brachia rather stout basally, narrowed distally, pointed; a long seta

from base of each brachium. Tegumen broader than long. Aedeagus slender, curved, with small dorsal point distally; manica without keel.

Female genitalia slides USNM 24704, 24705, 24708, 24709, 24712, 24762, 24764. Ostium small, round, opening from a sclerotized tube. Inception of ductus seminalis from posterior end of bursa copulatrix. Ductus bursae slender, membranous. Bursa copulatrix membranous, rather narrow, elongate.

ORIGINAL MATERIAL.—“♂♀. 9-11mm . . . Marquesas, Hiva Oa, to 1200 feet, December, at light, 8 ex.”

LECTOTYPE.—Female, 10 mm. “Hiva Oa, Marquesas. At light, 26.12.24. St. George Expedn. C.L. Collenette.” Two small white labels bear the inscriptions “Brit. Mus. 1925-488” and “P590,” respectively. On a large black-bordered label are “*Asymphorodes myronota* Meyr.” and “Tr. Ent. Soc. Lond. 76. p. 500 (1929) Type ♀.” In addition there is the usual British Museum round, red-bordered type label with “Type H.T.” Slide No. JFGC 12004. Lectotype hereby designated.

Lectotype is in the British Museum (Natural History).

TYPE-LOCALITY.—Hiva Oa, to 1200 ft (366 m).

DISTRIBUTION.—Marquesas Islands.

Before me are the 41 specimens listed below. Nuku Hiva: Pakiu Valley, 1800 ft (548 m), 17-28 Jan 1968, 5♂, 5♀; Tapuaooa, 2500 ft (762 m), 30 Jan 1968, 1♀; Tunoa Ridge, 2900 ft (884 m), 23 Jan 1968, 1♂. Hiva Oa: Puamau, 8 Feb 1968, 4♂, 6♀; Trail to Mt. Feani, 1200 ft (366 m), 6 Mar 1968, 1♂, 3♀; Mt. Feani, 2000 ft (610 m), 20 Feb 1968, 1♀; 1 Mar 1968, 1♂ 2♀; Tahauku, 26 Feb 1968, 1♀; Atuona, 27 Feb and 4 Mar 1968, 2♀. Fatu Hiva: Omoa, 11 and 21 Mar 1968, 4♀, Omoa Valley, 20 Mar 1968, 2♂, 2♀.

FOOD PLANT.—Unknown.

This species is similar to *remigiata*, new species, and rubbed specimens might be confused with it, but *myronotus* averages smaller than *remigiata* and the dorsal stripe of *myronotus* is distinctly yellowish, that of *remigiata* whitish.

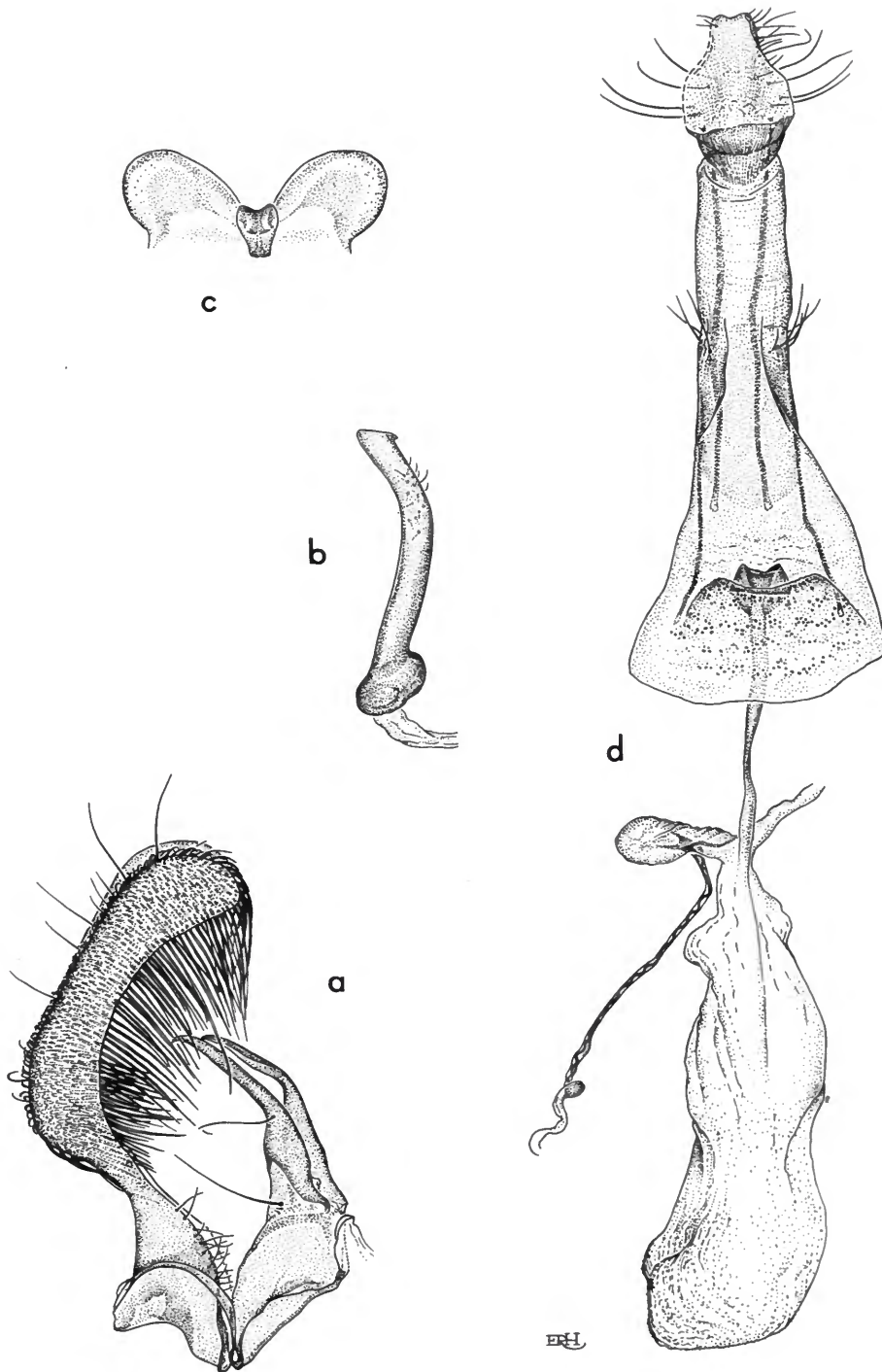


FIGURE 143.—*Asymphorodes myronotus* Meyrick: *a*, lateral aspect of male genitalia with aedeagus removed; *b*, aedeagus; *c*, 8th sternum; *d*, ventral view of female genitalia.

Although the food of *myronotus* is unknown it is probably a refuse feeder.

This is one of the species of *Asymphorodes* in which the 7th abdominal segment of the male is not modified.

***Asymphorodes cuneatus*, new species**

FIGURES 144, 298e

Alar expanse 8 mm.

Labial palpus second segment blackish fuscous except apex cream white; third segment cream white with blackish fuscous subapical annulus. Antenna with scape ochreous white; flagellum blackish fuscous. Head cream white. Thorax blackish fuscous except for ochreous white spot posteriorly. Forewing ground color blackish fus-

cous to apical third, then ochreous white; a cream white spot on costa at basal fifth and another slightly beyond middle; at basal third of dorsum a cream white spot and at middle of dorsum a wedge-shaped cream white mark; cilia ochreous white. Hindwing gray; cilia somewhat lighter. Foreleg blackish fuscous except for cream white markings on inner surface; midleg missing; hindleg cream white. Abdomen blackish fuscous dorsally, ochreous white ventrally. Lobes of eighth sternum small, fleshy.

Male genitalia slide USNM 24726. Harpe with neck greatly constricted; outer two-thirds of nearly equal width, except cucullus slightly expanded. Brachia slender, curved, sharply pointed and slightly crossed. Tegumen about as wide as long. Aedeagus slender, slightly curved, nearly as long as harpe.

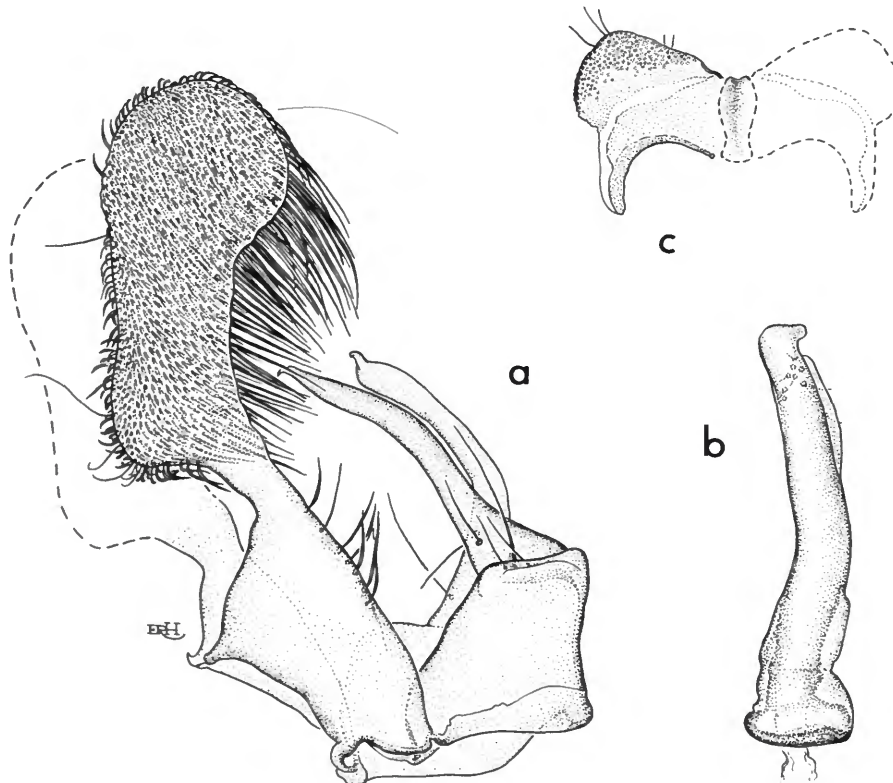


FIGURE 144.—*Asymphorodes cuneatus*, new species: a, lateral aspect of male genitalia with aedeagus removed; b, aedeagus; c, 8th sternum.

Female genitalia unknown.

HOLOTYPE.—USNM 100785.

TYPE LOCALITY.—Fatu Hiva, Tahuna, 2000 ft (610 m).

DISTRIBUTION.—Fatu Hiva.

FOOD PLANT.—Unknown.

Described from the ♂ holotype (27 Mar 1968).

This species is similar to *hemileucus*, new species, and *seminiger*, new species, but the pale apical portion of the forewing of *cuneatus* is much more restricted in size than it is in those two species.

Asymphorodes seminiger, new species

FIGURES 145, 298f

Alar expanse 10-11 mm.

Labial palpus light buff. Antenna scape cream white; flagellum cream white basally shading to light brown apically. Head cream white. Thorax cream white; tegula blackish fuscous. Forewing ground color basal half blackish fuscous; outer half cream white shading to buff; on base of dorsum a prominent buff streak, wider outwardly than at base; slightly beyond dark basal half of wing, in center, a tiny blackish fuscous dot; at apical third of costa a brown streak; cilia light buff. Hindwing grayish fuscous; cilia paler. Foreleg buff; femur and tibia blackish fuscous on outer side; tarsal segments warm buff; midleg buff; tibia and tarsal segments marked lightly with grayish fuscous; hindleg buff. Abdomen fuscous dorsally, buff ventrally. Epitygmata oval, fleshy.

Male genitalia slide USNM 24727. Harpe long, slender, narrowest at neck; cucullus only slightly expanded. Brachia curved, thick basally, tapering to a sharp point. Tegumen short, broad. Aedeagus nearly half the length of harpe, slightly curved, pointed; manica produced as a long, curved hook dorsally.

Female genitalia slide USNM 24728. Ostium small, emerging from a strongly sclerotized irregular plate (Figure 145). Inception of ductus seminalis from posterior end of bursa copulatrix. Ductus bursae very slender, membranous, about

as long as bursa copulatrix. Bursa copulatrix membranous.

HOLOTYPE.—USNM 100786.

TYPE-LOCALITY.—Nuku Hiva, Tapuaooa, 2500 ft (762 m).

DISTRIBUTION.—Nuku Hiva.

FOOD PLANT.—Unknown.

Described from the ♂ holotype (30 Jan 1968) and 8 paratypes as follows: 6♂, 1♀, Nuku Hiva, Tapuaooa, 2500 ft (762 m), 30 Jan 1968; 1♂, Tunoa Ridge, 23 Jan 1968, 2900 ft (884 m).

Of the three new species, *cuneatus*, *hemileucus*, and *seminiger*, the latter is the largest. Also, *seminiger* has a blackish spot in the pale area beyond the blackish basal portion of the wing.

Asymphorodes albicoma, new species

FIGURES 146, 298g

Alar expanse 7 mm.

Labial palpus white; outer side of second segment and apical part of third segment sordid white. Antenna white; flagellum with very faint yellowish tinge. Head white. Thorax white; tegula fuscous basally. Forewing ground color white; apical half with some very faintly yellowish scales; on basal fourth of costa a fuscous blotch that extends about two-thirds distance to dorsum; from slightly before middle of dorsum, an outwardly oblique fuscous bar extends to slightly beyond middle of costa; this bar is broader on costa than on dorsum; at the end of cell a small fuscous spot; around apex and termen a fuscous line; cilia pale yellowish white. Hindwing pale gray; cilia lighter. Foreleg white, heavily overlaid blackish fuscous on outer side; midleg and hindleg white; on hind tibia proximally a blackish fuscous dot. Abdomen white; dorsally suffused grayish fuscous.

Male genitalia slide USNM 24723. Harpe very slender basally; terminal half sickle-shaped. Brachia long, slightly curved, sharply pointed; a single, slender seta from base of each brachium. Tegumen about as long as brachia. Aedeagus long, slender, slightly curved, with a small re-

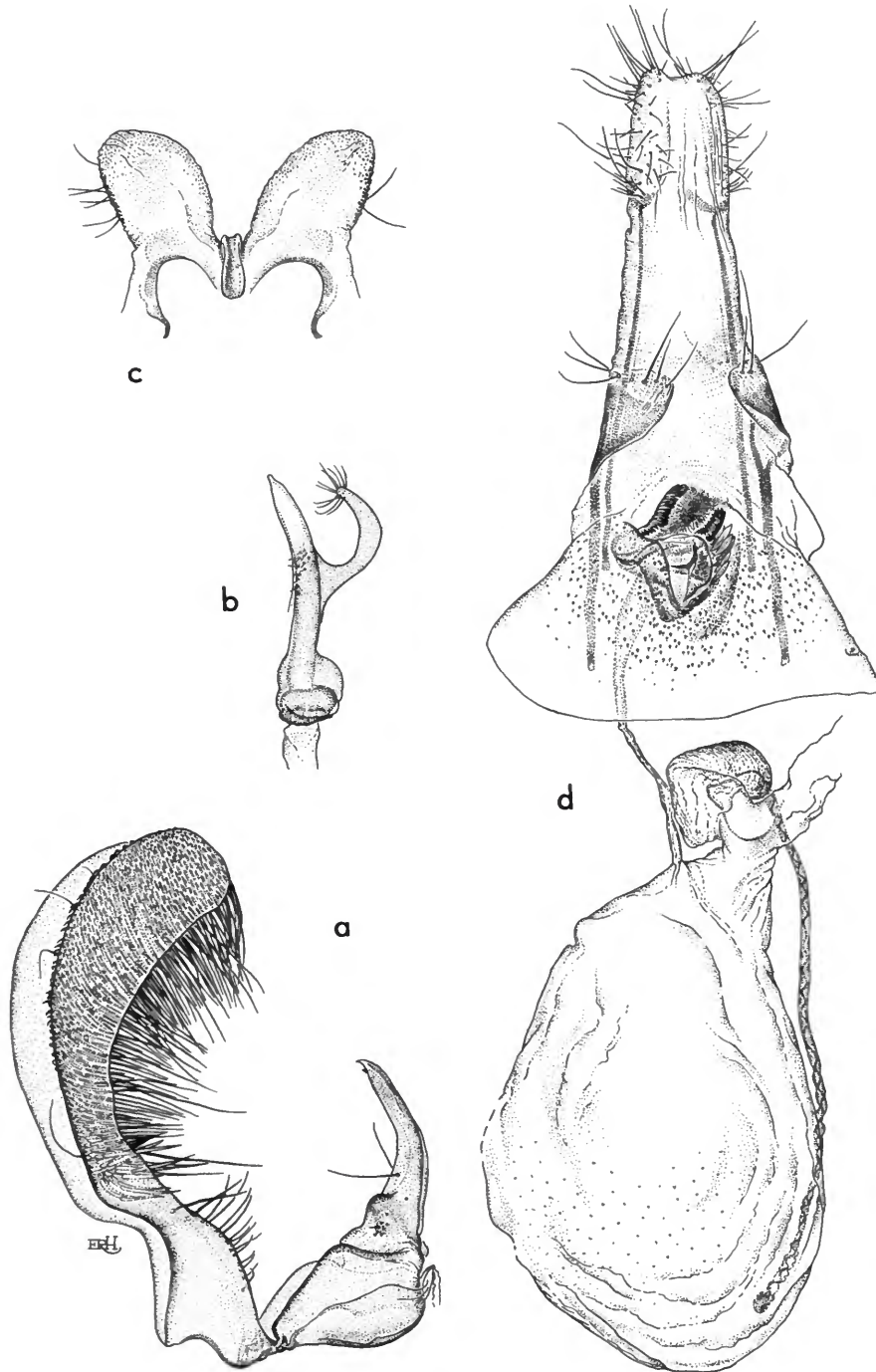


FIGURE 145.—*Asymphorodes seminiger*, new species: *a*, lateral aspect of male genitalia with aedeagus removed; *b*, aedeagus; *c*, 8th sternum; *d*, ventral view of female genitalia.

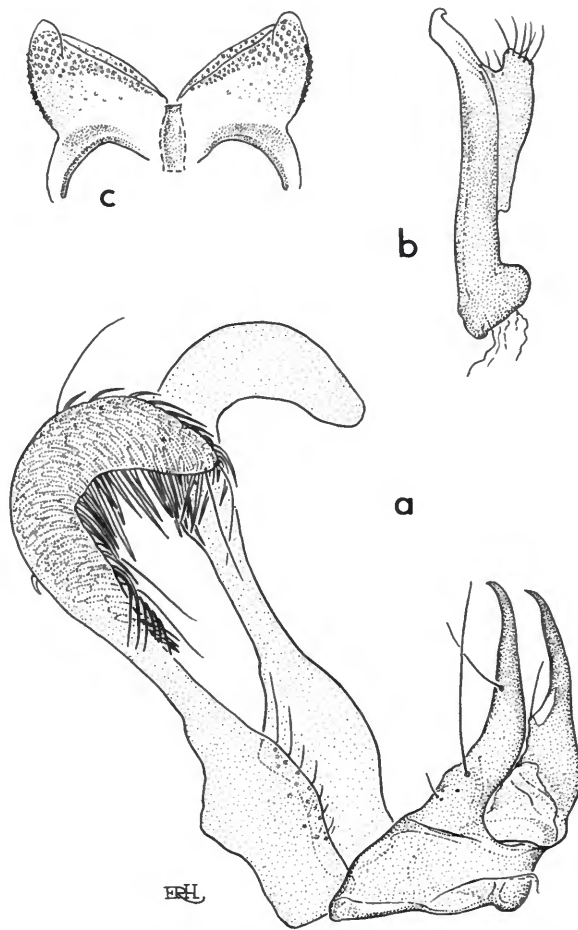


FIGURE 146.—*Asymphorodes albicoma*, new species: a, lateral aspect of male genitalia with aedeagus removed; b, aedeagus; c, 8th sternum.

curved hook apically; manica with broad dorsal keel subapically.

HOLOTYPE.—USNM 100787.

TYPE-LOCALITY.—Nuku Hiva, Tunoa Ridge, 2900 ft (884 m).

DISTRIBUTION.—Nuku Hiva.

FOOD PLANT.—Unknown.

Described from the ♂ holotype (23 Jan 1968).

In *albicoma* the dark basal patch does not cover the entire base of the wing as in *seminiger* and *hemileucus*.

Asymphorodes semiluteus, new species

FIGURES 147, 298h

Alar expanse 7-9 mm.

Labial palpus pale ochraceous buff; second segment with a fuscous blotch at middle on outer side. Antenna light ochraceous buff; scape light awny. Head pale orange yellow. Thorax pale orange yellow; tegula blackish fuscous. Thorax of ♂ with thornlike processes from metascutum. Forewing ground color blackish fuscous; on costa, at basal fourth, an ill-defined pale orange yellow, outwardly oblique dash; slightly beyond middle of costa a rectangular pale orange yellow mark; subapically, on costa, a subtriangular pale orange yellow spot; dorsum broadly pale orange yellow, interrupted at middle and at tornus by extensions of the blackish fuscous ground color; on termen two small pale orange yellow spots; ilia mixed grayish and pale orange yellow at or near termen, blackish fuscous along termen. Hindwing grayish fuscous; cilia somewhat lighter. Foreleg pale ochraceous buff; all segments blackish fuscous on outer side; midleg pale ochraceous buff; tibia with blackish fuscous dash proximally; hindleg pale ochraceous buff; tibia with two fuscous lashes on outer side; first segment with a fuscous blotch. Abdomen fuscous dorsally; ventrally pale ochraceous buff. The 7th tergum and 8th sternum modified (Figure 147).

Male genitalia slide USNM 24844. Harpe broad basally; neck elongate, narrow; cucullus slightly expanded. Brachia considerably longer than tegumen, curved, pointed. Tegumen shorter than broad. Aedeagus moderately slender, curved; manica with a rounded keel dorso-distally.

HOLOTYPE.—USNM 100791.

TYPE-LOCALITY.—Hiva Oa, Mt. Feani, 3800 ft (1158 m).

DISTRIBUTION.—Hiva Oa.

FOOD PLANT.—Unknown.

Described from the ♂ holotype (20 Feb 1968) and 3♂ paratypes, Hiva Oa, Mt. Feani, 3400 ft (1036 m), 1 Mar 1968.

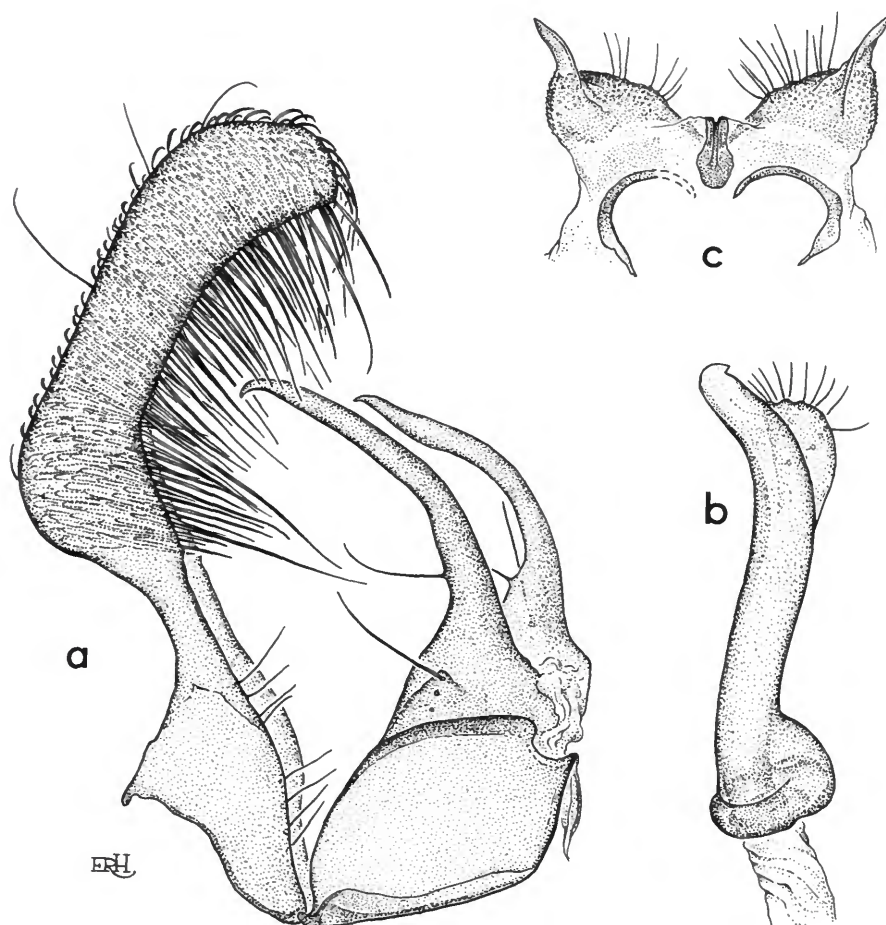


FIGURE 147.—*Asymphorodes semiluteus*, new species: *a*, lateral aspect of male genitalia with aedeagus removed; *b*, aedeagus; *c*, 8th sternum.

This species might be confused with *nigricornis*, but *semiluteus* is a smaller insect and its light colored antenna immediately distinguishes it from the former. Moreover, the modifications of the 8th sterna of the two render separation of them very easy.

***Asymphorodes nigricornis*, new species**

FIGURES 148, 299a

Alar expanse 11 mm.

Labial palpus light ochraceous buff; second segment infuscated in outer side; third segment

blackish fuscous on outer side, except apex. Antenna blackish fuscous; scape light ochraceous buff with a blackish fuscous line posteroventrally. Head light ochraceous buff. Thorax light ochraceous buff except anteriorly, and tegula blackish fuscous except tip light ochraceous buff; male with thornlike processes from metascutum. Forewing ground color light ochraceous buff, largely obliterated by blackish fuscous markings; basal fourth blackish fuscous followed by irregular areas of ground color; middle half of wing blackish fuscous interrupted by a spot of ground color slightly beyond middle of costa, and two spots of similar color on dorsum; in middle of cell a small

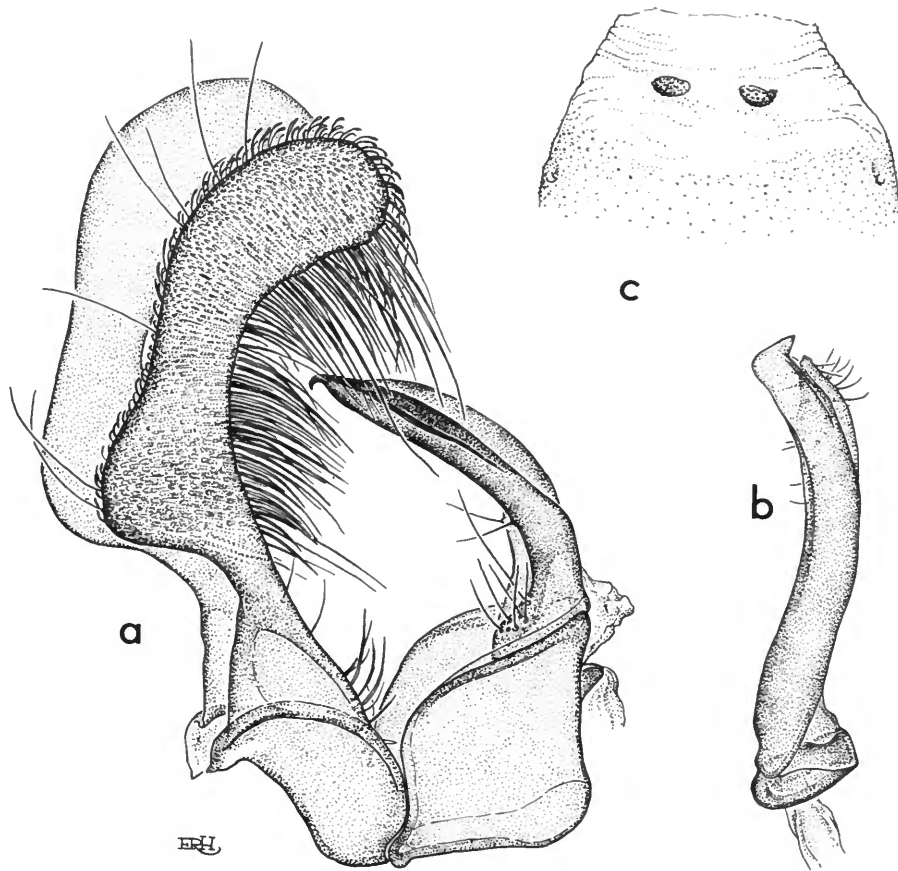


FIGURE 148.—*Asymphorodes nigricornis*, new species: *a*, lateral aspect of male genitalia with aedeagus removed; *b*, aedeagus; *c*, 7th tergum.

blackish fuscous discal spot encircled by a ring of ground color; apical third of wing blackish fuscous with a subapical spot of ground color on costa and a similarly colored spot slightly beyond tornus; near end of cell a triangular light ochraceous-buff spot; cilia grayish fuscous to blackish fuscous with a few light ochraceous-buff scales along termen. Hindwing fuscous; cilia somewhat lighter. Foreleg light ochraceous buff; tibia and tarsal segments blackish fuscous on outer side; midleg light ochraceous buff; tibia with a proximal fuscous spot and a distal fuscous shade; tarsal segments lightly marked fuscous; hindleg light ochraceous buff; tibia with three fuscous marks on outer side; tarsal segments with light grayish

suffusion. Abdomen blackish fuscous dorsally, buff, infuscated ventrally. Posterior segments of male not modified but intersegmental membrane following 7th tergum with a pair of sclerotized nodules.

Male genitalia slide USNM 24843. Harpe broad, neck narrow; cucullus moderately expanded. Brachia broad and flattened distally and nearly black toward tips. Tegumen as long as broad. Aedeagus moderately slender, gently curved, truncate distally with a dorsal point; manica with a low dorsal keel.

HOLOTYPE.—USNM 100779.

TYPE-LOCALITY.—Fatu Hiva, Tahuna, 2000 ft (610 m).

DISTRIBUTION.—Fatu Hiva.

FOOD PLANT.—Unknown.

Described from the unique ♂ holotype (27 Mar 1968).

This species is similar in appearance to *semiluteus*, new species, but is at once distinguished from it by the very dark antennae and the simple eighth sternum.

***Asymphorodes cicatricula*, new species**

FIGURES 149, 299b

Alar expanse 11-12 mm.

Labial palpus pale ochraceous buff; second segment slightly infuscated anteriorly; third segment almost wholly fuscous. Antenna blackish fuscous. Head buffy brown on crown, narrowly ochraceous laterally; frons pale ochraceous buff. Thorax buffy brown. Forewing ground color buffy brown; on costa, at basal fifth, an outwardly oblique, transverse pale ochraceous-buff dash that reaches fold; at three-fifths of costa an outwardly oblique, pale ochraceous-buff dash preceded by a short, black, parallel dash; preapically a slender, pale ochraceous-buff transverse line extends to tornus; in middle of cell a black, oval spot surrounded narrowly by pale ochraceous-buff scales and at end of cell a similar spot; on fold, at middle of wing an elongate black dash surrounded by pale ochraceous-buff scales; at apex a small pale ochraceous-buff spot followed at extreme tip by a tiny black dot; cilia mixed gray, buffy brown and light ochraceous buff. Hindwing dark gray; cilia slightly lighter. Fore-, mid-, and hindlegs pale ochraceous buff strongly marked blackish fuscous. Abdomen fuscous dorsally; posterior margins of three or four posterior segments narrowly edged pale ochraceous buff; ventrally pale ochraceous buff.

Female genitalia slides USNM 24943, 24944. Ostium small, round, emerging from a sclerotized tube, the tube situated in a deep excavation of the 7th sternum. Inception of ductus seminalis from posterior end of bursa copulatrix. Ductus bursae moderately short, membranous except

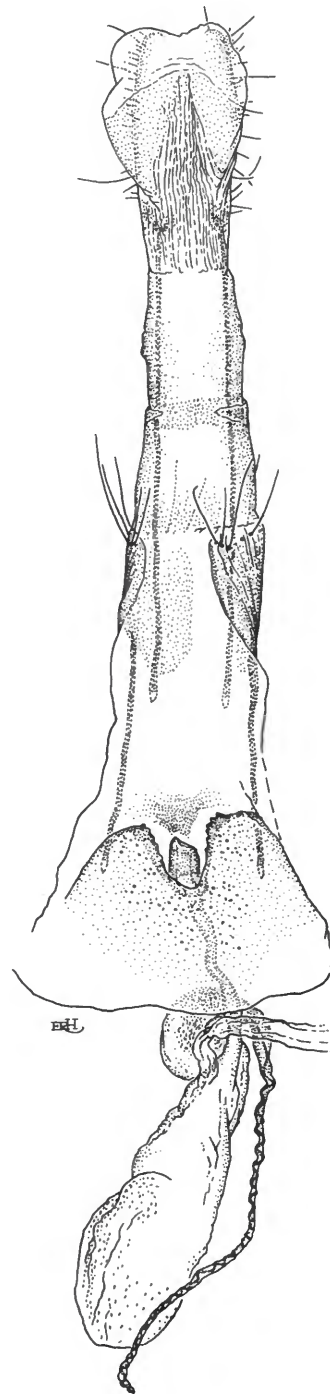


FIGURE 149.—*Asymphorodes cicatricula*, new species, ventral view of female genitalia.

posteriorly lightly sclerotized. Bursa copulatrix membranous.

HOLOTYPE.—USNM 100780.

TYPE-LOCALITY.—Nuku Hiva, Tapuaooa, 2500 ft (762 m).

DISTRIBUTION.—Nuku Hiva.

FOOD PLANT.—Unknown.

Described from the ♀ holotype (30 Jan 1968) and 2♀ paratypes with identical data.

This species is similar to *nigricornis*, new species, but the dark markings of that species are much darker than those of *cicatricula*. Moreover, the scape of *nigricornis* is light ochraceous buff, that of *cicatricula* blackish fuscous.

One female paratype is considerably paler in color than the holotype.

Asymphorodes amblysoma, new species

FIGURES 150, 299c

Alar expanse 11-12 mm.

Labial palpus light buff. Antenna pale ochraceous buff; scape light buff. Head light buff; pale ochraceous buff laterally. Thorax dark buffy brown; tegula buff-tipped; metascutum with thornlike processes. Forewing ground color dark buffy brown; across middle of wing an ill-defined grayish shade; in some specimens an ill-defined fuscous spot at end of cell; cilia buffy brown. Hindwing grayish fuscous; cilia a shade lighter. Foreleg light buff; tibia and tarsal segments marked grayish fuscous on outer side; midleg light buff; hindleg buff; tibia with small grayish patch on outer side distally. Abdomen grayish fuscous dorsally, light buff ventrally; 7th and 8th segments of male strongly modified.

Male genitalia slides USNM 24757, 24758. Harpe broad basally, gradually tapered distad but no distinct, narrow neck formed; cucullus greatly expanded. Brachia short, stout, curved; right brachium slightly dilated distally. Tegumen shorter than broad. Aedeagus slender, sharply curved; manica with a long, slender curved process dorsally.

Female genitalia slides USNM 24759, 24760.

Ostium small, round, emerging from a sclerotized bell-shaped process situated in a deep pit in the 7th sternum. Inception of ductus seminalis from near posterior end of bursa copulatrix. Ductus bursae membranous, slender, longer than bursa copulatrix. Bursa copulatrix membranous, finely spiculate.

HOLOTYPE.—USNM 100788.

TYPE-LOCALITY.—Fatu Hiva, Tahuna, 2000 ft (610 m).

DISTRIBUTION.—Fatu Hiva.

FOOD PLANT.—Unknown.

Described from the ♂ holotype (27 Mar 1968), 7♂ and 10♀ paratypes all with identical data; and 1♂ paratype, Mt. Upe, 2025 ft (617 m), 3 Apr 1968.

There is no doubt that *amblysoma* is very closely related to *lenticula*, new species, from Nuku Hiva and there is little to distinguish the two superficially. Indeed, worn specimens are indistinguishable. The genitalia, however, establish beyond doubt that the two species are distinct.

Asymphorodes chalcopterus, new species

FIGURES 151, 299d

Alar expanse 11-12 mm.

Labial palpus light ochraceous buff; second segment fuscous posteriorly on the outer side; third segment almost wholly infuscated. Antenna fuscous, except scape light ochraceous buff. Head light ochraceous buff, crown lighter; face shining. Thorax buff; tegula brownish olive with brassy hue; thornlike processes from metascutum of ♂ not well developed. Forewing ground color brownish olive, the whole wing with brassy hue; costa, from slightly beyond base to outer two-thirds, narrowly buff; cilia light brownish olive; terminal cilia mixed with ochraceous buff. Hindwing grayish; cilia slightly lighter. Foreleg ochraceous buff, strongly overlaid fuscous on outer side; midleg similar but not so strongly marked; hindleg buff; tarsal segments slightly infuscated. Abdomen grayish fuscous dorsally,

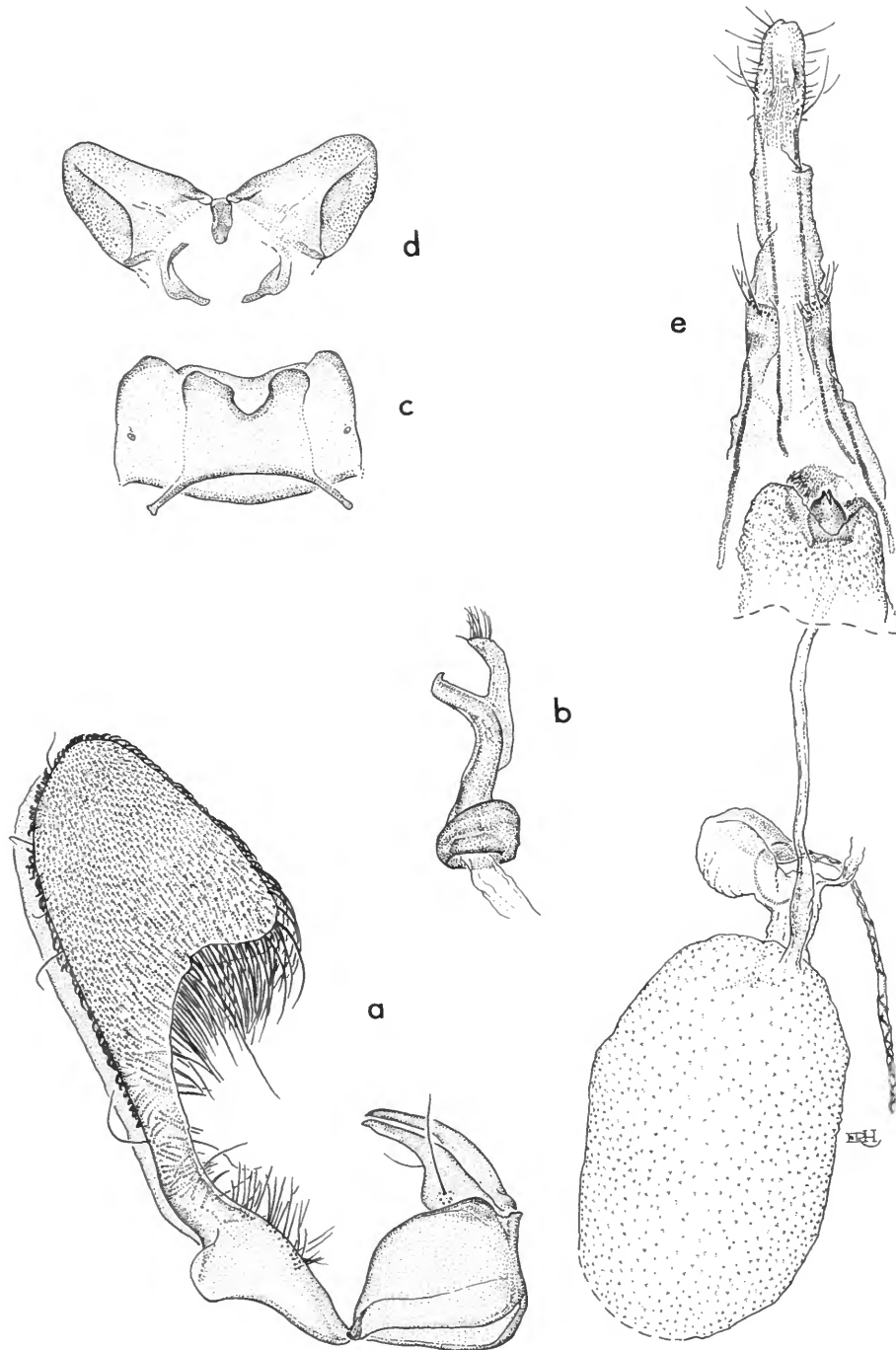


FIGURE 150.—*Asymphorodes amblysona*, new species: *a*, lateral aspect of male genitalia with aedeagus removed; *b*, aedeagus; *c*, 7th segment; *d*, 8th sternum; *e*, ventral view of female genitalia.

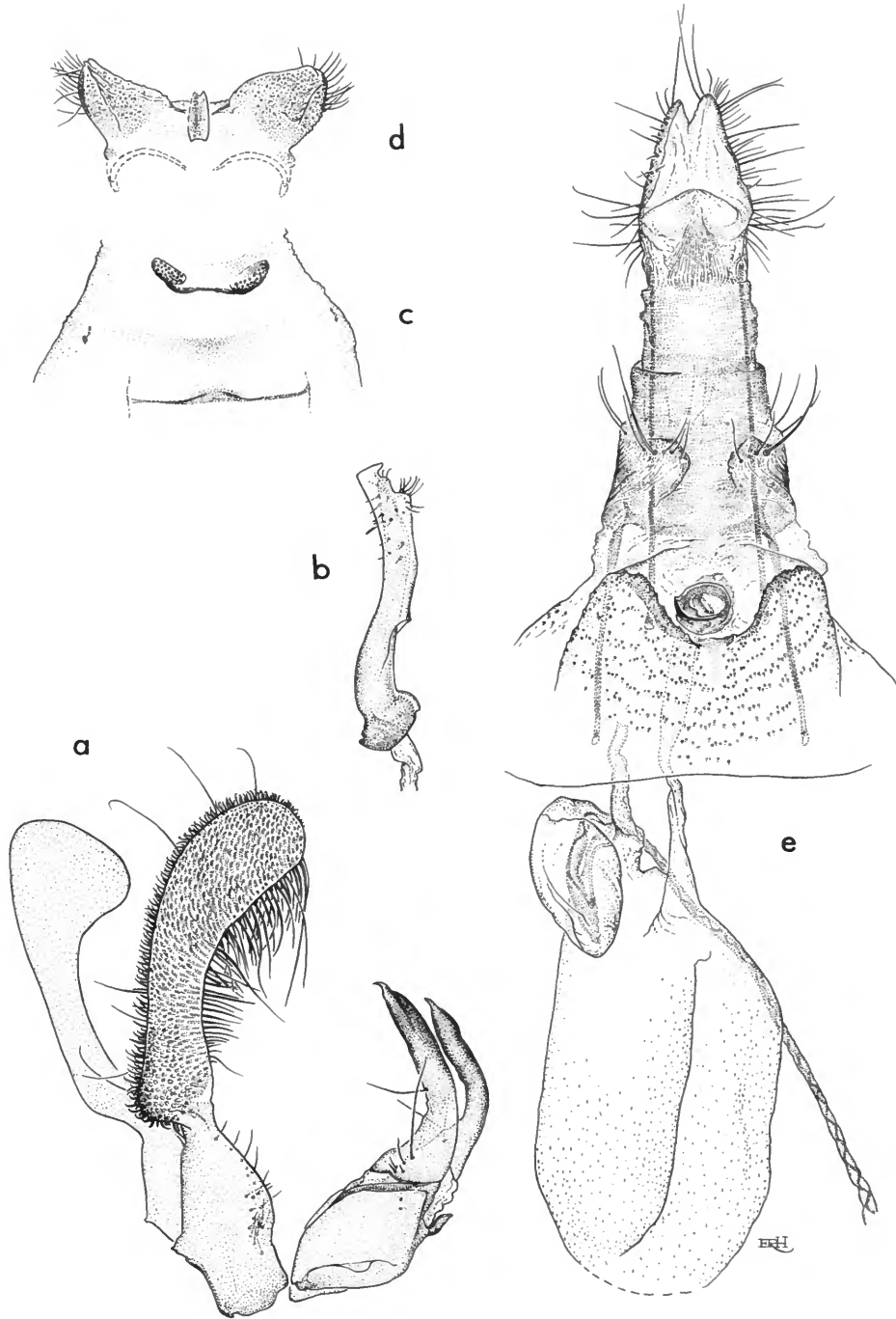


FIGURE 151.—*Asymphorodes chalcopterus*, new species: *a*, lateral aspect of male genitalia with aedeagus removed; *b*, aedeagus; *c*, 7th segment; *d*, 8th sternum; *e*, ventral view of female genitalia.

buff ventrally and with some shiny scales laterally; 7th sternum of male with a median pair of small sclerotized oval patches bearing small specialized scales; 8th sternum consisting of two flaps each narrowed distally; posterior edge of 7th sternum of female broadly excavated, the edge of this strongly sclerotized.

Male genitalia slides USNM 24714, 25170. Harpe more than three times the length of tegumen; sacculus broadly expanded; harpe very abruptly and strongly constricted beyond sacculus; cucullus broad distally. Brachia of about equal length, flattened and nearly black distally. Tegumen broader than long. Aedeagus long and slender with a crooked distal end; manica with dorsal rounded projection.

Female genitalia slides USNM 24715, 25171. Ostium very small, round. Inception of ductus seminalis from posterior end of bursa copulatrix. Ductus bursae membranous, very slender, about as long as bursa copulatrix. Bursa copulatrix membranous, short, oval.

HOLOTYPE.—USNM 100778.

TYPE-LOCALITY.—Hiva Oa, Mt. Feani, 3400 ft (1036 m).

DISTRIBUTION.—Hiva Oa.

FOOD PLANT.—Unknown.

Described from the ♂ holotype (1 Mar 1968), 3♂ and 4♀ paratypes from Hiva Oa, Mt. Feani, 3400 ft (1036 m), 1 Mar 1968.

This species appears to be related to *myronotus* but is at once distinguished from it by its brassy hue. The divergent brachia of *chalcopterus* further distinguish it from *myronotus*.

Asymphorodes lenticula, new species

FIGURES 152, 299e

Alar expanse 11-13 mm.

Labial palpus pale ochraceous buff; third segment grayish fuscous anteriorly. Antenna pale ochraceous buff shading to grayish fuscous distally. Head light ochraceous buff; face pale ochraceous buff. Thorax prout's brown; male with thornlike processes from metascutum. Forewing ground color prout's brown; on middle

of costa a pale ochraceous buff spot; in middle of cell a well-defined fuscous spot and a similar spot at end of cell; apical third of costa with several small light ochraceous-buff dashes; cilia grayish to prout's brown with two or three light ochraceous-buff dashes about middle of termen. Hindwing pale grayish, darker toward apex; cilia grayish. Foreleg pale ochraceous buff; femur, tibia and tarsal segments suffused fuscous on outer side; mid- and hindleg pale ochraceous buff. Abdomen grayish fuscous dorsally, pale ochraceous buff ventrally; 7th and 8th segments of male modified.

Male genitalia slides USNM 24847, 24899, 24900, 24902, 24946, 24947, 24948, 24950, 24954, 25017, 25113. Harpe short and broad basally; neck short; cucullus broadly expanded. Brachia short, scarcely longer than tegumen, curved, pointed. Tegumen shorter than broad. Aedeagus very short, nearly straight; manica with a sickle-shaped process dorsally.

Female genitalia slides USNM 24901, 24903, 24962, 24963, 24997, 24998. Ostium small, opening from a dome-shaped sclerotized structure, the latter at the base of a U-shaped invagination of the posterior margin of 7th sternum. Inception of ductus seminalis from posterior end of bursa copulatrix. Ductus bursae membranous, ribbonlike, about as long as bursa copulatrix. Bursa copulatrix granular.

HOLOTYPE.—USNM 100793.

TYPE-LOCALITY.—Nuku Hiva, Tapuaooa, 2500 ft (762 m).

DISTRIBUTION.—Nuku Hiva, Hiva Oa.

FOOD PLANT.—Unknown.

Described from the ♂ holotype (30 Jan 1968), 6♂ and 12♀ paratypes with identical data as the holotype; 24♂, 13♀ paratypes from Tunoa Ridge, 2900 ft (884 m), 23 Jan 1968, and Hiva Oa, Mt. Feani, 3400 ft (1036 m), 1 Mar 1968, 1♂, 3♀. Hiva Oa, Ootua, 800 m, 27-30 Jul 1977, 1♂ (Montgomery).

The shape of the harpe suggests a close relationship between *lenticula* and *xanthostola* but the brown forewing of the former immediately distinguishes it from the latter; also the scape of

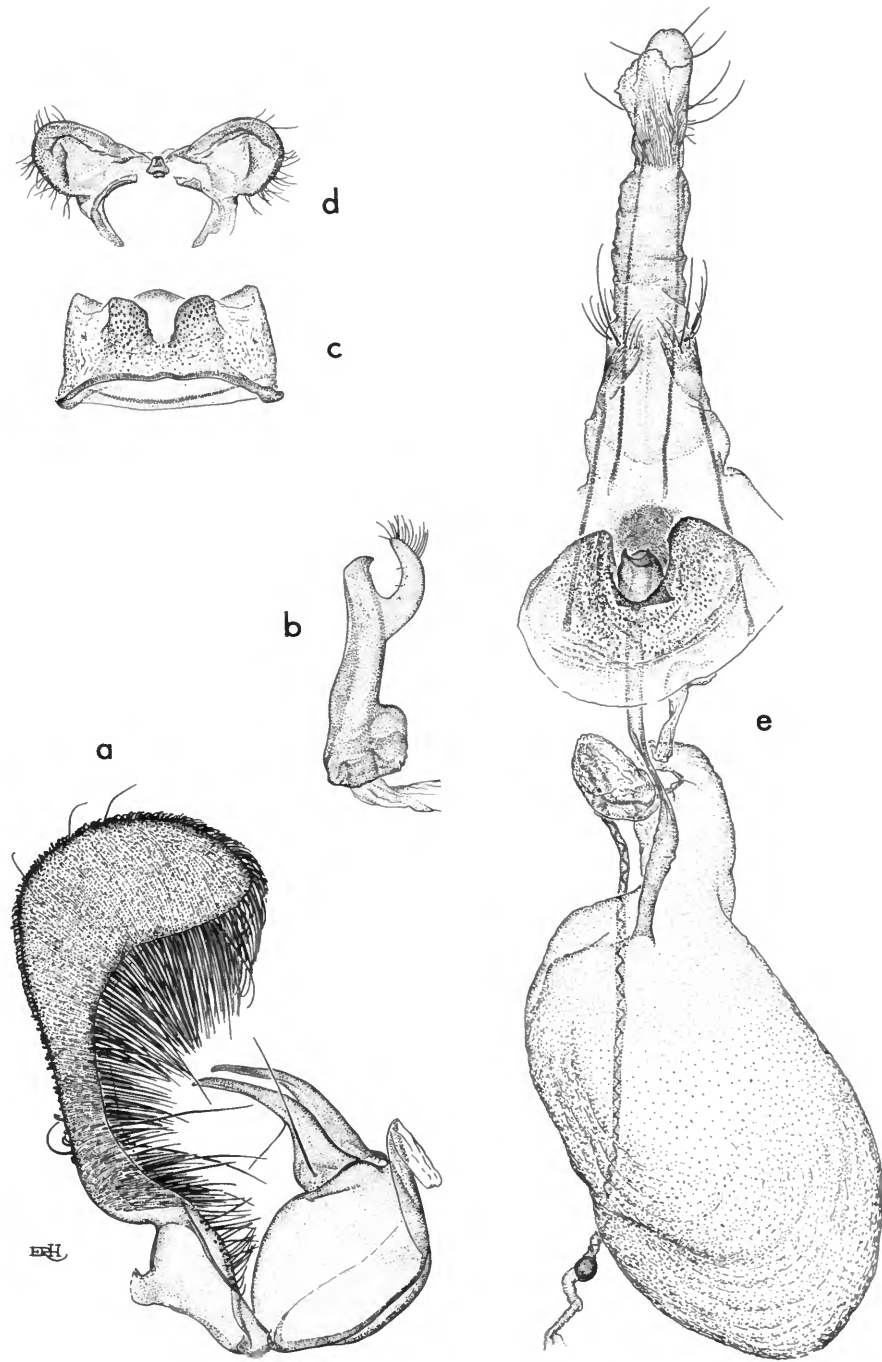


FIGURE 152.—*Asymphorodes lenticula*, new species: a, lateral aspect of male genitalia with aedeagus removed; b, aedeagus; c, 7th segment; d, 8th sternum; e, ventral view of female genitalia.

FIGURE 153.—*Asymphorodes xanthostola* Meyrick: *a*, lateral aspect of male genitalia with aedeagus removed; *b*, aedeagus; *c*, 7th segment; *d*, 8th sternum; *e*, ventral view of female genitalia.

lenticula is fuscous or dark gray, that of *xanthostola* is buff.

In addition to the type series there are two female specimens from Tunoa Ridge that appear to be somewhat different, but in the absence of males their exact position cannot be determined.

***Asymphorodes xanthostola* Meyrick**

FIGURES 153, 299f-h

Asymphorodes xanthostola Meyrick, 1934c:350.—Clarke, 1955 [1955-1970]:327.

Male genitalia slide USNM 24684. Harpe very long, nearly five times length of tegumen; very narrow basally; cucullus greatly enlarged (Figure 153a). Left brachium slightly shorter than right, both pointed. Vinculum not differentiated. Tegumen slightly wider than long. Aedeagus bulbous basally, slender, curved; manica with dorsal, flattened hook distally.

Female genitalia slide USNM 24685. Ostium a short, slightly protruding, sclerotized cylinder with median point on posteroventral edge. Inception of ductus seminalis from posterior end of bursa copulatrix. Ductus bursae membranous, from posterior end of bursa copulatrix. Bursa copulatrix elongate, oval, membranous. Lamella postvaginalis a granular area clothed with coarse deciduous scales.

HOLOTYPE.—In the Bernice P. Bishop Museum.

TYPE-LOCALITY.—Hiva Oa, Mt. Temetiu, slope north of summit, 3860 ft (1177 m).

DISTRIBUTION.—Marquesas Islands.

In the National Museum of Natural History, Smithsonian Institution, are the following specimens from Hiva Oa: Mt. Feani. 3400 and 3800 ft (1036 and 1158 m), 20 Feb and 1 Mar 1968, 1♂, 37♀.

FOOD PLANT.—Unknown.

Meyrick described this common species from a long series from Hiva Oa and also recorded it from Uapou. It has not been recorded from any of the other islands.

***Asymphorodes chrysophanes*, new species**

FIGURES 154, 300a

Alar expanse 9 mm.

Labial palpus light buff. Antenna light buff slightly infuscated basally and with ill-defined annulation toward apex. Head straw colored, face light buff. Thorax straw colored with brownish suffusion anteriorly; thornlike processes of metascutum of male not developed. Forewing ground color straw colored, lustrous, variously marked with brown; base of costa brown; on costa a patch of ground color slightly beyond middle and a similar spot on costa before apex; cilia grayish in tornal area, brown and straw colored along termen. Hindwing grayish fuscous; cilia slightly lighter. Foreleg light buff with slightly blackish fuscous marking on tibia and tarsal segments; midleg light buff; hindleg light buff. Abdomen grayish fuscous dorsally; pale ochraceous buff ventrally; 7th tergum and 8th sternum modified.

Male genitalia slide USNM 25007. Harpe broad basally; neck short and narrow; cucullus broadly expanded distally. Brachia stout at base, short; left brachium rather abruptly angled about middle; right brachium flattened distally. Tegumen shorter than broad. Aedeagus short, stout, nearly straight; manica with a curved process dorsally.

HOLOTYPE.—USNM 100789.

TYPE-LOCALITY.—Hiva Oa, Atuona.

DISTRIBUTION.—Hiva Oa.

FOOD PLANT.—Unknown.

Described from the unique ♂ holotype (12 Feb 1968). Similar to *nebrias*, new species, *chrysophanes* lacks the discal spots found in that species. In the male, the thornlike processes of the thorax are not developed in *chrysophanes* as they are in *nebrias*.

***Asymphorodes mesoxanthus*, new species**

FIGURES 155, 300b

Alar expanse 12 mm.

Labial palpus pale yellow orange. Antenna

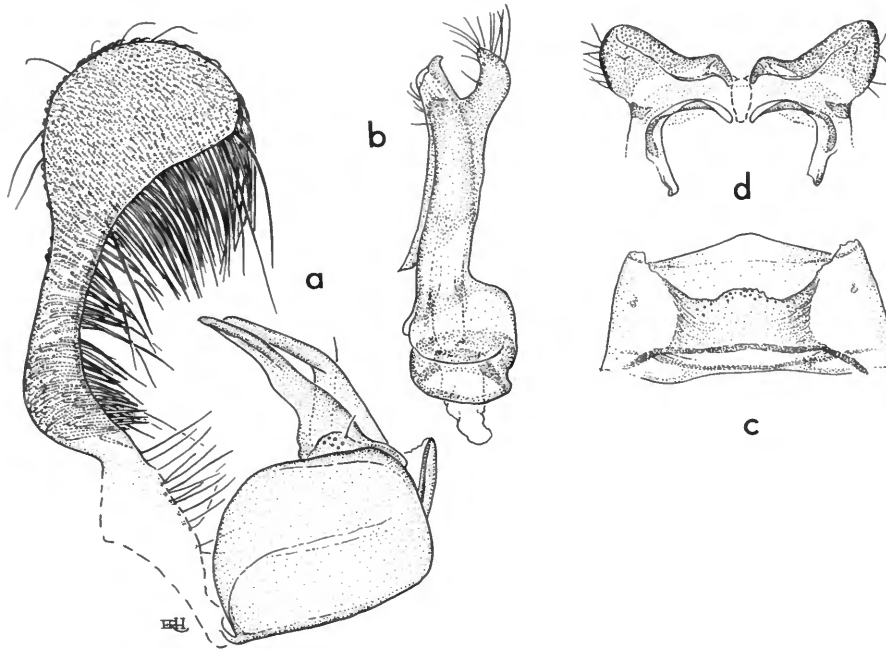


FIGURE 154.—*Asymphorodes chrysophanes*, new species: *a*, lateral aspect of male genitalia with aedeagus removed; *b*, aedeagus; *c*, 7th segment; *d*, 8th sternum.

pale yellow orange, suffused grayish distally; scape fuscous basoposteriorly. Head orange buff. Thorax orange buff. Forewing ground color orange buff; at extreme base of costa a fuscous blotch; from basal third of costa a fuscous fascia extends to dorsum; at apical third of costa a broad fuscous blotch extends to tornus and has a median extension that reaches termen and apex; cilia grayish at tornus and pale yellow orange along termen. Hindwing grayish fuscous; cilia grayish except yellowish along costa. Foreleg pale yellow orange; femur with fuscous spot on outer side; midleg pale yellow orange; hindleg pale yellow orange; tibia with median grayish fuscous dash and fuscous distal blotch on outer side. Abdomen fuscous dorsally; pale yellow orange ventrally.

Female genitalia slides USNM 25130, 25131. Ostium small, round, emerging from a dome-shaped, sclerotized structure, the latter at the base of a U-shaped excavation in the posterior margin of 7th sternum. Inception of ductus sem-

inalis from posterior end of bursa copulatrix. Ductus bursae membranous, ribbonlike, about as long as bursa copulatrix. Bursa copulatrix granular.

HOLOTYPE.—In the Bernice P. Bishop Museum.

TYPE-LOCALITY.—Uapou, above Hakahetau, 800 m.

DISTRIBUTION.—Uapou.

FOOD PLANT.—Unknown.

Described from the ♀ holotype (23–24 Jul 1977, Montgomery) and 1♀ paratype with identical data.

Although very similar to *Asymphorodes xanthostola* Meyrick, *mesoxanthus* is darker in color and has the dark apical shade of forewing that is lacking in *xanthostola*. Moreover, *xanthostola* lacks the two dark markings of the hind tibia found in *mesoxanthus*. The genitalia of both indicate close relationship, but the dome-shaped structure of the 7th sternum is longer in *mesoxanthus* than in *xanthostola*.

Asymphorodes adynatus, new species

FIGURES 156, 300c

Alar expanse 12–14 mm.

Labial palpus sordid white. Antenna sordid white with faint grayish annulations; scape sordid white. Head sordid white with slightly yellowish tinge. Thorax sordid white, suffused grayish fuscous anteriorly; base of tegula grayish fuscous; male with thornlike processes from metascutum. Forewing ground color sordid white; base of costa fuscous; at basal third a fuscous transverse fascia; at apical third, from costa to tornus, a fuscous longitudinal bar, the latter extending to apex; base of dorsum narrowly fuscous; cilia grayish. Hindwing grayish fuscous; cilia a shade lighter. Foreleg sordid white overlaid fuscous on outer side; midleg sordid white; hindleg sordid white; tibia with ill-defined grayish fuscous blotch on outer side distally. Abdomen grayish fuscous dorsally, sordid white ventrally. Posterior edge of 7th tergum of male with U-shaped excavation.

Male genitalia slide USNM 24942. Harpe base moderately broad, neck narrow; cucullus appreciably expanded. Brachia slender, curved, longer than tegumen. Tegumen slightly broader than long. Aedeagus about twice as long as tegumen, slightly curved, pointed; manica with sickle-shaped process dorsally.

Female genitalia slides USNM 24827, 24996. Ostium small, opening from a small dome-shaped process, this process at base of a deep, U-shaped excavation of the posterior edge of 7th sternum. Inception of ductus seminalis from posterior end of bursa copulatrix. Ductus bursae short, weak, membranous. Bursa copulatrix membranous; inner wall covered with tiny granules.

HOLOTYPE.—USNM 100790.

TYPE-LOCALITY.—Hiva Oa, Mt. Feani, 3400 ft (1036 m).

DISTRIBUTION.—Hiva Oa.

FOOD PLANT.—Unknown.

Described from the ♀ holotype (1 Mar 1968) 1♀ paratype with identical data, and 1♂ paratype, Mt. Feani, 3800 ft (1158 m), 20 Feb 1968.

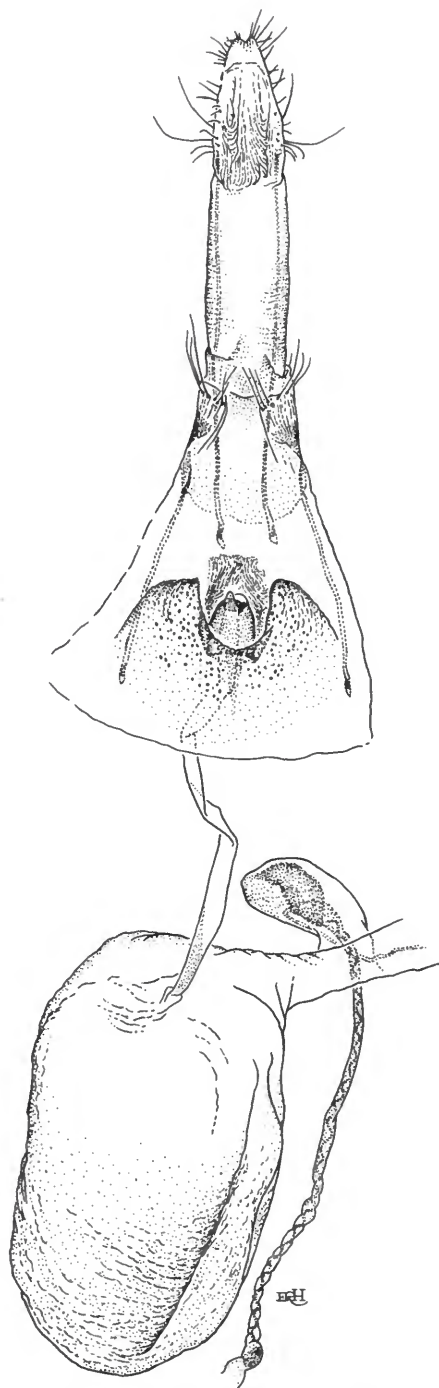


FIGURE 155.—*Asymphorodes mesoxanthus*, new species, ventral view of female genitalia.

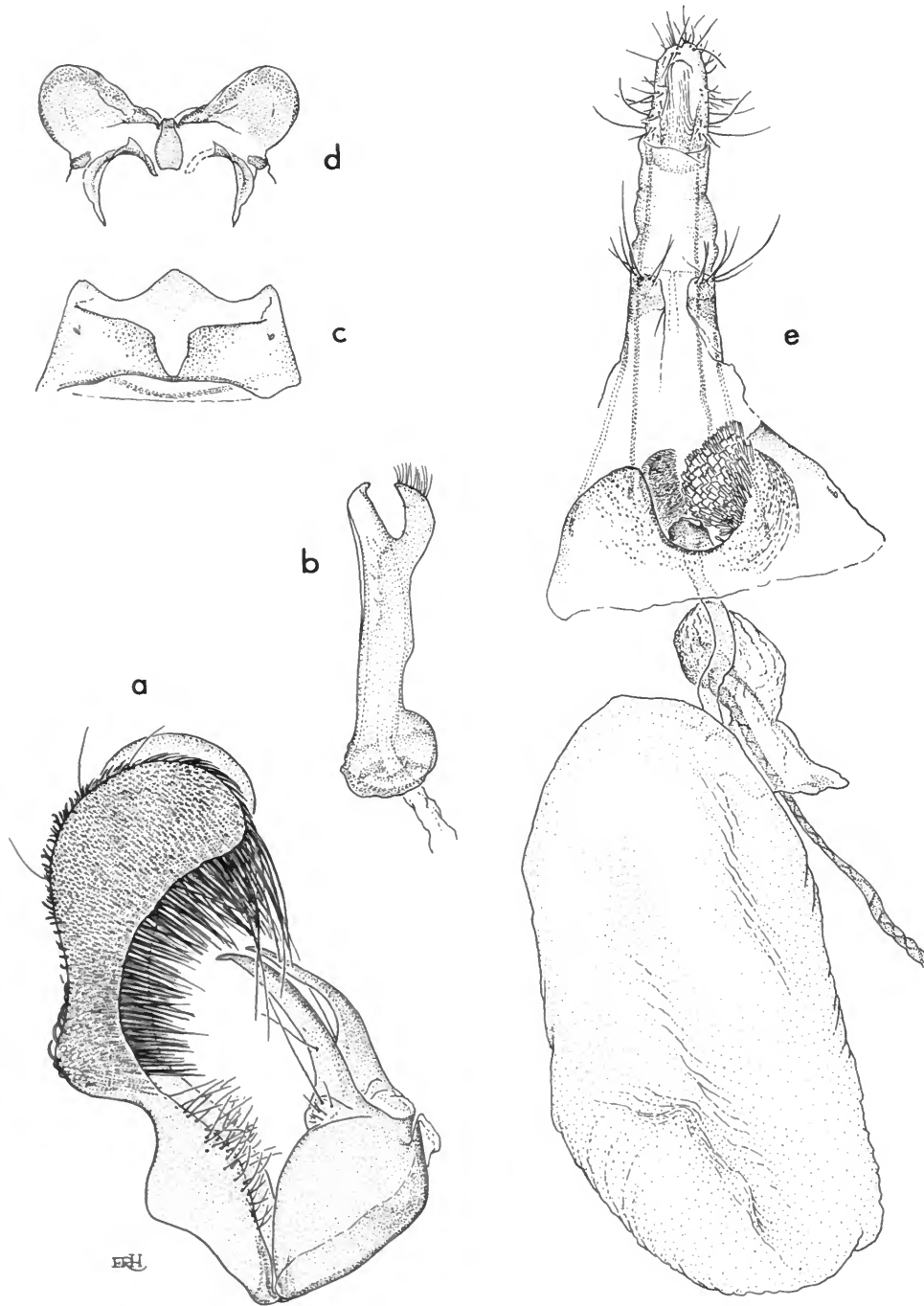


FIGURE 156.—*Asymphorodes adynatus*, new species; a, lateral aspect of male genitalia with aedeagus removed; b, aedeagus; c, 7th tergum and sternum; d, 8th sternum; e, ventral view of female genitalia.

This species is similar to *xanthostola* Meyrick in pattern, but the ground color of the forewing of *adynatus* is sordid white not "ocherous-yellow" as in the former species. However, the genitalia give adequate characters for separation.

***Asymphorodes melanosoma*, new species**

FIGURES 157, 300d

Alar expanse 12–14 mm.

Labial palpus second segment light buff; third segment almost wholly fuscous. Antenna mostly fuscous but somewhat paler distally. Head buff laterally, grayish on vertex. Thorax blackish fuscous; tegula grayish tipped; metascutum with thornlike processes. Forewing ground color blackish fuscous; from basal fifth of costa an outwardly curved white fascia reaches dorsum; from middle of costa a white transverse fascia, broadest on costa, extends to middorsum; subap-

ically, on costa, a white spot; on midtermen a tiny white spot; cilia grayish to grayish fuscous. Hindwing grayish fuscous; cilia concolorous. Fore-, mid-, and hindleg basically light buff marked with fuscous; tarsal segments conspicuously marked fuscous. Abdomen dorsally fuscous; ventrally light buff strongly suffused fuscous; 7th and 8th segments modified.

Male genitalia slide USNM 25142, 25513. Harpe broadest at base; neck rather long and slender; cucullus moderately expanded. Brachia rather stout, slightly curved; right brachium swollen beyond middle. Tegumen broader than long. Aedeagus moderately slender, nearly straight; manica with a thornlike process dorsally.

HOLOTYPE.—In the Bernice P. Bishop Museum.

TYPE-LOCALITY.—Fatu Hiva, Teavapuhiau, Oua, 750 m.

DISTRIBUTION.—Fatu Hiva.

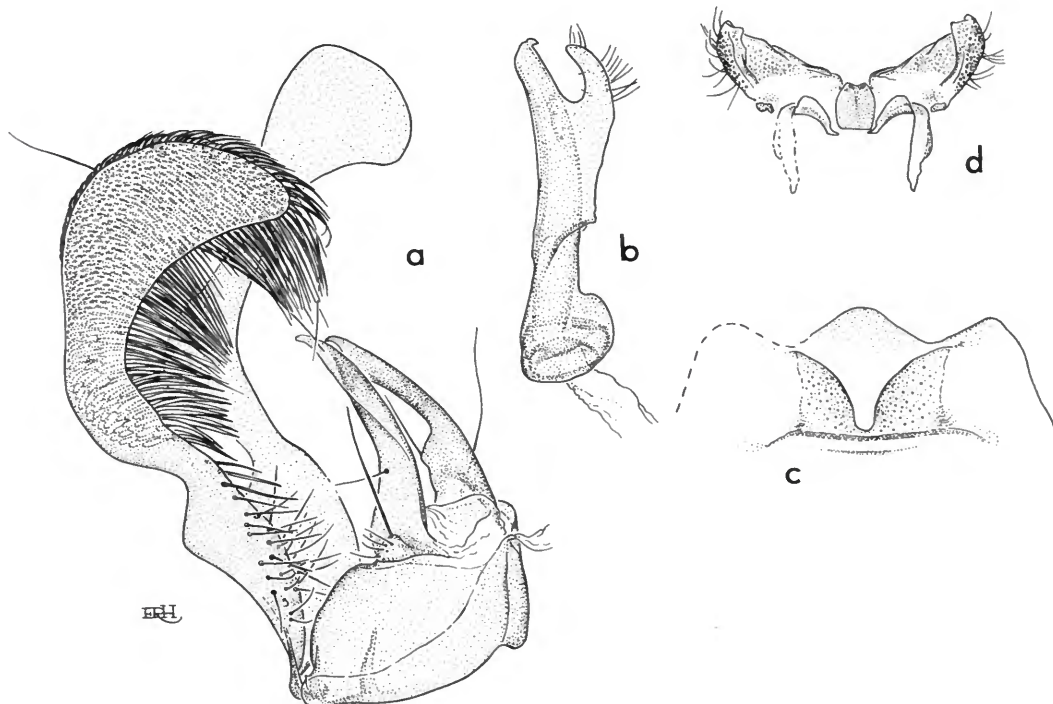


FIGURE 157.—*Asymphorodes melanosoma*, new species: a, lateral aspect of male genitalia with aedeagus removed; b, aedeagus; c, 7th tergum and sternum; d, 8th sternum.

FOOD PLANT.—Unknown.

Described from the ♂ holotype (1–3 Aug 1977, Montgomery), and 1♂ paratype with identical data.

Although *melanosoma* might at first be confused with *spintheropus* it is easily distinguished from it by the absence of the four blue metallic spots of the forewing, and by the presence of a prominent white transverse fascia from middle of costa. In addition, *melanosoma* is a larger species than *spintheropus*.

***Asymphorodes chalcocoma*, new species**

FIGURES 158, 300e

Alar expanse 10 mm.

Labial palpus pale ochraceous buff; third segment almost wholly overlaid fuscous. Antenna fuscous; scape pale ochraceous buff anteriorly. Head fuscous with brassy reflections; face pale ochraceous buff. Thorax fuscous; tegula with especially brassy hue; male with thornlike processes from metascutum. Forewing ground color fuscous, the whole with brassy hue and with no contrasting markings; cilia fuscous. Hindwing grayish fuscous, darker toward apex; cilia concolorous. Foreleg light buff; tibia and tarsal segments fuscous on outer side; midleg similar; hindleg light buff; tibia brown on outer side; tarsal segments fuscous on outer side. Abdomen fuscous dorsally; light buff ventrally; 7th and 8th segments of male modified.

Male genitalia slide USNM 25133. Harpe broad basally; neck slender, short; cucullus moderately expanded. Brachia unequal, the right brachium longer than the left, the former long and crooked, the left short and curved. Tegumen shorter than wide. Aedeagus about twice the length of tegumen; manica with digital dorsal process.

HOLOTYPE.—In the Bernice P. Bishop Museum.

TYPE-LOCALITY.—Hiva Oa, Ootua, 800 m.

DISTRIBUTION.—Hiva Oa.

FOOD PLANT.—Unknown.

Described from the unique ♂ holotype (29–30 Jul 1977, Montgomery).

Except for size, *chalcocoma*, is almost indistinguishable superficially from *porphyryarcha*. The former, however, is smaller than the latter and the scape of *chalcocoma* is pale ochraceous buff anteriorly. The labial palpus and the legs of *porphyryarcha* are much darker than those of *chalcocoma*.

***Asymphorodes oculisignis* Meyrick**

FIGURES 159, 300f,g

Asymphorodes oculisignis Meyrick, 1934c:349.—Clarke, 1955 [1955–1970]:223.

Male genitalia slides USNM 24733, 24801. Harpe broad; neck rather elongate; cucullus broadly expanded. Brachia rather slender, slightly longer than base of harpe. Tegumen shorter than broad. Aedeagus slender, curved; manica with a large flattened distally dilated hook dorsally.

Female genitalia slide USNM 24749. Ostium emerging from a large, sclerotized structure; lamella postvaginalis a large granular area. Inception of ductus seminalis from posterior end of bursa copulatrix. Ductus bursae from posterior end of bursa copulatrix. Bursa copulatrix membranous.

HOLOTYPE.—In the Bernice P. Bishop Museum.

TYPE-LOCALITY.—Hiva Oa, Temetiu Summit, 3900 ft (1189 m).

DISTRIBUTION.—Hiva Oa.

I have examined 25 specimens as follows:

Hiva Oa: Mt. Feani 3400 ft (1036 m), 1 Mar 1968, 5♂, 17♀; and 3800 ft (1158 m), 20 Feb 1968, 1♂, 1♀. Ootua, 800 m, 27–30 Jul 1977, 1♂ (Montgomery).

FOOD PLANT.—Unknown.

Although similar to *valligera*, *oculisignis* can be distinguished from the former by its spotted pattern.

This species, also, has thornlike processes from

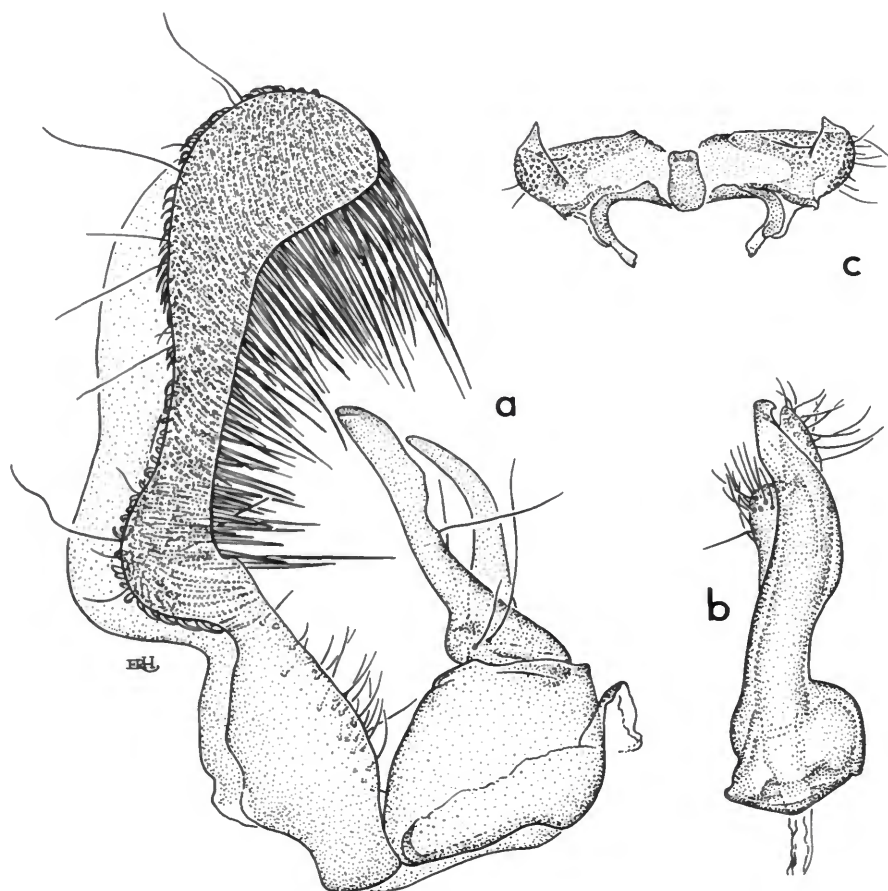


FIGURE 158.—*Asymphorodes chalcocoma*, new species: *a*, lateral aspect of male genitalia with aedeagus removed; *b*, aedeagus; *c*, 8th sternum.

the metascutum. Eighth sternum consisting of a pair of fleshy flaps.

The altitude of Temetiu Summit, given as 3900 ft, is probably close, but as late as 1968, during our visit, the exact elevation was not known.

***Asymphorodes homosoma*, new species**

FIGURES 160, 300*h*

Alar expanse 8–10 mm.

Labial palpus fuscous; third segment with white longitudinal line posteriorly. Antenna fus-

cous with narrow white annulations. Head, thorax, and forewing ground color fuscous; subapically on costa a sordid whitish wedge-shaped spot; cilia gray. Hindwing and cilia gray. Foreleg, midleg, and hindleg grayish, variously marked fuscous. Abdomen grayish fuscous dorsally, pale grayish ventrally.

Male genitalia slide USNM 24739. Harpe broad basally; neck strongly constricted; cucullus slightly narrower before middle than at the ends. Brachia of nearly equal length, strongly curved. Tegumen shorter than broad. Aedeagus slender, curved; manica with prominent keel dorsodistally with setae on outer edge.

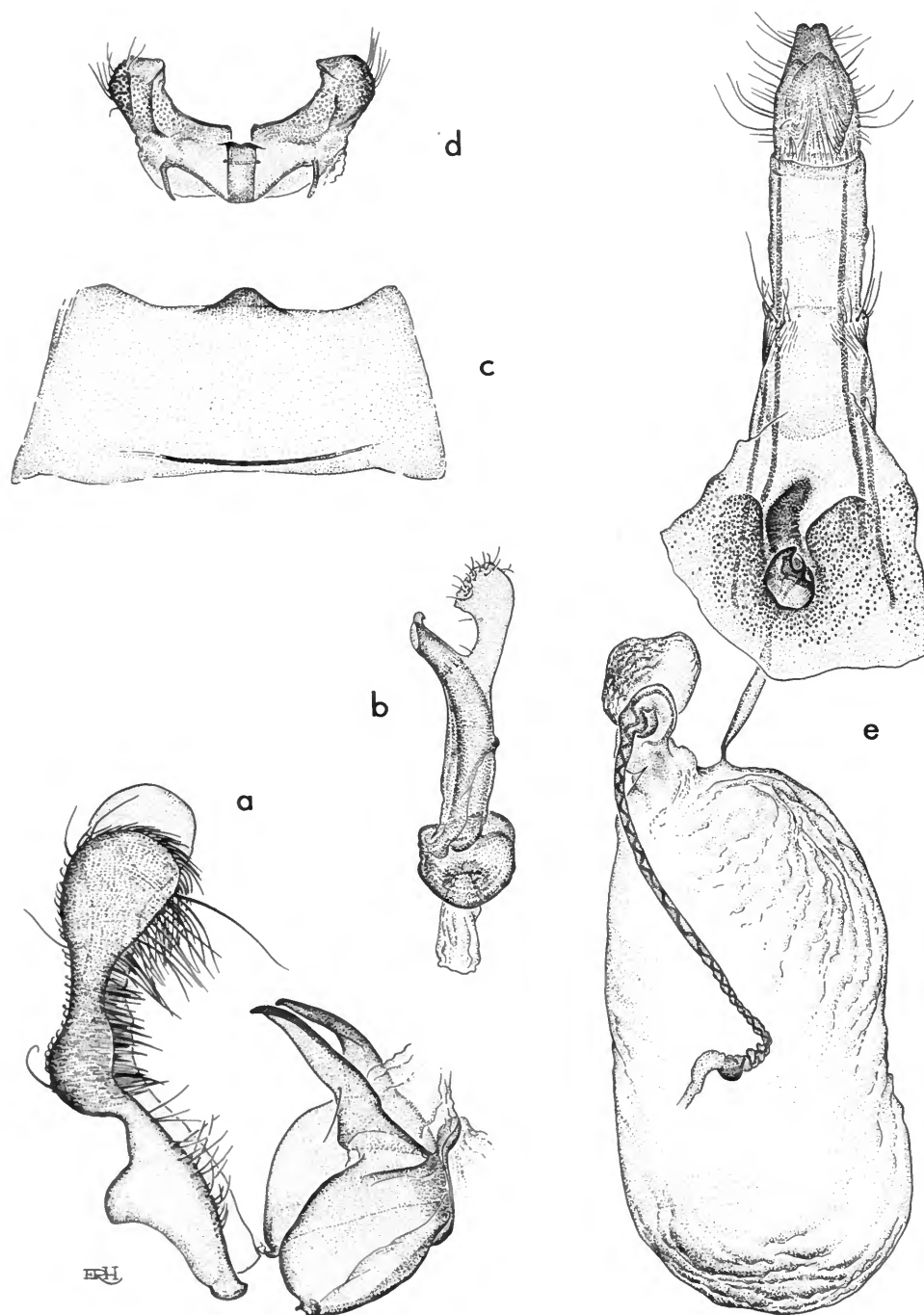


FIGURE 159.—*Asymphorodes oculisignis* Meyrick: *a*, lateral aspect of male genitalia with aedeagus removed; *b*, aedeagus; *c*, 7th sternum; *d*, 8th sternum; *e*, ventral view of female genitalia.

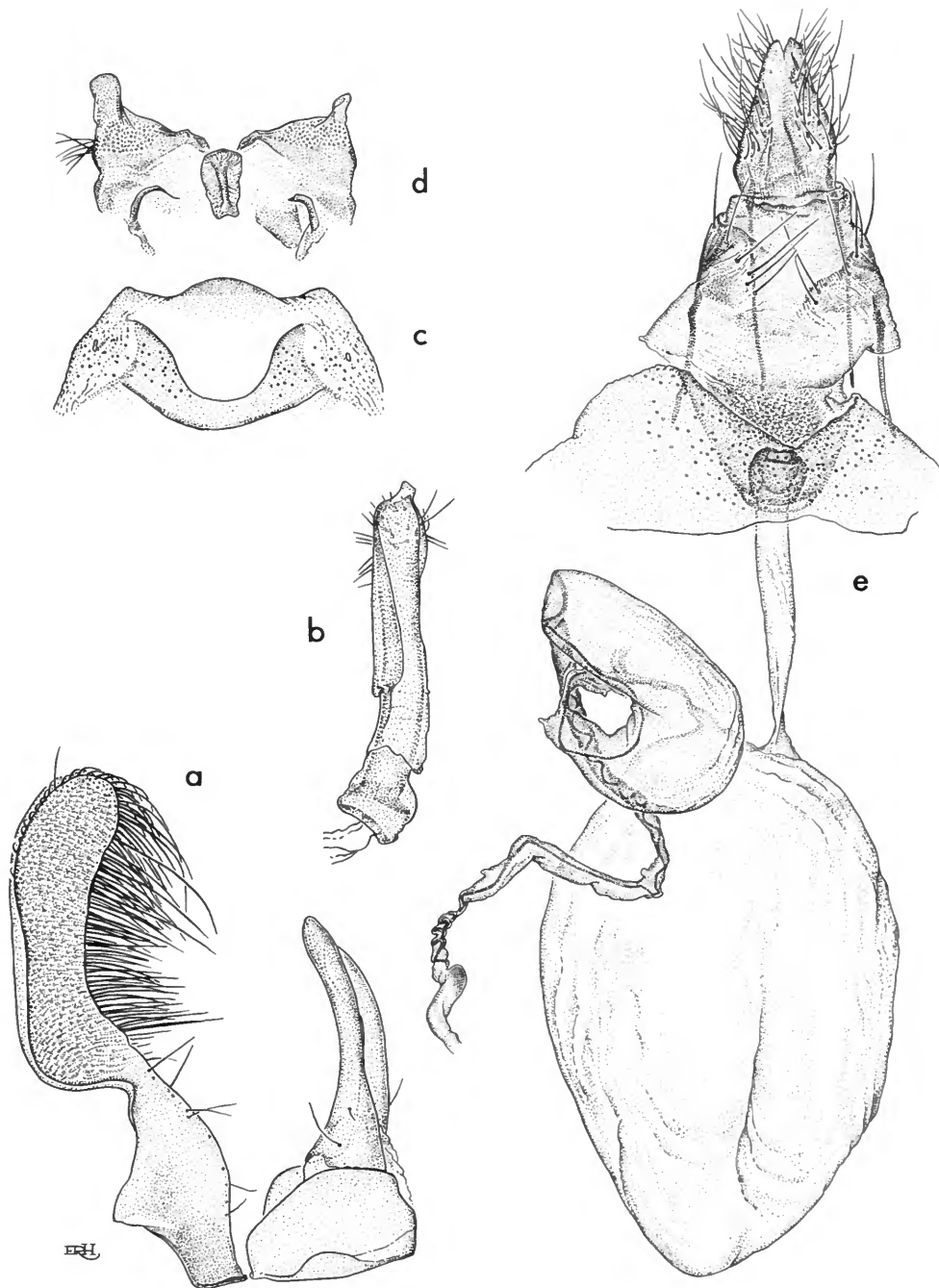


FIGURE 160.—*Asymphorodes homosoma*, new species; *a*, lateral aspect of male genitalia with aedeagus removed; *b*, aedeagus; *c*, 7th tergum and sternum; *d*, 8th sternum; *e*, ventral view of female genitalia.

Female genitalia slides USNM 24737, 24740. Ostium round, set deeply in a cavity in the posterior edge of the seventh sternum; the edges of the cavity are broadly sclerotized; lamella postvaginalis finely granular. Inception of ductus seminalis from posterior end of bursa copulatrix. Ductus bursae short, slender, membranous. Bursa copulatrix membranous.

HOLOTYPE.—USNM 100792.

TYPE-LOCALITY.—Nuku Hiva, Taiohae.

DISTRIBUTION.—Nuku Hiva.

FOOD PLANT.—Unknown.

Described from the ♂ holotype (4 Feb 1968) and 1♂ and 10♀ paratypes all from the type locality (16 Jan to 4 Feb 1968).

Although *homosoma* is, for all practical purposes, superficially indistinguishable from *acerbus*, the two species can be distinguished easily on genitalia and especially by the development of the male posterior terga and sterna (Figures 160, 189).

When Meyrick described *acerbus* he had two specimens, one from Nuku Hiva and one from

Fatu Hiva. Undoubtedly the Nuku Hiva specimen belongs to *homosoma*.

In certain light the forewing, head and thorax of *homosoma* give a bronzy reflection.

Asymphorodes bipunctatus, new species

FIGURES 161, 301a

Alar expanse 9–10 mm.

Labial palpus pale yellow orange. Antenna scape deep chrome with some fuscous scaling; flagellum fuscous. Head deep chrome. Thorax deep chrome; tegula concolorous; thorax of male with thornlike processes from metascutum. Forewing ground color deep chrome; extreme costal edge blackish fuscous to just before apex; from base of wing, just inside dorsum, a blackish fuscous streak extends almost to middle of wing; at basal third an ill-defined buff fascia; at outer three-fifths, just inside costa, a very pale buff triangular mark; from tornus to about base of vein 7, then angled to costa, an ill-defined, narrow buff line; in center of cell a black dot nar-

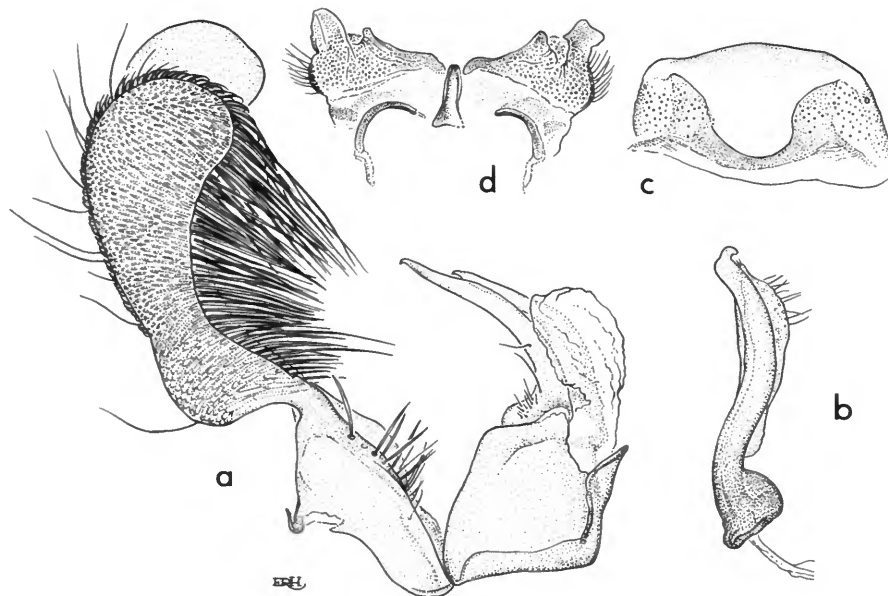


FIGURE 161.—*Asymphorodes bipunctatus*, new species: a, lateral aspect of male genitalia with aedeagus removed; b, aedeagus; c, 7th tergum and sternum; d, 8th sternum.

rowly edged with buff; at end of cell a similar spot; along termen three very small, faintly indicated buff spots; underside of forewing blackish fuscous; cilia on outer part of dorsum and tornus, grayish fuscous; cilia along termen deep chrome. Hindwing fuscous; cilia grayish fuscous. Foreleg buff, all segments blackish fuscous on outer side; midleg similar but not so heavily marked; hindleg buff; tarsal segments grayish. Abdomen fuscous dorsally, buff ventrally. For modifications of posterior segments see figures.

Male genitalia slide USNM 24802. Harpe broad basally; neck extremely narrow, remainder of harpe broadened toward cucullus. Tegumen longer than broad. Aedeagus long and slender, slightly S-shaped, with small, but distinct hook distally; manica with a shallow, elongate keel dorsally.

HOLOTYPE.—USNM 100794.

TYPE-LOCALITY.—Nuku Hiva, Tapuaooa, 2500 ft (762 m).

DISTRIBUTION.—Nuku Hiva.

FOOD PLANT.—Unknown.

Described from the ♂ holotype (30 Jan 1968) and 9♂ paratypes, all with identical data.

The only species with which *bipunctatus* might be confused is the new species, *leptotes*. In *bipunctatus* the basal longitudinal streak lies between the dorsum and the fold; in *leptotes* the longitudinal line along the fold, is much stronger, and longer. The male posterior abdominal segments of the two are distinct.

Asymphorodes coesyrius Meyrick

FIGURES 162, 301b

Asymphorodes coesyrius Meyrick, 1929a:498; 1934c:349.—Clarke, 1955 [1955–1970]:95.

Male genitalia slides USNM 24638, 24686. Harpe broad at base, slender at neck, remainder sickle-shaped. Brachia long and slender. Tegumen shorter than broad. Aedeagus slender, curved distad and with small hook dorsally at apex; manica with a long, curved dorsal process.

Female genitalia slides USNM 24639, 24687. Ostium an inverted cone from base of deep cleft

in posterior margin of 7th segment. Inception of ductus seminalis from posterior end of bursa copulatrix. Ductus bursae rather short, membranous. Bursa copulatrix membranous with slight, fine granulation in anterior half.

ORIGINAL MATERIAL.—♀, 9–10 mm. Marquesas, Nuku Hiva, Hiva Oa, Tahuata, to 300 feet., December, January, at light; 9 ex."

LECTOTYPE.—"Type, H.T." "Hiva Oa, Marquesas, at light, 300 ft., . . . 2.1.25, St. George Expedn., C.L. Collenette" "Brit. Mus. 1925–488.-P.535" "*Asymphorodes coesyrius* Meyr., Tr. Ent. Sec. Lond. 76, p. 498(1929)." "Type ♀."

Lectotype ♀. "*Asymphorodes coesyrius* Meyr., teste K. Sattler, 1980." Lectotype hereby designated.

Lectotype is in the British Museum (Natural History).

TYPE-LOCALITY.—Hiva Oa.

DISTRIBUTION.—According to our series of 96 specimens the distribution is as follows: Nuku Hiva: Taiohae, 5 Feb 1968, 1♂. Hiva Oa: Atuona, 12 Feb to 8 Mar 1968, 33♂, 48♀; Tahauku, Em. 12 and 20 Mar 1968, 2♀. Fatu Hiva: Omoa, 16 Mar to 5 Apr 6♂, 2♀; Tahuna, 2000 ft (610 m), 27 Mar 1968, 1♂, 2♀; Mt. Upe, 2025 ft (617 m), 3 Apr 1968, 1♂.

FOOD PLANTS.—*Tamarindus indica* L., *Eugenia uniflora* L.

As the records show, this attractive species is common and widespread.

We were successful in rearing this species from *Tamarindus indica* where the larva cuts off some of the leaflets and ties these to living leaflets and then feeds in this mass. The larva feeds in both the dead and living tissue where it is found in association with *Cryptoblabes ardescens* (Meyrick). Pupation occurs between two leaflets. The larva of *coesyrius* is found in a similar situation on *Eugenia uniflora*. The moths were also beaten from this plant.

Asymphorodes ergodes Meyrick

FIGURES 163, 301c

Asymphorodes ergodes Meyrick, 1934c:351.—Clarke, 1955 [1955–1970]:131.

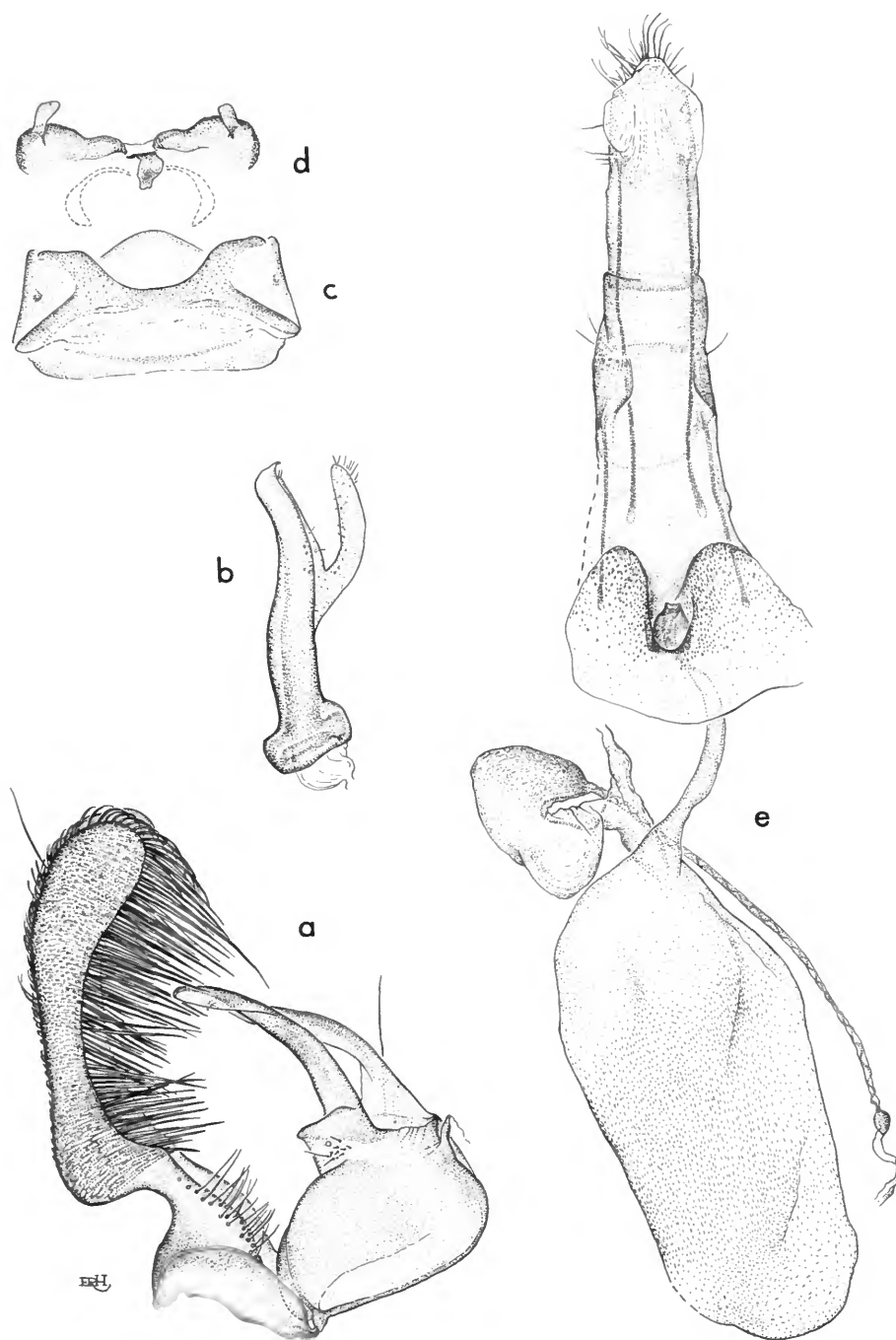


FIGURE 162.—*Asymphorodes coesyrius* Meyrick: *a*, lateral aspect of male genitalia with aedeagus removed; *b*, aedeagus, *c*, 7th tergum and sternum; *d*, 8th sternum; *e*, ventral view of female genitalia.

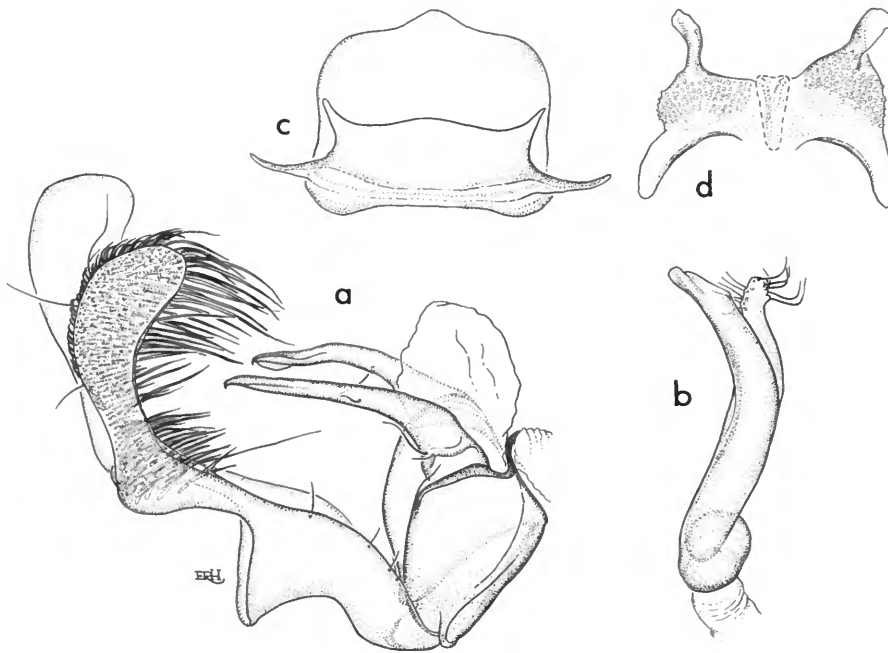


FIGURE 163.—*Asymphorodes ergodes* Meyrick: *a*, lateral aspect of male genitalia with aedeagus removed; *b*, aedeagus; *c*, 7th tergum and sternum; *d*, 8th sternum.

Male genitalia slide USNM 24232. Harpe broad basally, angulated beyond narrow neck; cucullus moderately expanded. Brachia slender, curved, sharply pointed. Tegumen broader than long. Aedeagus slender, curved.

HOLOTYPE.—In the Bernice P. Bishop Museum.

TYPE-LOCALITY.—Hiva Oa, Avaoa Valley.

DISTRIBUTION.—Hiva Oa.

FOOD PLANT.—Unknown.

As far as I am able to ascertain, the holotype is the only known specimen. The lateral flaps of 8th sternum have a digitate process dorsoposteriorly.

***Asymphorodes remigiata*, new species**

FIGURES 164, 301d

Alar expanse 12–14 mm.

Labial palpus buff; second segment suffused grayish on outer side; third segment fuscous ex-

cept base. Antenna creamy white shading to pale buff distally. Head white. Thorax white; tegula fuscous. Forewing ground color fuscous; on costa, slightly beyond middle, a very small creamy white or light buff streak; at apical fourth of costa a small similarly colored wedge-shaped mark; at end of cell a small ill-defined mark slightly darker than ground color; dorsum creamy white shading to light buff at tornus, or pale buff for entire length of dorsum; cilia pale grayish with slight yellowish tinge or light buff beyond tornus. Hindwing grayish fuscous; cilia somewhat paler. Foreleg creamy white; fuscous on outer side; midleg creamy white with faint grayish markings on outer side; hindleg creamy white, marked with grayish fuscous on outer side. Abdomen grayish fuscous dorsally; ventrally creamy white suffused grayish; anal tuft buff. (For modification of eighth sternum, see Figure 164.)

Male genitalia slide USNM 24690. Harpe

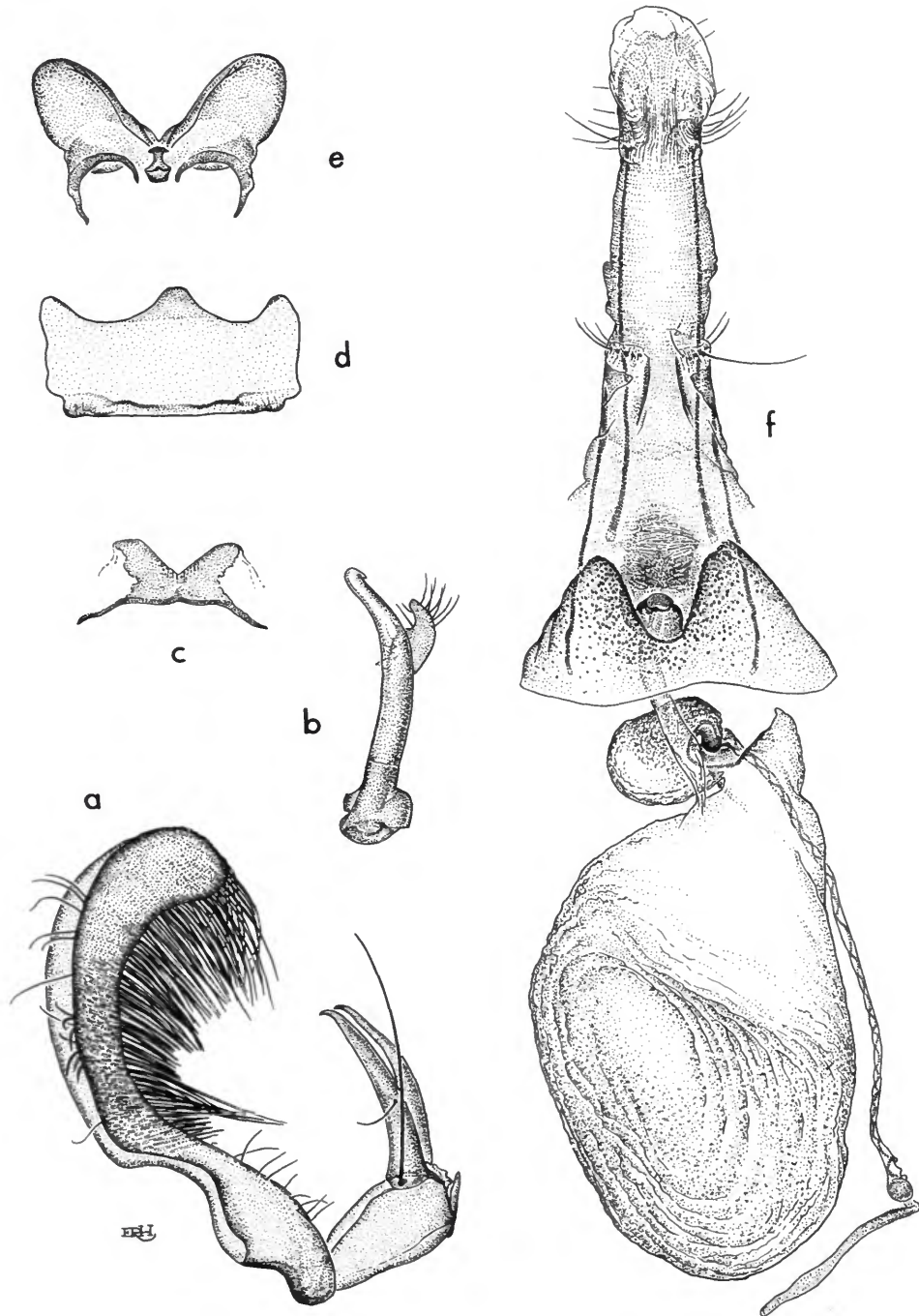


FIGURE 164.—*Asymphorodes remigiata*, new species: *a*, lateral aspect of male genitalia with aedeagus removed; *b*, aedeagus; *c*, 7th tergum; *d*, 7th sternum; *e*, 8th sternum; *f*, ventral view of the female genitalia.

long, constricted beyond base, then strongly curved; cucullus rounded. Brachia of about equal length, curved, slightly expanded distally; from base of each brachium a very long slender seta. Tegumen about as broad as long. Aedeagus rather stout, curved; manica expanded distally.

Female genitalia slide USNM 24691. Ostium small, round, slightly protruding, emerging from a deep, broad cleft in posterior edge of seventh sternum. Inception of ductus seminalis from posterior end of bursa copulatrix. Ductus bursae membranous, shorter than bursa copulatrix. Bursa copulatrix membranous posteriorly, rugose anteriorly.

HOLOTYPE.—USNM 100796.

TYPE-LOCALITY.—Nuku Hiva, Taiohae.

DISTRIBUTION.—Nuku Hiva.

FOOD PLANT.—Unknown.

Described from the ♂ holotype (17 Jan 1968), 12♂ and 8♀ paratypes as follows: Nuku Hiva: Tunoa Ridge, 2900 ft (884 m), 23 Jan 1968, 5♂, 2♀; Tapuaooa, 2500 ft (762 m), 30 Jan 1968, 1♂; Pakiu Valley, 1800 ft (548 m), 17–28 Jan 1968, 6♂, 6♀.

Although similar to *regina*, new species, *remigiata* is a smaller insect that lacks the grayish fuscous median area of the thorax, and the antennae shade to yellowish or pale buff distally. The genitalia are markedly different as can be seen by a comparison of the figures.

Asymphorodes emphereia, new species

FIGURES 165, 301e

Alar expanse 14 mm.

Labial palpus cream color. Antenna buff. Head and thorax buff. Forewing ground color whitish; extreme base of costa and basal angle grayish fuscous; from slightly beyond middle of costa to middle of dorsum an irregular grayish fuscous fascia, broadest at middle; on tornus a grayish fuscous shade extending outwardly to costa, slightly before apex, and with a median extension of the grayish fuscous shade to apex; cilia grayish fuscous at tornus but buff along

termen. Hindwing very pale grayish, darker at apex; cilia concolorous. Foreleg buff; tibia and tarsal segments strikingly black on outer side; midleg buff; tibia with small grayish spot on outer side distally; hindleg buff; tibia with fuscous spot distally and three fuscous dashes on tarsal segments. Abdomen buff ventrally, fuscous dorsally; 7th tergum and sternum, and 8th sternum modified (Figure 165c,d).

Male genitalia slide USNM 24826. Harpe broad basally, neck gently narrowed; cucullus rather strongly expanded. Tegumen much shorter than wide. Aedeagus strongly S-shaped with small, sharp hook distally; manica with a long, curved finger-like projection dorsally.

HOLOTYPE.—USNM 100795.

TYPE-LOCALITY.—Hiva Oa, Mt. Feani, 2400 ft (731 m).

DISTRIBUTION.—Hiva Oa.

FOOD PLANT.—Unknown.

Described from the unique ♂ holotype (1 Mar 1968).

Although widely different in appearance, *emphereia* is closely related to *regina*, new species, as is evident from the modifications of the 7th terga and sterna and the 8th sterna of the two species.

In superficial appearance, *emphereia* is similar to *brevimacula*, new species, but it is a larger insect.

Asymphorodes regina, new species

FIGURES 166, 301f

Alar expanse 17–18 mm.

Labial palpus cream white; second segment with longitudinal grayish fuscous streak on outer side; third segment grayish fuscous anteriorly. Antenna shaft buff; scape cream white. Head cream white except median dorsal streak grayish fuscous. Thorax cream white; tegula grayish fuscous. Forewing ground color grayish fuscous; costa cream white with slender longitudinal grayish fuscous streak inside extreme edge; dorsum cream white; at end of cell a suffused fuscous

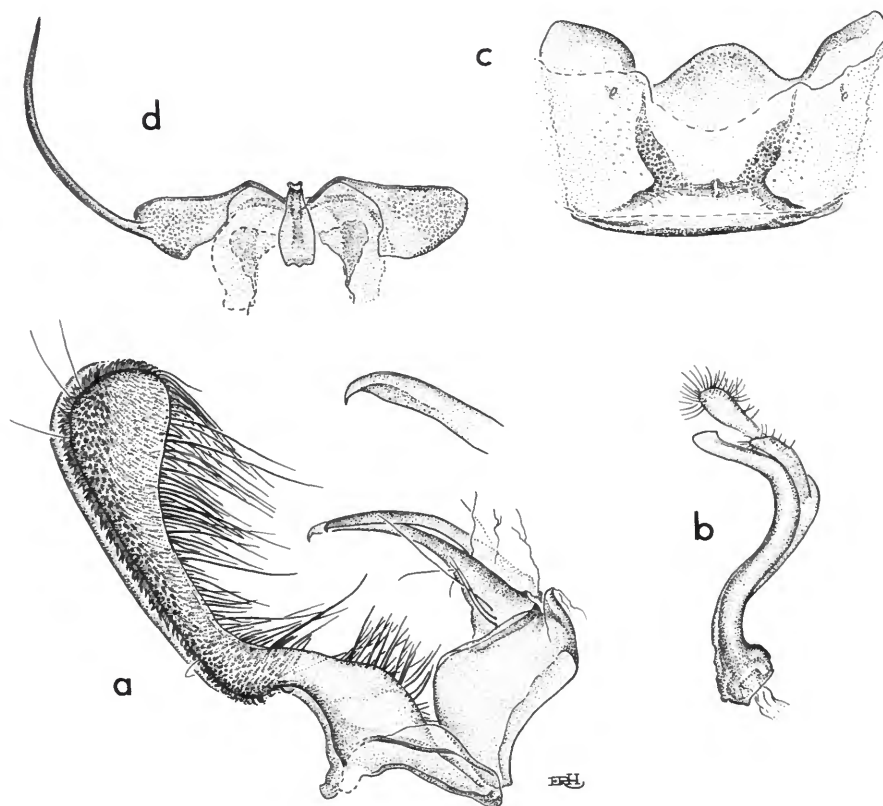


FIGURE 165.—*Asymphorodes emphereia*, new species: *a*, lateral aspect of male genitalia with aedeagus removed and detail of brachium above; *b*, aedeagus; *c*, 7th tergum and sternum; *d*, 8th sternum.

spot; in middle of cell a similarly colored, larger oval spot; cilia grayish fuscous. Hindwing costa and apical third grayish fuscous, basal two-thirds much paler; cilia grayish. Foreleg fuscous on outer side, cream white on inner side; midleg cream white; tibia with slight grayish suffusion on outer side; tarsal segments with faint grayish streaks; hindleg cream white; tarsal segments with faint grayish streaks. Abdomen grayish fuscous dorsally; cream white ventrally; eighth sternum clothed with long, coarse scales, forming a prominent anal tuft. (For seventh tergum and eighth sternum, see Figure 166*d,e*.)

Male genitalia slides USNM 24688, 24689. Harpe four times as long as tegumen; abruptly

narrowed slightly beyond base; cucullus greatly expanded. Brachia about equal in length, curved, pointed, with few tiny teeth on ventral surface distally. Tegumen slightly longer than wide. Aedeagus slender, S-shaped; manica with large dorsal keel.

HOLOTYPE.—USNM 100797.

TYPE-LOCALITY.—Fatu Hiva, Tahuna, 2000 ft (610 m).

DISTRIBUTION.—Fatu Hiva.

FOOD PLANT.—Unknown.

Described from the ♂ holotype (27 Mar 1968) and 1♂ paratype with identical data.

This species resembles *cirsodes* but is a much larger species with pure pale buff antenna, not

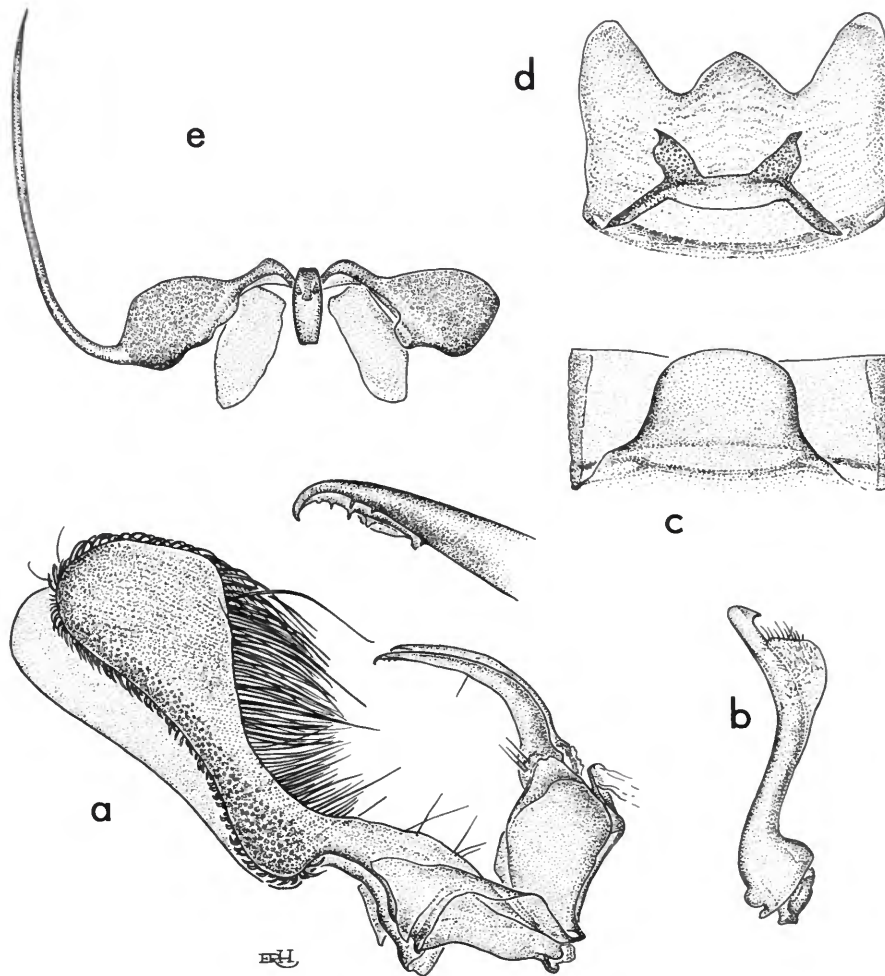


FIGURE 166.—*Asymphorodes regina*, new species: *a*, lateral view of male genitalia with aedeagus removed and detail of brachium above; *b*, aedeagus; *c*, 6th tergum and sternum; *d*, 7th tergum and sternum; *e*, 8th sternum.

marked with fuscous as in *cirsodes*.

Unfortunately, the female of *regina* is unknown.

Asymphorodes sphenocopa Meyrick

FIGURES 167, 301g,h

Asymphorodes sphenocopa Meyrick, 1929a:449.—Clarke, 1955 [1955–1970]:290.

Male genitalia slide USNM 24929. Harpe broad basally forming a short, narrow neck distad; cucullus moderately expanded. Brachia very broad basally; right brachium very broad and flattened distally (not apparent in figure). Tegumen broader than long. Aedeagus curved, moderately stout; manica with prominent dorsal keel.

Female genitalia slides USNM 24930, 24931. Ostium small, emerging from a dome-shaped structure situated at the base of the deep

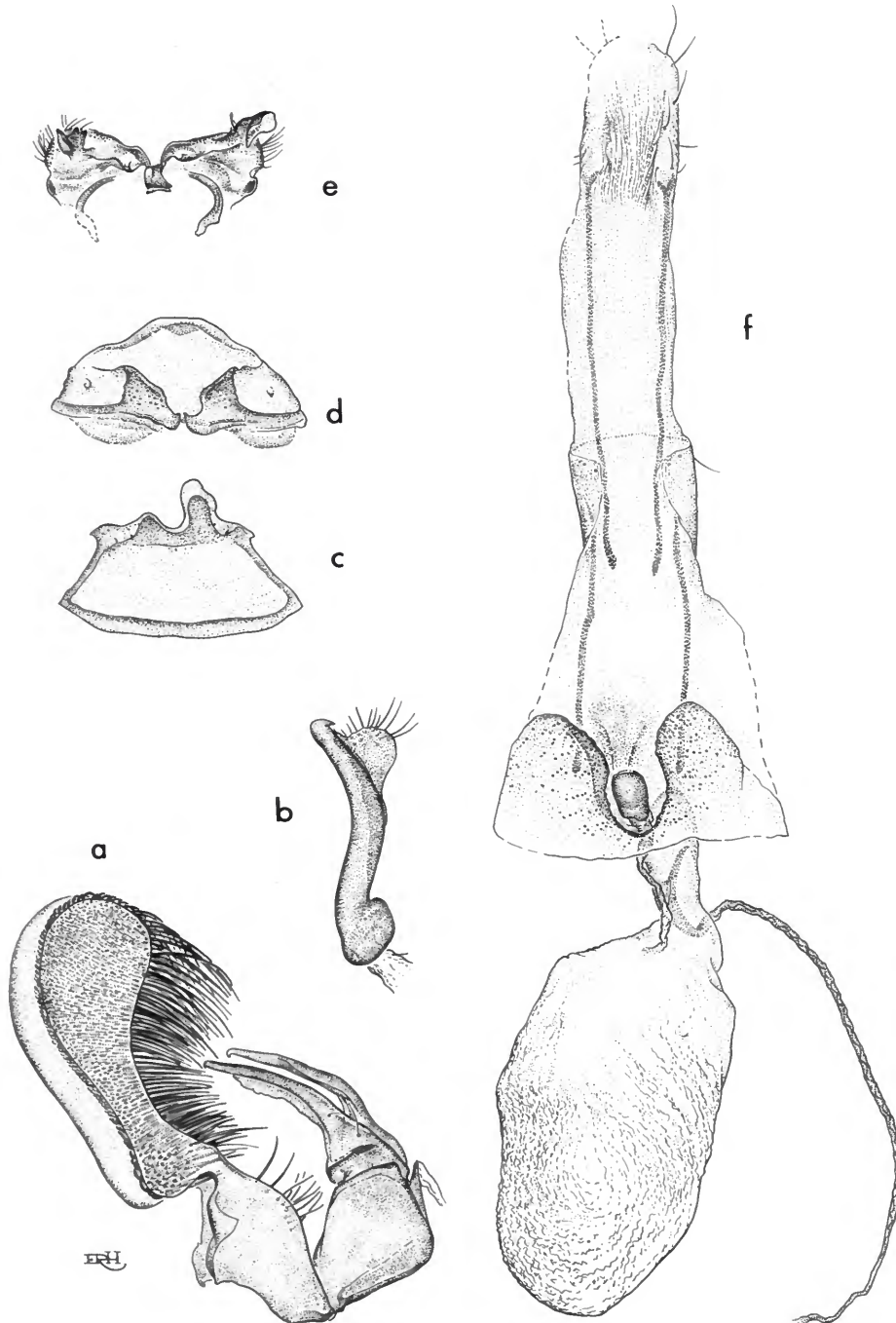


FIGURE 167.—*Asymphorodes sphenocopa* Meyrick: *a*, lateral aspect of male genitalia with aedeagus removed; *b*, aedeagus; *c*, 6th tergum; *d*, 7th tergum and sternum; *e*, 8th sternum; *f*, ventral view of female genitalia.

U-shaped excavation in the posterior margin of the 7th sternum. Inception of ductus seminalis from posterior end of bursa copulatrix. Ductus bursae very slender, membranous. Bursa copulatrix membranous; spiculate in anterior half. Signum absent.

HOLOTYPE.—In the British Museum (Natural History).

TYPE-LOCALITY.—Nuku Hiva, 200 ft (61 m).

DISTRIBUTION.—Nuku Hiva.

The series before me consists of the following 166 specimens. Nuku Hiva: Taiohae, 14 Jan to 6 Feb 1968, 39♂, 121♀; Pakiu Valley, 1800 ft (548 m), 19 Jan 1968, 4♂; Tunoa Ridge, 2900 ft (884 m), 23 Jan 1968, 2♂.

FOOD PLANT.—Unknown.

The great preponderance of the above series was collected near sea level, as were the original specimens.

The males of this species possess the prominent thornlike structures of the metascutum.

Asymphorodes poliopterus, new species

FIGURES 168, 302a

Alar expanse 7–10 mm.

Labial palpus cream white; second segment lightly suffused fuscous on outer side; third segment lightly infuscated toward apex. Antenna in male, cream white, darker toward apex and in some specimens fuscous distally; in female white and fuscous annulated. Head cream white; in some specimens slightly suffused fuscous. Thorax cream white; tegula fuscous. Forewing ground color grayish fuscous; dorsum narrowly cream white; at end of cell a fuscous spot; cilia buff with scattered fuscous cilia mixed toward apex. Hindwing pale gray, slightly darker toward apex; cilia buff. Foreleg buff, strongly marked fuscous on outer side; midleg similar, but only tarsal segments marked strongly; hindleg buff; tibia with fuscous dash on outer side distally; tarsal segments spotted fuscous. Abdomen fuscous dorsally; ventrally whitish suffused fuscous; abdominal segments 6, 7 and 8 strongly modified (Figure 168c–e).

Male genitalia slides USNM 24855, 24856, 24910, 24911, 24912, 24913, 24915. Harpe dilated basally; neck very slender, short; cucullus slightly dilated distally. Brachia strongly curved basally, sharply pointed; right brachium longer than left. Tegumen shorter than broad. Aedeagus S-shaped, slender; manica with a thickened keel dorsolaterally.

Female genitalia slides USNM 24815, 24857, 24909. Ostium small, round, emerging from a sclerotized domelike structure. Inception of ductus seminalis from posterior end of bursa copulatrix. Ductus bursae slender, sclerotized in posterior half. Bursa copulatrix membranous.

HOLOTYPE.—USNM 100800.

TYPE-LOCALITY.—Hiva Oa, Atuona.

DISTRIBUTION.—Hiva Oa, Nuku Hiva.

FOOD PLANT.—Unknown.

Described from the ♂ holotype (26 Feb 1968), 28♂ and 75♀ paratypes as follows. Hiva Oa: Atuona, 8 Feb to 6 Mar 1968, 23♂ and 55♀; Nuku Hiva: Taiohae, 13 Jan to 5 Feb 1968, 1♂, 15♀. Eiao, N. uplands, 400 m, 7 Aug 1977, 4♂, 5♀ (Montgomery).

Meyrick (1929a:500) described *Asymphorodes interstincta* from Fakarava, Paumotus (Tuamotus) from a single female. The present species, *poliopterus*, very closely resembles *interstincta*, and the female genitalia are similar if not identical. The type of *interstincta* was damaged by museum pests, and the female genitalia are fragmentary so no detailed comparison could be made with the genitalia of *poliopterus*. Because the female genitalia throughout the genus are very similar, it is not possible to identify *poliopterus* with *interstincta* with certainty. Hence I have described *poliopterus* as new to avoid a misidentification. *Asymphorodes poliopterus* is nearly related to *phaeochorda*.

Asymphorodes canicoma, new species

FIGURES 169, 302b

Alar expanse 8–9 mm.

Labial palpus fuscous except apex of second segment and base of third segment, sordid white.

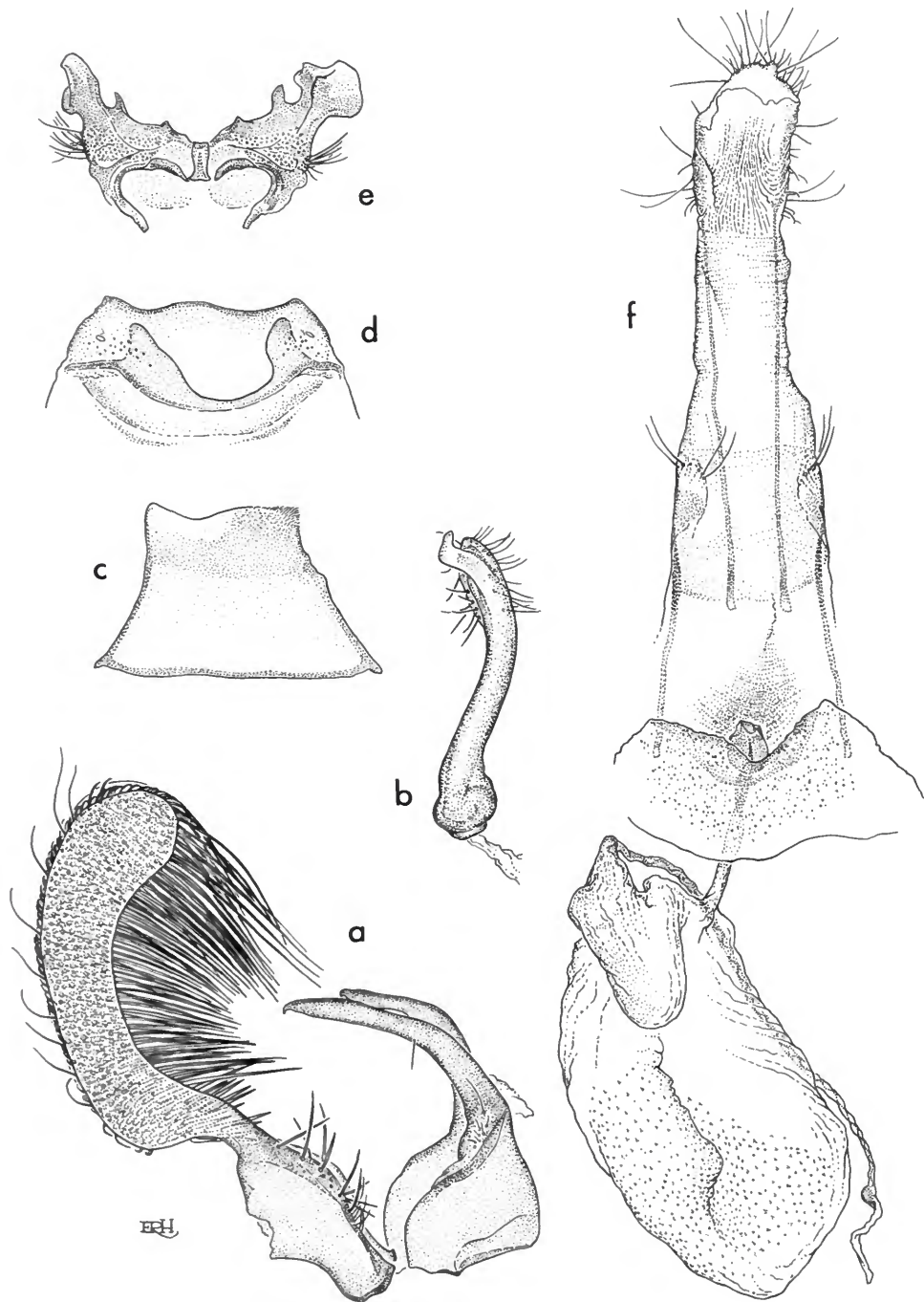


FIGURE 168.—*Asymphorodes poliopterus*, new species: *a*, lateral aspect of male genitalia with aedeagus removed; *b*, aedeagus; *c*, 6th tergum; *d*, 7th tergum and sternum; *e*, 8th sternum; *f*, ventral view of female genitalia.

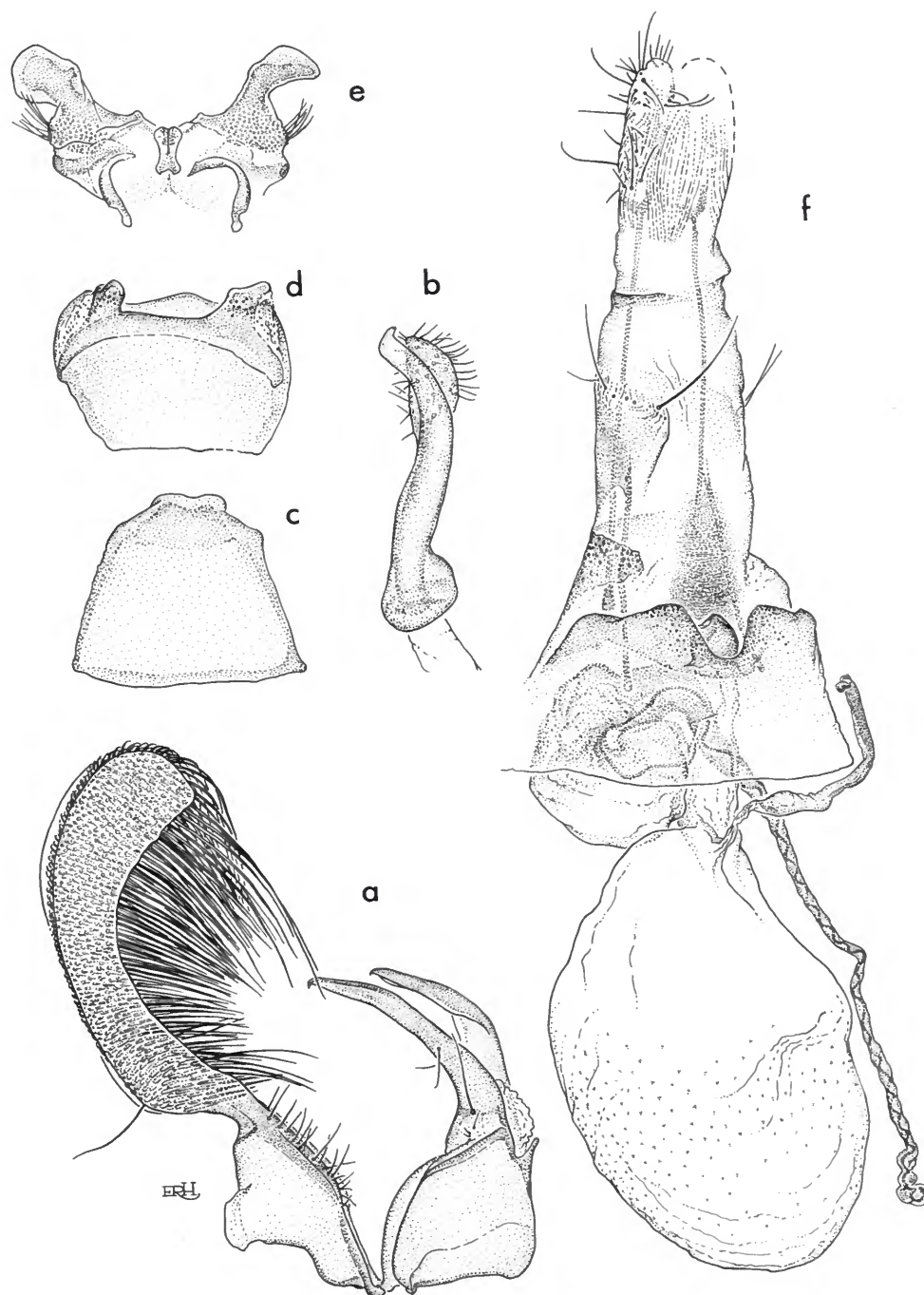


FIGURE 169.—*Asymphorodes canicoma*, new species: *a*, lateral aspect of male genitalia with aedeagus removed; *b*, aedeagus; *c*, 6th tergum; *d*, 7th tergum and sternum; *e*, 8th sternum; *f*, ventral view of female genitalia.

Antenna grayish with fuscous annulations; scape sordid white. Head sordid white with slight yellowish tinge in some specimens. Thorax fuscous; apex of tegula sordid white; metascutum of male with thornlike processes. Forewing ground color fuscous; from basal fourth of costa an outwardly oblique series of the three sordid white blotches; at middle of costa a sordid white blotch and in middle of cell a similarly colored short dash; on dorsum, before tornus, an ill-defined sordid white blotch; on termen an elongate sordid white mark; at end of cell a blackish fuscous spot narrowly surrounded by sordid white scales; cilia grayish. Hindwing grayish, darker toward apex. Foreleg sordid white heavily overlaid fuscous on outer side; midleg sordid white with three oblique fuscous marks on tibia; tarsal segments marked grayish fuscous; hindleg sordid white with two conspicuous fuscous marks on tibia; tarsal segments marked fuscous. Abdomen grayish fuscous dorsally; grayish ventrally with some sordid white at posterior margins of segments; 6th, 7th, and 8th segments of male strongly modified; posterior edge of 7th sternum of female heavily sclerotized.

Male genitalia slide USNM 24924. Harpe very broad basally, abruptly narrowed to a short, slender neck; cucullus slightly expanded distally. Brachia broad basally, curved, pointed; right brachium longer than left. Tegumen broader than long. Aedeagus rather slender, S-shaped; manica with a rounded keel dorsally.

Female genitalia slide USNM 24925. Ostium small, emerging from an oval sclerotized process. Inception of ductus seminalis from posterior end of bursa copulatrix. Ductus bursae slender, membranous. Bursa copulatrix membranous, lightly spiculate in anterior half. Signum absent.

HOLOTYPE.—USNM 100801.

TYPE-LOCALITY.—Fatu Hiva, Mt. Upe, 2025 ft (617 m).

DISTRIBUTION.—Fatu Hiva.

FOOD PLANT.—Unknown.

Described from the ♂ holotype (3 Apr 1968), 15♂ and 12♀ paratypes as follows. Fatu Hiva: Mt. Upe, 2025 ft (617 m), 3 Apr 1968, 2♂; Tahuna,

2000 ft (610 m), 27 Mar 1968, 8♂, 4♀; Omoa Valley, 5 Apr 1968, 2♂, 2♀; Mt. Teoaiua, 2000 ft (610 m), 22 Mar 1968, 3♂, 6♀.

This species is similar to *nigricornis*, new species, but is a smaller moth and lacks the discal spot in the middle of the cell. Moreover, *nigricornis* has three large and distinct yellowish costal spots absent in *canicoma*.

Asymphorodes lucidus, new species

FIGURES 170, 302c

Alar expanse 7–8 mm.

Labial palpus very light buff; second segment lightly suffused grayish on outer side; third segment grayish fuscous on outer side. Antenna drab. Head drab. Thorax drab; tegula slightly lighter distally; metascutum of ♂ with well-developed thornlike processes. Forewing ground color shining drab without markings; cilia drab. Hindwing gray; cilia lighter. Foreleg buff, marked grayish fuscous on outer side; midleg buff with slight grayish suffusion on tibia and tarsal segments; hindleg buff with grayish suffusion on outer side of tibia and tarsal segments. Abdomen fuscous dorsally; buff ventrally with grayish suffusion at middle.

Male genitalia USNM 24951. Harpe base broad, outer edge of base at right angles to the very short, narrow neck; cucullus slightly expanded. Brachia stout proximally, tapering to a sharp point. Tegumen longer than broad. Aedeagus long, slender, curved; manica with a moderately high keellike structure dorsally.

Female genitalia slide USNM 24952. Ostium emerging from a short, broad, sclerotized tube, the latter situated at the base of a very deep excavation in the 7th sternum. Inception of ductus seminalis from posterior edge of bursa copulatrix. Ductus bursae membranous, slender, from posterior end of bursa copulatrix. Bursa copulatrix membranous with slight granulation anteriorly.

HOLOTYPE.—USNM 100802.

TYPE-LOCALITY.—Hiva Oa, Atuona.

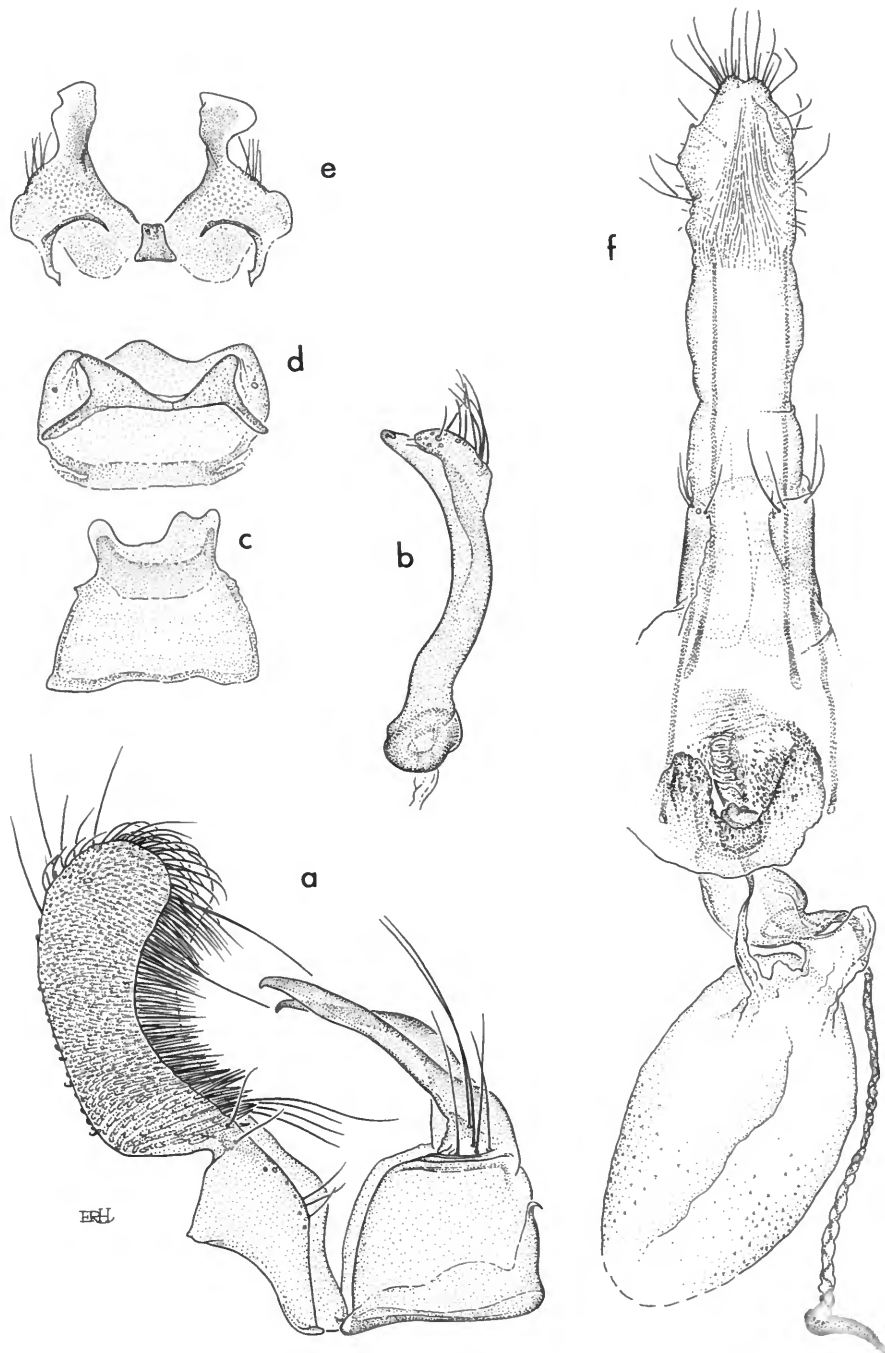


FIGURE 170.—*Asymphorodes lucidus*, new species: *a*, lateral aspect of male genitalia with aedeagus removed; *b*, aedeagus; *c*, 6th tergum; *d*, 7th tergum and sternum; *e*, 8th sternum; *f*, ventral view of female genitalia.

DISTRIBUTION.—Hiva Oa.

FOOD PLANT.—Unknown.

Described from the ♂ holotype (29 Feb 1968), 3♂ and 10♀ paratypes, all from Atuona with dates 12 Feb to 8 Mar 1968.

This unicolorous moth with a silvery sheen, appears to be closely related to *leptotes*, new species, but is a much smaller species and has an unmarked forewing; *leptotes* is a well marked moth, notably with a dark median longitudinal streak.

***Asymphorodes diffidentia*, new species**

FIGURES 171, 302d

Alar expanse 8–9 mm.

Labial palpus pale ochraceous buff. Antenna grey with slightly darker annulations, scape ochraceous buff. Head, thorax, and forewing ground color ochraceous buff; on basal angle of forewing a brown spot; cilia pale grayish to ochraceous buff. Thorax lightly infuscated. Hindwing grayish; cilia concolorous. Fore-, mid-, and hindleg pale ochraceous buff. Abdomen grayish fuscous dorsally, pale ochraceous buff ventrally.

Female genitalia slide USNM 24985. Ostium small, round, emerging from a short domelike structure, the latter situated at the base of a V-shaped excavation in the posterior margin of the 7th sternum. Inception of ductus seminalis from posterior end of bursa copulatrix. Ductus bursae membranous, from posterior end of bursa copulatrix. Bursa copulatrix membranous, finely spiculate anteriorly.

HOLOTYPE.—USNM 100803.

TYPE-LOCALITY.—Fatu Hiva, Tahuna, 2000 ft (610 m).

DISTRIBUTION.—Fatu Hiva.

FOOD PLANT.—Unknown.

Described from the ♀ holotype (27 Mar 1968) and 2♀ paratypes with identical data. One paratype is considerably darker than the holotype.

This nearly unicolorous moth is probably most nearly related to *lucidus*, new species, but because of the great similarity of the female genitalia in this genus it is difficult to be sure.

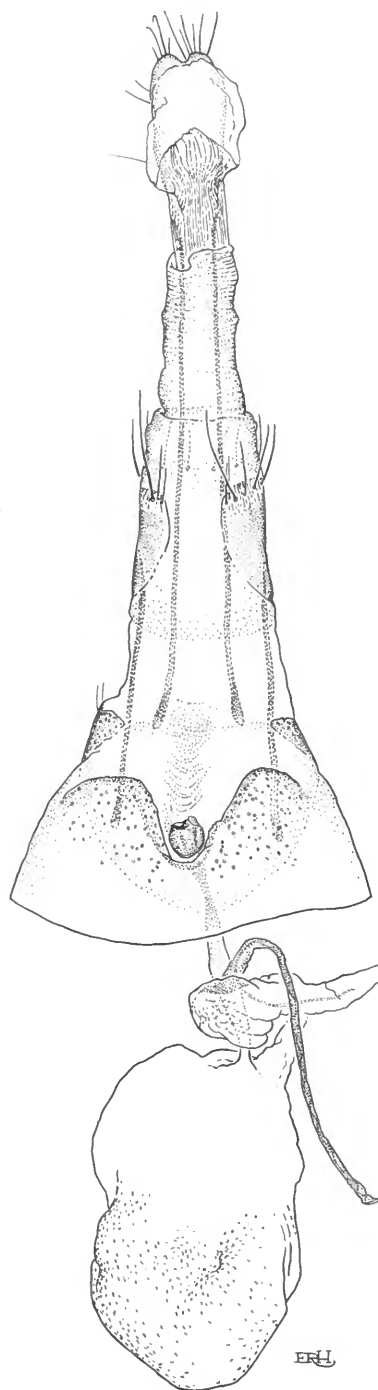


FIGURE 171.—*Asymphorodes diffidentia*, new species, ventral view of female genitalia.

***Asymphorodes culminis*, new species**

FIGURES 172, 302e

Alar expanse 12 mm.

Labial palpus shining cream white. Antenna grayish fuscous, slightly darker distally than proximally; scape cream white. Head, thorax, and forewing ground color shining cream white; extreme base of costa narrowly blackish fuscous; cilia at tornus pale grayish, remainder white with a yellowish tinge. Hindwing grayish fuscous; cilia somewhat lighter. Foreleg cream white; tibia and tarsal segments blackish fuscous on outer side; midleg and hindleg cream white. Abdomen fuscous dorsally; lustrous silvery white ventrally.

Female genitalia slide USNM 24973. Ostium small, round, emerging from a small, sclerotized, dome-shaped process. Inception of ductus seminalis from posterior end of bursa copulatrix. Ductus bursae membranous, from near posterior end of bursa copulatrix. Bursa copulatrix membranous posteriorly, spiculate anteriorly.

HOLOTYPE.—USNM 100804.

TYPE-LOCALITY.—Hiva Oa, Mt. Feani, 3800 ft (1158 m).

DISTRIBUTION.—Hiva Oa.

FOOD PLANT.—Unknown.

Described from the unique ♀ holotype (20 Feb 1968).

Although similar to *Asymphorodes sericeus*, new species, the forewing of *culminis* is immaculate, except for the blackish fuscous base of costa, and is devoid of any mark on the inner angle as found in *sericeus*.

***Asymphorodes fractura*, new species**

FIGURES 173, 302f

Alar expanse 7–8 mm.

Labial palpus white. Antenna buff; scape white. Head white. Thorax white; male with thornlike processes from metascutum. Forewing ground color silvery white; basal half of wing toward costa suffused fuscous; outwardly toward apex, dark markings more intense, blackish fuscous; at three-fifths of costa a silvery white, out-

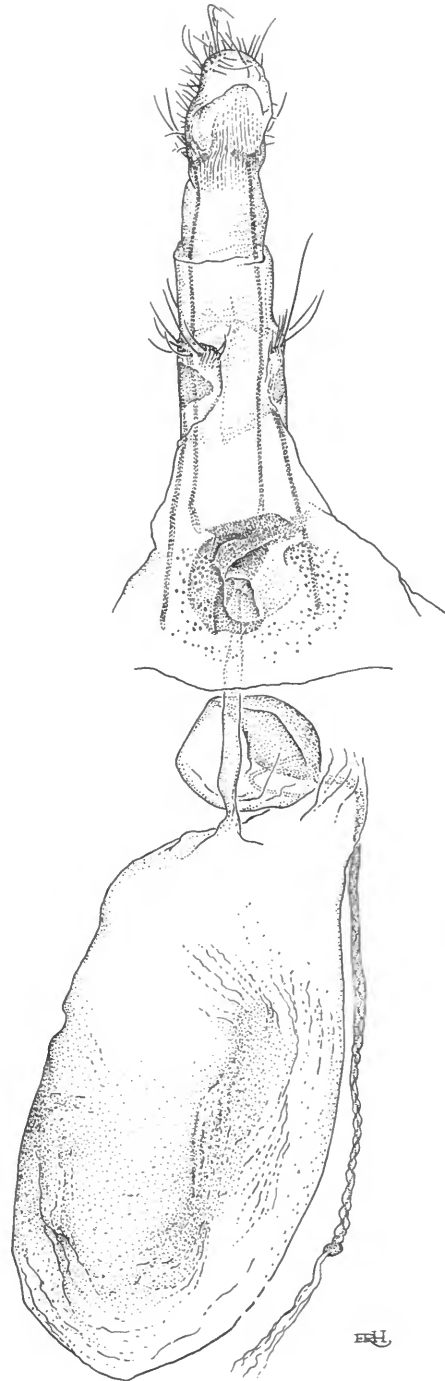


FIGURE 172.—*Asymphorodes culminis*, new species, ventral view of female genitalia.

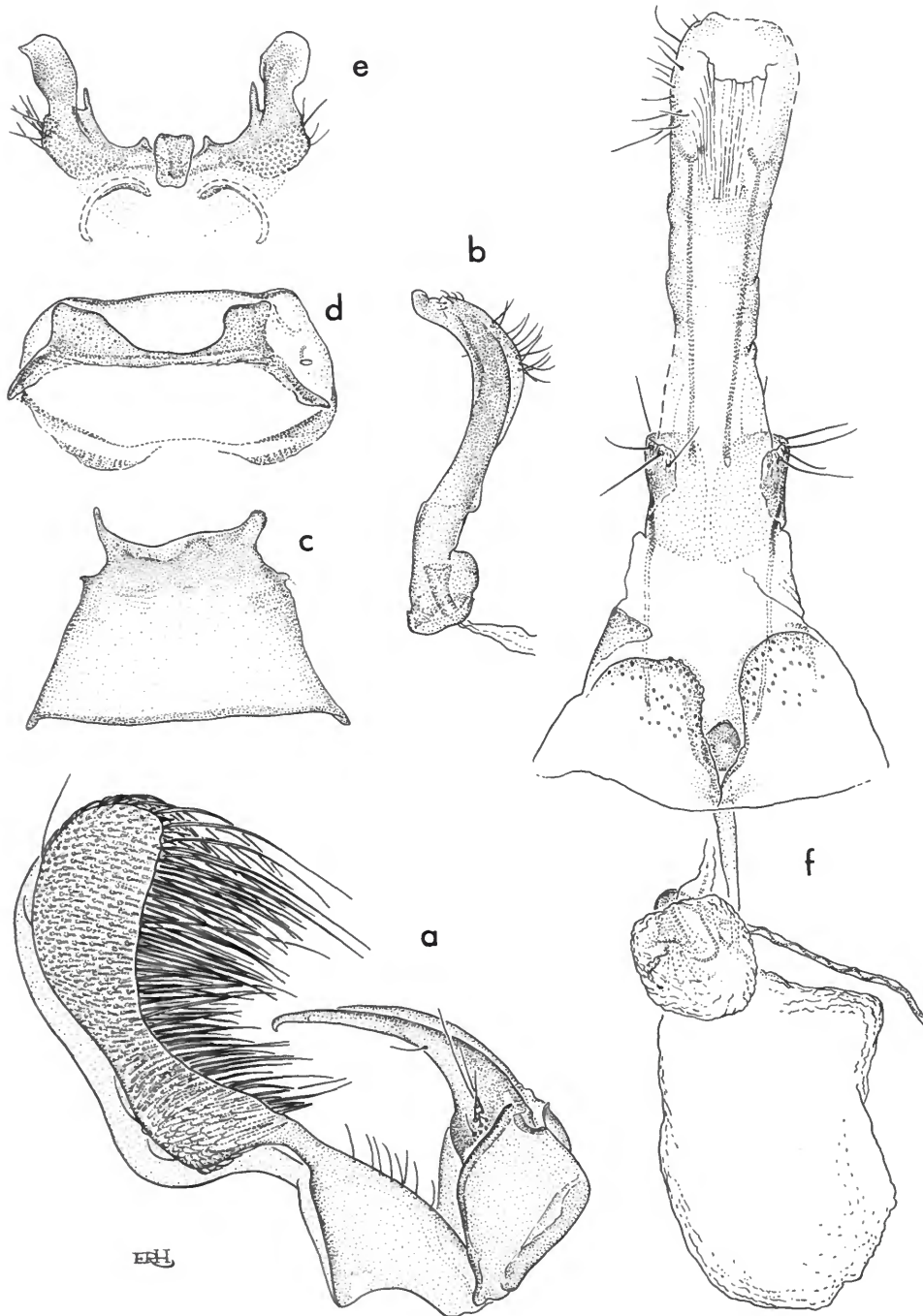


FIGURE 173.—*Asymphorodes fractura*, new species: *a*, lateral aspect of male genitalia with aedeagus removed; *b*, aedeagus; *c*, 6th tergum; *d*, 7th tergum and sternum; *e*, 8th sternum; *f*, ventral view of female genitalia.

wardly oblique mark invades the blackish fuscous color; beyond this silvery white mark a small wedge-shaped spot of the same color; on tornus an outwardly oblique fuscous dash; parallel to termen an elongate blackish fuscous line; around apex and termen a narrow line of blackish fuscous scales; cilia around apex and termen white; cilia before tornus light grayish. Hindwing pale grayish, darker toward apex, cilia grayish. Foreleg white; tibia and tarsal segments fuscous on outer side, midleg white; tibia with fuscous dash distally; hindleg white; tibia with two elongate fuscous marks on outer side; tarsal segments marked fuscous. Abdomen white with slight grayish suffusion dorsally; 6th, 7th, and 8th segments of male modified.

Male genitalia slide USNM 24982. Harpe broad basally, tapering to a very narrow neck; cucullus expanded distally. Brachia thick at base, slender, pointed distally. Tegumen broader than long. Aedeagus strongly curved distally; manica a long, low ridge dorsally.

Female genitalia slide USNM 24983. Ostium very small, opening from a sclerotized conical structure, the latter at the base of a deep cleft in the 7th sternum. Inception of ductus seminalis from posterior end of bursa copulatrix. Ductus bursae very short, membranous. Bursa copulatrix membranous.

HOLOTYPE.—USNM 100805.

TYPE-LOCALITY.—Nuku Hiva, Tunoa Ridge, 2900 ft (884 m).

DISTRIBUTION.—Nuku Hiva.

FOOD PLANT.—Unknown.

Described from the ♂ holotype (23 Jan 1968), 1♂ paratype, same data as holotype, and 1♀ paratype, Nuku Hiva, Tapuaooa, 2500 ft (762 m), 30 Jan 1968.

This species is similar to *admirandus* but is more heavily marked.

Asymphorodes lucerna, new species

FIGURES 174, 302g

Alar expanse 10–11 mm.

Labial palpus light buff; second segment suffused fuscous on outer side; third segment gray-

ish fuscous anteriorly. Antenna light buff. Head light buff, dorsally suffused grayish. Thorax drab; metascutum with thornlike processes. Forewing ground color drab; both thorax and forewing lustrous; cilia drab. Hindwing pale grayish basally, darker toward apex; cilia drab. Foreleg light buff; tibia and tarsal segments fuscous on outer side. Midleg and hindleg light buff. Abdomen grayish fuscous dorsally, buff ventrally, lightly infuscated; 6th, 7th and 8th segments of male modified.

Male genitalia slides USNM 24990, 24991. Harpe broad basally; neck moderately narrow; cucullus slender basally then broadly expanded distally. Brachia broad basally but slender for most of their length, curved. Tegumen shorter than broad. Aedeagus moderately thick, curved, with a small hook dorsoapically; manica with a very long, curved process dorsally.

Female genitalia slide USNM 24994. Ostium small, round, emerging from a sclerotized dome-like structure, the latter situated in a shallow U-shaped excavation in the posterior edge of the 7th sternum. Inception of ductus seminalis from posterior end of bursa copulatrix. Ductus bursae membranous, from posterior end of bursa copulatrix. Bursa copulatrix finely granular in posterior third, lightly rugose in anterior two-thirds.

HOLOTYPE.—USNM 100806.

TYPE-LOCALITY.—Fatu Hiva, Tahuna, 2000 ft (610 m).

DISTRIBUTION.—Fatu Hiva.

FOOD PLANT.—Unknown.

Described from the ♂ holotype (27 Mar 1968), 1♂ and 1♀ paratypes with identical data.

Although similar in superficial appearance to *acerbus*, the antenna is of light buff in *lucerna* but bronze gray in *acerbus*, and *lucerna* is a much larger moth. The male genitalia seem to indicate that *lucerna* is closely related to *valligera*.

Asymphorodes phalarogramma, new species

FIGURES 175, 302h

Alar expanse 14 mm.

Labial palpus light buff. Antenna grayish fus-

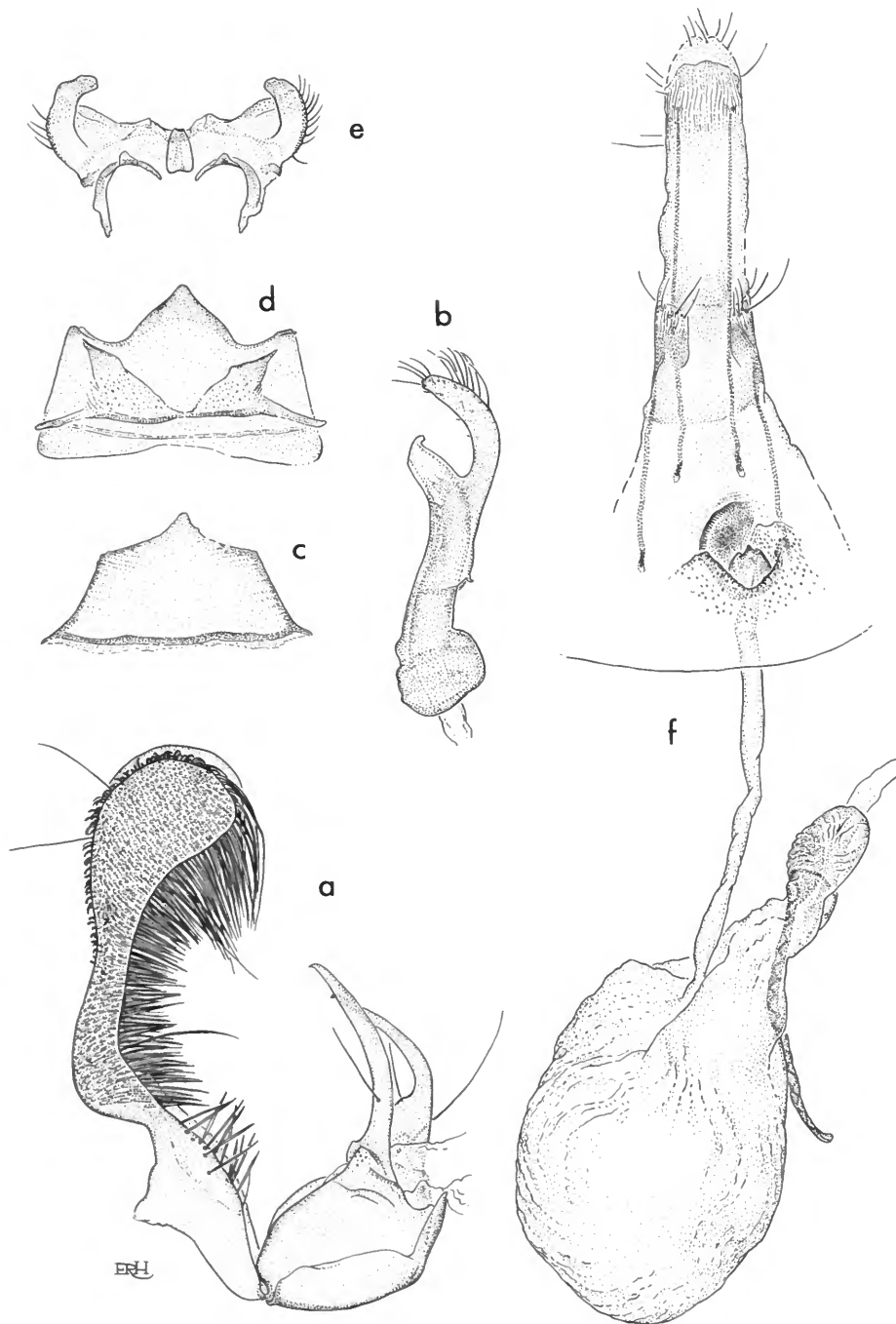


FIGURE 174.—*Asymphorodes lucerna*, new species: *a*, lateral aspect of male genitalia with aedeagus removed; *b*, aedeagus; *c*, 6th tergum; *d*, 7th tergum and sternum; *e*, 8th sternum; *f*, ventral view of female genitalia.

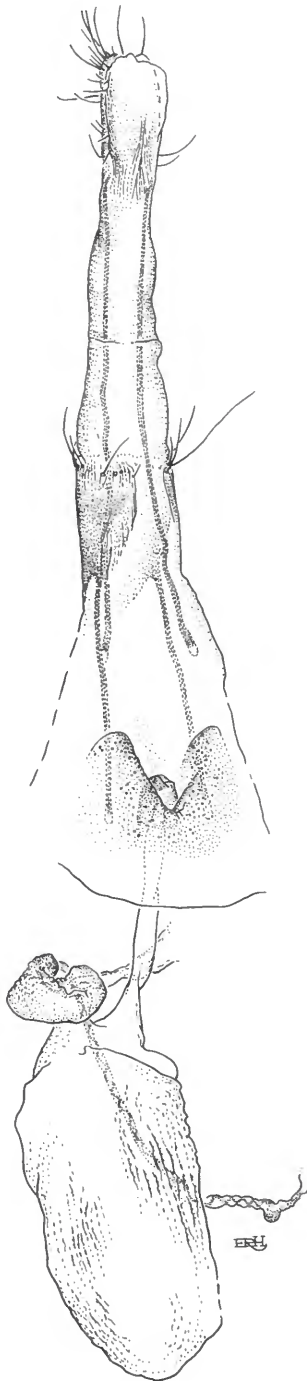


FIGURE 175.—*Asymphorodes phalarogramma*, new species, ventral view of female genitalia.

cous; scape pale ochraceous buff. Head pale ochraceous buff, slightly darker laterally. Thorax pale ochraceous buff; tegula brownish drab, lustrous. Forewing ground color brownish drab, lustrous; in middle of cell an oval whitish spot; cilia concolorous. Hindwing grayish; cilia concolorous. Foreleg light buff; tibia and tarsal segments blackish fuscous on outer side; midleg light buff; tibia and tarsal segments with slight grayish suffusion; hindleg light buff; tibia with grayish blotch on outer side distally. Abdomen grayish fuscous dorsally; buff ventrally.

Female genitalia slide USNM 24992. Ostium small, emerging from a sclerotized conical process, the latter at the base of a V-shaped excavation in the posterior edge of the 7th sternum. Inception of ductus seminais from posterior end of bursa copulatrix. Ductus bursae membranous, shorter than bursa copulatrix, from posterior end of bursa copulatrix. Bursa copulatrix rugose in anterior three-quarters.

HOLOTYPE.—USNM 100807.

TYPE-LOCALITY.—Hiva Oa, trail to Mt. Feani, 2000 ft (610 m).

DISTRIBUTION.—Hiva Oa.

FOOD PLANT.—Unknown.

Described from the unique ♀ holotype (20 Feb 1968).

Similar in appearance to *lucerna*, *phalarogramma* has a whitish spot in the middle of the cell, *lucerna* has none and *phalarogramma* has a grayish fuscous antenna, that of *lucerna* is light buff.

Asymphorodes leucoloma, new species

FIGURES 176, 303a

Alar expanse 12 mm.

Labial palpus light buff; second segment suffused grayish fuscous on outer side; third segment almost wholly overlaid fuscous. Antenna fuscous. Head drab; face buff. Thorax drab, lustrous. Forewing ground color drab, lustrous; from slightly beyond base to apical third, costa narrowly edged with sordid buff; cilia drab.

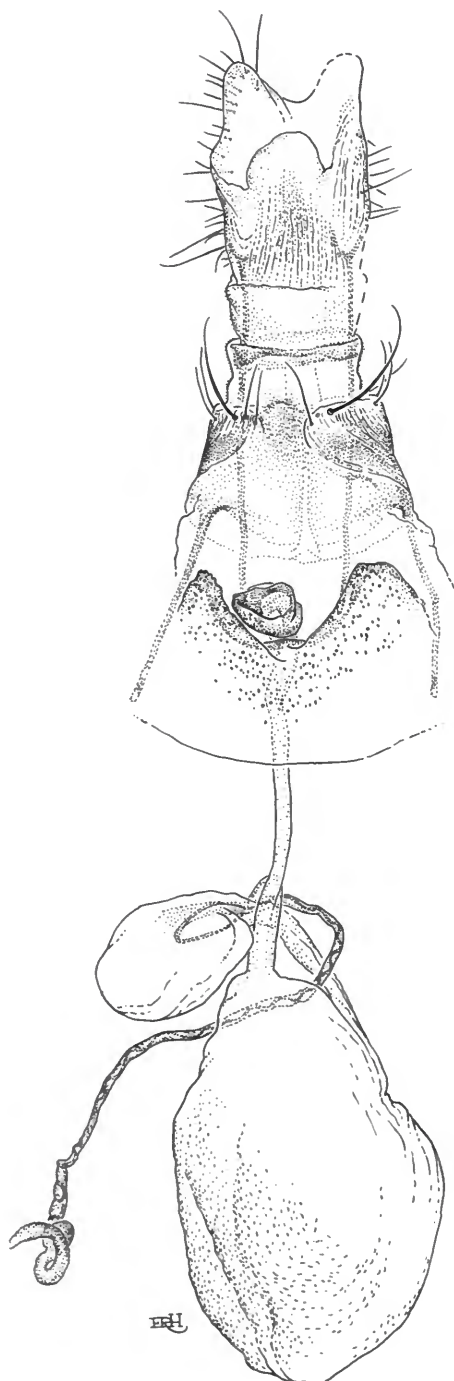


FIGURE 176.—*Asymphorodes leucoloma*, new species, ventral view of female genitalia.

Hindwing sordid white basally, slightly darker toward apex; cilia very pale gray. Foreleg buff; femur, tibia, and tarsal segments blackish fuscous on outer side; midleg missing (similar?); hindleg pale buff; tarsal segments suffused grayish. Abdomen fuscous dorsally, but somewhat lighter posteriorly, shining buff ventrally.

Female genitalia slide USNM 24993. Ostium small, emerging from a short, heavily sclerotized ring, the latter situated at the base of a broadly U-shaped excavation in seventh sternum. Inception of ductus seminalis from posterior end of bursa copulatrix. Ductus bursae membranous, ribbonlike. Bursa copulatrix membranous, finely spiculate anteriorly.

HOLOTYPE.—USNM 100808.

TYPE-LOCALITY.—Hiva Oa. Mt. Feani, 3400 ft (1036 m).

DISTRIBUTION.—Hiva Oa.

FOOD PLANT.—Unknown.

Described from the unique ♀ holotype (1 Mar 1968).

This species is similar to both *lucerna* and *phalarogramma* but both lack the pale costal streak. The female of *leucoloma* can be distinguished from both of the above by the broad U-shaped excavation of the seventh sternum.

Asymphorodes paraporia, new species

FIGURES 177, 303b

Alar expanse 10 mm.

Labial palpus light buff; third segment fuscous anteriorly. Antenna light buff basally, shading to very pale grayish toward apex and with slightly darker annulations; scape light buff. Head pale buff, warm buff laterally. Thorax warm buff, streaked with pale buff, anteriorly grayish fuscous; male with thornlike processes from metasutum. Forewing ground color pale ochraceous buff largely overlaid with blotches of grayish fuscous; on costa, at two-thirds, a light buff spot followed on costa before apex by another similarly colored spot; on basal angle a fuscous spot; on middle of fold a short, blackish fuscous line;

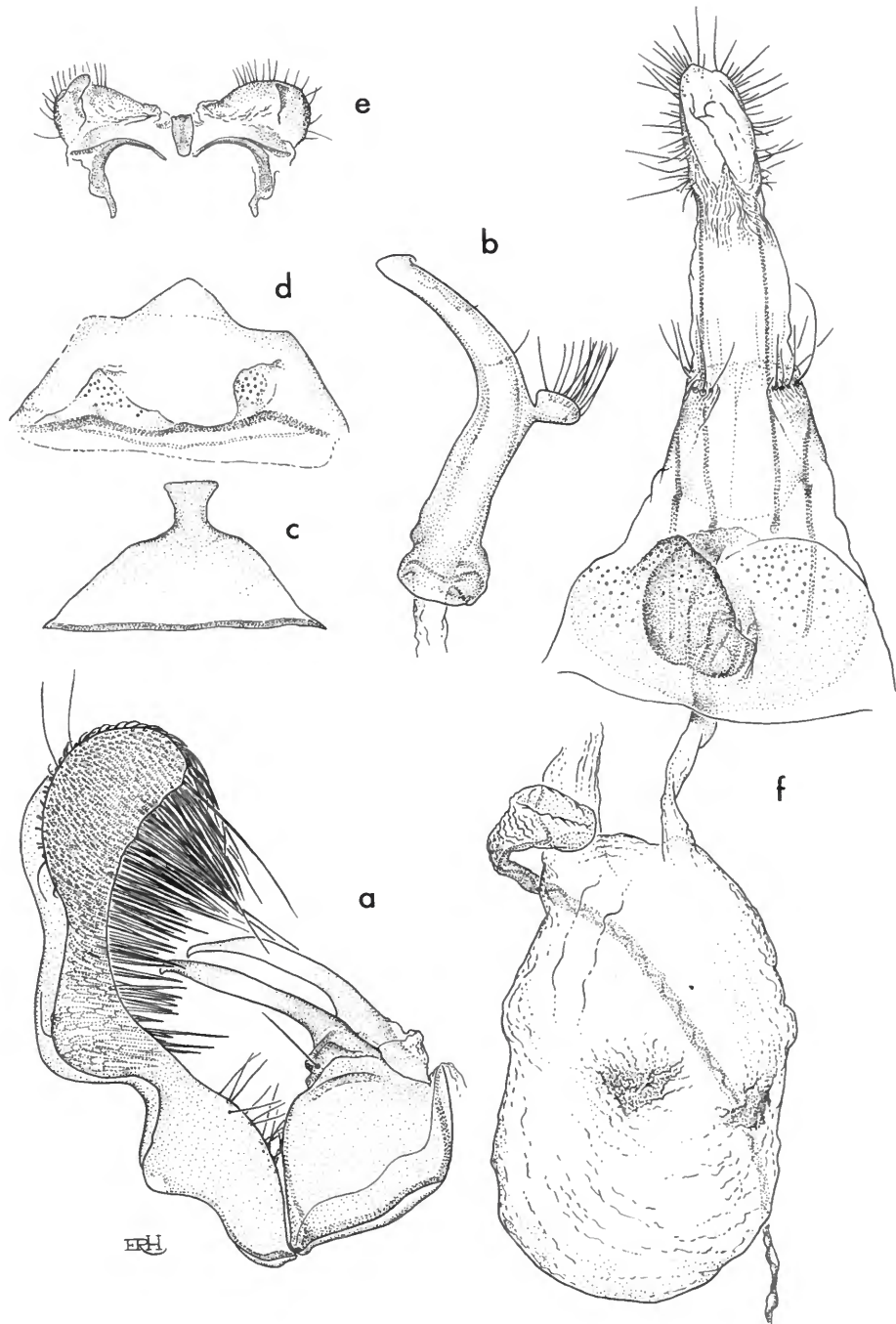


FIGURE 177.—*Asymphorodes paraporia*, new species: a, lateral aspect of male genitalia with aedeagus removed; b, aedeagus; c, 6th tergum; d, 7th tergum and sternum; e, 8th sternum; f, ventral view of female genitalia.

at end of cell a blackish fuscous spot; cilia at tornus pale grayish, shading to pale ochraceous buff along termen. Hindwing dark gray, cilia paler gray with an ochraceous tinge basally. Foreleg light buff shaded fuscous on outer side; midleg light buff; tibia with two grayish fuscous dashes on outer side; tarsal segments with ill-defined fuscous dashes on outer sides; hindleg light buff; tibia with grayish fuscous mark on outer side distally. Abdomen fuscous dorsally, light buff ventrally; 6th, 7th, and 8th segments of male modified.

Male genitalia slide USNM 25114. Harpe broad basally; neck short, narrow; cucullus slightly expanded. Brachia of about equal length. Tegumen as long as broad. Aedeagus slender, curved; manica not modified.

Female genitalia slide USNM 25004. Ostium small, round, opening from a sclerotized tube. Seventh sternum folded on the left side with a flap covering the ostial aperture. Inception of ductus seminalis from posterior end of bursa copulatrix. Ductus bursae short, about half as

long as bursa copulatrix. Bursa copulatrix membranous. Signa two small, irregular, dentate plates.

HOLOTYPE.—USNM 100809.

TYPE-LOCALITY.—Nuku Hiva, Tunoa Ridge, 2900 ft (884 m).

DISTRIBUTION.—Nuku Hiva.

FOOD PLANT.—Unknown.

Described from the ♀ holotype (23 Jan 1968) and 1♂ paratype, Nuku Hiva, Tapuaooa, 2500 ft (762 m), 30 Jan 1968.

Although superficially similar to *aporia*, new species, *paraporia* is very different in female genitalia having two *signa* while *aporia* has none. Moreover, *paraporia* is a smaller moth than *aporia*.

Asymphorodes chalcosoma, new species

FIGURES 178, 303c

Alar expanse 8–9 mm.

Labial palpus warm buff; third segment fus-

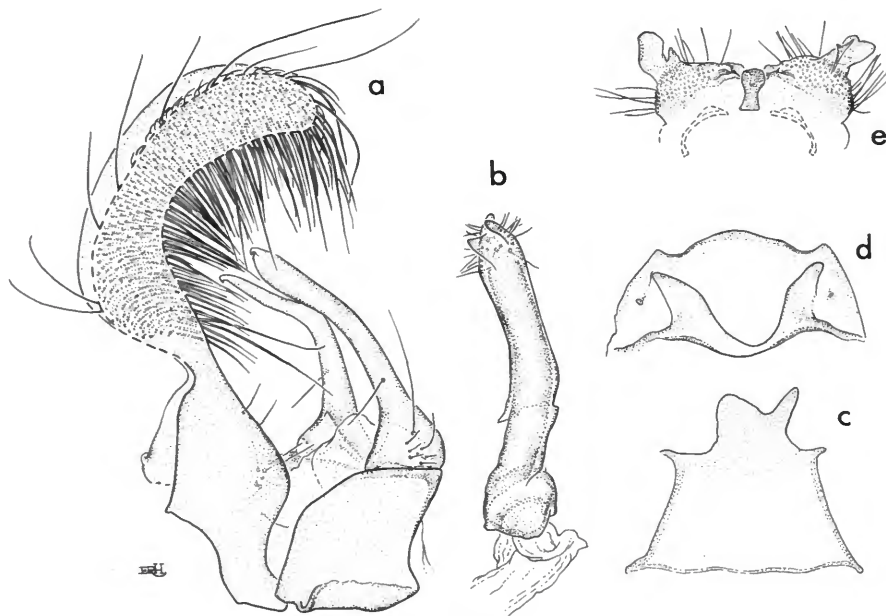


FIGURE 178.—*Asymphorodes chalcosoma*, new species: a, lateral aspect of male genitalia with aedeagus removed; b, aedeagus; c, 6th tergum; d, 7th tergum and sternum; e, 8th sternum.

cous on outer side. Antenna fuscous. Head fuscous with silvery sheen, face warm buff. Thorax fuscous; tegula with silvery sheen; thornlike processes from metascutum present. Forewing ground color fuscous, lustrous; no definite markings; cilia fuscous. Hindwing grayish fuscous; cilia concolorous. Foreleg buff; tibia and tarsal segments fuscous on outer side; midleg buff; tibia suffused grayish fuscous on outer side; hindleg buff, the whole leg overlaid fuscous on outer side. Abdomen fuscous above, grayish ventrally with posterior margins of segments buff; 6th, 7th, and 8th segments modified.

Male genitalia slide USNM 25108. Harpe broad basally; neck slender; cucullus narrow. Brachia curved, slender, of about equal length. Tegumen slightly longer than broad. Aedeagus elongate S-shaped; manica with a shallow keel dorsally.

HOLOTYPE.—USNM 100810.

TYPE-LOCALITY.—Nuku Hiva, Tunoa Ridge, 2900 ft (884 m).

DISTRIBUTION.—Nuku Hiva.

FOOD PLANT.—Unknown.

Described from the ♂ holotype (23 Jan 1968) and 1♂ paratype with identical data as holotype. No females are available.

In general appearance *chalcosoma* is very similar to *lucidus*, new species, but is darker and slightly larger. The genitalia are almost identical, but the abdominal segments differ (Figures 170, 178). Moreover, the two species are from different islands.

***Asymphorodes aenigma*, new species**

FIGURES 179, 303d

Alar expanse 10 mm.

Labial palpus buff; third segment fuscous anteriorly. Antenna flagellum fuscous; scape buff, mottled with fuscous. Head crown fuscous with purple reflections and buff scales posteriorly; face buff. Thorax fuscous. Forewing ground color tawny olive; on midcosta a fuscous suffusion; apical third suffused fuscous; cilia grayish fuscous. Hindwing grayish fuscous; cilia concol-

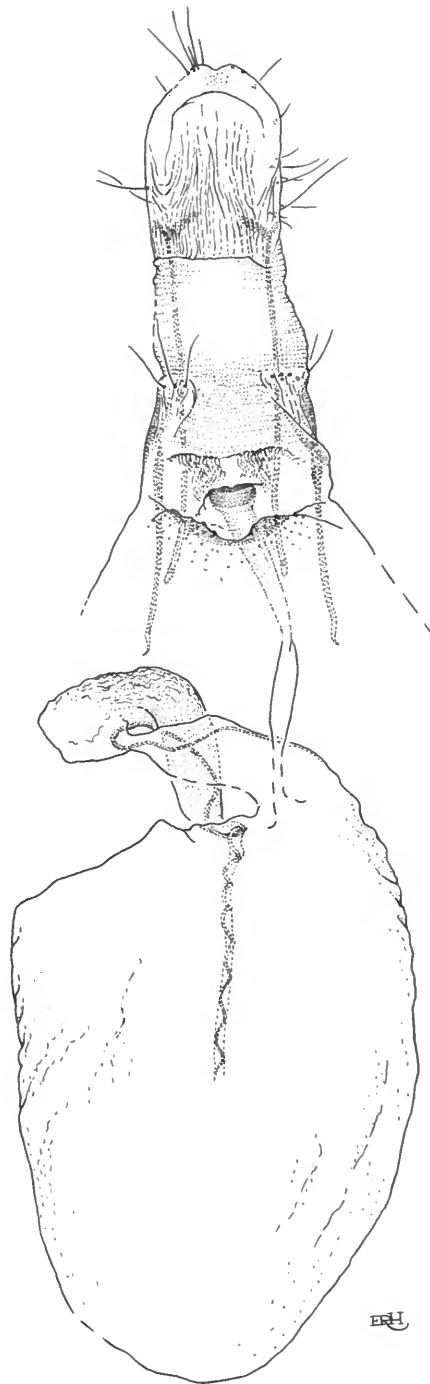


FIGURE 179.—*Asymphorodes aenigma*, new species, ventral view of female genitalia.

orous. Foreleg and midleg warm buff; tibia and tarsal segments fuscous on outer side; hindleg warm buff; tarsal segments suffused fuscous. Abdomen blackish fuscous dorsally; warm buff ventrally.

Female genitalia slide USNM 25111. Ostium cup-shaped, situated distantly posterior to a shallow excavation in the posterior margin of the 7th segment; lamella postvaginalis rugose. Inception of ductus seminalis from posterior end of bursa copulatrix. Ductus bursae slender, membranous. Bursa copulatrix membranous.

HOLOTYPE.—USNM 100811.

TYPE-LOCALITY.—Hiva Oa, Mt. Feani, 3400 ft (1036 m).

DISTRIBUTION.—Hiva Oa.

FOOD PLANT.—Unknown.

Described from the unique ♀ holotype (1 Mar 1968).

It is not quite clear to what *aenigma* is related. At first glance it appears like an oversized *lucidus*, new species, but is larger and darker.

Asymphorodes montgomeryi, new species

FIGURES 180, 303e

Alar expanse 12 mm.

Labial palpus light buff; third segment suffused fuscous anteriorly. Antenna flagellum gray; scape warm buff; posterodorsally fuscous for its entire length. Head warm buff. Thorax gold color; tegula fuscous; male with thornlike processes from metascutum. Forewing ground color fuscous; on costa at basal third an elongate gold colored mark; at apical third a similar gold mark; dorsum, from base to tornus, narrowly gold colored; cilia grayish fuscous to fuscous. Hindwing dark gray; cilia grayish fuscous. Foreleg cream white; tibia and tarsal segments blackish fuscous on outer side; midleg cream white to light buff; tibia with grayish fuscous blotch on outer side distally; tarsal segments blackish fuscous on outer side; hindleg light buff; tibia with grayish streak on outer side distally; tarsal segments grayish. Abdomen fuscous dorsally, cream

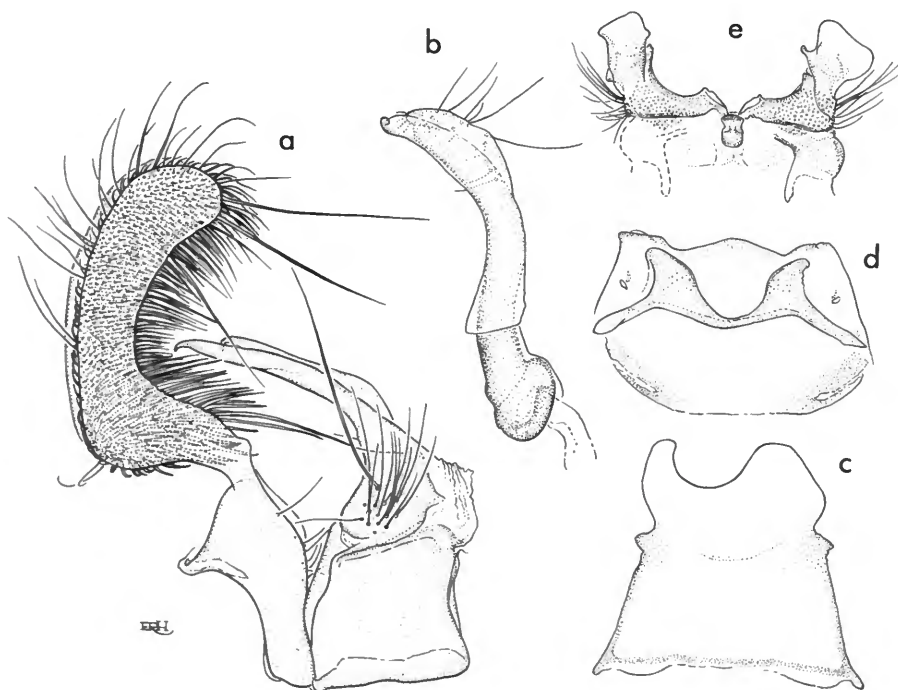


FIGURE 180.—*Asymphorodes montgomeryi*, new species: a, lateral aspect of male genitalia with aedeagus removed; b, aedeagus; c, 6th tergum; d, 7th tergum and sternum; e, 8th sternum.

white ventrally, segments, 6, 7, 8 of male modified.

Male genitalia slide USNM 25125. Harpe broad basally; neck short, very narrow; cucullus slightly expanded. Brachia slender, of about equal length, curved. Tegumen shorter than broad. Aedeagus slender, curved; manica with a shallow keel dorsally.

HOLOTYPE.—In the Bernice P. Bishop Museum.

TYPE-LOCALITY.—Hiva Oa, Ootua, 800 m.

DISTRIBUTION.—Hiva Oa.

FOOD PLANT.—Unknown.

Described from the unique ♂ holotype (27–30 Jul 1977).

The pattern of *montgomeryi* is similar to that of *myronotus* but is much more golden in hue. The posterior abdominal segments of the male of *montgomeryi* are greatly modified, not so in *myronotus*.

I take great pleasure in naming this species for the collector who has contributed substantially to our knowledge of the Marquesan fauna.

Asymphorodes nuciferae, new species

FIGURES 181, 303f,g

Alar expanse 10–12 mm.

Labial palpus light buff shaded pale ochraceous buff on outer side. Antenna ochraceous buff with pale, but slightly darker annulations. Head pale ochraceous buff. Thorax light sayal brown; tegula tipped light buff; thornlike processes from metascutum strongly developed in male. Forewing ground color sayal brown; at basal third a narrow light buff transverse fascia; about midcosta a triangular light buff mark extending to outer discal spot; subapically, an inwardly oblique, light buff fascia extends to tornus; in middle of basal fascia a few fuscous scales, in some specimens forming a distinct discal spot; at end of cell a conspicuous fuscous spot surrounded by light buff scales; in female markings less distinct than in male giving a more mottled appearance (Figure 303g); cilia light buff, but terminal cilia mixed with sayal brown. Hindwing

shining light buff; cilia light buff. Foreleg and midleg light buff marked with grayish fuscous; hindleg light buff. Abdomen light buff; 6th tergum, 7th tergum and sternum, and 8th sternum strongly modified (Figure 181).

Male genitalia slide USNM 24645. Harpe broad basally, neck short and very slender; cucullus dilated. Brachia slender, curved, slightly flattened, with small hook at distal end. Tegumen about as broad as long. Aedeagus long, slender, slightly S-shaped with small point at distal end dorsally; manica a long keel dorsally, clothed with strong setae.

Female genitalia USNM 24646. Ostium small round, from base of a broad, deep excavation in 7th sternum. Inception of ductus seminalis from posterior edge of bursa copulatrix. Ductus bursae short, slender. Bursa copulatrix membranous.

HOLOTYPE.—USNM 100812.

TYPE-LOCALITY.—Hiva Oa, Atuona.

DISTRIBUTION.—Nuku Hiva, Hiva Oa.

FOOD PLANT.—*Cocos nucifera* L.

Under my field note NH9 (Nuku Hiva): Larvae were found on *Cocos nucifera* skeletonizing the undersides of leaflets in patches. Feeding tube, constructed across skeletonized area or along midrib, made of frass and silk. Only one larva was collected but there was much evidence of feeding. Under field note H010 (Hiva Oa): Larva skeletonizing under surface of leaflet, feeding beneath a mass of brown frass and silk.

Described from the ♂ holotype (Em. 21 Mar 1968), 6♂ and 12♀ paratypes as follows: Nuku Hiva: Pakiu Valley, 800–1000 ft (244–305 m), Em. 21 Feb 1968, 25 Mar 1968, 1♂, 1♀; Taiohae, 14 Jan 1968, 1♀; Hiva Oa; Atuona, Em. 18–29 Mar 1968, 5♂, 10♀.

The male of this species possesses the thornlike processes of the metascutum as in *dimorpha* and *porphyryrarcha*.

Asymphorodes favilla, new species

FIGURES 182, 303h

Alar expanse 12 mm.

Labial palpus buff; second segment dusted

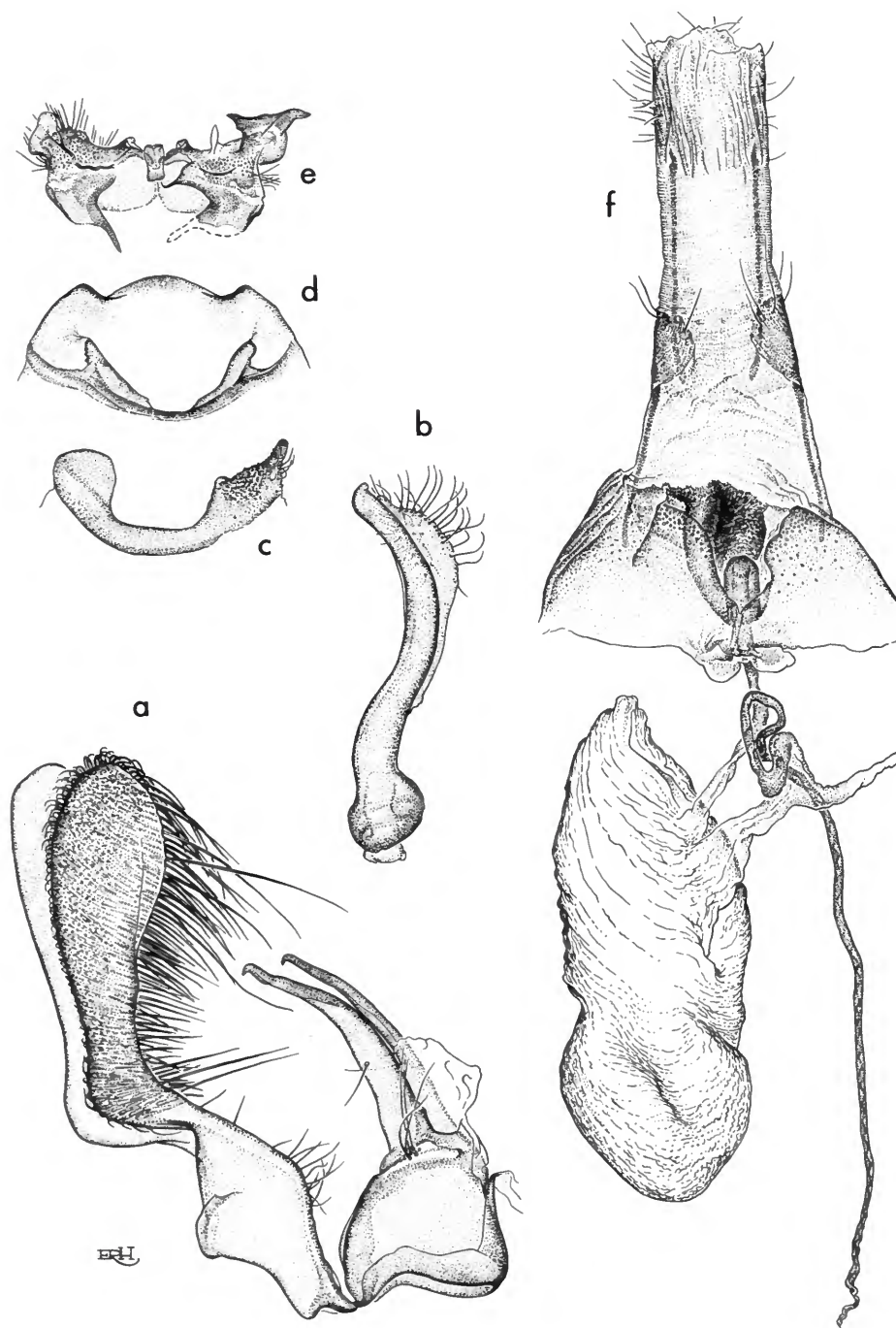


FIGURE 181.—*Asymphorodes nuciferae*, new species: *a*, lateral aspect of male genitalia with aedeagus removed; *b*, aedeagus; *c*, 6th tergum; *d*, 7th tergum and sternum; *e*, 8th sternum; *f*, ventral view of female genitalia.

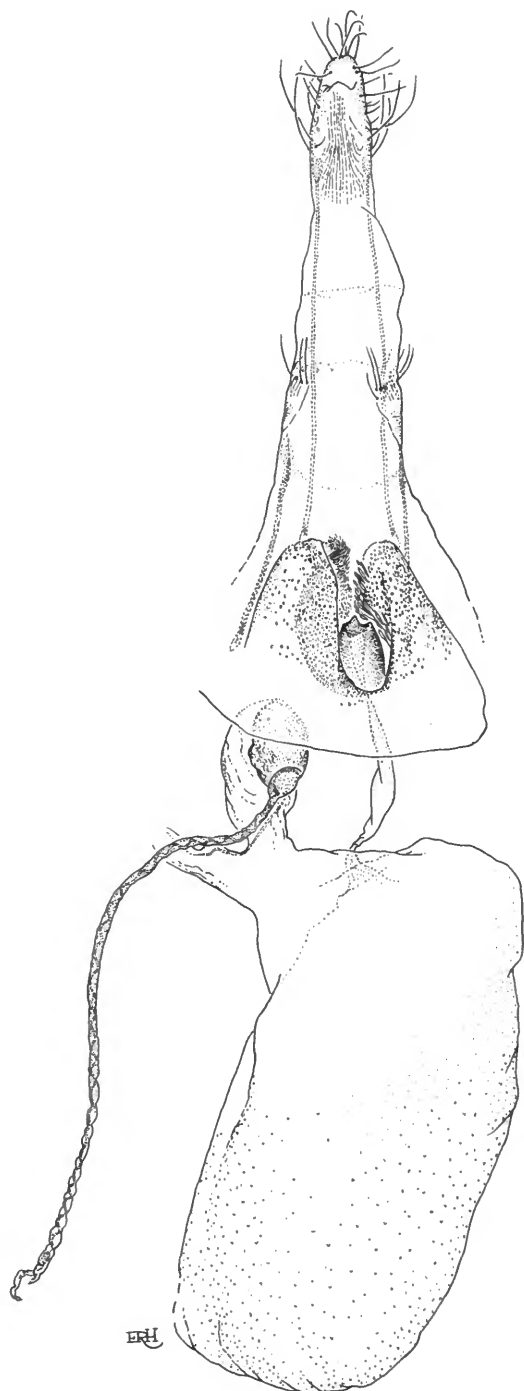


FIGURE 182.—*Asymphorodes favilla*, new species, ventral view of female genitalia.

with gray on outer side; third segment almost wholly grayish fuscous. Antenna buff; base of flagellum and scape suffused grayish. Head warm buff, lustrous. Thorax warm buff suffused grayish; tegula grayish fuscous anteriorly. Forewing ground color grayish; costa slightly lighter; no markings on wing; cilia pale grayish. Hindwing gray; cilia slightly lighter. Foreleg buff; tibia and tarsal segments grayish fuscous on outer side; midleg buff; hindleg buff; tibia with grayish fuscous distally on outer side. Abdomen fuscous dorsally; buff ventrally.

Female genitala slide USNM 25023. Ostium small, round, emerging from a sclerotized conical structure; lamella postvaginalis formed as a deep pocket on left side. Inception of ductus seminalis from posterior end of bursa copulatrix. Ductus bursae slender, membranous, shorter than bursa copulatrix. Bursa copulatrix membranous.

HOLOTYPE.—USNM 100813.

TYPE-LOCALITY.—Hiva Oa, Mt. Feani, 2000 ft (610 m).

DISTRIBUTION.—Hiva Oa.

FOOD PLANT.—Unknown.

Described from the unique ♀ holotype (1 Mar 1968).

The folded left side of the 7th sternum over the pocket containing the ostium, suggests a relationship to *nuciferae*, new species. The two species are widely different in phenotype.

Asymphorodes trichogramma, new species

FIGURES 183, 304a,b

Alar expanse 7–9 mm.

Labial palpus very light buff; second segment with slight grayish suffusion on outer side; third segment grayish anteriorly. Antenna pale ochraceous buff in male; in female, annulated fuscous and light buff; scape light buff. Head light buff with pale ochraceous buff suffusion on crown. Thorax buff to pale ochraceous buff; tegula buffy brown; metascutum of male with prominent thornlike processes. Forewing ground color buffy brown; on costa three light buff outwardly oblique streaks, the second longer than first and

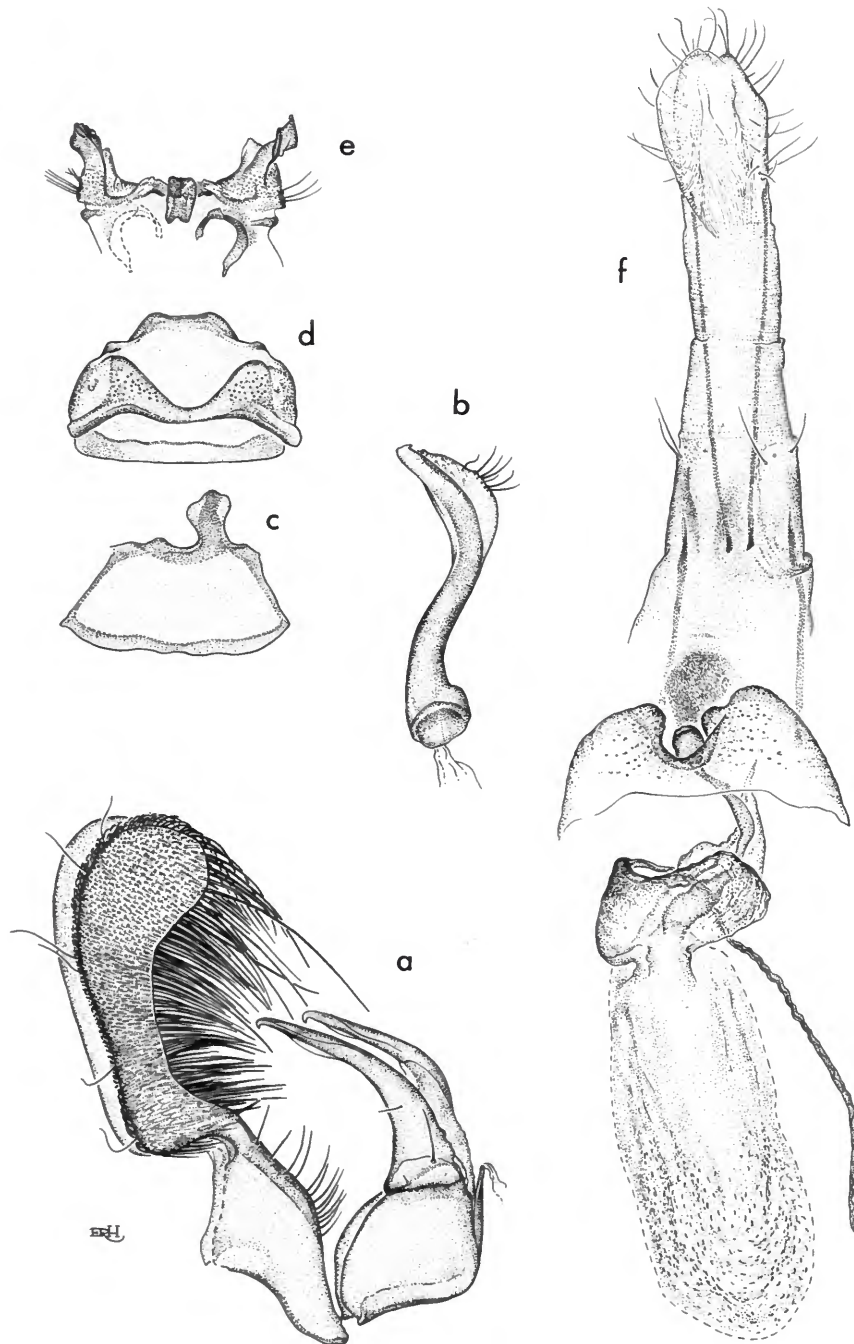


FIGURE 183.—*Asymphorodes trichogramma*, new species: *a*, lateral aspect of male genitalia with aedeagus removed; *b*, aedeagus; *c*, 6th tergum; *d*, 7th tergum and sternum; *e*, 8th sternum; *f*, ventral view of female genitalia.

third; these streaks separated by parallel blackish fuscous dashes; on costa, before apex, a light buff dash preceeded and followed by blackish fuscous; dorsum, from base to tornus, light buff; termen light buff mixed with a few blackish fuscous marks; cilia light buff to pale ochraceous buff. Hindwing light gray; cilia considerably paler. Foreleg light buff marked fuscous on outer side; midleg similar; hindleg light buff; tibia with two grayish fuscous dashes on outer side; tarsal segments spotted grayish fuscous. Abdomen fuscous dorsally, light buff ventrally; 6th, 7th, and 8th segments of male strongly modified.

Male genitalia slides USNM 24932, 24933, 24937. Harpe broad basally, constricted distad forming a short, slender neck; cucullus moderately expanded. Brachia stout basally terminating in a sharp point; right brachium broadened and flattened distally. Tegumen as broad as long. Aedeagus S-shaped, slender; manica with dorsal keel.

Female genitalia slides USNM 24934, 24935, 24936, 24938. Ostium very small, round, emerging from an oval sclerotized process, the latter at the base of a deep U-shaped excavation in the posterior edge of the 7th sternum. Inception of ductus seminalis from posterior end of bursa copulatrix. Ductus bursae slender, membranous, from posterior end of bursa copulatrix. Bursa copulatrix membranous; spiculate in anterior half.

HOLOTYPE.—USNM 100814.

TYPE-LOCALITY.—Hiva Oa, Atuona.

DISTRIBUTION.—Hiva Oa, Fatu Hiva, Easter Island.

FOOD PLANT.—Unknown.

Described from the ♂ holotype (25 Feb 1968) and 269 paratypes as follows. Hiva Oa: Atuona, 10 Feb to 8 Mar 1968, 55♂, 180♀; Fatu Hiva: Omoa, 12–17 Mar 1968, 4♂, 9♀; Easter Island: Hanga-Roa, 26–27 May, 1971, 10♂, 7♀; Rano-Kao, 21 May 1971, 2♀ (Peña). Eiao, N. uplands, 400 m, 7 Aug 1977, 2♀ (Montgomery).

Asymphorodes trichogramma is similar to *sphenocopa* in general appearance, but the latter species lacks the pale dorsum that is present in the

former. Moreover, *trichogramma*, except for the light colored dorsum, is a much darker moth than *sphenocopa*.

Although Campos and Peña (1973:225) recorded the presence of the genus *Asymphorodes* on Easter Island (based on my determination of Peña's material), this is the first specific record for a species of *Asymphorodes* from that island.

Asymphorodes sericeus, new species

FIGURES 184, 304c–e

Alar expanse 8–10 mm.

Labial palpus white; very slight darkening of third segment distad. Antenna buff; scape white. Head white. Thorax white; prominent, thornlike processes present from metascutum of male. Forewing ground color white; on fold, two ill-defined, small grayish spots; beyond these, two similar spots toward costa; on tornus a large, ill-defined grayish blotch; cilia grayish at tornus, yellowish along termen. Hindwing gray; cilia somewhat paler. Foreleg white; tibia edged with fuscous; tarsal segments fuscous on outer side; midleg and hindleg white. Abdomen fuscous dorsally, buff ventrally; 6th to 8th segments of male strongly modified (Figure 184 c–e).

Male genitalia slides USNM 24829, 24830. Harpe broad basally, very constricted at neck; neck very short; cucullus expanded. Tegumen about as long as broad. Aedeagus of about equal thickness throughout, curved; manica with a long, claviform process dorsally.

Female genitalia slides USNM 24831, 24832. Ostium small, round, emerging from a long tubular structure, the latter set in a deep median excavation of the posterior margin of the 7th sternum. Inception of ductus seminalis from posterior edge of bursa copulatrix. Ductus bursae membranous, arising at posterior end of bursa copulatrix. Bursa copulatrix mostly membranous, slightly rugose. Signa indicated by a pair of patches of small, thornlike, sclerotized points.

HOLOTYPE.—USNM 100799.

TYPE-LOCALITY.—Nuku Hiva, Tunoa Ridge, 2900 ft (884 m).

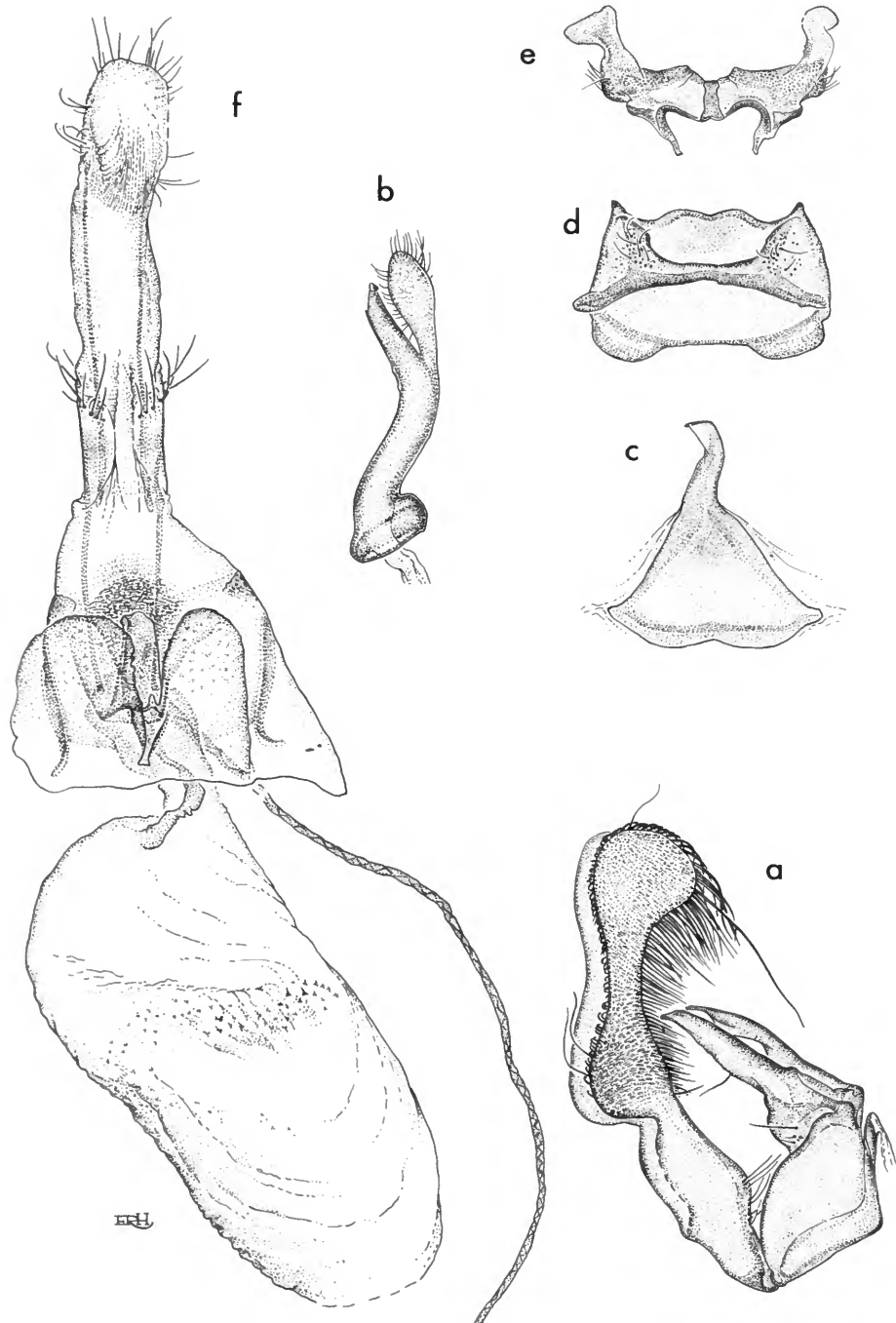


FIGURE 184.—*Asymphorodes sericeus*, new species: *a*, lateral aspect of male genitalia with aedeagus removed; *b*, aedeagus; *c*, 6th tergum; *d*, 7th tergum and sternum; *e*, 8th sternum; *f*, ventral view of female genitalia.

DISTRIBUTION.—Nuku Hiva.

FOOD PLANT.—Unknown.

Described from the ♂ holotype (23 Jan 1968), 18♂ and 61♀ paratypes with identical data.

This species is variable, some specimens are immaculate (mostly females) and some are marked with several spots (Figure 304c–e). In using the term “white” in my description I do so with some reservation because the ground color is “off white,” but not buff, and the whole light surface presents a shining, silky aspect.

The segments of the male abdomen are strongly modified and suggest a relationship to *circopis* and *acritopterus*, new species, but *sericeus* exhibits none of the brown markings found in those two species.

Asymphorodes circopis Meyrick

FIGURES 185, 304f,g

Asymphorodes circopis Meyrick, 1929a:499; 1934c:349.—Clarke, 1955 [1955–1970]:90.

Male genitalia slides USNM 24647, 24649, 24652, 24558, 24659. Harpe broad basally, neck very short and slender; cucullus slightly expanded. Brachia sharply bent before middle; right brachium much longer than left and arising from a very broad base. Tegumen about as long as wide. Aedeagus S-shaped, slender; manica with a large triangular keel dorsodistally.

Female genitalia slides USNM 24648, 24650, 24660, 24661. Ostium small, round, emerging from an inverted sclerotized cone, the whole situated in a cuplike structure. Lamella postvaginalis granular. Seventh sternum deeply, but narrowly, incised posteriorly. Inception of ductus seminalis from posterior edge of bursa copulatrix. Ductus bursae slender, sclerotized in posterior half. Bursa copulatrix membranous; very finely spiculate in anterior half.

ORIGINAL MATERIAL.—“♂♀. 11–12 mm . . . Marquesas, Nuku Hiva, 1500 feet, January, beaten from tree and at light; 3 ex.”

LECTOTYPE.—“Lectotype” is marked “Type ♂ H.T.,” but it is a ♀. “1500 feet Jan. 25, St. George

Expedn . . . C.L. Collenette. Brit. Mus. 1925.” “*Asymphorodes circopis* Meyr. Tr. Ent. Soc. Lond. 76, p. 499.” Lectotype hereby designated.

Lectotype is in the British Museum (Natural History).

TYPE-LOCALITY.—Nuku Hiva, 1500 ft (457 m).

DISTRIBUTION.—Marquesas Islands.

Nuku Hiva: Taiohae, 20 Jan to 26 Feb 1968, 17♂, 22♀. Hiva Oa: Atuona, 10 Feb to 8 Mar 1968, 8♂, 31♀.

FOOD PLANT.—Unknown.

This and the following species, *A. acritopterus*, new species, are indistinguishable superficially. Even the genitalia of the males are similar, but the female genitalia are distinct and the posterior abdominal segments of the males present excellent characters for separation. (Figures 185, 186).

Asymphorodes acritopterus, new species

FIGURES 186, 305a,b

Alar expanse 8–12 mm.

Labial palpus second segment light buff with fuscous mark at base and a fuscous annulus at apex; third segment fuscous. Antenna fuscous; scape with a small buff spot dorsodistally. Head fuscous; face buff. Thorax and tegula fuscous; thornlike processes from metascutum of male present. Forewing ground color in basal half fuscous overlaid proximally with grayish scales; ground color of outer half mostly grayish; on costa beyond basal patch, a buff spot, this followed by a fuscous subtriangular mark, the latter based on costa, which fuses with a fuscous subquadrate mark at end of cell; along termen a fuscous line with usually three small buff spots along its outer edge; cilia grayish fuscous. Hindwing grayish; cilia a shade lighter. Foreleg, midleg, and hindleg buff, marked with fuscous. Abdomen grayish fuscous dorsally, ventrally buff; terminal segments of male strikingly modified (Figure 186c–e).

Male genitalia slides USNM 24651, 24662,

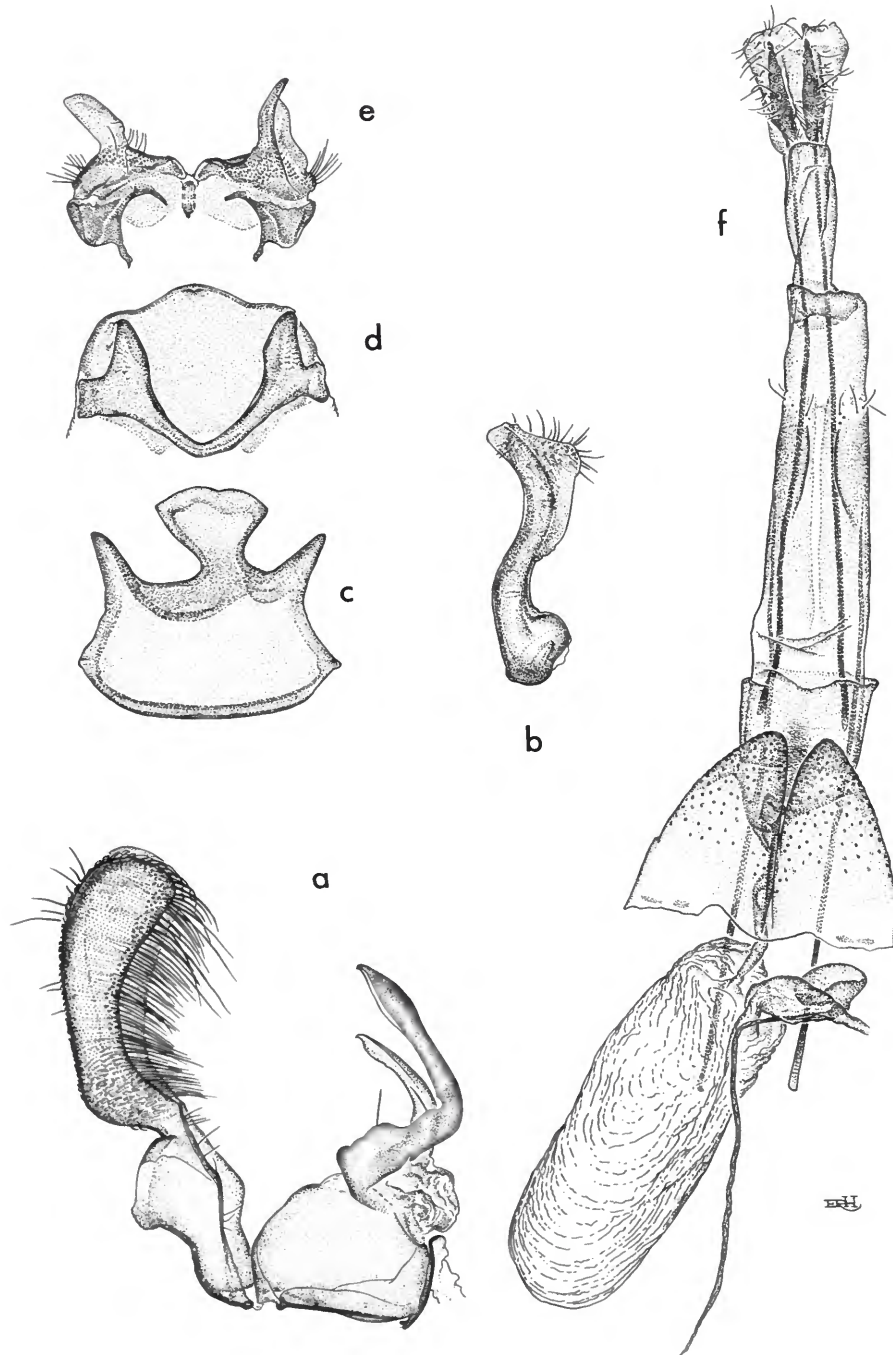


FIGURE 185.—*Asymphorodes circopis* Meyrick: *a*, lateral aspect of male genitalia with aedeagus removed; *b*, aedeagus; *c*, 6th tergum; *d*, 7th tergum and sternum; *e*, 8th sternum; *f*, ventral view of female genitalia.

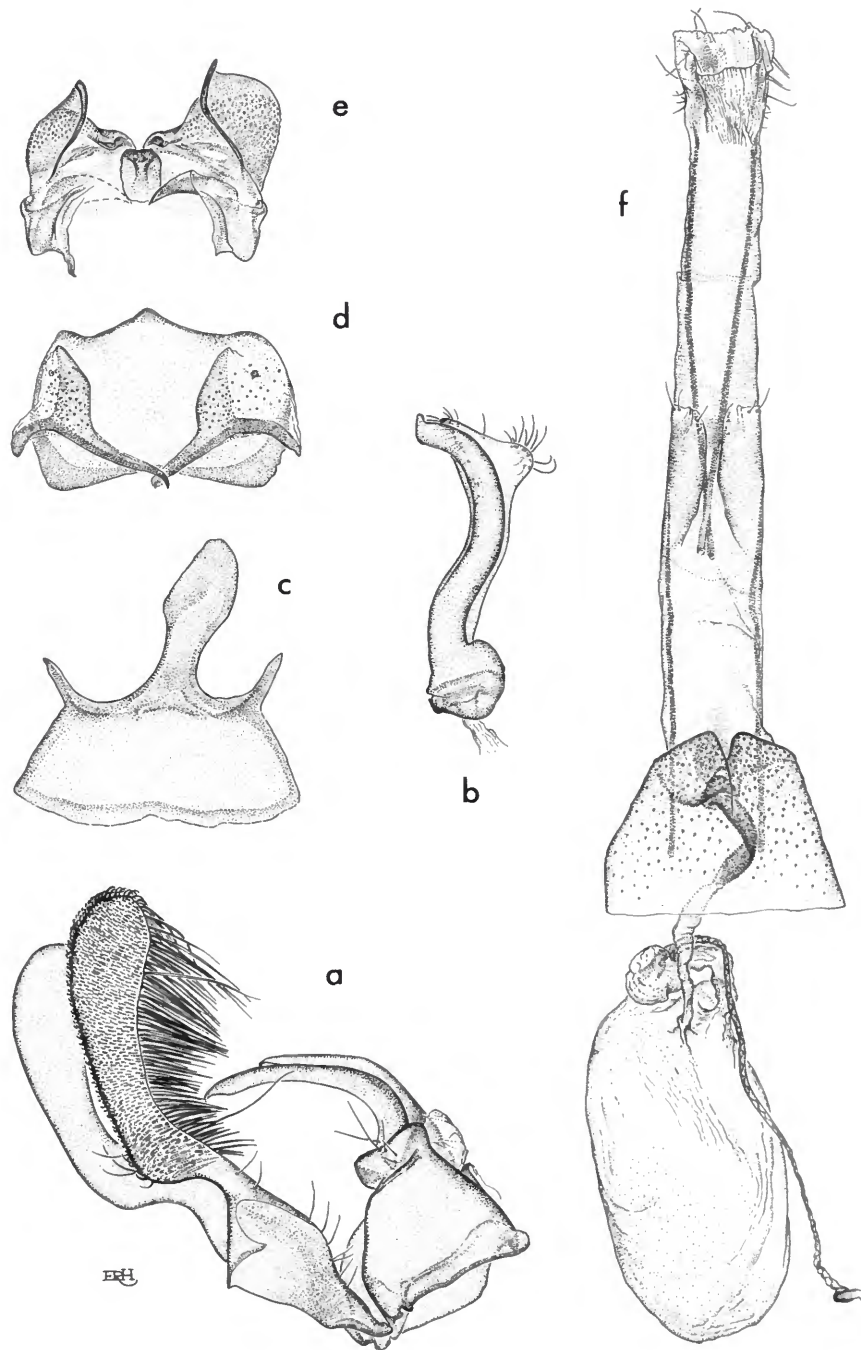


FIGURE 186.—*Asymphorodes acritopterus*, new species: *a*, lateral aspect of male genitalia with aedeagus removed; *b*, aedeagus; *c*, 6th tergum; *d*, 7th tergum and sternum; *e*, 8th sternum; *f*, ventral view of female genitalia.

24663. Harpe with broad base; neck half as long as basal portion, narrow; cucullus slightly expanded. Brachia bent before middle; right brachium arising from a broad base and curved transversely touching left brachium; right brachium longer than left. Tegumen about as long as broad. Aedeagus S-shaped, slender; manica with subtriangular keel dorsodistally.

Female genitalia slides USNM 24664, 24665. Ostium small, round, emerging from a bulbous process set in base of asymmetrical pit in posterior edge of 7th sternum. Inception of ductus seminalis from posterior edge of bursa copulatrix. Ductus bursae membranous anteriorly, strongly sclerotized in posterior half. Bursa copulatrix membranous.

HOLOTYPE.—USNM 100815.

TYPE-LOCALITY.—Fatu Hiva, Omoa.

DISTRIBUTION.—Fatu Hiva.

FOOD PLANT.—Unknown.

Described from the ♂ holotype (17 Mar 1968),

9♂ and 23♀ paratypes all from Fatu Hiva, Omoa, 14 Mar to 10 Apr 1968.

This is very similar to the foregoing, *circopis*, from which it is distinguished as discussed under that species. All of the specimens of *acritopterus* were collected at practically sea level, and the species appears to be confined to Fatu Hiva.

Asymphorodes spodogramma, new species

FIGURES 187, 304h

Alar expanse 6–7 mm.

Labial palpus cream white. Antenna pale buff. Head cream white; vertex with slight yellowish cast. Thorax cream white; tegula grayish fuscous. Forewing ground color cream white; from base along fold, a broad, longitudinal, grayish fuscous streak that ends before tornus; at end of cell a fuscous streak; on costa, beyond middle, two slender, outwardly oblique grayish fuscous

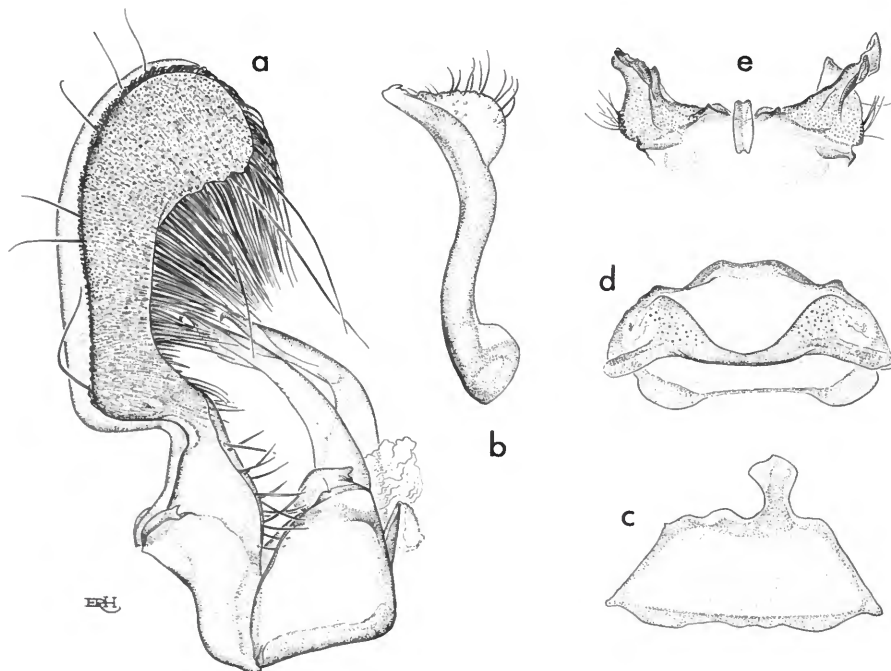


FIGURE 187.—*Asymphorodes spodogramma*, new species: a, lateral aspect of male genitalia with aedeagus removed; b, aedeagus; c, 6th tergum; d, 7th tergum and sternum; e, 8th sternum.

streaks; termen to apex with scattered grayish fuscous scales; cilia pale buff. Hindwing whitish; cilia pale buff. Foreleg cream white; tibia and tarsal segments marked grayish fuscous; midleg similar but not so strongly marked; hindleg cream white. Abdomen grayish dorsally; ventrally pale buff; 6th, 7th, and 8th segments of male strongly modified.

Male genitalia slide USNM 25141. Harpe broadest at base, neck short and narrow; cucullus moderately expanded. Brachia of about equal length, curved. Tegumen shorter than broad. Aedeagus S-shaped, slender, with a small barb dorsodistally; manica with high keel dorsally.

HOLOTYPE.—USNM 100821.

TYPE-LOCALITY.—Hiva Oa, Atuona.

DISTRIBUTION.—Hiva Oa.

FOOD PLANT.—Unknown.

Described from the ♂ holotype (10 Feb 1968) and 2♂ paratypes from Atuona, 10 Feb and 3 Mar 1968.

The abdominal segments point to a close relationship between *spodogramma* and *acritopterus*, new species, but the latter is a much larger moth (8–12 mm) than the former and *acritopterus* lacks the longitudinal streak of the forewing, so characteristic of *spodogramma*.

Asymphorodes balanotis Meyrick

FIGURES 188, 305c–e

Asymphorodes balanotis Meyrick, 1934c:351.—Clarke, 1955 [1955–1970]:63.

Male genitalia slides USNM 24235, 24795. Harpe base broad, neck abruptly angled; outer three-fourths sickle-shaped; cucullus broadened. Brachia slender, wavy; right brachium considerably longer than left. Tegumen slightly broader than long. Aedeagus slender, slightly bent distally; manica with deep keel dorsally.

Female genitalia slides USNM 24794, 24796. Ostium emerging from a deep pit in 7th sternum; 7th sternum with deep median cleft; edges of cleft sclerotized. Inception of ductus seminalis from posterior edge of bursa copulatrix. Ductus bursae very slender. Bursa copulatrix membra-

nous. Signa two elongate, dentate plates.

HOLOTYPE.—In the Bernice P. Bishop Museum.

TYPE-LOCALITY.—Hiva Oa, Avaoa Valley.

DISTRIBUTION.—Marquesas Islands.

Hiva Oa: Atuona, 12–28 Feb 1968, 3♂, 3♀. Ootua, 800 m, 27–30 Jul 1977, 3♂ (Montgomery). Fatu Hiva: Omoa, 11–21 Mar 1968, 5♂, 7♀. Eiao: Vaituha (acc. Meyrick, 1934c).

FOOD PLANT.—Unknown.

The iridescent modified scale patch of the hindwing and the dorsal horny processes from the metascutum distinguish this species (♂) from any other described form. The females of *balanotis* and those of *Microzestis inelegans* Meyrick are superficially similar, and might be confused, but the genitalia (Figures 188, 208) easily distinguish the two. Between the 6th and 7th sterna of the female of *balanotis* there is median, cuplike structure.

Two of our specimens are labeled “beaten from *Pandanus tectorius*.”

Asymphorodes acerbus Meyrick

FIGURES 189, 305f,g

Asymphorodes acerba Meyrick, 1929a:501.—Clarke, 1955 [1955–1970]:33.

Male genitalia slides USNM 24735, 24743. Harpe sharply angled between base and cucullus; cucullus narrow proximally, dilated distally. Brachia broad basally, gradually tapered to a sharp point, right brachium slightly longer than left. Tegumen slightly broader than long. Aedeagus slender, nearly straight; manica with small, weak keel dorsodistally.

Female genitalia slides USNM 24736, 24745, 25132. Ostium a short, sclerotized tube deeply set in a deep excavation of seventh sternum; posterior edge of sternum broadly sclerotized; lamella postvaginalis granular. Inception of ductus seminalis from posterior edge of bursa copulatrix. Ductus bursae very slender, very short. Bursa copulatrix membranous.

ORIGINAL MATERIAL.—“♀. 9–10 mm . . . Mar-

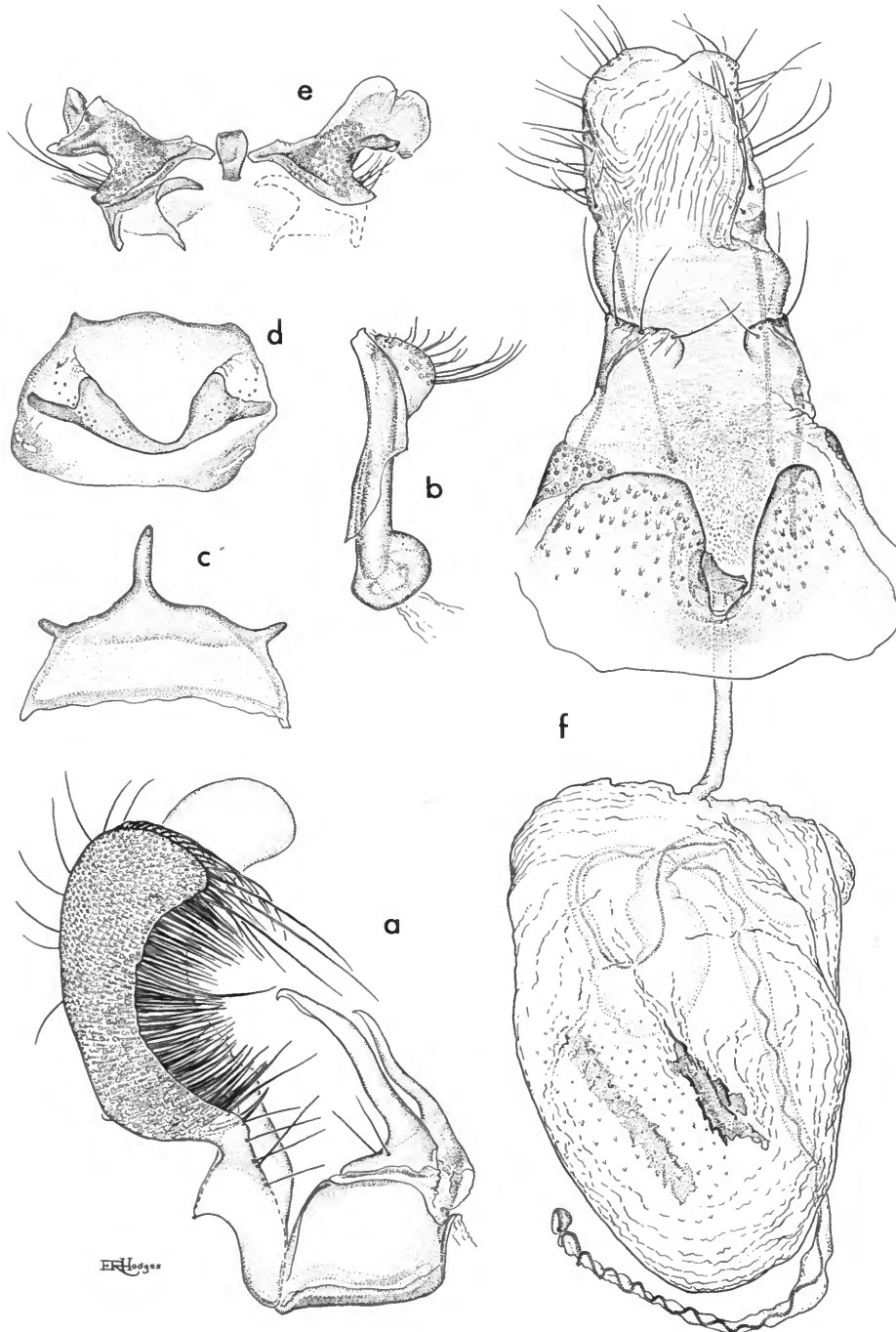


FIGURE 188.—*Asymphorodes balanotis* Meyrick: *a*, lateral aspect of male genitalia with aedeagus removed; *b*, aedeagus; *c*, 6th tergum; *d*, 7th tergum and sternum; *e*, 8th sternum; *f*, ventral view of female genitalia.

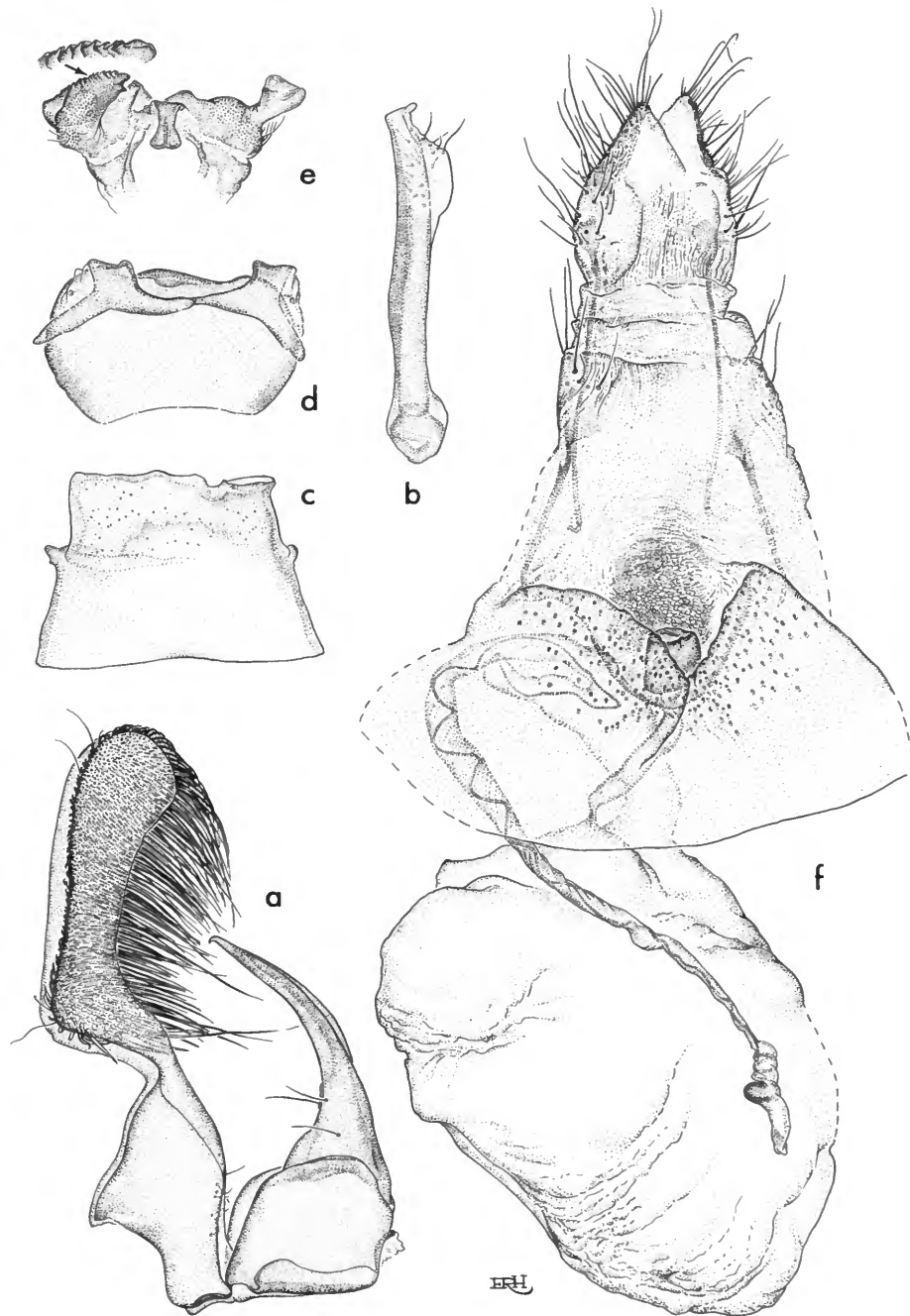


FIGURE 189.—*Asymphorodes acerbus* Meyrick: *a*, lateral aspect of male genitalia with aedeagus removed; *b*, aedeagus; *c*, 6th tergum; *d*, 7th tergum and sternum; *e*, 8th sternum; *f*, ventral view of female genitalia.

quesas, Nuku Hiva, Fatu Hiva, January, at light; 2 ex".

LECTOTYPE.—Female, 9 mm. "Fatu Hiva, Marquesas. At light. 5.1.25. St. George Expedn. C. L. Collenette." A small white label reads, "Brit. Mus. 1925-488," and another small one "P616." A large black-bordered label bears the inscription "*Asymphorodes acerba* Meyr. Tr. Ent. Soc. Lond. 76, p. 501(1929). TYPE ♀." In addition there is the usual round, red-bordered British Museum label with "Type. H. T." Lectotype hereby designated.

Lectotype is in the British Museum (Natural History).

TYPE-LOCALITY.—Fatu Hiva.

DISTRIBUTION.—Marquesas Islands.

This common species is represented in the USNM collection by the following 195 specimens. Hiva Oa: Atuona, 28 Feb 1968, 1♀. Fatu Hiva: Omoa, 11–29 Mar 1968, 27♂, 166♀; Tahuna, 2000 ft (610 m), 27 Mar 1968, 1♀.

FOOD PLANT.—Unknown.

The preponderance of females is interesting: 6 to 1. This species is primarily a low elevation insect, found only occasionally at higher altitudes.

The thornlike processes of the metascutum of the male are present in *acerbus*.

Meyrick described this as "dark bronzy-grey" but the ground color in fresh specimens is nearer fuscous with bronzy reflections, as in *homosoma*, new species.

Asymphorodes porphyrarcha Meyrick

FIGURES 190, 306a

Asymphorodes porphyrarcha Meyrick, 1929a:501.—Clarke, 1955 [1955–1970]:255.

Asymphorodes xestophanes Meyrick, 1934c:351.—Clarke, 1955 [1955–1970]:328. [New synonym.]

Male genitalia slides USNM 24640, 24643, 24920. Harpe narrow basally, outer half narrow, cucullus rounded. The harpe is strongly ankylosed with lateral fleshy flaps on eighth sternum, each flap with a median point. Brachia twice as long as tegumen, dilated distally. Tegumen sub-

rectangular. Aedeagus slender, curved; manica dilated distally.

Female genitalia slides USNM 24641, 24642, 24644. Ostium a small sclerotized ring slightly protruding. Seventh sternum deeply cleft posteriorly. Antrum not differentiated. Inception of ductus seminalis from posterior end of bursa copulatrix on right side. Ductus bursae slender, membranous, about one-third length of bursa copulatrix. Bursa copulatrix membranous with a few fine granules anteriorly.

ORIGINAL MATERIAL.—"♂♀. 12–14 mm . . . Marquesas, Hiva Oa, 3500 feet, January, at light or beaten from herbage; 6 ex."

LECTOTYPE.—Male, 12 mm. "Hiva Oa, Marquesas. At light. 3500 ft., 28.1.25. St. George Expedn. C. L. Collenette." A small white label reads "Brit. Mus. 1925-488," and another small one "P574." A large rectangular, black-bordered label bears the inscription "*Asymphorodes porphyrarcha* Meyr. Tr. Ent. Soc. Lond. 76, p. 501(1929) TYPE ♂." The usual round, red-bordered British Museum label with "Type H. T." is attached. Lectotype hereby designated.

Lectotype (*porphyrarcha*) is in the British Museum (Natural History); holotype (*xestophanes*) is in the Bernice P. Bishop Museum.

TYPE-LOCALITIES.—Hiva Oa, 3500 ft (1067 m) (*porphyrarcha*); Hiva Oa, Avaoa Valley, 1350 ft (411 m) (*xestophanes*).

DISTRIBUTION.—Hiva Oa, Fatu Hiva.

The series before me consists of the following. Hiva Oa: Mt. Feani, 3400 ft (1036 m), 1 Mar 1968, 8♂, 4♀. Ootua, 800 m, 27–30 Jul 1977, 1♂ (Montgomery). Fatu Hiva: Teavapuhiau, Ouia, 750 m, 1–3 Aug 1977, 1♂ (Montgomery).

FOOD PLANT.—Unknown.

The male possesses the same thornlike structures of the metascutum as in *Asymphorodes dimorpha* (Busck, 1914:105) from Hawaii, and as illustrated by Zimmerman (1978, figs. 755, 756, 757). The type of *xestophanes* in the Bishop Museum is in miserable condition, consisting of one badly rubbed forewing and two hindwings. The head and abdomen are missing. On the basis of the one remaining forewing I place *xestophanes*

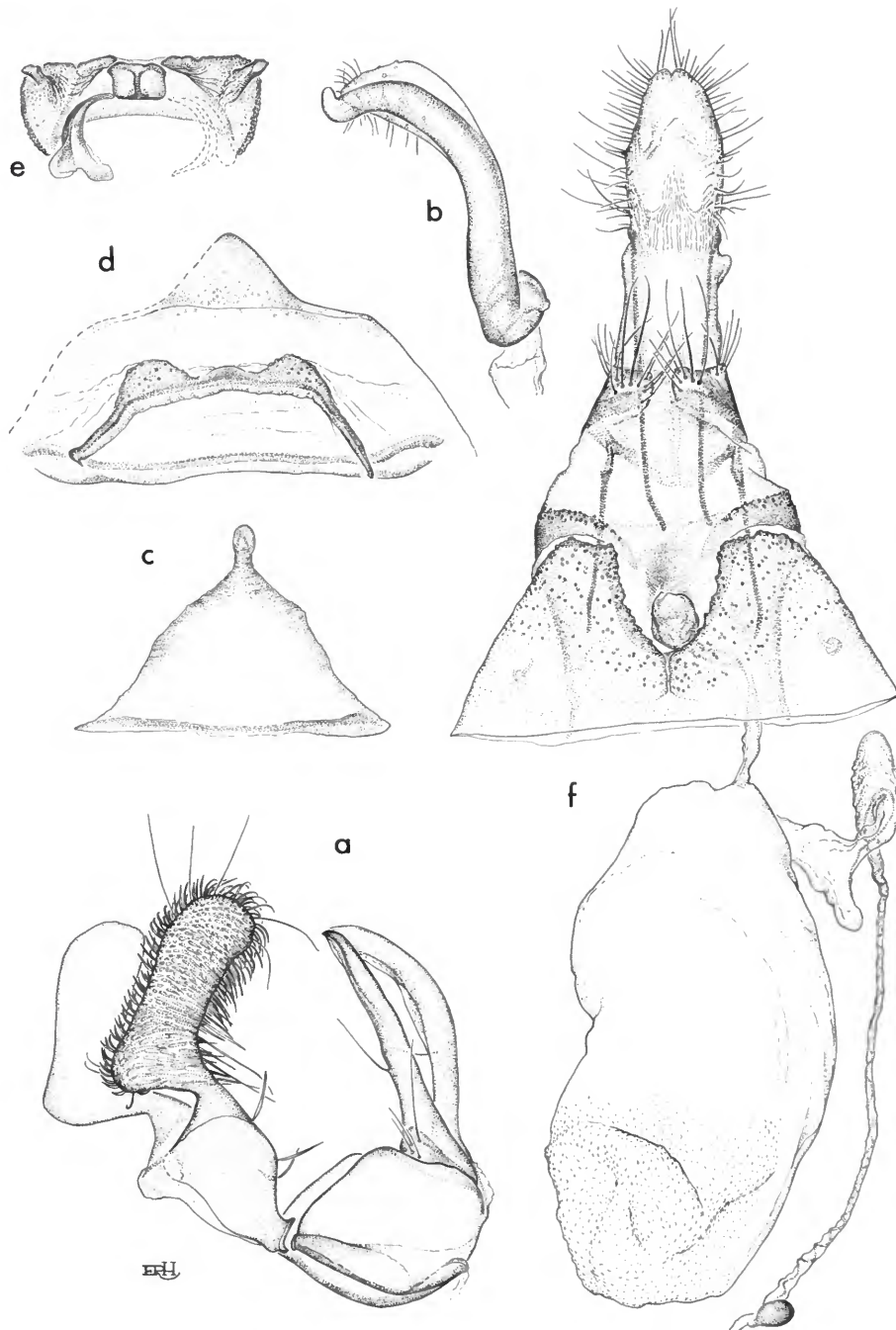


FIGURE 190.—*Asymphorodes porphyryarcha* Meyrick: *a*, lateral aspect of male genitalia with aedeagus removed; *b*, aedeagus; *c*, 6th tergum; *d*, 7th tergum and sternum; *e*, 8th sternum; *f*, ventral view of female genitalia.

in the synonymy under *porphyryarcha*, and associate the 14 specimens as listed above.

***Asymphorodes honoria*, new species**

FIGURES 191, 305h

Alar expanse 11 mm.

Labial palpus missing. Antenna benzo brown with slightly paler annulations. Head benzo brown; face buff. Thorax benzo brown; tegula pale grayish apically; metascutum with prominent thornlike processes. Forewing ground color benzo brown; from basal fifth of costa an irregular, oblique, transverse buff fascia extends to slightly beyond fold; at three fifths of costa an irregular buff blotch crosses end of cell and nearly reaches tornus; in middle of cell a blackish fuscous spot followed at end of cell by a similarly colored but larger elongate spot; subapically on costa a wedge-shaped buff mark and along termen a buff dash; cilia grayish fuscous and benzo brown mixed with a few buff scales. Hindwing grayish fuscous; cilia slightly lighter. Foreleg

buff, strongly marked fuscous on outer side; midleg buff; tibia with three fuscous blotches on outer side; tarsal segments marked fuscous; hindleg buff; tibia with a small fuscous spot at middle and a large blotch distally on outer side. Abdomen fuscous dorsally, buff ventrally; 6th, 7th, and 8th segments of male strongly modified.

Male genitalia slide USNM 24939. Harpe extreme base narrow, then broadened distad ending in a narrowly constricted neck; cucullus broadly expanded. Brachia rather long, curved, pointed. Tegumen broader than long. Aedeagus slender, curved; manica with narrow keel dorsally.

HOLOTYPE.—USNM 100816.

TYPE-LOCALITY.—Fatu Hiva, Mt. Upe, 2025 ft (617 m).

DISTRIBUTION.—Fatu Hiva.

FOOD PLANT.—Unknown.

Described from the unique ♂ holotype (3 Apr 1968).

This species reminds one of *circopis* but the dark basal patch of the forewing of *honoria* is

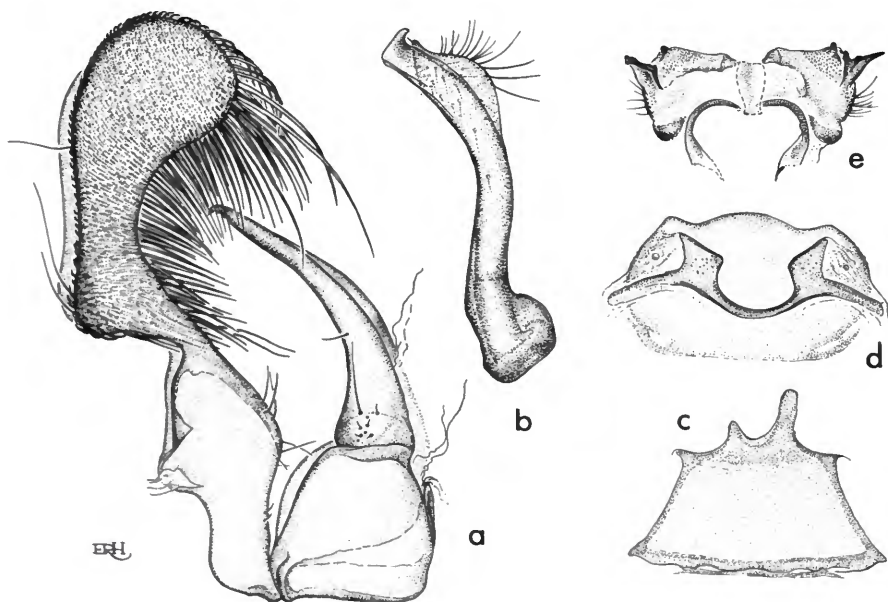


FIGURE 191.—*Asymphorodes honoria*, new species: a, lateral aspect of male genitalia with aedeagus removed; b, aedeagus; c, 6th tergum; d, 7th tergum and sternum; e, 8th sternum.

much shorter than that of *circopis*. The manica of *honorio* is much narrower than that of *circopis* and the terminal abdominal segments of the males are strikingly different as can be seen in the figures. Unfortunately the female of *honorio* is unknown.

***Asymphorodes phaeodelta*, new species**

FIGURES 192, 306b

Alar expanse 10–11 mm.

Labial palpus ocherous white; third segment almost wholly blackish fuscous on inner surface. Antenna blackish fuscous and white annulated; scape ocherous white with a small fuscous spot near apex dorsally. Head ocherous white with median ocherous suffusion. Thorax light ochraceous buff; tegula ochraceous tawny. Forewing ground color light ochraceous buff; at basal angle an ochraceous tawny suffusion and a similarly colored short streak on base of costa; from basal fourth to apical fourth of costa a triangular, sayal brown patch based on costa, extends to tornus; in middle of triangular patch, on costa, a light ochraceous buff patch; terminal area of wing sayal brown; on fold, at inner edge of triangle, a small fuscous spot; cilia buff at tornus, remainder brown. Hindwing grayish, paler toward base; cilia light grayish. Foreleg buff; tibia and tarsal segments blackish fuscous on outer side; midleg buff; tibia with fuscous mark proximally and distally on outer side; tarsal segments marked fuscous; hindleg buff; tibia suffused fuscous on outer side; tarsal segments marked fuscous. Abdomen grayish fuscous dorsally; ocherous white ventrally.

Female genitalia slide USNM 24842, 25455. Ostium small, round, emerging from a dome-shaped, sclerotized structure, the latter at the base of a deep excavation in the posterior margin of the 7th sternum. Inception of ductus seminalis from posterior end of bursa copulatrix. Ductus bursae slender, membranous, from posterior end of bursa copulatrix. Bursa copulatrix membranous, finely spiculate.

HOLOTYPE.—USNM 100817.

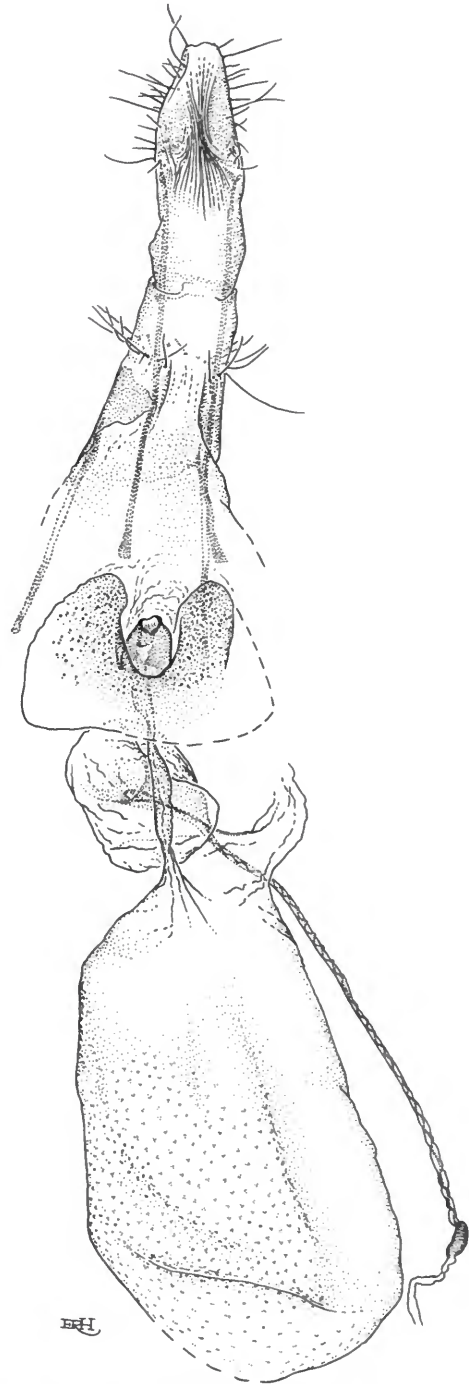


FIGURE 192.—*Asymphorodes phaeodelta*, new species, ventral view of female genitalia.

TYPE-LOCALITY.—Nuku Hiva, Taiohae.

DISTRIBUTION.—Nuku Hiva.

FOOD PLANT.—Unknown.

Described from the ♀ holotype (26 Jan 1968) and 3♀ paratypes, all from the type-locality, 25 Jan to 5 Feb 1968.

Although the females show distinct annulations of the antennae, the male antennae are probably not annulated, as is the case with some other species.

The relationship of *phaeodelta* probably lies with the new species group *leptotes-nebrias*, but can easily be distinguished from those two species by the triangular mark on the costa.

Asymphorodes leptotes, new species

FIGURES 193, 306c,d

Alar expanse 10–12 mm.

Labial palpus light buff; third segment suffused grayish anteriorly. Antenna scape pale orange yellow with fuscous line posteriorly; flagellum grayish fuscous with faint paler annulations. Head pale orange yellow. Thorax pale orange yellow; tegula brown; male with thornlike processes from metascutum. Forewing ground color pale orange yellow; from base, along fold, a blackish fuscous line extends almost to end of cell; beyond the outer end of this line a blackish fuscous spot; base of costa blackish fuscous; slightly beyond middle of costa a blackish fuscous dash followed by a buff dash; underside of forewing blackish fuscous; cilia on outer part of dorsum and tornus grayish, remainder along termen pale orange yellow. Hindwing grayish fuscous; cilia a shade lighter. Foreleg buff; blackish fuscous on outer side; midleg similar but not strongly marked fuscous; hindleg buff marked on tibia and tarsal segments with fuscous. Abdomen blackish fuscous dorsally; ventrally buff; posterior segments modified (Figure 193 c–e).

Male genitalia slides USNM 24806, 24807. Harpe broad basally; neck very short and slender; cucullus expanded. Branchia slender, sharply pointed, abruptly curved just before mid-

dle. Tegumen slightly longer than broad. Aedeagus long, slender, nearly straight; manica with a moderately high keel dorsally.

Female genitalia slides USNM 24800, 24803. Ostium small, round, emerging from a short, sclerotized tube, at base of excavation in posterior margin of 7th sternum. Inception of ductus seminalis from posterior end of bursa copulatrix. Ductus bursae short, slender, sclerotized posteriorly. Bursa copulatrix membranous, finely spiculate in anterior half.

HOLOTYPE.—USNM 100818.

TYPE-LOCALITY.—Nuku Hiva, Tapuaooa, 2500 ft (762 m).

DISTRIBUTION.—Nuku Hiva.

FOOD PLANT.—Unknown.

Described from the ♂ holotype (30 Jan 1968), 3♂ and 6♀ paratypes with identical data; and 4♂, 1♀ paratypes from Nuku Hiva, Toovii, Ooumu, 900 m, 16–19 Jul 1977 (Montgomery).

The markings on some of the specimens are suffused, or not as well developed as shown in illustrations of the wings (Figure 306c,d).

This, and *bipunctatus*, new species, might be confused as indicated under *bipunctatus*. The two occur together but can most readily be distinguished by the terminal abdominal segments of the males.

Asymphorodes mediostriatus, new species

FIGURES 194, 306e

Alar expanse 11–12 mm.

Labial palpus light buff; third segment fuscous anteriorly. Antenna scape light buff; flagellum brown basally shading to fuscous distally. Head light buff, side tufts light orange yellow. Thorax light orange yellow; tegula fuscous; thorax of male with thornlike processes from metascutum. Forewing ground color light orange yellow; from base to apex a blackish fuscous longitudinal stripe; on base of costa a blackish fuscous mark, and similarly colored marks on midcosta and on costa before apex; in some specimens the basal mark and the one on midcosta are joined and

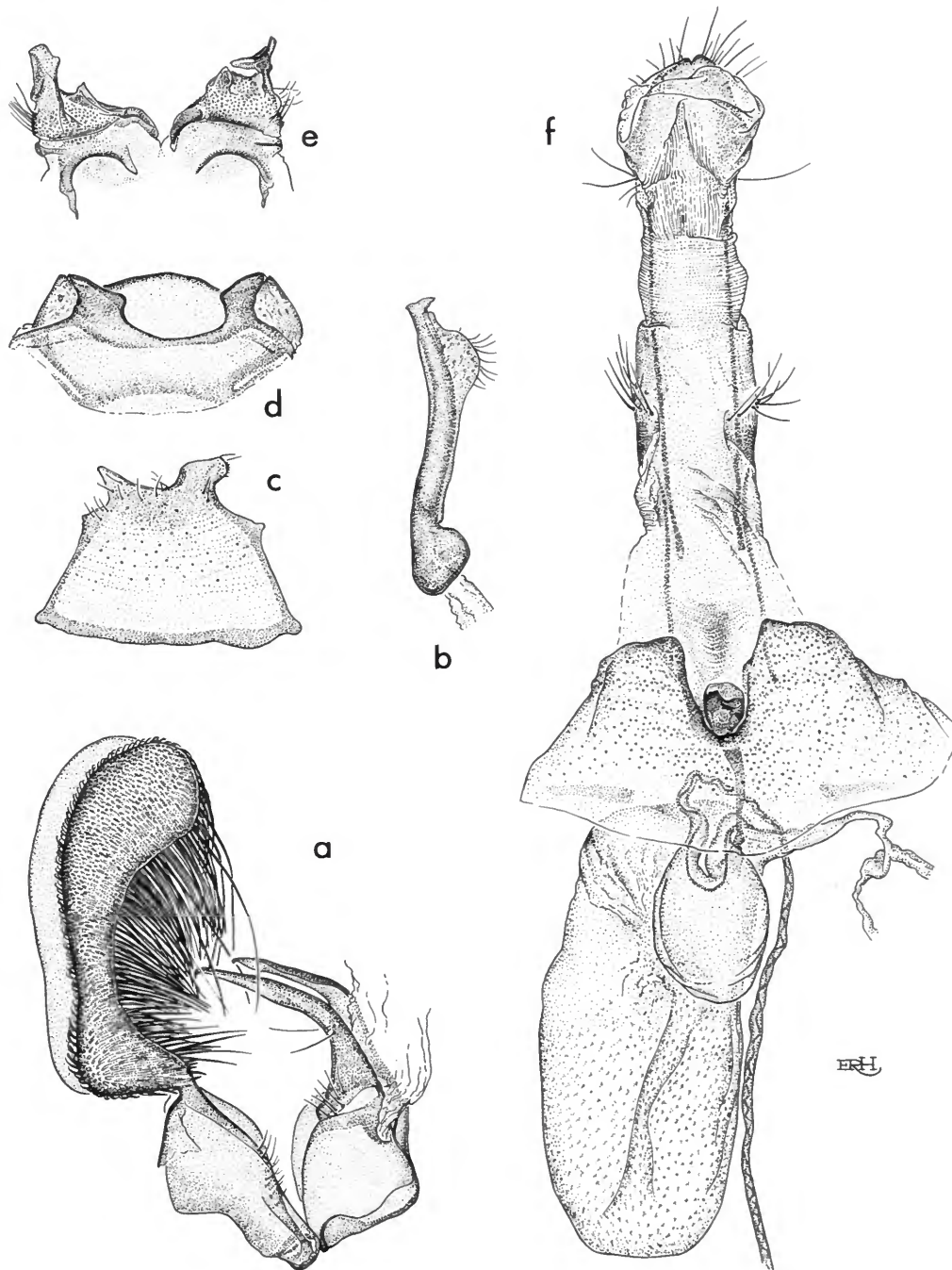


FIGURE 193.—*Asymphorodes leptotes*, new species: *a*, lateral aspect of male genitalia with aedeagus removed; *b*, aedeagus; *c*, 6th tergum; *d*, 7th tergum and sternum; *e*, 8th sternum; *f*, ventral view of female genitalia.

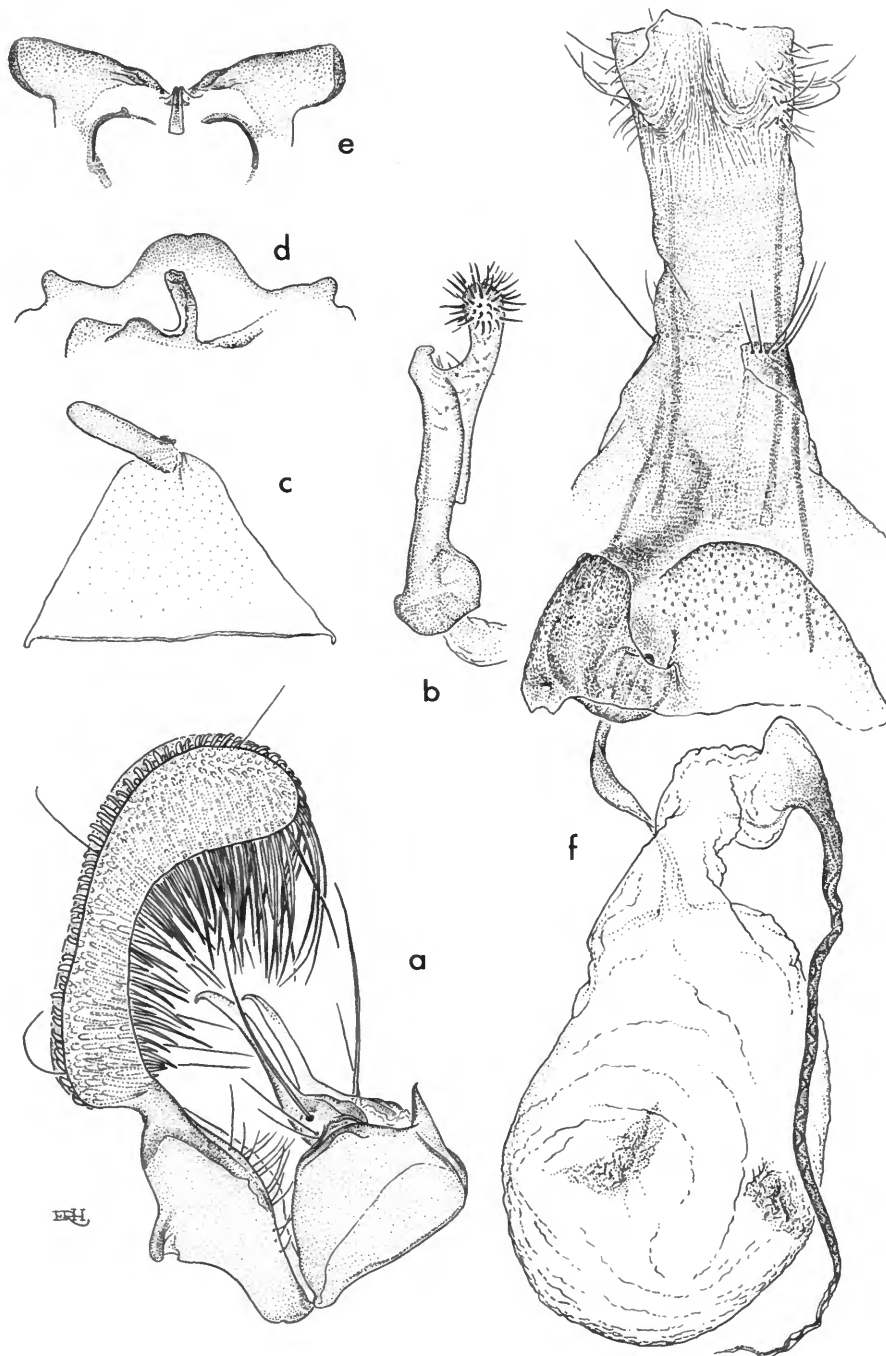


FIGURE 194.—*Asymphorodes mediotriatus*, new species: *a*, lateral aspect of male genitalia with aedeagus removed; *b*, aedeagus; *c*, 6th tergum; *d*, 7th tergum and sternum; *e*, 8th sternum; *f*, ventral view of female genitalia.

confluent with the median longitudinal line; on dorsum a few blackish fuscous scales in some specimens; in middle of cell a discal spot is sometimes indicated by a ring of light buff scales around a blackish fuscous spot; underside of forewing blackish fuscous; cilia light grayish fuscous at tornus, light orange yellow toward apex. Hindwing grayish fuscous; cilia slightly lighter. Foreleg light buff; femur with blackish fuscous dash on outer side; tibia and tarsal segments blackish fuscous on outer side; midleg and hindleg light buff; hind femur with grayish suffusion distally on outer side. Abdomen fuscous dorsally, buff ventrally; 6th tergum, 7th tergum and sternum, and 8th sternum of male strongly modified (Figure 194*c-e*).

Male genitalia slide USNM 24797. Harpe broad basally, abruptly narrowed at neck; neck very short; remainder of harpe sickle-shaped; cucullus slightly expanded. Brachia broad basally, abruptly narrowed and very weak, terminating in a small hook; right brachium slightly longer than left. Tegumen shorter than broad. Aedeagus relatively short, slightly longer than tegumen; manica with a long, curved dorsal process clothed with setae distally.

Female genitalia slide USNM 24798. Ostium small, round, at the base of a peculiar cavity on the left side of the 7th sternum. Inception of ductus seminalis from posterior end of bursa copulatrix. Ductus bursae slender, about half the length of bursa copulatrix, sclerotized on posterior half. Bursa copulatrix membranous. Signa two rugose, narrow plates.

HOLOTYPE.—USNM 100819.

TYPE-LOCALITY.—Nuku Hiva, Tunoa Ridge, 2900 ft (884 m).

DISTRIBUTION.—Nuku Hiva.

FOOD PLANT.—Unknown.

Described from the ♂ holotype (23 Jan 1968), 5♂ and 5♀ paratypes as follows: Nuku Hiva, Tunoa Ridge, 2900 ft (884 m), 23 Jan 1968, 5♂, 3♀; Tapuaooa, 2500 ft (762 m), 30 Jan 1968, 2♀.

This is one of the few species in the genus that have signa, an unusual feature. It is similar in coloring to *semiluteus*, new species, but is a larger moth and easily distinguishable on genitalia.

Asymphorodes nebrias, new species

FIGURES 195, 306*fg*

Alar expanse 8–11 mm.

Labial palpus ochraceous buff; second segment with grayish fuscous apical annulus; third segment grayish fuscous on outer side. Antenna grayish fuscous with slightly paler annulations; scape ochraceous buff. Head ochraceous buff with median grayish suffusion. Thorax ochraceous buff; tegula grayish fuscous basally; male with thornlike processes from metascutum. Forewing ground color ochraceous buff; at base of costa a grayish fuscous mark and a similar mark at basal angle; at base of fold a grayish fuscous streak; in middle of cell a short grayish fuscous dash, and at end of cell a similarly colored spot; much of wing marked by grayish suffusion; cilia grayish fuscous at tornus, remainder ochraceous buff. Hindwing gray; cilia slightly lighter. Foreleg buff; outer side blackish fuscous; midleg and hindleg buff. Abdomen grayish fuscous dorsally; buff ventrally; 6th, 7th, and 8th segments of male strongly modified (Figure 195*c-e*).

Male genitalia slides USNM 24839, 24840, 24845, 24846, 24945, 24946, 24957, 24959, 24961, 25120. Harpe about one-third longer than brachia and tegumen combined; broad basally, neck very short; cucullus expanded. Brachia slender, curved, slightly longer than tegumen. Tegumen slightly broader than long. Aedeagus moderately slender, sharply curved about middle; manica with no appreciable modification.

Female genitalia slides USNM 24841, 24848. Ostium small, round, emerging from a sclerotized tube, the latter set at the base of a deep, median excavation in the 7th abdominal sternum. Lamella postvaginalis a large granular patch. Inception of ductus seminalis from posterior end of bursa copulatrix. Ductus bursae slender, threadlike, from near posterior end of bursa copulatrix. Bursa copulatrix membranous, somewhat thickened and slightly rugose anteriorly.

HOLOTYPE.—USNM 100820.

TYPE-LOCALITY.—Nuku Hiva, Tunoa Ridge, 2900 ft (884 m).

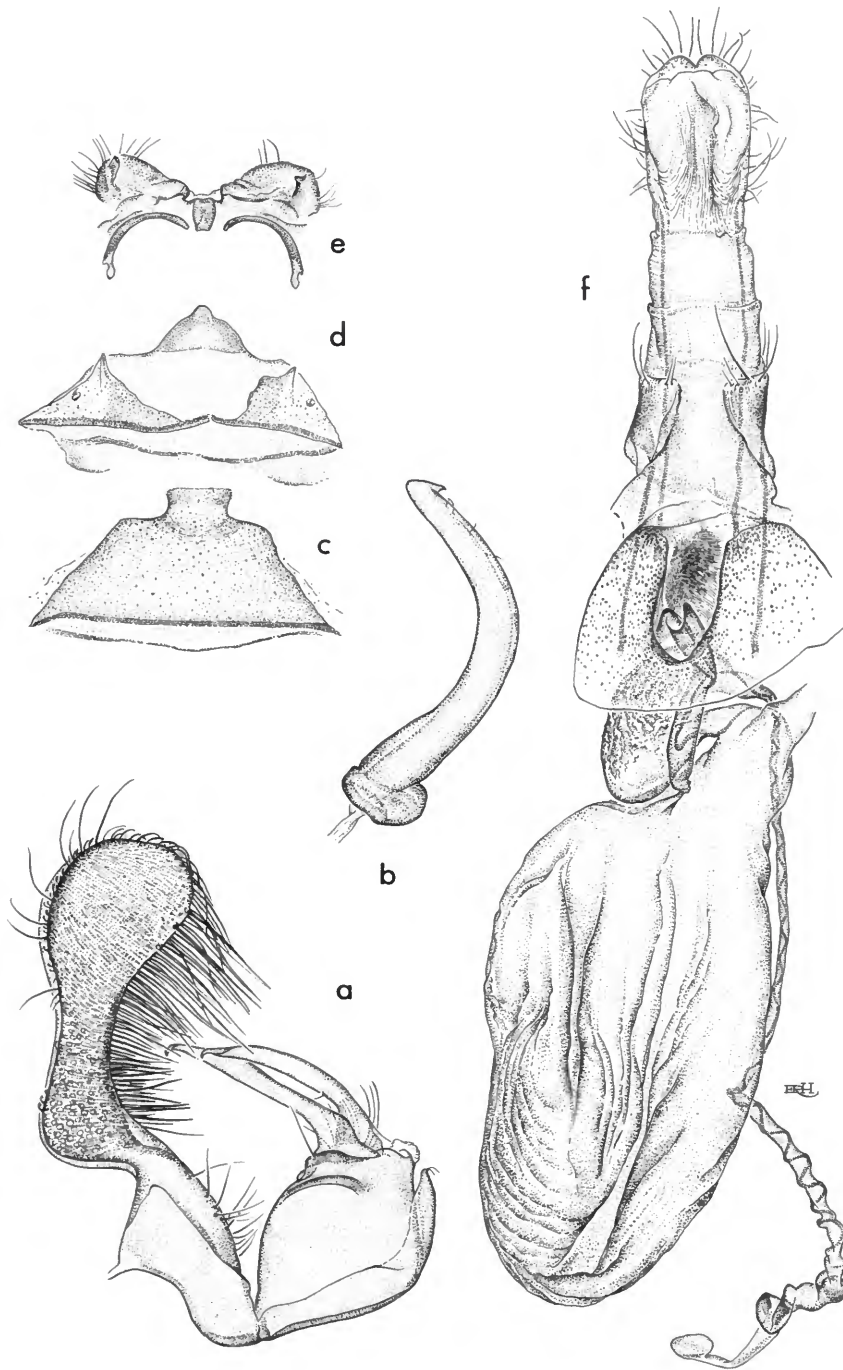


FIGURE 195.—*Asymphorodes nebias*, new species: *a*, lateral aspect of male genitalia with aedeagus removed; *b*, aedeagus; *c*, 6th tergum; *d*, 7th tergum and sternum; *e*, 8th sternum; *f*, ventral view of female genitalia.

DISTRIBUTION.—Nuku Hiva.

FOOD PLANT.—Unknown.

Described from the ♂ holotype (23 Jan 1968) 11♂ and 9♀ paratypes with identical data.

In some specimens the dark markings of the forewing are more contrasting than in the holotype (Figure 306g).

In coloration *nebras* is similar to *bipunctatus*, new species and *leptotes*, new species, but is easily distinguishable on genitalia.

There is considerable variation in the posterior margin of the 6th tergum of the males, varying from a bluntly pointed median projection to one that is broadly truncate as shown in Figure 195.

Asymphorodes phaeochorda Meyrick

FIGURES 196, 307a-c

Asymphorodes phaeochorda Meyrick, 1929a:499; 1934c:350.—Clarke, 1955 [1955-1970]:244.

Male genitalia slides USNM 24858, 24859, 24869, 24870, 24893, 24895, 24896, 24897, 24905, 24906, 24911. Harpe broad and short basally; neck short, slender; cucullus slightly dilated distally. Brachia rather slender, bent proximally; right brachium longer than left. Tegumen broader than long. Aedeagus somewhat S-shaped; manica indicated mainly by setae dorsally.

Female genitalia slides USNM 24813, 24814, 24860, 24861, 24894, 24907, 24908. Ostium small, round. Inception of ductus seminalis from posterior end of bursa copulatrix. Bursa copulatrix membranous.

ORIGINAL MATERIAL.—“♂♀. 9-10 mm . . . Marquesas, Nuku Hiva, Hiva Oa, Tahuata, Fatu Hiva, up to 1200 feet, January, at light; 35 ex.”

LECTOTYPE.—Female, 7 mm. “Nuku Hiva, Marquesas. At light, 21.1.25 St. George Expedn. C. L. Collenette.” A small white label reads “Brit. Mus. 1925-448.” A black-bordered, rectangular label bears the inscription “*Asymphorodes phaeochorda* [sic] Meyr. Tr. Ent. Soc. Lond. 76. p. 499, 1929. Type ♂.” Also, there is the usual red-bordered, round British Museum label “Type

H. T.,” plus a small white one with “P559.” Slide JFGC No. 11993. Lectotype hereby designated.

Lectotype is in the British Museum (Natural History).

TYPE-LOCALITY.—Nuku Hiva.

DISTRIBUTION.—Marquesas Islands.

Our series consists of 509 specimens as follows. Nuku Hiva: Taiohae, 13 Jan to 1 Feb 1968, 57♂, 265♀. Hiva Oa: Atuona, 12 Feb to 5 Mar 1968, 29♂, 108♀. Fatu Hiva: Omoa, 11 Mar to 8 Apr 1968, 7♂, 38♀. Eiao: N. uplands, 400 m, 7 Aug 1977, 1♂, 4♀ (Montgomery).

FOOD PLANT.—Unknown.

Meyrick recorded this species, undoubtedly the commonest in the islands, from Eiao, Tahuata, Uahuka, Hatutu, Hiva Oa, and Fatu Hiva, up to an elevation of 2460 feet (750 m). It should be noted that most of our material of this species was taken practically at sea level, very little at high elevation.

The males of *phaeochorda* possess prominent thornlike processes from the metascutum. Also, the 6th, 7th, and 8th segments of the abdomen are strongly modified (Figure 196 c-e) and indicate a close relationship to *leptotes*, new species, and *circopis*.

Asymphorodes plectographa Meyrick

FIGURES 197, 306h

Asymphorodes plectographa Meyrick, 1929a:498.—Clarke, 1955 [1955-1970]:252.

Male genitalia slide JFGC 11998. Harpe very narrow basally, strongly curved; cucullus expanded. Right brachium broad basally, tapering to a sharp point; left brachium, curved slightly, broadened distally. Tegumen short, broad. Aedeagus moderately slender, curved; manica with shallow keel dorsally.

HOLOTYPE.—In the British Museum (Natural History).

TYPE-LOCALITY.—Hiva Oa, 3500 ft (1067 m).

DISTRIBUTION.—Hiva Oa.

FOOD PLANT.—Unknown.

The holotype is the only specimen known of

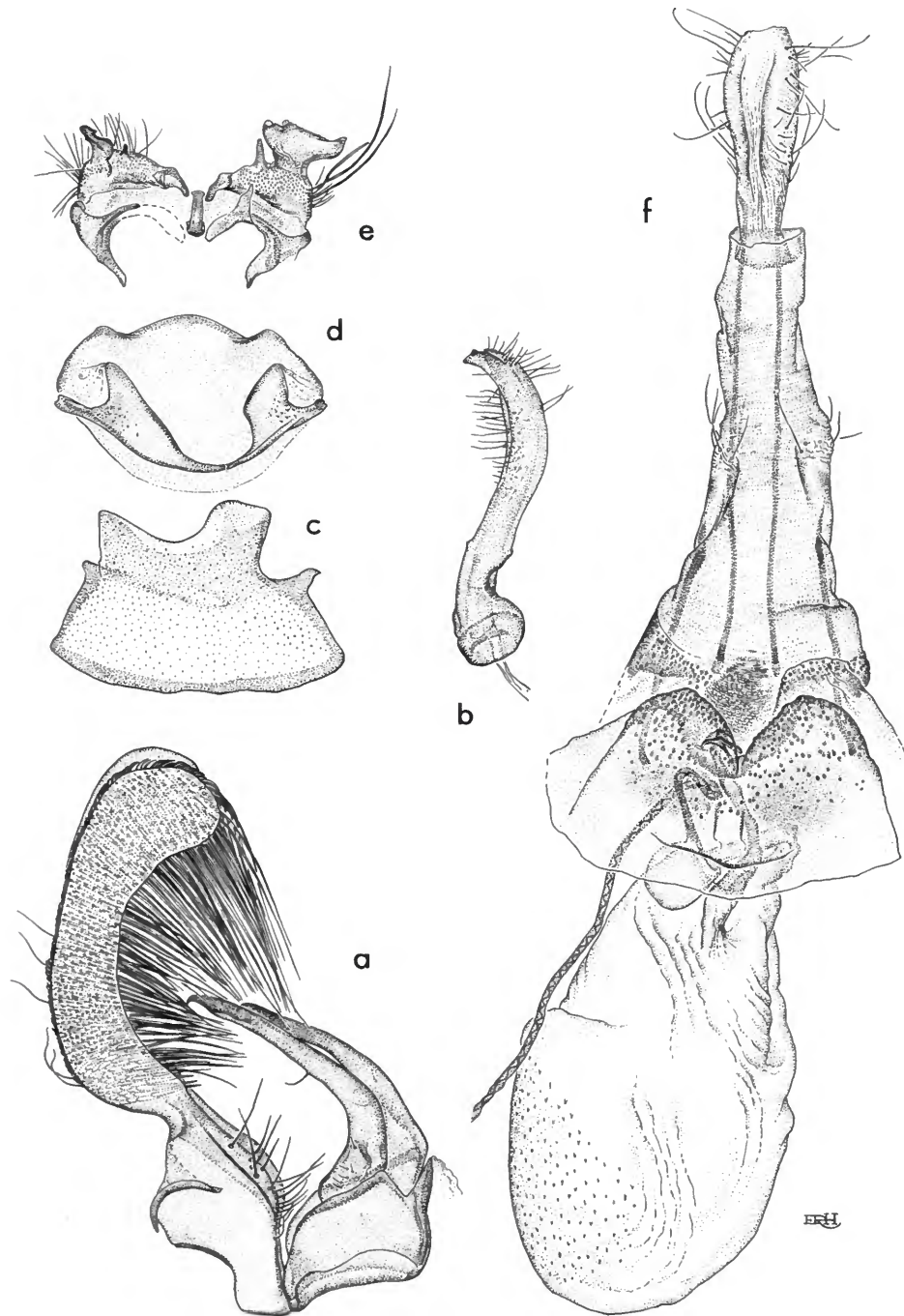


FIGURE 196.—*Asymphorodes phaeochorda* Meyrick: *a*, lateral aspect of male genitalia with aedeagus removed; *b*, aedeagus; *c*, 6th tergum; *d*, 7th tergum and sternum; *e*, 8th sternum; *f*, ventral view of female genitalia.

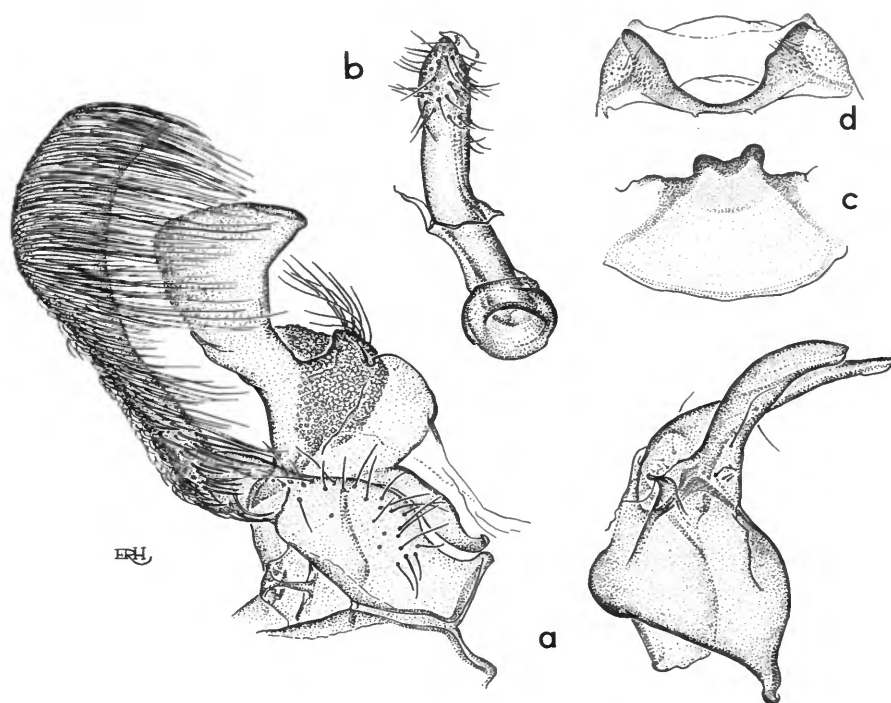


FIGURE 197.—*Asymphorodes plectographa* Meyrick: *a*, ventral view of male genitalia with right side removed, with left side of 8th sternum attached and brachia to right; *b*, aedeagus; *c*, 6th tergum; *d*, 7th tergum and sternum.

this species. (For modifications of the 6th and 7th terga and 8th sternum, see Figure 197*a-d*.)

Asymphorodes ochrogramma, new species

FIGURES 198, 307*d*

Alar expanse 10–12 mm.

Labial palpus buff; second segment fuscous on outer side; third segment with fuscous subapical annulus. Antenna fuscous, annulated pale ochraceous buff basally; scape pale ochraceous buff. Head mixed gray and pale ochraceous buff. Thorax fuscous mixed with pale ochraceous buff; metascutum of male with thornlike processes. Forewing ground color fuscous; near basal fifth of costa an irregular, oblique, ill-defined, pale ochraceous-buff fascia extends to fold; from middle of costa a slender, outwardly oblique pale ochraceous-buff line extends to end of cell where it joins a black dot; on costa, before apex, a small

pale ochraceous-buff dash; inside termen two pale ochraceous-buff dashes; on fold, about middle, a black spot; some scattered pale ochraceous-buff scales over most of wing; cilia grayish at tornus, fuscous along termen. Hindwing grayish fuscous; cilia concolorous toward apex, paler toward base. Foreleg pale ochraceous buff; tibia black on outer side; tarsal segments marked with black, midleg similar but not so strongly marked; hindleg pale ochraceous buff; tibia with two blackish fuscous blotches on outer side; tarsal segments marked blackish fuscous on outer side. Abdomen fuscous dorsally, buff ventrally with a fuscous spot on each segment laterally; 6th, 7th, and 8th segments of male strongly modified (Figure 198*c-e*).

Male genitalia slides USNM 24753, 24754. Harpe base short and broad; neck very short, slender; cucullus dilated. Brachia long, slender, curved. Tegumen longer than broad. Aedeagus

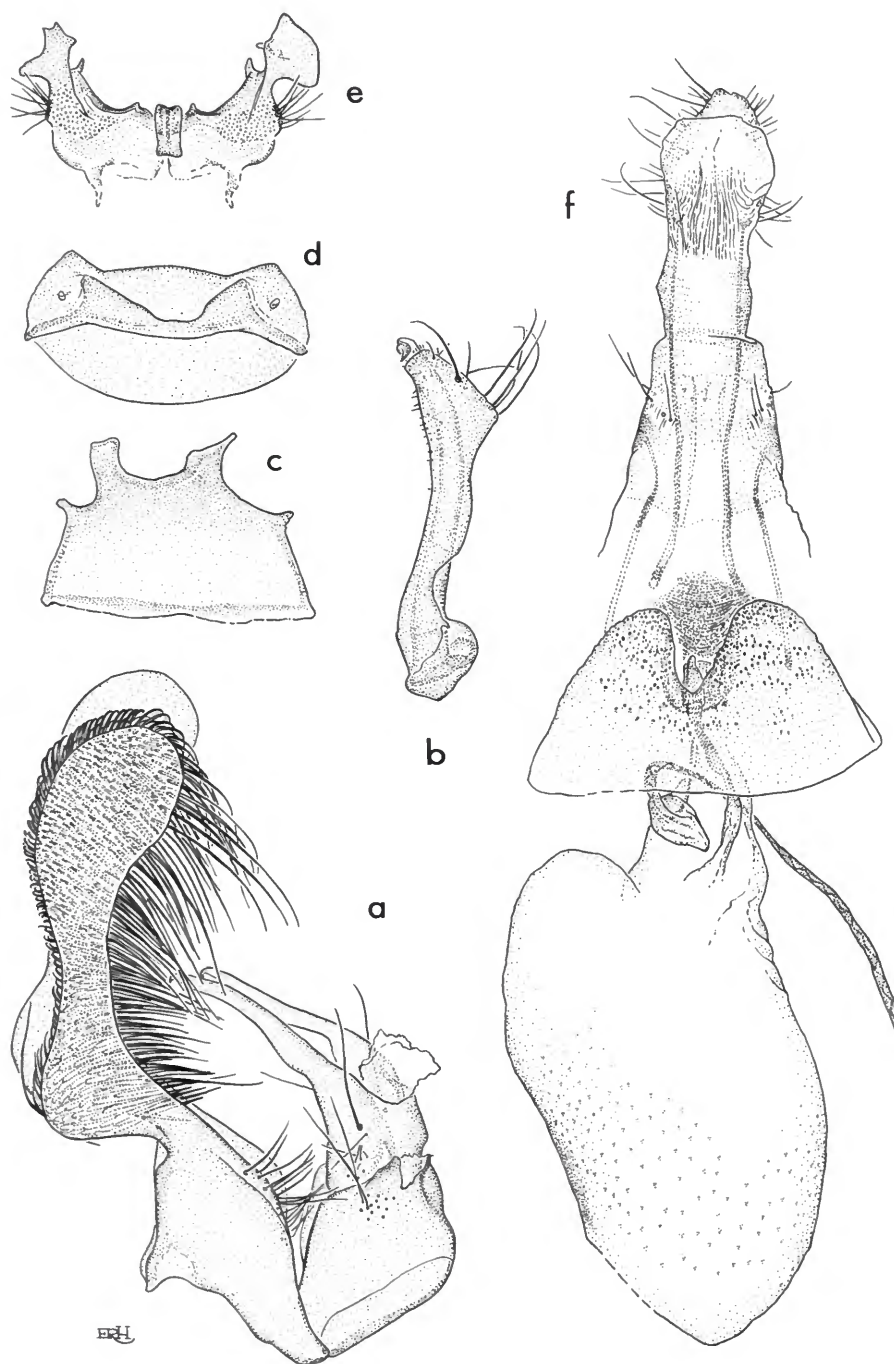


FIGURE 198.—*Asymphorodes ochrogramma*, new species: *a*, lateral aspect of male genitalia with aedeagus removed; *b*, aedeagus; *c*, 6th tergum; *d*, 7th tergum and sternum; *e*, 8th sternum; *f*, ventral view of female genitalia.

slender, slightly curved; manica with a shallow, triangular keel dorsodistally.

Female genitalia slides USNM 24755, 24756. Ostium small, round, emerging from a domelike structure, the latter with a posteroventral thornlike process; lamella postvaginalis a very broad granular area. Inception of ductus seminalis from posterior end of bursa copulatrix. Ductus bursae lightly sclerotized in posterior half. Bursa copulatrix membranous, finely and sparsely spiculate in anterior half.

HOLOTYPE.—USNM 100798.

TYPE-LOCALITY.—Nuku Hiva, Tapuaooa, 2500 ft (762 m).

DISTRIBUTION.—Nuku Hiva.

FOOD PLANT.—Unknown.

Described from the ♂ holotype (30 Jan 1968), 3♂ and 49♀ paratypes with identical data, and 2♀ paratypes from Tunoa Ridge, 2900 ft (884 m), 23 Jan 1968. Also, 27 ♂♀ paratypes from Nuku Hiva, Toovii, Ooumu, 900 m, 16–19 Jul 1977 (Montgomery).

This species shows an obvious relationship to several species (e.g., *trichogramma*, *phaeochorda*) through the modifications of the posterior abdominal segments of the males (Figures 183, 196). The species are quite different in appearance, and there should be no difficulty in identifying the various taxa.

Genus *Labdia* Walker

Labdia Walker, 1864 [1856–1866]:823.

TYPE-SPECIES.—*Labdia deliciosella* Walker, 1864 [1856–1866]:823; by monotypy.

Labdia dicyanitis Meyrick

FIGURES 199, 307e

Labdia dicyanitis Meyrick, 1934c:347.—Clarke, 1955 [1955–1970]:116; 1971:157, fig. 126, pl. 21f.

TYPE.—In the Bernice P. Bishop Museum.

TYPE-LOCALITY.—Marquesas Islands, Uahuka, Hane Valley, 30 ft (9.14 m).

DISTRIBUTION.—Marquesas Islands, Rapa.

In addition to the record of the type series from Uahuka we record the following. Nuku Hiva: Pakiu Valley, 1800 ft (548 m), 19–28 Jan 1968, 1♂, 2♀. Hiva Oa: Atuona, 11–27 Feb 1968, 1♂, 7♀; trail to Mt. Feani, 2000 ft (610 m), 1 Mar 1968, 1♂; 2200 ft (670 m), 20 Feb 1968, 1♂; Tahauku, 26 Feb 1968, 1♂, 1♀. Fatu Hiva: Omoa, 11–30 Mar 1968, 10♂, 81♀; Omoa Valley, 16 Mar to 9 Apr 1968, 4♂, 2♀; Tahuna, 2000 ft (610 m), 27 Mar 1968, 1♀; Teoaiua, 2000 ft (610 m), 22 Mar 1968, 1♂, 1♀.

FOOD PLANT.—Unknown.

As can be seen by the record, this species is very common in the Marquesas; and in all probability it will be found on most of the islands. The great preponderance of females (95♀ to 20♂) is an interesting phenomenon.

There is a great variation in size, not confined to one or the other sex, which leads me to suspect that the larva may be a borer or leafminer.

Herlinda, new genus

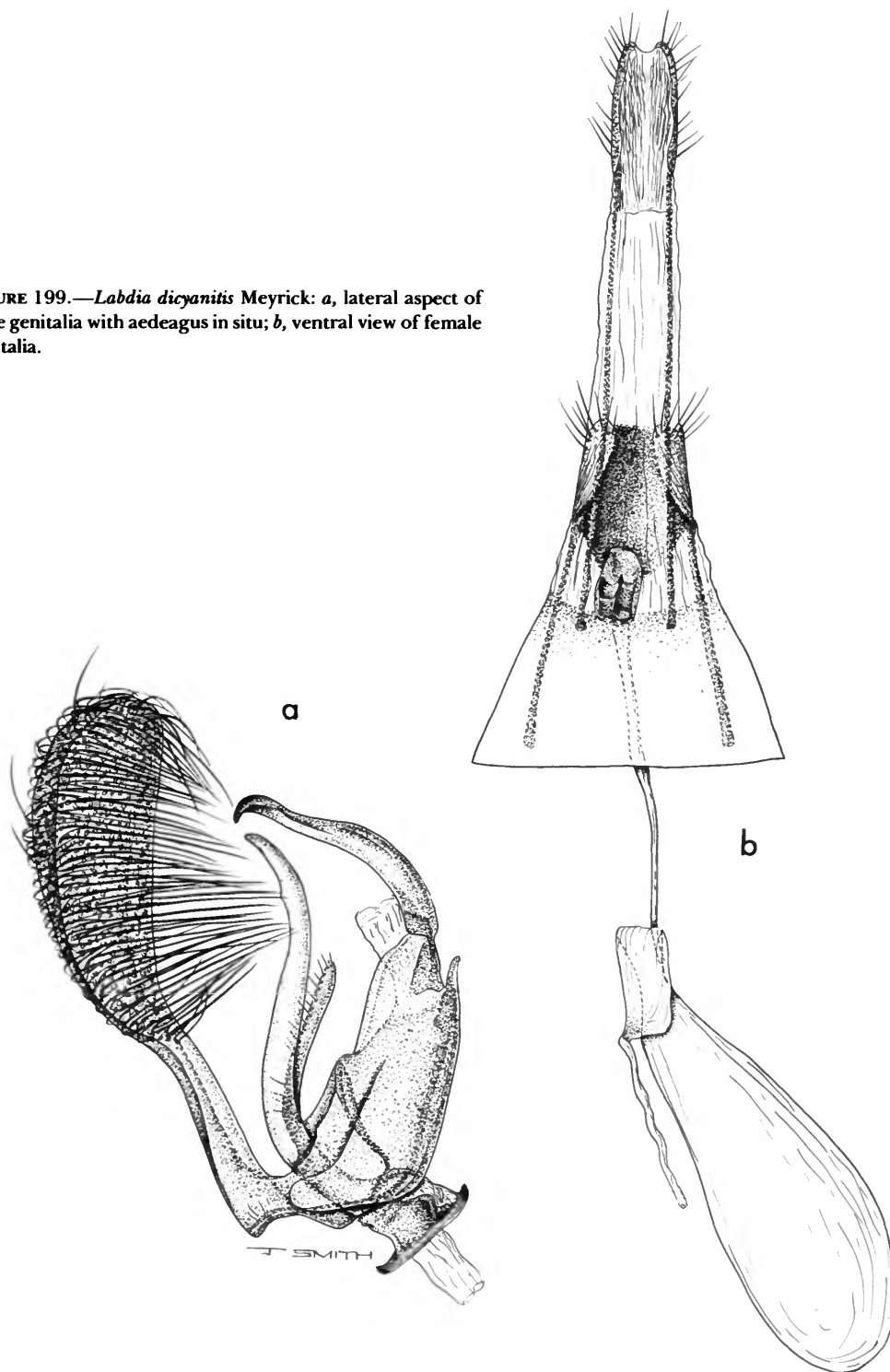
TYPE-SPECIES.—*Herlinda phaeoxantha*, new species; by present designation. The gender of the generic name is feminine.

Antenna serrate in male, simple in female, about four-fifths length of forewing; scape with pecten. Labial palpus, upturned, divergent, not reaching vertex; second segment slightly roughened anteriorly; third segment acute, about as long as second. Head smooth, covered with tightly appressed scales; ocellus absent. Thorax smooth. Posterior tibia roughened with hairlike scales. Forewing smooth, lanceolate, 11 veins, 1b simple, 1c absent; 2 and 3 coincident; 4 distant from 2 + 3; 5 absent, or faintly indicated; 6 and 7 stalked out of 8, 7 to costa slightly before apex; 8 obsolete at base or approximate to 9; 10 from well before 9; 11 from middle of cell. Hindwing with 8 veins, but 2, 3, 4, and 5 weakly indicated; 6 and 7 stalked, 7 to costa; hairpencil present (in male) on underside, from near base, fitting into fold along cell.

Male genitalia asymmetrical.

Female genitalia signum absent.

FIGURE 199.—*Labdia dicyanitis* Meyrick: *a*, lateral aspect of male genitalia with aedeagus in situ; *b*, ventral view of female genitalia.



This genus may be distinguished from *Microzestis* Meyrick (1929a:501) by the absence of vein 1c of the forewing and the simple vein 1b.

I am assigning four very small new species to this genus: *phaeoxantha*, *iota*, *fasciola*, and *oligoria*. There are some very slight differences in venation and labial palpi, but I think the species are so similar that they belong together.

***Herlinda fasciola*, new species**

FIGURES 200, 307f

Alar expanse 6 mm.

Labial palpus white; basal two-thirds of second segment fuscous; third segment with three fuscous annuli. Antenna cream white barred with fuscous for most of its length; scape cream white marked with fuscous dorsally. Head cream white with fuscous scales laterally. Thorax fuscous; tegula white apically; in male, thornlike processes from metascutum present. Forewing ground color fuscous; from basal fifth of costa an outwardly oblique, broad, white fascia extends to dorsum; at end of cell a fuscous spot broadly surrounded by white scales; slightly before tornus, on dorsum, a white blotch; cilia cream white. Hindwing very pale gray; cilia concolorous. Foreleg cream white; tibia and tarsal segments marked blackish fuscous on outer side; midleg cream white; tibia and tarsal segments barred with blackish fuscous; hindleg cream white; tibia with two fuscous marks on outside. Abdomen grayish fuscous dorsally; ventrally cream white; 8th sternum modified.

Male genitalia slides USNM 25121, 25122. Harpe broad basally; neck very slender, short; cucullus slightly expanded. Brachia of about equal length, slender, curved. Tegumen broader than long. Aedeagus slender, strongly curved; manica with shallow keel dorsally.

HOLOTYPE.—USNM 100823.

TYPE-LOCALITY.—Fatu Hiva, Omoa.

DISTRIBUTION.—Fatu Hiva.

FOOD PLANT.—Unknown.

Described from the ♂ holotype (14 Mar 1968) and 1♂ paratype with identical data.

At first glance *fasciola* might be confused with *iota*, new species, but *iota* lacks the distinct fascia of the forewing found in *fasciola*. Moreover, the aedeagus of *fasciola* is longer, more slender, and more strongly curved than that of *iota*. The 8th sterna are markedly different (Figures 200, 201).

Two females from Hiva Oa, Atuona, 24 Feb 1968, are superficially indistinguishable from the males of *fasciola*, but their genitalia differ from each other and there is no way of associating either of them with the males.

***Herlinda iota*, new species**

FIGURES 201, 307g,h

Alar expanse 6–7 mm.

Labial palpus white; second segment blackish fuscous in basal half on outer side; third segment with black basal and median bands and black apex. Antenna flagellum grayish; scape white with black median spot dorsoposteriorly. Head white. Thorax white with a few blackish scales mixed posteriorly; tegula white with scattered blackish scales anteriorly. Forewing ground color white; extreme base of costa gray; from near base of costa an ill-defined outwardly oblique blackish bar; from middle of costa to slightly before tornus an outwardly oblique, broken, black fascia, often reduced to a series of spots; at end of cell a black dot; beyond this dot a dusting of blackish scales; cilia sordid white. Hindwing pale grayish; cilia a shade lighter. Foreleg white, heavily overlaid blackish on outer side; midleg white with longitudinal black streaks on tibia and tarsal segments; hindleg sordid white. Abdomen sordid white, suffused grayish dorsally; ventrally sordid white with median grayish tinge.

Male genitalia slides USNM 24721, 25105. Harpe very broad basally, sharply angled to a short, narrow neck; cucullus moderately expanded. Brachia unequal; left brachium broadly expanded and flattened distally; right brachium stout basally, abruptly narrowed, pointed. Tegumen shorter than broad. Aedeagus strongly curved; manica with dorsal protuberance.

HOLOTYPE.—USNM 100825.

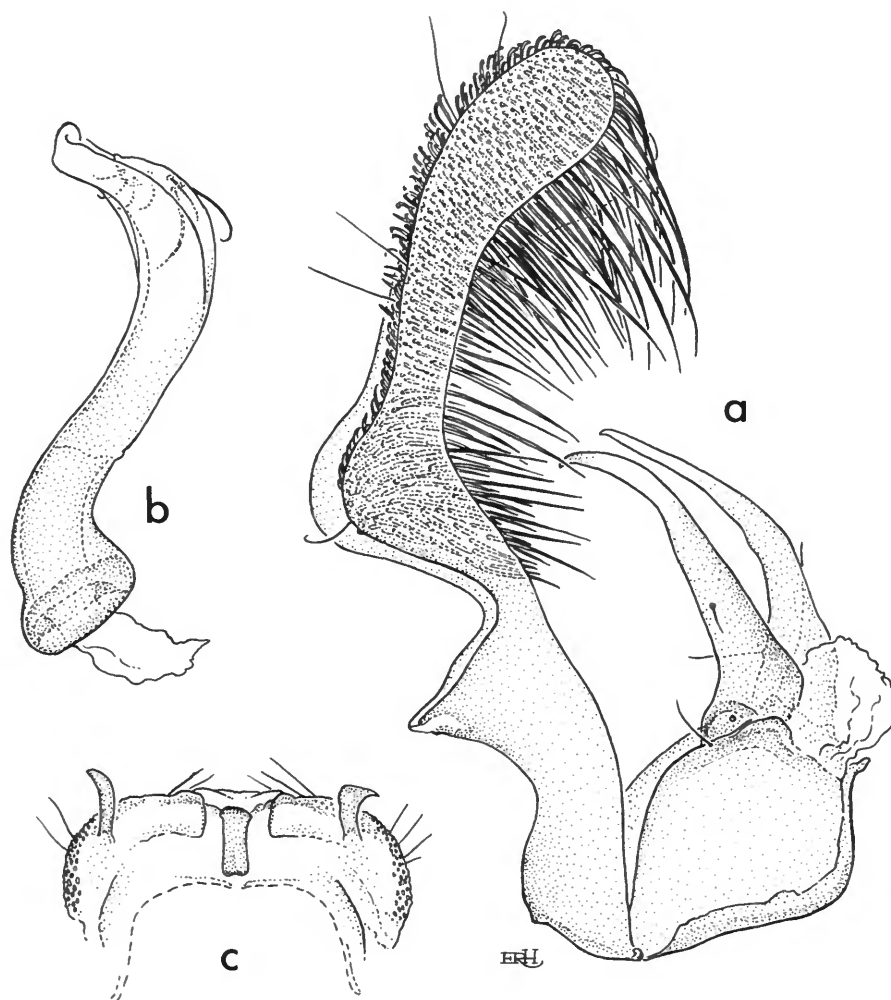


FIGURE 200.—*Herlinda fasciola*, new species: *a*, lateral aspect of male genitalia with aedeagus removed; *b*, aedeagus; *c*, 8th sternum.

TYPE-LOCALITY.—Nuku Hiva, Taiohae.

DISTRIBUTION.—Nuku Hiva.

FOOD PLANT.—Unknown.

Described from the ♂ holotype (28 Jan 1968) and 7♂ paratypes from the same locality 14 Jan to 4 Feb 1968.

Similar in size to *Asymphorodes balanotis*, this species lacks the dark coloring of that species. Moreover, *iota* has a white forewing marked with contrasting blackish spots.

***Herlinda oligoria*, new species**

FIGURES 202, 308a

Alar expanse 5–6 mm.

Labial palpus second segment black except white apex; third segment white except black median annulus and apex. Antenna flagellum buff and blackish annulated; scape buff with black apex. Head white. Thorax white with a few blackish scales posteriorly; tegula white with

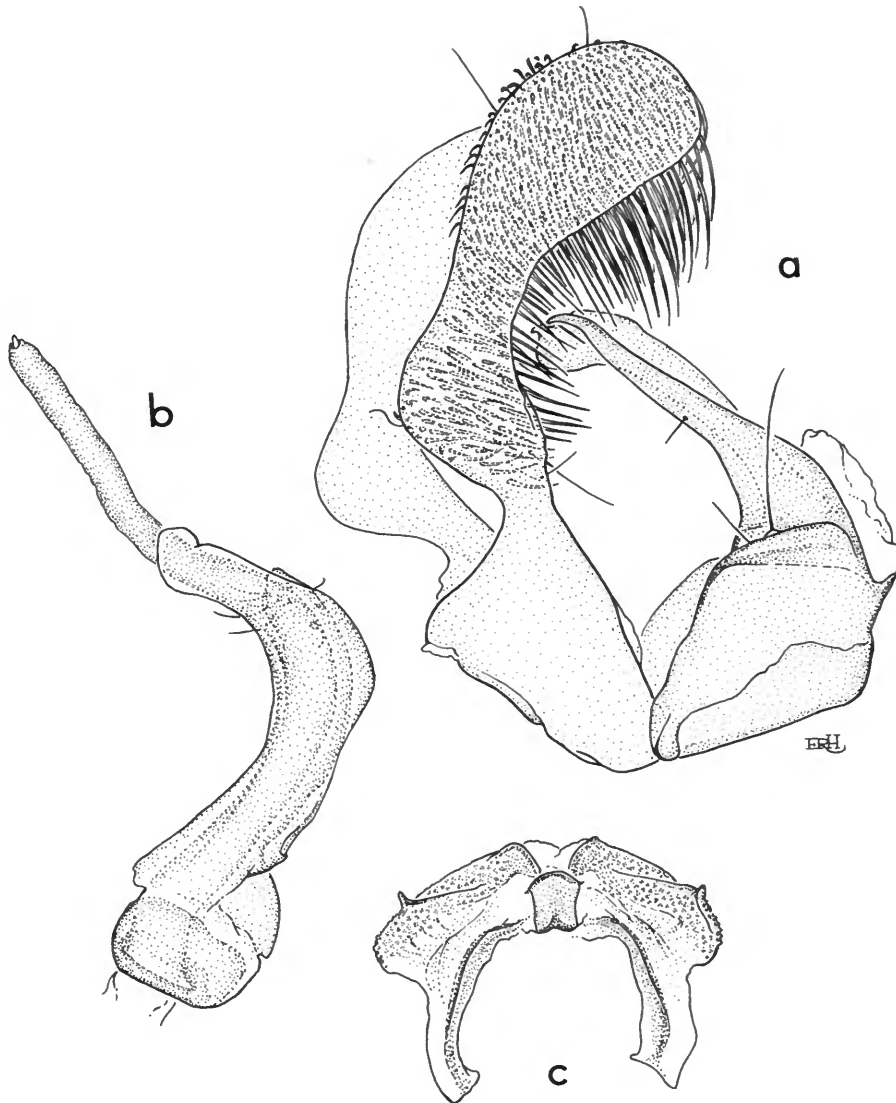


FIGURE 201.—*Herlinda iota*, new species: *a*, lateral aspect of male genitalia with aedeagus removed; *b*, aedeagus; *c*, 8th sternum.

some blackish scales anteriorly. Forewing ground color white sparsely irrorate black; near base, inside costa, a blackish spot; at basal fifth of costa a smaller, less distinct, similar spot; at middle of costa an outwardly oblique, short black dash; subapically, on costa, a conspicuous black blotch; in middle of cell a conspicuous black spot, and at

end of cell a similar one; subterminally a slender, interrupted, black line; cilia white. Hindwing very pale grayish; cilia whitish. Foreleg white, heavily overlaid blackish fuscous; midleg white, marked blackish fuscous on outer side of tibia and tarsal segments; hindleg sordid white; terminal tarsal segment with blackish spot. Abdo-

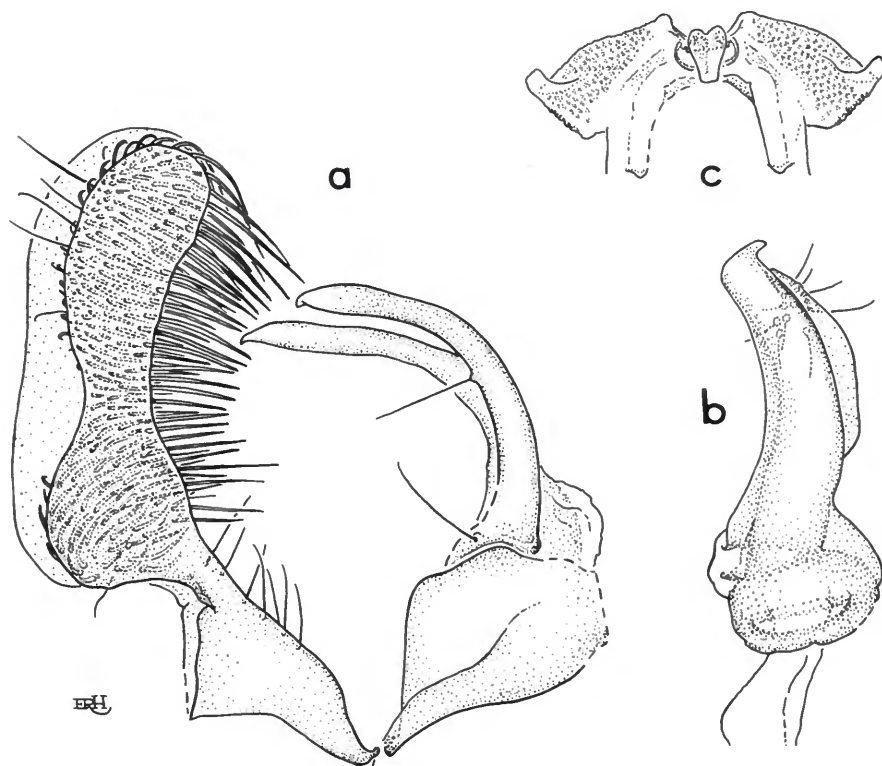


FIGURE 202.—*Herlinda oligoria*, new species: *a*, lateral aspect of male genitalia with aedeagus removed; *b*, aedeagus; *c*, 8th sternum.

men sordid white with median grayish suffusion dorsally and ventrally.

Male genitalia slide USNM 25106. Harpe broad basally; neck narrow; cucullus slightly expanded. Brachia equal in length, rather slender, curved. Tegumen shorter than broad. Aedeagus short, curved; manica with low keel dorsally.

HOLOTYPE.—USNM 100824.

TYPE-LOCALITY.—Hiva Oa, Atuona.

DISTRIBUTION.—Hiva Oa.

FOOD PLANT.—Unknown.

Described from the ♂ holotype (24 Feb 1968) and 1♂ paratype with same data except dated 23 Feb 1968.

This species is very similar to *iota*, new species. The second segment of the labial palpus is almost entirely black and the third segment lacks the basal black annulus found in *iota*. Furthermore,

there is no dark ternal spot of the forewing of *oligoria* as in *iota*. In the male genitalia of *oligoria* the brachia are of equal length, and the left brachium is not flattened and expanded distally as in *iota*.

Each is confined to a single island.

Herlinda phaeoxantha, new species

FIGURES 203, 308b

Alar expanse 7 mm.

Labial palpus light ochraceous buff; second segment with conspicuous clay color blotch in basal half on outer side; third segment with clay color blotch at middle on outer side. Antenna ochraceous buff with fuscous spots. Head light ochraceous buff with some fuscous scales laterally. Thorax light ochraceous buff strongly

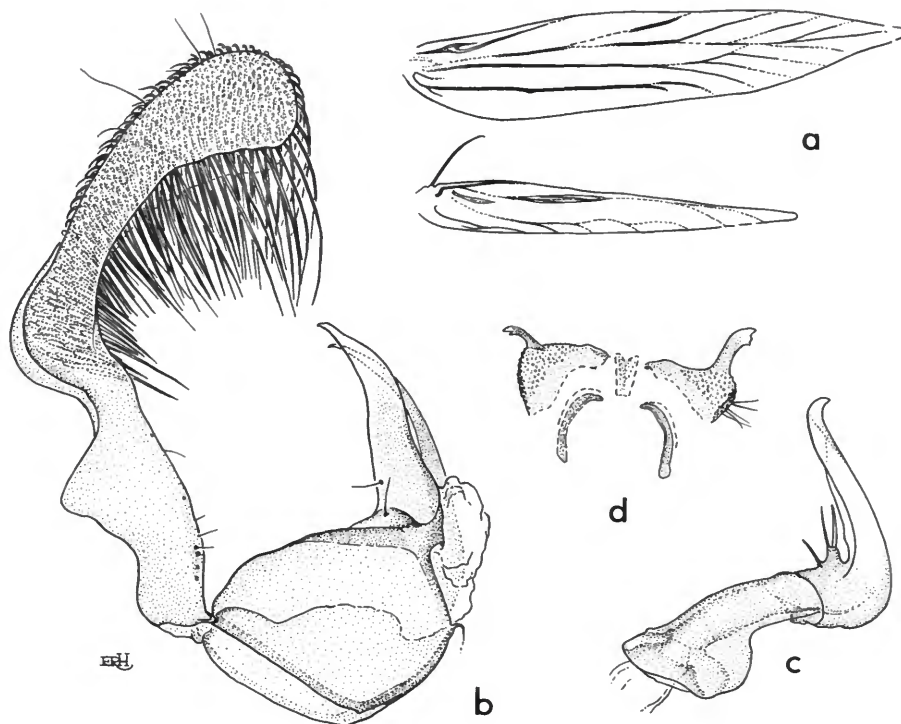


FIGURE 203.—*Herlinda phaeoxantha*, new species: *a*, venation of right wings; *b*, lateral aspect of male genitalia with aedeagus removed; *c*, aedeagus; *d*, 8th sternum.

overlaid fuscous. Forewing ground color light ochraceous buff with fuscous irroration over most of the wing; on middle of costa an elongate fuscous shade with two spots of clear ground color invading it on costal edge; a fuscous blotch subapically; cilia light ochraceous buff with a slender line of fuscous scales along termen to apex. Hindwing pale grayish; cilia lighter with yellowish tinge. Foreleg pale ochraceous buff; tibia and tarsal segments blackish fuscous on outer side; midleg pale ochraceous buff; tibia with a fuscous blotch proximally and another distally on outer side; two similar spots on tarsal segments; hindleg pale ochraceous buff; tibia with grayish fuscous shade proximally and distally on outer side. Abdomen fuscous dorsally, light buff ventrally, suffused grayish fuscous.

Male genitalia slide USNM 25152. Harpe broad basally; neck slender, moderately long; cucullus slightly expanded. Brachia unequal; left brachium stout, pointed; right brachium slender, evenly curved, pointed. Tegumen slightly longer than broad. Aedeagus distal half at right angles to basal half.

HOLOTYPE.—USNM 100826.

TYPE-LOCALITY.—Hiva Oa, trail to M. Feani, 2200 ft (670 m).

DISTRIBUTION.—Hiva Oa.

FOOD PLANT.—Unknown.

Described from the unique ♂ holotype (20 Feb 1968).

Probably nearest to *iota*, new species, but entirely different in coloring, lacking any of the basic white ground color of that species.

***Adeana*, new genus**

TYPE-SPECIES.—*Labdia leucoxantha* Meyrick, 1927a:87; by monotypy and present designation. The gender of the name is feminine.

Antenna simple, slightly thicker in male than in female, about four-fifths the length of forewing; scape with pecten. Labial palpus slender, recurved, exceeding vertex; third segment acute, slightly longer than second. Head smooth, covered with tightly appressed scales; ocellus absent. Tongue well developed, heavily scaled. Thorax smooth. Posterior tibia roughened above with hairlike scales. Forewing smooth, lanceolate, costa nearly straight, termen strongly oblique, apex produced, 11 veins; 1b simple; 1c absent; 2 distant from 3; 3 and 4 coincident; 5 out of the stalk of 7 and 8; 6 out of 7; 7 to costa; 9 from near end of cell; 10 equidistant from 9 and 11; 11 from beyond middle of cell. In the male there is a patch of modified scales from the underside of the tornal area obscuring the venation. Hindwing with 8 veins; 2, 3, 4 about equidistant; 5 connate with the stalk of 6 and 7; 7 to costa.

Male genitalia asymmetrical; uncus and socius absent.

Female genitalia ostium protruding, signum absent.

This genus is closely related to *Asymphorodes* but 1b of forewing of *Adeana* is simple, that of *Asymphorodes* is furcate; veins 3 and 4 of forewing are coincident in *Adeana*, separate in *Asymphorodes*. The genitalia are quite different also; the males have a distorted left brachium and the females have a prominent protruding ostium in *Adeana*. Both these characters are lacking in *Asymphorodes*. *Adeana* is also closely related to *Labdia* but differs from it by the coincidence of veins 3 and 4 and the simple vein 1b of forewing.

***Adeana leucoxantha* (Meyrick),
new combination**

FIGURES 204, 205, 308c,d

Labdia leucoxantha Meyrick, 1927a:87; 1934c:347.—Clarke, 1955 [1955–1970]:187.

Male genitalia slides USNM 24633, 24634, 25109. Harpe very slender, reaching to or be-

yond right brachium; cucullus narrow. Right brachium twice as long as tegumen, terminating in a slender hook; left brachium broad, divided into two arms distally, the outer arm a strongly curved hook. Prospicuous long and slender. Tegumen about as wide as long, strongly sclerotized. Aedeagus short, bulbous proximally.

Female genitalia slides USNM 24632, 25110. Ostium strongly protruding (Figure 204), sclerotized distally. Inception of ductus seminalis from posterior end of bursa copulatrix. Ductus bursae long and slender, membranous. Bursa copulatrix finely spiculate in anterior two-thirds.

ORIGINAL MATERIAL.—♀.10–11 mm . . . Upolu, Mulifanau, November; 1 ex. Also 3 from Ellice Islands (Nui and Faunafuti), September."

LECTOTYPE.—Female, 11 mm. Labeled "Cotype." "S. Pacific, Ellice Is., Nui, 21.1x.1924, P.A. Buxton and G.H. Hopkins." A small white label reads "Brit. Mus. 1927-119." An additional label has the following: "*Labdia leucoxantha* Meyrick, Det: E. Meyrick." Lectotype hereby designated.

Lectotype is in the British Museum (Natural History).

TYPE-LOCALITY.—Ellice Islands, Nui.

DISTRIBUTION.—Ellice Islands, Samoa, Tahiti, Marquesas Islands.

Our series of *leucoxantha* consists of 95 specimens as follows. Nuku Hiva: Pakiu Valley, 1800 ft (548 m), 17 and 28 Jan 1968, 2♀; Taiohae, 14 Jan to 4 Feb 1968, 1♂, 4♀. Hiva Oa: Atuona, 8 Feb to 7 Mar 1968, 7♂, 23♀; Puamau, 8 Feb 1968, 7♂, 2♀; Tahauku, 26 Feb 1968, 1♀. Fatu Hiva: Omoa, 11 Mar to 9 Apr 1968, 19♂, 16♀; Omoa Valley, 16–25 Mar 1968, 5♂, 6♀; Mt. Upe, 2025 ft (617 m), 3 Apr 1968, 1♀; Hanavave, 12 Apr 1968, 1♂.

FOOD PLANT.—Unknown.

Meyrick had the habit of seldom selecting or marking a type, so all of the specimens listed by Meyrick in the original description are eligible for lectotype selection. One of the specimens from the Ellice Islands was incorrectly marked as "type" and this specimen lacks the abdomen. Consequently, I have selected a ♀ as lectotype as indicated above.

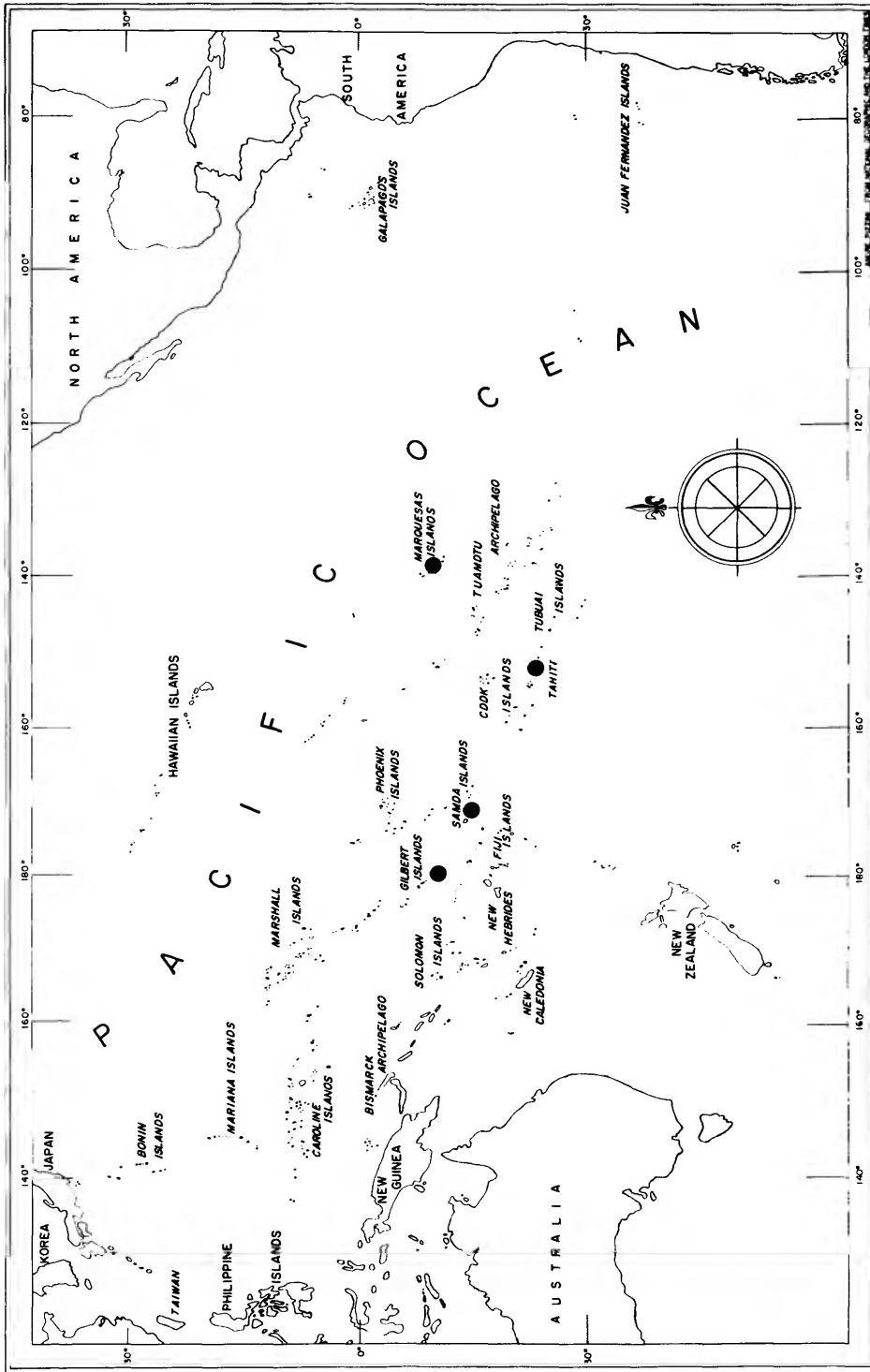


FIGURE 204.—Distribution map of *Adena leucoxantha* (Meyrick).

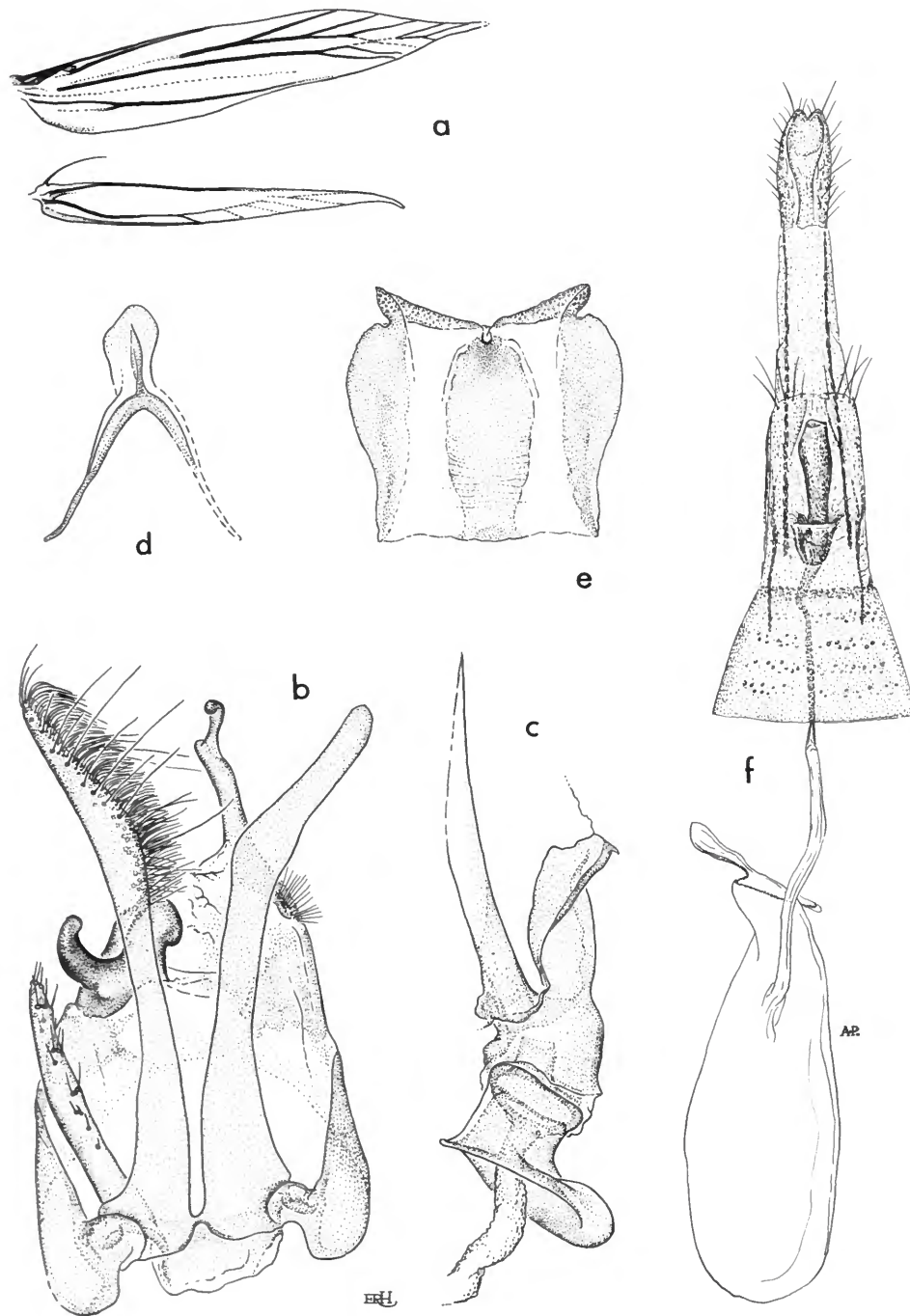


FIGURE 205.—*Adeana leucoxantha* (Meyrick): *a*, venation of right wings; *b*, ventral view of male genitalia with aedeagus removed; *c*, aedeagus; *d*, 8th tergum; *e*, 8th sternum; *f*, ventral view of female genitalia.

Genus *Iressa* Clarke

Iressa Clarke, 1971:159.

TYPE-SPECIES.—*Iressa neoleuca* Clarke, 1971:159; by monotypy and original designation.

Iressa neoleuca Clarke

FIGURES 206, 308_{e,f}

Iressa neoleuca Clarke, 1971:159.

HOLOTYPE.—In the National Museum of Natural History.

TYPE-LOCALITY.—Rapa, Haurei.

DISTRIBUTION.—Rapa, Marquesas Islands, Tahiti.

From the Marquesas Islands I have before me the following. Nuku Hiva: Taiohae, 14 Jan 1968, 1♀. Hiva Oa: Atuona, 12–29 Feb 1968, 2♀; 29 Feb 1968, 1♂. Fatu Hiva: Omoa, 11 Mar to 10 Apr 1968, 1♂, 49♀; Omoa Valley, 20–21 Mar 1968, 2♀.

In addition to those above, and those recorded from Rapa (Clarke, 1971:162) we have 4♂, 6♀ from Tahiti: from Fautaua River, 17–24 Oct 1961, 2♂, 1♀; Pamatal, 1000 ft (304 m) 1–7 Jan 1968, 2♂, 5♀.

Iressa microsema, new species

FIGURES 207, 308_g

Alar expanse 7 mm.

Labial palpus second and third segments blackish fuscous except apices, which are light buff. Antenna light buff, spotted with blackish fuscous, except apically wholly blackish fuscous; scape light buff with blackish fuscous spot dorsally at apex. Head fuscous; posterolaterally light buff; face light buff. Thorax fuscous mixed with buff scales. Forewing ground color fuscous; from basal fifth of costa a slender, outwardly curved light buff streak; from middle of costa a small, slender, wedge-shaped light buff spot; from apical fifth of costa a light buff wedge-shaped spot; in fold, about basal fourth, a tiny light buff spot;

along termen three irregular light buff spots; cilia fuscous. Hindwing gray; cilia concolorous. Foreleg light buff; tibia and tarsal segments blackish fuscous on outer side; midleg light buff; tibia and tarsal segments spotted with blackish fuscous on outer side; hindleg light buff; tibia suffused grayish on outer side; tarsal segments marked fuscous. Abdomen grayish fuscous dorsally; light buff ventrally.

Female genitalia slide USNM 25115. Ostium small, round, emerging from a sclerotized cylinder; lamella postvaginalis lightly rugose. Inception of ductus seminalis from posterior end of bursa copulatrix. Ductus bursae threadlike, about half as long as bursa copulatrix. Bursa copulatrix membranous. Signum absent.

HOLOTYPE.—USNM 100822.

TYPE-LOCALITY.—Fatu Hiva, Omoa.

DISTRIBUTION.—Fatu Hiva.

FOOD PLANT.—Unknown.

Described from the ♀ holotype (18 Mar 1968) and 1♀ paratype from Omoa, 12 Mar 1968.

Although dissimilar in appearance to *Iressa neoleuca* the type of the genus, *microsema* belongs here structurally.

Genus *Microzestis* Meyrick

Microzestis Meyrick, 1929a:501.

TYPE-SPECIES.—*Microzestis inelegans* Meyrick, 1929a:502; by monotypy.

In Meyrick's description of this genus he states "Ocelli posterior;" but I have not been able to find an ocellus in our long series. He states further, "Antennae . . . scape elongate, without pecten." The scape does have a pecten. In the forewing 1c is present; the base of 6 and 9 are obsolete. In the hindwing vein 7 is not apparent, vein 6 running to costa then back to termen.

Microzestis is very closely related to *Asymphorodes* and has an identical type of genitalia. The only appreciable differences between the two lie in the absence of vein 1c of the forewing of *Asymphorodes* and the stalked veins 6 and 7 of hindwing of latter genus.

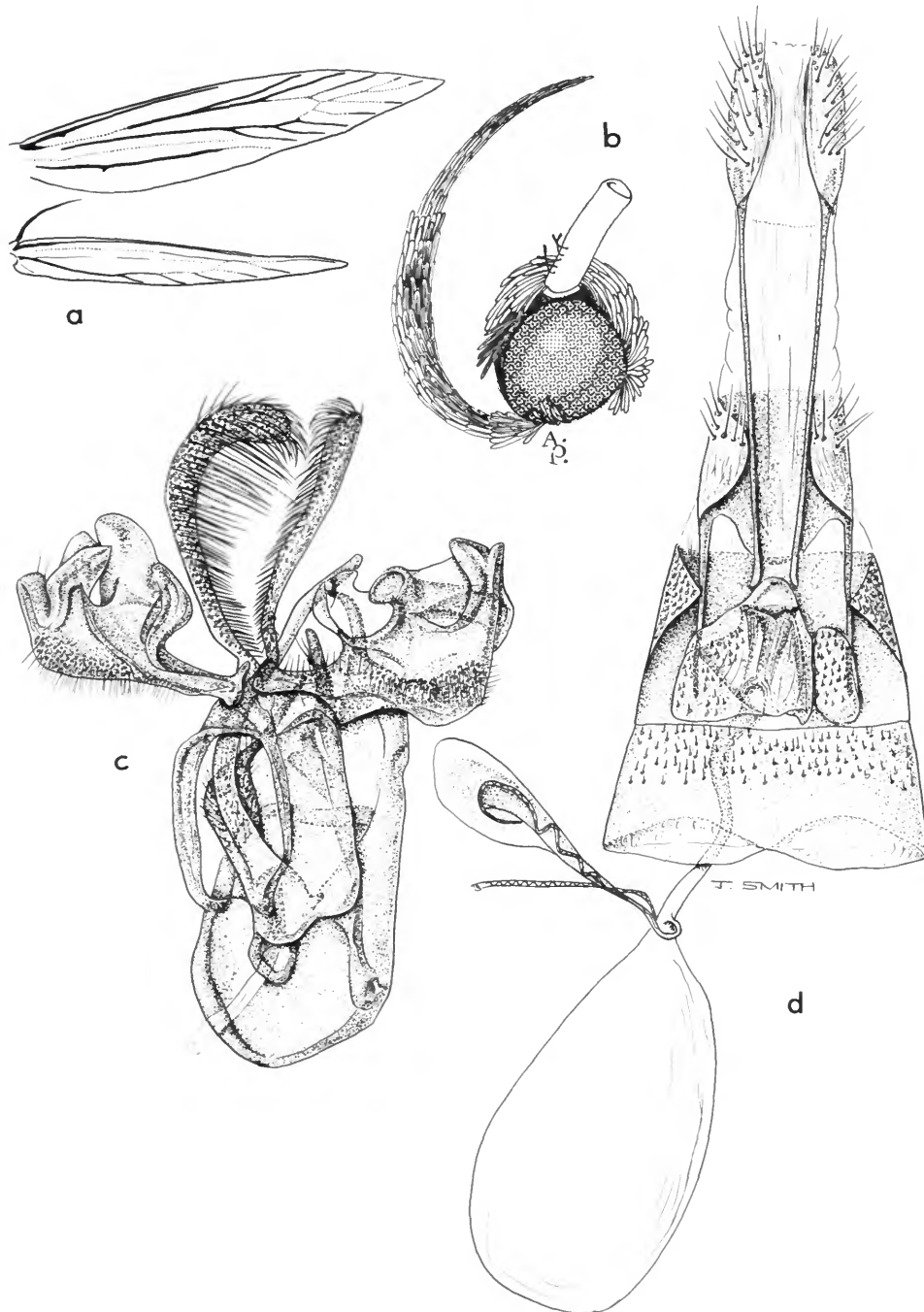


FIGURE 206.—*Iressa neoleuca* Clarke: *a*, venation of right wings; *b*, lateral view of head and labial palpus; *c*, ventral view of male genitalia with aedeagus and 8th sternum in situ; *d*, ventral view of female genitalia.

Microzestis inelegans Meyrick

FIGURES 9, 208, 309a-d

Microzestis inelegans Meyrick, 1929a:502.—Clarke, 1955 [1955-1970]:170.

ORIGINAL MATERIAL.—“♂♀. 5-7 mm . . . Marquesas, Tahuata, Hiva Oa, to 850 feet, January, at light; 9 ex.”

LECTOTYPE.—Female, 5 mm. “Tahuata, Marquesas. At light, 850 ft., 12-1-25, St. George Expedn. C.L. Collenette.” A small white label reads “Brit. Mus. 1925-488” and another “P634.” A large black-bordered, rectangular label bears the inscription “*Microzestis inelegans* Meyr. Tr. Ent. Soc. Lond. 76, p. 501, 1929 Type ♂.” Also there is a round red-bordered label with “Type H.T.” Lectotype hereby designated.

Male genitalia slides USNM 24804, 25034. Harpe very broad basally; neck short, cucullus with thick patch of setae near base. Brachia stout and sharply curved basally; left brachium broad and flat distally. Tegumen shorter than broad. Aedeagus moderately slender, sharply curved distad; manica with shallow keel dorsally.

Female genitalia slides USNM 24805, 25025, 25033. Ostium small, round, emitted from a short tubular process. Cleft in posterior margin of seventh segment narrow, V-shaped. Inception of ductus seminalis from posterior end of bursa copulatrix. Ductus bursae membranous. Bursa copulatrix rugose and granular in anterior two-thirds.

Lectotype is in the British Museum (Natural History).

TYPE-LOCALITY.—Tahuata.

DISTRIBUTION.—Marquesas Islands.

Our series of this common species consists of 286 specimens as follows. Nuku Hiva: Taiohae, 17 Jan to 5 Feb 1968, 40♂, 43♀; Pakiu Valley, 800 ft (244 m), 31 Jan to 4 Feb 1968, 3♀. Hiva Oa: Atuona, 12 Feb to 5 Mar 1968, 16♂, 49♀. Fatu Hiva: Omoa, 11-20 Mar 1968, 67♂, 68♀. Tahuata: (Meyrick, 1929a).

FOOD.—Algae?

The larvae of this moth construct flat webs on the surfaces of rocks (Figure 9) and apparently

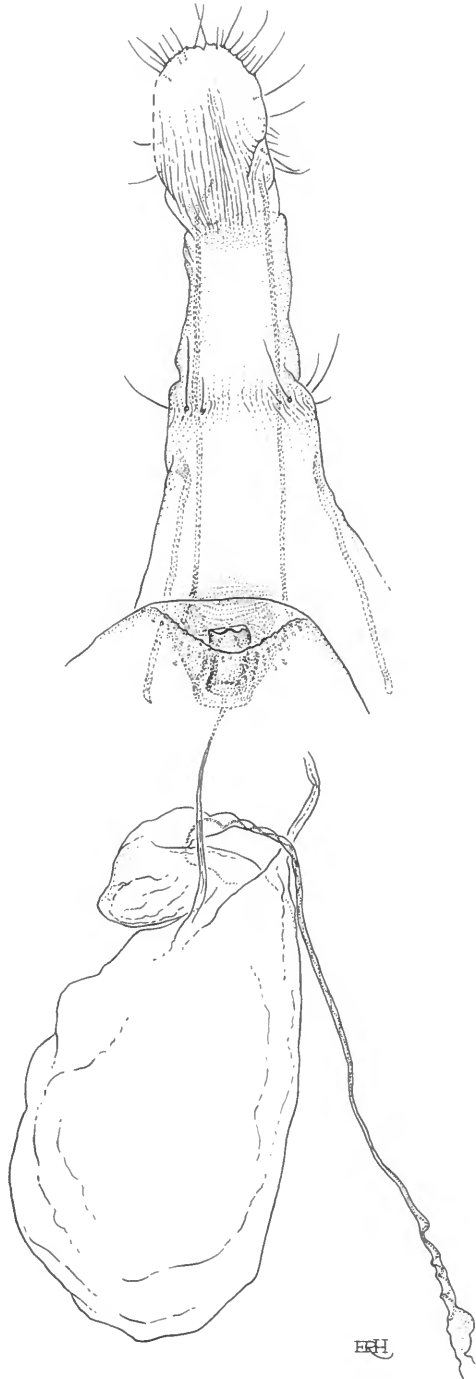


FIGURE 207.—*Iressa microsema*, new species, ventral view of female genitalia.

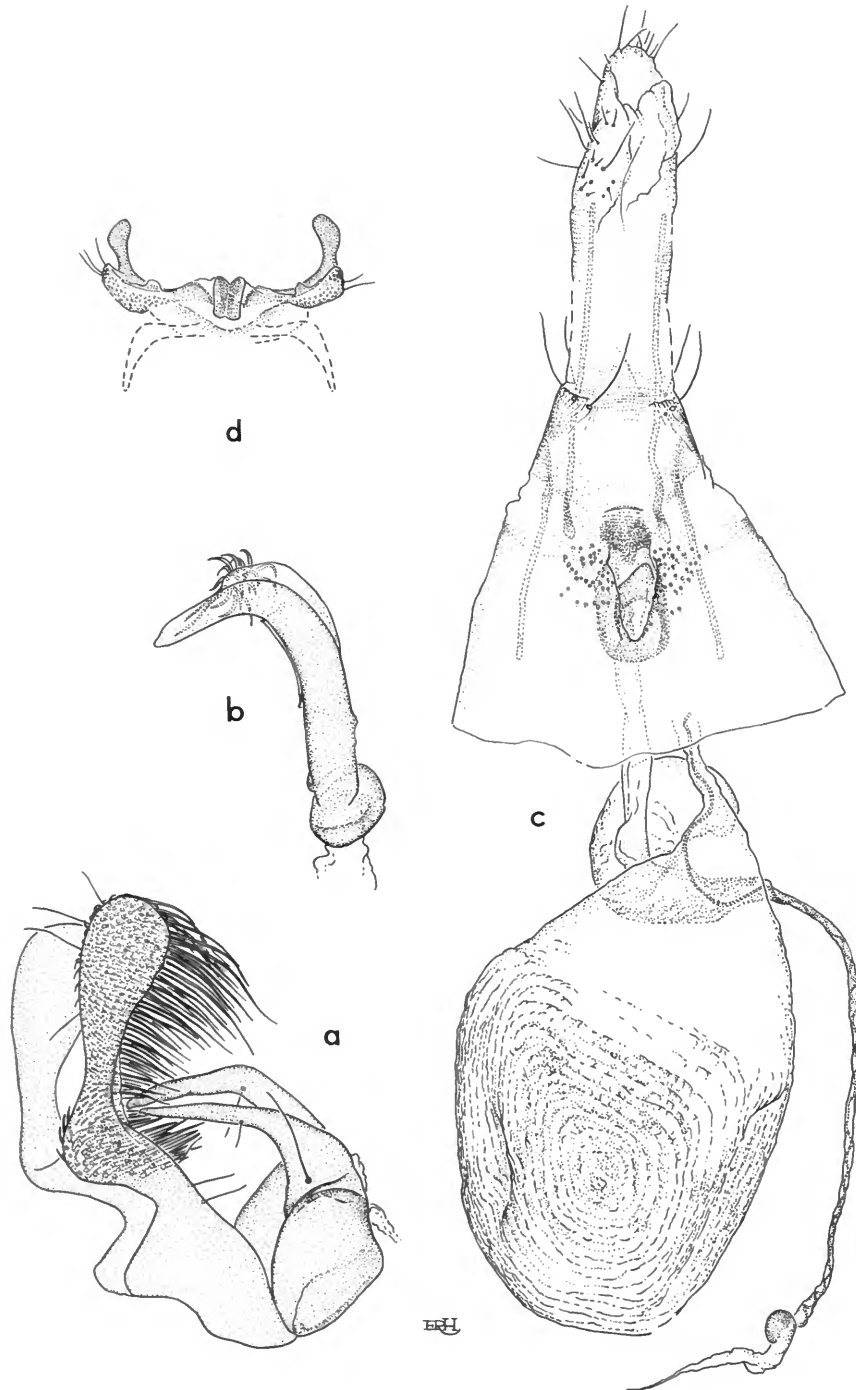


FIGURE 208.—*Microzestis inelegans* Meyrick: *a*, lateral aspect of male genitalia with aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia; *d*, 8th sternum.

feed on algae, or some other minute plant life, under the webs. The species is common but we were able to rear only a few specimens.

Genus *Anatrachyntis* Meyrick

Anatrachyntis Meyrick, 1915b:325 [type-species: *Gracilaria? falcata* Stainton, 1859:121; by original designation].
Sathrobrotia Hodges, 1962:73 [type-species: *Batrachedra rileyi* Walsingham, 1882:198; by original designation].

Zimmerman (1978:1040) properly indicated the synonymy of *Anatrachyntis* and showed that *Pyroderces* Herrich-Schäffer is a distinct genus based on genitalia. *Pyroderces* is also distinct from *Anatrachyntis* as can be demonstrated by the forewing venation: in *Anatrachyntis* veins 2 and 3 are closely approximate and parallel; 2, 3, and 4 are well separated and equidistant in *Pyroderces*.

The species included below consistently have veins 2 and 3 closely approximate and parallel as in the type of the genus. Vein 6 of the forewing of species of *Anatrachyntis* is usually well preserved, but in some specimens it is weakly indicated or obsolete.

Although Zimmerman (1978) placed the three species he included in *Anatrachyntis* his figure 732 appears to be incorrect. He illustrates a single vein where 2 and 3 of forewing should be. I have seen his slide and can only conclude that his specimen is aberrant.

Anatrachyntis incertulella (Walker)

FIGURES 209, 309e

Gelechia incertulella Walker, 1864 [1856–1866]:658.
Pyroderces incertulella (Walker).—Meyrick, 1929a:497.—Viette, 1949a:318.—Swezey, 1954:146.
Stigmatophora (Proterocosma) incertulella (Walker).—Walsingham, 1907:515, pl. 15: fig. 20.
Aeloscelis aulacosema Lower, 1904:172.
Stigmatophora (Proterocosma) tridigitella Walsingham, 1907:515.
Pyroderces subcarnea Meyrick, 1924c:553.
Anatrachyntis incertulella (Walker).—Clarke, 1971:150, fig. 122, pl. 19h.—Zimmerman, 1978:1044, figs. 734, 735, 740, 741.

TYPES.—In the British Museum (Natural His-

tory) (*incertulella*, *tridigitella*, *subcarnea*); in the South Australian Museum (*aulacosema*).

TYPE-LOCALITIES.—Sandwich Islands (Hawaii) (*incertulella*); Rapa (*tridigitella*); Rodriguez Id. (*subcarnea*); MacKay, Queensland (*aulacosema*).

DISTRIBUTION.—Hawaiian Islands, Australia, Fiji, Pitcairn, Austral Islands, Okinawa, Tahiti, Marquesas Islands.

Our records from the Marquesas are as follows. Nuku Hiva: Taiohae, 17 Jan to 6 Feb 1968, 1♂, 2♀; Tapuaooa, 2500 ft (762 m), 1♀. Toovii, Ooumu, 900 m, 16–19 Jul 1977, 1♂ (Montgomery). Hiva Oa: Atuona, 16–28 Feb 1968, 3♂, 2♀; Mt. Feani, 3800 ft (1158 m), 20 Feb 1968, 3♀. Fatu Hiva: Mt. Teoaiua, 2000 ft (610 m), 22 Mar 1968, 3♂, 8♀; Tahuna, 2000 ft (610 m), 27 Mar 1968, 4♂, 17♀; Omoa, 17 Mar 1968, 1♀; Omoa Valley, 5 Apr 1968, 2♀. Teavapuhiau, Ouia, 2437 ft (750 m), 1–3 Aug 1977, 1♂ (Montgomery).

FOOD PLANT.—*Pandanus tectorius* Parkinson, and probably other species of *Pandanus*.

Undoubtedly, this species will be found wherever *Pandanus* grows.

Anatrachyntis megacentra (Meyrick)

FIGURES 210, 309f

Pyroderces megacentra Meyrick, 1923b:59.—Clarke, 1955 [1955–1970]:198.—Bradley, 1961:147.
Anatrachyntis megacentra (Meyrick).—Clarke, 1971:153, fig. 123, pl. 191.

TYPE.—In the British Museum (Natural History).

TYPE-LOCALITY.—Fiji, Dreketi River.

DISTRIBUTION.—Fiji, Rapa, New Guinea, Java, Solomon Islands (Guadalcanal), Marquesas Islands.

The following were collected in the Marquesas. Hiva Oa: Mt. Feani, 3800 ft (1158 m), 20 Feb 1968, 1♀. Fatu Hiva: Mr. Teoaiua, 2000 ft (610 m), 22 Mar 1968, 3♀; Tahuna, 2000 ft (610 m), 27 Mar 1968, 1♂, 5♀; Omoa Valley, 5 Apr 1968, 1♀.

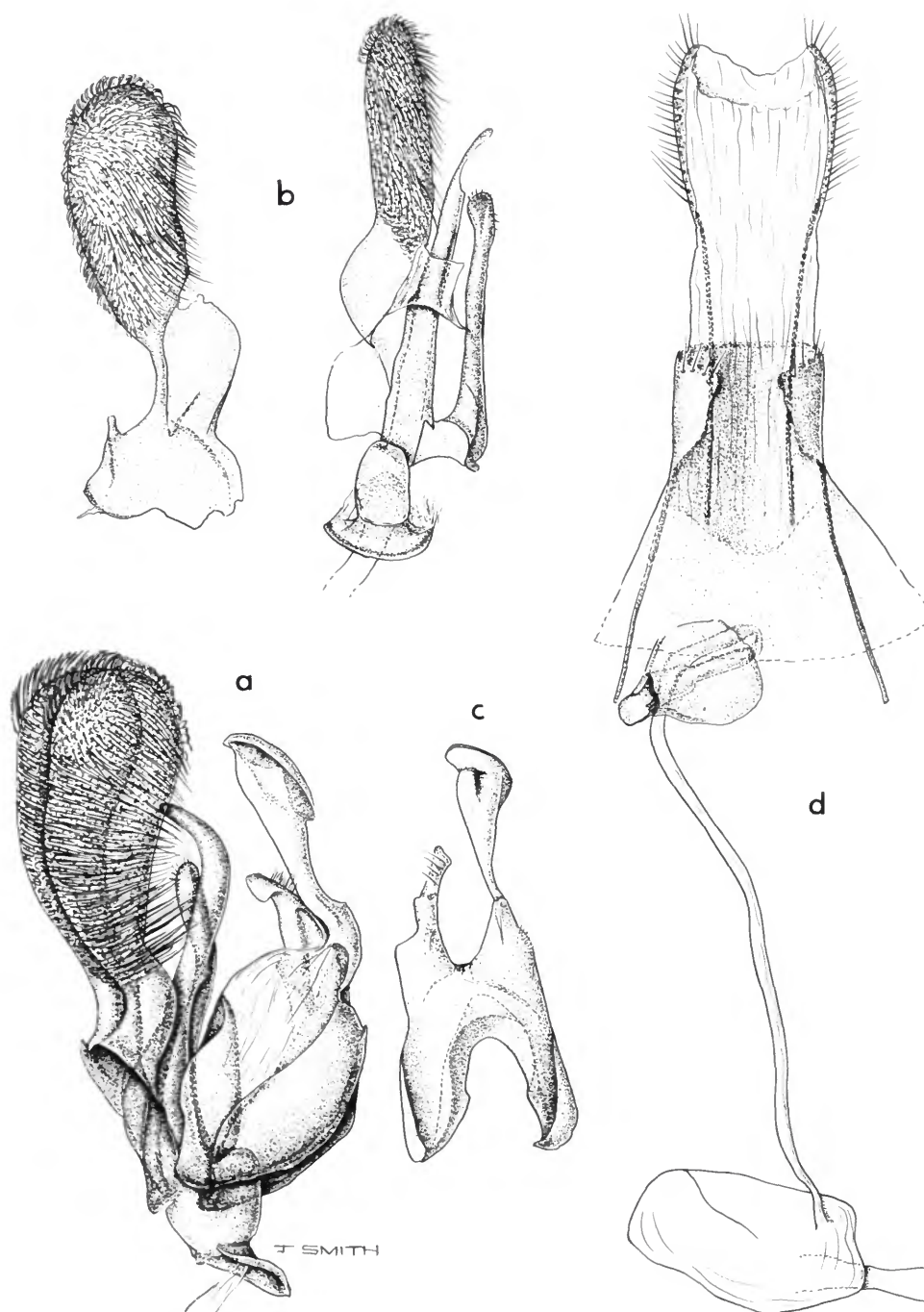
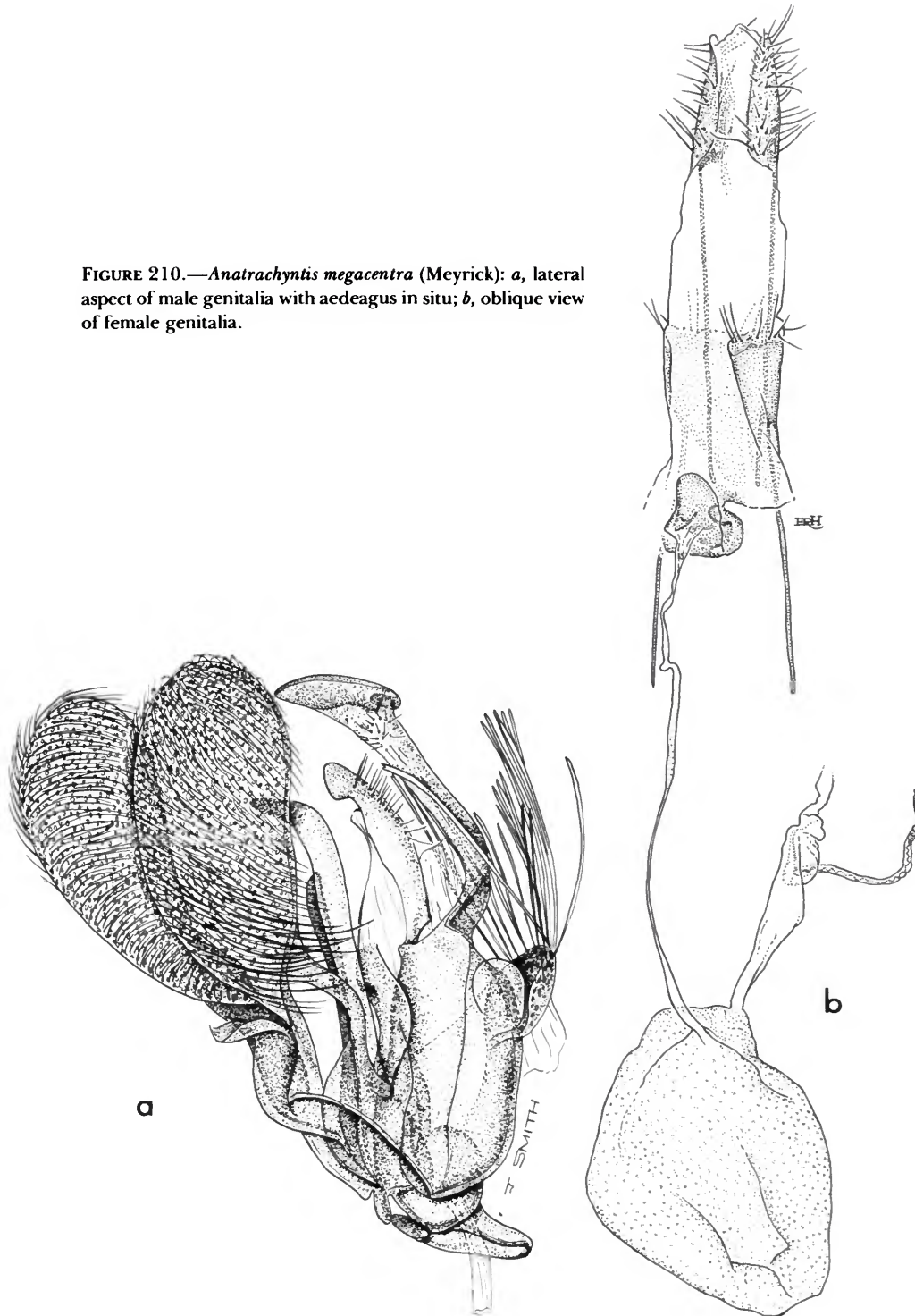


FIGURE 209.—*Anatrachyntis incertulella* (Walker): *a*, lateral aspect of male genitalia with aedeagus in situ; *b*, disarticulated harpes with aedeagus and propicius; *c*, tegumen and brachia; *d*, ventral view of female genitalia.

FIGURE 210.—*Anatrachyntis megacentra* (Meyrick): *a*, lateral aspect of male genitalia with aedeagus in situ; *b*, oblique view of female genitalia.



FOOD PLANTS.—*Pandanus* spp., larva in flowers also in dried fruits and fruitstalks.

As can be seen, altitude is no barrier to the distribution of this species in the islands. In Rapa (Clarke 1971:155) all specimens of *megacentra* were found virtually at sea level. None of the specimens collected in the Marquesas was reared, but the species apparently feeds on species of *Pandanus* growing at high elevations, in addition to *Pandanus tectorius* Parkinson, which grows at low level on the islands.

In the Rapa paper (Clarke, 1971, fig. 123b) I figured the ventral view of the female genitalia, but in this work I am illustrating the oblique view to show the protruding ostium.

***Anatrachyntis cyma* (Bradley),
new combination**

FIGURES 211, 309g

Stigmatophora cyma Bradley, 1953:112, figs. 6, 7.

HOLOTYPE.—In the British Museum (Natural History).

TYPE-LOCALITY.—Fiji, Vitti Levu, Lami, Suva.

DISTRIBUTION.—Fiji, Marquesas Islands.

Nuku Hiva: Taiohae, 19 Jan 1968, 1♀; Tapuaooa, 2500 ft (762 m), 30 Jan 1968, 1♂. Toovii, Ooumu, 2925 ft (900 m), 18–19 Jul 1977, 1♀ (Montgomery). Hiva Oa: Ootua, 2600 ft (792 m), 27–30 Jul 1977, 1♀ (Montgomery). Fatu Hiva: Mt. Teoaiua, 2000 ft (610 m), 22 Mar 1968, 7♂, 9♀; Tahuna, 2000 ft (610 m), 27 Mar 1968, 2♂, 1♀; Mt. Upe, 2025 ft (617 m), 3 Apr 1968, 1♀. Teavapuhiau, Ouia, 813 ft (350 m), 1–3 Aug 1977, 1♀ (Montgomery).

FOOD PLANT.—*Pandanus* sp. (male flowers).

Bradley (1953) described this species from Fiji and placed it in the genus *Stigmatophora*. A careful examination of the characters, particularly the venation, convinces me that *cyma* belongs with *Anatrachyntis incertulella* (Walker) and *A. megacentra* (Meyrick). The larvae of all three species attack the inflorescence or fruits of *Pandanus*. Moreover, the genitalia are structurally

similar, further evidence of their close relationship.

***Anatrachyntis lunulifera* (Meyrick), new
combination**

FIGURES 212, 309h

Pyroderces lunulifera Meyrick, 1934c:347.—Clarke, 1955 [1955–1970]:192.

Pyroderces similis Bradley, 1953:112, figs. 2, 3.

Anatrachyntis similis (Bradley).—Clarke, 1971:150, fig. 121, pl. 23a.

TYPES.—In the Bernice P. Bishop Museum (*lunulifera*); in the British Museum (Natural History) (*similis*).

TYPE-LOCALITIES.—Marquesas Islands, Fatu Hiva, Vaikooa, Ooumoa, 1600 ft (487 m) (*lunulifera*); Fiji, Viti Levu, Lami, Suva (*similis*).

DISTRIBUTION.—Fiji, Rapa, Marquesas Islands.

Our series of *lunulifera* is from the following localities. Nuku Hiva: Taiohae, 20 Jan 1968, 1♀; Pakiu Valley, 1800 ft (548 m), 17–28 Jan 1968, 3♂, 3♀. Toovii, Ooumu (900 m), 16–19 Jul 1977, 6♂, 1♀ (Montgomery). Hiva Oa: Atuona, 27 Feb 1968, 1♀; Mt. Feani, 3800 ft (1158 m), 20 Feb 1968, 1♂. Ootua, 2600 ft (792 m), 27–30 Jul 1977, 1♂, 3♀ (Montgomery). Fatu Hiva: Omoa, 11 Mar to 5 Apr 1968, 6♂, 37♀; Tahuna, 2000 ft (610 m), 27 Mar 1968, 7♂, 7♀; Teoaiua, 2000 ft (610 m), 22 Mar 1968, 18 ♂, 46♀; Mt. Upe, 2025 ft (617 m), 3 Apr 1968, 4♂, 5♀. Teavapuhiau, Ouia, 2460 ft (750 m), 1–3 Aug 1977, 6♂, 10♀ (Montgomery).

Meyrick (1934c:348) records this species also from the islands of Eiao, Tahuata, and Uapou, all in the Marquesas.

FOOD PLANT.—*Pandanus* (ex male flowers).

I have compared slides of the genitalia from our series of *similis* with those from our series of the Marquesan *lunulifera* and they are identical. Also, I have compared the genitalia of specimens from our Rapa series with those of the type of *similis*.

Clarke (1971, fig. 121) figures the genitalia,

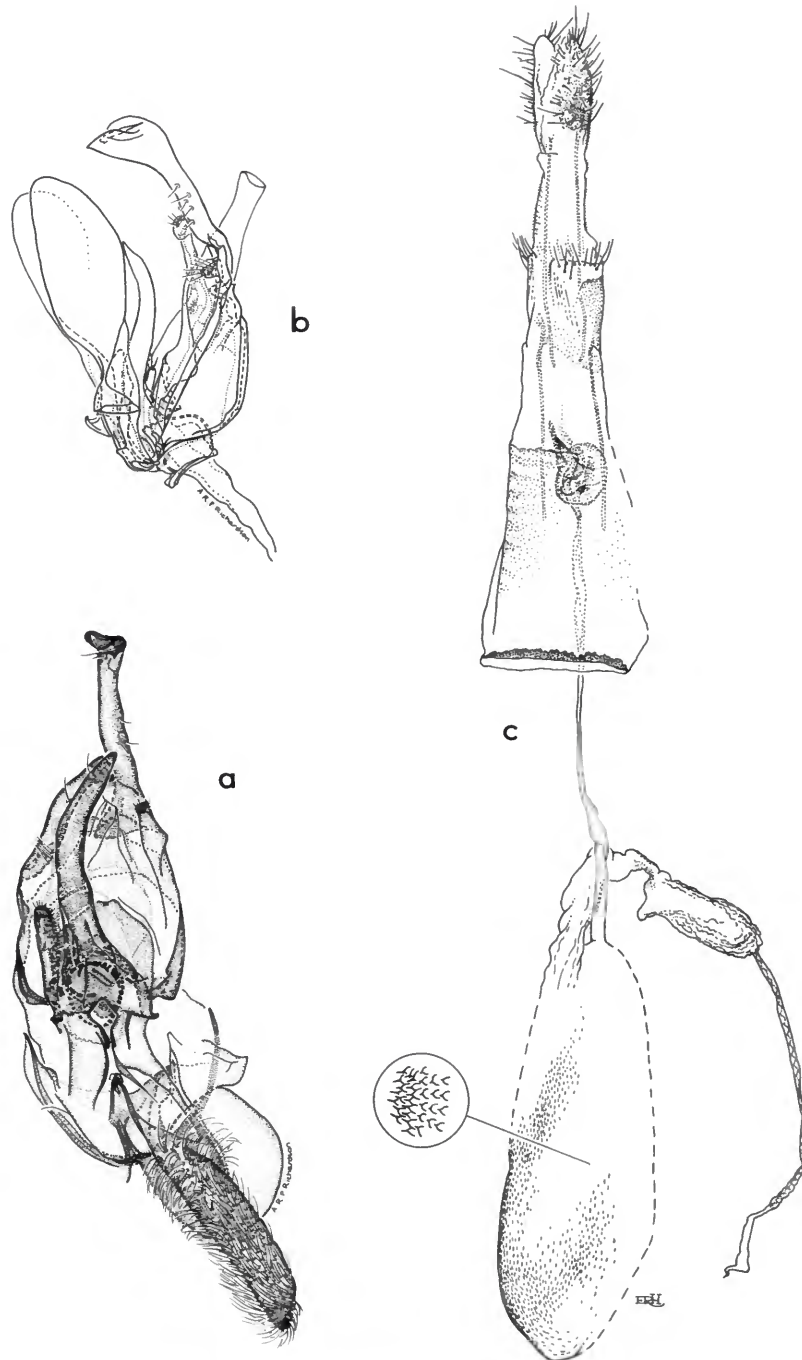
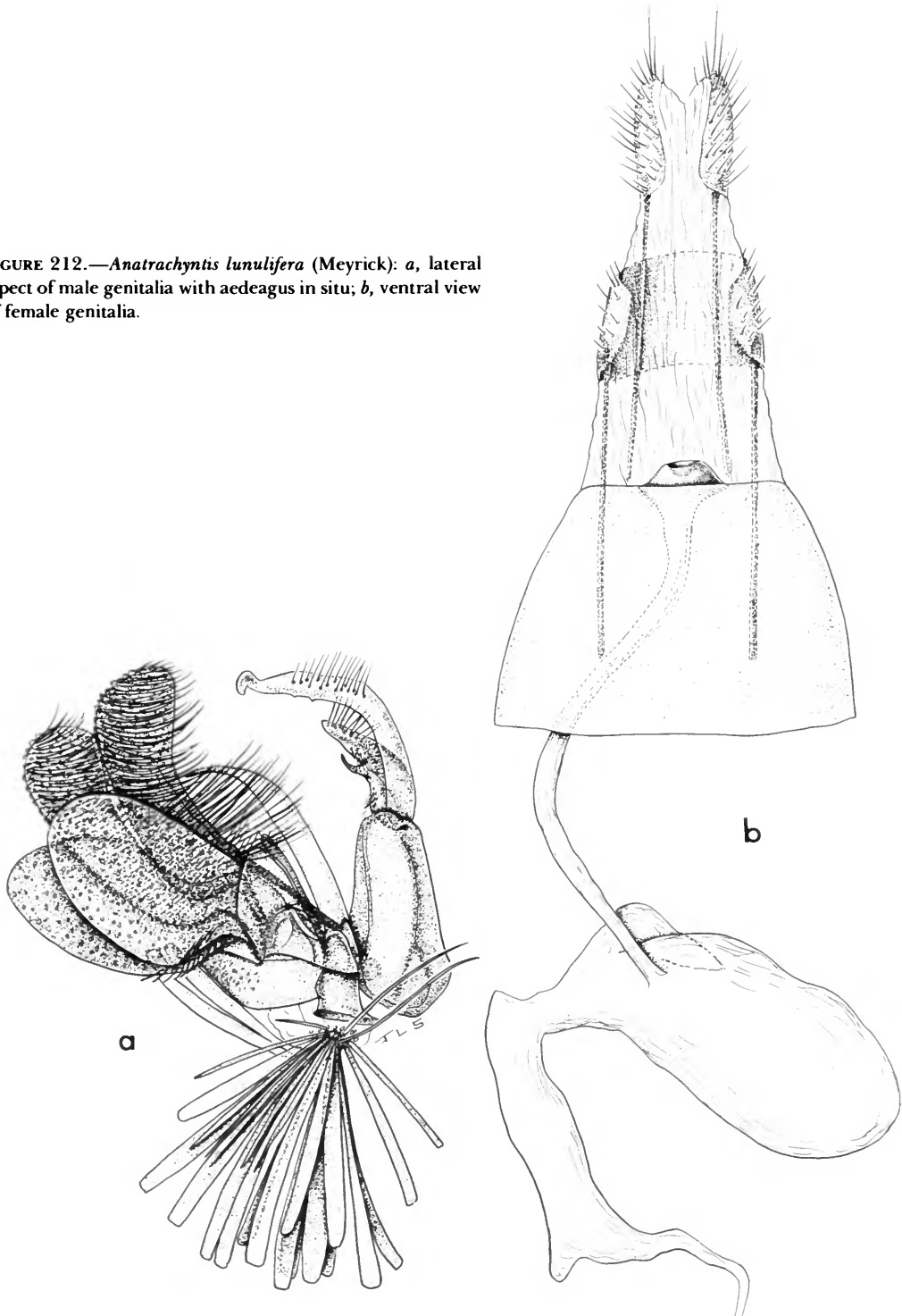


FIGURE 211.—*Anatrachyntis cyma* (Bradley): *a*, ventral view of male genitalia with left harpe removed and aedeagus in situ; *b*, lateral outline of male genitalia; *c*, ventral view of female genitalia.

FIGURE 212.—*Anatrachyntis lunulifera* (Meyrick): *a*, lateral aspect of male genitalia with aedeagus in situ; *b*, ventral view of female genitalia.



but they are repeated here for the sake of completeness.

Genus *Trissodoris* Meyrick

Trissodoris Meyrick, 1914a:775.—Clarke, 1965 [1955–1970]:550, pl. 271:figs. 1–1c; 1971:147, figs. 21, 119, pl. 20e,f.

TYPE-SPECIES.—*Stigmatophora honorariella* Walsingham, 1907:515, pl. 15: fig. 21; by original designation.

Trissodoris honorariella (Walsingham)

FIGURES 213, 214, 310a,b

Stigmatophora honorariella Walsingham, 1907:515, pl. 15: fig. 21.

Trissodoris honorariella (Walsingham).—Meyrick, 1914a:776; 1927a:92.—Fletcher, 1929:17.—Meyrick, 1934c:348.—Swezey, 1942b:212.—Bradley, 1957:100.—Clarke, 1965 [1955–1970]:550, pl. 271: figs. 1–1c; 1971:147, figs. 21, 119, pl. 20e,f.—Inoue et al., 1982, 1:272, 2:107, pl. 227: fig. 19.

Trissodoris honorielle [sic:] Viette, 1949a:318.

Stigmatophora quadrifasciata Walsingham, 1907:516, pl. 15: fig. 22.

Trissodoris quadrifasciata (Walsingham).—Meyrick, 1914a:776; 1927a:92.—Swezey, 1954:146.—Bradley, 1957:100.

TYPES.—In the British Museum (Natural History) (*honorariella*, *quadrifasciata*).

TYPE-LOCALITIES.—Pitcairn Island (*honorariella*); New Guinea (*quadrifasciata*).

DISTRIBUTION.—Hawaii, Pitcairn Island, Fiji, Samoan Islands, New Hebrides, Australia, Buru, Sarawak, Sri Lanka (Ceylon), Marquesas Islands, Tahiti, New Guinea, Caroline Islands, Japan.

From the Marquesas we have the following. Nuku Hiva: top of Pakiu Valley, 1800 ft (548 m), Em. 2 Feb 1968, 1♂, and 19 Jan 1968, 1♀; Taiohae, 26 Jan 1968, 1♀. Hiva Oa: Atuona, 15 Feb to 14 Mar 1968, 15♂, 14♀; trail to Mt. Feani, 2500 ft (762 m), 20 Feb 1968, 1♀. Fatu Hiva: Omoa, 4 Mar to 6 Apr 1968, 1♂, 9♀. Eiao: N. uplands, 400 m, 7 Aug 1977, 1♀, 1♂ (Montgomery).

FOOD PLANTS.—*Pandanus* spp.

Clarke (1971, fig. 119) figures the genitalia of this species, but the figures are repeated here for completeness. The species is common, particularly at low elevations, and is widely distributed throughout the Pacific.

Melnea, new genus

TYPE-SPECIES.—*Ascalenia armigera* Meyrick, 1923b:60; by monotypy and present designation. The gender of the generic name is feminine.

Antenna about three-fourths the length of the forewing, serrulate and short ciliated in male, filiform and short ciliated in female; scape without pecten. Labial palpus slightly more than twice as long as head; second and third segments of nearly equal length; second segment slightly dilated distally; third sharply pointed. Tongue well developed, heavily scaled basally. Head with tightly appressed scales; ocellus absent. Thorax smooth. Posterior tibia roughened above with scales. Forewing smooth, lanceolate, costal and dorsal edges converging toward apex, termen strongly oblique, 12 veins; 1b furcate; 2 and 3 approximate toward base, parallel; 4 remote from 3; 5 and 6 nearly parallel, obsolete toward base; 7 and 8 stalked, 7 to apex; 8 to costa; 9 approximate to base of stalk of 7 and 8; 10 nearer to 9 than to 11; 11 from middle of cell. Hindwing with 8 veins; 2, 3, and 4 widely separated; 4, 5, closely approximate toward base; base of 5 obsolete; 6 and 7 stalked, 6 to termen well before apex; 7 to apex; 8 very short, to costa near base.

Male genitalia asymmetrical; uncus rudimentary; socius absent.

Female genitalia ostium lateral; signa present; ovipositor apparently developed for piercing.

This genus appears to be most closely related to the North American *Synplocia* Hodges (1964:295) but differs in several respects. In the forewing of *Synplocia* vein 6 is out of the stalk of 7 and 8, but in *Melnea* 6 is separate and 5 is separate and not connate with the stalk of 7 and 8 as in *Synplocia*. In the hindwing veins 6 and 7 are obsolete in *Synplocia*, stalked in *Melnea*, and vein 8 reaches well out on costa in *Synplocia* but reaches costa near base in *Melnea*.

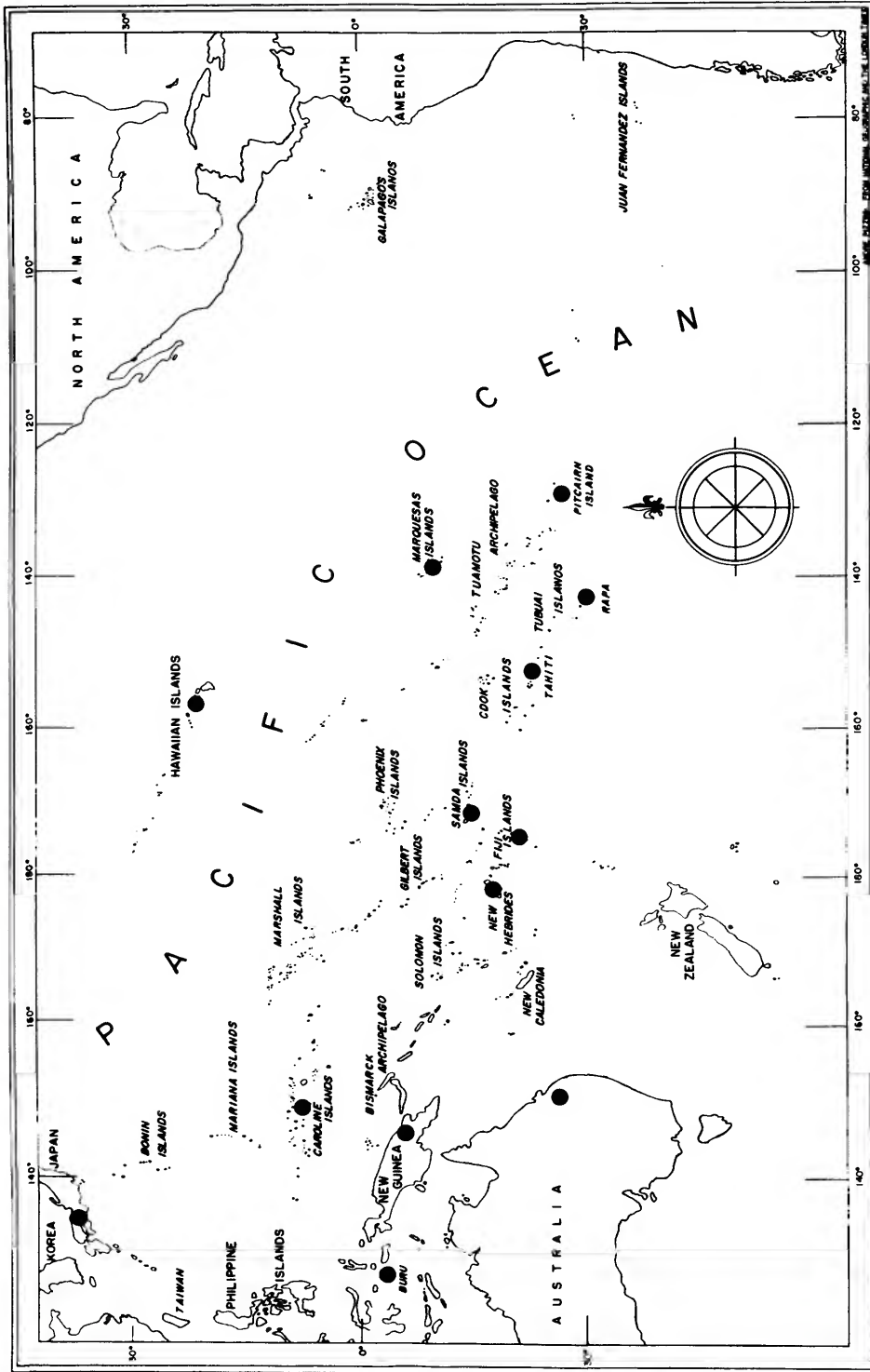
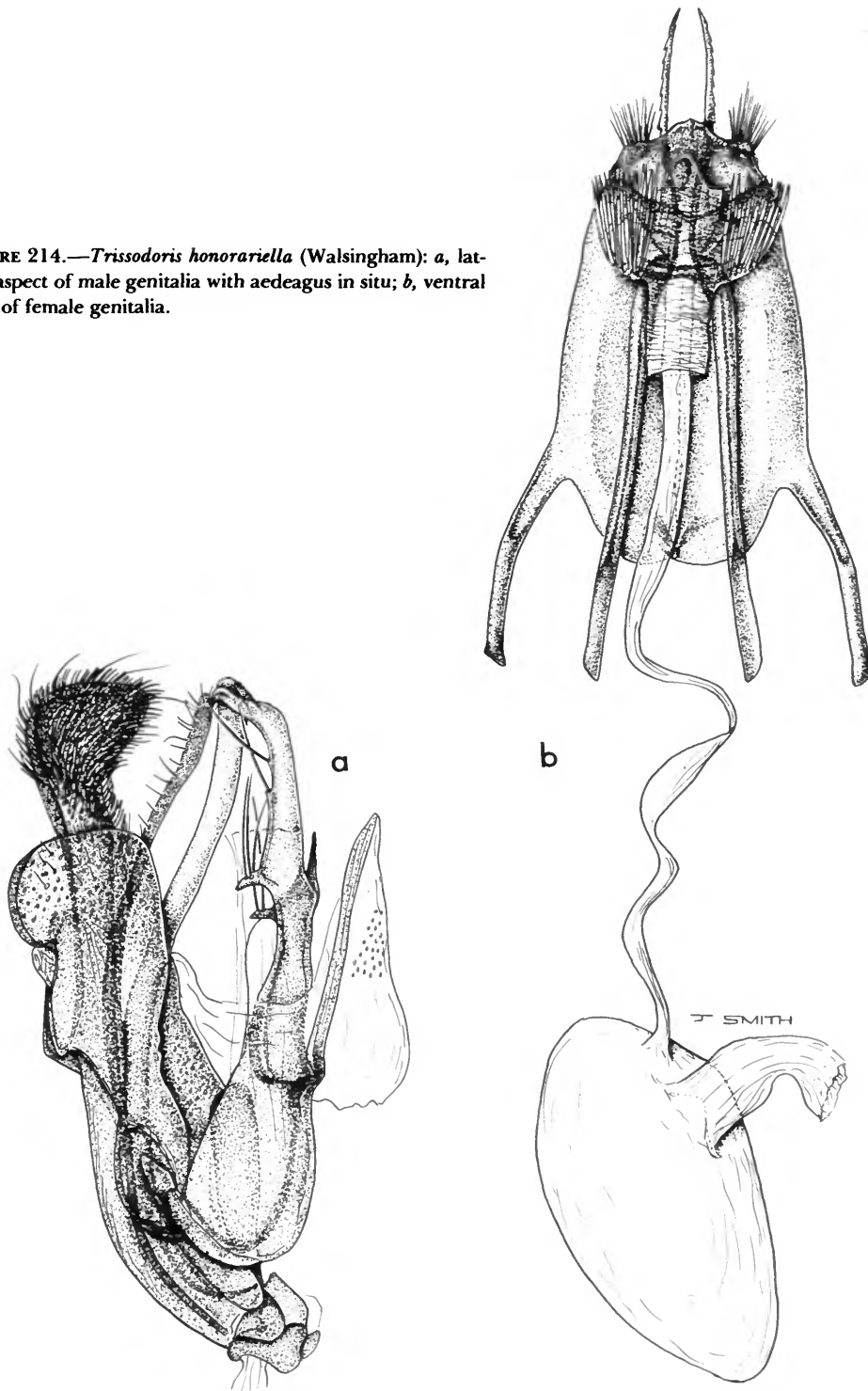


FIGURE 213.—Distribution map of the genus *Trissodoris* Meyrick.

FIGURE 214.—*Trissodoris honorariella* (Walsingham): *a*, lateral aspect of male genitalia with aedeagus in situ; *b*, ventral view of female genitalia.



In the male genitalia the harpes of *Synploca* are symmetrical but in *Melnea* they are asymmetrical. Moreover, the aedeagus of *Melnea* is not massive as in *Synploca*.

The ostium of *Melnea* opens laterally (almost dorsolaterally) but that of *Synploca* is ventral.

***Melnea armigera* (Meyrick), new combination**

FIGURES 215, 310c

Ascalenia armigera Meyrick, 1923b:60.—Clarke, 1955 [1955–1970]:55.—Bradley, 1961:148.

Male genitalia slides USNM 24000, 24970. Harpes asymmetrical; right harpe broad at base, costa arched; cucullus narrow with 4 stout setae dorsally; left harpe broad at base, costa arched; cucullus slender, with a finger-like process at base ventrally, with four stout setae near apex dorsally, and a strong seta at base dorsally. Uncus rudimentary. Vinculum broad, irregular. Tegumen arched; posteriorly a triangular area with a strong seta on each side. Anellus an elongate sclerotized plate. Aedeagus slender, S-shaped.

Female genitalia slides USNM 24971, 24972. Ostium oval, opening laterally. Inception of ductus seminalis from ductus bursae posteriorly. Ductus bursae membranous, rather broad. Bursa

copulatrix membranous. Signa two small dentate plates.

HOLOTYPE.—In the British Museum (Natural History).

TYPE-LOCALITY.—Fiji, Labasa.

DISTRIBUTION.—Fiji, Solomon Islands, Tahiti, Marquesas Islands.

FOOD PLANT.—Unknown.

We obtained only two specimens in the Marquesas: Nuku Hiva, Taiohae, 27 Jan 1968, 1♂, and 19 Jan 1968, 1♀. Also, before me are 9 specimens from Tahiti, Punaauia, Bel Air Hotel, 5–7 Jan 1968, 2♂, 4♀; Faaa, Pamatal, 1000 ft (304 m), 1 Jan 1968, 1♂, 2♀.

In addition to the above I have a specimen from Koror, Palau (Micronesia) Townes No. 1243 that appears to be *armigera*, but it is darker than the other specimens I have examined.

As far as I am able to ascertain the records from Nuku Hiva, Tahiti, and Palau are the first outside of Fiji and the Solomons.

Genus *Cosmopterix* Hübner

Cosmopterix Hübner, 1825 [1816–1826]: 424.

TYPE-SPECIES.—*Tinea zieglerella* Hübner 1805–1810 [1796–1838], pl. *Tinea* 44: fig. 306. (Opinion 866, 1969: 150–151.)

Key to the Species of *Cosmopterix*

1. Alar expanse 10 mm or more 2
Alar expanse 8 mm or less *melanarches* Meyrick
2. Forewing with entire length of fold a white streak. *diandra*, new species
Forewing not so marked 3
3. Outer part of costa marked by fine black strigulae. *ceriocosma* (Meyrick)
Outer part of costa not so marked *nonna*, new species

***Cosmopterix ceriocosma* (Meyrick), new combination**

FIGURES 216, 310e

Labdia ceriocosma Meyrick, 1934c:347.—Clarke, 1955 [1955–1970]: 80.

Male genitalia slides USNM 24637, 25496. Harpe narrow basally, with short sclerotized ridge; cucullus broad, clothed with fine setae. Right brachium greatly developed, distally greatly broadened; left brachium undeveloped. Prospicuous well developed, curved, distal half

FIGURE 215.—*Melnea armigera* (Meyrick): *a*, ventral view of male genitalia with aedeagus in situ; *b*, ventral view of female genitalia.

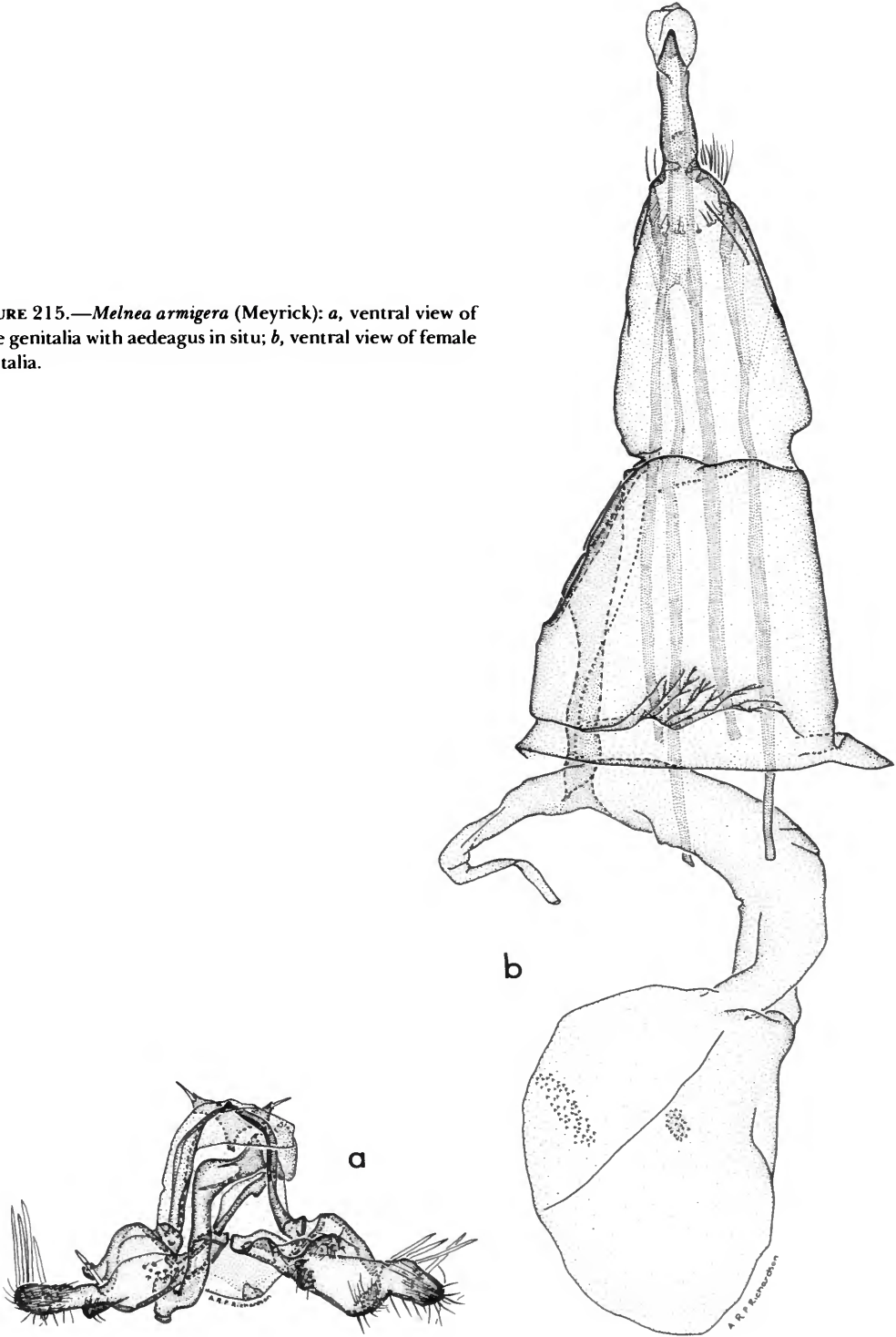
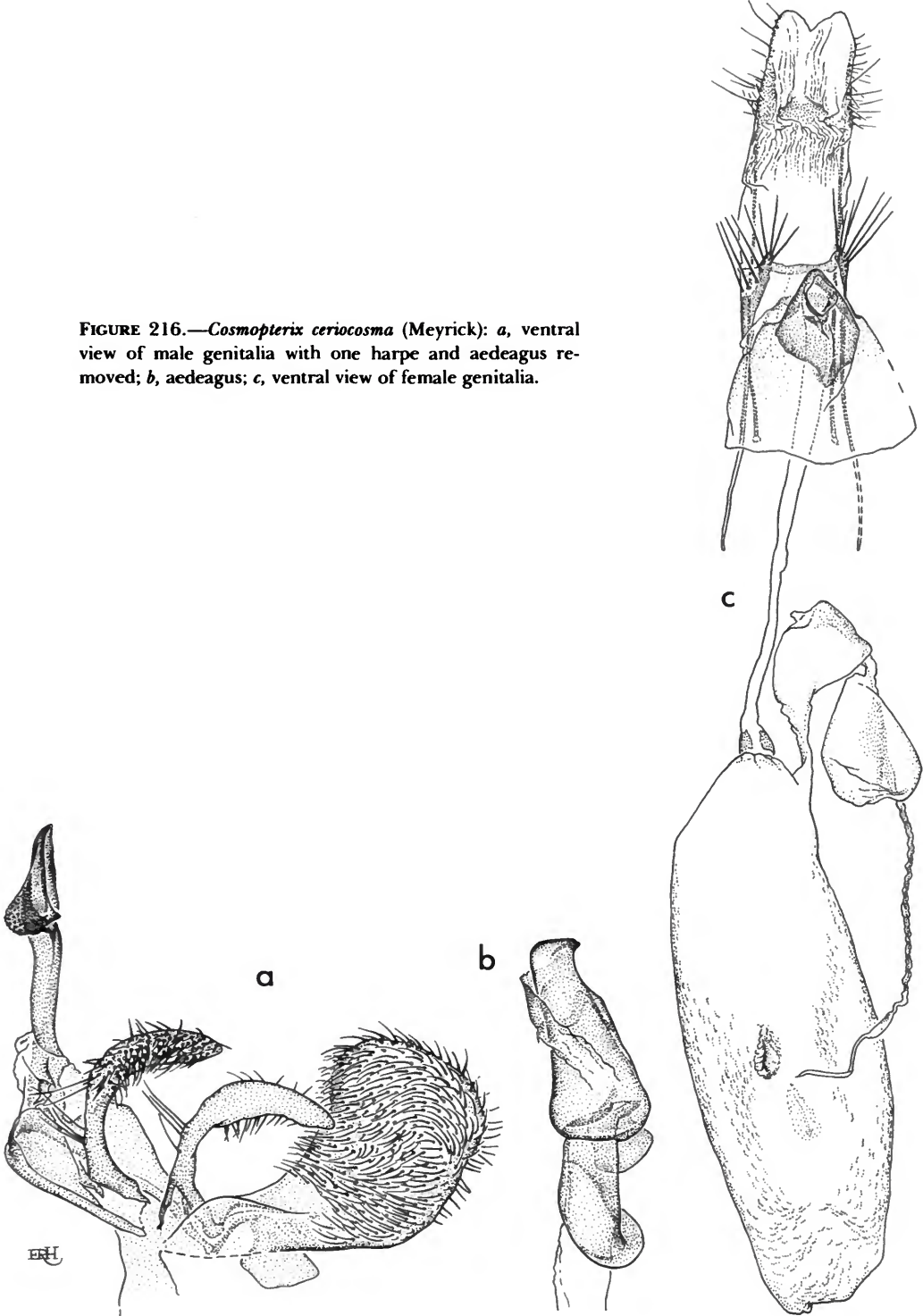


FIGURE 216.—*Cosmopterix ceriocosma* (Meyrick): *a*, ventral view of male genitalia with one harpe and aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.



clothed with setae. Tegumen nearly twice as long as broad. Anellus an irregular, sclerotized plate ankylosed with aedeagus. Aedeagus stout, widest about middle, truncated distally.

Female genitalia slides USNM 24636, 25497. Ostium oval, emerging from posterior end of a raised diamond-shaped sclerotized area. Antrum not differentiated. Inception of ductus seminalis from near posterior end of bursa copulatrix. Ductus bursae slender, membranous, except for a pair of small sclerotized patches at junction with bursae copulatrix. Bursa copulatrix granular, signa two small, oval plates, each with a central tooth. In association with the female genitalia, the seventh sternum bears two conspicuous pairs of deciduous, modified scales.

HOLOTYPE.—In the Bernice P. Bishop Museum.

TYPE-LOCALITY.—Fatu Hiva, Omoa.

DISTRIBUTION.—Fatu Hiva, Hiva Oa.

Hiva Oa: Atuona, 26 Feb 1968, 1♀. Fatu Hiva: Omoa, 14 Mar to 8 Apr 1968, 2♂, 4♀.

FOOD PLANT.—Unknown.

Aside from the genitalia, the most outstanding distinguishing feature of *ceriocosma* is the series of black strigulae on the outer half of the costa of forewing.

***Cosmopterix nonna*, new species**

FIGURES 217, 310f

Alar expanse 16 mm.

Labial palpus blackish fuscous with median longitudinal white stripe; second segment sordid white on inner side. Antenna blackish fuscous spotted with white; well before apex a broad and a narrow white band; apex white; scape with a longitudinal white stripe. Head blackish fuscous; face bronze. Thorax blackish fuscous; tegula edged white. Forewing ground color blackish fuscous; from base of costa a slender white stripe turns inward to cell and ends at middle of dark basal part of wing; on fold a very slender white longitudinal dash; between fold and dorsum a similar dash; beyond the dark basal half of wing,

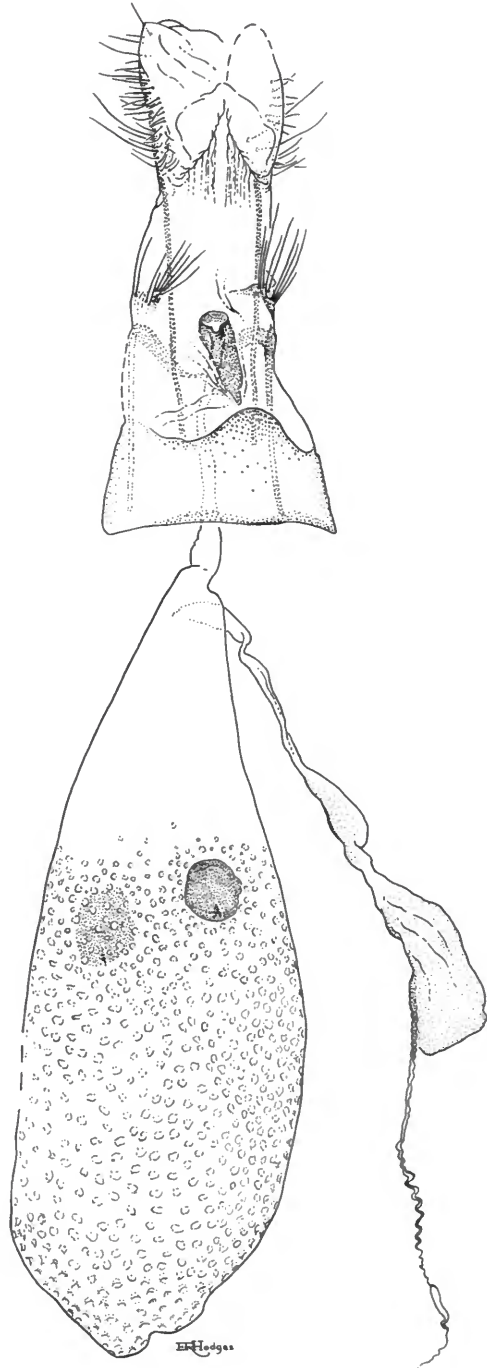


FIGURE 217.—*Cosmopterix nonna*, new species, ventral view of female genitalia.

a broad light ochraceous-buff area preceded by a silvery white border and followed by a transverse fascia of the same color; at base of the ochraceous-buff area, in costal third, a small black spot; at outer edge of this light area, on costa and at tornus, some fuscous scaling; outer apical area attenuated, blackish fuscous with median, longitudinal, silvery white stripe; cilia grayish fuscous to fuscous. Hindwing fuscous; cilia grayish. Legs ochraceous white marked with blackish fuscous. Abdomen blackish fuscous dorsally, paler ventrally.

Female genitalia slide USNM 25495. Ostium small, round, from the posterior end of a narrow sclerotized sac. Antrum not differentiated. Inception of ductus seminalis from posterior end of bursa copulatrix. Ductus bursae slender, membranous. Bursa copulatrix membranous with very slight granulation. Signa two large round plates each with a marginal tooth.

HOLOTYPE.—USNM 100848.

TYPE-LOCALITY.—Hiva Oa, Mt. Feani, 3400 ft (1036 m).

DISTRIBUTION.—Hiva Oa.

FOOD PLANT.—Unknown.

Described from the unique ♀ holotype (1 Mar 1968).

This handsome species might at first be confused with *C. ceriocosma* (Meyrick) but is easily distinguished from it, not only by the genitalia, but by the absence of the black strigulae on the outer part of the costa of forewing. Moreover, *ceriocosma* is found at low elevation (near sea level) but, apparently, *nonna* occurs at higher altitudes. This is the largest of the Marquesan species of *Cosmopterix*.

The species of *Cosmopterix* have an antennal pecten consisting of a single, elongate scale. This single scale is easily lost, and in the case of *nonna*, this scale is missing from the unique specimen.

Cosmopterix diandra, new species

FIGURES 218, 310g

Alar expanse 10–13 mm.

Labial palpus striped blackish fuscous and white. Antenna blackish fuscous with a white

stripe for most of its length, three terminal segments white, preceded by six blackish fuscous segments, the latter preceded by two white, two blackish fuscous and two more white segments; scape with buff longitudinal stripe dorsally. Head sepia with fine median and lateral whitish lines. Thorax sepia with fine median whitish line; tegula sepia with inner edge whitish. Forewing ground color sepia; at outer two-thirds a broad, transverse, pale ochraceous buff band shading to light ochraceous buff outwardly; on the inner margin of this transverse band a silver spot at costa and a similar spot dorsally, the latter narrowly edged by black scales; on the outer edge of the transverse band two, sometimes confluent, silver spots each with a cluster of black scales at inner edge; from outer edge of the transverse band a median whitish line extends to apex; fold a white line; between fold and costa two slender whitish longitudinal lines, the second based on costa; between fold and dorsum a short longitudinal whitish dash; cilia grayish to sepia except at apex, whitish. Hindwing fuscous; cilia grayish fuscous. Fore-, mid-, and hindlegs pale ochraceous buff mixed with white and streaked with fuscous. Abdomen covered with dull golden scales dorsally, pale ochraceous buff ventrally, with whitish silvery scales laterally at the posterior margins of the segments. Female abdomen with tufts of short, stout scales ventrolaterally.

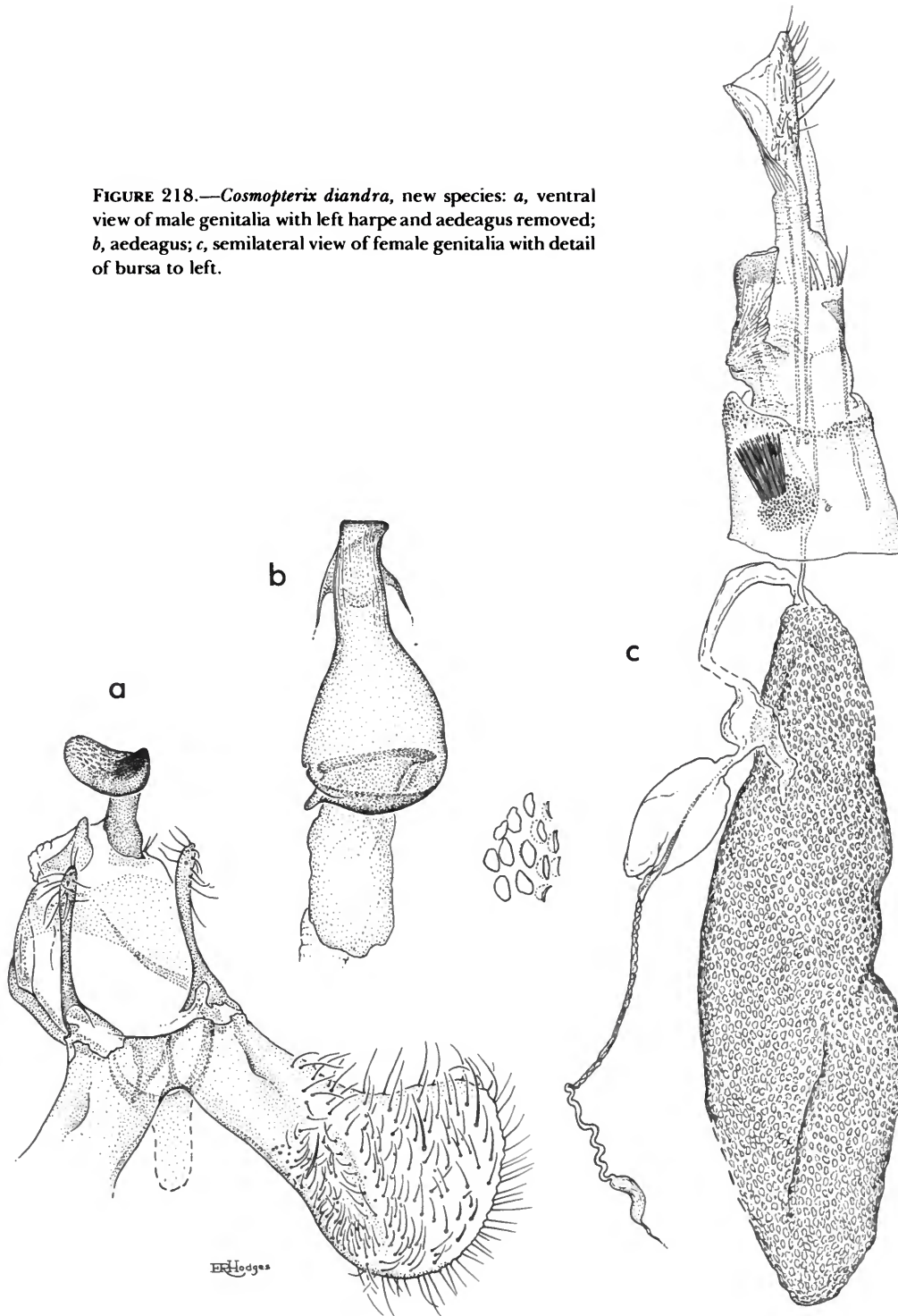
Male genitalia slide USNM 24966. Harpe stout basally, cucullus broadly expanded. Right brachium large, stout, terminating in a thick curved process; left brachium very short, triangular. Prospicuous slender, short. Tegumen longer than broad. Aedeagus bulbous basally, short, stout.

Female genitalia slide USNM 24967. Ostium small, round, emitted from a long protruding process. Inception of ductus seminalis from posterior margin of bursa copulatrix. Ductus bursae long, slender membranous. Bursa copulatrix long, oval, profusely and coarsely granular. Signum absent.

HOLOTYPE.—USNM 100827.

TYPE-LOCALITY.—Nuku Hiva, Tapuaooa, 2500 ft (762 m).

FIGURE 218.—*Cosmopterix diandra*, new species: *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus; *c*, semilateral view of female genitalia with detail of bursa to left.



DISTRIBUTION.—Nuku Hiva.

FOOD PLANT.—Unknown.

Described from the ♂ holotype (30 Jan 1968), 10♂ and 11♀ paratypes as follows. Nuku Hiva: Tapuaooa, 2500 ft (762 m), 30 Jan 1968, 6♂, 5♀; Tunoa Ridge, 2900 ft (884 m), 23 Jan 1968, 3♂, 6♀; Fatu Hiva: Mt. Teoaiua, 2000 ft (610 m), 22 Mar 1968, 1♂.

This species is similar to *Cosmopterix aculeata* Meyrick (1909:419) from Sri Lanka (Ceylon), but the fold is white for its entire length, and the two median stripes are much broader (×3); on the inner edge of the subapical transverse band are two short, broad, silver metallic bars without any indication of the outer black spots that are found in *aculeata*.

Cosmopterix melanarches Meyrick

FIGURES 219, 310h

Cosmopterix melanarches Meyrick, 1929a:497.—Viette, 1949a:318.—Clarke, 1955 [1955–1970]:198; 1971:155, fig. 124, pl. 21e.

HOLOTYPE.—In the British Museum (Natural History).

TYPE-LOCALITY.—Raiatea (Society Islands).

DISTRIBUTION.—Raiatea, Rapa, Marquesas Islands.

Nuku Hiva: Taiohae, 13 Jan to 5 Feb 1968, 2♂, 3♀. Hiva Oa: Atuona, 12–14 Feb 1968, 4♂, 1♀. Fatu Hiva: Omoa, 1 Mar to 9 Apr 1968, 14♂, 7♀.

FOOD PLANT.—Unknown, probably a grass.

None of the Marquesan specimens was taken in association with cow dung as they were on Rapa. The specimens listed above were taken at light.

The genitalia are repeated here for completeness. I wish to point out that the prospicuous on the left side of the male genitalia was omitted to avoid confusion of structures.

Acanthophlebia, new genus

TYPE-SPECIES.—*Acanthophlebia argentea*, new species, by monotypy and present designation. The gender of the generic name is feminine.

Antenna serrate, finely ciliate (♂); scape with pecten. Labial palpus slender, recurved, greatly exceeding vertex; third segment slightly longer than second, acute. Head smooth, clothed with tightly appressed scales; ocellus absent. Tongue well developed, heavily scaled. Thorax smooth; posterior tibia slightly roughened with loosely appressed scales. Forewing smooth, lanceolate, costa nearly straight, termen strongly oblique, apex pointed, 11 veins; 1b simple at base, terminating in a broad, shallow, curved pit with a strong spine at end, near margin of wing on underside; 1c present; 2 from angle of cell; 3 and 4 coincident and approximate to 2; 5 obsolete; 6 and 7 stalked, 7 to costa; 8 and 9 out of stalk of 6 and 7; 10 closer to 11 than to 9; 11 from slightly beyond middle of cell. Hindwing very narrow with reduced venation; cell open; 3 + 4? apparently present; 6 and 7 stalked, 7 to apex; on underside of wing, near margin, a coarse spine.

Male genitalia asymmetrical; uncus and socius absent.

Female genitalia unknown.

This genus is closely related to *Asymphorodes* and *Adeana* but is distinguished from both by the greatly reduced venation of the hindwing.

The peculiar spines on the undersides of the wings, undoubtedly confined to the male, are probably found only in this genus. These spines can be seen with a moderately low powered binocular microscope without denuding the wings.

Acanthophlebia argentea, new species

FIGURES 220, 308h

Alar expanse 5 mm.

Labial palpus second segment dusky neutral gray on outer side with a white spot at apex, silvery on inner surface; third segment black with longitudinal white stripe. Antenna black with grayish annulations; scape black with a white spot near base and one at apex dorsally. Head dark neutral gray with a white stripe laterally. Thorax brassy with silver metallic dorsolateral line; tegula brassy. Forewing ground color black; basal

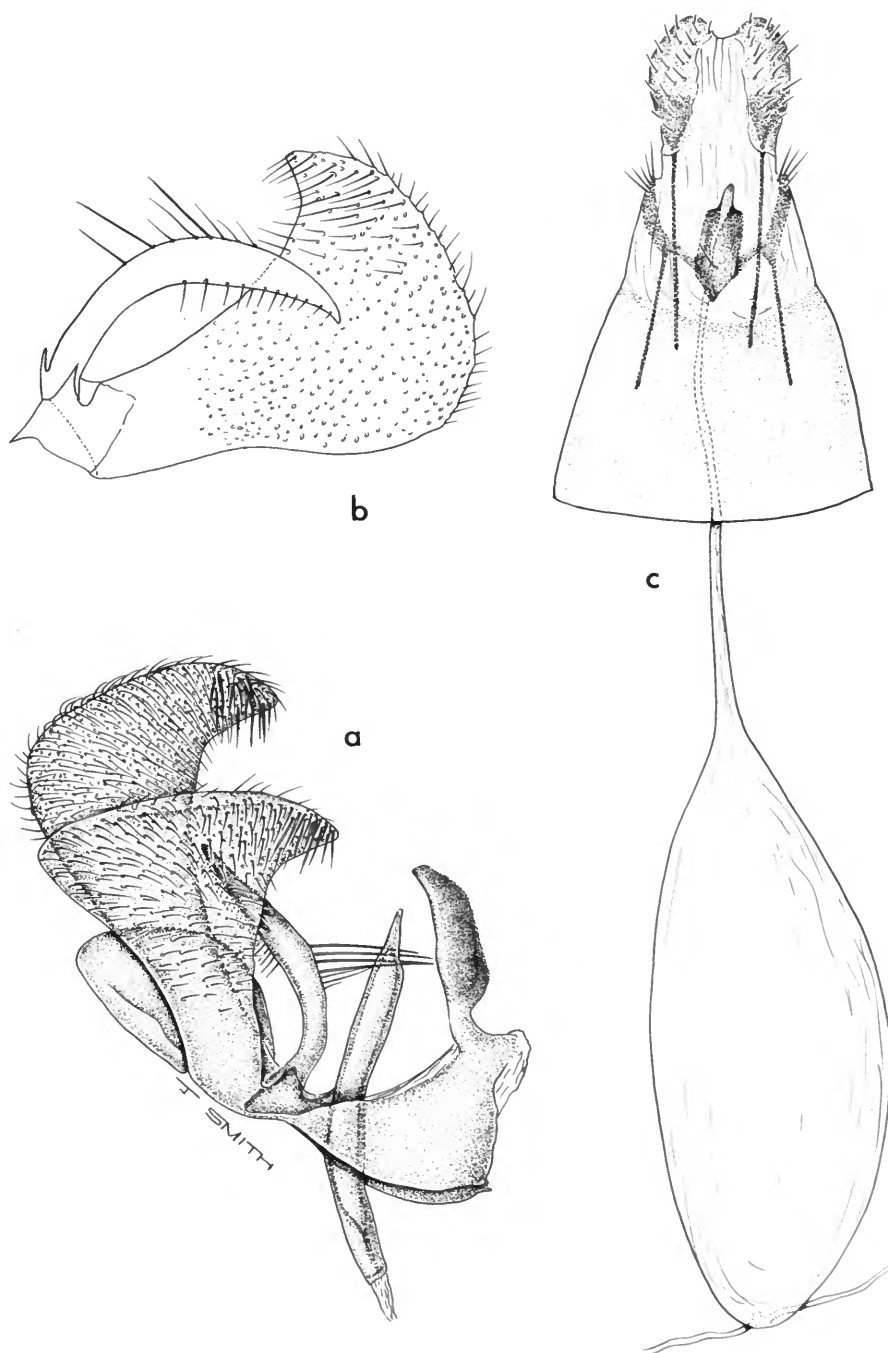


FIGURE 219.—*Cosmopterix melanarches* Meyrick: *a*, lateral aspect of male genitalia with aedeagus in situ; *b*, harpe with propicius attached; *c*, ventral view of female genitalia.

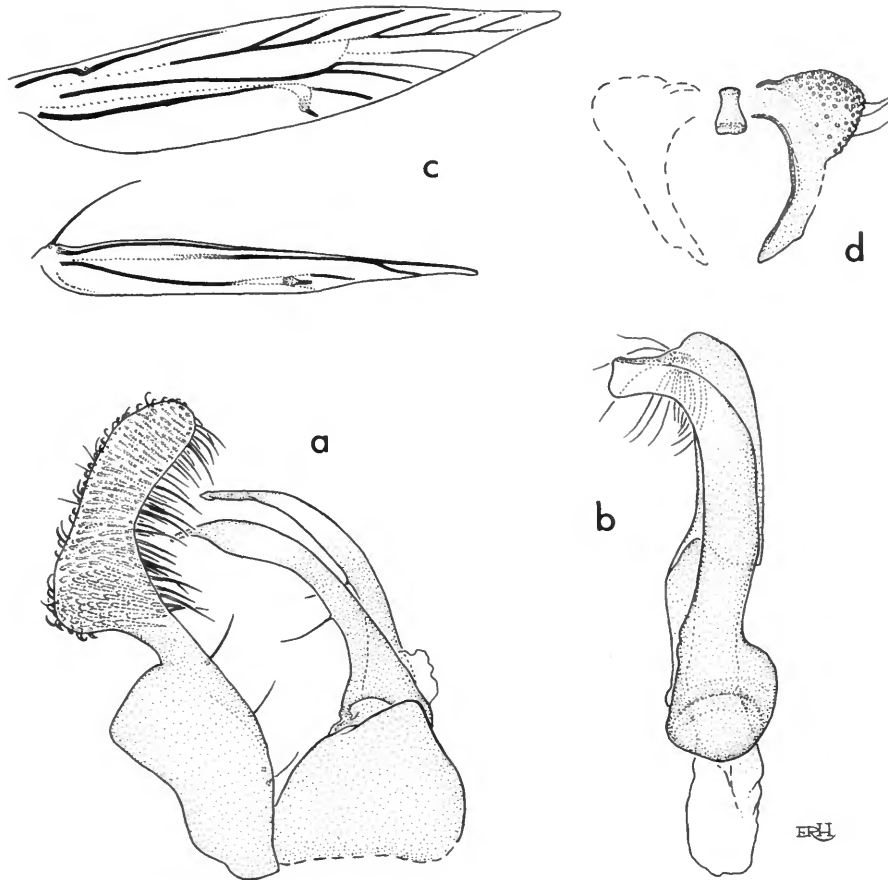


FIGURE 220.—*Acanthophlebia argentea*, new species: *a*, lateral aspect of male genitalia with aedeagus removed; *b*, aedeagus; *c*, venation of right wings; *d*, 8th sternum (dashed line indicates missing parts of specimen).

fourth of costa broadly silver metallic; from basal angle a silver metallic streak extends to about one-third; between these two silver marks an elongate patch of brassy scales bordered on each side by a slender black line, the metallic marks show blue or violaceous iridescence; from about middle of costa a silver metallic fascia, with blue or violaceous reflections, extends to dorsum; at apical fourth a similar fascia; cilia gray at tornus, black along termen to apex. Hindwing grayish fuscous; cilia slightly paler. Foreleg femur and tibia lustrous gray; tarsal segments black; two basal tarsi with white tips; midleg similar; hindleg metallic black; tibia with white spot at middle

and at apex; two white spots on tarsi. Abdomen black; 8th sternum slightly modified.

Male genitalia slide USNM 25139. Harpe broad basally, neck hardly differentiated, very short; cucullus narrow distally. Brachia long, curved, dilated distally. Tegumen shorter than wide. Aedeagus slender, S-shaped; manica with a high keel dorsally.

HOLOTYPE.—USNM 100828.

TYPE-LOCALITY.—Fatu Hiva, Omoa.

DISTRIBUTION.—Fatu Hiva.

FOOD PLANT.—Unknown.

Described from the unique ♂ holotype (11 Mar 1968).

This species brings to mind the American *Fabiola tecta* Braun (1935:45) but *argentea* is a smaller species and has a blue or violaceous iridescence in the apical half of the forewing lacking in *tecta*.

Family BLASTOBASIDAE

Genus *Blastobasis* Zeller

Blastobasis Zeller, 1855:171.

TYPE-SPECIES.—*Oecophora (Scythris) phycidella* Zeller, 1855:171; subsequent designation by Walsingham and Durrant, 1907:47.

Blastobasis inana (Butler)

FIGURES 221, 310d

Gracilaria inana Butler, 1881:404 [No. 44].

Blastobasis inana (Butler).—Walsingham, 1907:648, pl. 25: fig. 3.—Swezey, 1910:141.—Zimmerman, 1978:992, figs. 696–699.

Blastobasis explorata Meyrick, 1918b:158.

TYPES.—In the British Museum (Natural History).

TYPE-LOCALITIES.—Honolulu (*inana*); Pusa, Bengal, India (*explorata*).

DISTRIBUTION.—Hawaiian Islands, India, Marquesas Islands.

From the Marquesas we have 97 specimens from three islands. Nuku Hiva: Taiohae 19 Jan to 1 Feb 1968, 3♂, 1♀. Hiva Oa: Atuona, 10 Feb to 22 Mar 1968, 21♂, 52♀; Tahauku, 26 Feb 1968, 1♂. Ootua, 800 m, 27–30 Jul 1977, 1♀ (Montgomery). Fatu Hiva: Omoa, 10 Mar to 5 Apr 1968, 6♂, 12♀.

FOOD PLANTS.—Garden beans (Swezey): coffee berries, dead sugar cane, *Dioscorea* (yam) Zimmerman; *Eugenia uniflora* L.

Nearly all of our specimens were collected at light. The one specimen reared from *Eugenia* was from a larva that was feeding in a mass of mature and dried fruits in company with larvae of *Strepsicrates holotephros* (Meyrick), *Asymphorodes coesyrius* Meyrick, and an unidentified phycitid.

This is the first record of the occurrence of this species in the Marquesas Islands, and I am indebted to Zimmerman's figures (vide ante) for the determination. The strong spine from the base of the inner face of the harpe is a distinguishing feature.

Family HELIODINIDAE

Genus *Lissocnemitis* Meyrick

Lissocnemitis Meyrick, 1934c:352.

TYPE-SPECIES.—*Lissocnemitis argolyca* Meyrick, 1934c:352; by monotypy.

Lissocnemitis argolyca Meyrick

FIGURES 222, 311a,b

Lissocnemitis argolyca Meyrick, 1934c:352.—Clarke, 1955 [1955–1970]: 53; 1971:182, pl. 24f.

Male genitalia slides USNM 24227, 24999, 25001. Harpe with small loop at base of costa; sacculus narrowly sclerotized; cucullus narrowly rounded. Gnathos a long, pointed process. Uncus elongate, bluntly pointed, clothed with stout setae. Vinculum triangular. Tegumen bulbous basally, narrowed at middle, then broadened to base of uncus. Anellus triangular, with posteromedian hump. Aedeagus stout, pointed distally.

Female genitalia slides USNM 25000, 25002, 25003. Ostium very broad, transverse, slitlike. Antrum broadly sclerotized. Inception of ductus seminalis at end of convoluted bursa copulatrix. Ductus bursae short, broad. Bursa copulatrix a posteroventral irregular sac, anteriorly long and convoluted. Signum a small sclerotized plate.

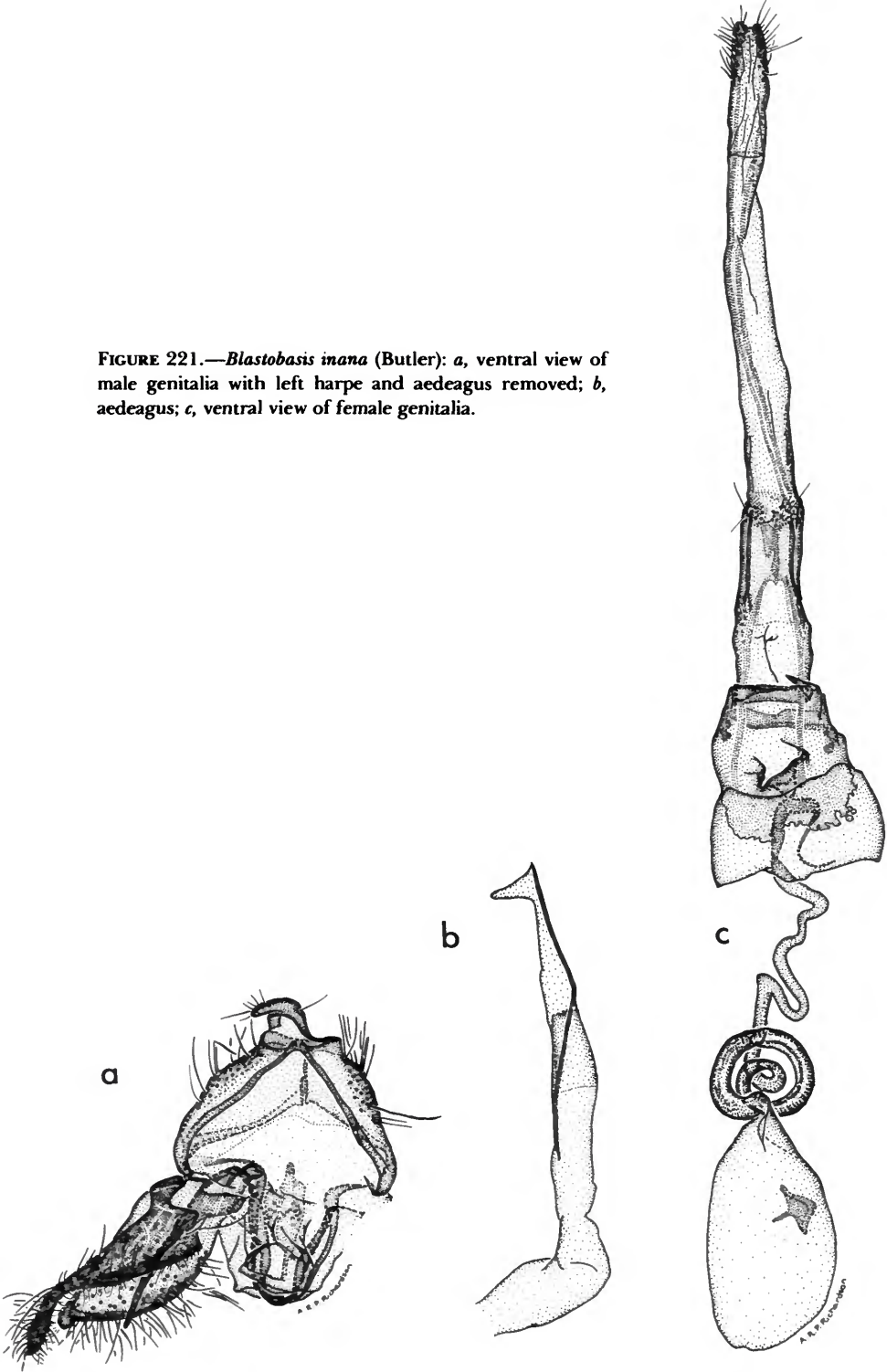
HOLOTYPE.—In the Bernice P. Bishop Museum.

TYPE-LOCALITY.—Hiva Oa, Atuona Valley.

DISTRIBUTION.—Marquesas Islands, Rapa.

Our series contains the following. Nuku Hiva: Taiohae, 5 Feb 1968, 1♂; Tapuaoa, 2500 ft (762 m), 30 Jan 1968, 1♂; Tunoa Ridge, 2900 ft (884 m), 23 Jan 1968, 1♀. Hiva Oa: Atuona, 15–

FIGURE 221.—*Blastobasis inana* (Butler): *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.



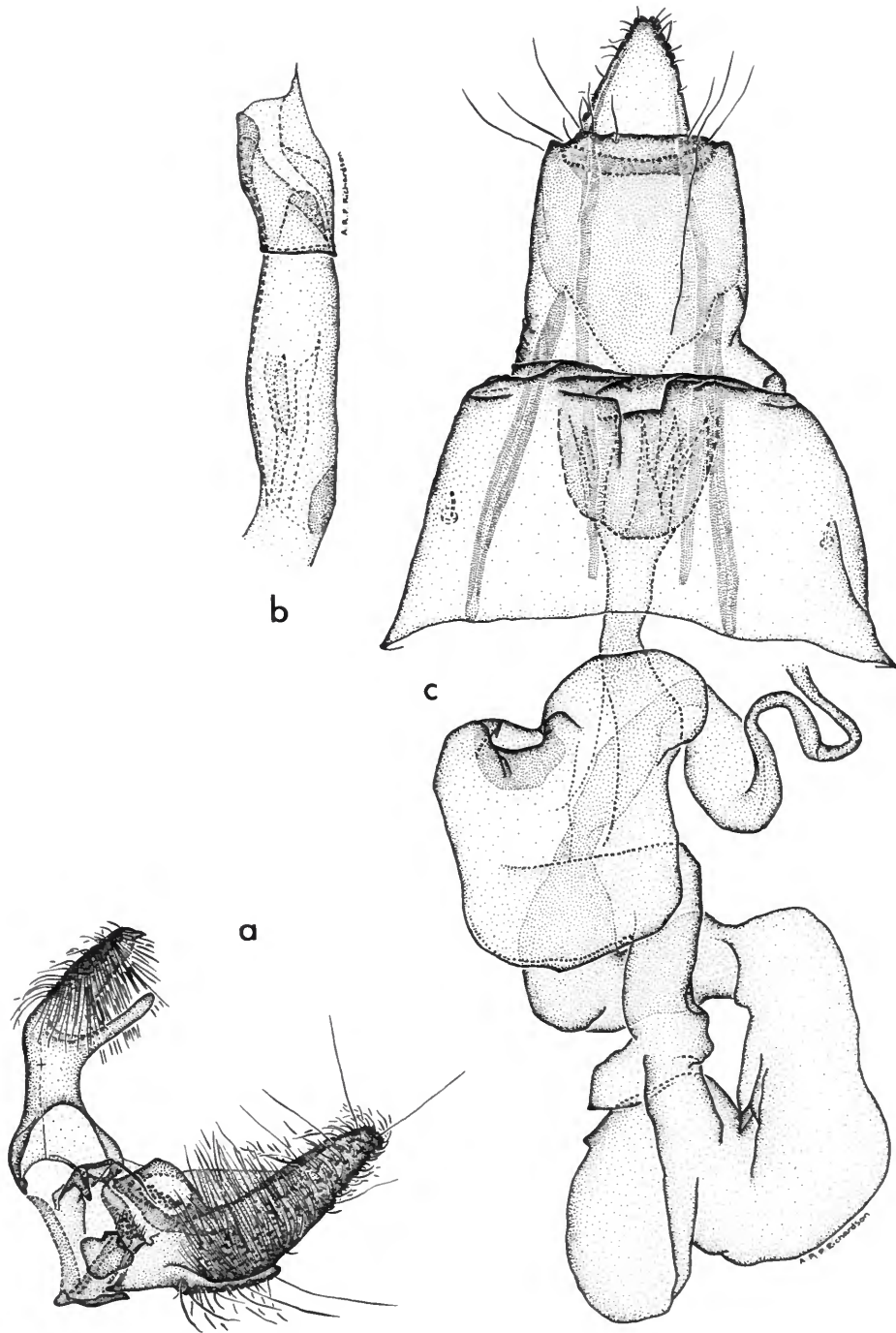


FIGURE 222.—*Lissocnemis argolyca* Meyrick: *a*, male genitalia with left harpe and aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.

24 Feb 1968, 1♂, 1♀; Mt. Feani, 3400–3800 ft (1036–1158 m), 20 Feb and 1 Mar 1968, 22♂, 22♀. Fatu Hiva: Omoa, 14 Mar to 10 Apr 1968, 4♂; Tahuna, 2000 ft (610 m), 27 Mar 1968, 1♀.

FOOD PLANT.—Unknown.

The holotype was collected 6 July 1929 (by Mumford and Adamson) and is in fair condition. Fortunately, the abdomen was intact.

A ♂ and 2♀ from Mt. Feani are considerably

larger than the average, and show some grayish streaks (Figure 311*b*).

Family IMMIDAE

Genus *Imma* Walker

Imma Walker, 1859 [1856–1866]:195.

TYPE-SPECIES.—*Imma rugosalis* Walker, 1859 [1855–1856]:195; by monotypy.

Key to the Species of *Imma*

1. Forewing outer half much darker than basal half . . . *semiclara* Meyrick
Forewing otherwise 2
2. Forewing ground color streaked or blotched 3
Forewing ground color otherwise 5
3. Hindwing with cell wholly gray or grayish fuscous
 *heppneri*, new species
Hindwing otherwise 4
4. Hindwing with cell wholly yellowish buff *impariseta*, new species
Hindwing with cell half gray *fulminatrix* Meyrick
5. Forewing ground color fuscous or brownish 6
Forewing ground color ochraceous buff or whitish ochreous 9
6. Hindwing with conspicuous buff streak *feaniensis*, new species
Hindwing without buff streak 7
7. Forewing ground color brownish gray *philomena*, new species
Forewing ground color much darker 8
8. Forewing transverse fascia strongly indicated . . . *gloriana*, new species
Forewing transverse fascia obsolete *rotia*, new species
9. Forewing ground color whitish ochreous *ochrilactea* Meyrick
Forewing ground color otherwise 10
10. Hindwing uniformly grayish *catapsesta* Meyrick
Hindwing distinctly lighter costad *assita*, new species

Imma philomena, new species

FIGURES 223, 311*c*

Alar expanse 23 mm.

Labial palpus ochraceous buff; third segment slightly infuscated anteriorly on outer side; third segment brownish gray. Antenna ochraceous buff basally, shading to brownish distally. Head ochraceous buff. Thorax brownish gray. Forewing ground color brownish gray; from slightly beyond middle of costa, a slender, outwardly oblique, broken, irregular blackish fuscous line

extends to tornus; terminal line blackish fuscous; cilia warm buff. Hindwing light grayish fuscous, darker toward termen; cilia light buff. Foreleg, midleg, and hindleg ochraceous buff. Abdomen grayish fuscous dorsally, ochraceous buff ventrally.

Female genitalia slide USNM 24918. Ostium funnel-shaped. Antrum sclerotized laterally. Inception of ductus seminalis anterior from the ductus bursae. Ductus bursae very long, coiled; posteriorly there is a slender sclerotized rod about one-fourth the length of the ductus. Bursa

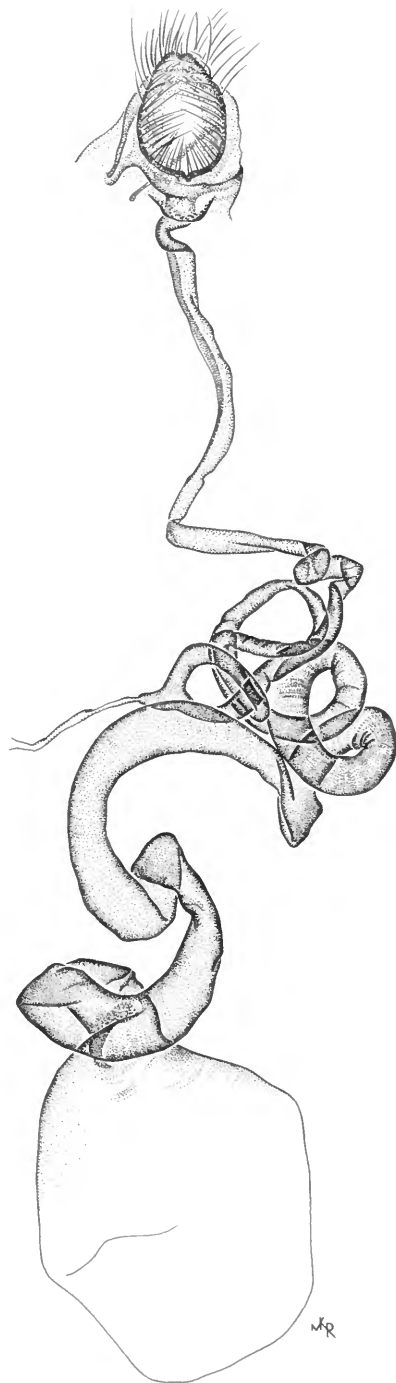


FIGURE 223.—*Imma philomena*, new species, ventral view of female genitali.

copulatrix very finely granular, slightly thickened at the beginning of the ductus bursae. Signum absent.

HOLOTYPE.—In the British Museum (Natural History).

TYPE-LOCALITY.—Tahuata, 200 ft (61 m).

DISTRIBUTION.—Tahuata.

FOOD PLANT.—Unknown.

Described from the ♀ holotype (13 Jan 1925, C.L. Collenette).

This species is closely related to *ochrilactea* and *catapsesta* but is much darker (brownish gray) than either; and *philomena* occupies a different island, often an important factor is distinguishing species.

Unfortunately, the single specimen available is a female and the female genitalia are not very helpful, usually, in separating the closely related species of these islands.

Imma ochrilactea Meyrick

FIGURES 224, 311d

Imma ochrilactea Meyrick, 1934c:353.—Clarke, 1955 [1955–1970]:222.

Alar expanse 23 mm.

Labial palpus light ochraceous buff; third segment apex slightly darker. Antenna light ochraceous buff basally becoming darker toward apex. Head, thorax, and forewing ground color light ochraceous buff; transverse fascia of forewing faintly indicated from slightly beyond middle of costa, outwardly oblique toward, but not reaching, tornus; terminal line very slender, brownish; cilia pale ochraceous buff. Hindwing very pale grayish, darker and more brownish toward margins. Fore-, mid-, and hindlegs pale ochraceous buff; tarsal segments slightly darker.

Female genitalia slide USNM 24917. Ostium funnel-shaped, rather broad. Inception of ductus seminalis from ductus brusae. Ductus bursae very long, coiled; posteriorly, there is a slender sclerotized rod on inner surface extending to first loop. Bursa copulatrix very finely granular, more heavily so where ductus bursae enters.

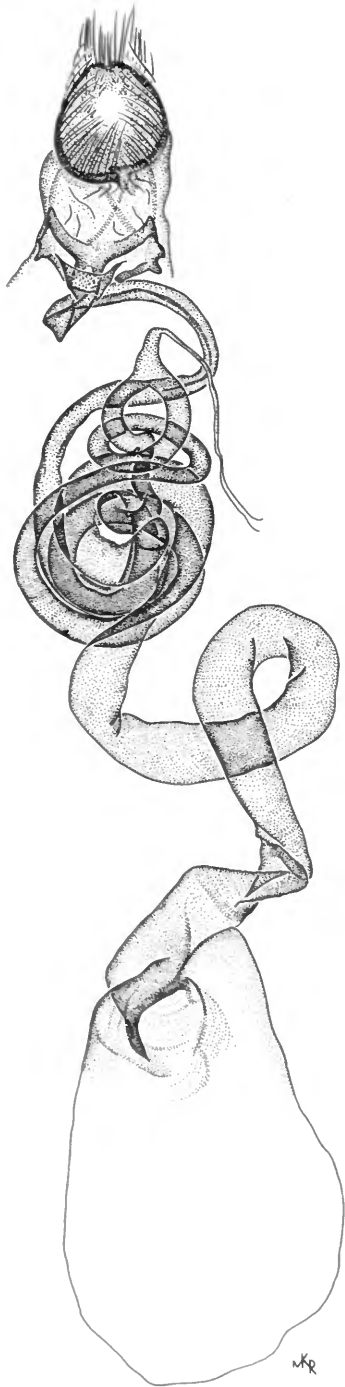


FIGURE 224.—*Imma ochrilactea* Meyrick, ventral view of female genitalia.

HOLOTYPE.—In the British Museum (Natural History).

TYPE-LOCALITY.—Hiva Oa.

DISTRIBUTION.—Hiva Oa.

FOOD PLANT.—Unknown.

Under the description of *Imma semiclara* Meyrick (1929a:503) Meyrick stated that “two large females are peculiar; one from Hiva Oa, 24 mm., has fore-wings, uniform whitish-ocherous, transverse line only faintly indicated, terminal line distinct, hindwings grey-whitish, towards termen grey; . . .”

Later, Meyrick (1934c:353) named this moth *ochrilactea* without further description. I have given a brief description following *Ridgeway Color Standards* (1912) hence the discrepancies in the color descriptions.

Several species, *ochrilactea*, *assita*, new species, *philomena*, new species, and *catapsesta* are closely related, but *ochrilactea* is much paler in coloring than the others. Unfortunately, only a single female of *ochrilactea* is available for study. Because of its pale washed-out appearance there remains the question of whether or not it is distinct from some of the others; the female genitalia are of little help.

Imma semiclara Meyrick

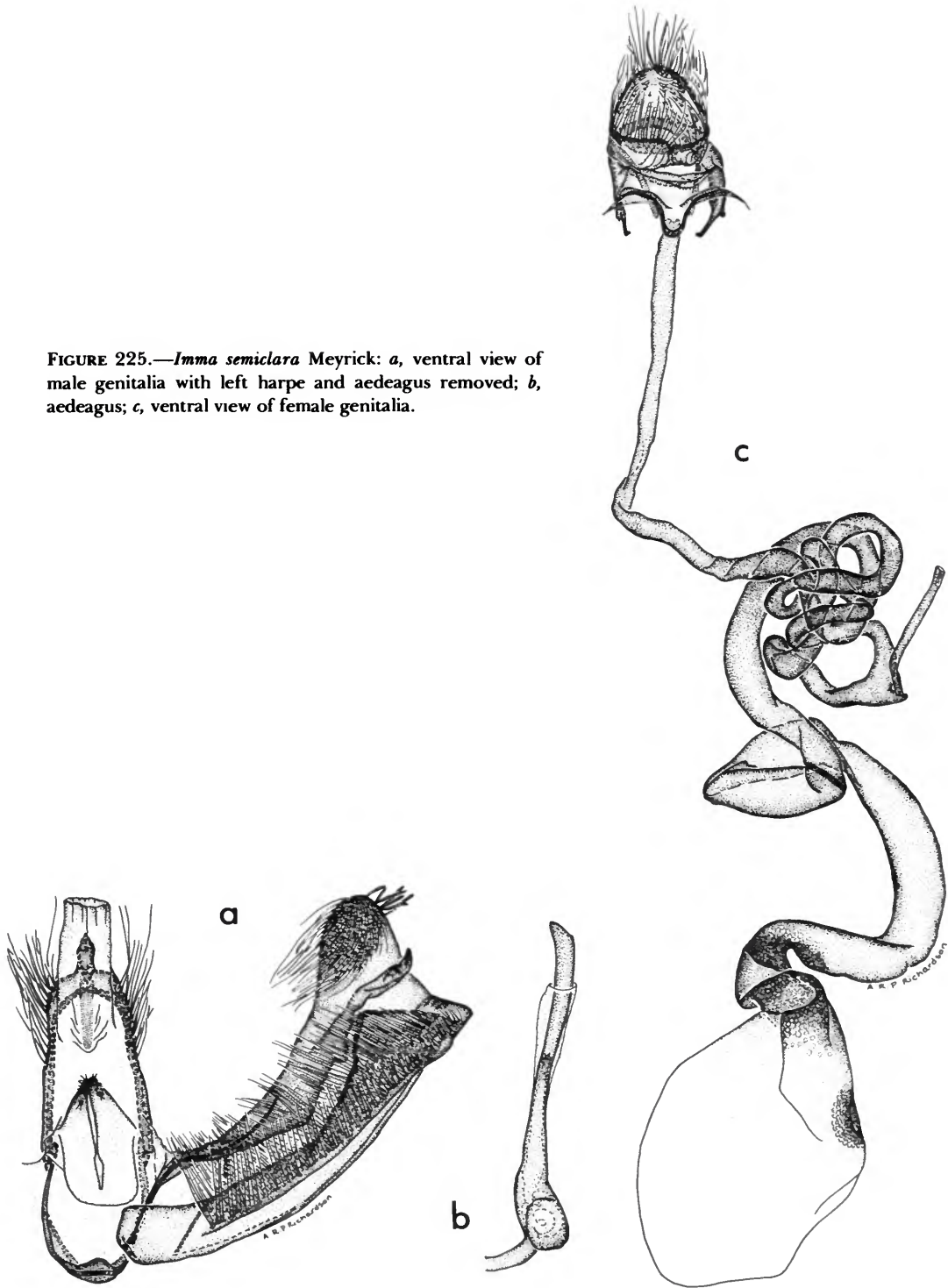
FIGURES 225, 311e

Imma semiclara Meyrick, 1929a:503.—Clarke, 1955 [1955–1970]:283; 1969 [1955–1970]:155, pl. 77: figs. 1–1b.—Heppner, 1982:271.

Male genitalia slide USNM 24666. Harpe narrow basally, broadening toward cucullus; cuculus broad, outer margin concave; clasper long, exceeding outer margin of cucullus. Vinculum U-shaped. Tegumen highly arched. Anellus two very lightly sclerotized elongate plates, the tip of each clothed with setae. Aedeagus simple, long, slender, bulbous proximally.

Female genitalia slide USNM 24667. Ostium small, round. Inception of ductus seminalis at about two-thirds length of ductus bursae. Ductus bursae membranous, very long, convoluted; some granulation anteriorly. Bursa copulatrix

FIGURE 225.—*Imma semiclara* Meyrick: *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.



granular. Signum indicated by a concentration of granules in wall of bursa copulatrix.

TYPE.—In the British Museum (Natural History).

TYPE-LOCALITY.—Nuku Hiva, at 100 ft (305 m).

DISTRIBUTION.—Nuku Hiva.

The specimens before me are from Nuku Hiva: Taiohoe, 16 Jan to 5 Feb 1968, 4♂, 5♀. Toovii, Ooumu, 900 m, 16–19 Jul 1977, 1♀ (Montgomery).

FOOD PLANT.—Unknown.

In addition to Nuku Hiva, Meyrick recorded this species from Hiva Oa and Tahuata. We did not find it on Hiva Oa and, judging by the behavior of other members of the genus, perhaps Meyrick had a mixed series. Although most specimens are recorded from near sea level, the Montgomery specimen indicates that altitude is no barrier to the distribution of this insect, at least on Nuku Hiva.

Imma gloriana, new species

FIGURES 226, 311f,g

Alar expanse 22–24 mm.

Labial palpus light ochraceous buff; second and third segments shaded with grayish anteriorly. Antenna buckthorn brown. Head light ochraceous buff anteriorly, somewhat darker posteriorly. Thorax raw umber with some ochraceous buff scales anteriorly. Forewing ground color raw umber; extreme edge of costa pale ochraceous buff; from slightly beyond middle costa to dorsum slightly before tornus a distinct, irregular, slender, light buff line bordered outwardly by a narrow fuscous shade; subterminal line indicated by a series of small buff spots; terminal line very fine, fuscous; cilia raw umber; underside of forewing mostly light ochraceous buff. Hindwing fuscous, paler basally, cilia yellowish to light buff; underside of hindwing mostly light ochraceous buff. Fore-, mid-, and hindlegs light ochraceous buff; tarsal segments of midleg spotted grayish. Abdomen pale olive

buff dorsally, chamois ventrally; anal tuft of male black.

Male genitalia slide USNM 24670. Harpe broad, broadest at cucullus; distal edge of cucullus very slightly convex; clasper strong, slightly curved, pointed, extending beyond outer edge of cucullus. Vinculum broadly U-shaped. Tegumen short, broad, rounded distally. Anellus two very light sclerotized plates, each distally pointed and clothed with setae. Aedeagus slightly longer than tegumen and vinculum combined, S-shaped, bulbous proximally.

Female genitalia slides USNM 24671, 24921. Ostium small, round. Inception of ductus seminalis from well forward from ductus bursae. Ductus bursae membranous; granular where it joins the bursa copulatrix. Bursa copulatrix finely granular. Signum small, round, formed by a concentration of granules.

HOLOTYPE.—USNM 100829.

TYPE-LOCALITY.—Nuku Hiva, Tunoa Ridge, 2900 ft (884 m).

DISTRIBUTION.—Nuku Hiva, Fatu Hiva.

FOOD PLANT.—Unknown.

Described from the ♂ holotype (23 Jan 1968), and 2♀ paratypes as follows. Nuku Hiva: Toovii, Ooumu, 900 m, 16–19 Jul 1977, 1♀ (Montgomery). Fatu Hiva: Tahuna, 2000 ft (610 m), 27 Mar 1968, 1♀.

Although *gloriana* looks very different from *semiclara*, it is, obviously, more closely related to it than to any of the other Marquesan species. Both exhibit a broad harpe with clasper extending beyond the outer margin of cucullus. In the females both lack the sclerotized rod in the wall of the ductus bursae posteriorly, and both have a signum.

Imma feaniensis, new species

FIGURES 227, 311h

Alar expanse 24–26 mm.

Labial palpus light ochraceous buff, suffused brownish; second segment buffy brown anteriorly; third segment buffy brown. Antenna

FIGURE 226.—*Imma gloriana*, new species: *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.

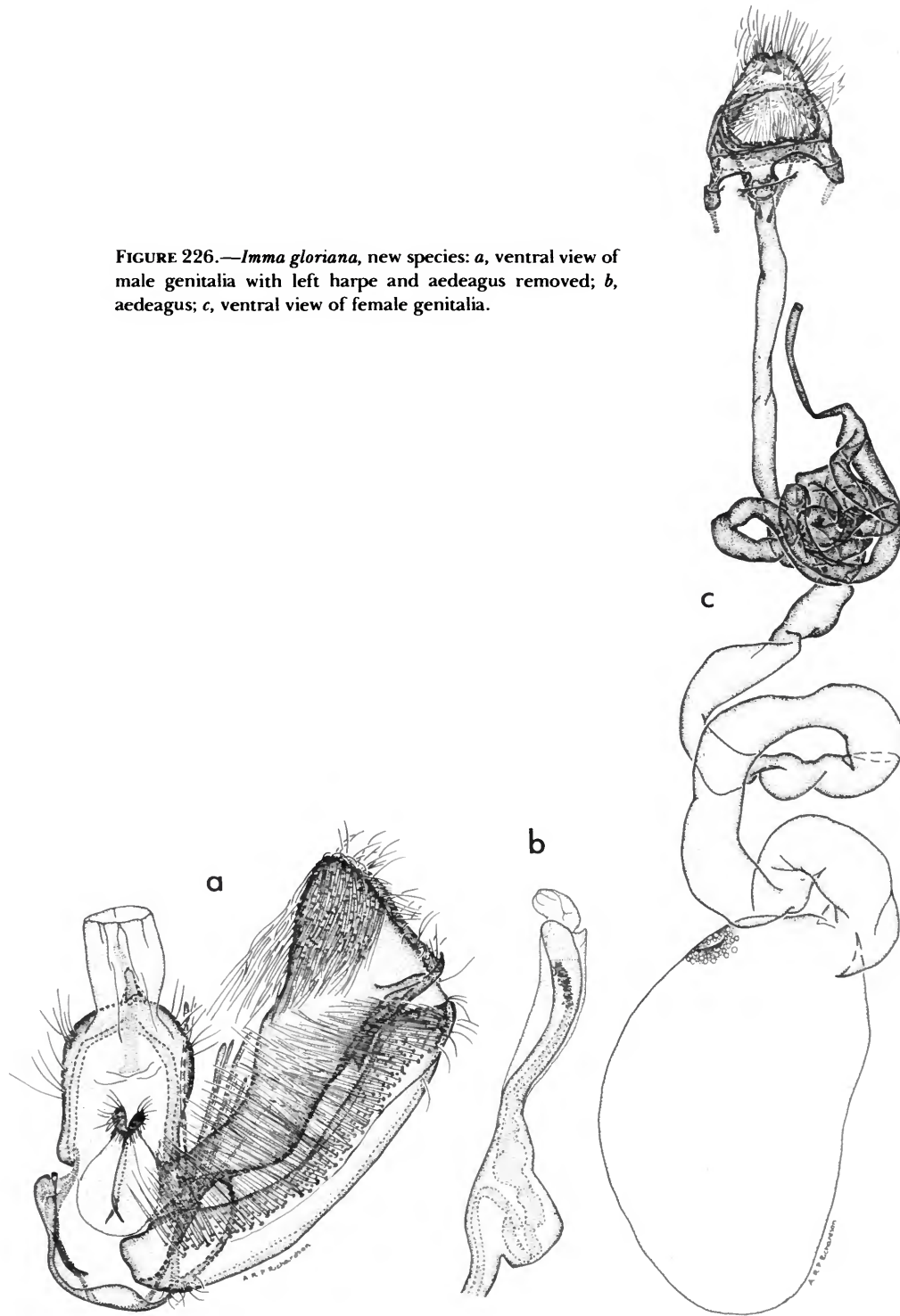
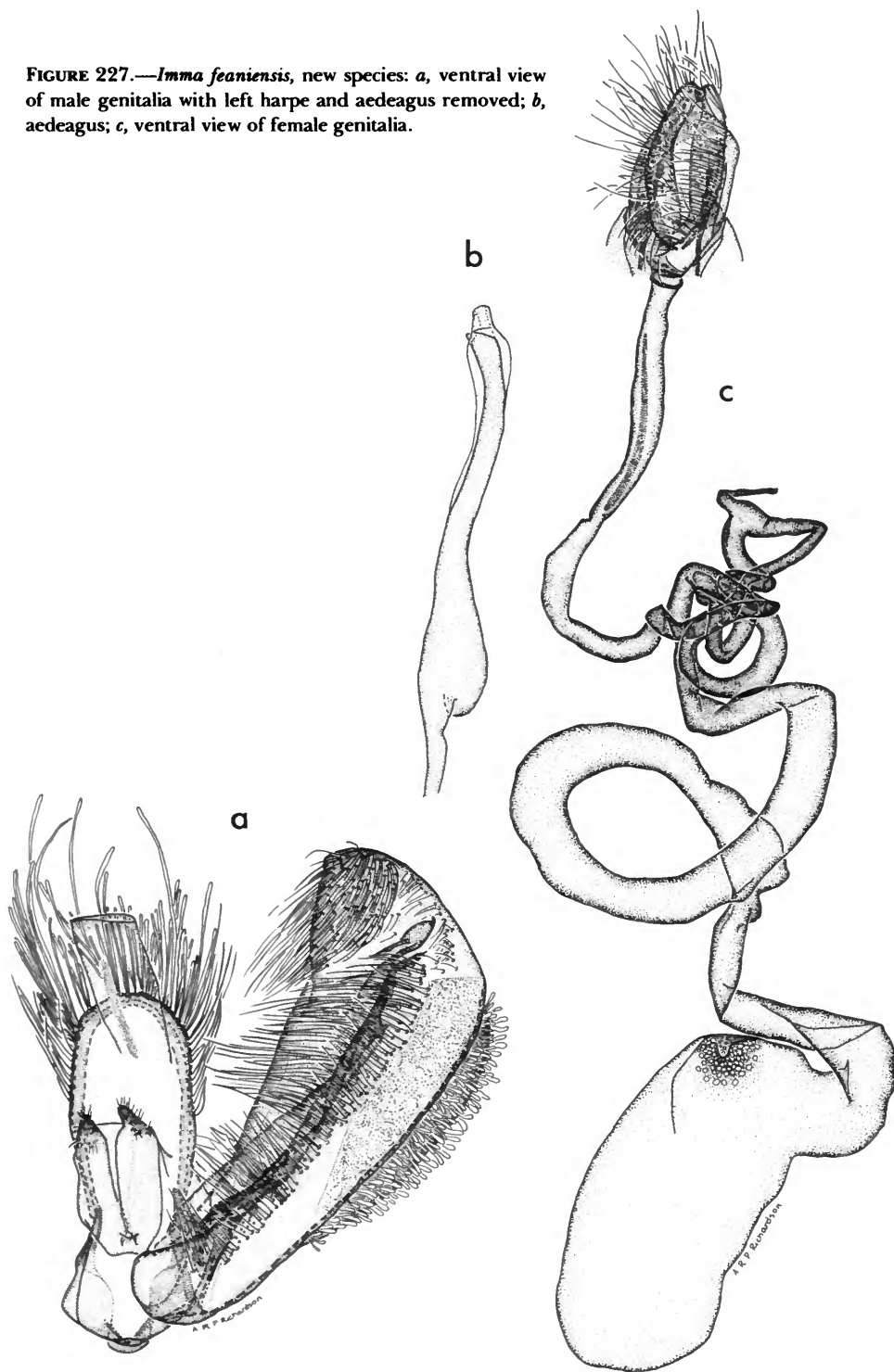


FIGURE 227.—*Imma feaniensis*, new species: *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.



buffy brown, slightly paler basally. Head light buffy brown. Thorax buffy brown with a light ochraceous buff spot posteriorly; apex of tegula slightly lighter. Forewing ground color buffy brown; from slightly beyond middle of costa outwardly to dorsum slightly before tornus, an irregular, indistinct, fuscous transverse line; subterminal line ill-defined, indicated by a few short brownish dashes; terminal line slender, blackish fuscous; underside with light buff streak; cilia wood brown. Hindwing fuscous with a longitudinal light buff streak; underside light buff except margins; cilia pale ochraceous buff. Fore-, mid-, and hindlegs light buff suffused grayish. Abdomen grayish buffy brown dorsally, buff ventrally.

Male genitalia slide USNM 24674. Harpe narrow basally, broadening to a truncated cucullus; outer two-thirds of sacculus clothed with an elongate patch of modified scales; clasper strong, curved, pointed, not reaching terminal edge of cucullus. Vinculum U-shaped. Tegumen rounded posteriorly. Anellus two elongate, lightly sclerotized plates, each clothed with setae terminally. Aedeagus long, slender, slightly curved, bulbous proximally.

Female genitalia slide USNM 24675. Ostium very small, oval. Inception of ductus seminalis at about posterior third of ductus bursae. Ductus bursae very long, convoluted, membranous; posteriorly, a short, slender sclerotized rod on inner wall. Bursa copulatrix granular. Signum indicated by concentration of granules of bursa wall.

HOLOTYPE.—USNM 100833.

TYPE-LOCALITY.—Hiva Oa, Mt. Feani, 3800 ft (1158 m).

DISTRIBUTION.—Hiva Oa.

FOOD PLANT.—Unknown.

Described from the ♂ holotype (20 Feb 1968) and 2♀ paratypes with identical data.

This species appears to be closely related to *gloriana*, new species, but *feaniensis* has a pale streak on the hindwing, absent in *gloriana*, and the transverse line of the forewing of *gloriana* is more sharply defined than that of *feaniensis*.

Imma rotia, new species

FIGURES 228, 312a,b

Alar expanse 24–26 mm.

Labial palpus dusky brown. Antenna brown basally shading to light ochraceous buff distally. Head dusky brown. Thorax dusky brown. Forewing ground color dusky brown; from slightly beyond middle of costa to dorsum before tornus an irregular, ill-defined (almost imperceptible in some specimens) slender line; in middle of this line, at end of cell a buff spot, and sometimes in the transverse line at end of fold, an ill-defined similarly colored spot; subterminal line consists of a series of very tiny buff spots; cilia dusky brown. Hindwing base whitish, shading to grayish fuscous at margins. Foreleg and midleg dusky brown. Hindleg grayish. Abdomen dorsoanteriorly grayish shading to grayish fuscous posteriorly; ventrally dusky brown; posterior segments of male with buff lateral tufts.

Male genitalia slide USNM 24627. Harpe of about equal width throughout except slightly broader at cucullus; cucullus with undulating outer margin; clasper exceeding outer edge of cucullus. Vinculum U-shaped. Tegumen broadly rounded posteriorly. anellus two closely appressed, lightly sclerotized, elongate plates; distal end of each clothed with setae. Aedeagus simple, slender, slightly curved, bulbous proximally.

Female genitalia slide USNM 24677. Ostium small, oval. Inception of ductus seminalis from about middle of ductus bursae. Ductus bursae very long, convoluted, membranous with some granulation; slightly before ostium a short, rather broad sclerotized rod in wall of ductus. Bursa copulatrix granular. Signum not indicated in this species.

HOLOTYPE.—USNM 100832.

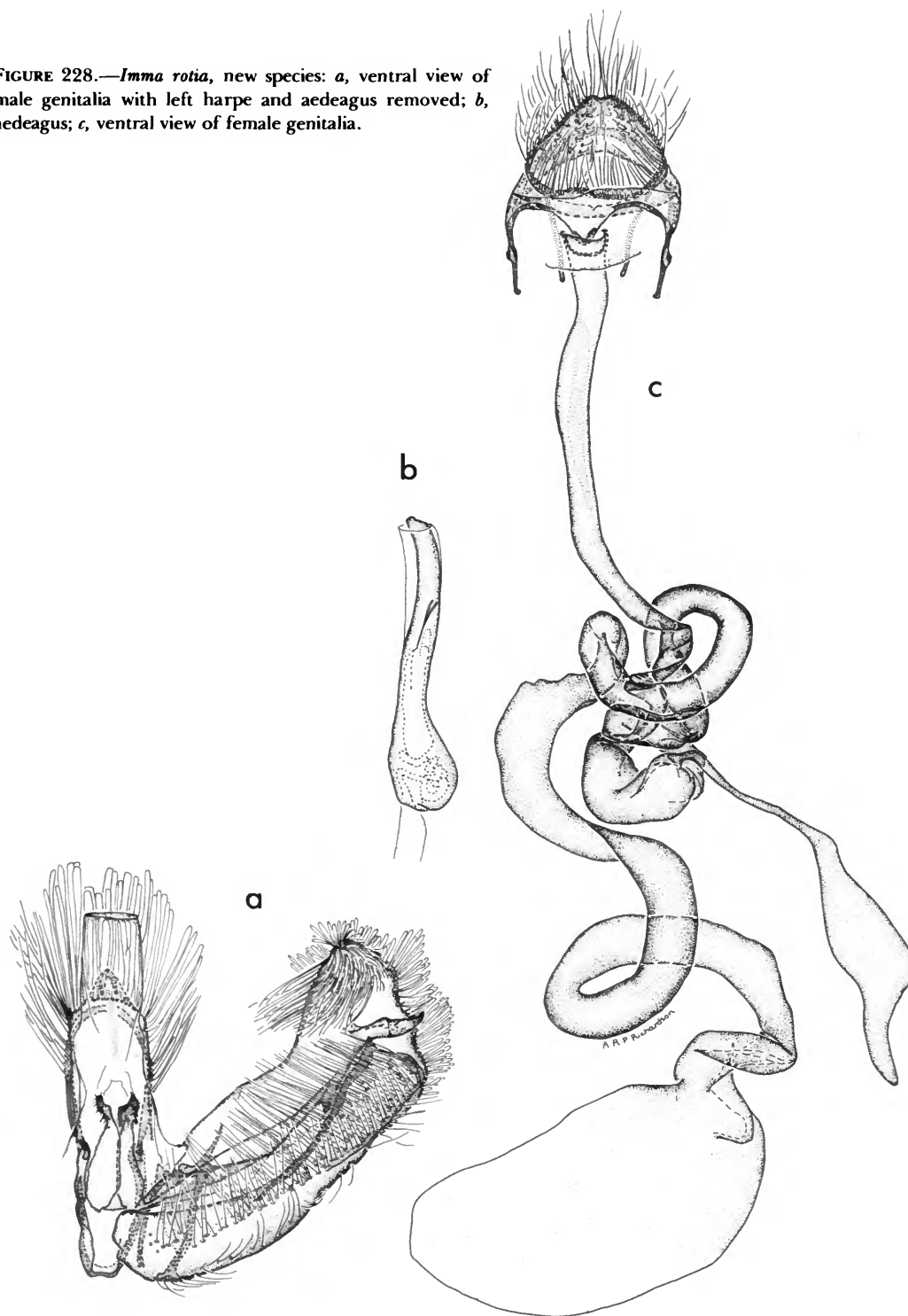
TYPE-LOCALITY.—Hiva Oa, Mt. Feani, 3800 ft (1158 m).

DISTRIBUTION.—Hiva Oa.

FOOD PLANT.—Unknown.

Described from the ♂ holotype (20 Feb 1968) 5♂ and 2♀ paratypes with identical data.

FIGURE 228.—*Imma rotia*, new species: *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.



Although similar to *feaniensis*, new species, the forewing is much darker in *rotia* than in that species, and *rotia* lacks the light colored streak of the hindwing of *feaniensis*.

***Imma assita*, new species**

FIGURES 229, 312 *c,d*

Alar expanse 26–28 mm.

Labial palpus light ochraceous buff. Antenna argillaceous. Head, thorax and forewing ground color argillaceous; from slightly beyond middle of costa, to dorsum just before tornus, an ill-defined irregular transverse line, primarily indicated by a fuscous spot at costa and a similar one at end of cell; subterminal line indicated by a series of small buff or yellowish spots; terminal line very narrow, fuscous; cilia argillaceous, whitish tipped. Hindwing grayish fuscous except costal half sordid whitish; cilia sordid whitish. Foreleg pale buff; tibia and tarsal segments argillaceous on outer side; midleg pale buff; tarsal segments argillaceous; hindleg pale buff. Abdomen argillaceous dorsally; ventrally pale buff with some argillaceous shading.

Male genitalia slide USNM 24682. Harpe narrow basally, broadening to a wide cucullus; terminal margin of cucullus strongly convex; clasper strong, acutely pointed, not reaching margin of cucullus. Vinculum broadly U-shaped. Tegumen about half as long as harpe, distally rounded. Anellus two elongate, slightly sclerotized plates, each clothed with setae distally. Aedeagus slender, elongate, slightly bent; bulbous proximally.

Female genitalia slide USNM 24683. Ostium very small, oval. Inception of ductus seminalis from about middle of ductus bursae. Ductus bursae membranous except granular anteriorly; well before ostium a short, slender, sclerotized bar. Bursa copulatrix granular. Signum indicated by a small concentration of granules.

HOLOTYPE.—USNM 100831.

TYPE-LOCALITY.—Fatu Hiva, Mt. Upe, 2025 ft (617 m).

DISTRIBUTION.—Fatu Hiva.

FOOD PLANT.—Unknown.

Described from the ♂ holotype, 15♂ and 15♀ paratypes as follows: 3♂ and 2♀ with identical data as holotype; Mt. Teoaiua, 2000 ft (610 m), 22 Mar 1968, 11♂, 7♀; Tahuna, 2000 ft (610 m), 27 Mar 1968, 1♂, 5♀. Teavapuhiau, Ouia, 750 m, 1–3 Aug 1977, 1♀ (Montgomery).

The two species, *catapsesta* and *assita*, are closely related and closely similar in appearance, but the transverse line of *assita* is emphasized by the two fuscous spots of forewing, which are absent or poorly defined in *catapsesta*. Moreover, the terminal line in *assita* is very narrow and of nearly equal width throughout but that of *catapsesta* has a broad spot at apex. In the male genitalia the terminal edge of cucullus is nearly straight in *catapsesta* and very strongly convex in *assita*. In the females the signum of *catapsesta* is strongly developed, that of *assita* hardly indicated.

***Imma catapsesta* Meyrick**

FIGURES 230, 312 *e,f*

Imma catapsesta Meyrick, 1934c:352.—Clarke, 1955 [1955–1970]:76.—Heppner, 1982:268.

Male genitalia slide USNM 24680. Harpe very narrow basally, broadening to the wide cucullus; outer margin of cucullus nearly straight, clasper very short, acutely pointed. Vinculum U-shaped. Tegumen broad basally, narrowed distally. Anellus two very slightly sclerotized, narrow plates, each clothed with setae distally. Aedeagus long slender, very slightly curved; bulbous proximally.

Female genitalia slide USNM 24681. Ostium rather broad, oval. Inception of ductus seminalis well forward on ductus bursae. Ductus bursae very long, convoluted; posteriorly a long, slender, sclerotized rod in wall of ductus; junction with bursa copulatrix granular. Bursa copulatrix membranous, very slightly rugose. Signum consisting of a concentration of granules in wall of bursa.

HOLOTYPE.—In the Bernice P. Bishop Museum.

TYPE-LOCALITY.—Nuku Hiva.

FIGURE 229.—*Imma assita*, new species: *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.

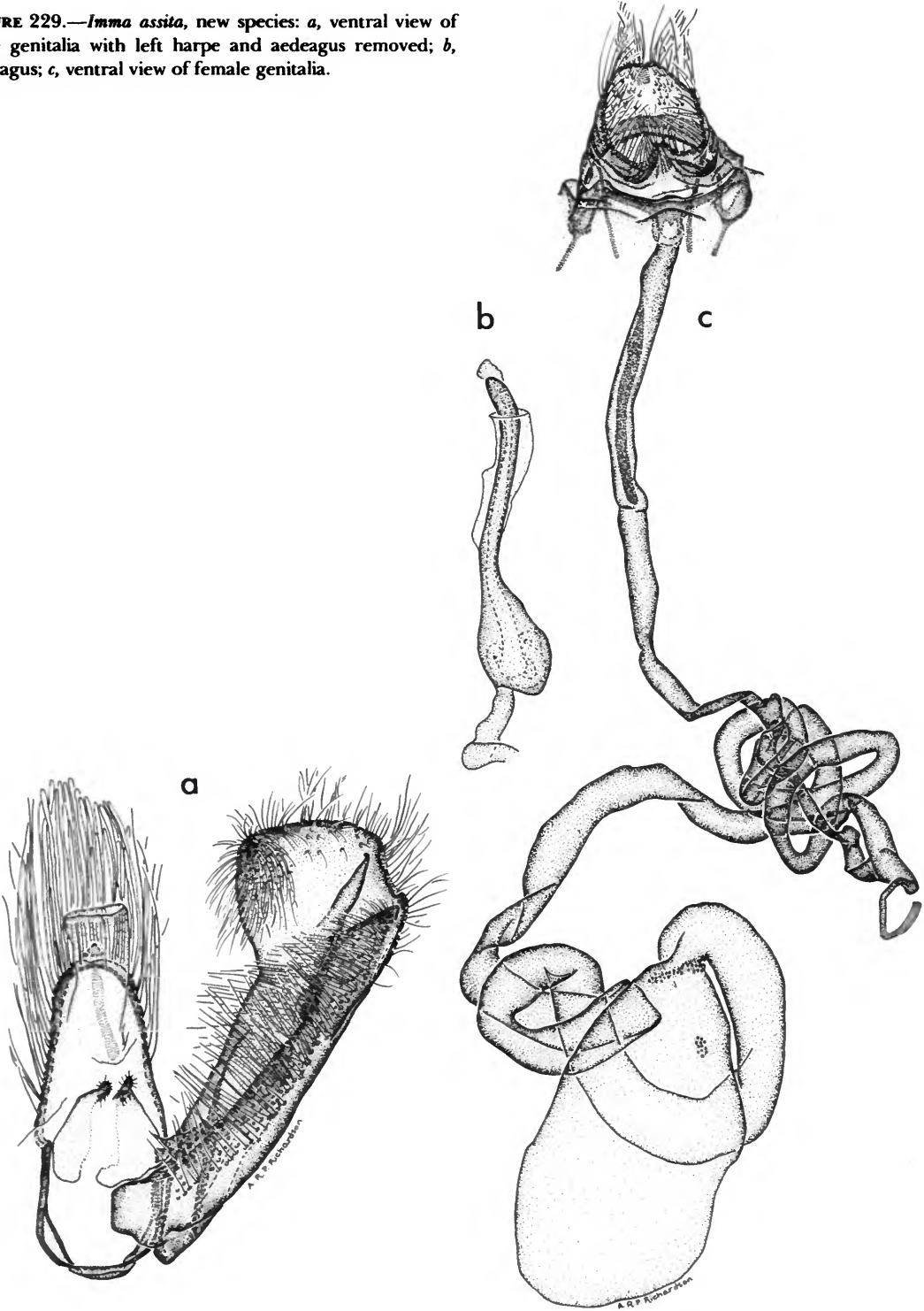
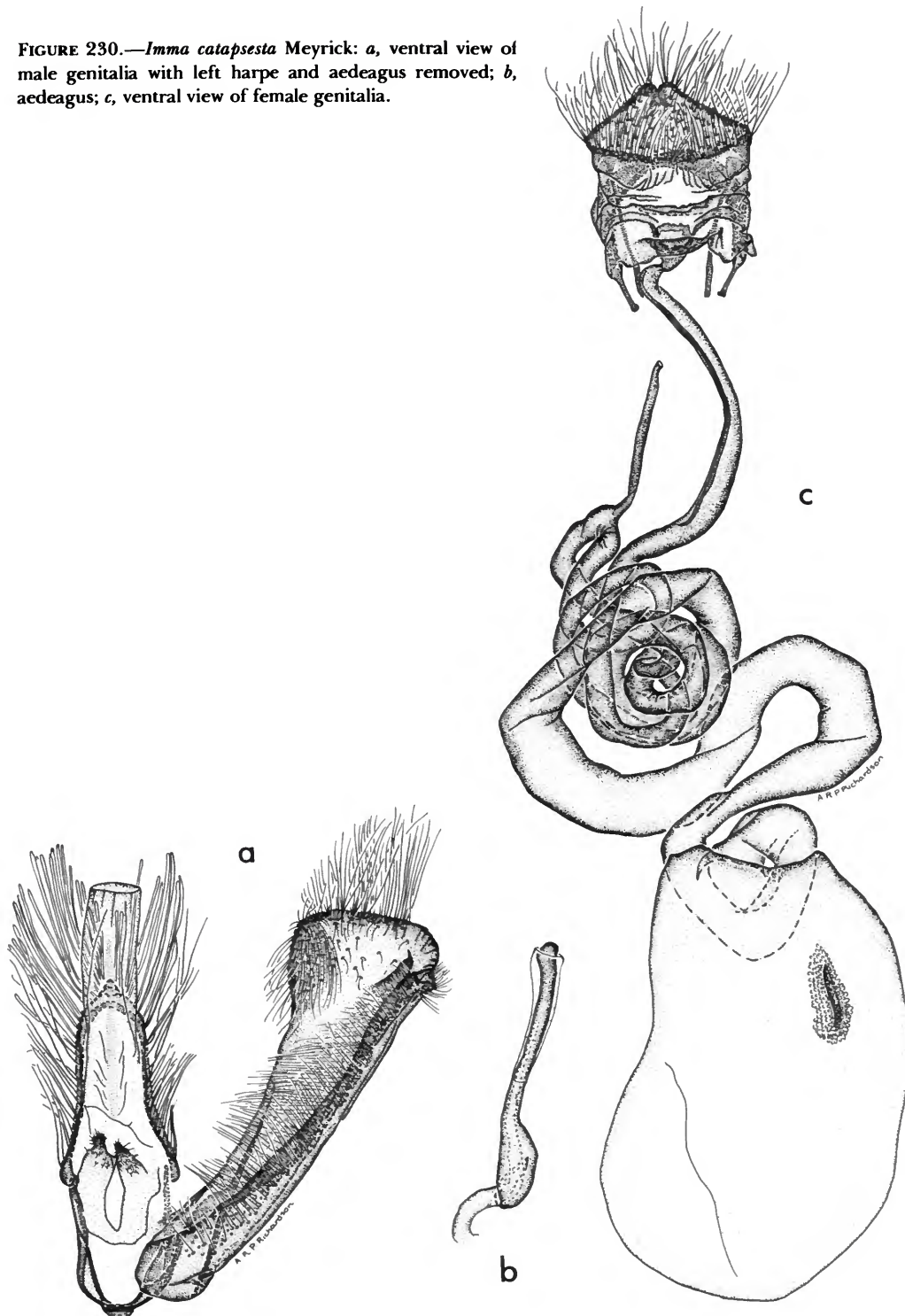


FIGURE 230.—*Imma catapsecta* Meyrick: *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.



DISTRIBUTION.—Nuku Hiva: (Fatu Hiva, Uahuka, Uapou, Hiva Oa?).

Our series of 24 specimens is as follows. Nuku Hiva: Tapuaooa, 2500 ft (762 m) 30 Jan 1968, 5♂, 3♀; Tunoa Ridge, 2900 ft (884 m), 23 Jan 1968, 8♂, 3♀; Taiohae, 18 Jan to 4 Feb 1968, 3♂, 1♀. Toovii, Ooumu, 900 m, 16–19 Jul 1977, 1♂ (Montgomery).

FOOD PLANT.—Unknown.

When Meyrick described *catapsesta* he included in his series, specimens from Fatu Hiva, Uahuka, Uapou, and Hiva Oa, as well as specimens from Nuku Hiva. I am of the opinion that Meyrick had a mixed series. Certainly our specimens from Fatu Hiva are distinct and are described herein as *assita*, new species.

The four specimens from Taiohae average smaller (20–23 mm) than the other examples, but I can find no structural or superficial differences to justify separation.

***Imma impariseta*, new species**

FIGURES 231, 313a

Alar expanse 21–23 mm.

Labial palpus pale ochraceous buff; second segment with prominent fuscous streak on outer side anteriorly; third segment with fuscous streak on outer side. Antenna fuscous; scape pale ochraceous buff anteriorly. Head pale ochraceous buff; fuscous on vertex. Thorax grayish fuscous with warm buff scaling anteriorly; tegula pale ochraceous buff; grayish fuscous scales on inner edge. Forewing ground color buff heavily overlaid grayish fuscous, mixed with warm buff scales; from slightly beyond midcosta a jagged blackish fuscous transverse line extends to dorsum; at costa and at dorsum a buff-suffused spot precedes this line; terminal line dentate, blackish fuscous, widest at apex; at inner edge of terminal line a series of small warm buff spots; cilia grayish fuscous with buff basal line. Hindwing fuscous around margin except more grayish toward anal angle; costal half, except apex, very light buff. Foreleg pale ochraceous buff with ill-defined grayish markings; midleg similar but grayish

markings more distinct; hindleg pale ochraceous buff with suggestion of grayish on outer side of tibia. Abdomen grayish fuscous dorsally; ventrally pale ochraceous buff.

Male genitalia slide USNM 24678. Harpe of nearly equal width throughout; cucullus narrowly rounded; clasper broad basally, pointed, almost reaching ventral edge of cucullus. Vinculum U-shaped. Tegumen elongate, narrow. Anellus two rather broad, lightly sclerotized plates, each distally clothed with setae. Aedeagus slender, slightly curved, bulbous basally.

Female genitalia slide USNM 24627. Ostium transverse, oval. Inception of ductus seminalis at about posterior third. Ductus bursae membranous except granular where it joins bursa copulatrix; posteriorly a short, slender, sclerotized rod in wall of ductus. Bursa copulatrix granular. Signum suggested by a slight concentration of granules.

HOLOTYPE.—USNM 100830.

TYPE-LOCALITY.—Fatu Hiva, Mt. Teoaiua, 2000 ft (610 m).

DISTRIBUTION.—Fatu Hiva.

FOOD PLANT.—Unknown.

Described from the ♀ holotype (22 Mar 1968) 2♀ and 1♂ paratypes as follows: Fatu Hiva, Omoa, 15 Mar 1968, 2♀; Mt. Teoaiua, 2000 ft (610 m), 22 Mar 1968, 1♂.

A female was selected as holotype because the single available male is in poor condition.

This species is very similar to *fulminatrix*, but the entire costal area of the hindwing of *impariseta* is very pale buff, while only part of the cell of *fulminatrix* is buff. Also, the signum is well developed in *fulminatrix*, but there is only a suggestion of a signum in *impariseta*.

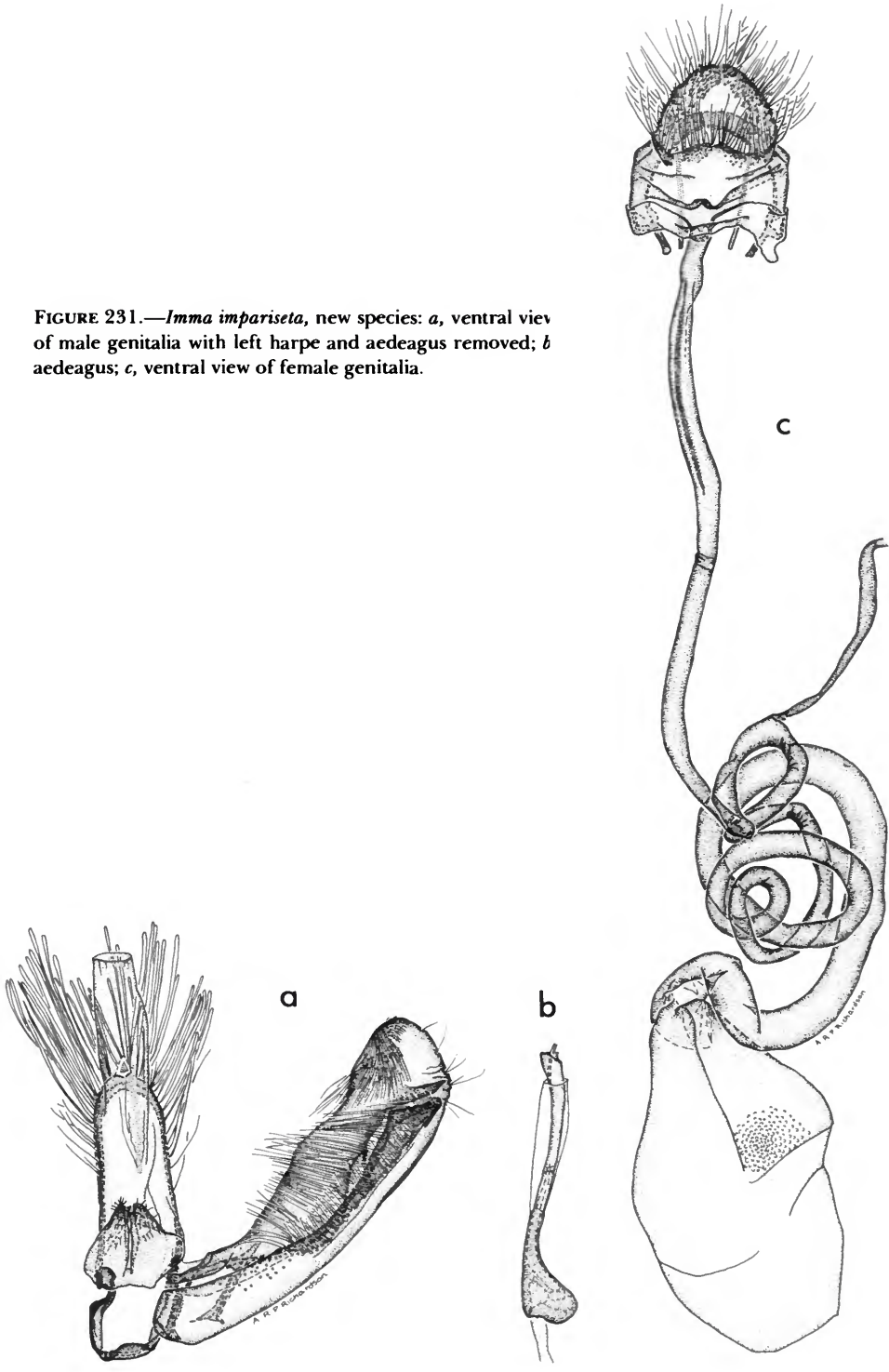
***Imma fulminatrix* Meyrick**

FIGURES 232, 313b

Imma fulminatrix Meyrick, 1934c:353.—Clarke, 1955 [1955–1970]:144.—Heppner, 1982:269.

Female genitalia slide JFGC 12136. Ostium small, shield-shaped. Inception of ductus seminalis at approximately the posterior third of duc-

FIGURE 231.—*Imma impariseta*, new species: *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b* aedeagus; *c*, ventral view of female genitalia.



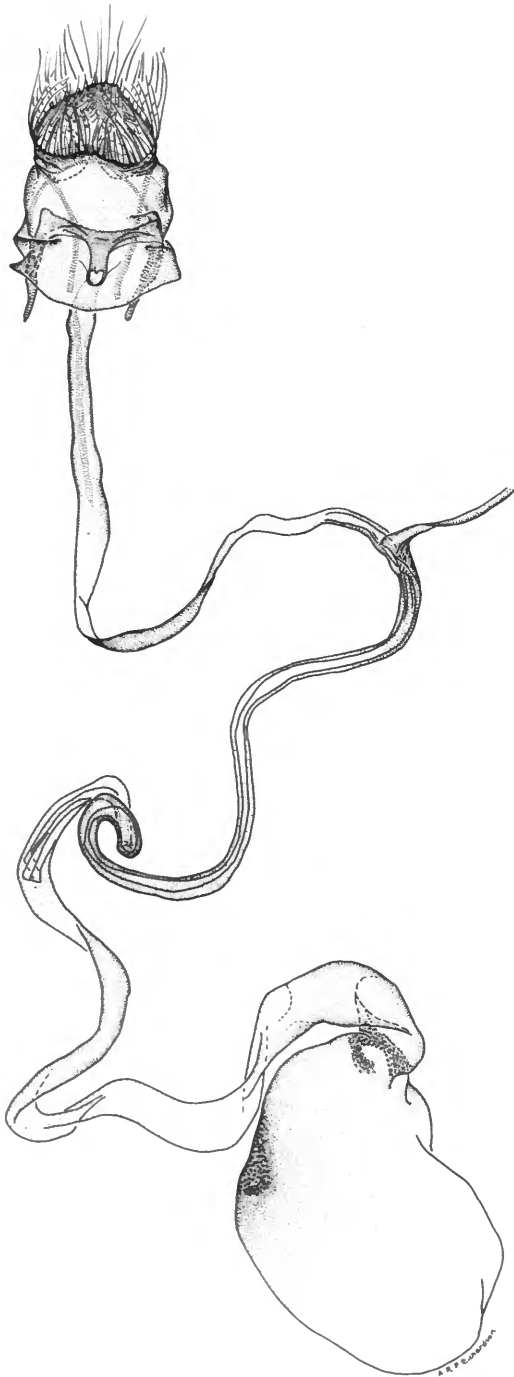


FIGURE 232.—*Imma fulminatrix* Meyrick, ventral view of female genitala.

tus bursae. Ductus bursae very long, slender; at posterior end a slender sclerotized strip. Bursa copulatrix very finely granular, with a heavily granular area at beginning of ductus bursae. Signum consists of a very strongly granular area of the wall of the bursa copulatrix.

HOLOTYPE.—In the Bernice P. Bishop Museum.

TYPE-LOCALITY.—Hiva Oa, Kakaho Puanui, 2464 ft (751 m).

DISTRIBUTION.—Hiva Oa.

FOOD PLANT.—Unknown.

The type has a hindwing similar to that of *impariseta*, new species, from Fatu Hiva, but the cell of the latter is wholly yellowish, that of *fulminatrix* is half gray as described by Meyrick. Also, *fulminatrix* lacks the pale subterminal line and the dentate terminal line found in *impariseta*.

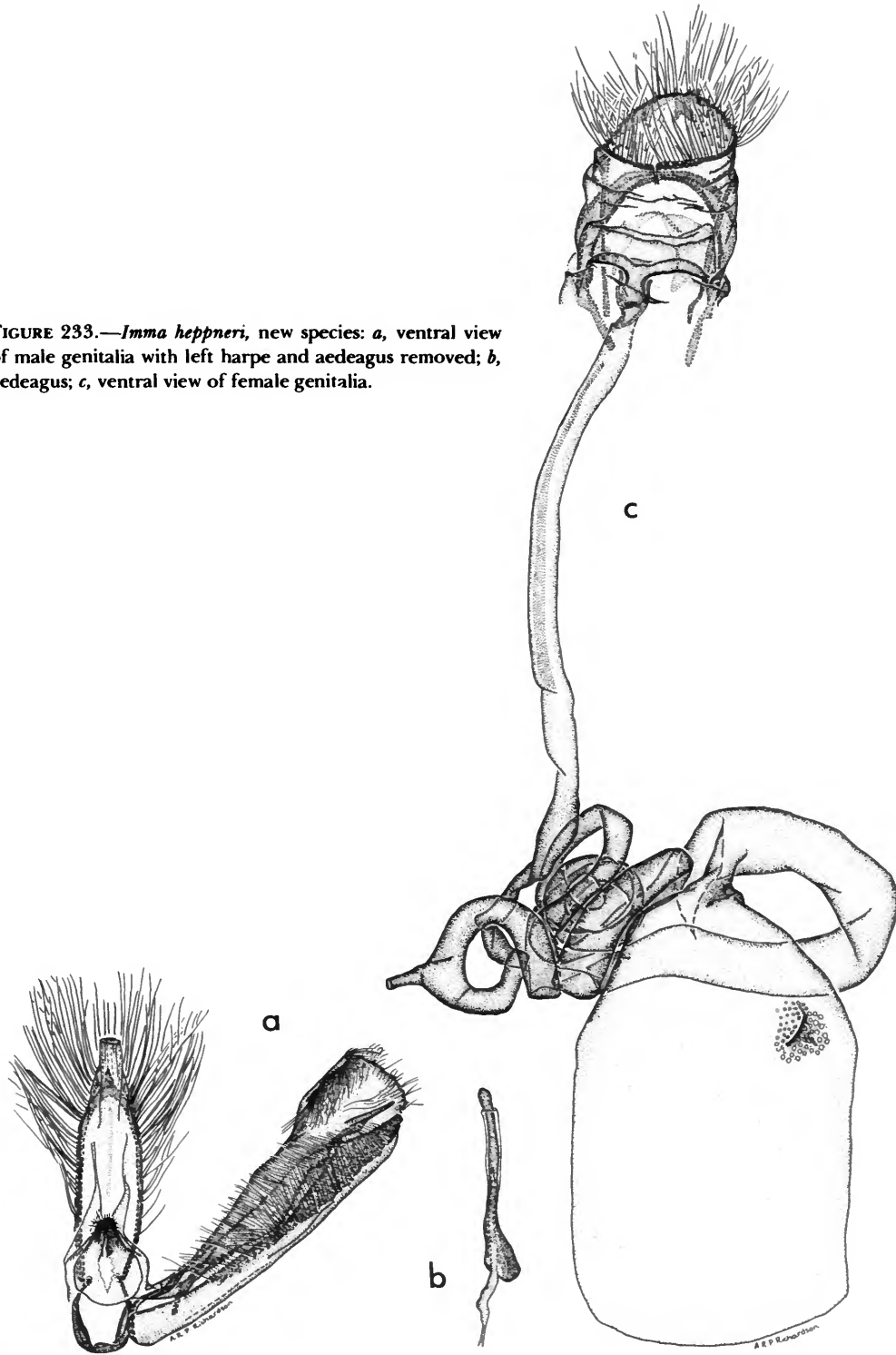
Imma heppneri, new species

FIGURES 233, 312 g,h

Alar expanse 19–24 mm.

Labial palpus light buff; second segment distal half, and streak posteriorly, blackish fuscous on outer side; third segment almost wholly blackish fuscous. Antenna fuscous. Head mixed light buff and grayish fuscous. Thorax grayish fuscous, anteriorly light buff; tegula grayish fuscous narrowly edged light buff. Forewing ground color light buff heavily overlaid and blotched grayish fuscous; costa very narrowly edged light to warm buff; from slightly beyond middle of costa an irregular, jagged, blackish fuscous line (most intense at end of cell) continues to dorsum before tornus; dorsum sprinkled with elongate warm buff scales; apical third of wing with warm buff scales; subterminal line consisting of a series of small, warm buff spots, terminal line slender, blackish fuscous; cilia fuscous with a sprinkling of light buff scales. Hindwing grayish fuscous, darker toward margins; cilia grayish. Foreleg light buff; tibia fuscous on outer side; tarsal segments marked fuscous; midleg similar; hindleg light buff; tibia with grayish streak on outer side.

FIGURE 233.—*Imma heppneri*, new species: *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.



Abdomen grayish fuscous dorsally, segments narrowly edged with light buff; ventrally light buff.

Male genitalia slide USNM 24668. Harpe narrow, broadening at cucullus; cucullus rounded; clasper slender, not reaching margin of cucullus. Vinculum U-shaped. Tegumen elongate, narrowly rounded posteriorly. Anellus consisting of two broad, slightly sclerotized plates posteriorly clothed with setae. Aedeagus slender, nearly straight, bulbous proximally.

Female genitalia slide USNM 24669. Ostium small, round. Inception of ductus seminalis from about posterior third of ductus bursae. Ductus bursae membranous except granular at junction with bursa copulatrix. Bursa copulatrix finely granular. Signum thornlike.

HOLOTYPE.—USNM 100834.

TYPE-LOCALITY.—Nuku Hiva, Tunoa Ridge, 2900 ft (884 m).

DISTRIBUTION.—Nuku Hiva.

FOOD PLANT.—Unknown.

Described from the ♂ holotype (23 Jan 1968), 8♂ and 4♀ paratypes, all with identical data.

The three species, *fulminatrix* Meyrick, *impariseta*, new species, and *heppneri*, new species, all have similar forewings, but *heppneri* is at once distinguished from the other two by the solid color of the hindwing.

It gives me great pleasure to name this species for John B. Heppner who proposed the family Immidae to which this taxon belongs.

Family CHOREUTIDAE

Genus *Choreutis* Hübner

Choreutis Hübner, 1825 [1816–1826]:373.

TYPE-SPECIES.—*Phalaena (Tortrix) pariana* Clerck, 1764 [1759–1764], pl. 10: fig. 9; subsequent designation by Walsingham, 1980:987.

Choreutis chelaspis chelaspis (Meyrick), new combination

FIGURES 313c

Simaethis chelaspis Meyrick, 1929a:504; 1934c:353.—Clarke, 1955 [1955–1970]:83.

Anthophila chelaspis (Meyrick).—Clarke, 1969 [1955–1970]: 4, pl. 2: figs. 3–3b.

Male genitalia slide USNM 24926. Harpe of nearly equal width throughout; cucullus broadly rounded, clothed with strong setae; sacculus clothed with an elongate cluster of long, strong setae. Uncus broadly rounded. Vinculum U-shaped, broadest at middle. Tegumen weak, arched. Anellus consisting of a basal plate with a posteromedian protuberance and two lateral, broad arms. Aedeagus moderately stout, about as long as harpe, twisted proximally.

Female genitalia slide USNM 24927. Ostium round. Antrum a sclerotized cylinder. Inception of ductus seminalis arising slightly anterior to antrum. Ductus bursae long, slender, membranous. Bursa copulatrix membranous, finely granular. Signum a small dentate plate.

HOLOTYPE.—In the British Museum (Natural History).

TYPE-LOCALITY.—Hiva Oa.

DISTRIBUTION.—Hiva Oa, Fatu Hiva.

The series of this common species before me consists of the following. Hiva Oa: Atuona, 12–24 Feb 1968, 2♂, 1♀; Mt. Feani, 3800 ft (1158 m), 20 Feb 1968, 6♂, 1♀; trail to Mt. Feani, 2200 ft (670 m), 20 Feb 1968, 1♂. Ootua, 800 m, 27–30 Jul 1977, 1♂, (Montgomery). Fatu Hiva: Omoa, 4–21 Mar 1968, 44♂, 41♀; Omoa Valley, 21 Mar 1968, 2♂; Mt. Teoaiua, 2000 ft (610 m), 22 Mar 1968, 8♂, 8♀. Teavapuhiau, Ouaia, 750 m, 1–3 Aug 1977, 6♂, 5♀ (Montgomery).

FOOD PLANT.—*Ficus*?

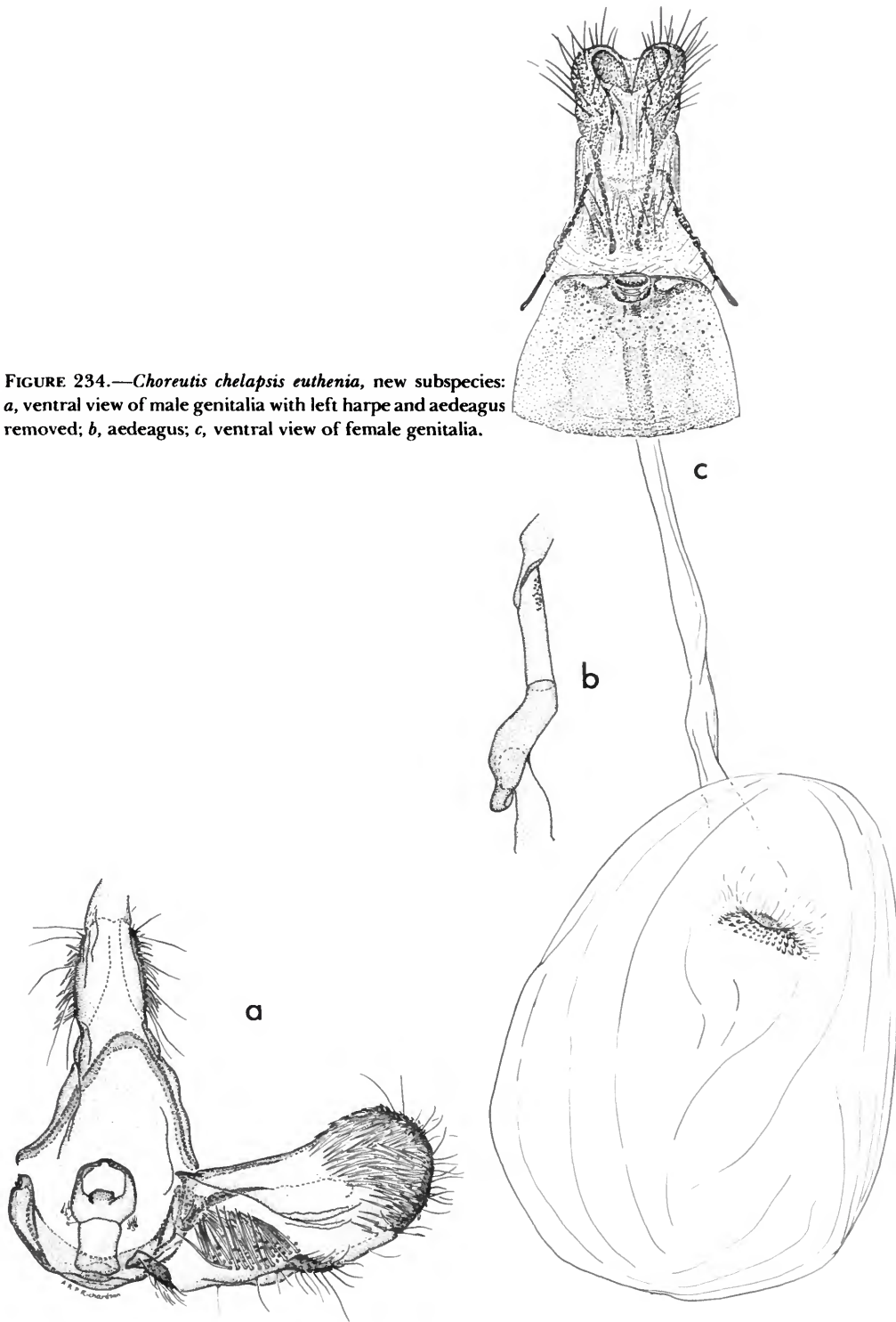
Presumably the nominate subspecies is confined to the two islands, Hiva Oa and Fatu Hiva, those from Nuku Hiva being quite distinct as indicated below. Meyrick (1934c:353) recorded this subspecies from the island of Uapou, but the specimens from Uapou may represent another subspecies.

Choreutis chelaspis euthenia, new subspecies

FIGURES 234, 313d

This taxon is very similar to the nominate subspecies. It differs from *chelaspis chelaspis* in

FIGURE 234.—*Choreutis chelapsis euthenia*, new subspecies:
 a, ventral view of male genitalia with left harpe and aedeagus removed;
 b, aedeagus; c, ventral view of female genitalia.



the forewing by the much broader subterminal band, the greater amount of whitish scales in the tornal black blotch, the more prominent and extensive ochraceous scaling surrounding the leaden metallic streak from near base to four-fifths, and broader, more conspicuous whitish fascia at basal third. On the hindwing there is less whitish scaling in *C.c. euthenia* than on the hindwing of *C.c. chelaspis*, and it is closer to the margin.

HOLOTYPE.—USNM 100835.

TYPE-LOCALITY.—Nuku Hiva, Tapuaooa, 2500 ft (762 m).

DISTRIBUTION.—Nuku Hiva.

FOOD PLANT.—*Ficus*?

Described from the ♀ holotype (30 Jan 1968), 48 ♂ and 48 ♀ paratypes as follows. Nuku Hiva: Tapuaooa, 2500 ft (762 m), 30 Jan 1968, 27♂, 20♀; Tunoa Ridge, 2900 ft (884 m), 23 Jan 1968, 1♀; Pakiu Valley, 1800 ft (548 m), 28 Jan 1968, 1♂; Taiohae, 16–27 Jan 1968, 20♂, 27♀.

There are no appreciable structural differences between this and the nominate subspecies, the differences residing primarily in variations in pattern. The differences in pattern and markings described above are constant and consistent throughout the series.

Family YPONOMEUTIDAE

Key to the Genera of Yponomeutidae

1. Hindwing with 7 veins by coincidence of veins 3 and 4 *Prays*
Hindwing with 8 veins 2
2. Hindwing with veins 5 and 6 stalked 3
Hindwing otherwise 4
3. Forewing with veins 3 to 10 bunched from end cell *Zelleria*
Forewing with vein 10 remote from 9 *Plutella*
4. Hindwing with veins 3 and 4 stalked *Eftichia*, new genus
Hindwing with veins 3 and 4 separate *Terthroptera*

Genus *Plutella* Schrank

Plutella Schrank, 1802:169.

TYPE-SPECIES.—*Phalaena Tinea xylostella* Linnaeus, 1758:538 (= *Cerostoma maculipennis* Curtis, 1832 [1824–1839]); by monotypy.

Plutella xylostella (Linnaeus)

FIGURES 235, 313e

Phalaena Tinea xylostella Linnaeus, 1758:538.—Hübner, 1796 [1796–1838]:119.

Plutella xylostella (Linnaeus), Schrank, 1802:169.—Guenée, 1845:339; [1846]:101.—Herrich-Schäffer, 1854 [1843–1856], 5:106.—Wocke, 1871:281.—Wollaston, 1879:434.—Bartlett-Calvert, 1886:345.—Mošchler, 1891:341.—Gundlach, 1891:380.—Viette, 1952:3.—Paulian and Viette, 1955:153.—Viette, 1958:4.—Bradley, 1966:219.—Bradley and Pelham-Clinton, 1967:127.—Bradley, 1967:510, fig. 7.—Clarke,

1971:173, fig. 135, pl. 22b.—Chiu and Chien, 1972:145–152; 1974:48, 55, 56, fig. 1.—Koshihara and Yamado, 1976:110–114.—Gozmány, 1978:62.—Gressitt and Nadkarni, 1978:87.—Leraut, 1980:84 [No. 1675].—Hodges et al., 1983:26 [No. 2366].—Lorimer, 1983:13, 21, 75.—Shin et al., 1983:525, pl. 35: fig. 600.—Liu and Sun, 1984:1608–1609.

Cerostoma maculipennis Curtis, 1832 [1824–1839], [No. 420]; 1837:214 [No. 1031(3)].—Westwood, 1854:223, pl. 49: fig. 1548.—Walsingham and Durrant, 1897:173–175.

Cerostoma xylostella (Linnaeus).—Curtis, 1837:214 [No. 1031(4)].—Stainton, 1859 [1858–1859]:315 [No. 1347].

Alucita xylostella (Linnaeus).—Godart and Duponchel, 1838 [1827–1838]:11, pl. 293: fig. 10.

Cerostoma annulatellus Wood, 1839:223, pl. 49: fig. 1547.

Plutella cruciferarum Zeller, 1843:283.—Stainton, 1849b:2; 1854:68, pl. 3: figs. 3a–3c; 1859 [1858–1859]:312 [No. 1332]; 1869:328.—Heinemann, 1870 [1863–1870]:117.—Fry, 1880:347.—Snellen, 1882:542.—Meyrick, 1886c:177.—Hampson, 1891:42.—Walsingham, 1891:92.—Ormerod, 1891:1–34.—Rebel, 1892:243,

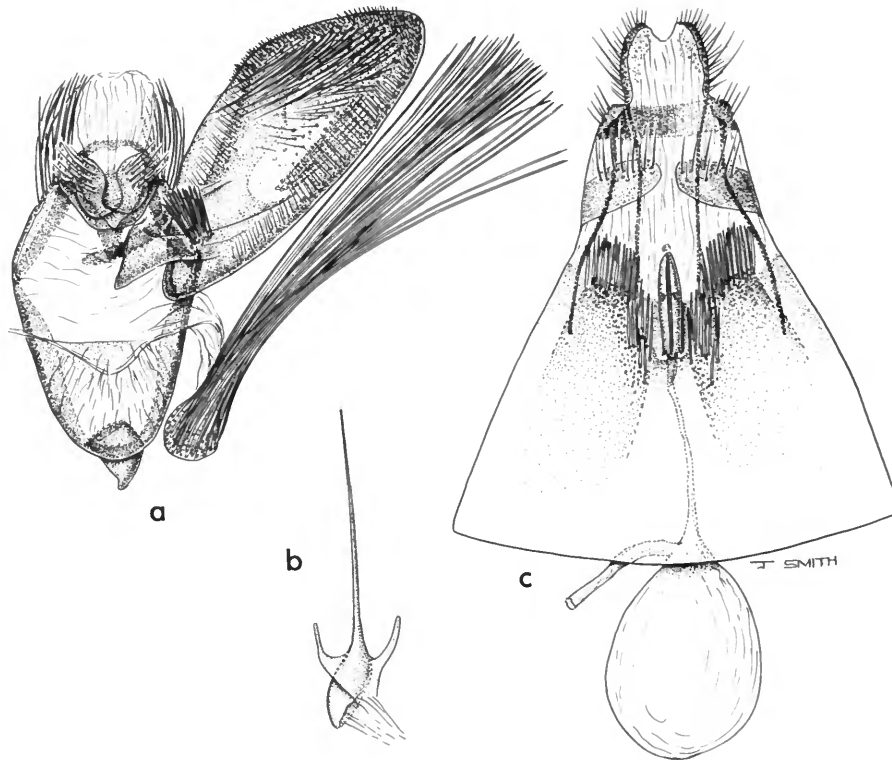


FIGURE 235.—*Plutella xylostella* (Linnaeus): *a*, ventral view of male genitalia with left harpe and aedeagus removed, with corema intact; *b*, aedeagus; *c*, ventral view of female genitalia.

- 272.—Hinneberg, 1894:352, 357.—Walsingham, 1894:543.—Meyrick, 1894a:24; 1895:702.—Rebel, 1896:102–148.
- Plutella maculipennis* (Curtis).—Stainton, 1849b:2.—Berg, 1880:85–91, 99–109.—Rebel, 1901:137.—Dyar, 1903:492 [No. 5503].—Rebel, 1906:44.—Walsingham, 1907:652.—Matsumura, 1908:237 [No. 1994].—Maxwell-Lefroy and Howlett, 1909:538, fig. 345.—Spuler, 1910:452, pl. 47: fig. 44.—Rebel, 1910a:25; 1910b:430 [No. 125]; 1911:350 [No. 236].—Fullaway, 1913:43, 46.—Shiraki, 1913:340.—Dupont, 1913:59.—Meyrick, 1914b:59.—Walsingham, 1914 [1909–1915]:343.—Barnes and McDunnough, 1917:183 [No. 7683].—Marsh, 1917:1–10, pl. 1, 2.—Rebel and Zerny, 1917:443 [No. 113].—Senior-White, 1917:121.—Cotton, 1918:281.—Auctorum, 1919:4.—Britton, 1920:96.—Hutson, 1920:C10.—Swezey, 1920:383.—Auctorum, 1920:326; 1921:458.—d'Emmerez de Charmoy and Gebert, 1921:186.—Timberlake et al., 1921:609.—Bréthes, 1923:162–163, figs. 1, 2.—Forbes, 1923:341.—Wolcott, 1923:205.—Miles, 1924:45–48.—Perry, 1924:13.—Essig, 1926:742.—Buxton and Hopkins, 1927:30, pl. 2.—Hopkins, 1928b:47.—Meyrick, 1928:802.—Bondar, 1928:259–260.—Illingworth, 1929:251.—King, 1929:373–390, pl. 1.—Swezey, 1929c:283.—Thorpe, 1929:621–634.—Romanova, 1930:139–152.—Forbes, 1930:100.—Muggeridge, 1930:253–264, figs. 1–9.—Meyrick, 1931:283.—Ghosh, 1932:5.—Busck, 1934:187.—Meyrick, 1935a:92.—Zerny, 1935:135.—Corbett, 1935:53.—Amsel, 1936:354.—Isaac, 1936:170.—Wolcott, 1936:485.—Walker and Anderson, 1937:443–448.—List, 1937:676.—Hardy, 1938:343–372, figs. 1–10, pl. 9.—Robertson, 1939:330A–364A, figs. 1–10.—McDunnough, 1939:89 [No. 8878].—Bourquin, 1939:409–413, figs. 1–3.—Rebel, 1939:7.—Brooks and Allen, 1940:56.—Ghosh, 1940a:129–130, pl. 62: figs. 1–4.—Lloyd, 1940:451–484, pls. 18, 19.—Ghesquière, 1940:39, fig. 3.—Rebel, 1940a:38; 1940b:55.—Ghesquière, 1941:763.—Reid et al., 1941:1–35, figs. 1–7.—Reid et al., 1942:1, fig. 1c.—Walker and Anderson, 1943:343–344.—Jones and Kimball, 1943:182.—Swezey, 1944:144.—Lima, 1945:317–319, figs. 201–203.—Kanervo, 1946:143–153, fig. 1.—Ahmad, 1949:205.—Ullyett, 1947:7–202, figs. 1–30.—MacNay,

1948:77.—Paulian, 1949:351, fig. 4.—Lamont and Callan, 1950:206.—Ford, 1951:90, 91, pl. 12: fig. 17.—Skala, 1951:182, pl. 18.—Hill, 1852:59.—Agenjo, 1952:69.—MacNay, 1953:66–94.—Paramonow, 1954:78.—Inoue, 1954:34.—Auctorum, 1954:280.—Weber, 1954:369.—Harcourt, 1955:900 [No. 9751]; 1956:155–160, figs. 1–7.—Tanada, 1956:320–329, figs. 1–4.—MacNay, 1957:92.—Harcourt, 1957:554, figs. 1, 2.—G. Peterson, 1957:206.—Hassanein, 1958:326, figs. 1–3.—Wakely, 1958:139.—Janjua and Haque, 1958:148, 157.—MacNay, 1959a:32–43.—Dale and Herring, 1959:12.—Friese, 1960:20.—Simmonds and Rao, 1960:278.—Harcourt, 1960a:419, figs. 1, 2; 1960b:517, fig. 1.—Gupta and Thorsteinson, 1960:241–250.—MacNay, 1961:251.—Beri, 1961:69–70.—Harcourt, 1961:820, figs. 1, 2.—Butler, 1961:384.—DeBach, 1962:72.—Butler and Usinger, 1963:241.—Pastokhov, 1964:42.—Wolff, 1964:51.—Benander, 1965:22.—Kimball, 1965:291.—Azuma, 1965:56.—Hua, 1965:1–4, pl. 1A–5B.—Merovec, 1966:497.—Gozmány, 1967:89.—Johansson and Svensson, 1968:127.—Abraham and Padmanaban, 1968:513–519.—Kawabe, 1968:539.—Tello, 1968:233.—Diakonoff, 1968:263, 307, fig. 759.

Plutella maculipennis [sic] (Curtis).—Ghosh, 1925:7.

Plutella annulatella (Wood).—Herrich-Schäffer, 1851 [1843–1856], 5:107.

Cerostoma brassicella Fitch, 1856:170.

Plutella limbipennella Clemens, 1861 [1859–1861]:6; 1872:90.

Plutella mollipedella Clemens, 1861 [1859–1861]:6; 1872, 91.

Gelechia cicerella Rondani, 1876:20, pl. 1: figs. 3–5.

Cerostoma dubiosella Beutenmüller, 1889:27.

TYPES.—Linnean Society, London (*xylostella*); Melbourne Museum Australia? (*maculipennis*); Philadelphia Academy of Sciences, Philadelphia (*limbipennella*, *mollipedella*); lost (*brassicella*, *dubiosella*); depository unknown (*annulatella*, *cicerella*).

TYPE-LOCALITIES.—Europe (*xylostella*, *maculipennis*); England (*annulatella*); North America (*limbipennella*, *mollipedella*, *brassicella*, *dubiosella*); Italy (*cicerella*).

DISTRIBUTION.—Cosmopolitan.

From the Marquesas we have only two specimens. Nuku Hiva: Taiohae, 3 Feb 1968, 1♂; Fatu Hiva: Omoa, 14 Mch 1968, 1♂.

For the complete known distribution of this widespread, economic species, consult Series A. (Agricultural), Map 32 (revised), published by

the Commonwealth Institute of Entomology, London, 1967.

FOOD PLANTS.—Cultivated and wild Cruciferae.

Genus *Prays* Hübner

Prays Hübner, 1825 [1816–1826]:413.

TYPE-SPECIES.—*Phalaena curticellus* Donovan, 1793 (= *Prays caenobitella* Hübner, 1810 [1796–1838], 5 (Tinea), pl. 45; fig. 309 [20 June 1813]); subsequent designation by Fletcher, 1929:183.

Prays ignota, new species

FIGURES 236, 313fg

Alar expanse 10–12 mm.

Labial palpus light ochraceous buff; third segment with distal half prout's brown on outer side; third segment almost wholly prout's brown. Antenna fuscous, scape light ochraceous buff anteriorly. Head light buffy brown dorsally with light ochraceous buff scaling laterally; frons light ochraceous buff. Thorax dresden brown; tegula pale ochraceous buff-tipped. Forewing ground color dresden brown; on middle of costa a buff quadrate spot and before apex a similarly colored wedge-shaped spot; before tornus an irregular buff blotch; and sometimes on dorsum, near base, a subtriangular blotch with a dresden brown spot near edge; in center of wing an ill-defined series of double buff spots running longitudinally; cilia mixed buff and brown. Hindwing grayish fuscous; cilia lighter. Foreleg light ochraceous buff overlaid fuscous on outer side; midleg similar but not so strongly marked; hindleg light ochraceous buff; tibia and tarsal segments shaded grayish fuscous. Abdomen fuscous dorsally; light ochraceous buff ventrally.

Female genitalia slides USNM 24550, 24551. Ostium round. Sterigma a V-shaped, sclerotized plate truncated anteriorly; inner edges of the "V" armed with strong setae. Antrum not appreciably developed. Inception of ductus seminalis ventrad at junction of ductus bursae and bursa copula-

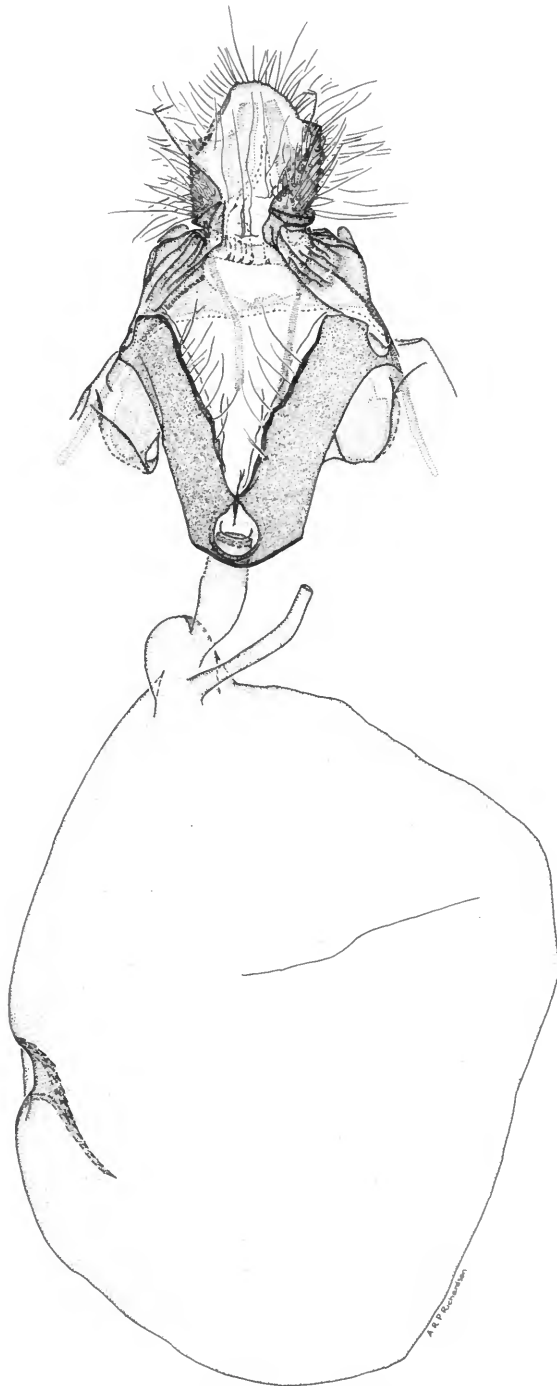


FIGURE 236.—*Prays ignota*, new species, ventral view of female genitalia.

trix. Ductus bursae membranous. Bursa copulatrix membranous. Signum an elongate triangular plate with serrate edges.

HOLOTYPE.—USNM 100836.

TYPE-LOCALITY.—Hiva Oa, Mt. Feani, 3800 ft (1158 m).

DISTRIBUTION.—Hiva Oa.

FOOD PLANT.—Unknown.

Described from the ♀ holotype (20 Feb 1968) and 3♀ paratypes with the same data.

As can be seen by the illustration (Figure 313 *f,g*) the species is variable. The example shown in Figure 313 *f* has much reduced white areas of the forewing.

The Japanese *P. iota* Moriuti (1977:124) is probably most nearly like *ignota* but lacks the white apical blotch of the latter species. Moreover, *ignota* lacks the two spinous processes of the sterigma of *iota* and the signum of *ignota* is long and slender but that of *iota* is nearly oval in general shape. Unfortunately, the male of *ignota* is unknown.

Eftichia, new genus

TYPE-SPECIES.—*Eftichia chrysoleuca*, new species, by monotypy and present designation. The gender of the name is feminine.

Antenna about three-fifths length of forewing, simple; scape with pecten. Labial palpus less than twice the length of head, slightly upturned; second and third segments of about equal length, third segment acutely pointed. Maxillary palpus vestigial. Tongue well developed, naked. Head roughened above; ocellus present. Thorax smooth. Abdominal terga unspined. Forewing smooth, termen oblique, costal and dorsal margins nearly parallel, stigma present, 12 veins, all separate; 1b furcate; 1c strongly developed; 2 distant from 3; 3, 4, and 5 approximate at base; 5 and 6 parallel; 7 to termen; 10 distant from 9; 11 from before middle of cell; upper internal vein preserved. Hindwing with 8 veins; 2 remote from 3; 3 and 4 stalked from angle of cell; 5 much nearer to 6 than to the stalk of 3 and 4; 7 and 8 parallel. Hind tibia smooth.

Male genitalia uncus absent; gnathos and socius present.

Female genitalia unknown.

Eftichia is probably closest to *Kessleria* Nowicki, 1864, but differs from it by the stalking of veins 3 and 4 in the hindwing.

***Eftichia chrysoleuca*, new species**

FIGURES 237, 313*h*

Alar expanse 10–11 mm.

Labial palpus second segment grayish fuscous with whitish scaling above near apex; third segment white. Antenna ocherous white with a fuscous spot dorsally at base of shaft. Head white, suffused ocherous white above. Thorax ocherous white; tegula white, suffused fuscous basally. Forewing ground color white; basal half of costa golden brown giving rise to a triangular fascia of the same color truncated at dorsum; beyond middle, a broad transverse fascia of the same color as basal fascia; on apical third of costa four golden-brown marks, the third largely covered with fuscous scales; on apex a small brownish

dash, a similarly colored blotch before termen and a golden-brown spot on termen between veins 6 and 5; cilia mixed white and golden brown. Hindwing grayish fuscous with slight metallic sheen; cilia grayish with slight yellowish tinge. Foreleg ocherous white, suffused grayish fuscous; midleg ocherous white, tibia and tarsal segments suffused grayish fuscous; hindleg ocherous white; each tarsal segment with a grayish fuscous spot. Abdomen grayish fuscous dorsally, ocherous white ventrally.

Male genitalia slide USNM 24552. Harpe very broad at cucullus; at junction of sacculus and cucullar edge, a stout spine. Gnathos a moderately broad sclerotized band. Uncus absent. Socius a long, curved, digitate process. Vinculum rounded; saccus very short. Tegumen narrow, rounded. Anellus membranous. Aedeagus slender, curved; vesica armed with a single cornutus.

Female genitalia unknown.

HOLOTYPE.—USNM 100837.

TYPE-LOCALITY.—Hiva Oa, Mt. Feani, 3800 ft (1158 m).

DISTRIBUTION.—Hiva Oa.

FOOD PLANT.—Unknown.

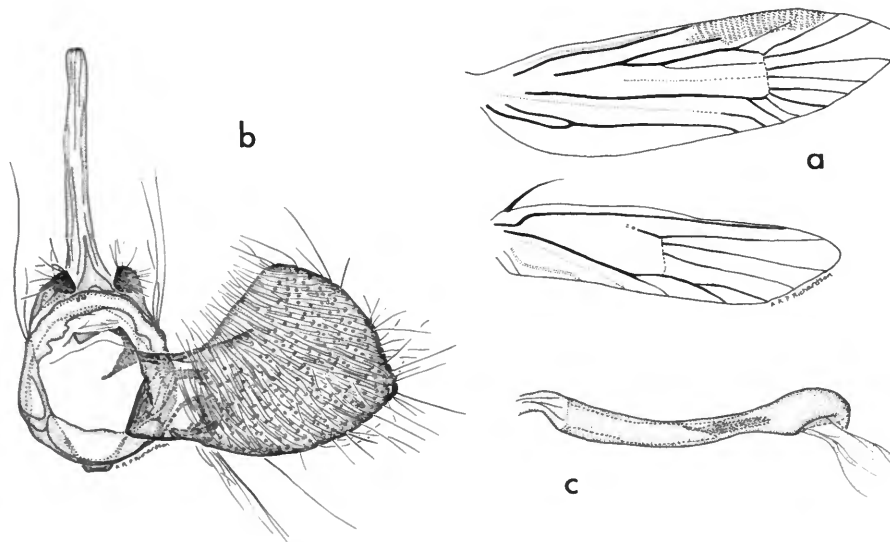


FIGURE 237.—*Eftichia chrysoleuca*, new species: *a*, venation of right wings; *b*, ventral view of male genitalia with left harpe and aedeagus removed; *c*, aedeagus.

Described from the ♂ holotype and 2♂ paratypes with identical data, 20 Feb 1968.

This species reminds one of several species of *Argyresthia*, particularly *A. oreasella* Clemens (1861:7) of North America. In *A. oreasella*, however, there is only one golden transverse fascia but in *E. chrysoleuca* there are two.

Genus *Zelleria* Stainton

Zelleria stainton, 1849a:22.

TYPE-SPECIES.—*Zelleria hepariella* Stainton, 1849a:22; subsequent designation by Fletcher, 1929:239.

Zelleria leucostrota Meyrick

FIGURES 238, 314a

Zelleria leucostrota Meyrick, 1929a:504.—Clarke, 1955 [1955–1970]:187.

Zelleria leucostra [sic] Meyrick.—Viette, 1949a:317.

Female genitalia slides USNM 24554, 24555. Ostium very small, crescentic. Antrum slender, cylindrical, sclerotized. Inception of ductus seminalis dorsal, well before antrum. Ductus bursae membranous. Bursa copulatrix membranous, very weak. Signum absent. Lamella antevaginalis membranous. Lamella postvaginalis broadly sclerotized, with deep median cleft.

LECTOTYPE.—In the British Museum (Natural History).

TYPE-LOCALITY.—Nuku Hiva.

DISTRIBUTION.—Nuku Hiva, Tahuata, Hiva Oa.

FOOD PLANT.—Unknown.

Meyrick described *leucostrota* from four specimens from Nuku Hiva and Tahuata (no specific localities) from 200 to 3500 ft (61 to 1067 m). The specimen that I have examined is labeled Hiva Oa, a locality not listed by Meyrick. Meyrick gave the alar expanse as 15–16 mm. The specimen of this species in the Smithsonian National Museum of Natural History from Hiva Oa, Atuona (24 Feb 1968), measures only 12 mm.

Dr. Sattler, of the British Museum (Natural

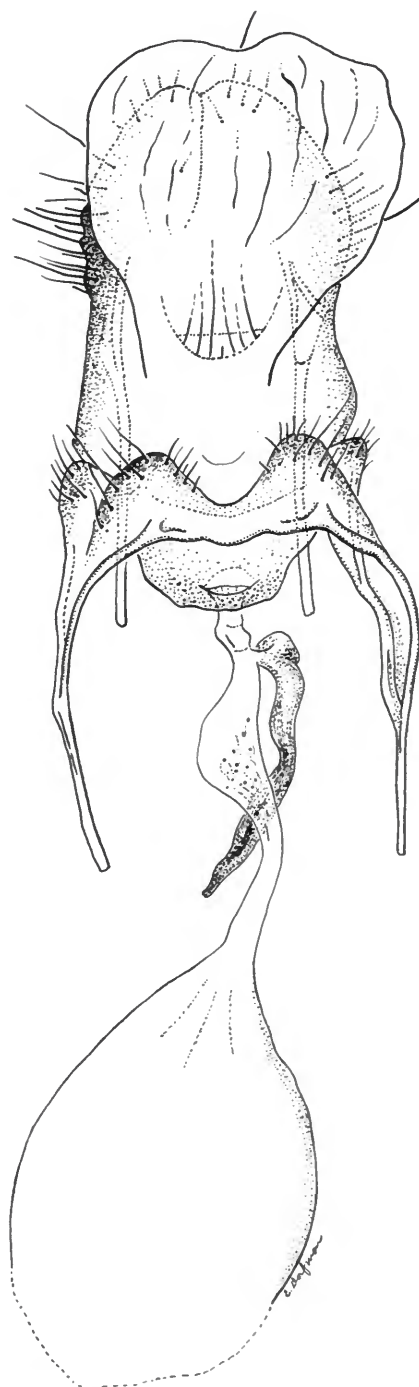


FIGURE 238.—*Zelleria leucostrota* Meyrick, ventral view of female genitalia.

History) (in litt., 4 Jan 1979) wrote the following: "In our collection there are four specimens which have lost the abdomen. The lectotype; although labeled 'type ♂' is also a female. I'm sorry the paralectotype (sent to me for study) is in such poor condition. However, the lectotype does not look any better."

Genus *Terthroptera* Clarke

Terthroptera Clarke, 1971:172.

TYPE-SPECIES.—*Terthroptera eremosesia* Clarke, 1971:172; by monotypy and original designation.

Terthroptera astochia, new species

FIGURES 239, 314b

Alar expanse 10 mm.

Labial palpus white, outer sides of second and third segments grayish fuscous. Antenna grayish

fuscous; scape with a white patch dorsally. Head light olive buff dorsally, grayish fuscous laterally; face white. Thorax grayish fuscous. Forewing ground color sordid white; basal sixth of wing grayish fuscous; costa marked with about a dozen small grayish fuscous bars or spots; a few similar spots on dorsum; remainder of forewing irrorate with grayish fuscous; cilia gray and grayish fuscous mixed. Hindwing gray; cilia slightly lighter. Foreleg buff; femur and tibia suffused grayish on outer side; tarsal segments fuscous; midleg similar but tibia grayish fuscous on outer side and tarsal segments sordid white on inner side; hindleg sordid white suffused grayish. Abdomen grayish dorsally, grayish fuscous ventrally.

Male genitalia slide USNM 24556. Harpe of almost equal width throughout, sharply bent at middle; at outer ventral edge of cucullus a short, truncate process. Gnathos not developed. Uncus very short and wide, hardly perceptible. Vinculum broad; saccus conical, about as long as harpe. Tegumen short and broad. Anellus a pair of arms

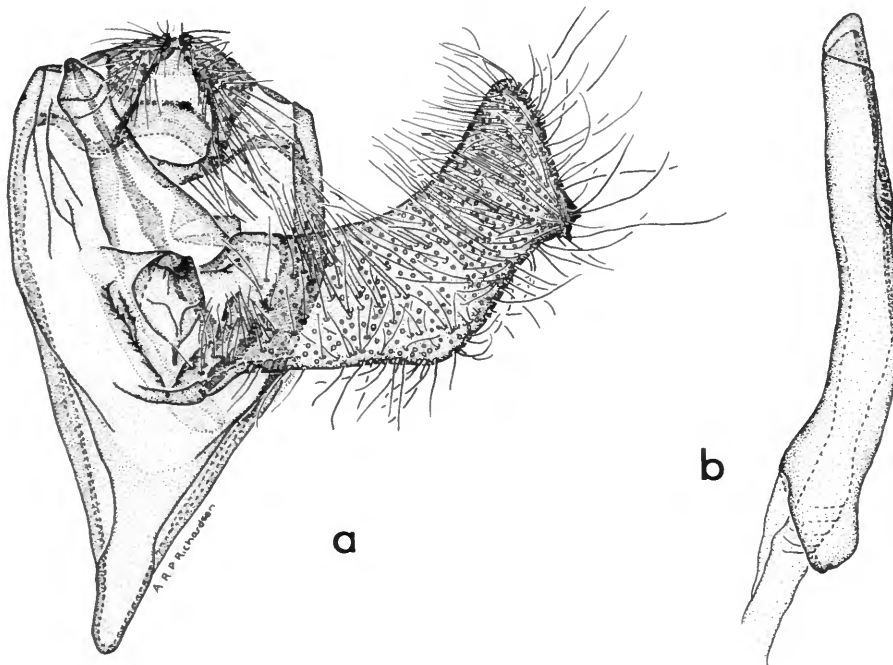


FIGURE 239.—*Terthroptera astochia*, new species: a, ventral view of male genitalia with left harpe and aedeagus removed; b, aedeagus.

fused basally, with aedeagus emerging between. Aedeagus rather slender, curved; vesica unarmed.

HOLOTYPE.—USNM 100838.

TYPE-LOCALITY.—Hiva Oa, Mt. Feani, 3800 ft (1158 m).

DISTRIBUTION.—Hiva Oa.

FOOD PLANT.—Unknown.

Described from the ♂ holotype, 20 Feb 1968.

Terthroptera astochia is very similar to *T. eremosia* Clarke (see Clarke, 1971, pl. 22f) from Rapa, but is a smaller insect and it is not so strongly marked as the latter species. Unfortunately the female of neither species is known.

Family GRACILLARIIDAE

Genus *Epicephala* Meyrick

Epicephala Meyrick, 1880a:168.

TYPE-SPECIES.—*Epicephala colymbetella* Meyrick, 1880a:169; by monotypy.

Epicephala colymbetella Meyrick

FIGURE 240

Epicephala colymbetella Meyrick, 1880a:169; 1907:53; 1912a:14; 1912b:14, fig. 8.—Clarke, 1955 [1955–1970]: 96.—Vari, 1961:42.

Male genitalia slide USNM 24626. Harpe costa nearly straight; cucullus narrowly rounded; sacculus heavily sclerotized, terminating in a pair of sharp points. Vinculum very broad and heavily sclerotized; saccus long, slender. Tegumen elongate triangular. Aedeagus stout, nearly straight; cornutus short, curved.

Female genitalia slide USNM 24627. Ostium broad, surrounded by an elongate sclerotized plate. Inception of ductus seminalis posterior from ductus bursae. Ductus bursae very broad, scarcely distinguishable from the bursa copulatrix. Bursa copulatrix granular anteriorly. Signum absent.

Meyrick (1929a:504) recorded *colymbetella* from Nuku Hiva, but he misidentified his species. The Marquesan species is *Epicephala spinula*, new

species, described below. The true *colymbetella* is confined to Australia.

Epicephala spinula, new species

FIGURES 241, 314c,d

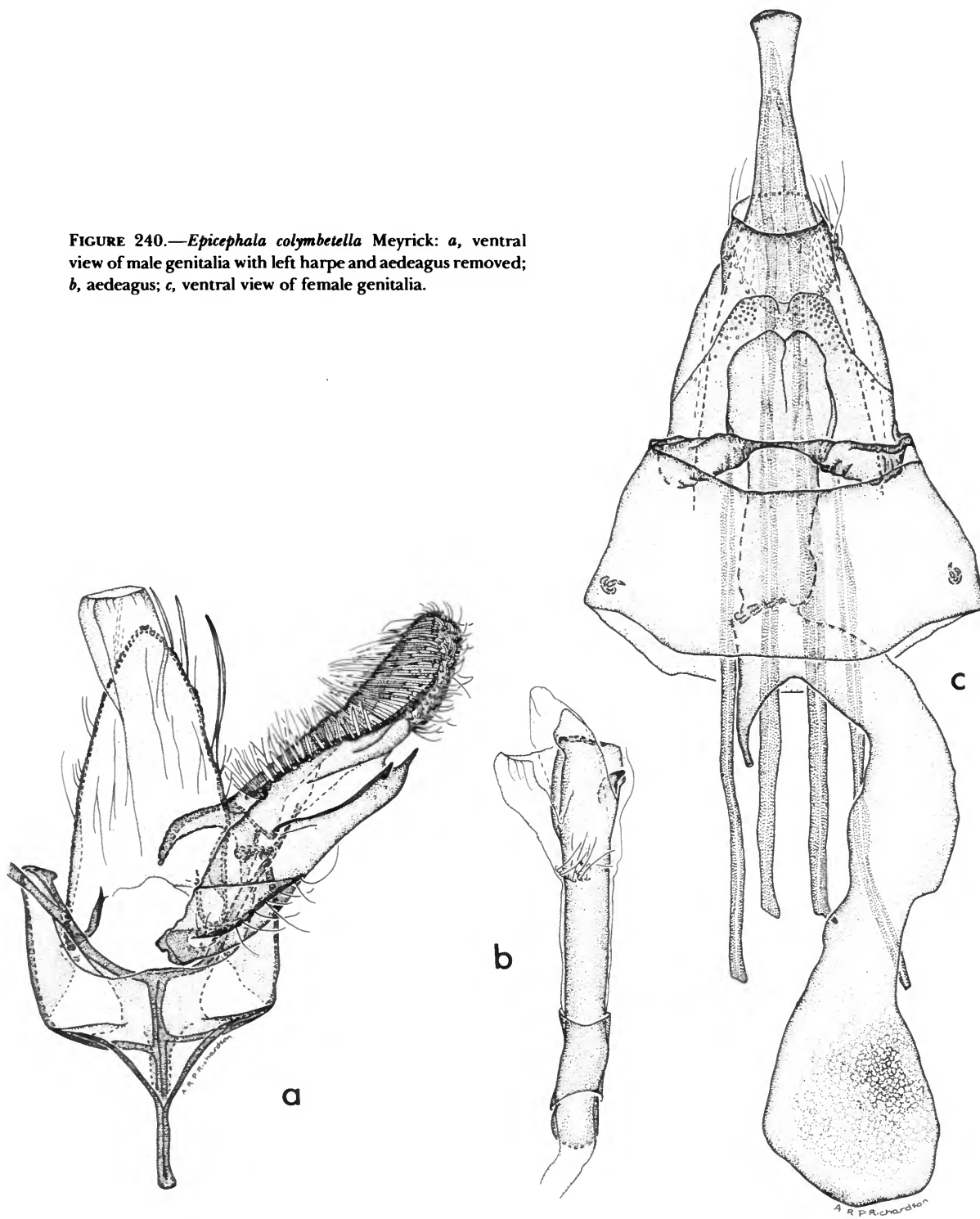
Epicephala colymbetella.—Meyrick, 1929a:504 [not *Epicephala colymbetella* Meyrick, 1880].

Alar expanse 9–12 mm.

Labial palpus white, suffused grayish on outer side, except base of second segment. Antenna grayish fuscous, somewhat lighter distally. Head white. Thorax white; tegula grayish fuscous. Forewing ground color fuscous; before middle of costa a short, outwardly oblique white dash; beyond middle of costa a slender, outwardly oblique curved mark, narrower distally than proximally; dorsum white except for three narrow, inwardly directed intrusions of ground color; subapically a short, transverse, slender metallic bar; beyond the metallic bar a white apical area with a dull ochraceous buff central space at the base of which is a small black spot; apical portion of costa and termen narrowly blackish fuscous; cilia on dorsum and tornus grayish, white on termen and around apex; apical cilia tipped grayish fuscous. Hindwing grayish with slight brassy hue; cilia grayish. Foreleg white, overlaid blackish fuscous on outer side; midleg white; tibia with three fuscous marks; hindleg white; tibia with fuscous mark distally. Abdomen grayish fuscous dorsally; white ventrally with fuscous stripes. Abdomen of male with two pairs of coremata.

Male genitalia slide USNM 24630. Harpe divided; costal part slender, heavily clothed with setae; at middle of outer face a group of stout setae and at base large protuberance bearing a single, long seta; sacculus a broad curved plate with a single strong seta distally. Vinculum broad, with a moderately well-developed saccus. Tegumen elongate, triangular. Anellus a very slightly sclerotized plate with a small lobe posteriorly on each side bearing fine setae. Aedeagus long, slender, slightly bent; cornuti apparently absent.

FIGURE 240.—*Epicphala colymbetella* Meyrick: *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.



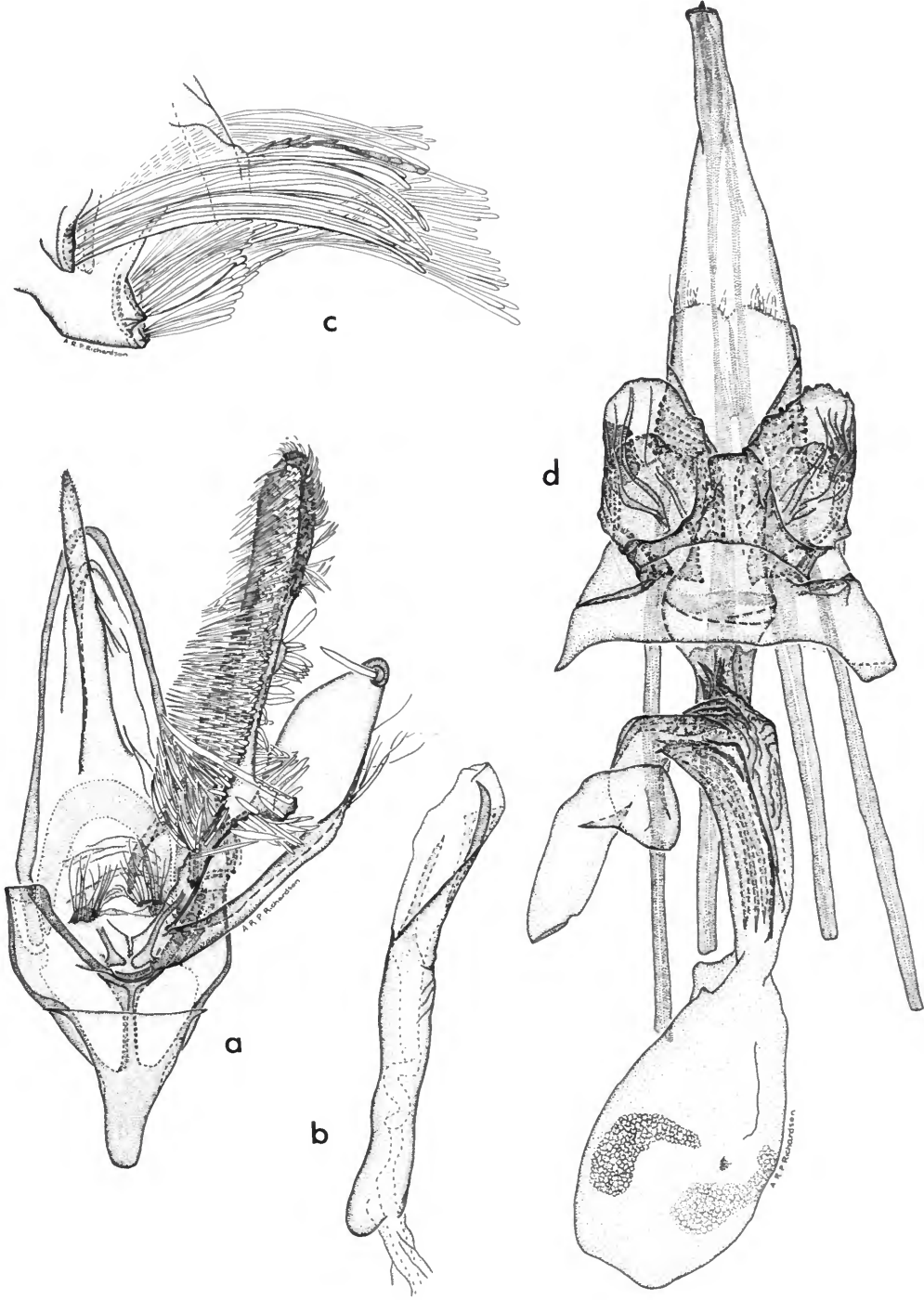


FIGURE 241.—*Epicephala spinula*, new species: *a*, ventral view of male genitalia with left harpe and aedeagus; *b*, aedeagus; *c*, coremata; *d*, ventral view of female genitalia.

Female genitalia slides USNM 24560, 24628, 24629. Ostium broad, funnel-shaped; on each side posteriorly a large, sclerotized, rugose plate. Antrum a narrow sclerotized ring. Inception of ductus seminalis lateral, from posterior portion of ductus bursae. Ductus bursae long and broad, rugose for most of its length. Bursa copulatrix very small, membranous. Signum a band of granules encircling middle of bursa copulatrix.

HOLOTYPE.—USNM 100839.

TYPE-LOCALITY.—Fatu Hiva, Mt. Teoaiua, 2000 ft (610 m).

DISTRIBUTION.—Fatu Hiva, Nuku Hiva.

FOOD PLANT.—Unknown.

Described from the ♀ holotype (22 Mar 1968), 2♂ and 5♀ paratypes as follows: Fatu Hiva: Omoa Valley, 5 apr 1968, 3♀. Teavapuhiau, Ouia, 750 m, 1–3 Aug 1977, 1♀ (Montgomery). Nuku Hiva: Tapuaooa, 2500 ft (762 m), 30 Jan 1968, 1♂, 1♀. Nuku Hiva, at light, 100 ft (30.5 m), 15 Jan 1925, 1♂ (“St. George Expedn. C.L. Collenette, Brit. Mus. 1925-488”).

This is the species Meyrick misidentified as *Epicephala colymbetella* Meyrick (see ante). The two species are similar but *colymbetella* is smaller (8 mm) than *spinula* (9–12 mm). In *colymbetella* the costal and dorsal white streaks meet in the middle of the wing, breaking up the central dark ground color. In *spinula* the dark central portion is not broken by the white streaks.

Genus *Caloptilia* Hübner

Caloptilia Hübner, 1825 [1816–1826]:427.

TYPE-SPECIES.—*Tinea upupaepennella* Hübner, 1796 [1796–1838], pl. 30: fig. 203; subsequent designation by Fletcher, 1929:38.

Caloptilia deltanthes (Meyrick), new combination

FIGURES 242, 314e

Gracilaria deltanthes Meyrick, 1934c:354.

Male genitalia slide USNM 24558. Harpe simple, narrow basally, broad toward cucullus; cucullus truncate. Uncus narrowly rounded. Vin-

culum elongate, triangular. Tegumen narrow, weakly sclerotized. Anellus a weakly sclerotized irregular plate. Aedeagus long, slender, straight; vesica unarmed.

Female genitalia slides USNM 24557, 24960. Ostium small oval; lamella postvaginalis sclerotized. Antrum a tiny sclerotized cylinder. Inception of ductus seminalis slightly anterior to antrum. Ductus bursae very slender, almost thread-like, membranous, coiled at junction with bursa copulatrix. Bursa copulatrix membranous. Signa two, slender, bladellike.

HOLOTYPE.—In the Bernice P. Bishop Museum.

TYPE-LOCALITY.—Uapou, Teoatea, Hakahe-tau.

DISTRIBUTION.—Marquesas Islands.

Uapou: above Hakahetau, 800 m, 23–24 Jul 1977, 1♂ (Montgomery).

Nuku Hiva: Tapuaooa, 2500 ft (762 m), 30 Jan 1968, 2♂, 2♀; Pakiu Valley, 1800 ft (548 m), 17, 19 Jan 1968, 2♂.

Fatu Hiva: Teavapuhiau, Ouia, 750 m, 1–3 Aug 1977, 3♀ (Montgomery).

FOOD PLANT.—*Glochidion ramiflorum* (Forster F.) Mueller-Argovensis.

Of the three original specimens, the holotype is lacking the right forewing. Of the others Mr. Gordon Nishida of the Bernice P. Bishop Museum wrote, “We have only one paratype which is in poor condition. The paratype specimen is missing the abdomen and several other parts . . .”

Caloptilia deltanthes is one of the few species that is found on more than one island, and probably will be found on other than Uapou, Nuku Hiva, and Fatu Hiva.

Only one of our specimens from Tapuaooa was reared and was found in association with *Dudua eumenica* (Meyrick).

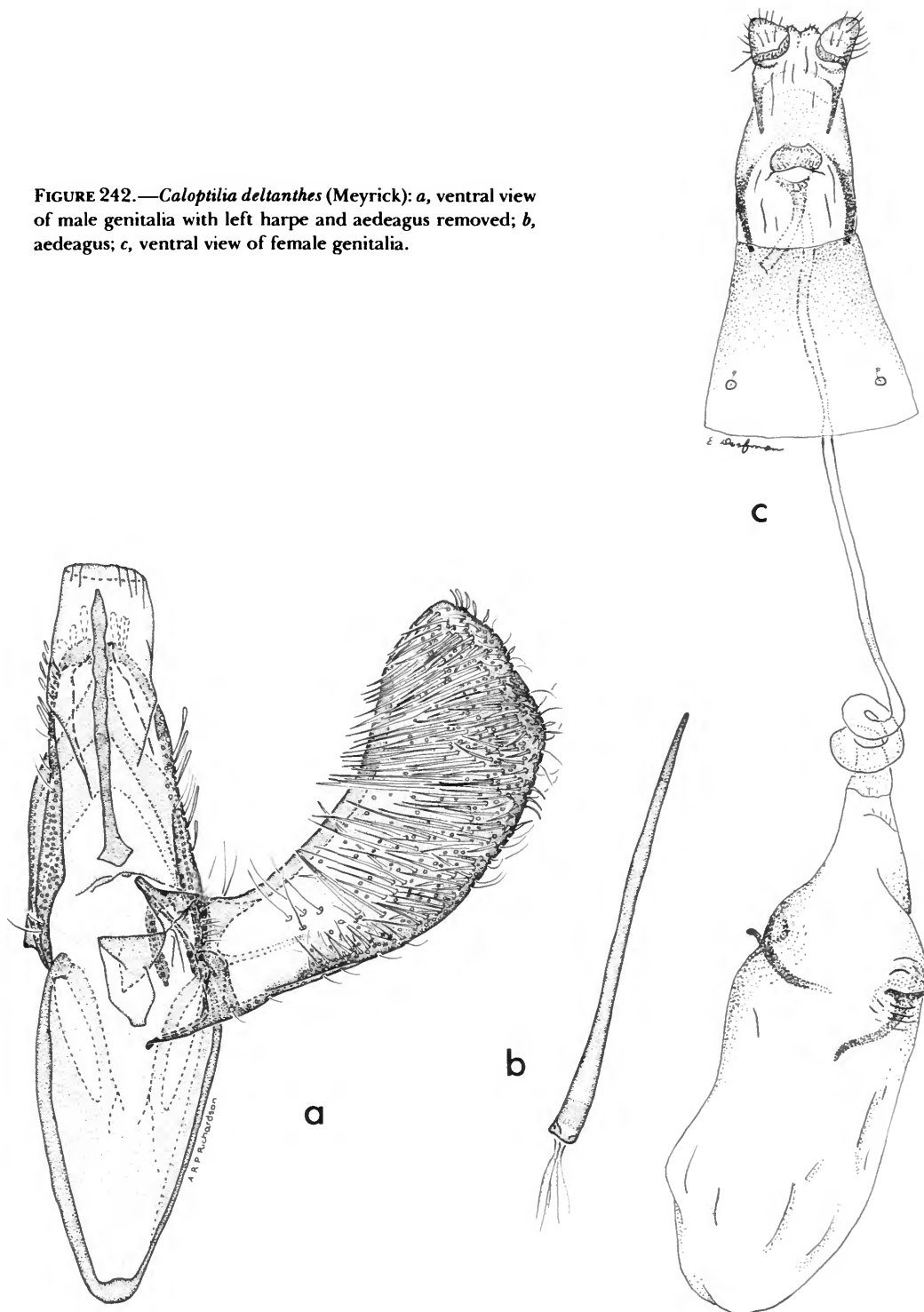
Caloptilia insidia, new species

FIGURES 243, 314f

Alar expanse 12 mm.

Labial palpus light buff; outer half and ventrally third segment purplish fuscous. Antenna

FIGURE 242.—*Caloptilia deltanthes* (Meyrick): *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.



grayish; scape purplish fuscous. Head purplish fuscous, face buff. Thorax purplish fuscous. Forewing ground color iridescent purplish fuscous; from base an oblique, narrow, triangular

sulphur yellow mark, one angle of which reaches dorsum but no part of which reaches costa; from slightly before middle of costa a transverse sulphur yellow bar reaches dorsum as a point; on dorsum, slightly before tornus, a small sulphur yellow spot; cilia concolorous with ground color except at apex and part of termen, buff. Hindwing fuscous; cilia concolorous. Foreleg purplish fuscous; midleg femur and tibia purplish fuscous; tarsal segments buff, shaded outwardly grayish; hindleg femur buff, remainder purplish fuscous. Abdomen fuscous dorsally, shining buff ventrally.

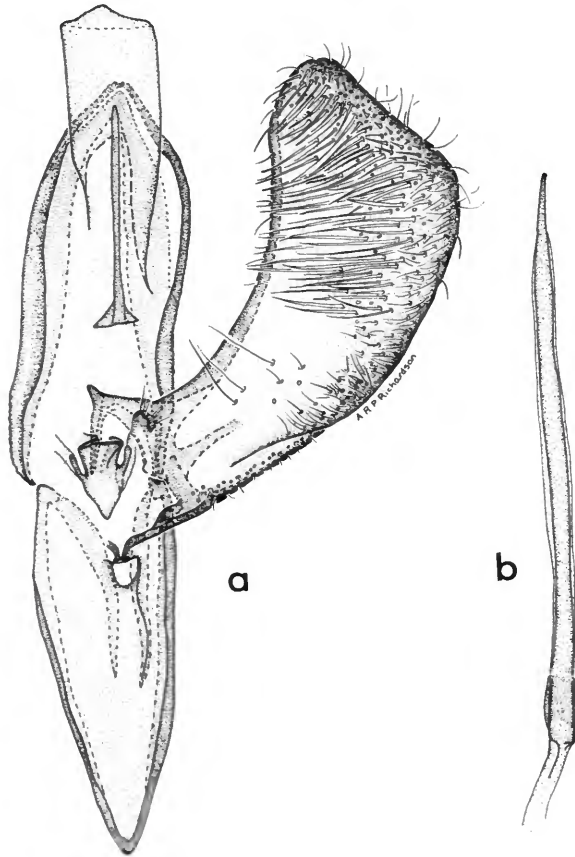


FIGURE 243.—*Caloptilia insidia*, new species: a, ventral view of male genitalia with left harpe and aedeagus removed; b, aedeagus.

Male genitalia slide USNM 24559. Harpe simple, narrow basally, broad toward cucullus; cucullus broad, truncate, bluntly pointed at dorso-distal margin. Uncus bluntly pointed. Vinculum elongate, triangular. Tegumen moderately sclerotized, twice as long as broad. Anellus a weakly sclerotized, irregular plate. Aedeagus long, slender, straight, pointed; vesica unarmed.

Female genitalia unknown.

HOLOTYPE.—USNM 100840.

TYPE-LOCALITY.—Hiva Oa, Mt. Feani, 2500 ft (762 m).

DISTRIBUTION.—Hiva Oa, Fatu Hiva.

FOOD PLANT.—Unknown.

Described from the ♂ holotype and 1♂ paratype, with identical data (1 Mar 1968); and 2♂ paratypes, from Fatu Hiva, Teavapuhiau, Ouia, 750 m, 1–3 Aug 1977 (Montgomery).

This species is very similar to *deltanthes* but lacks the broad triangular patch from the costa and the yellow spot at apical fourth of costa. Also, the triangular basal marking of forewing is much narrower (compare figure 314e with 314f).

Family TINEIDAE

Key to the Genera of Tineidae

1. Face flattened *Opogona*
Face not flattened 2
2. Fore- and hindwings with all veins separate 3
Fore- and hindwings not as above 6
3. Forewing with 11 veins *Erechthias*
Forewing with 12 veins 4

- 4. Forewing vein 1b furcate *Trichophaga*
Forewing vein 1b simple 5
- 5. Labial palpus second segment smooth beneath; maxillary palpus large
and prominent *Wyoma*, new genus
Labial palpus second segment roughened beneath; maxillary palpus small
inconspicuous *Phereoeca*
- 6. Hindwing with no more than four veins *Clepticodes*
Hindwing otherwise 7
- 7. Forewing vein 1b simple 8
Forewing vein 1b furcate 10
- 8. Hindwing veins 3 and 4 united *Comodica*
Hindwing otherwise 9
- 9. Hindwing veins 5 and 6 stalked *Tinea*
Hindwing veins 5 and 6 separate *Crypsithyroides*
- 10. Forewing veins 7, 8, and 9 stalked *Setomorpha*
Forewing otherwise 11
- 11. Hindwing veins 5 and 6 stalked 12
Hindwing veins 5 and 6 separate *Praeacedes*
- 12. Forewing veins 3 and 4 united *Decadarchis*
Forewing veins 3 and 4 separate *Trachycentra*

Genus *Decadarchis* Meyrick

Decadarchis Meyrick, 1886:290.

TYPE-SPECIES.—*Decadarchis melanastra* Meyrick, 1886:291; by monotypy.

Key to the Species of *Decadarchis*

- 1. Forewing with distinct tufts on dorsum 2
Forewing without distinct tufts on dorsum 3
- 2. Alar expanse 20 mm or more *aspera*, new species
Alar expanse 19 mm or less *percnomicta* Meyrick
- 3. Ground color of forewing white 4
Ground color of forewing otherwise 6
- 4. Forewing marked with black spots *simulans* (Butler)
Forewing otherwise 5
- 5. Forewing with ochereous or brownish longitudinal streak
..... *psammaula* Meyrick
Forewing with three distinct fuscous marks . *tritogramma*, new species
- 6. Alar expanse 25 mm or more 7
Alar expanse less than 25 mm 8
- 7. Forewing with brownish ochereous streak along fold
..... *coleosema* Meyrick
Forewing without such streak *rufimacula* Meyrick
- 8. Alar expanse 11 mm or less 9
Alar expanse more than 11 mm 11

9. Forewing with small black spots and yellowish streaks *flavistriata* (Walsingham)
 Forewing otherwise 10
10. Forewing cream to ochreous, speckled brownish *minuscula* (Walsingham)
 Forewing otherwise; male with patch of ochreous scales on underside
 *penicillata* (Swezey)
11. Forewing light gray; dark gray on costa *clistopa* Meyrick
 Forewing otherwise 12
12. Forewing with three distinct transverse fasciae from costa
 *celestra*, new species
 Forewing without such fasciae 13
13. Forewing with fuscous median streak terminating in a blotch
 *physocapna* Meyrick
 Forewing otherwise *incongrua*, new species

***Decadarchis clistopa* Meyrick**

FIGURES 244, 314g

Decadarchis clistopa Meyrick, 1929a:506.—Clarke, 1955 [1955–1970]: 94.

Male genitalia slide USNM 25101. Harpe as broad as long; costa strongly arched, armed with a dense cluster of setae. Uncus lightly sclerotized laterally. Vinculum a sclerotized band; saccus subrectangular, terminating distally in a sharp point. Tegumen a moderately broad sclerotized band. Anellus Y-shaped ventrally, cup-shaped dorsally. Aedeagus slender, nearly straight; vesica armed with a single, short, strong cornutus.

HOLOTYPE.—In the British Museum (Natural History).

TYPE-LOCALITY.—Nuku Hiva, 100 ft (30.5 m).

DISTRIBUTION.—Nuku Hiva.

FOOD PLANT.—Unknown.

The species is known only from the holotype. The specimen appears somewhat rubbed but the genitalia of the male are intact and are figured. Abdomen with strong, paired, deciduous coremata.

***Decadarchis physocapna* Meyrick**

FIGURES 245, 314h

Decadarchis physocapna Meyrick, 1929a:506.—Clarke, 1955 [1955–1970]: 249.

Male genitalia slide USNM 25100. Harpe oval; costa with a dense patch of strong setae on basal half; cucullus bluntly pointed. Uncus slightly sclerotized laterally. Vinculum rather broad; saccus broad, terminating in a point. Tegumen a narrow sclerotized band. Anellus a subtriangular plate ventrally, cup-shaped dorsally, Aedeagus slender, curved, pointed; vesica armed with a single weak cornutus.

HOLOTYPE.—In the British Museum (Natural History).

TYPE-LOCALITY.—Hiva Oa, 1200 ft (365 m).

DISTRIBUTION.—Hiva Oa.

FOOD PLANT.—Unknown.

The only known specimen of *physocapna* is the holotype. The specimen is rather rubbed, the markings are indistinct and the cilia are missing.

The male genitalia are intact and are figured. Posteriorly, there is a pair of strong, but deciduous coremata.

***Decadarchis psammaula* Meyrick**

Figures 246, 315a,b.

Decadarchis psammaula Meyrick, 1921a:459.—Lepesme, 1947:319.—Viette, 1949a:316.—Clarke, 1955 [1955–1970]: 262.—Dugdale, 1977:66.

Male genitalia slide USNM 25010. Harpe very short, broad; costa almost wholly clothed with setae; cucullus bluntly pointed. Uncus divided posteriorly, narrowly sclerotized laterally. Vin-

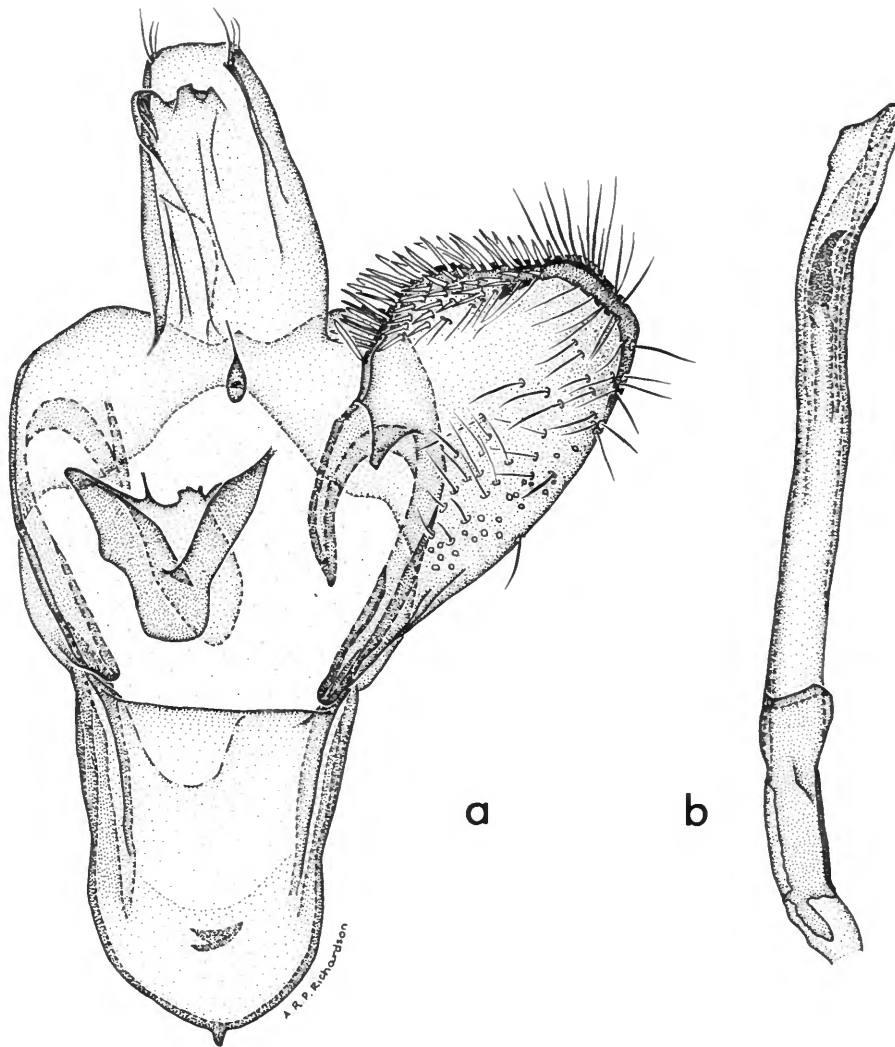


FIGURE 244.—*Decadarchis clistopa* Meyrick: *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus.

culum broad, pointed distally. Tegumen a narrow band. Anellus Y-shaped posteriorly, cup-shaped proximally. Aedeagus slender, curved; vesica apparently unarmed, except for a few spicules.

Female genitalia slides USNM 25011, 25012. Ostium small, U-shaped. Inception of ductus seminalis slightly before ostium, dorsally. Ductus bursae long, slender, membranous. Bursa copulatrix ornamented with a reticulum of very fine

ridges. Signum a broad curved plate; capitulum prominent.

HOLOTYPE.—In the British Museum (Natural History).

TYPE-LOCALITY.—Tahiti.

DISTRIBUTION.—Tahiti, Marquesas Islands, Malaya, Fiji.

Our series, including reared specimens, is as follows. Nuku Hiva: Pakiu Valley, 800–1000 ft (244–304.8 m), 12 Feb to 12 Mar 1968, 13♂, 5♀;

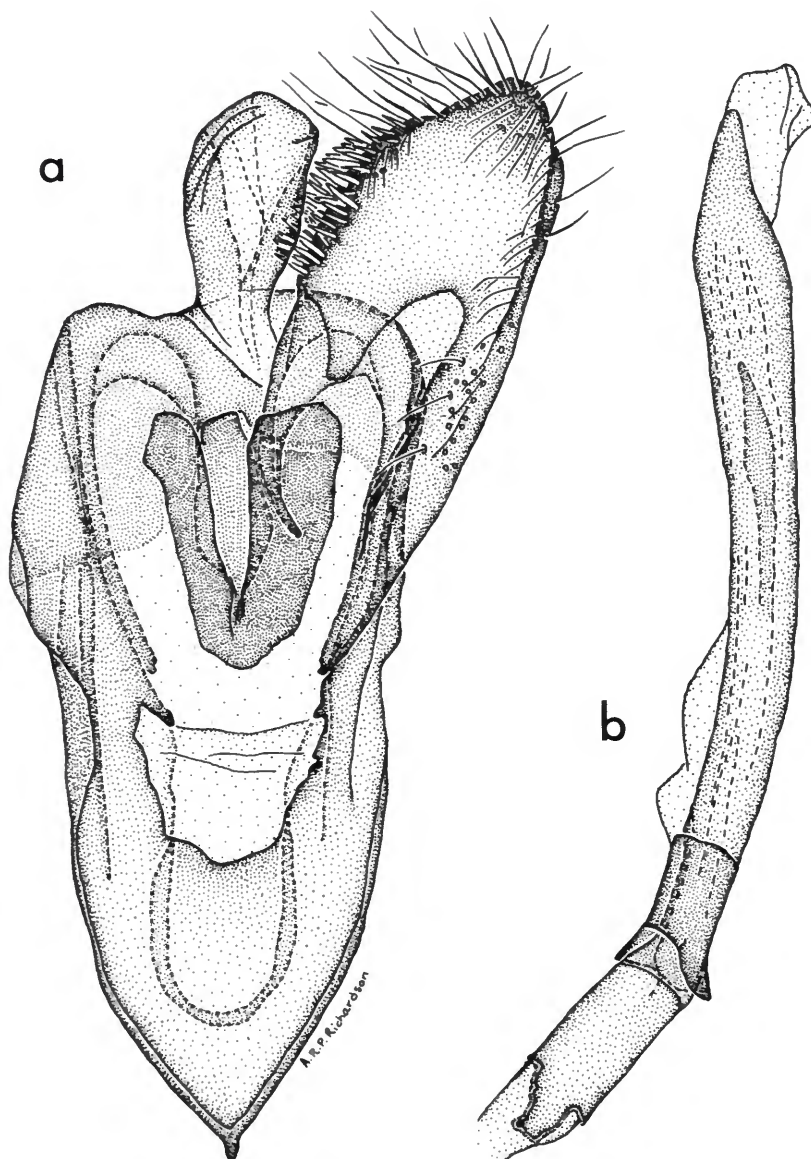


FIGURE 245.—*Decadarchis physocapna* Meyrick: *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus.

Taiohae, 28 Jan 1968. 1♂. Hiva Oa: Atuona, 13 Feb to 26 Mar 1968, 5♂, 7♀. Fatu Hiva: Omoa, 11–17 Mar 1968, 2♀.

FOOD PLANT.—On “spun tips of coconut leaves” (Meyrick 1921a:459). Several specimens were reared by us. My notes are as follows: “Pupa and larva in rolled edge of dead leaflet tissue.

Larvae appear to have fed on dead tissues on underside of leaflet.

Decadarchis celestra, new species

FIGURES 247, 315c

Alar expanse 15 mm.

Labial palpus light buff, shaded grayish fus-

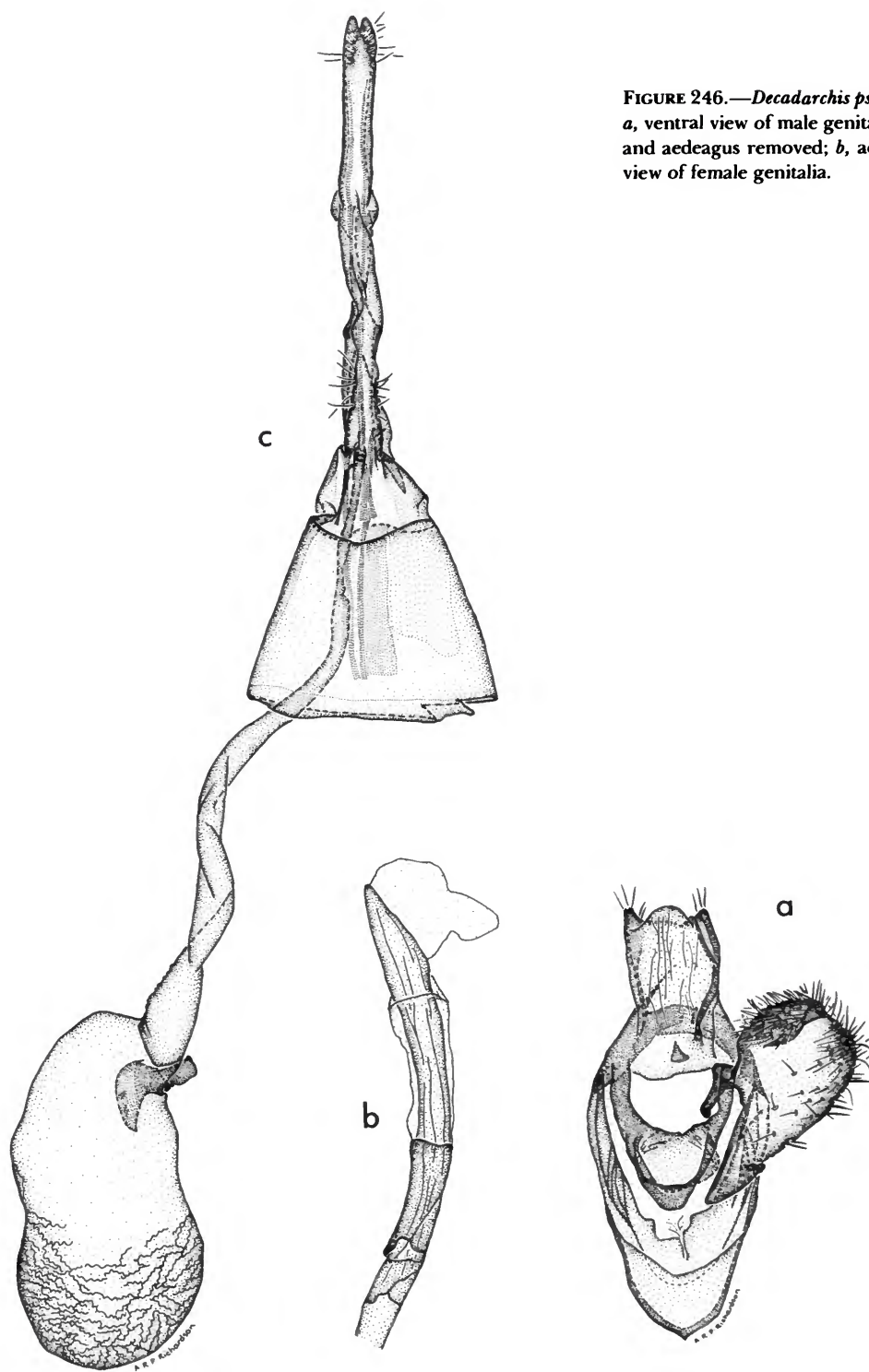


FIGURE 246.—*Decadarchis psammaula* Meyrick: *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.

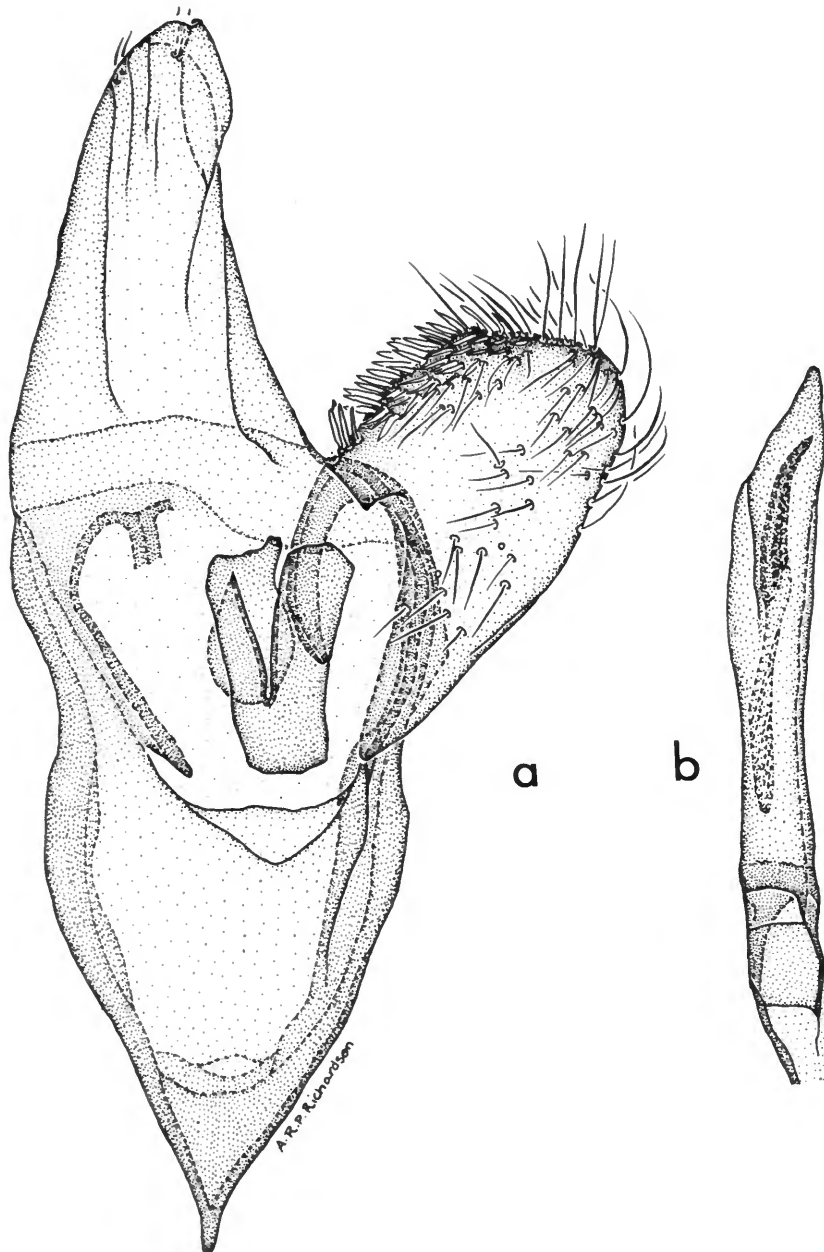


FIGURE 247.—*Decadarchis celestra*, new species: *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus.

cous on outer side. Antenna fuscous; scape narrowly buff distally. Head fuscous. Thorax fuscous; tegula with grayish and buff scales distally. Forewing ground color light buff variously

marked with fuscous; base fuscous, this color extends over most of the dorsal part of wing; from basal fourth of costa an outwardly oblique fascia extends to the dark dorsal shade; from

middle of costa a similar, outwardly oblique fascia extends half way to tornus; at outer fourth of costa an outwardly oblique fascia extends to a point inside apex then turns costad at right angles; a fuscous line along termen nearly forms a V with the outer costal streak; apex with a blackish fuscous dot; cilia mixed buff and fuscous. Hindwing pale grayish; cilia a shade lighter. Foreleg light buff, strongly overlaid fuscous on outer side; midleg light buff; tibia and tarsal segments marked blackish fuscous; hindleg light buff; tarsal segments lightly marked grayish fuscous. Abdomen light buff; male abdomen with strong eversible coremata posteriorly.

Male genitalia slide USNM 25043. Harpe short and broad; costa arched and clothed with cluster of stout setae; cucullus rounded. Uncus lightly sclerotized laterally. Vinculum a narrow band; saccus broad, sharply pointed. Tegumen a lightly sclerotized band. Anellus subrectangular ventrally, cup-shaped dorsally. Aedeagus slightly curved; vesica armed with a single curved cornutus.

HOLOTYPE.—USNM 100841.

TYPE-LOCALITY.—Nuku Hiva, Tunoa Ridge, 2900 ft (884 m).

DISTRIBUTION.—Nuku Hiva.

FOOD PLANT.—Unknown.

Described from the ♂ holotype (23 Jan 1968) and 1♂ paratype with the same data.

Nearest to *Decadarchis incongrua*, new species, *celestra* is a smaller species and may be distinguished from the former by the two well-defined oblique transverse fascia of the forewing, absent in *incongrua*.

Decadarchis incongrua, new species

FIGURES 248, 315d

Alar expanse 14–18 mm.

Labial palpus grayish fuscous on inner surface, fuscous on outer side. Antenna fuscous; apex and ventral surface of scape grayish. Head grayish fuscous. Thorax fuscous; apex of tegula grayish. Forewing ground color fuscous; ill-defined grayish blotches along costa but no distinct markings; at apex a fuscous spot in a narrow grayish circle,

cilia fuscous. Hindwing grayish, cilia concolorous. Foreleg fuscous; midleg buff marked fuscous; hindleg sordid buff; tibia with grayish suffusion distally on outer side; tarsal segments marked fuscous. Abdomen grayish dorsally, sordid buff ventrally; ♂ with strong posterior abdominal coremata.

Male genitalia slide USNM 25071. Harpe slightly longer than broad; costa strongly arched and armed with a dense cluster of strong setae. Uncus lightly sclerotized laterally. Vinculum a broad band; saccus sharply pointed. Tegumen a narrow sclerotized band. Anellus cup-shaped with an elongated ventral plate. Aedeagus nearly straight; vesica armed with a single slender cornutus.

HOLOTYPE.—USNM 100842.

TYPE-LOCALITY.—Fatu Hiva, Mt. Upe, 2025 ft (617 m).

DISTRIBUTION.—Fatu Hiva.

FOOD PLANT.—Unknown.

Described from the ♂ holotype (3 Apr 1968) and 5♂ paratypes with identical data.

Similar to *percnomicta*, *incongrua* lacks any well-defined markings on the forewing. Moreover, the vesica of *incongrua* is armed with a well-defined cornutus, absent in *percnomicta*.

Decadarchis coleosema Meyrick

FIGURES 249, 315e,f

Decadarchis coleosema Meyrick, 1934c:354.—Clarke, 1955 [1955–1970]: 95.

Male genitalia slide USNM 25037. Harpe very broad, stubby, thickest beyond middle; on costa a dense patch of short setae; cucullus rounded. Uncus lightly sclerotized laterally. Vinculum very broad basally, sharply pointed distally. Tegumen narrowly sclerotized laterally. Anellus cup-shaped proximally, narrow. Aedeagus slender, slightly curved, pointed; cornutus a single spine.

Female genitalia slides USNM 25025, 25036. Ostium posteroventral edge U-shaped. Antrum not differentiated. Inception of ductus seminalis slightly before ostium. Ductus bursae membra-

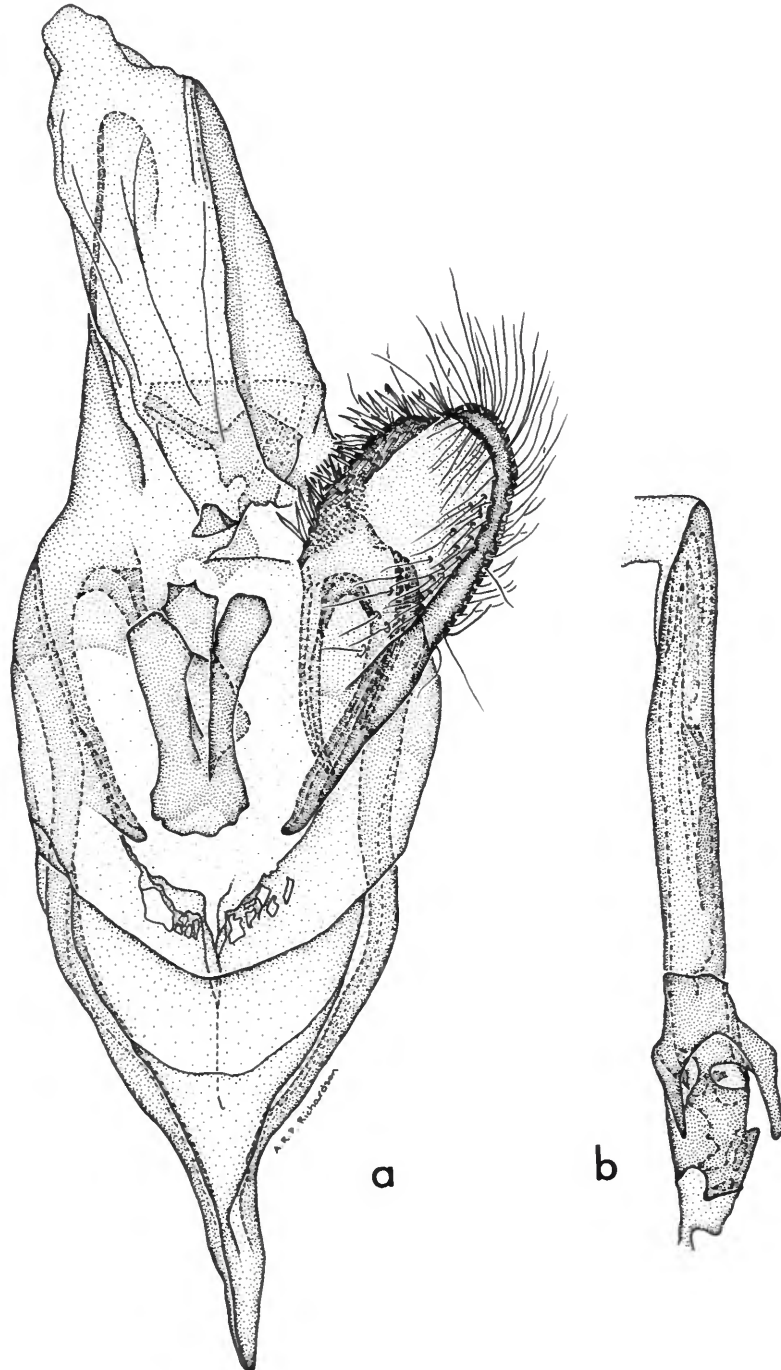
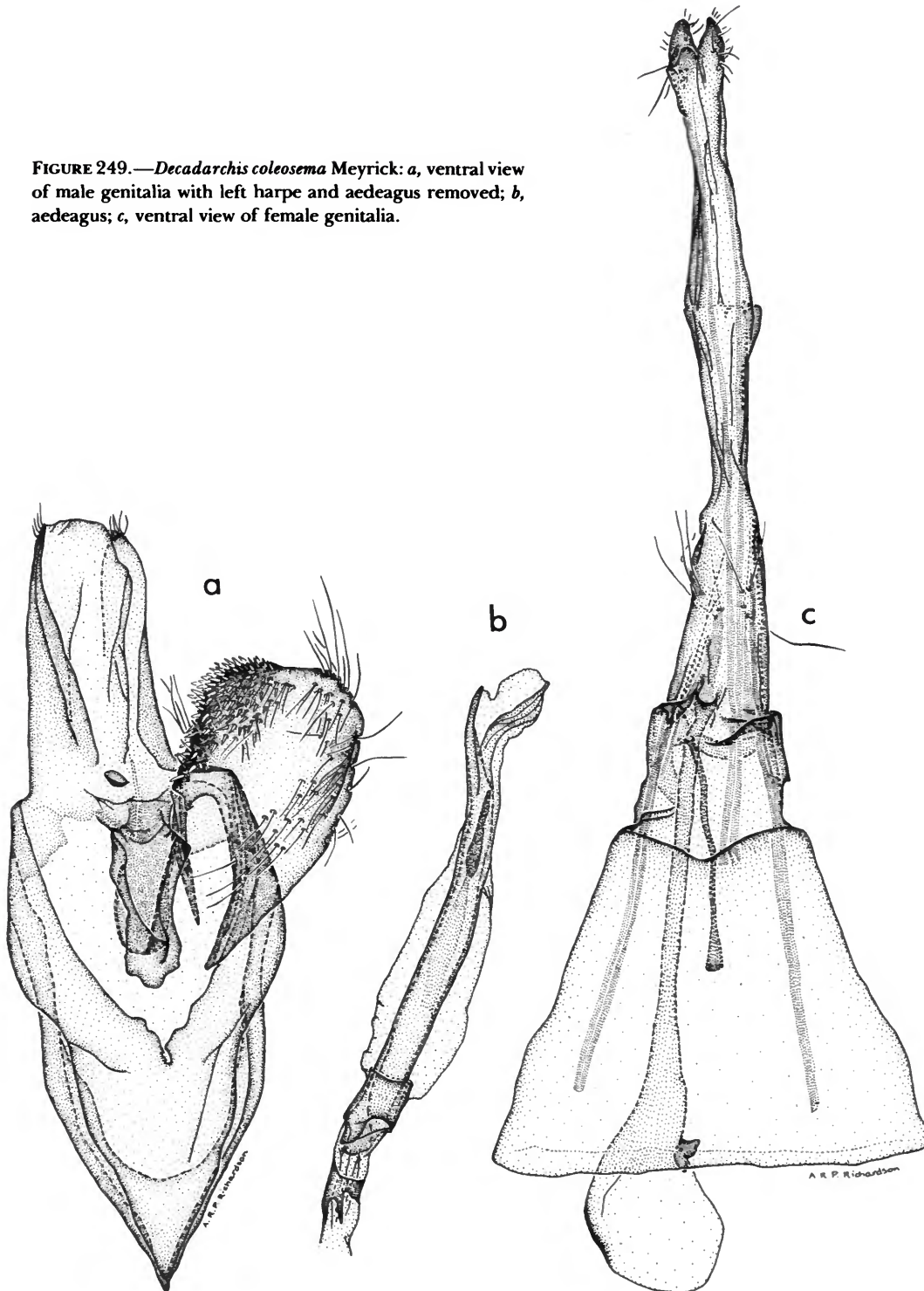


FIGURE 248.—*Decadarchis incongrua*, new species; *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus.

FIGURE 249.—*Decadarchis coleosema* Meyrick: a, ventral view of male genitalia with left harpe and aedeagus removed; b, aedeagus; c, ventral view of female genitalia.



nous, gradually widening toward junction with bursa copulatrix. Bursa copulatrix very finely rugose. Signum a small, curved plate; capitulum prominent.

HOLOTYPE.—In the Bernice P. Bishop Museum.

TYPE-LOCALITY.—Hiva Oa, slope north of summit, 3860 ft (1176 m).

DISTRIBUTION.—Marquesas Islands.

Nuku Hiva: Toovii, Ooumu, 16–19 Jul 7♂, 5♀, (Montgomery). Hiva Oa: Mt. Temetiu, 3860 ft (1176 m) (LeBronnec and Tauraa).

FOOD.—Probably refuse and decaying vegetable matter.

Meyrick described *coleosema* from four specimens but did not indicate the sexes except for the “type female.” We did not encounter this species on any of the islands we visited.

Decadarchis aspera, new species

FIGURES 250, 315g

Alar expanse 20 mm.

Labial palpus sordid white; second segment with two blackish fuscous bars on outside: Antenna grayish with fuscous annulations; scape pale ochraceous buff, and deeply notched. Head sordid white. Thorax fuscous; apex of tegula sordid white. Forewing ground color light buff but heavily suffused and blotched with grayish; extreme base of wing fuscous, this extending along costa to about one-fourth; beyond the dark base, costa is narrowly light buff; at basal angle, one fourth of dorsum and middorsum, prominent tufts of raised fuscous scales each edged with white scales outwardly; at base, inside costa, a similar but less conspicuous tuft; at outer end of fold another such, but somewhat flattened, tuft; at end of cell a fuscous spot edged with sordid white scales; at apex a fuscous spot; cilia ochraceous buff mixed with a few grayish fuscous scales. Hindwing gray; cilia ochraceous buff. Foreleg light buff suffused grayish; tibia and tarsal segments blackish fuscous on outer side; midleg light buff; tibia blackish fuscous on outer side, except distally sordid white; hindleg light

buff. Abdomen grayish dorsally, buff ventrally; male with pair of dense deciduous coremata posteriorly.

Male genitalia slide USNM 25096. Harpe short and broad; costa strongly arched and almost entirely armed with a large patch of coarse, short setae. Uncus sclerotized laterally. Vinculum very broad; saccus pointed. Tegumen a narrow sclerotized band. Anellus cup-shaped. Aedeagus slender, curved; vesica armed with a single long slender cornutus.

HOLOTYPE.—USNM 100843.

TYPE-LOCALITY.—Hiva Oa, Mt. Feani, 3800 ft (1158 m).

DISTRIBUTION.—Hiva Oa.

FOOD PLANT.—Unknown.

Described from the ♂ holotype (20 Feb 1968).

This is the only species of *Decadarchis* that I know that has such prominent scale tufts on the forewing. In male genitalia it is similar to *percnomicta* Meyrick. On the basis of the tufting of the forewing one might suspect a generic difference, but the genitalia are typically *Decadarchis*.

Decadarchis percnomicta Meyrick

FIGURES 251, 315h

Decadarchis percnomicta Meyrick, 1934c:355.—Clarke, 1955 [1955–1970]: 240.

Male genitalia slides USNM 25042, 25102. Harpe very short, broadest before cucullus; costa almost completely armed with short, stout setae. Uncus narrowly sclerotized laterally. Vinculum broad; saccus pointed. Tegumen a narrow ring. Anellus cup-shaped basally, posteriorly a rectangular plate. Aedeagus broadest at apex; vesica armed with a single cornutus.

HOLOTYPE.—In the Bernice P. Bishop Museum.

TYPE-LOCALITY.—Eiao: above Vaituha, altitude 1200 ft (365 m).

DISTRIBUTION.—Eiao.

Eiao: N. Uplands, 400m, 7 Aug 1977, 2♂ (Montgomery).

FOOD.—Unknown.

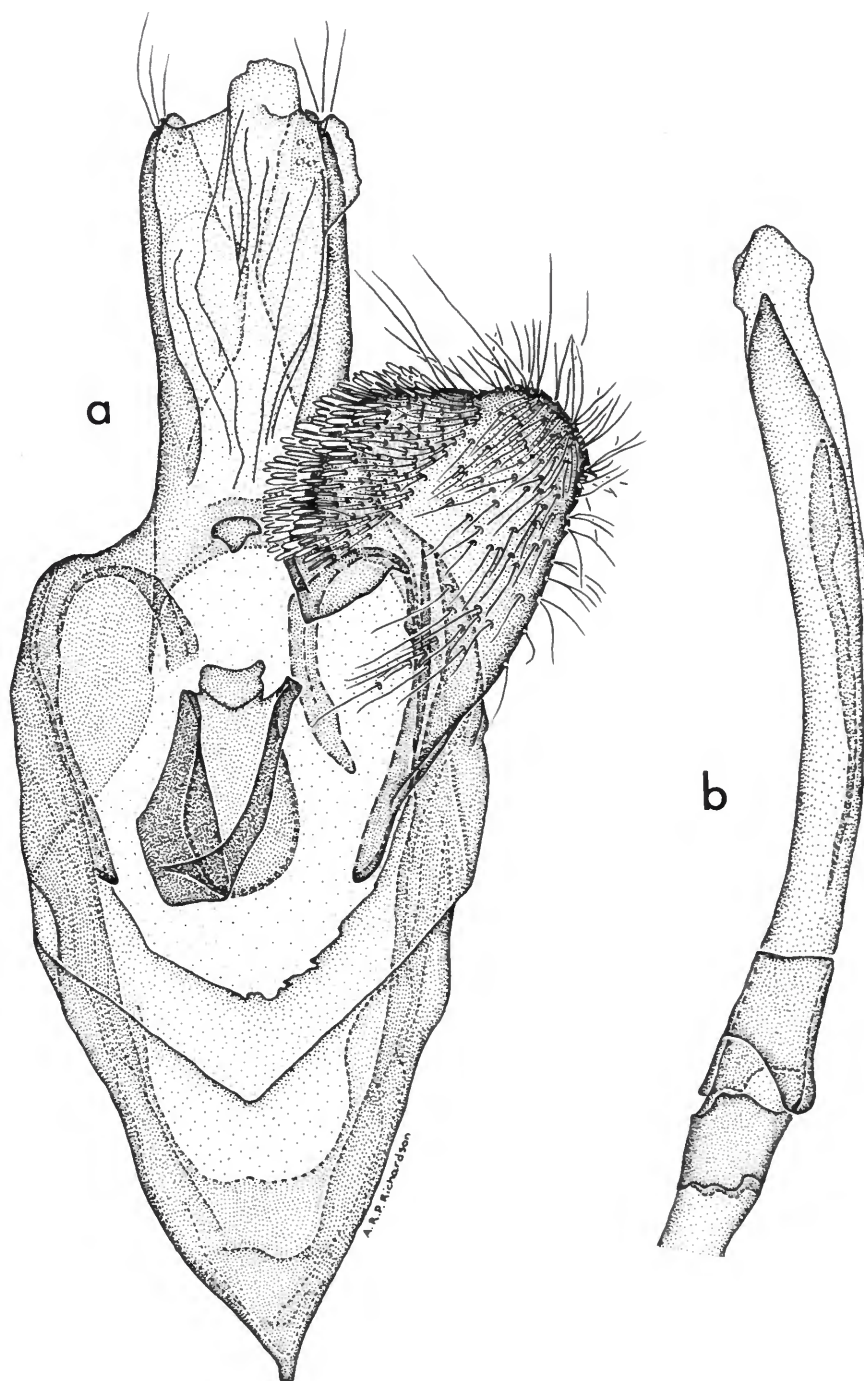


FIGURE 250.—*Decadarchis aspera*, new species: *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus.

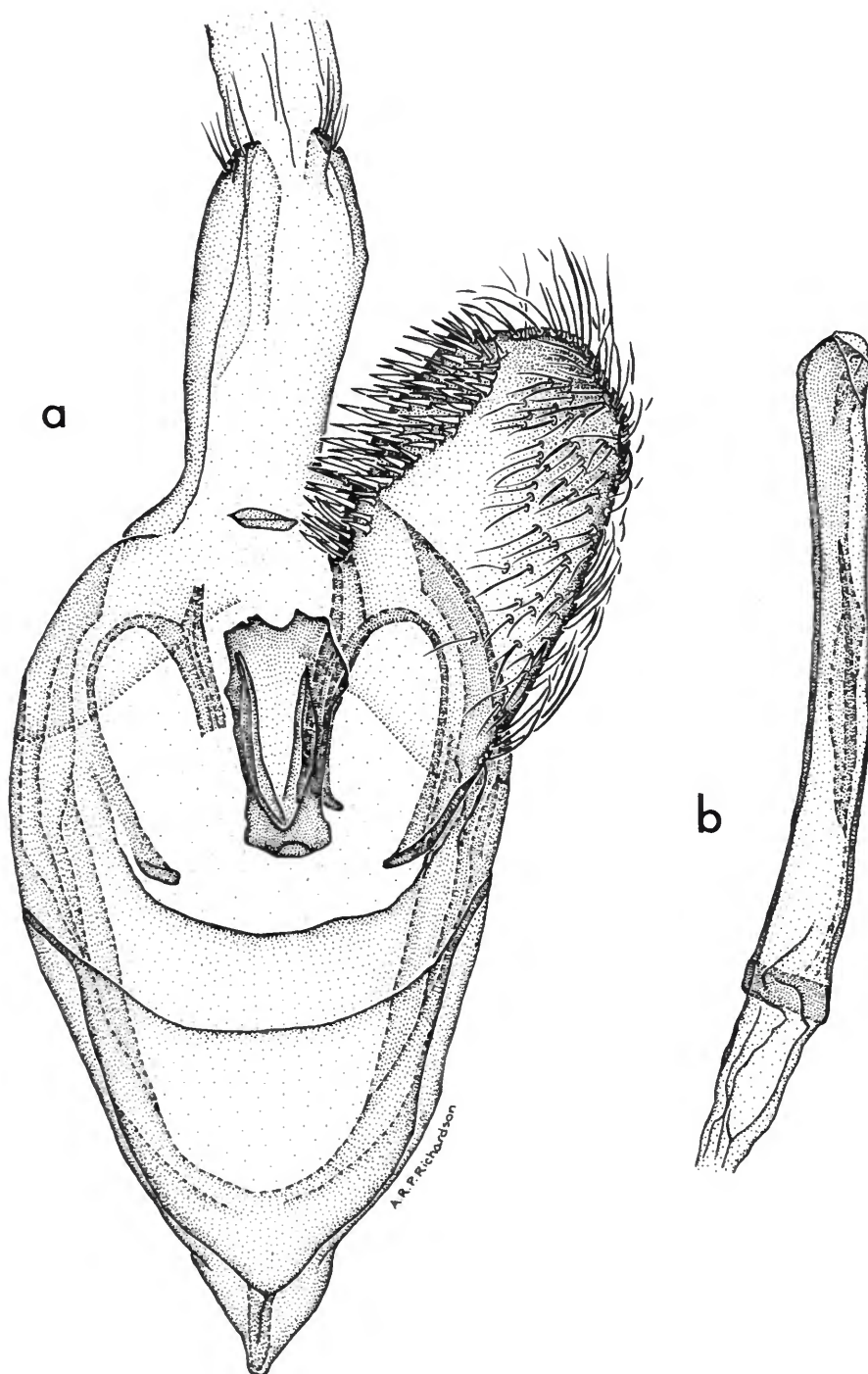


FIGURE 251.—*Decadarchis percnomicta* Meyrick: *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus.

In addition to the type male there are the two specimens listed above.

The type is somewhat rubbed and does not show the scale tufts on dorsum as in the Montgomery specimens.

Strong coremata (deciduous) are present from the intersegmental membrane between the 8th segment and male genitalia.

Decadarchis rufimacula Meyrick

FIGURES 252, 316a

Decadarchis rufimacula Meyrick, 1934c:355.—Clarke, 1955 [1955–1970]: 274.

Male genitalia slide AB 28 Nov 1940. Harpe twice as long as broad; costa only slightly arched, clothed with short stout setae; cucullus rounded. Uncus sclerotized laterally. Vinculum broad; saccus short, pointed. Tegumen a narrow band. Anellus a deep, cup-shaped structure. Aedeagus slender, curved; vesica armed with a single slender cornutus.

Female genitalia slide USNM 25049. Ostium small, funnel-shaped. Inception of ductus seminalis dorsal, from ductus bursae, slightly before ostium. Ductus bursae long and slender. Bursa copulatrix finely rugose. Signum sickle-shaped; capitulum prominent.

HOLOTYPE.—In the Bernice P. Bishop Museum.

TYPE-LOCALITY.—Uapou, Teoatea, Hakahe-
tau, 1950 ft (594 m).

DISTRIBUTION.—Marquesas Islands.

Uapou: Teoatea, Hakahe-
tau, 1950 ft (594 m).
Nuku Hiva: Toovii, Ooumu, 900 m (Montgomery).

FOOD PLANT.—Unknown.

The holotype male lacks the right forewing, but otherwise is in fair condition.

With the holotype I associated the female from Nuku Hiva.

Decadarchis tritogramma, new species

FIGURES 253, 316b

Alar expanse 13–14 mm.

Labial palpus white; basal two-thirds of second

segment fuscous on outer side. Antenna light ochraceous buff. Head white. Thorax white; tegula fuscous anteriorly. Forewing ground color white; base of costa broadly fuscous; on middle of costa an outwardly oblique fuscous mark extending into cell; on middorsum an elongate fuscous dash; along outer part of costa to apex and subterminally, a fine fuscous line; at apex a small fuscous spot; cilia white mixed with fuscous outwardly. Hindwing whitish basally, light buff outwardly. Fore- and midleg grayish fuscous; hindleg buff; tarsal segments marked grayish fuscous. Abdomen pale buff; male with posterior deciduous abdominal coremata.

Male genitalia slide USNM 25065. Harpe short, oval; on costa an elongate patch of stout setae. Uncus lightly sclerotized laterally. Vinculum a broad sclerotized band; saccus short, broad, pointed. Tegumen a narrow band. Anellus a deep, cup-shaped structure. Aedeagus slender, slightly curved, pointed; vesica armed with a short, weak cornutus.

HOLOTYPE.—USNM 100844.

TYPE-LOCALITY.—Nuku Hiva, Tapuaooa, 2500 ft (762 m).

DISTRIBUTION.—Nuku Hiva.

FOOD PLANT.—Unknown.

Described from the ♂ holotype (30 Jan 1968) and 2♂ paratypes with identical data.

Unfortunately, the female is unknown. Of the Marquesan species of this genus, *tritogramma* appears to be most closely related to *incongrua*, new species, but the latter species lacks the contrasting dark markings of the forewing of *tritogramma*.

Decadarchis minuscula (Walsingham)

FIGURES 254, 316c,d

Ereunetis minuscula Walsingham, 1897:155; 1907:716—
Swezey, 1909: 12, pl. 2: figs. 7–9; 1910:142.—Busck, 1911:80.—Swezey, 1912a:155.—Walsingham, 1914 [1909–1915]:347.—Bridwell, 1919a:22.—Wolcott, 1923:205.—Muir, 1929:206.—Swezey, 1929b:281.—Forbes, 1930:147.—Williams, 1931:156, figs. 7–9.—Wolcott, 1936:501.—Auctorum, 1936a:34; 1939:177.—Swezey, 1940b:458.—Wolcott, 1948:739.—Beardsley, 1961:354.

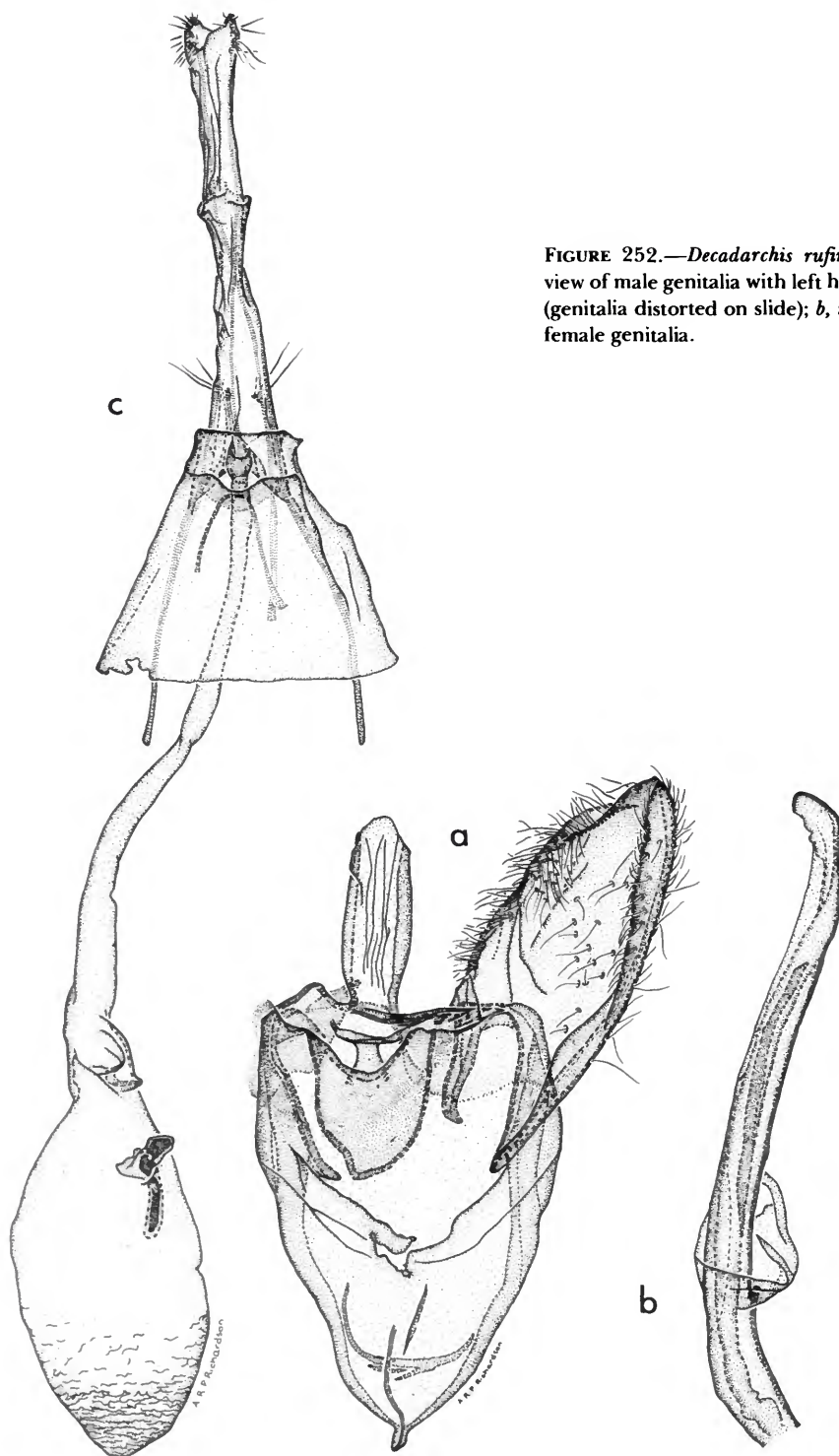


FIGURE 252.—*Decadarchis rufimacula* Meyrick: *a*, ventral view of male genitalia with left harpe and aedeagus removed (genitalia distorted on slide); *b*, aedeagus; *c*, ventral view of female genitalia.

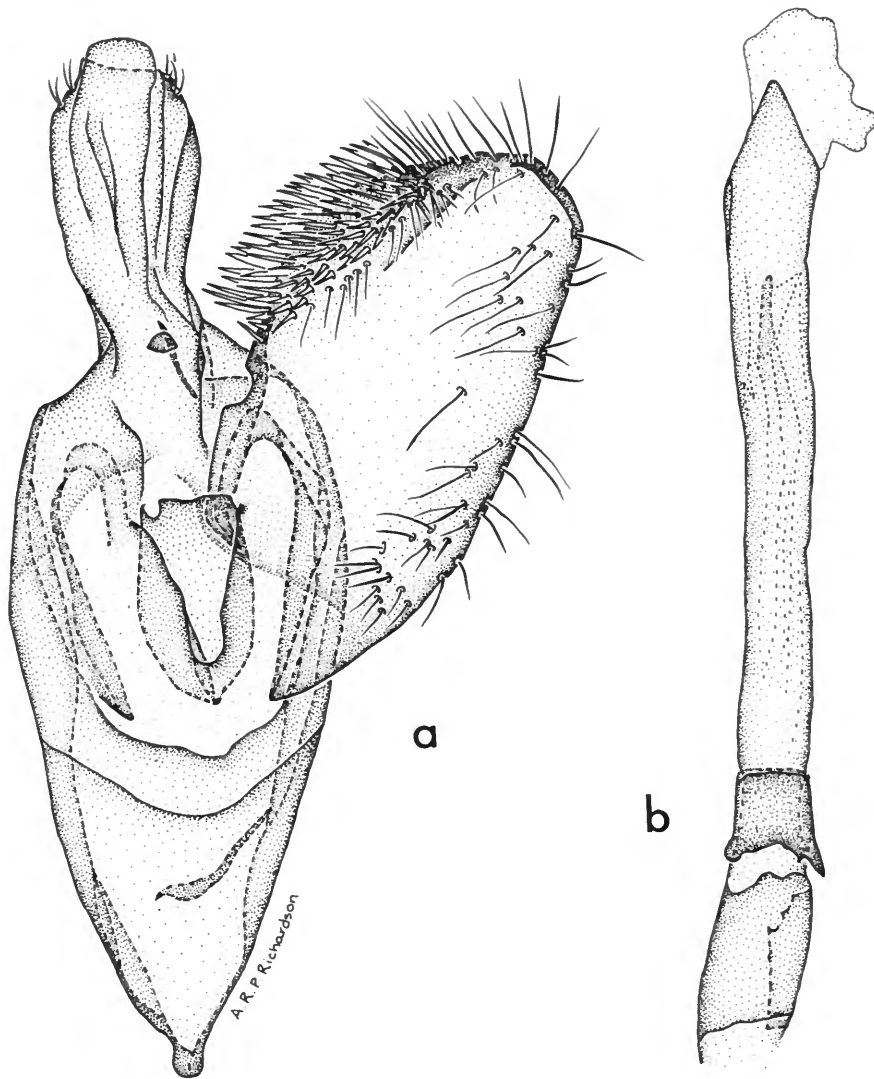


FIGURE 253.—*Decadarchis tritogramma*, new species: *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus.

Decadarchis minuscula (Walsingham).—Meyrick, 1929a: 505.—Harris, 1937:486.—Ghesquière, 1940:86.—Vesey-Fitzgerald, 1941:158.—Swezey, 1942:215.—Lepesme, 1947:318.—Viette, 1949a:316.—Swezey, 1952:378.—Davis, 1953:85.—Swezey, 1954:21, 147, 160, 187.—Diakonoff, 1968:265, 308, fig. 762.—Clarke, 1971:211, fig. 164, pl. 26e,f.

Lepidobregma minuscula (Walsingham).—Zimmerman, 1978:352, figs. 169, 171a, 173, 175, 177, 179, 180.

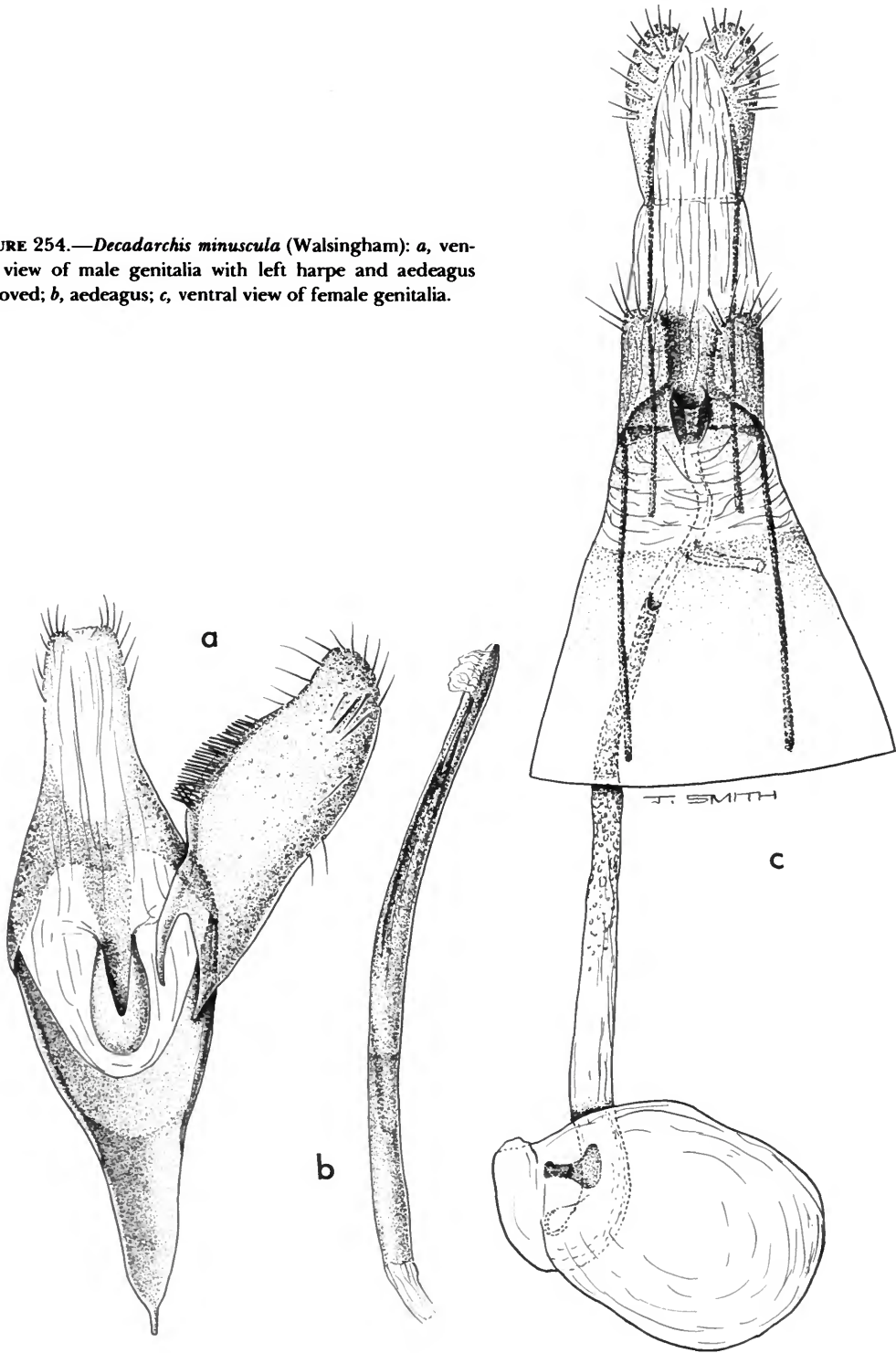
TYPE.—In the British Museum (Natural History).

TYPE-LOCALITY.—West Indies.

DISTRIBUTION.—Pantropical. West Indies, Virgin Islands, United States, Ceylon (Sri Lanka), Australia, Hawaii, Marquesas Islands, Rapa, Tahiti, Fiji, Solomon Islands, Seychelles, Caroline Islands, Samoa, Nigeria, Belgian Congo, Tanganyika, Java, Guyana (from gall on mango).

Our large series from the Marquesas is from the following islands. Nuku Hiva: Taiohae, 13 Jan to 18 Feb 1968, 127♂, 85♀. Hiva Oa: Atuona,

FIGURE 254.—*Decadarchis minuscula* (Walsingham): *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.



12 Feb to 6 Mar 1968, 1♂ 14♀. Fatu Hiva: Omoa, 11 Mar to 5 Apr 1968, 21♂, 27♀. Eiao: N. Uplands (400 m), 7 Aug 1977, 1♂, 1♀ (W.C. Gagne).

FOOD PLANTS.—The dead or decaying tissue of many hosts such as coconut, *Pandanus*, *Acacia*, *Cacao*, *Thespesia*, and *Tamarindus indica* L. Swezey (1910:142) records *minuscule* from "in dead stems . . . decaying pods of various legumes, and on dead leaves of banana, papaia, palm, *Pandanus*, pineapple, etc. . . ."

This common moth came readily to light, but also we were able to rear specimens from *Thespesia* and *Tamarindus*.

Decadarchis flavistriata (Walsingham)

Figures 255, 316e

- Ereunetis flavistriata* Walsingham, 1907:716, pl. 25: fig. 18.—Swezey, 1909:9. pl. 2: figs. 1–6; 1910:142; 1915a:101.—Auctorum, 1923:199.—Timberlake et al., 1924:442; 1926:320.—Williams, 1927:459.—Illingworth, 1927:394; 1928:44.—Swezey, 1929b:281.—Williams, 1931:152, pl. 25: figs. 1–2, pl. 26: figs. 1–6.—Ito and Carter, 1932:44.—Bianchi, 1940:385.—Linford, 1940:437–445.—Sakimura and Linford, 1940:453.—Swezey, 1940:458.—Auctorum, 1941:10.—Viette, 1951:14.—Beardsley, 1961:354.—Shiroma, 1963:209.
- Decadarchis flavistriata* (Walsingham).—Veitch, 1923:9, pl. 2: fig. 2.—Lepesme, 1947:322.—Bradley, 1961:163; 1962:270.—Clarke, 1971:213, fig. 165, pls. 27e, 29d.
- Erechthias* [sic] *flavistriata* (Walsingham).—Corbett, 1922:184.
- Decadarchis euophthalma* Meyrick, 1924b:83.—Bradley, 1961:163.
- Erechthias flavistriata* (Walsingham).—Meyrick, 1915a:233 [No. 269]; 1929a:505.—Viette, 1949a:316.—Swezey, 1954:57.
- Neodecadarchis flavistriata* (Walsingham).—Zimmerman, 1978:341, figs. 168, 171e, 172, 175–177, 179, 180–182.

TYPES.—In the British Museum (Natural History).

TYPE-LOCALITIES.—Lanai, Hawaii (*flavistriata*), Solomon Islands (*euophthalma*).

DISTRIBUTION.—Hawaii, New Zealand, Solomon Islands, Polynesia, Java, Malaya, New Hebrides, Fiji, Marquesas Islands, Rapa, Kermadec Islands.

The Marquesas records are from the following islands. Nuku Hiva: Pakiu Valley, 1000 ft (305 m) and 1800 ft (548 m), 19 Jan to 16 Mar 1968, 2♂, 2♀ (March dates are for specimens reared from *Cocos nucifera*). One specimen was beaten from dry banana leaves. Hiva Oa: Atuona, 11 Feb and 4 Mar 1968, 1♂, 1♀. Fata Hiva: Omoa, 11–15 Mar 1968, 3♂; Omoa Valley, 16 Mar 1968, 3♂.

FOOD PLANTS.—Sugarcane (Viette and others): *Cocos nucifera* L. (flowers; Meyrick): *Pandanus tectorius* Solander (dry, dead fruits, leaves).

In Fiji *flavistriata* is known as the "budmoth of sugarcane." The larva of this species will probably feed on any dry dead vegetable matter.

The genitalia of *flavistriata* were figured by Clarke (1971, fig. 165) but are repeated here for completeness.

Decadarchis simulans (Butler)

FIGURES 256, 316f,g

- Tinea simulans* Butler, 1882:43.
- Decadarchis simulans* (Butler).—Meyrick, 1927a:113; 1929a:506.—Swezey, 1942b:215; 1954:187, 188.—Bradley, 1957:109.—Comstock, 1966:67.—Dugdale, 1977:66.—Zimmerman, 1978:359, figs. 105c, 183, 186, 188, 191.
- Decadarchis melanastra* Meyrick, 1886b:291.
- Comodica decaspila* Lower, 1905:114.
- Ereunetis simulans* (Butler).—Walsingham, 1907:714, 715, 737, pl. 15: fig. 15.—Swezey, 1909:13, pl. 2: figs. 10–12; 1910:142.—Rebel, 1915:142.—Swezey, 1929a:278.—Illingworth, 1929:249.—Auctorum, 1936a:34.—Holdaway and Look, 1942:254.—Suehiro, 1960:293.—Beardsley, 1961:354.—Auctorum, 1965:29.—Sugerman, 1972:279.

Male genitalia slide USNM 25008. Harpe broad and stubby; from middle of costa a large swelling profusely clothed with setae; cucullus with outer edge dentate. Uncus divided posteriorly, lightly sclerotized laterally. Vinculum very broad and flattened distally. Tegumen a rather narrow ring. Anellus cup-shaped proximally. Aedeagus long and slender; cornutus long, slender.

Female genitalia slide USNM 25009. Ostium U-shaped, narrow. Antrum a sclerotized tube.

FIGURE 255.—*Decadarchis flavistriata* (Walsingham); *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.

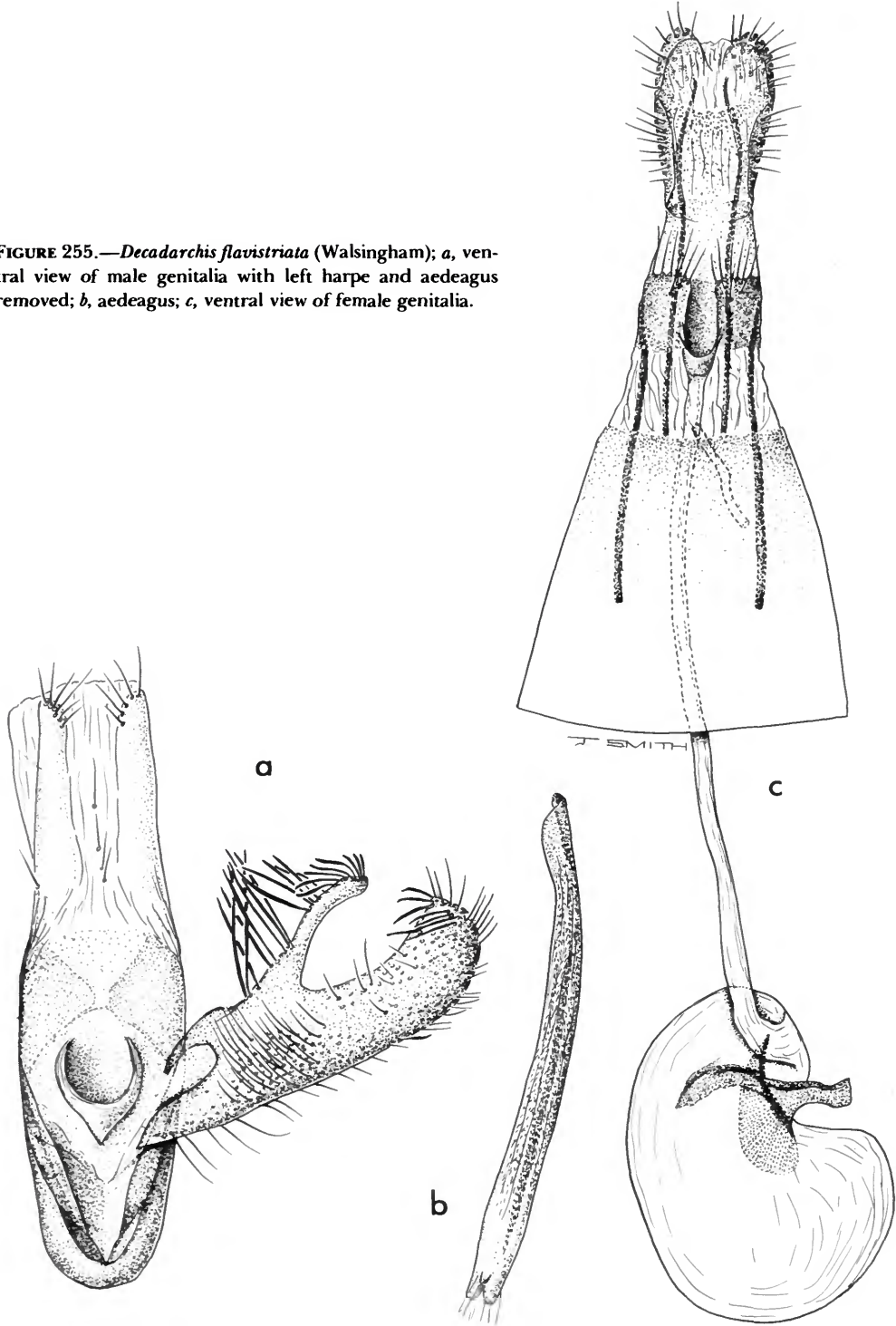
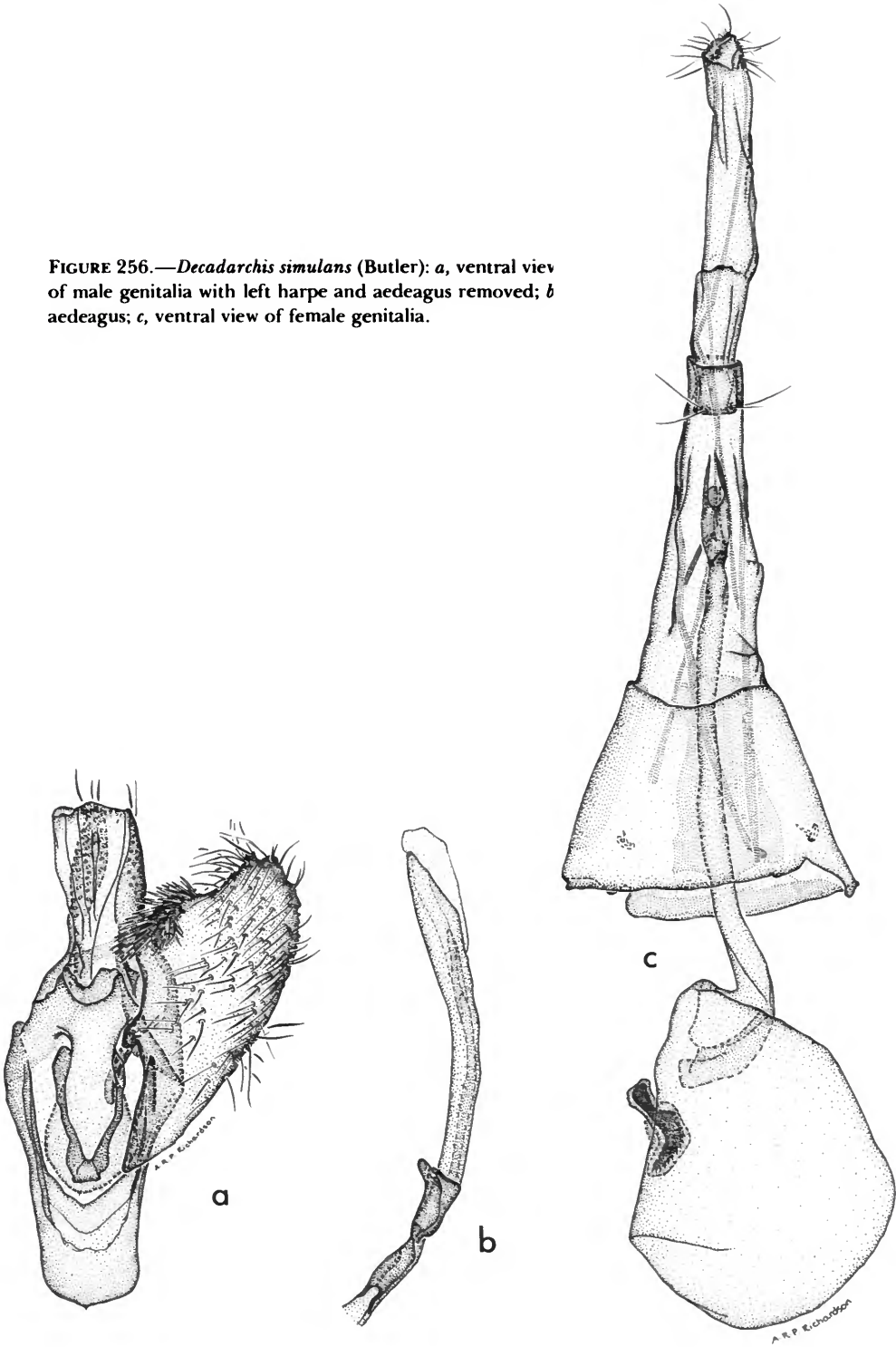


FIGURE 256.—*Decadarchis simulans* (Butler): *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b* aedeagus; *c*, ventral view of female genitalia.



Inception of ductus seminalis from base of antrum, dorsally. Ductus bursae membranous posteriorly, sclerotized anteriorly and formed as a broad loop where it joins the bursa copulatrix. Bursa copulatrix ornamented with a reticulum of fine ridges. Signum a sickle-shaped process; capitulum well developed.

TYPES.—In the British Museum (Natural History) (*simulans*, *melanastra*); in the South Australian Museum? (*decaspila*).

TYPE-LOCALITIES.—Hawaii, Honolulu (*simulans*); Fiji (*melanastra*); Cookstown, Queensland (*decaspila*).

DISTRIBUTION.—Widespread in the tropical Pacific. Hawaii, Solomon Islands, Fiji, Samoa, Elice Islands, Midway, Society Islands, Australia, Marquesas Islands.

Our series from the Marquesas Islands is as follows. Nuku Hiva: Taiohae, 17 Jan to 5 Feb 1968, 10♀. Hiva Oa: Atuona, 23–27 Feb 1968, 3♀. Tahuata: (Meyrick, 1929a:506).

FOOD PLANTS.—Numerous plants, where the larva feeds on dead and decaying tissue. Zimmerman (1978:359) records the following hosts: *Coffea*, *Hibiscus tiliaceus* L., *Samanea saman* (Jacquin) Merrill, *Sapindus oahuensis* Hillebrand ex Radlkofer.

Prehistorically this widespread species probably was carried from place to place in native canoes. Now, its habit of feeding on dead vegetable matter probably contributes to its distribution in commerce.

It should be noted that only females were collected by us in the Marquesas. The male genitalia have been figured from a male from Tahiti.

***Decadarchis penicillata* (Swezey), new combination**

FIGURES 257, 317a,b

Ereunetis penicillata Swezey, 1909:13; 1910:142; 1915b:69; 1917:297; 1954:146.

Pantheus penicillatus (Swezey).—Zimmerman, 1978:354, figs. 105d, 170, 171b, 174, 175, 178.

Male genitalia slides USNM 25044, 25070. Harpe of about equal width throughout; costa

armed with an elongate patch of stout setae; outer margin of cucullus with shallow excavation. Uncus lightly sclerotized laterally. Vinculum a broad band; saccus sharply pointed. Tegumen a narrow sclerotized band. Anellus cup-shaped with a short, truncated ventral process. Aedeagus slender, curved, pointed, nearly twice as long as harpe; vesica armed with two rows of dentate cornuti and an elongate pair.

Female genitalia slide USNM 25045. Ostium funnel-shaped. Inception of ductus seminalis well before ostium. Ductus bursae membranous. Bursa copulatrix lightly rugose anteriorly and posteriorly. Signum broad, spoon shaped; capitulum large, prominent.

HOLOTYPE.—In the Bernice P. Bishop Museum.

TYPE-LOCALITY.—Kilauea, Kauai.

DISTRIBUTION.—Marquesas Islands, Hawaiian Islands.

We have five specimens from the Marquesas as follows. Hiva Oa: Atuona, 15–23 Feb 1968, 3♂; Fatu Hiva: Omoa, 15 Mar 1968, 1♂, 1♀.

FOOD PLANT.—*Pandanus* leaves (dried).

This species appears to be related to *Decadarchis cirrhogramma* Clarke (1971:205), having the same type of signum and the excavation of the outer edge of the cucullus, but differing from the latter by the dentate cornuti.

Zimmerman (1978:354) gives an excellent account of this species, but had no females. We have one female the genitalia of which are typical of the genus *Decadarchis*, as are those of the male, so I am placing the species in this genus.

Genus *Erechthias* Meyrick

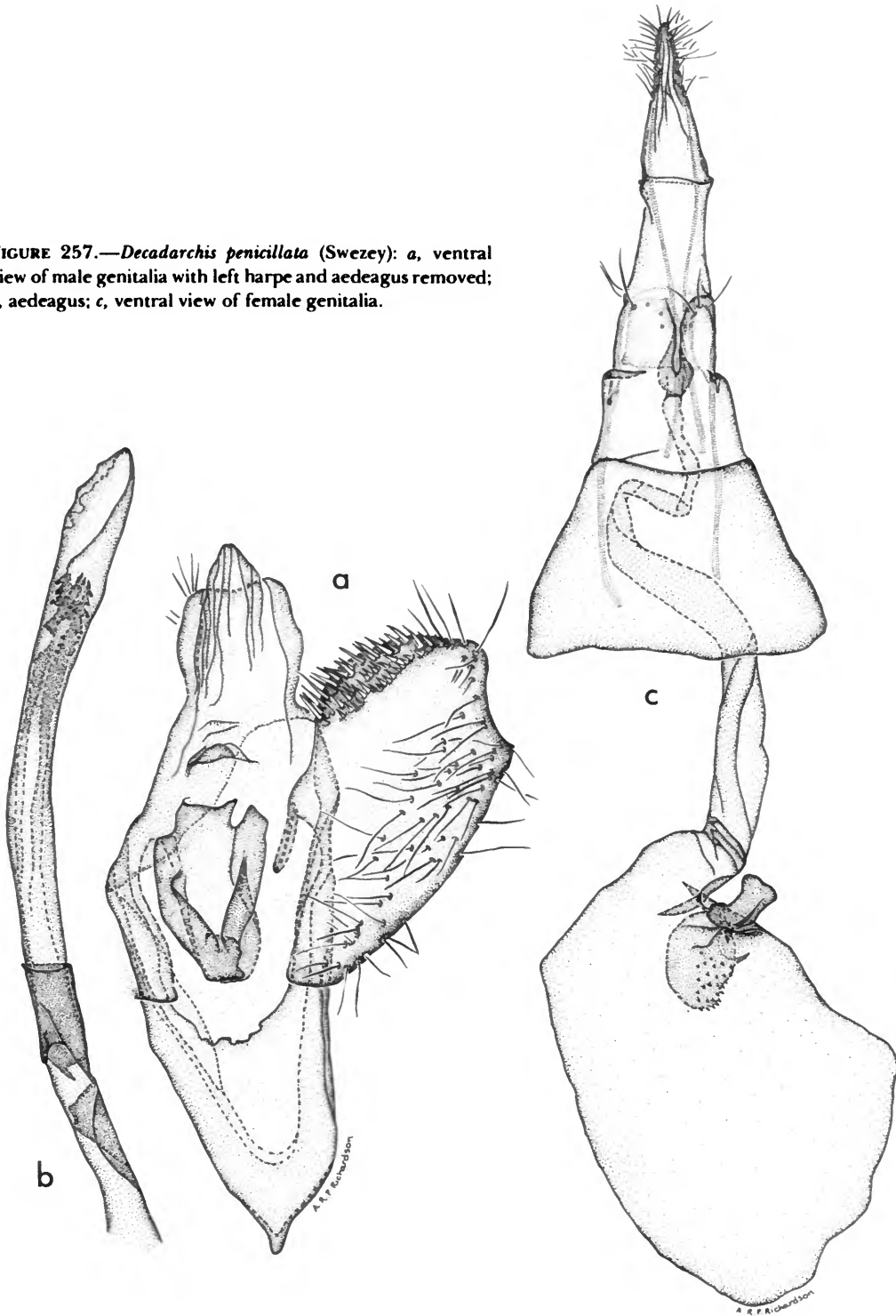
Erechthias Meyrick, 1880b:261.

TYPE-SPECIES.—*Erechthias charadrota* Meyrick, 1880b:268; subsequent designation by Meyrick, 1915a:233.

Under this genus Robinson (1983:306) synonymized eleven (11) genera, among them the genus *Decadarchis* Meyrick.

Admittedly, the genitalia of *Decadarchis* and *Erechthias* are strikingly similar, and obviously

FIGURE 257.—*Decadarchis penicillata* (Swezey): *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.



they are closely related, but I am retaining the genus *Decadarchis* based on the key characters. Some of the genera treated by Robinson are obvious synonyms of *Decadarchis*, not *Erechthias*; others I do not know so cannot comment on them; moreover, they are beyond the scope of this study.

***Erechthias zebrina* (Butler)**

FIGURES 258, 316*h*

Argyresthia zebrina Butler, 1881:403.

Erechthias zebrina (Butler).—Fletcher, 1921a:178.—Meyrick, 1927a:111; 1929a:505; 1930a:322.—Viette, 1949a:316.—Clarke, 1971:196, figs. 152, 153, pl. 27*h*.—Zimmerman, 1978:365, figs. 192, 194, 195.

Ereunetis zebrina (Butler).—Walsingham, 1907:715, pl. 25: fig. 16.

Ereunetis xenica Meyrick, 1911b:301.

Comodica lanceolata (Walsingham).—Walsingham, 1914 [1909–1915]: 346.

Erechthias[sic] zebrina (Butler).—Ghesquière, 1940:86.

Tinexotaxa travestita Gozmány, 1968:306, figs. 8–11.—Davis, in Hodges et al., 1983:5 [No. 303.]

TYPES.—In the British Museum (Natural History).

TYPE-LOCALITIES.—Honolulu, Hawaii (*zebrina*); Saint Thomas, Danish West Indies (*lanceolata*); Seychelles, Cascade Estate, Mahé (*xenica*).

DISTRIBUTION.—Pantropical: Brazil, Saint Thomas, Puerto Rico, Mexico, Panama Canal Zone, Cuba, Jamaica, Seychelles, Mauritius, Borneo, Fiji, Society Islands, Ceylon (Sri Lanka), China, India, Java, Sumatra, Assam, Belgian Congo, Cameroun, Madagascar, Hawaii, Rapa, Marquesas Islands, Caroline Islands.

Our specimens from the Marquesas consist of the following. Hiva Oa: Atuona, 15 Feb to 3 Mar 1968, 4♂, 5♀; Fatu Hiva: Omoa, 11–30 Mar 1968, 1♂, 2♀.

FOODS.—Fruits of *Cola acuminata* Schott and Endlicher, and of false cotton; galls of *Lophira alata* Banks (Clarke, 1971:196); also abandoned cocoons (Ghesquière, 1940:87).

The genitalia of this species have been illustrated by Clarke (1971, fig. 153) and Zimmer-

man (1978, figs. 192, 194, 195) but are repeated here for completeness.

Genus *Tinea* Linnaeus

Tinea Linnaeus, 1758:496.

TYPE-SPECIES.—*Phalaena Tinea pellionella* Linnaeus, 1758:536; subsequent designation by International Commission of Zoological Nomenclature, 1957, Opinions, Declarations, International Commission on Zoological Nomenclature, 15 (Opinion 450): 254. (See Robinson, 1979:62).

***Tinea oxymora* Meyrick**

FIGURES 259, 317*c*

Tinea oxymora Meyrick, 1919:274.—Clarke, 1955 [1955–1970]: 230; 1970 [1955–1970], 8:99, pl. 49: figs. 3–3*b*.

Male genitalia slides USNM 25027, 25030, 25040. Harpe simple, narrow, of nearly equal width throughout; cucullus with oblique, straight outer edge. Gnathos unusually long and narrow, pointed distally. Uncus elongate, triangular, twice as long as tegumen. Vinculum a weak, narrow band; saccus slender, about half as long as harpe. Tegumen short, broad. Anellus tubular with a small ventral plate. Aedeagus straight, as long as harpe, distally armed with a cluster of stout, short spines; vesica armed with a single, weak cornutus.

Female genitalia slides USNM 25031, 25041. Ostium funnel-shaped; lamella antevaginalis two sclerotized plates clothed posteriorly with long setae. Inception of ductus seminalis well before ostium. Ductus bursae membranous, about as long as bursa copulatrix. Bursa copulatrix membranous. Signum three or four small sclerotized plates each with a long, attenuated spine.

LECTOTYPE.—In the British Museum (Natural History).

TYPE-LOCALITY.—Peru, Chosica.

DISTRIBUTION.—Peru, Marquesas Islands.

Nuku Hiva: Taiohae, 14 Jan 1968, 1♂. Hiva Oa: Atuona, 15 Feb to 6 Mar 1968, 11♂, 4♀. Fatu Hiva: Omoa, 14 Mar 1968, 1♂.

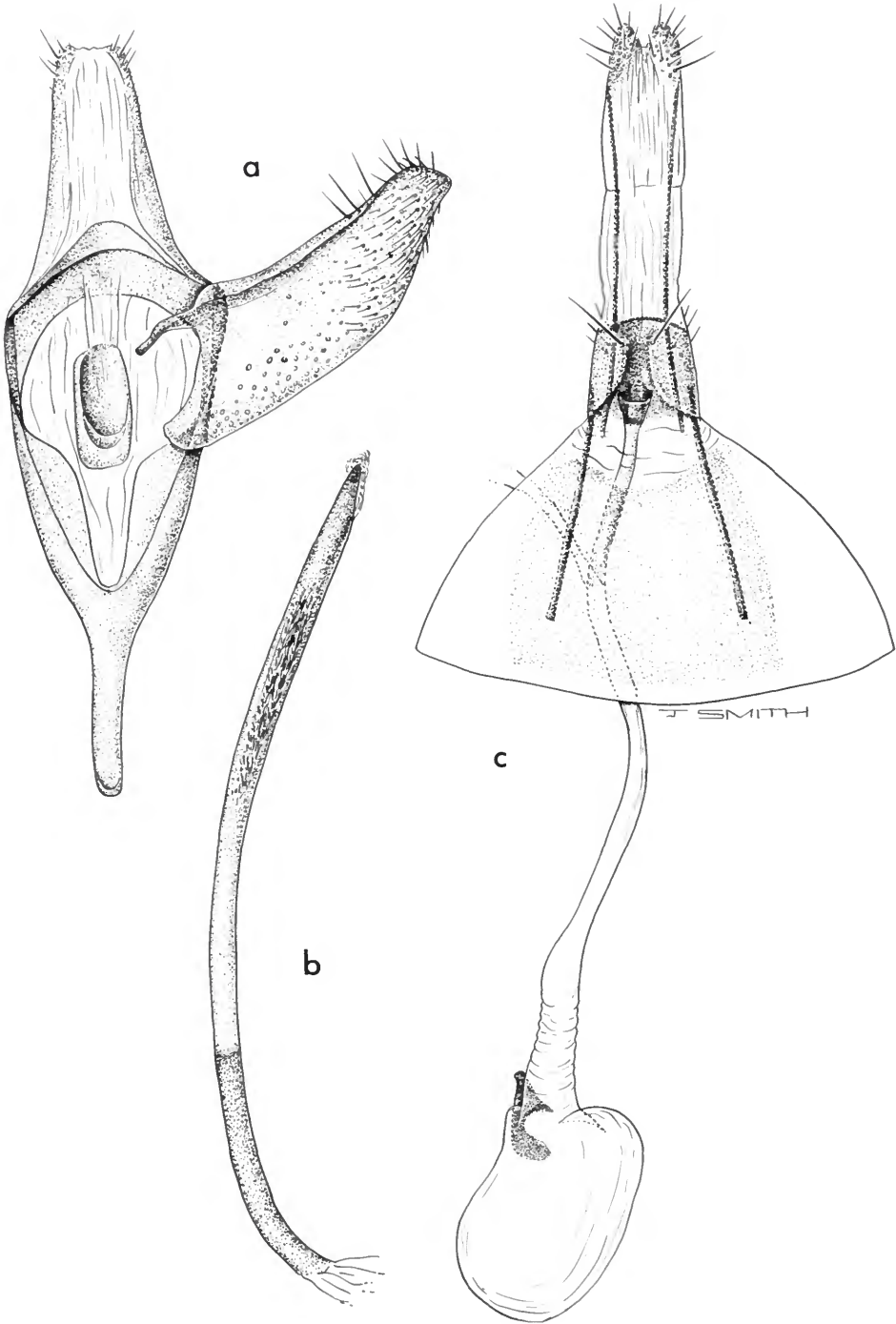
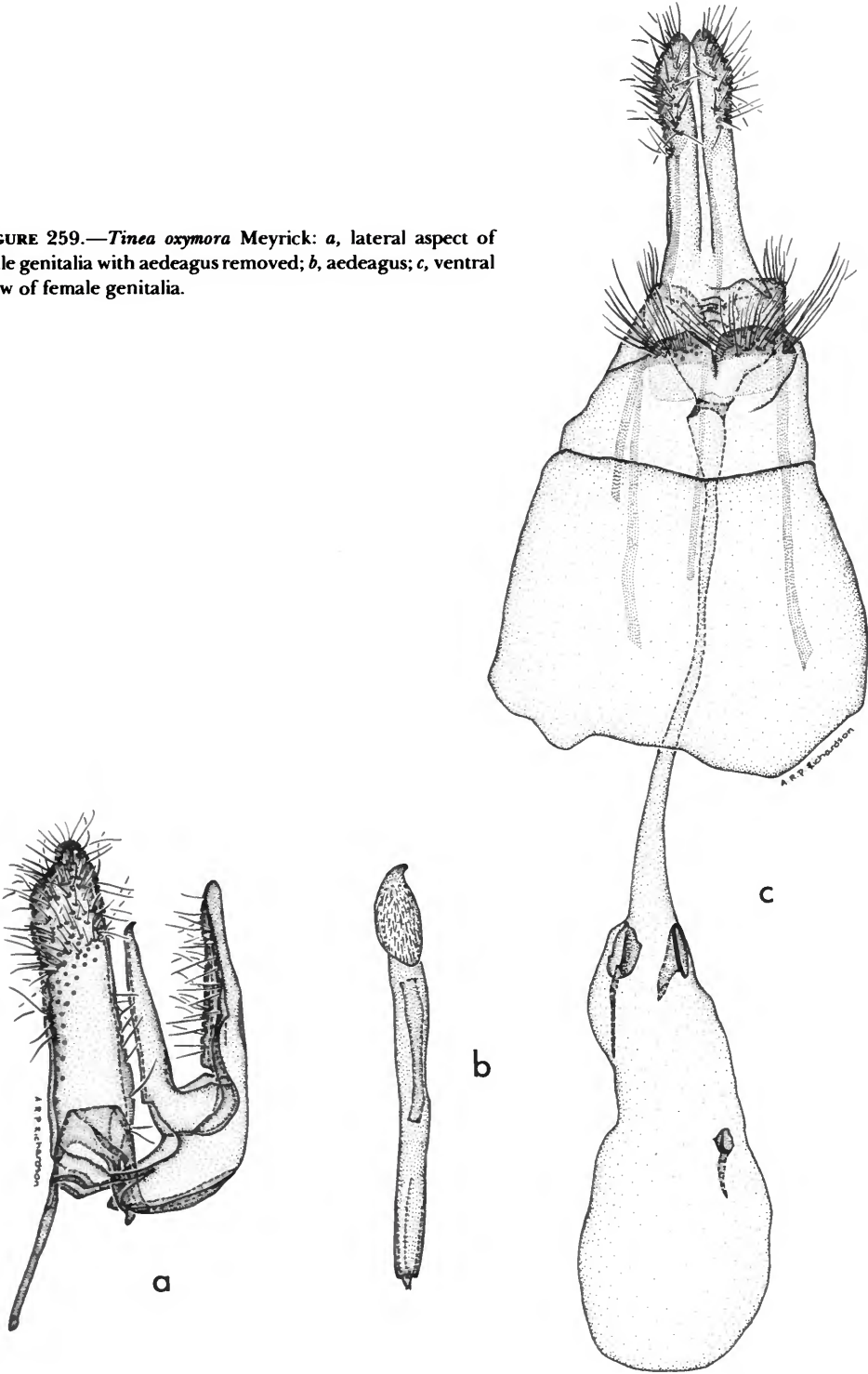


FIGURE 258.—*Erechthias zebrina* (Butler): a, ventral view of male genitalia with left harpe and aedeagus removed; b, aedeagus; c, ventral view of female genitalia.

FIGURE 259.—*Tinea oxymora* Meyrick: *a*, lateral aspect of male genitalia with aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.



FOODS.—Probably refuse and decaying vegetable matter.

The venation shows nothing to prevent retention of this species in *Tinea*, although the genitalia suggest that a new genus may be necessary to accommodate *oxymora*.

Despite the fact that this species was described from Peru, there appears to be no doubt about the identity of the Marquesan examples. The species is probably a refuse feeder, a "tramp species," but all of our material was collected at black light.

Wyoma, new genus

TYPE-SPECIES.—*Wyoma dysgnoia*, new species; by monotypy and present designation. The gender of the generic name is feminine.

Antenna simple, slightly thicker in male than in female, about as long as forewing; scape with weak pecten. Labial palpus drooping; second segment with strong cluster of bristles on outer side distally; third segment shorter than second. Maxillary palpus long, folded, four-segmented. Tongue well developed, naked. Head roughened with hairlike scales. Forewing smooth, costa very slightly arched, termen oblique, apex rounded; 12 veins, all separate; 1b simple; 2 from near angle; 4 nearer to 5 than to 3; 7 to costa slightly before apex; 9 nearer to 8 than to 10; 10 distant from 11; 11 from basal fourth. Hindwing with 8 veins, all separate; anal veins obsolete; 2 from well before angle; 3 nearer to 2 than to 4; 4 to 6 about equidistant; 7 to costa slightly before apex.

Male genitalia symmetrical; uncus and gnathos present; socius absent.

Female genitalia, presence or absence of signum not known (genitalia badly disintegrated; Figure 260*d*).

Apparently this genus is closely related to *Tinea*, having similar male genitalia; but the female genitalia are very different. The venation of both fore- and hindwings of *Wyoma* is simple, all veins being separate. In *Tinea*, however, 6 and 7 are stalked in forewing, and 5 and 6 are stalked in hindwing.

Wyoma dysgnoia, new species

FIGURES 260, 317*d*

Alar expanse 8–11 mm.

Labial palpus second segment shining creamy white on inner surface, fuscous on outer surface; third segment sordid white with broad grayish fuscous annulus basally. Antenna fuscous dorsally; creamy white ventrally; head grayish fuscous on vertex; face white. Thorax fuscous. Forewing ground color fuscous; on basal third a large whitish wedge-shaped mark with two short, outwardly oblique fuscous dashes; slightly beyond middle of costa a subrectangular whitish mark containing two fuscous dashes; beyond this mark two small whitish transverse marks followed at apex by a triangular yellowish spot; dorsum mottled whitish and fuscous; above tornus a subtriangular yellowish mark; cilia mixed grayish and fuscous with a small yellowish group at apex. Hindwing light gray; cilia sordid white strongly suffused light brownish basally. All legs buff strongly marked fuscous. Abdomen fuscous dorsally; ventrally buff, suffused grayish; from each side of the second pleuron of the male an eversible sac.

Male genitalia slide USNM 25074. Harpe simple, of nearly equal width throughout; cucullus pointed. Gnathos elements fused forming a curved point. Uncus triangular. Vinculum broad; saccus nearly as long as harpe. Tegumen subquadrate. Anellus membranous. Aedeagus slender, straight, longer than harpe; bulbous at base.

Female genitalia slide USNM 25104. Ostium elongate, slitlike. Antrum lightly sclerotized. Inception of ductus seminalis from anterior end of ductus bursae. Ductus bursae very slender, membranous. Bursa copulatrix with two heavily sclerotized sections, the posterior one narrower than the anterior; at the posterior end of each sclerotized section a conspicuous "collar" and each section crisscrossed by multiple narrow ridges; (anterior part of bursa destroyed).

HOLOTYPE.—USNM 100845.

TYPE-LOCALITY.—Hiva Oa, Atuona.

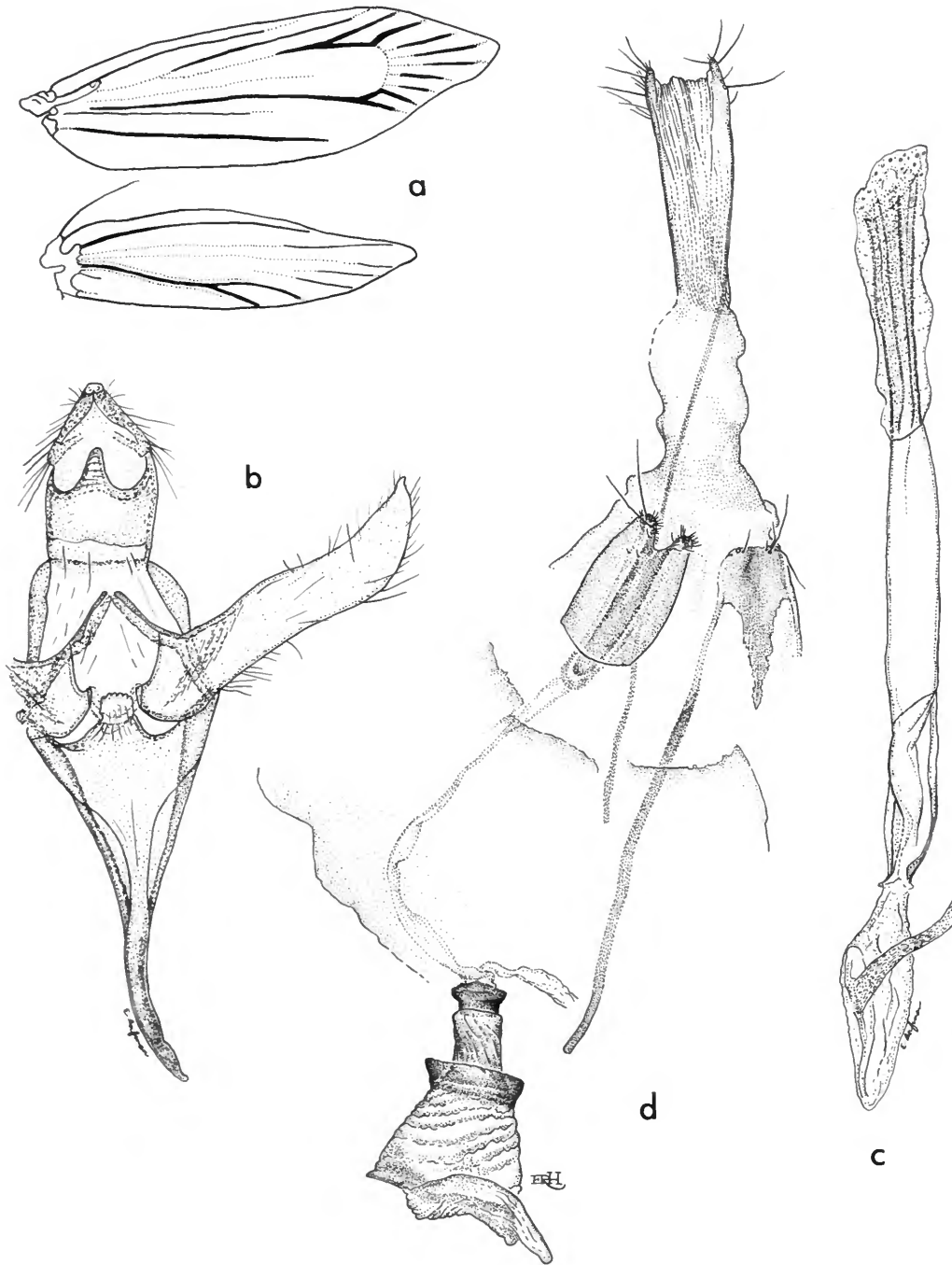


FIGURE 260.—*Wyoma dysgnoia*, new species: *a*, venation of right wings; *b*, ventral view of male genitalia with left harpe and aedeagus removed; *c*, aedeagus; *d*, female genitalia (damaged).

DISTRIBUTION.—Hiva Oa.

FOOD—Unknown.

Described from the ♂ holotype (25 Feb 1968) 3♂ and 1♀ paratypes, 23–27 Feb 1968.

This reminds one of *Erechthias zebrina* (Butler) but is distinguished from it by the costal markings and the genitalia.

I have not been able to place this species in any genus known to me, although the venation appears to agree with that of *Tineola* Herrich-Schäffer, but the female genitalia of *dysgnoia* are very unlike those of *T. bisselliella* (Hummel, 1823:13) the type of *Tineola*.

The markings of the forewing of *dysgnoia* vary from specimen to specimen, while retaining the same general pattern. In one specimen the markings differ on each side.

Genus *Phereoeca* Hinton and Bradley

Phereoeca Hinton and Bradley, 1956:45.

TYPE-SPECIES.—*Tineola uterella* Walsingham, 1897:165, by original designation.

Phereoeca allutella (Rebel)

FIGURES 261, 317e

Tineola Allutella Rebel, 1892:270, pl. 17: fig. 3; 1896:124.—Staudinger and Rebel, 1901:240 [No. 4623].

Tineola allutella Rebel.—Walsingham, 1894:537, 542.—Rebel, 1906:44.—Walsingham, 1908:1026.—Rebel, 1911:367 [No. 360].—Busck, 1934:188–189.

Tinea allutella (Rebel).—Fletcher, 1933:76.—Busck, 1934:188.—Ghesquière, 1940:6; 1941:762.

Phereoeca allutella (Rebel).—Hinton and Bradley, 1956:46.—Hinton, 1956:258, 327.—Petersen, 1957 [1957–1958]:342, fig. 153; 1958 [1957–1958]:422.—Gozmány, 1967:23, 25.—Gozmány and Vari, 1973:16, 17.—Zimmerman, 1978:298, figs. 135, 136, 137, 138, 139.—Aiello, 1979:125–136, figs. 1–14.

Tinea pachyspila Meyrick, 1905:619.—Fletcher, 1914:466, fig. 342; 1921:191.—Meyrick, 1927a:116.—Clarke, 1955 [1955–1970]:232 [synonymy by Zimmerman, 1978].

Male genitalia slides USNM 25018, 25026. Harpe slender, broadest basally; costa with prominent protuberance at basal third. Gnathos con-

sisting of two slender, curved elements. Uncus long, narrow, truncated. Vinculum a slender band; saccus long; slender. Tegumen elongate. Anellus membranous. Aedeagus moderately slender, slightly curved, slightly swollen distally.

Female genitalia slide USNM 25032. Ostium elongate, dorsad of two sclerotized protuberances. Antrum strongly sclerotized. Inception of ductus seminalis slightly anterior to antrum. Ductus bursae membranous. Bursa copulatrix membranous. Signum absent.

LECTOTYPE.—Male, 10 mm. A small printed label reads "Simony [Prof. Dr. Oscar Simony] '89 Palma." A second label has the inscription "*Tineola Allutella* Reb.," with "type" below in red. A third, red label reads "Paratypus." A fourth label "♂ hiervon micro. Präp. Kopulat.—Apparat," is pinned below. My lectotype label is attached. Lectotype hereby designated.

The species was described from four examples. I have selected the specimen from which G. Petersen made a genitalic preparation, his Gen. Präp 6003.

Lectotypes are in the Naturhistorisches Museum, Vienna (*allutella*); in the British Museum (Natural History) (*pachyspila*).

TYPE-LOCALITIES.—Tenerife (*allutella*); Ceylon (*pachyspila*).

DISTRIBUTION.—Madeira, Canary Islands, Africa, Seychelles, Sri Lanka (Ceylon), India, Java, Samoa, Hawaiian Islands, Marquesas Islands, Panama.

At this time it appears that *allutella* is established on only one island in the Marquesas. Hiva Oa: Atuona, 27 Feb to 7 Mar 1968, 3♂, 2♀.

FOOD.—Flannel, furs, refuse, etc.

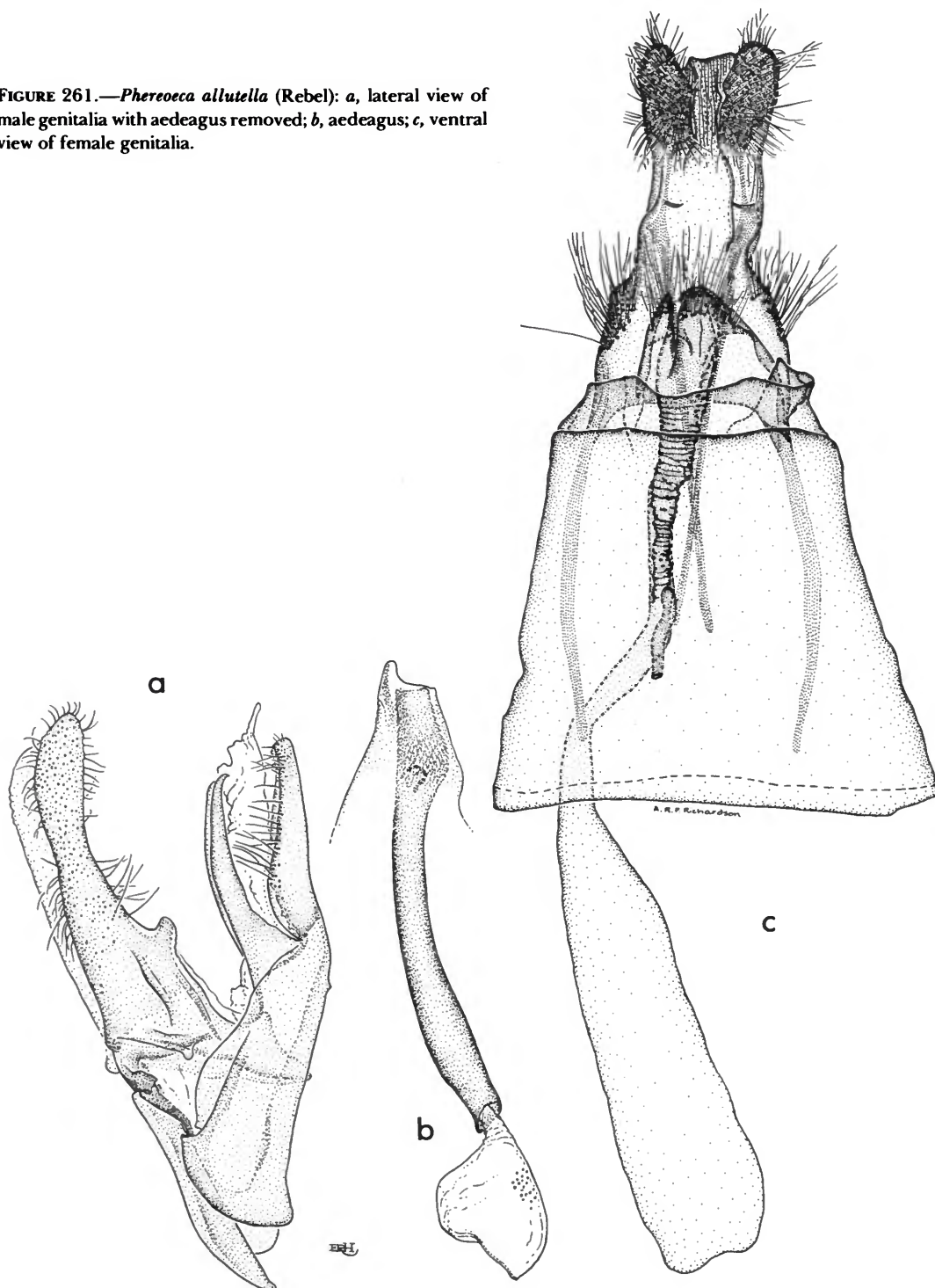
The distinctive feature of the male genitalia is the prominent protuberance from the costa of the harpe.

Genus *Trichophaga* Ragonot

Trichophaga Ragonot, 1894a:123.

TYPE-SPECIES.—*Trichophaga coprobiella* Ragonot, 1894a:121; by original designation.

FIGURE 261.—*Phereoeca allutella* (Rebel): *a*, lateral view of male genitalia with aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.



Trichophaga mormopis Meyrick

FIGURES 262, 317f

Trichophaga mormopis Meyrick, 1935b:575.—Ghesquière, 1940:5.—Clarke, 1955 [1955–1970]:211.—Gozmány, 1967:7, figs. 5, 6.—Zimmerman, 1978, p. 305, figs. 143, 144, 145.

Trichophaga percna Corbet and Tams, 1943b:131, fig. 5; 1943c:107, 119, fig. 214.—Hinton, 1956:328.—Gozmány, 1967:7.

Male genitalia slide USNM 25046. Harpe with arched costa; cucullus curved inwardly, sharply pointed; sacculus with median ridge. Gnathos with lateral elements fused at middle. Uncus large, hoodlike, with deep median cleft. Vinculum with ventral median projection; saccus long, slender distally. Tegumen much longer than broad. Anellus membranous basally with a large sclerotized hood dorsoposteriorly. Aedeagus twice as long as harpe, straight, bulbous proximally, armed with row of teeth on opposite sides distally.

TYPES.—In the Musée du Congo Belge, Tervueren, Belgium (*mormopis*); in the British Museum (Natural History) (*percna*).

TYPE-LOCALITIES.—Belgian Congo, Elizabethville (*mormopis*); Gold Coast, Accra (*percna*).

DISTRIBUTION.—Belgian Congo, Hawaiian Islands (Oahu, Maui), India, Sri Lanka (Ceylon), Malaya, Formosa, Fiji, Fatu Hiva.

Fatu Hiva: Omoa, 11 Mar 1968, 1♂.

FOODS.—Furs, skins, woolen materials, feathers.

We have only a single male as listed above. No female is available for study. This widespread species is transported in commerce and is undoubtedly well established in the Marquesas Islands.

Genus *Comodica* Meyrick

Comodica Meyrick, 1880b:254.

TYPE-SPECIES.—*Comodica tetracercella* Meyrick, 1880b:255; by monotypy.

Comodica signata, new species

FIGURES 263, 317g

Alar expanse 8–9 mm.

Labial palpus pale ochraceous buff proximally, shading to white distally; third segment pale ochraceous buff on inner surface, fuscous on outer surface. Antenna flagellum light buff ventrally, dorsally buff at base shading to fuscous at apex; scape pale ochraceous buff. Head light ochraceous buff anteriorly, dark tawny olive on vertex. Thorax fuscous, with light ochraceous buff posteriorly; tegula light ochraceous buff. Forewing ground color ochraceous buff; from base, nearly to apex, a fuscous median streak, broadest about middle; at about one-third of costa an outwardly oblique fuscous dash reaches median streak and is followed by a parallel white streak; beyond this another outwardly oblique dash, this in turn followed by a fine, outwardly curved white line that crosses the median streak at tornus; beyond the outwardly curved white line two short fuscous dashes with ground color between; extreme outer edge of costa white; on base of dorsum a fuscous blotch followed by three outwardly oblique fuscous dashes; cilia light ochraceous buff. Hindwing grayish fuscous; cilia a shade lighter. Foreleg pale ochraceous buff; tarsal segments marked fuscous; midleg pale ochraceous buff; tarsal segments marked with two blackish fuscous dashes; hindleg pale ochraceous buff; tibia with blackish fuscous hair-like scales dorsally. Abdomen grayish fuscous dorsally, pale ochraceous buff ventrally.

Female genitalia slides USNM 25072, 25073. Ostium very small. Inception of ductus seminalis slightly before ostium. Ductus bursae long, slender, membranous. Bursa copulatrix membranous. Signum slender, thornlike.

HOLOTYPE.—USNM 100846.

TYPE-LOCALITY.—Nuku Hiva, Taiohae.

DISTRIBUTION.—Marquesas Islands.

FOOD PLANT.—Unknown.

Described from the ♀ holotype (2 Feb 1968) and 3♂ paratypes, Hiva Oa, 29 Feb and 7 Mar

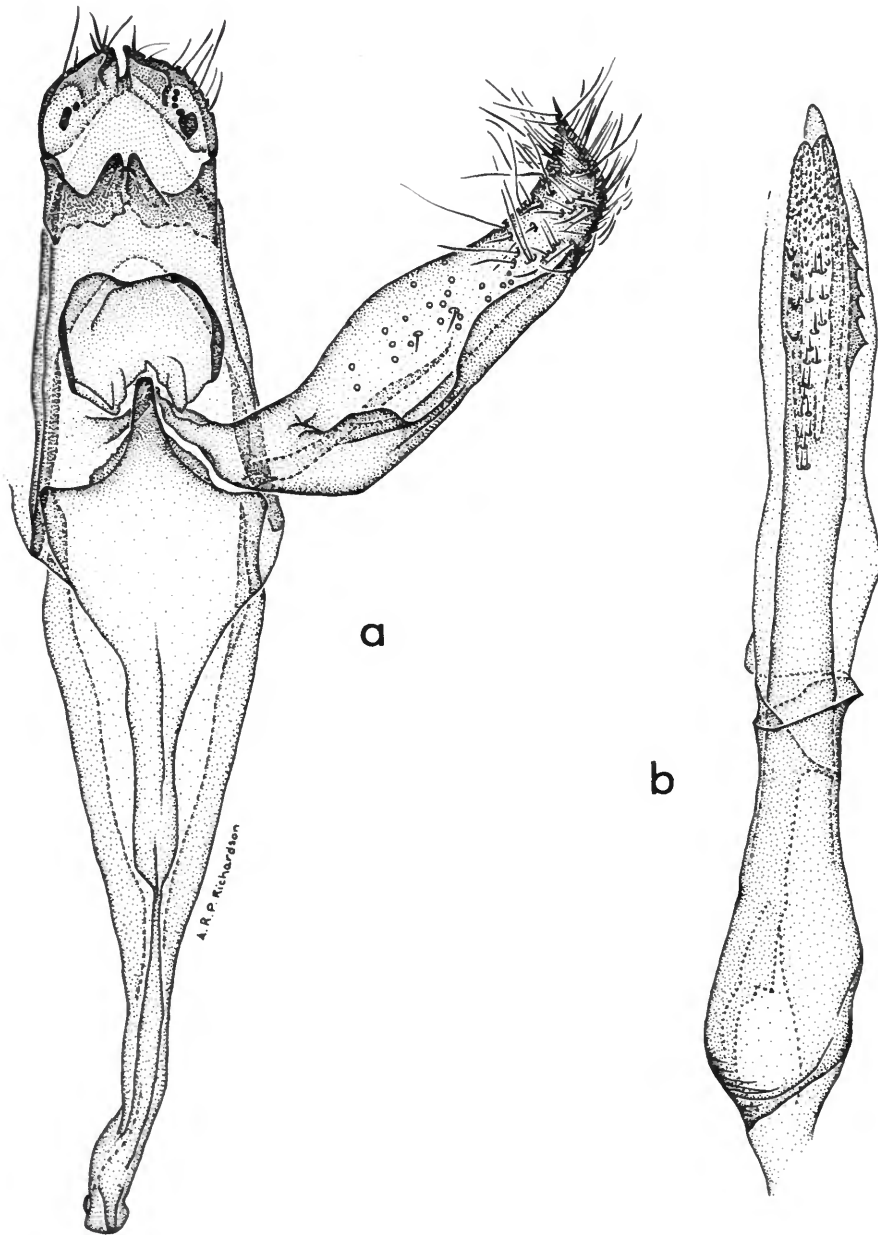


FIGURE 262.—*Trichophaga mormopis* Meyrick: *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus.

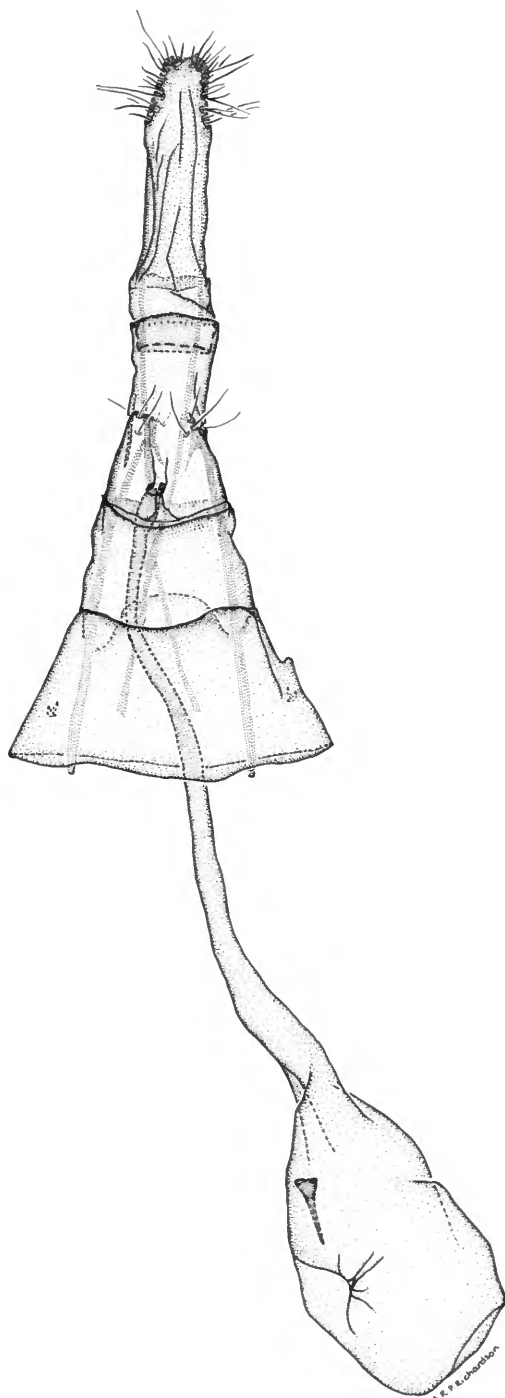


FIGURE 263.—*Comodica signata*, new species, ventral view of female genitalia.

1968; 2♀ paratypes, Nuku Hiva, Taiohae, 14 and 25 Jan 1968.

In placing this species in *Comodica* I recognize several minor differences between the Marquesan specimens and the type of the genus as described by Meyrick. Although the third segment of the labial palpus is shorter than the second it is not "much shorter" as described. Meyrick described the hindwing as having all veins separate. In one Marquesan specimen 5 and 6 are distinctly separate, in the one figured (Figure 317g) 6 is obsolete toward base, but its direction suggests that it would have been stalked with 5 had it been complete; 6 does go to apex of hindwing as described.

The female genitalia of a *Comodica* species have not been figured previously. For the figure of male genitalia, see Clarke (1970 [1955–1970], 8, pl. 28: figs. 2–2b).

This species is probably nearest the Fijian species *Comodica disparata* (Meyrick) (1923a:24) but differs from it by the darker thorax and darker ground color of the forewing.

Genus *Setomorpha* Zeller

Setomorpha Zeller, 1852 [1854]:93.

TYPE-SPECIES.—*Setomorpha rutella* Zeller, 1852 [1854]:94; by monotypy.

Setomorpha rutella Zeller

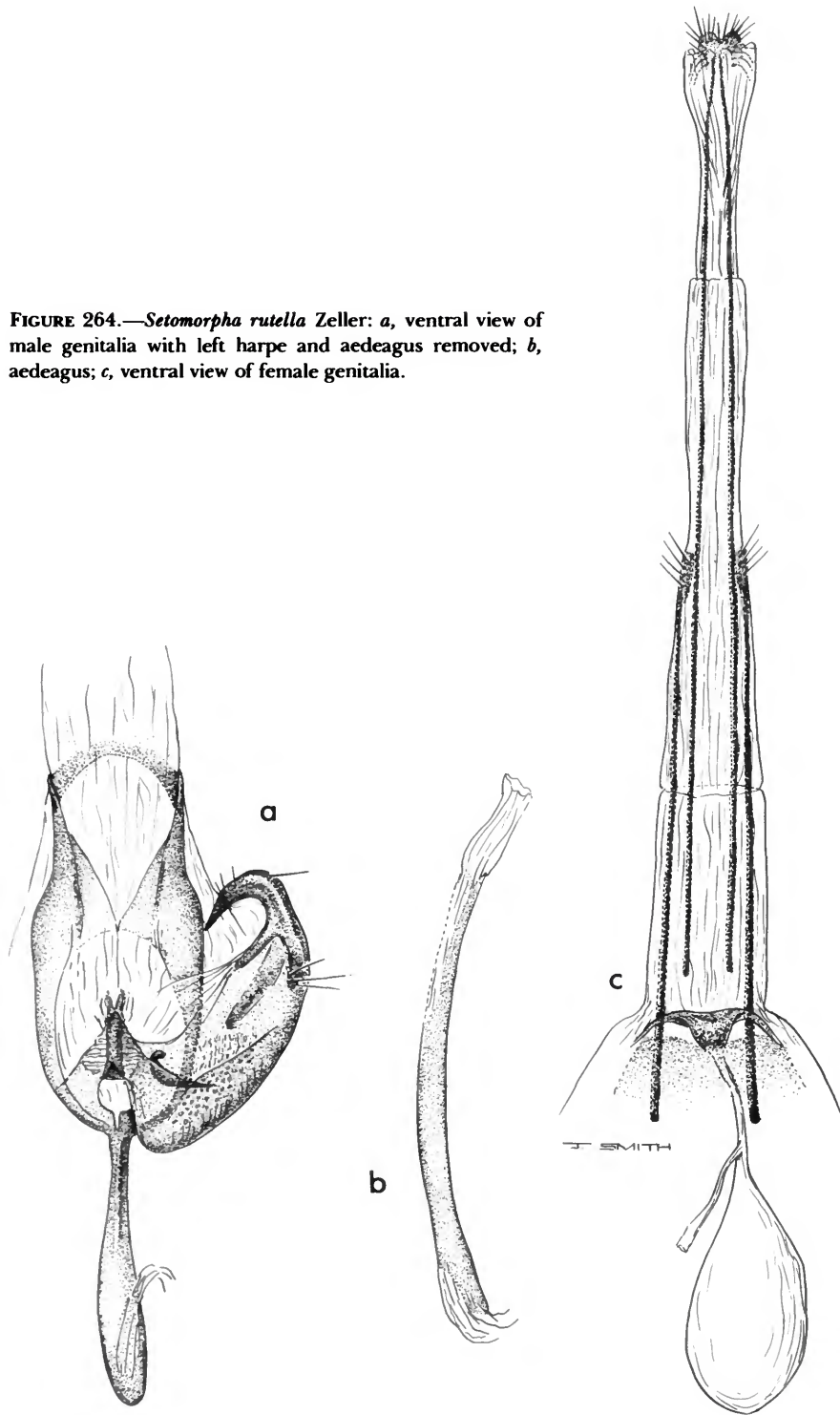
FIGURES 264, 317h

Setomorpha rutella Zeller, 1852 [1854]:94.—Walsingham, 1891:81.—Miller, 1932:10, 22, 50.—Leefmans, 1934 [1933–1934]:89.—Diakonoff, 1938:399–414, figs. 1–10.—Chesquière, 1940:11, pl. 3: fig. 4; 1941:763.—Corbet and Tams, 1943c:111, 119, figs. 200, 235, 262, pl. 5: figs. 9, 10.—Paulian and Viette, 1955:146.—Hinton, 1956:261.—Viette, 1956:533.—Cozmány, 1966:257; 1967:29, fig. 30.—Diakonoff, 1968:284, 308, fig. 773.—Clarke, 1971:188, fig. 145, pl. 25e.—Dugdale, 1977:66.—Zimmerman, 1978:378, figs. 201, 202, 203, 204.

HOLOTYPE.—In the Naturhistoriska Riksmuseum, Stockholm.

TYPE-LOCALITY.—Africa.

FIGURE 264.—*Setomorpha rutella* Zeller: *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.



DISTRIBUTION.—General in the tropical and subtropical regions.

Hiva Oa: Atuona, 11 Feb 1968, 1♀.

FOODS.—Many stored animal and vegetable materials.

Although the genitalia of this species have been figured several times previously, I am repeating the illustrations used in Clarke (1971, fig. 145). For a more extensive bibliography than that shown above, see Diakonoff (1938:405–409) and Davis (in Hodges et al., 1983).

Genus *Clepticodes* Meyrick

Clepticodes Meyrick, 1927b:332.

TYPE-SPECIES.—*Clepticodes horocentra* Meyrick, 1927b:332; by monotypy.

Clepticodes clasmaticus Meyrick

FIGURES 265, 266, 318a

Clepticodes clasmatica Meyrick, 1934b:479.—Clarke, 1955 [1955–1970]:93.

Male genitalia slide USNM 25038. Harpe with a broad base, extended narrowly into a long distal portion; cucullus narrowly rounded; sacculus produced as a digitate process. Socius a broad, flat pad. Vinculum very broad basally, pointed distally. Tegumen a narrow sclerotized band. Anellus consisting of a crescentic proximal portion with a fleshy lobe on each side posteriorly. Aedeagus stout, long, nearly straight; vesica armed with a large cluster of strong cornuti.

Female genitalia slide USNM 25039. Ostium funnel-shaped. Antrum not differentiated. Inception of ductus seminalis from anterior end of bursa copulatrix. Ductus bursae long, wide, membranous. Bursa copulatrix membranous. Signum complex; consisting of a palmate series of ridges and a narrow, sclerotized band encircling the bursa copulatrix.

HOLOTYPE.—In the British Museum (Natural History).

TYPE-LOCALITY.—Fiji, Vunidawa.

DISTRIBUTION.—Fiji, Gilbert Islands (Tarawa

Atoll), Fatu Hiva. From the Marquesas there are before me the following specimens: Fatu Hiva, Omoa, 13 Mar to 8 Apr 1968, 7♀.

FOOD.—Unknown.

This is the first record of this species from the Marquesas Islands and as far as I know, is the most eastward extension of its range in the Pacific.

Genus *Crypsithyroides* Zimmerman

Crypsithyroides Zimmerman, 1978:267.

TYPE-SPECIES.—*Blabophanes obumbrata* Butler, 1881:396; by monotypy and original designation.

Crypsithyroides concolorellus (Walker)

FIGURES 267, 318b

Tinea concolorella Walker, 1863 [1856–1866]:475.

Crypsithyroides concolorella (Walker).—Robinson, 1980:103, figs. 5, 41.

Tinea ignotella Walker, 1864 [1856–1866]:1003.—Robinson, 1980:103.

Blabophanes obumbrata Butler, 1881:396.

Monopis obumbrata (Butler).—Walsingham, 1907:728.

Crypsithyris enixa.—Illingworth, 1923, p. 185 [not *Crypsithyris enixa* Meyrick].

Crypsithyris sladeni Bradley, 1957:111, pl. 2: fig. 28, pl. 12: figs. 111, 112.

Crypsithyroides obumbrata (Butler).—Zimmerman, 1978, figs. 106–112.

Male genitalia slide USNM 25019. Harpe parallel-sided to beyond middle, then narrowed to a bluntly pointed cucullus. Gnathos divided distally into two slender, divergent arms. Socius a broad, flattened pad. Uncus extended distally to form a point on each side. Vinculum broad basally; sacculus pointed. Tegumen a broad band. Anellus triangular. Aedeagus slender, slightly bent, armed.

Female genitalia slide USNM 25020. Ostium cup-shaped. Inception of ductus seminalis from posterior third of ductus bursae. Ductus bursae slender, membranous, except for a short sclerotized section in posterior half. Bursa copulatrix membranous. Signum absent.

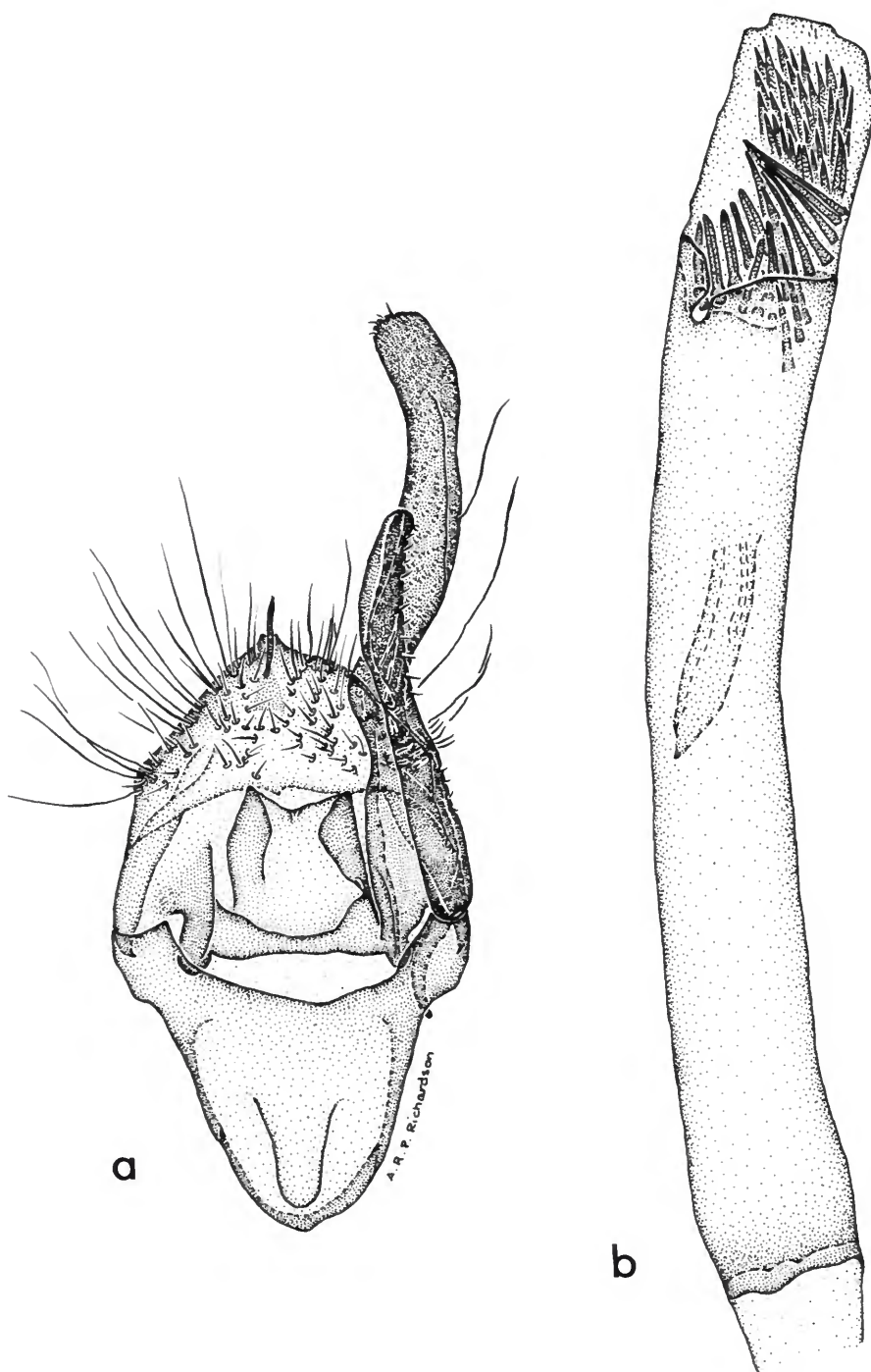


FIGURE 265.—*Clepticodes clasmaticus* Meyrick: *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus.

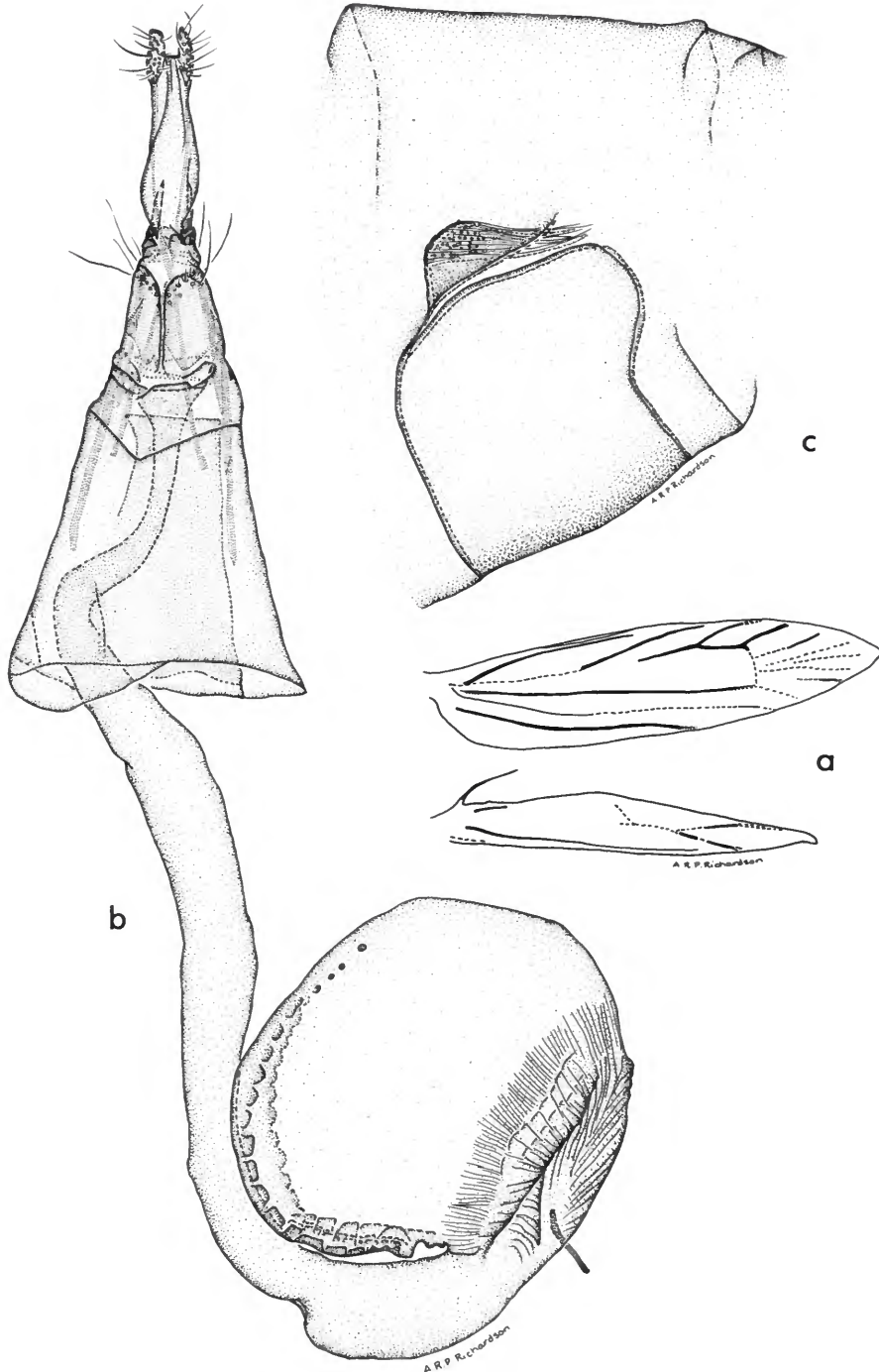


FIGURE 266.—*Clepticodes clasmaticus* Meyrick: *a*, venation of right wings; *b*, ventral view of female genitalia; *c*, 8th segment of male.

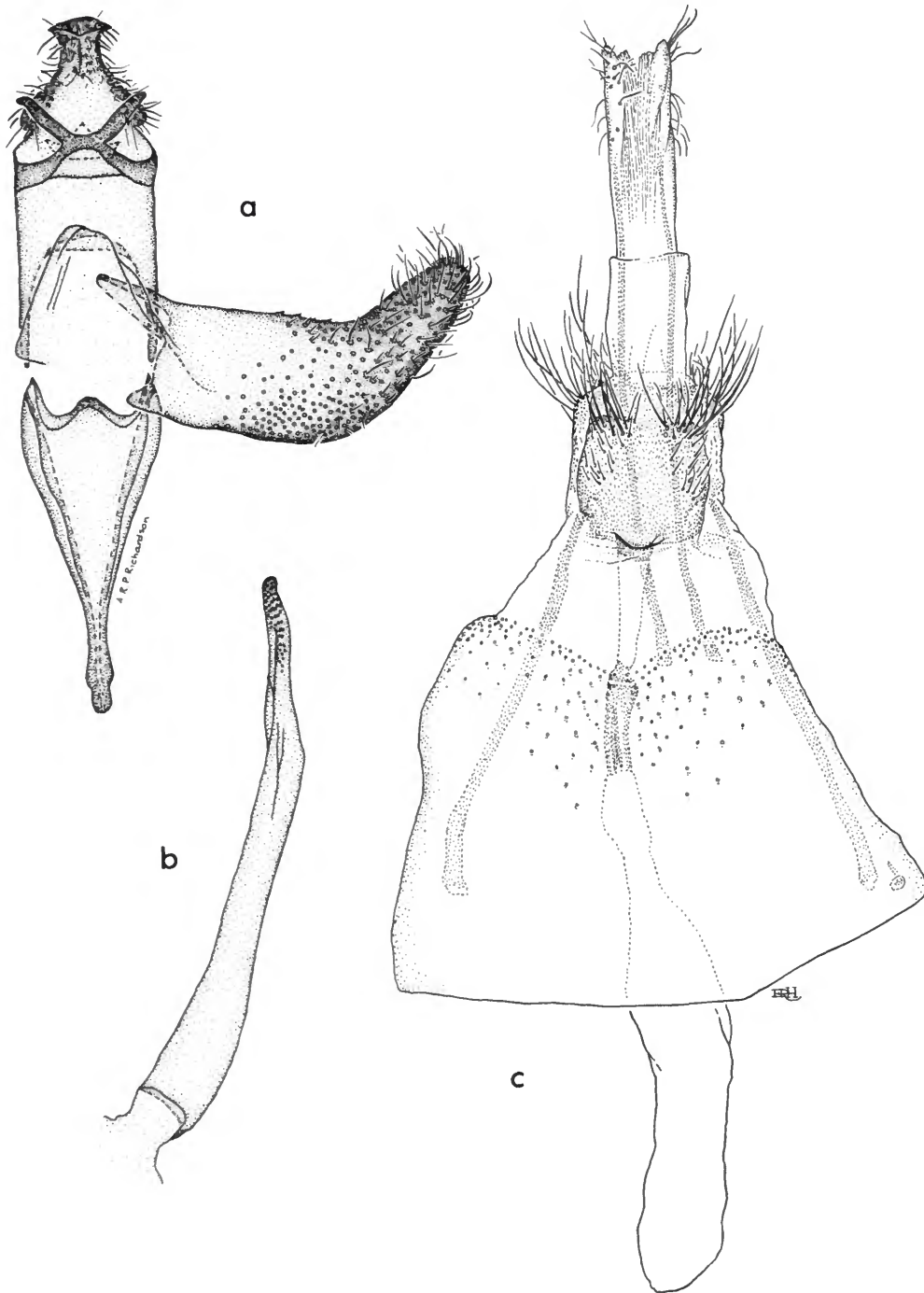


FIGURE 267.—*Crypsithyodes concolorellus* (Walker): *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.

HOLOTYPE.—In the British Museum (Natural History).

TYPE-LOCALITY.—Honolulu, Hawaii.

DISTRIBUTION.—Hawaii, Rennell Island, Caroline Islands (Kusaie; currently Kosrae), Marquesas Islands.

Nuku Hiva: Taiohae, 13–27 Jan 1968, 3♂. Hiva Oa: Atuona, 18 Feb to 8 Mar 1968, 18♂, 3♀.

FOOD.—Unknown.

My notes on this moth, 11 April 1953, collected on Kusaie, are as follows:

“I had Fredy (guide) lead me to Yela Cave which was reported to house swifts and to contain guano. The swifts were there in small numbers, and under the few, limited nesting sites, there were deposits of trash, excrement, etc. Over these [deposits] a very nice tineid (new) was hovering, so I collected a good series.”

It should be noted that the Marquesan specimens are from two villages indicating the possible association with human habitation. All were collected at black light.

Zimmerman (1978:269) has discussed Meyrick's misdetermination of *obumbrata* as *enixa*, and has indicated the appearance of the latter name in Hawaiian entomological literature.

Genus *Praeacedes* Amsel

Praeacedes Amsel, 1954a:55.

TYPE-SPECIES.—*Praeacedes deluccae* Amsel, 1954:55; by monotypy.

***Praeacedes thecophora* (Walsingham)**

FIGURES 268, 318c

Tinea thecophora Walsingham, 1908:1024.—Rebel, 1911:366 [No. 354]; 1940a:45.

Titaenoses thecophora (Walsingham).—Petersen, 1958 [1957–1958]:417.

Praeacedes deluccae Amsel, 1954a:55, fig. 7; 1955:29.

Tinea despecta Meyrick, 1919:274.—Viette, 1949a:316.—Clarke, 1955 [1955–1970]:114.

Praeacedes thecophora (Walsingham).—Petersen, 1958 [1957–1958]:417.—Clarke, 1971:191, figs. 148, 149.—Zimmerman, 1978:274.

TYPES.—In the British Museum (Natural History) (*thecophora*, *despecta*); Delucca collection, Malta (*deluccae*).

TYPE-LOCALITIES.—Brazil (*thecophora*); British Guiana (*despecta*); Malta (*deluccae*).

DISTRIBUTION.—North, Central, and South America, Borneo, Sri Lanka (Ceylon), Taiwan (Formosa), Azores, Teneriffe, Rapa, Hawaii, Marquesas Islands.

Hiva Oa: Atuona, 15 Feb and 8 Mar 1968, 1♂, 2♀.

FOOD.—Refuse; decaying vegetable matter?

This is the second record of the occurrence of this species in the Marquesas Islands. Meyrick (1934c:333, 355) recorded it as *Tinea despecta* Meyrick. It is generally associated with human habitations and is probably much more abundant in the Marquesas than our records show.

Genus *Trachycentra* Meyrick

Trachycentra Meyrick, 1886b:288.

TYPE-SPECIES.—*Trachycentra calamias* Meyrick, 1886b:288; by monotypy.

***Trachycentra calamias* Meyrick**

FIGURES 269, 318d

Trachycentra calamias Meyrick, 1886b:288; 1907:142; 1929a:507.—Swezey, 1942b:215.—Viette, 1949a:316.—Clarke, 1955 [1955–1970]:69.—Dale and Herring, 1959:13.

Male genitalia slide USNM 25021. Harpe saccus broad, triangular with an outer, long, curved process; neck long, narrow; cucullus large, oval. Gnathos consisting of two long, curved arms. Uncus very lightly sclerotized, pointed. Socius very small, slender. Vinculum narrow, short. Tegumen very long, slender. Anellus a lightly sclerotized plate. Aedeagus short, straight, lightly sclerotized.

HOLOTYPE.—In the British Museum (Natural History).

TYPE-LOCALITY.—Tonga.

DISTRIBUTION.—Tonga, Fiji, Marquesas Is-

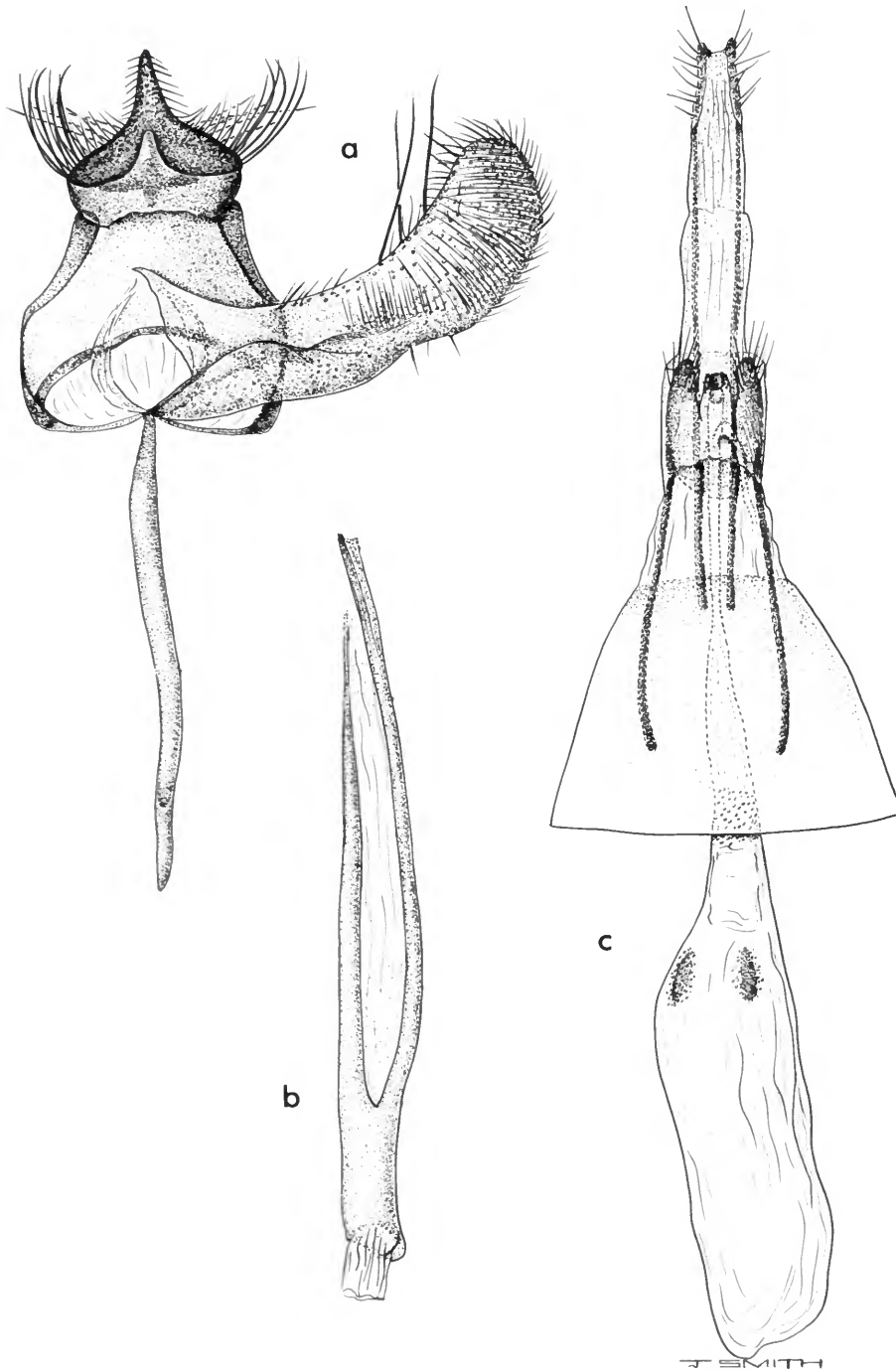


FIGURE 268.—*Praeaces thecophora* (Walsingham): *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.

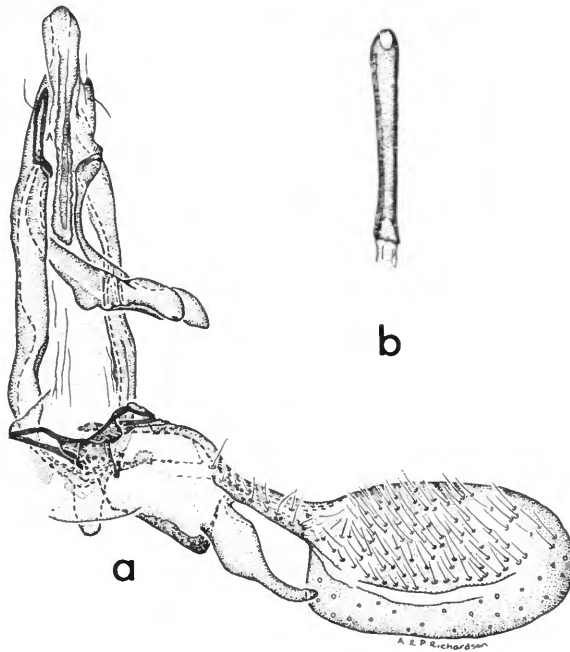


FIGURE 269.—*Trachycentra calamias* Meyrick: *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus.

lands, Samoa, Society Islands.

Hiva Oa: Trail to Mt. Feani, 1200 ft (365 m), 1♂. Nuku Hiva: (Meyrick, 1929a:507).

FOOD PLANTS.—*Hibiscus tileaceus* L., *Erythrina* (under bark); *Cocos nucifera* L.

We collected a series of larvae but were able to rear only a single specimen (Em. 15 Mar 1968). Unfortunately, we did not discover the cannibalistic habit of the larvae until it was too late.

The larva of *calamias* is a case maker and carries its case as it burrows and feeds under the bark.

Swezey (1942b:215) states that "larvae of this moth were found feeding in the core of a coconut tree top which was damaged by the rhinoceros beetle. Some of the larvae were boring into the living tissues of the mass of undeveloped leaves, free without cases. Other larvae were feeding in the mass of rotting tissues and those which were apparently the older ones were in brown cases

many of which were covered with fibers placed longitudinally and overlapping like thatch. Pupation took place within these shaggy cases."

In the male there are two large deciduous coremata posteriorly from inside the abdomen.

Genus *Opogona* Zeller

Opogona Zeller, 1853:504.

TYPE-SPECIES.—*Opogona dimidiatella* Zeller, 1853:507; by monotypy.

Opogona regressa Meyrick

FIGURES 270, 319a

Opogona regressa Meyrick, 1916:620; 1932b:231.—Lepesme, 1947:315.—Clarke, 1955 [1955–1970]:269.

Male genitalia slides JFGC 12006; USNM 24977, 24978. Harpe bulbous basally, the cucullus produced; sacculus produced distally as a sharp point and with a fleshy process from ventral edge. Socius greatly enlarged and armed with stout setae. Saccus about as long as harpe (obscured in drawing). Tegumen broad and short. Anellus a small, subrectangular, sclerotized plate. Aedeagus slender, straight, about as long as harpe.

Female genitalia slide USNM 24979. Ostium very small, oval. Inception of ductus seminalis from anterior two-thirds (?) of ductus bursae. Ductus bursae threadlike, very long. Bursa copulatrix surface armed with large granules. Signum a strong, transverse bar with ventral keel, and a cross bar at each end.

HOLOTYPE.—In the British Museum (Natural History).

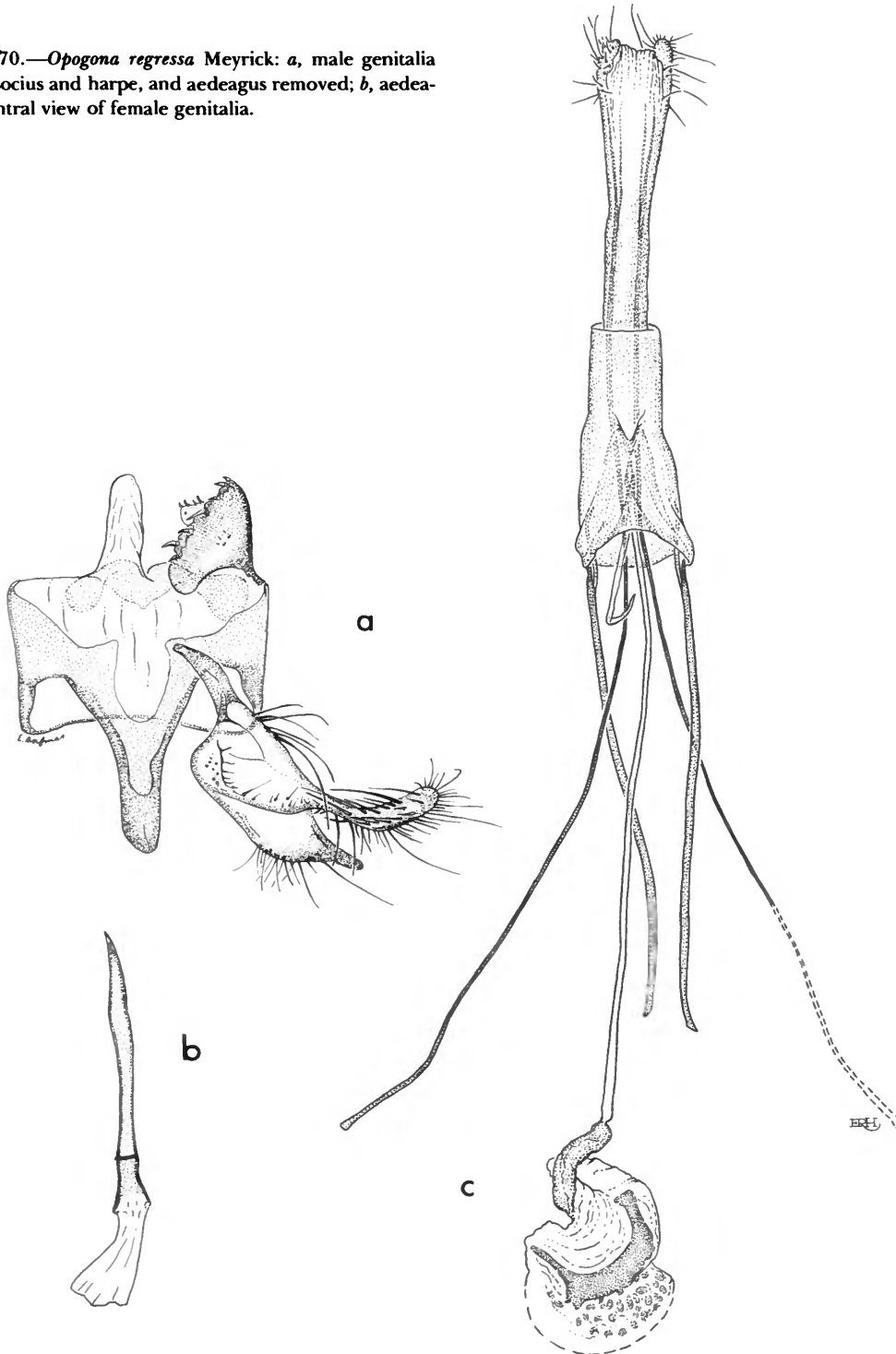
TYPE-LOCALITY.—Fiji, Natova.

DISTRIBUTION.—Fiji, Marquesas Islands.

FOODS.—Decayed vegetable matter? Coconut flowers.

The 20 specimens before me are from the following localities. Nuku Hiva: Taiohae, 21 Jan to 6 Feb 1968, 3♂, 2♀. Hiva Oa: Atuona, 5 Feb to 27 Mar 1968, 1♂, 2♀. Fatu Hiva: Omoa, 11

FIGURE 270.—*Opogona regressa* Meyrick: *a*, male genitalia with left socius and harpe, and aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.



Mar to 9 Apr 1968, 5♂, 6♀; Omoa Valley, 16 Mar 1968, 1♂.

The type ♀ of *regressa* lacks its head and abdomen but the specimens from the Marquesas agree in all superficial particulars, and the male genitalia of a Hiva Oa specimen (USNM 24977) agree with those of a ♂ from Fiji reared from coconut flowers. (Slide JFGC 12006, in the BMNH).

This is the first record of the occurrence of *regressa* in the Marquesas Islands.

Opogona trissostacta Meyrick

FIGURES 271, 319*b,c*

Opogona trissostacta Meyrick, 1934c:354.—Clarke, 1955 [1955–1970]:318.

Male genitalia slides USNM 24980, 24981. Harpe of equal width except cucullus produced as a pointed process; from base of inner surface a long, fleshy process that extends well over costal edge. Socius a fleshy pad armed with short, stout setae. Vinculum narrow, bandlike; saccus as long as harpe. Tegumen short and broad, Aedeagus very slender, straight, pointed.

Female genitalia slide USNM 24986. Ostium very small, opening ventrally from a slit. Inception of ductus seminalis from posterior half of ductus bursae. Ductus bursae membranous, very slender except anteriorly where it broadens before bursa copulatrix. Bursa copulatrix lightly sclerotized posteriorly, ornamented with transparent pits anteriorly. Signum a curved, sclerotized plate with a spinelike point on each side anteriorly.

HOLOTYPE.—In the Bernice P. Bishop Museum.

TYPE-LOCALITY.—Hiva Oa, Kaava Ridge, Kakahopuanui, 2460 ft (750 m).

DISTRIBUTION.—Marquesas Islands.

Nuku Hiva: Toovii, Ooumu, 900 m, 16–19 Jul 1977, 1♀ (Montgomery). Hiva Oa: trail to Mt. Feani, 2500 ft (762 m), 20 Feb 1968, 1♂, 1 Mar 1968, 1♂; Mt. Feani, 3400 ft (1036 m), 1 Mar 1968, 1♀. Fatu Hiva: Omoa, 11–15 Mar 1968,

1♂, 1♀; Mt. Upe, 2025 ft (617 m), 3 Apr 1968, 1♀.

FOOD PLANT.—*Reynoldsia* sp., rotten bark (Montgomery specimen).

The type is in poor condition; the abdomen and left hindwing are missing and the forewings are rubbed.

The signum of *trissostacta* is strikingly like that of *aurisquamosa* but in habitus *trissostacta* is very similar to *Opogona allaini* (Clarke, 1971:227) from Rapa.

Opogona aurisquamosa (Butler)

FIGURES 272, 319*d,e*

Argyresthia? aurisquamosa Butler, 1881:403.

Opogona aurisquamosa (Butler).—Walsingham, 1907:713, 737, pl. 25: fig. 14.—Swezey, 1909:16, pl. 3: figs. 1–3; 1910:142; 1912a:155; 1919:10.—Bridwell, 1919a:25.—Auctorum, 1922:15.—Meyrick, 1929a:505.—Williams, 1931:156, pl. 27: figs. 1–3.—Meyrick, 1934c:354.—Swezey, 1940a:366; 1942a:133.—Holdaway and Look, 1942:259.—Viette, 1949a:316.—Swezey, 1954:116, 160.—Clarke, 1971:222, fig. 174, pl. 28c,d.

TYPE.—In the British Museum (Natural History).

TYPE-LOCALITY.—Hawaii, Honolulu.

DISTRIBUTION.—Tahiti, Easter Island, Marquesas Islands, Fiji, Kermadec Islands, Rapa.

From the Marquesas we have the following. Nuku Hiva: Taiohae, 13 Jan to 3 Feb 1968, 10♂, 27♀; Pakiu Valley, 1800 ft (548 m), 19–26 Jan 1968, 2♂, 2♀. Hiva Oa: Atuona, 12 Feb to 7 Mar 1968, 11♂, 22♀; Mt. Feani, 1200 ft (365 m), 6 Mar 1968, 2♂, 1♀. Fatu Hiva: Omoa, 11 Mar to 10 Apr 1968, 36♂, 67♀; Omoa Valley, 16–21 Mar 1968, 4♂, 1♀; Hanavave, 12 Apr 1968, 1♀.

FOOD PLANT.—*Pandanus tectorius* Parkinson and probably other dead vegetable matter.

Undoubtedly *aurisquamosa* will be found on all of the Marquesas Islands. Meyrick recorded this species (1934c:354) from Eiao and Uahuka.

Although the genitalia were figured by Clarke (1971, fig. 174), the figures are repeated here for completeness' sake.

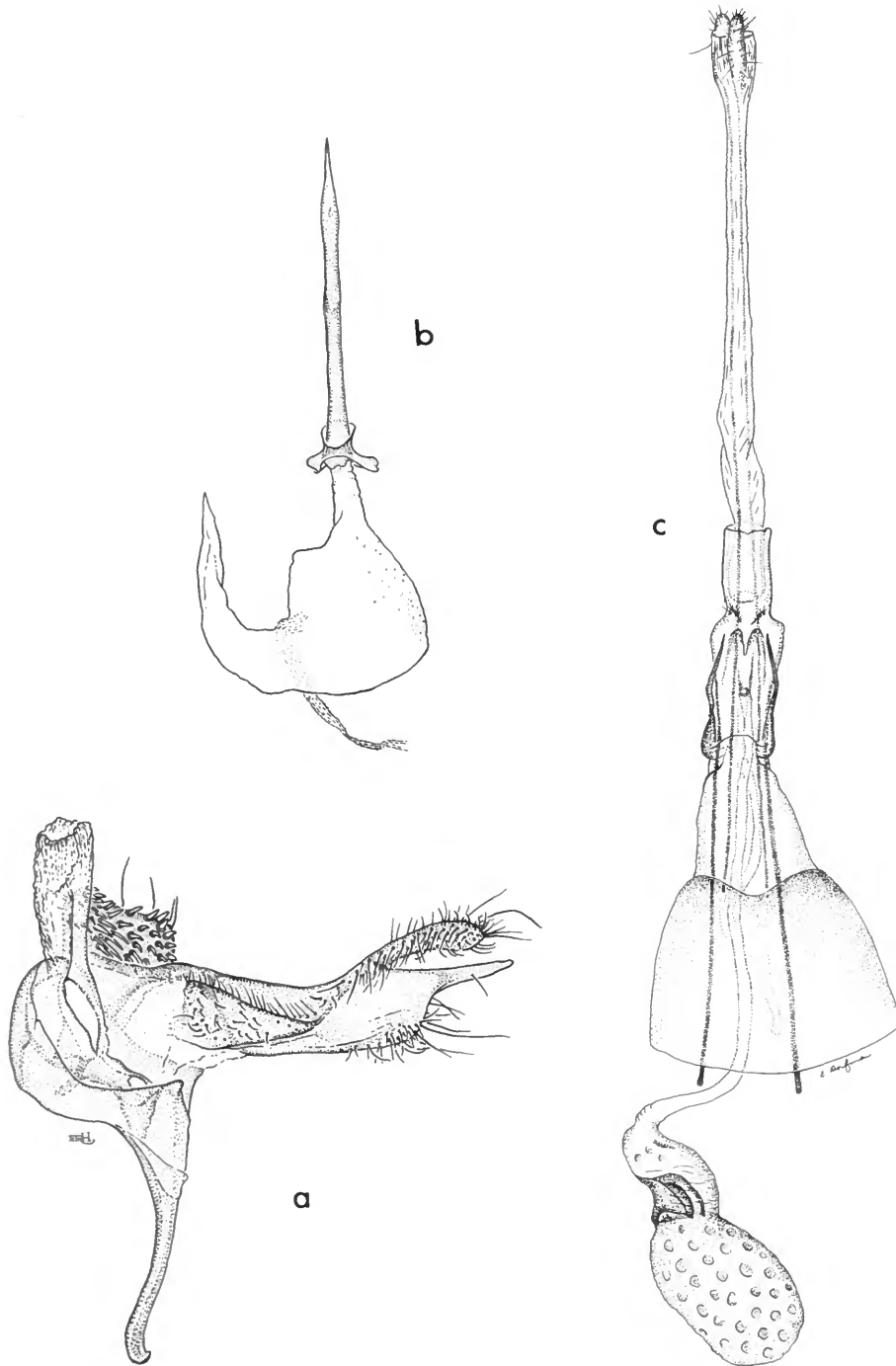
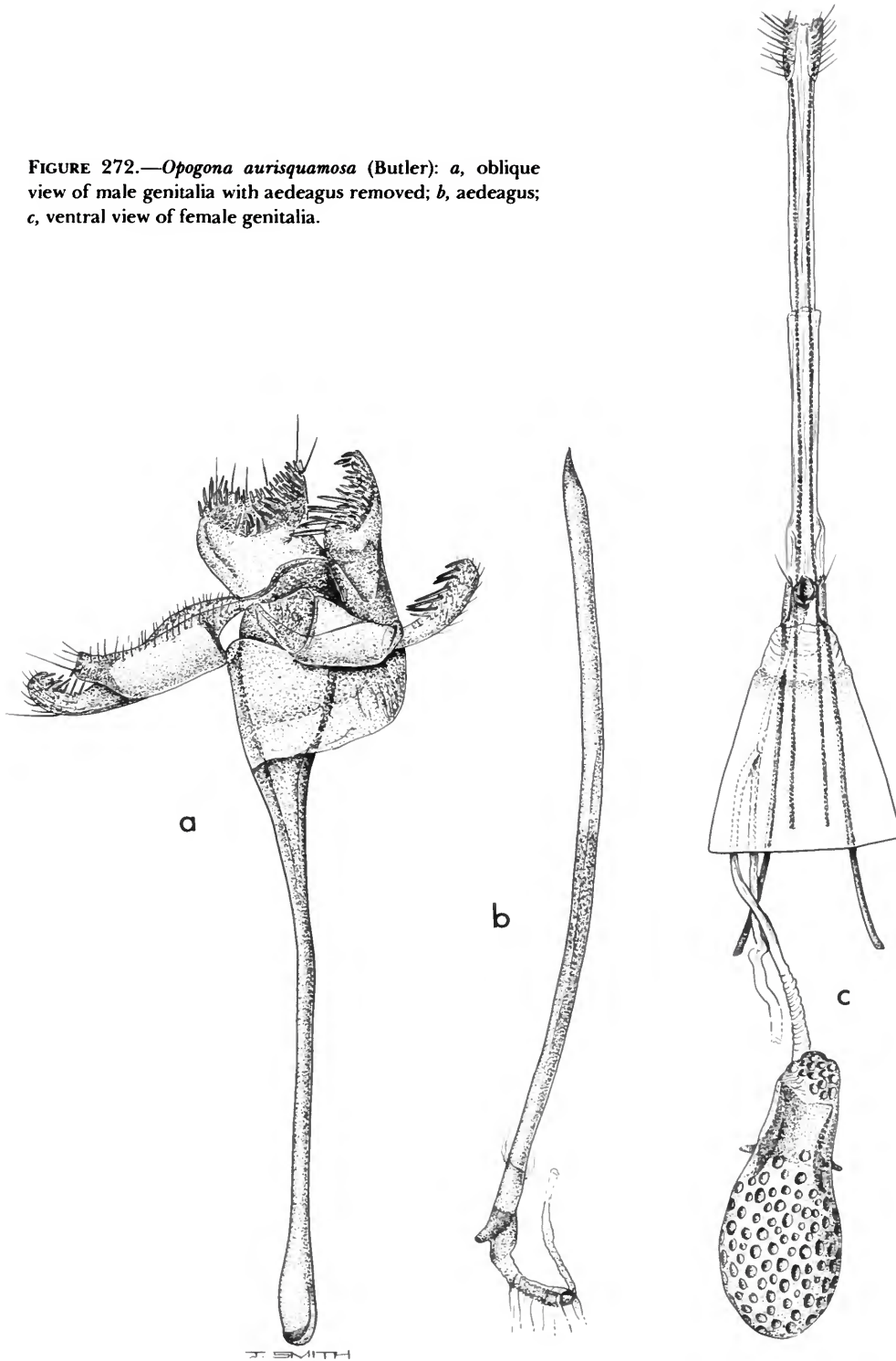


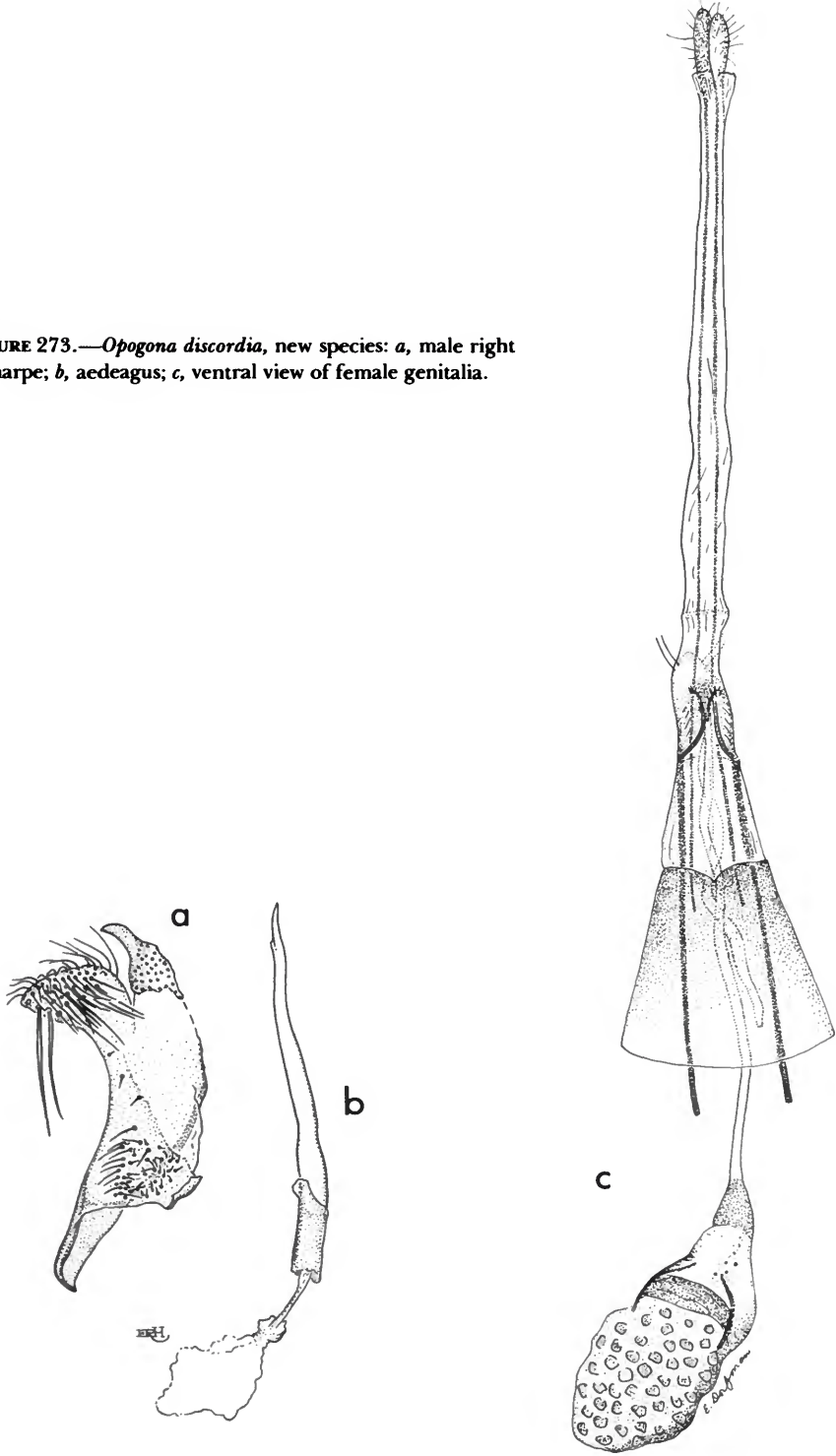
FIGURE 271.—*Opogona trissostacta* Meyrick: *a*, male genitalia with left harpe and aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.

FIGURE 272.—*Opogona aurisquamosa* (Butler): *a*, oblique view of male genitalia with aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.



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FIGURE 273.—*Opogona discordia*, new species: *a*, male right harpe; *b*, aedeagus; *c*, ventral view of female genitalia.



Opogona discordia, new species

FIGURES 273, 319f

Alar expanse 9–12 mm.

Labial palpus cream color. Antenna light ochraceous buff; scape blackish fuscous with blueish reflections. Head fuscous with blueish reflections; face cream color. Thorax massicot yellow; base of tegula blackish fuscous with blueish reflections. Forewing ground color massicot yellow; dark markings blackish fuscous with blueish reflections; on base of costa a large oval dark mark, on midcosta a quadrate mark and beginning on dorsum and extending to apex a large, irregular dark area (in some specimens a tiny, ill-defined spot on dorsum near base); cilia brown. Hindwing grayish fuscous; cilia slightly lighter. Foreleg cream color, marked grayish fuscous on outer side; midleg cream color; tibia suffused fuscous; hindleg cream color; tibia with long, grayish, hairlike scales dorsally. Abdomen grayish fuscous dorsally, cream color ventrally.

Male genitalia slide USNM 24225. Harpe of about equal width throughout; sacculus extended as a short hook; cucullus subtriangular,

fleshy. Socius a broad pad armed with stout setae. Uncus short, pointed. Vinculum a broad band; saccus slightly longer than harpe. Tegumen short and broad. Aedeagus very slender, pointed.

Female genitalia slides USNM 24226, 24784. Ostium very small, oval, emerging ventrally from a slit. Inception of ductus seminalis from posterior half of ductus bursae(?). Ductus bursae very slender, membranous. Bursa copulatrix sclerotized posteriorly; membranous in anterior half and ornamented with coarse granules. Signum a crescentic band with a long, pointed bar at each end.

HOLOTYPE.—USNM 100847.

TYPE-LOCALITY.—Hiva Oa, Atuona.

DISTRIBUTION.—Hiva Oa, Tahiti.

FOOD PLANT.—Unknown.

Described from the ♀ holotype (3 Mar 1968), 8♀ and 1♂ paratypes as follows: Hiva Oa, Atuona, 11 Feb to 8 Mar 1968, 7♀; Puamau, 8 Feb 1968, 1♂; Tahiti, Punaauia, Bel Air Hotel, 7 Jan 1968, 1♀.

This species is distinguished from other members of the genus (*aurisquamosa*, *trissostacta*, etc.) by its scattered dark markings.

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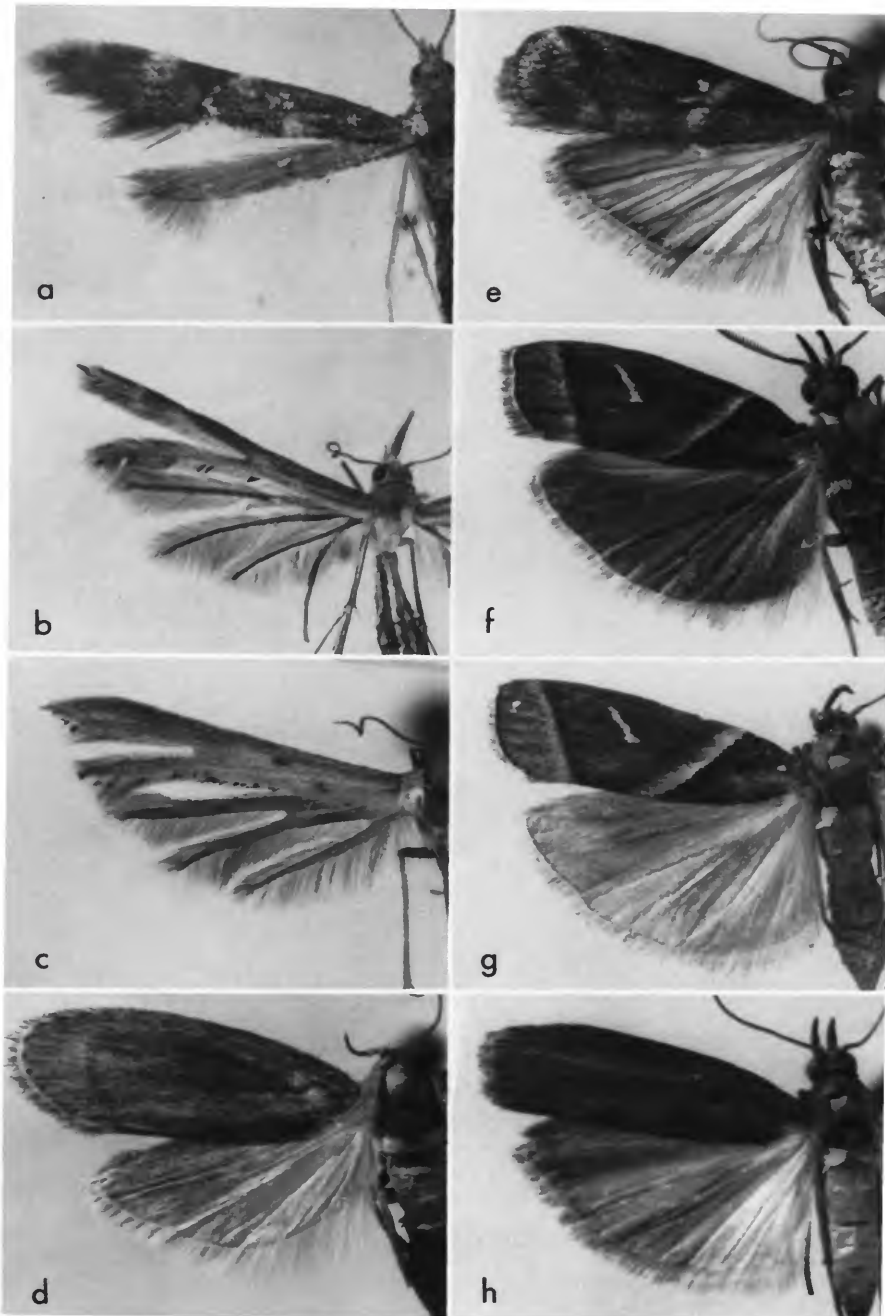


FIGURE 274.—*a*, *Neoxychiota isolata*, new species, ♀ paratype; *b*, *Stangeia distantia*, new species, ♀ paratype; *c*, *Marasmarcha pumilio* (Zeller), ♂; *d*, *Achroia grisella* (Fabricius), ♀; *e*, *Cryptoblabes ardescens* (Meyrick), ♀; *f*, *g*, *Ernophthora denticornis* (Meyrick) (*f* ♂; *g*, ♀); *h*, *Ernophthora iospila*, new species, ♀ holotype.

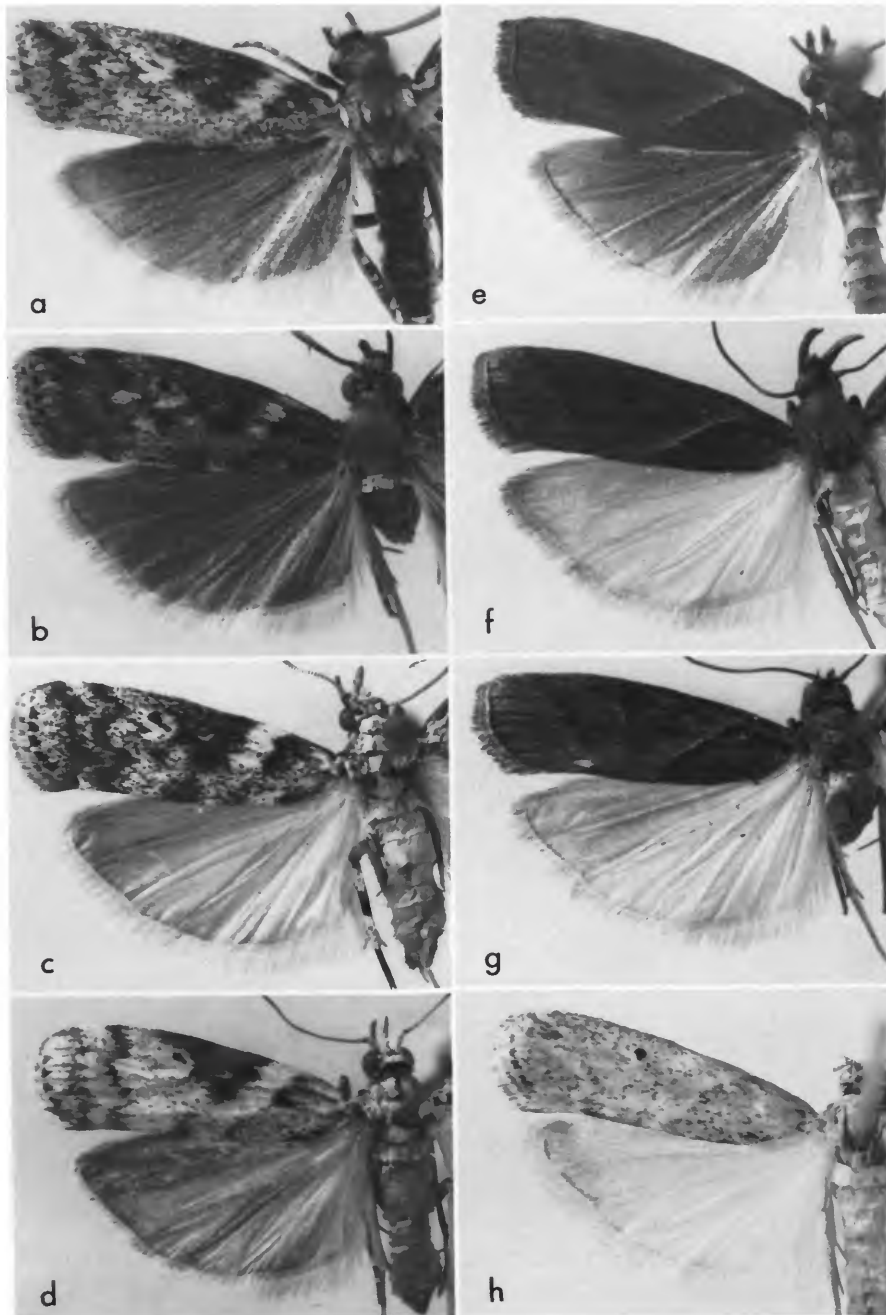


FIGURE 275.—*a-d*, *Ernophthora dryinandra* (Meyrick) (*a, b*, ♂; *c, d*, ♀); *e-g*, *Ernophthora lechriogramma*, new species, (*e*, ♂ holotype; *f, g*, ♀ paratypes; *h*, *Ernophthora palassopectera*, new species, ♀ holotype.

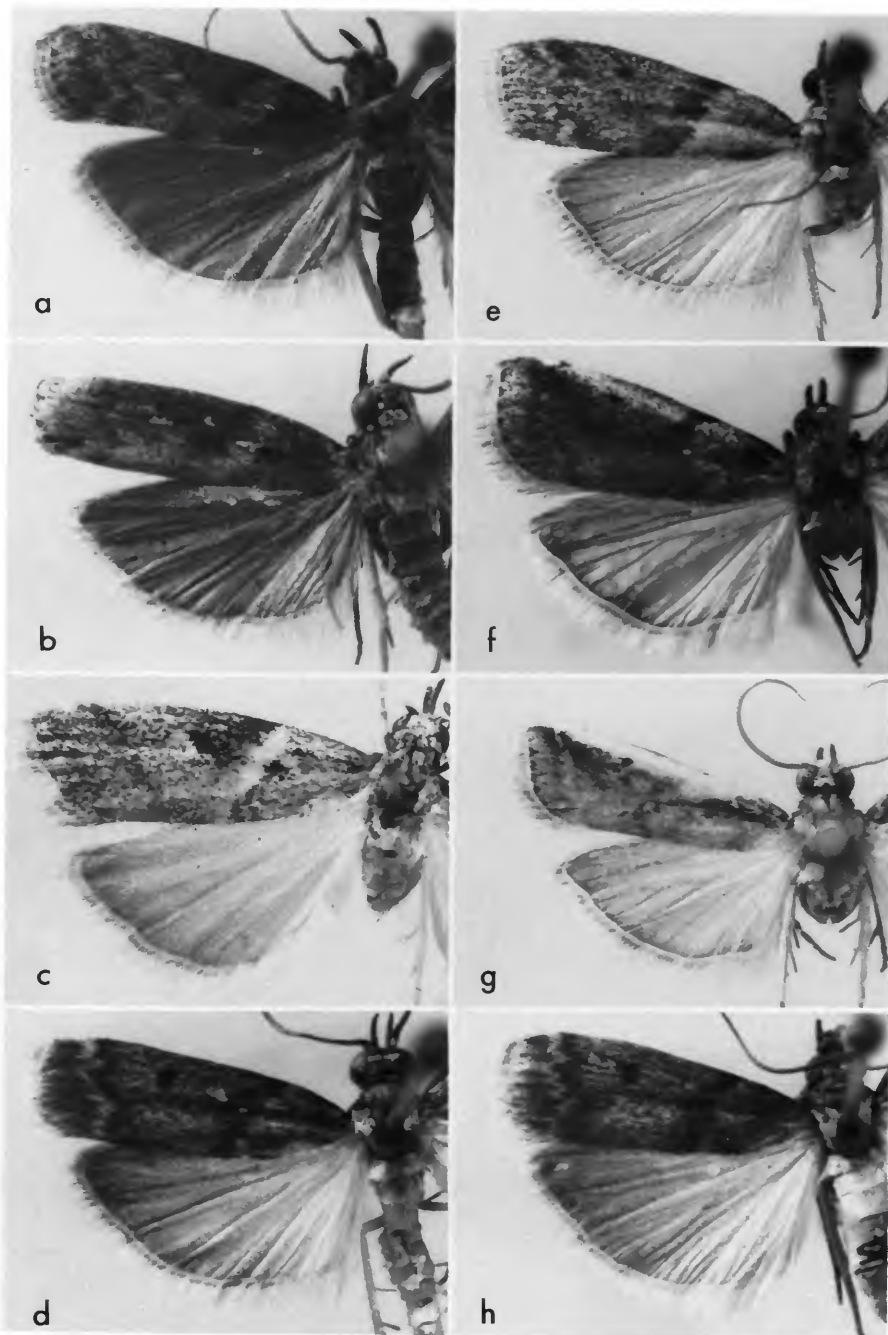


FIGURE 276.—*a, b*, *Ernophthora aphanoptera*, new species (*a* ♂ holotype; *b*, ♂, paratype); *c*, *Ernophthora maculicostella* (Ragonot), ♀; *d*, *Ernophthora chrysur*a (Meyrick), ♂; *e*, *Zamagiria exedra*, new species, ♀ holotype; *f*, *Cateremna halmophila* Meyrick, ♀; *g*, *Cateremna decipula*, new species, ♂ paratype (right wings reversed); *h*, *Ernophthora chrysur*a (meyrick), ♀.

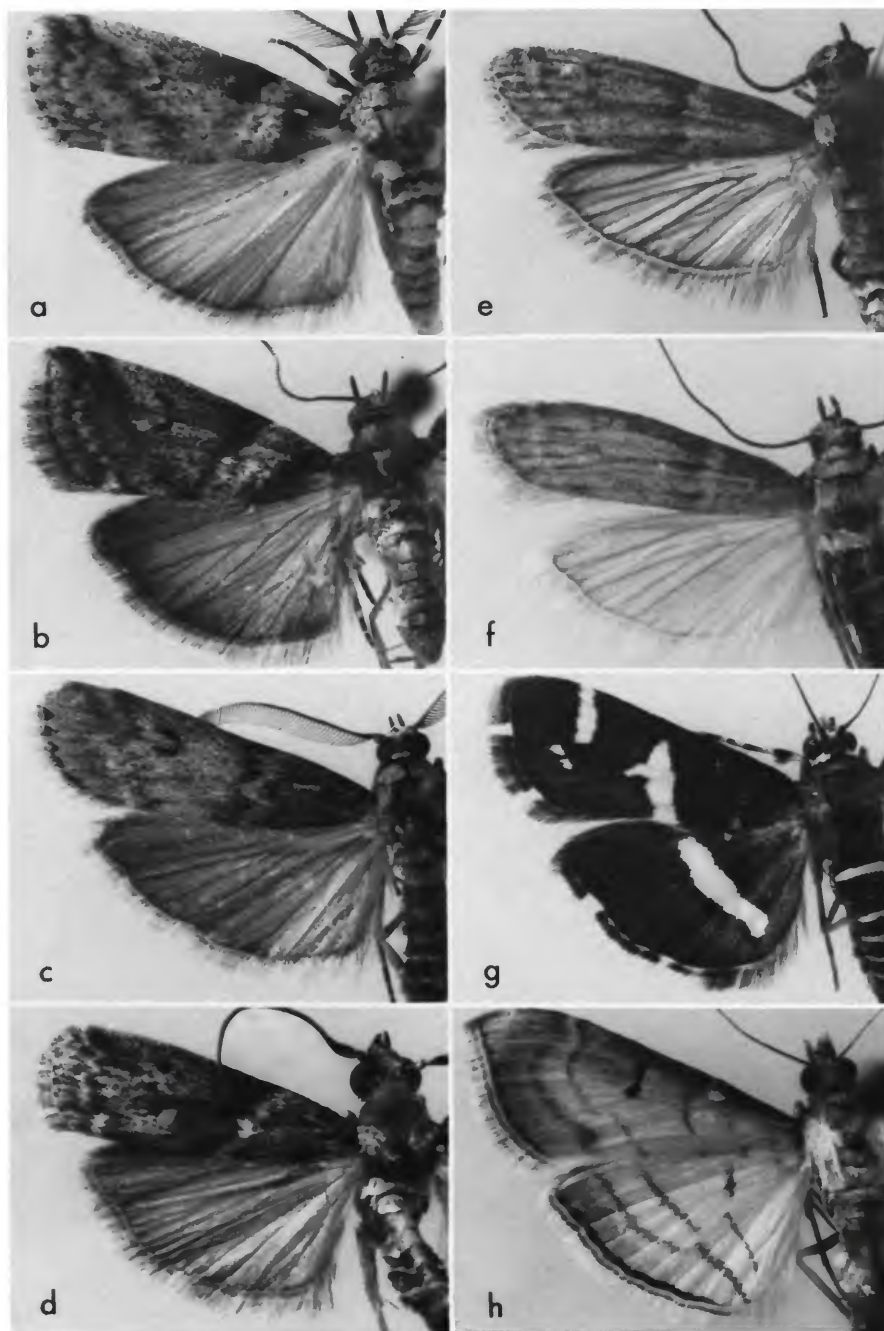


FIGURE 277.—*a, b*, *Ctenomeristis ochrodepta* Meyrick (*a*, ♂; *b*, ♀); *c*, *Delcina diaspora*, new species, ♂ holotype; *d*, *Phycita orthoclina* Meyrick, ♂; *e, f*, *Cadra cautella* (Walker) (*e*, ♂; *f*, ♀); *g*, *Spoladea recurvalis* (Fabricius), ♀; *h*, *Marasmia trapezalis* (Guenée), ♀.

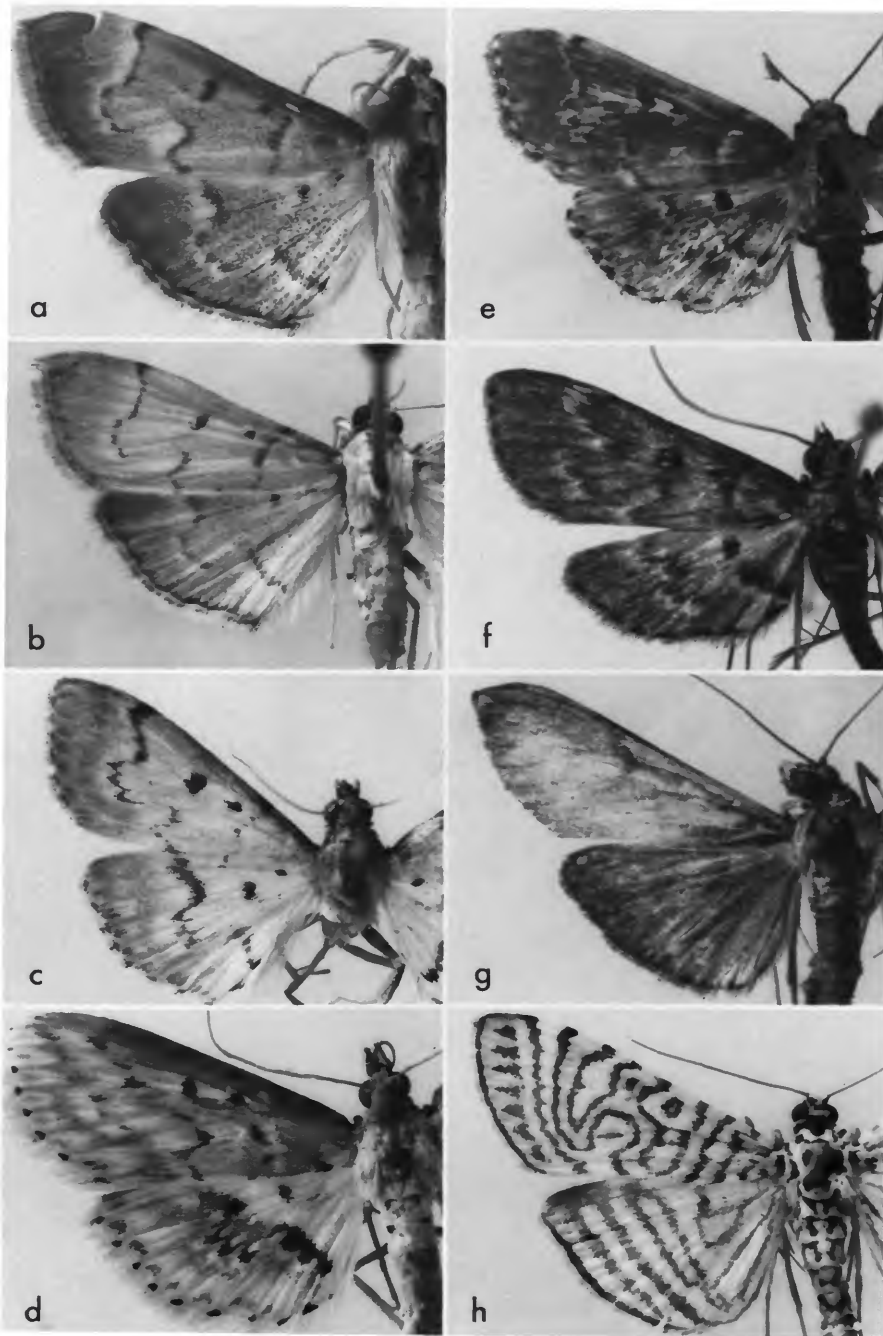


FIGURE 278.—*a, b*, *Psara jasiusalis* (Walker) (*a*, ♂; *b*, ♀); *c*, *Psara orphnopeza*, new species, ♀ holotype; *d*, *Herpetogramma phthorosticta* (Meyrick), ♂ (right wings reversed); *e*, *Herpetogramma cleoropa* (Meyrick), ♂; *f*, *Tatobotys vibrata* Meyrick, ♀; *g*, *Tessema sensilis*, new species, ♂ holotype; *h*, *Glyphodes phormingopa* (Meyrick), ♂.

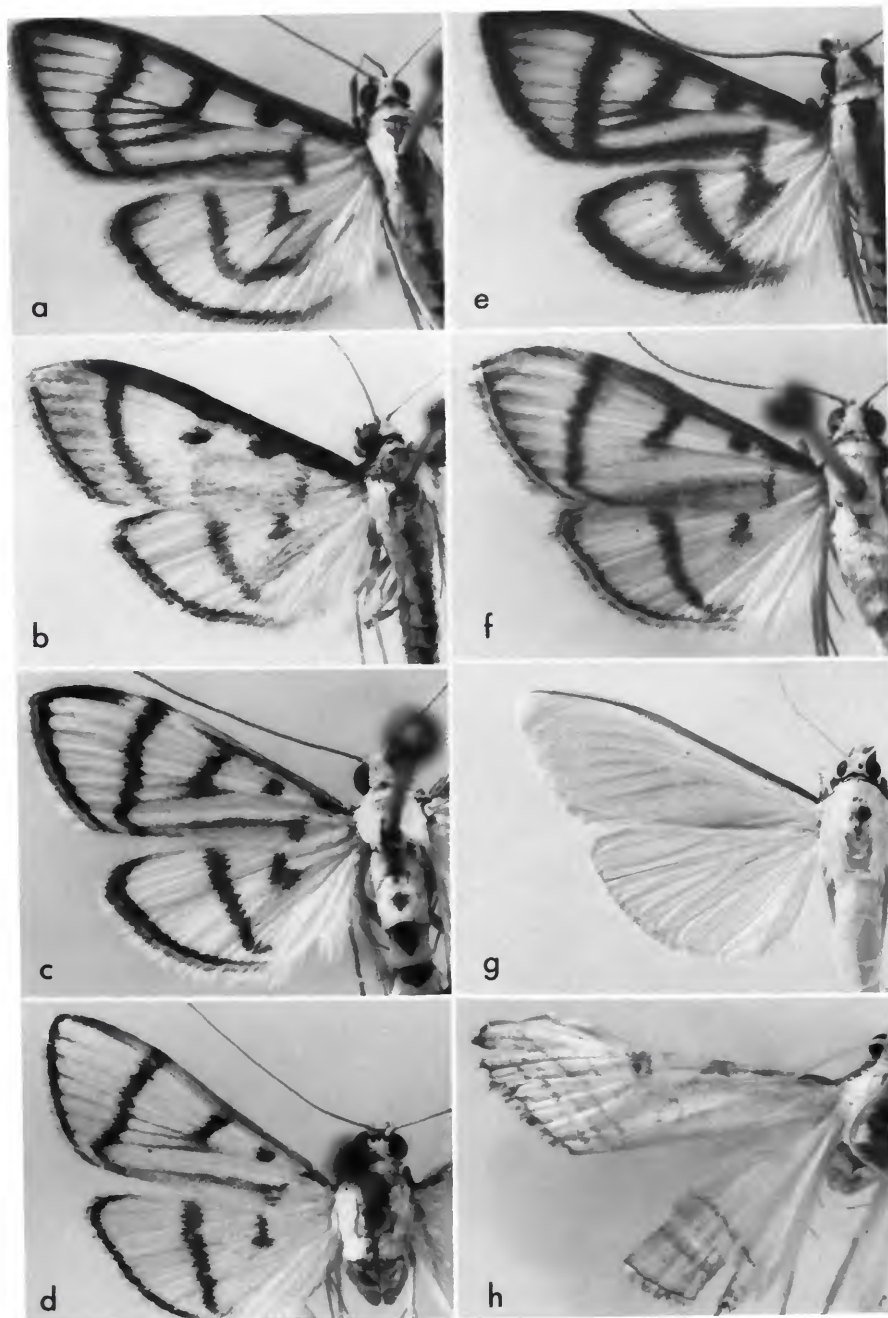


FIGURE 279.—a, *Bradina tormentifera* Meyrick, ♀; b, *B. fidelia*, new species, ♀ paratype; c, *B. perlucidalis* Hampson, ♂; d, *B. stricta*, new species, ♀ holotype (right wings reversed); e, *B. emphasis*, new species, ♀ holotype; f, *B. eremica*, new species, ♂ holotype; g, *Stemorrhages euthalassa* (Meyrick), ♀; h, *Chrysophyllis lucivaga* Meyrick, ♂ holotype.

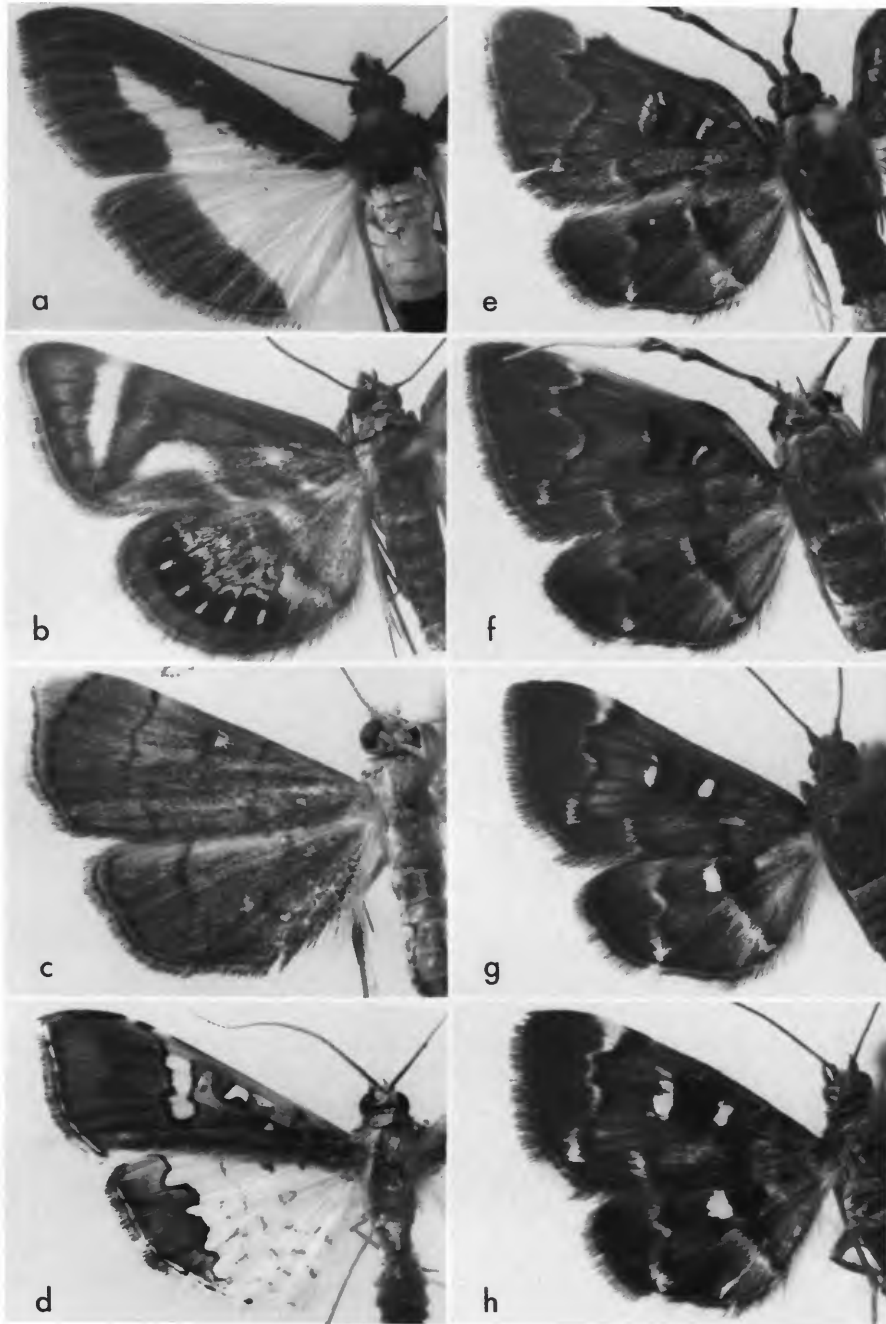


FIGURE 280.—*a*, *Diaphania indica* (Saunders), ♂; *b*, *Aulacodes eupselias* Meyrick, ♀; *c*, *Cangetta eschatia*, new species, ♀ holotype; *d*, *Maruca testulalis* (Geyer), ♂; *e-h*, *Pileocera signiferalis* (Wallengren) (*e, f*, ♂; *g, h*, ♀).

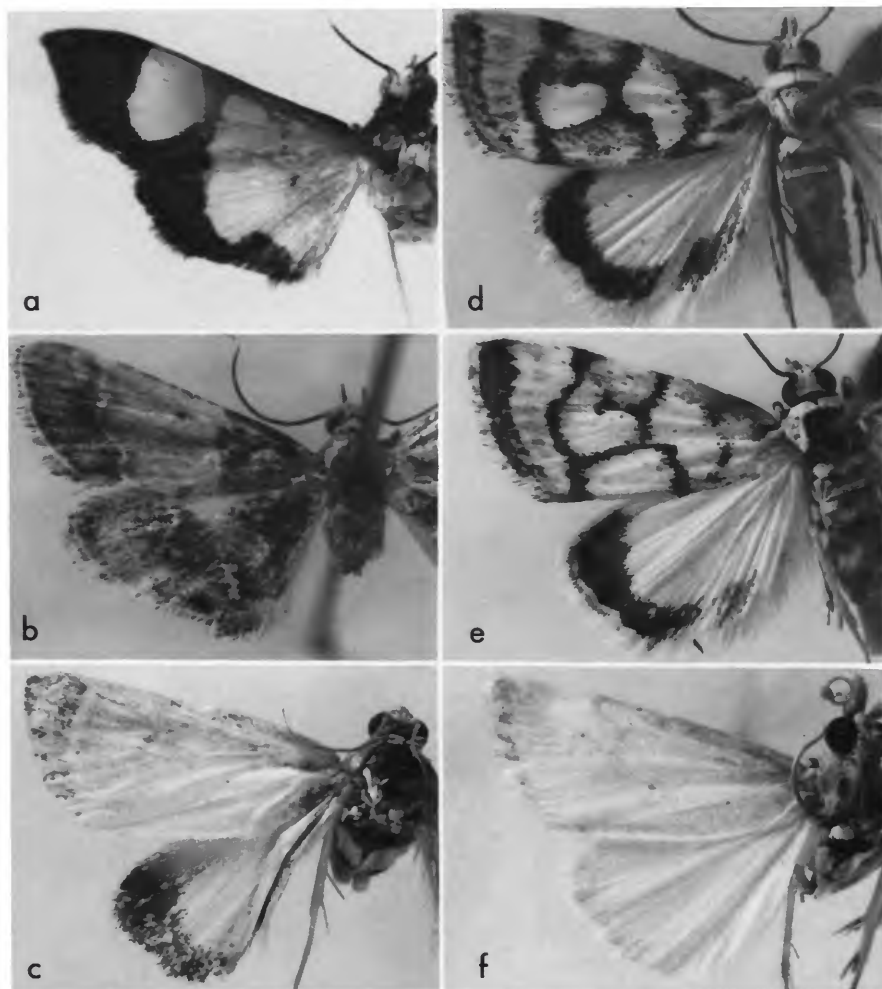


FIGURE 281.—*a*, *Aethaloëssa calidalis tiphalis* (Walker), ♂; *b*, *Pyralis pictalis* (Curtis), ♀; *c*, *Idioblasta isoterma* Meyrick, ♀ holotype; *d, e*, *I. lacteata* Warren (*d* ♂; *e*, ♀); *f*, *I. acleropa* (Meyrick), ♂ holotype.

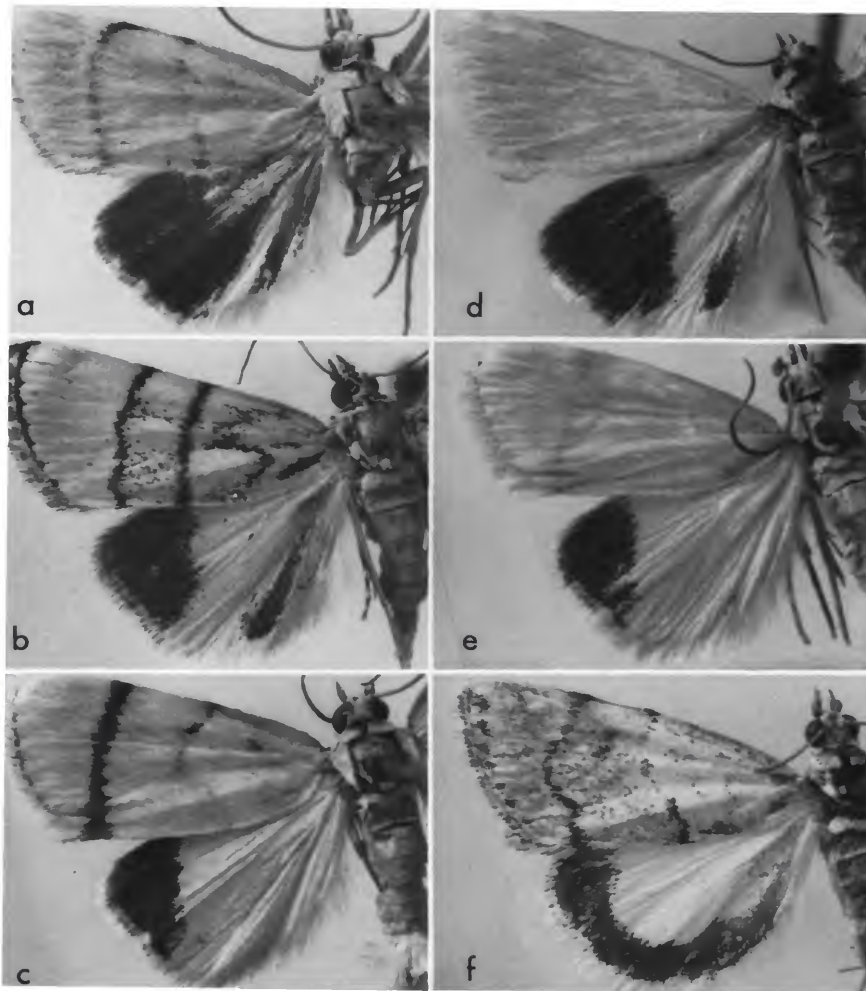


FIGURE 282.—*a*, *Idioblasta procellaris* (Meyrick), ♂; *b*, *I. transversata*, new species, ♀ paratype; *c*, *I. stenogramma*, new species, ♂ holotype; *d*, *I. amydsoma*, new species, ♀ holotype; *e*, *I. acrogramma*, new species, ♂ holotype; *f*, *I. linearis*, new species, ♀ holotype.

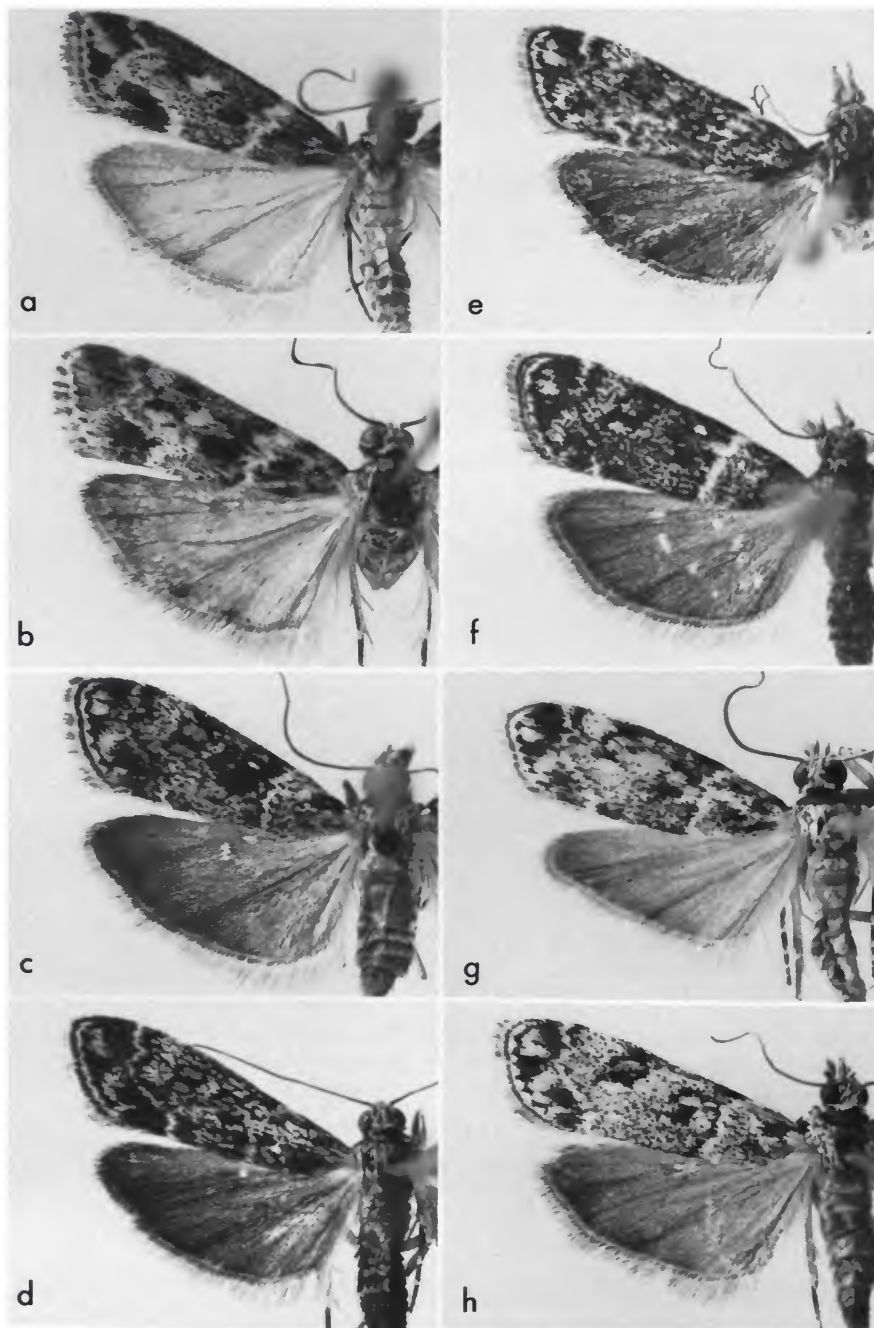


FIGURE 283.—*a*, *Eudonia citrocosma* (Meyrick), ♂; *b*, *E. clavula*, new species, ♂ holotype; *c*, *E. spectacularis* Meyrick, ♀; *d*, *E. opostactis* (Meyrick), ♀; *e*, *E. officialis* (Meyrick), ♀; *f*, *E. achlya*, new species, ♀ holotype; *g, h*, *E. clerica* (Meyrick) (*g*, ♂; *h*, ♀).

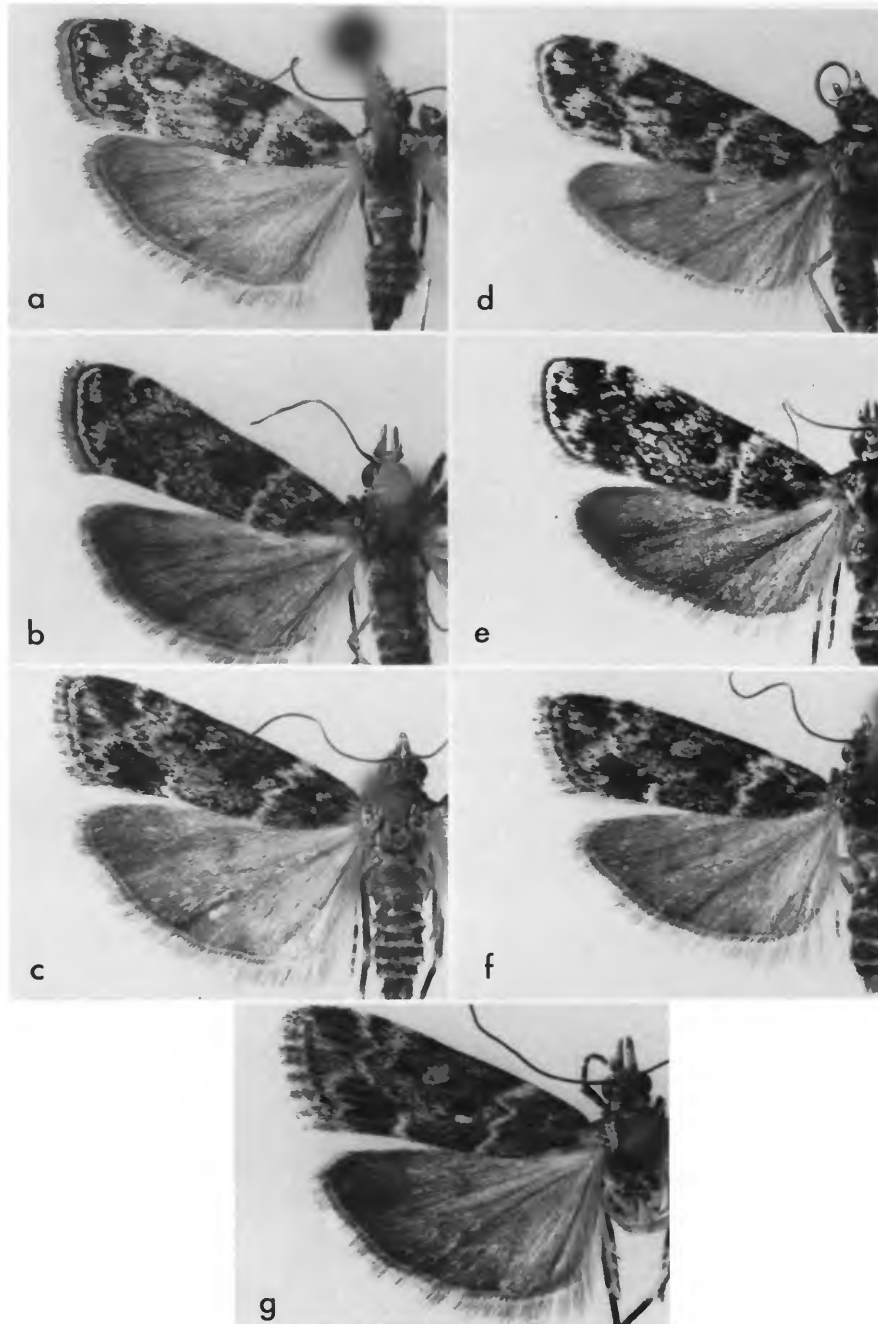


FIGURE 284.—*a*, *Eudonia ara*, new species, ♀ paratype; *b*, *E. aplysia*, new species, ♀ paratype; *c*, *E. chrysomicta* (Meyrick), ♀; *d, e*, *E. dupla*, new species, paratypes (*d*, ♂; *e*, ♀); *f*, *E. chrysomicta* (Meyrick), ♀; *g*, *E. munroei*, new species, ♀ paratype.

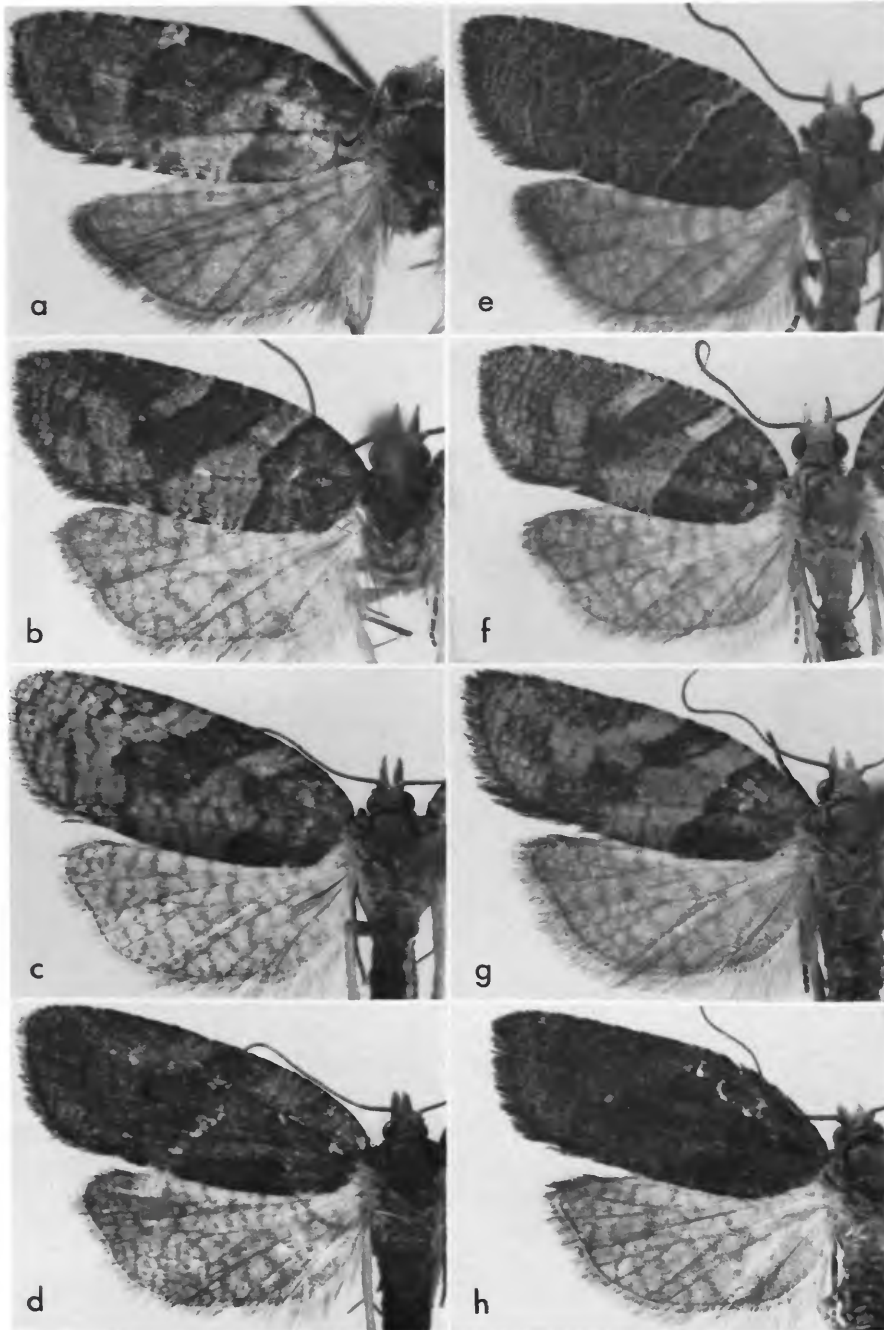


FIGURE 285.—*a*, *Dichelopa castanopsis* Meyrick, ♂ holotype; *b-d*, *Dichelopa amorpha*, new species, paratypes (*b*, ♂; *c,d*, ♀); *e,f*, *Dichelopa flexura*, new species, paratypes (*e*, ♂; *f*, ♀); *g,h*, *D. flexura*, new species, ♀ paratypes.

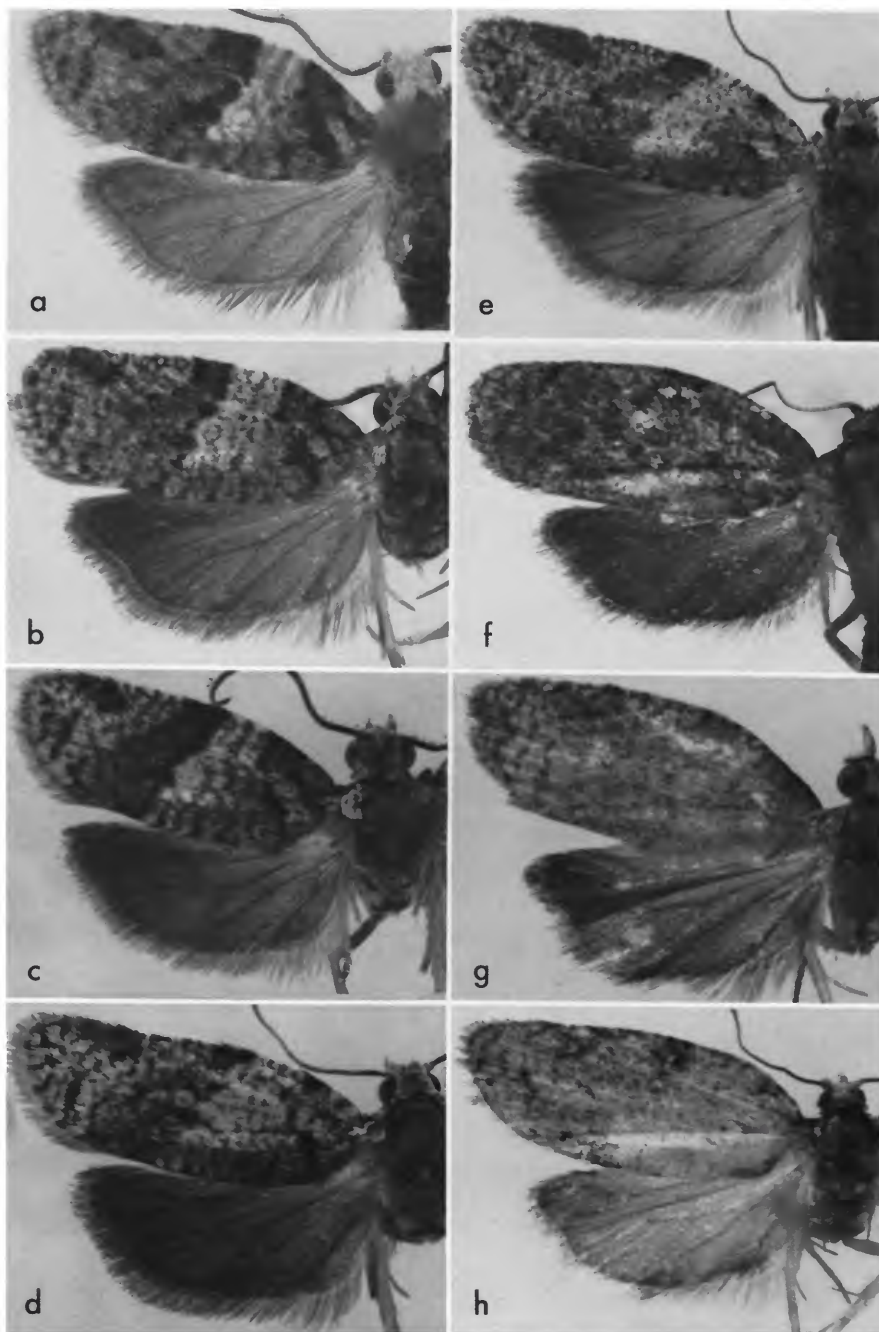


FIGURE 286.—a-f, *Dichelopa harmodes* Meyrick (a, ♂, Nuku Hiva; b, ♂, Hiva Oa; c, ♂, Fatu Hiva; d, ♀ (right wings reversed); e, ♀; f, *D. harmodes?*, ♀); g, *D. hadrotes*, new species, ♂ holotype; h, *D. hadrotes?*, ♀.

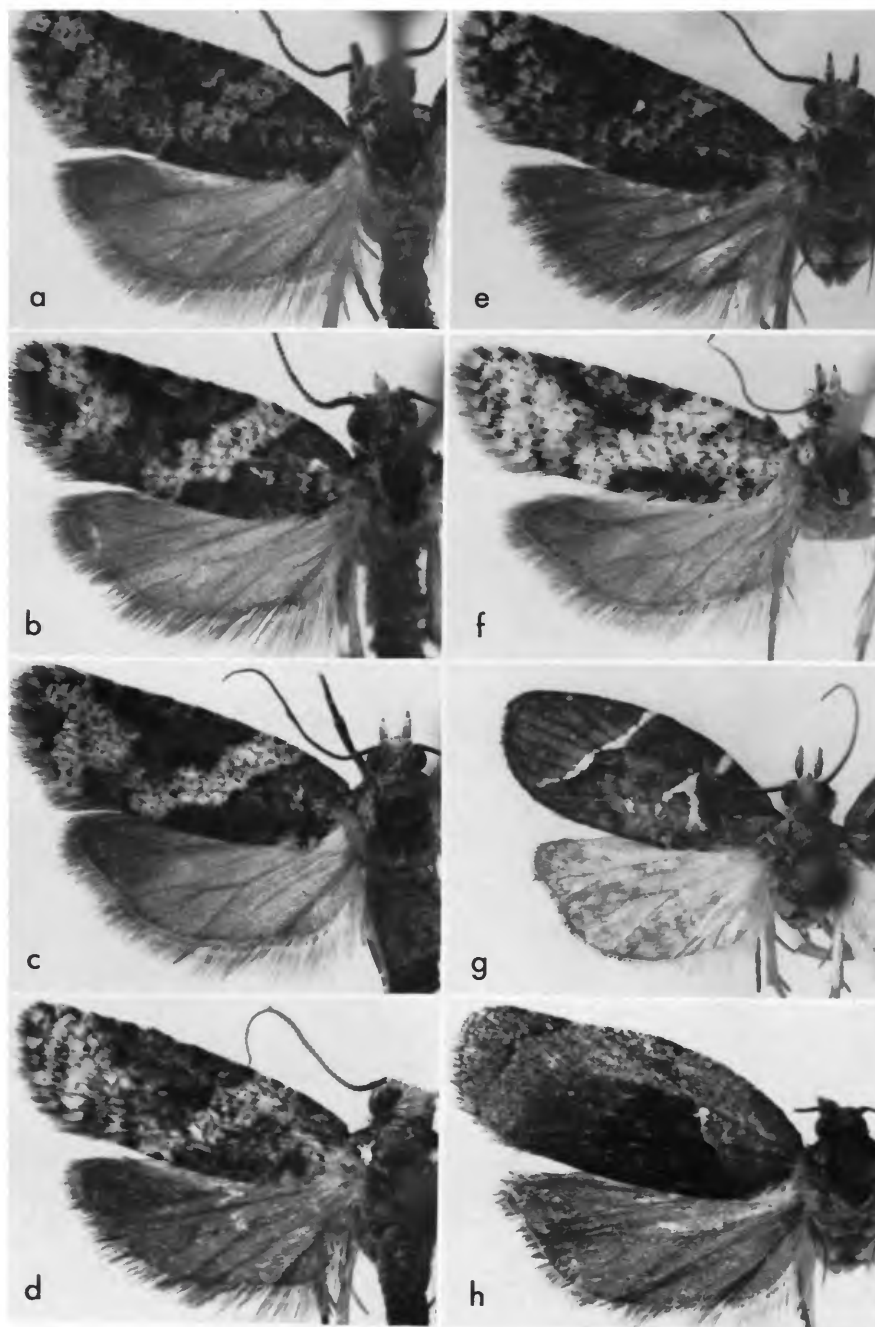


FIGURE 287.—*a-f*, *Dichelopa choleranthes* Meyrick (*a, b*, ♂; *c-f*, ♀); *g*, *D. chionogramma*, new species, ♂ holotype; *h*, *D. dorsata*, new species, ♀ holotype.

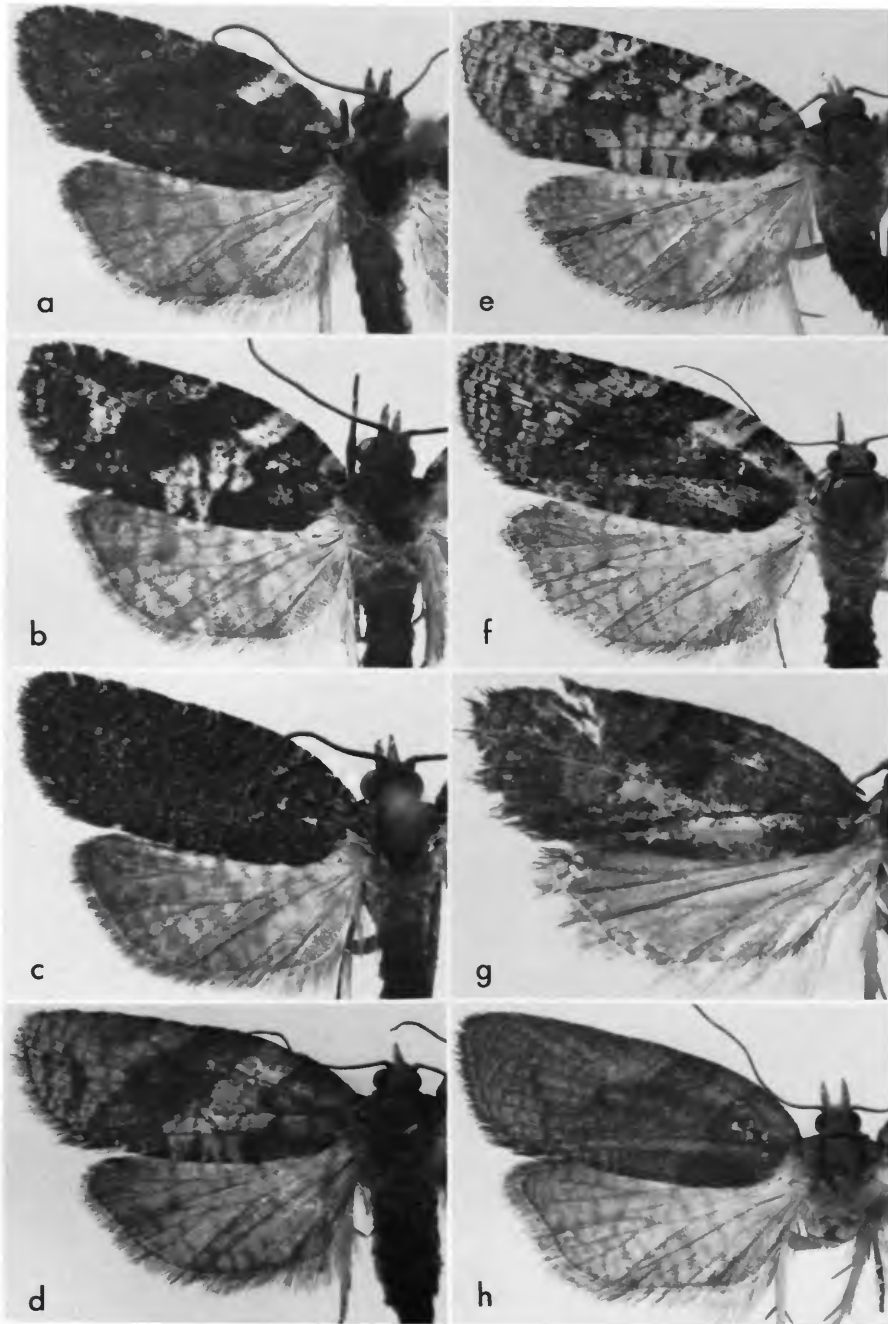


FIGURE 288.—*a-c*, *Dichelopa peropaca* Meyrick (*a*, *b*, ♂; *c*, *D. peropaca*?, ♂); *d-f*, *Dichelopa platyxantha*, new species (*d*, ♀ holotype; *e*, *f*, ♀ paratypes); *g*, *Dichelopa orthiostyla* Meyrick, ♀ holotype; *h*, *Dichelopa flexura*, new species, ♀ paratype.

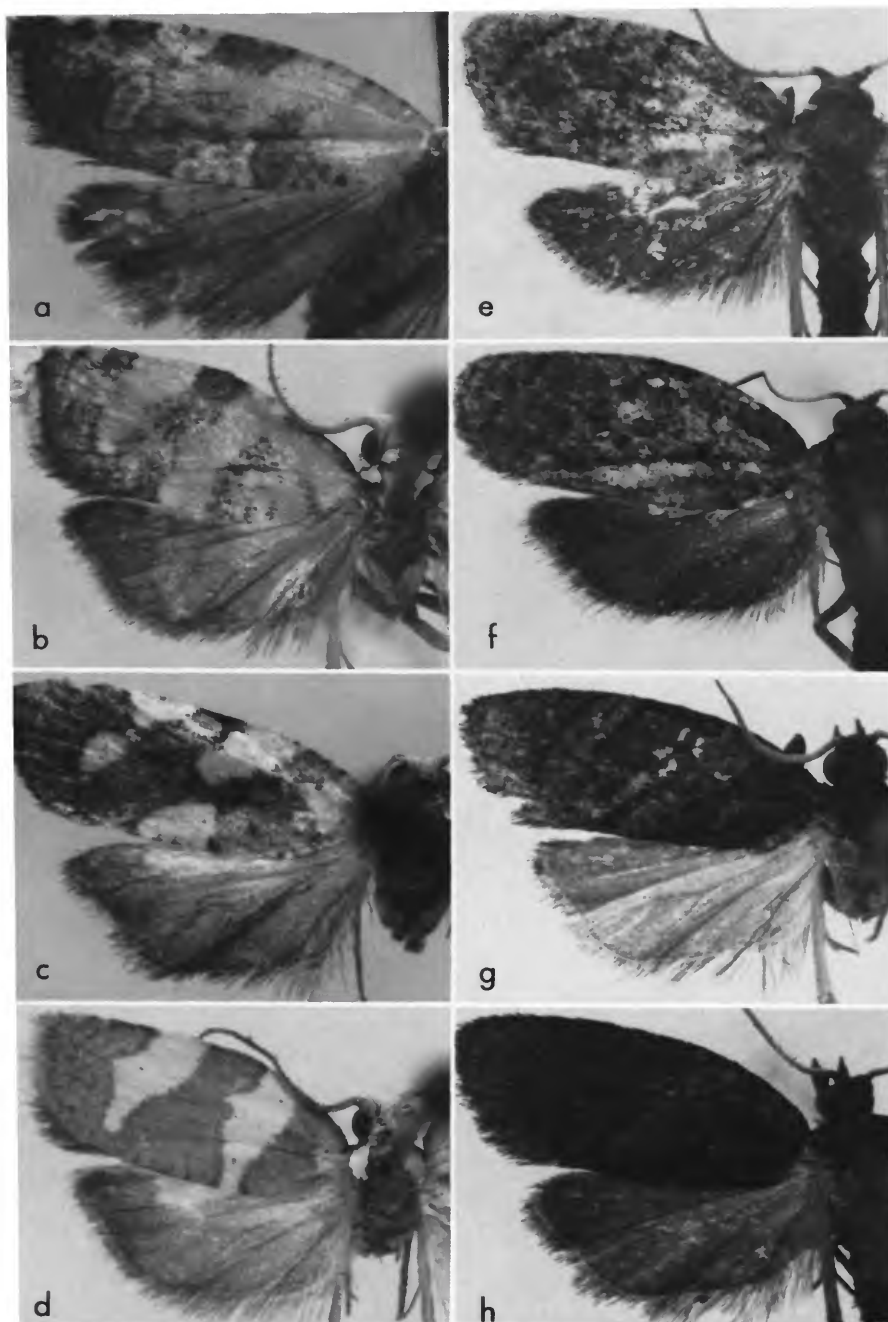


FIGURE 289.—*a*, *Dichelopa phalaranthes phalaranthes* Meyrick, ♀ holotype; *b, c*, *D. p. aporrhagma*, new subspecies (*b*, ♂ holotype; *c*, ♀ paratype (right wings reversed); *d*, *D. ochroma*, new species, ♂ holotype; *e*, *D. gnoma*, new species, ♂ holotype; *f*, *D. paragnoma*, new species, ♀ holotype; *g*, *D. praestrigata* Meyrick, ♂; *h*, *D. meligma*, new species, ♂ holotype.

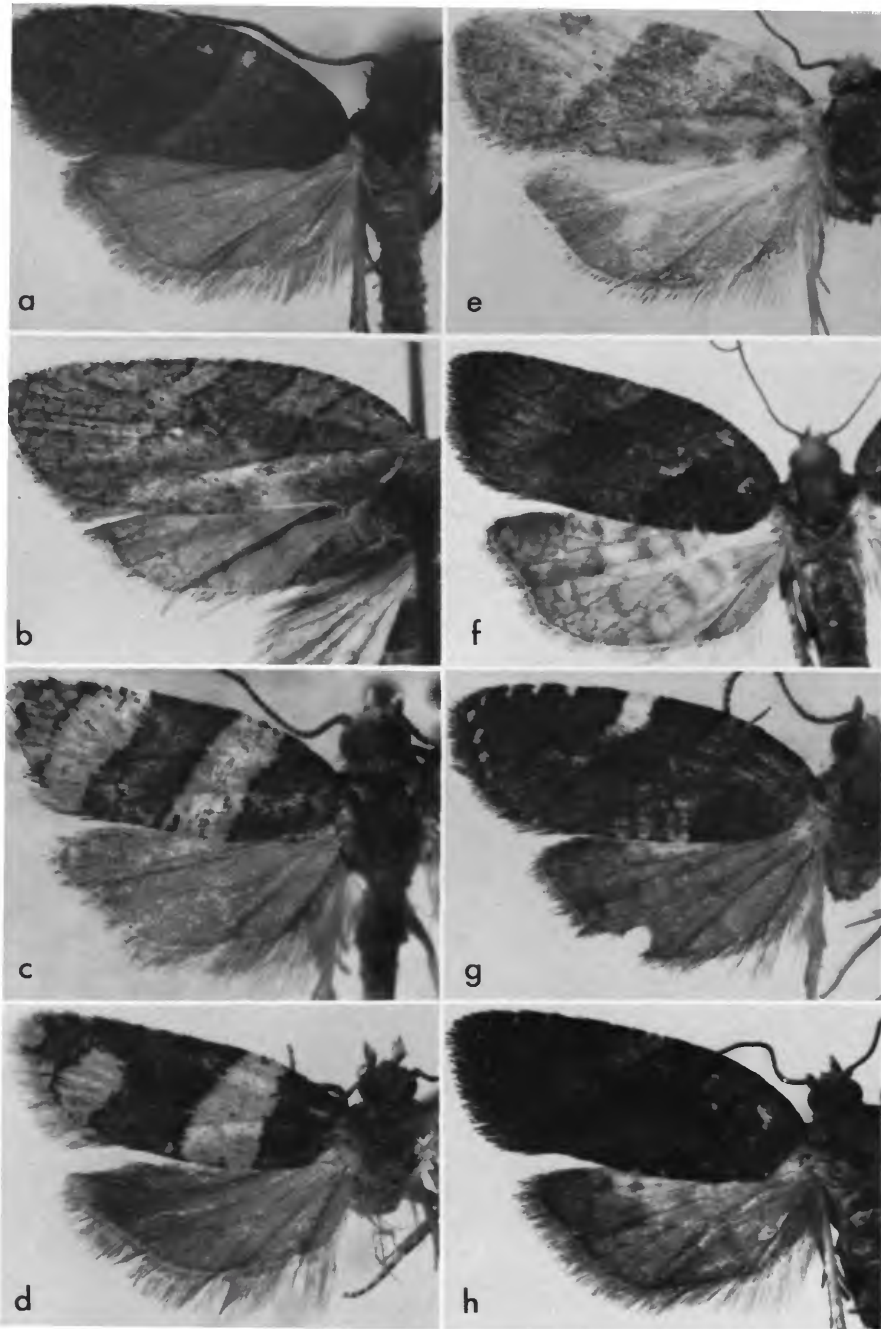


FIGURE 290.—*a*, *Dichelopa zona*, new species, ♂ holotype; *b*, *D. porphyrophanes* Meyrick, ♀ holotype; *c*, *D. pyrsoγραμμα* Meyrick, ♂ (right wings reversed); *d*, *D. pachymeta* Meyrick, ♀; *e*, *D. cirrhodoris* Meyrick, ♀; *f*, *D. canitia*, new species, ♀ holotype; *g*, *h*, *D. argosphena* Meyrick (*g*, ♂; *h*, ♀).

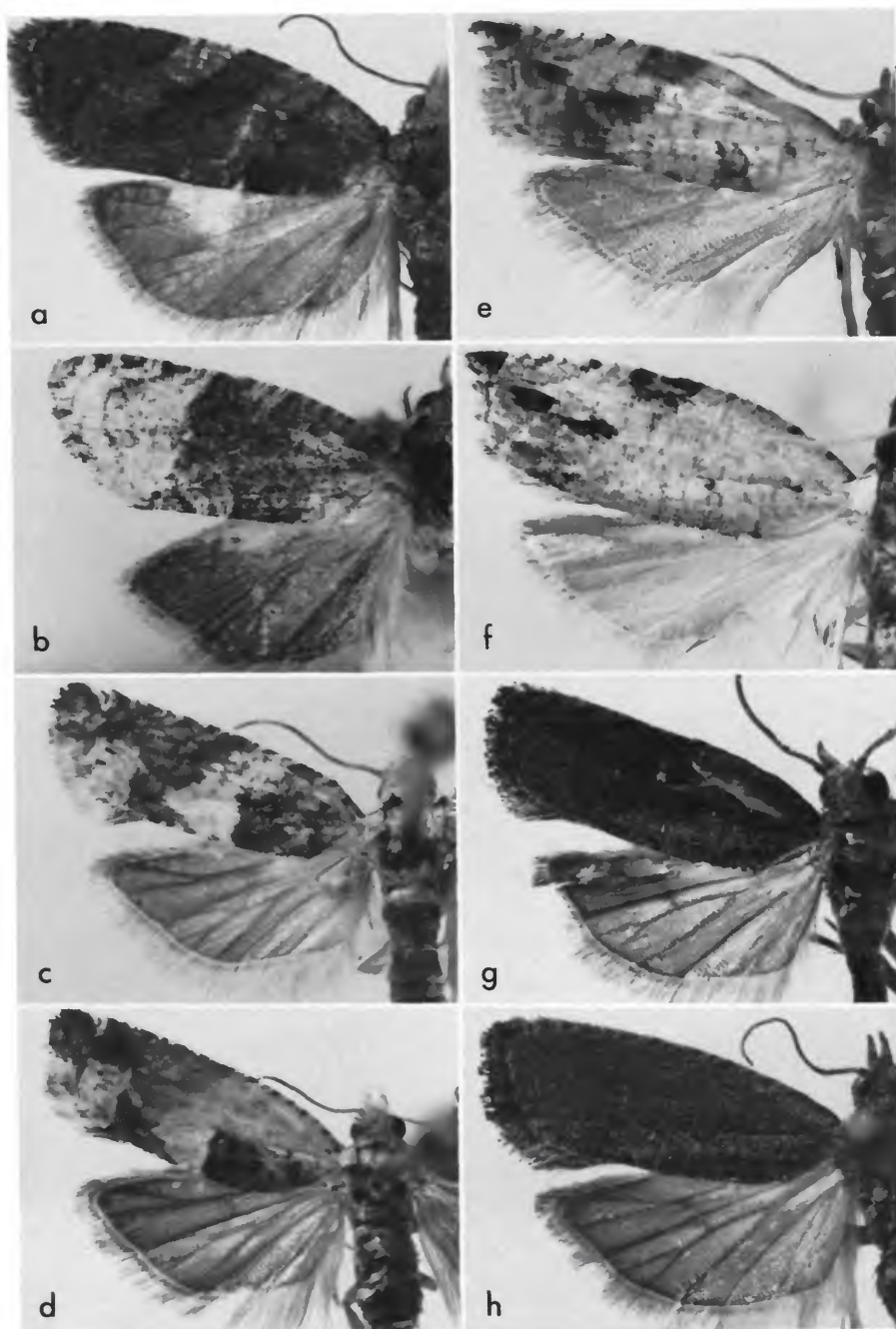


FIGURE 291.—*a*, *Dichelopa argema*, new species, ♀ paratype; *b*, *Eucosma agriochlora* Meyrick, ♂; *c*, *d*, *Crociosema plebejana* Zeller (*c*, ♂; *d*, ♀); *e*, *f*, *Duessa marquesana*, new species (*e*, ♂ holotype; *f*, ♀ paratype); *g*, *h*, *Strepsicrates holotephras* (Meyrick) (*g*, ♂; *h*, ♀).

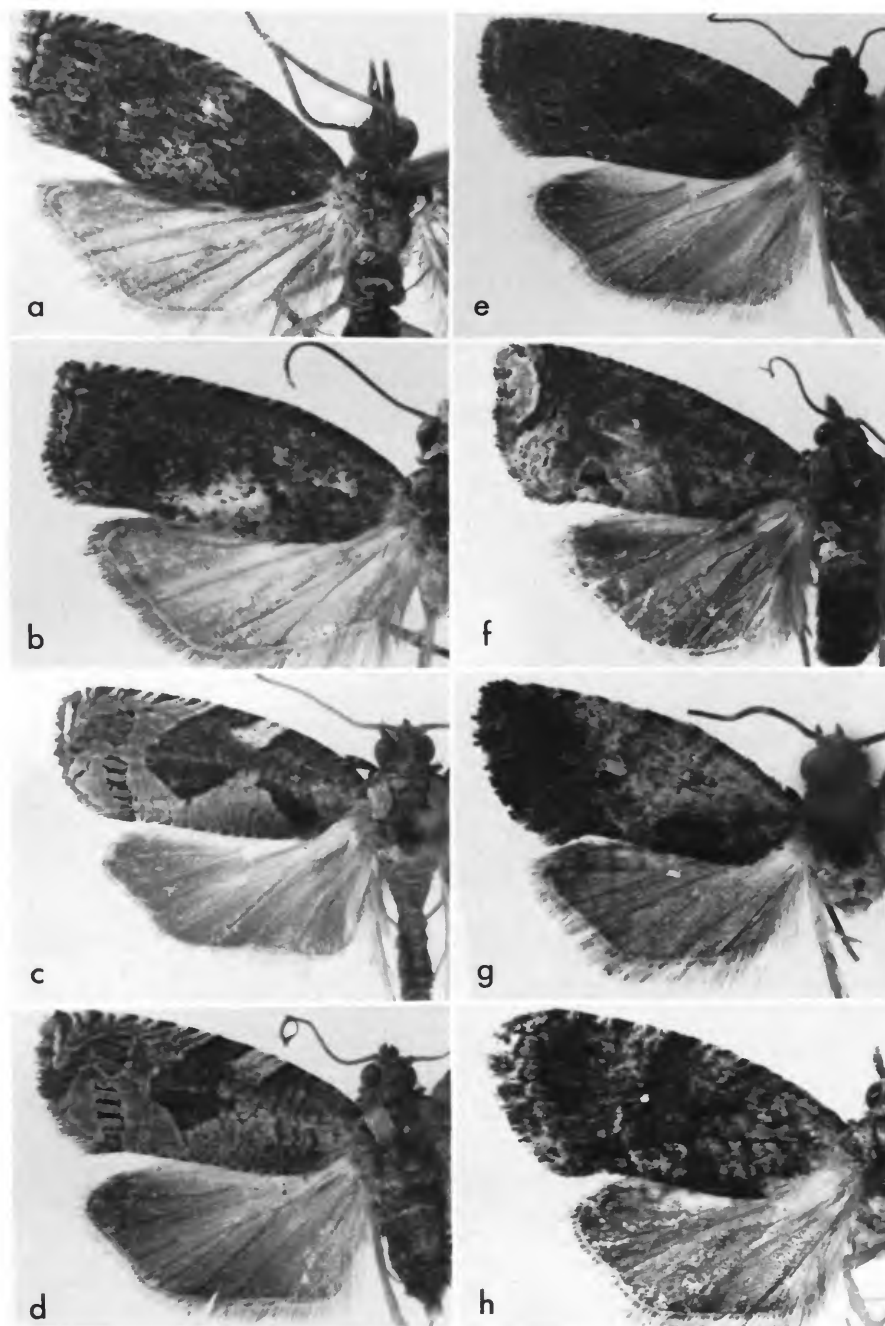


FIGURE 292.—*a, b*, *Tritopterna eocnephaea* (Meyrick) (*a*, ♂; *b*, ♀); *c, e*, *Dudia eumenica* (Meyrick) (*c*, ♂; *d, e*, ♀); *f*, *Cryptophlebia pallifimbriana* Bradley, ♀; *g, h*, *C. chaomorpha* (Meyrick) (*g*, ♂; *h*, ♀).

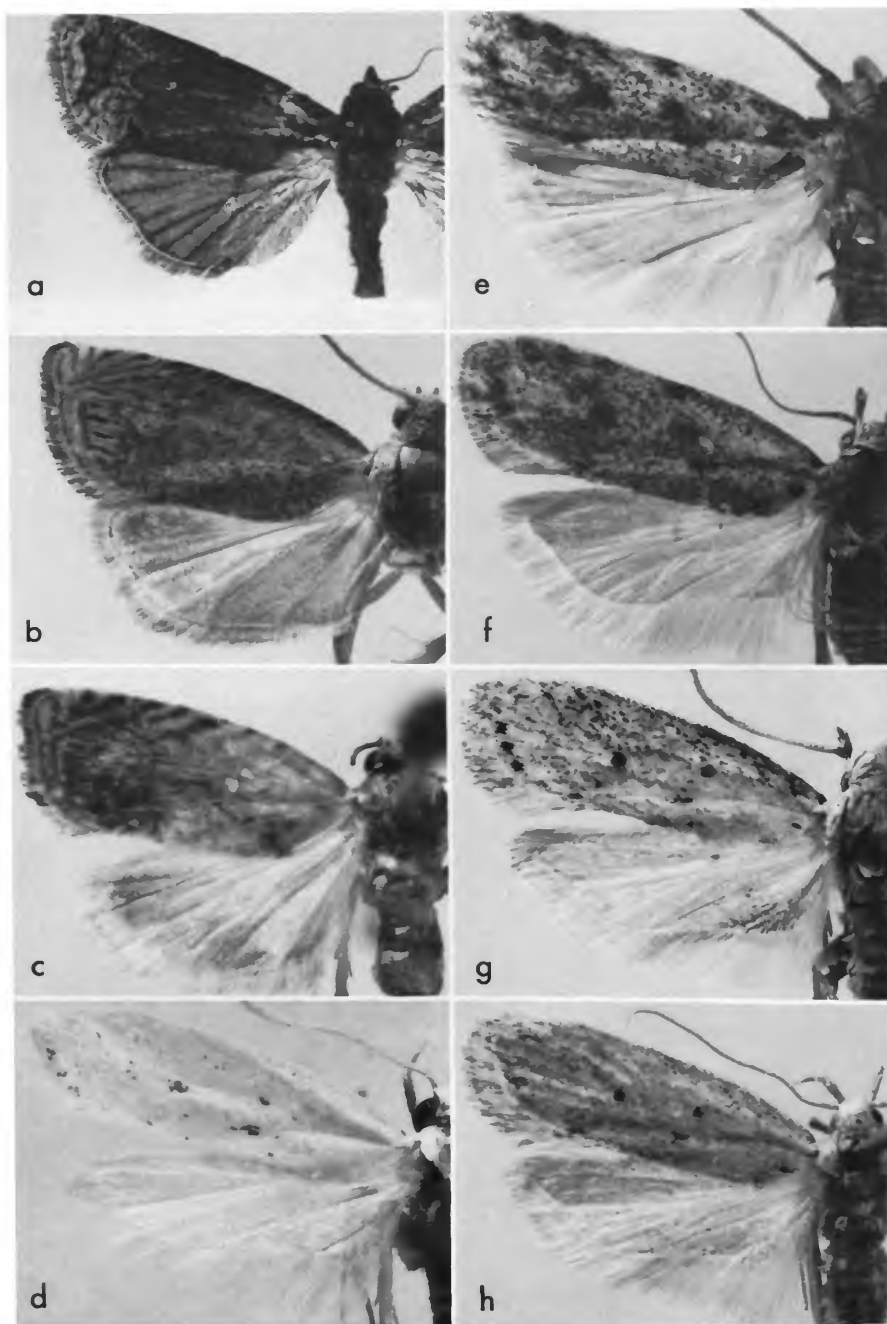


FIGURE 293.—*a*, *Cryptophlebia rhynchias* (Meyrick), ♂ (photo courtesy British Museum (NH)); *b*, *c*, *Cydia pseudomalesana*, new species (*b*, ♂ holotype; *c*, ♀ paratype); *d*, *Autosticha leucoptera*, new species, ♂ holotype; *e*, *f*, *Stoerberhinus testaceus* Butler (*e*, ♂; *f*, ♀); *g*, *h*, *Autosticha pelodes* (Meyrick) (*g*, ♂; *h*, ♀).

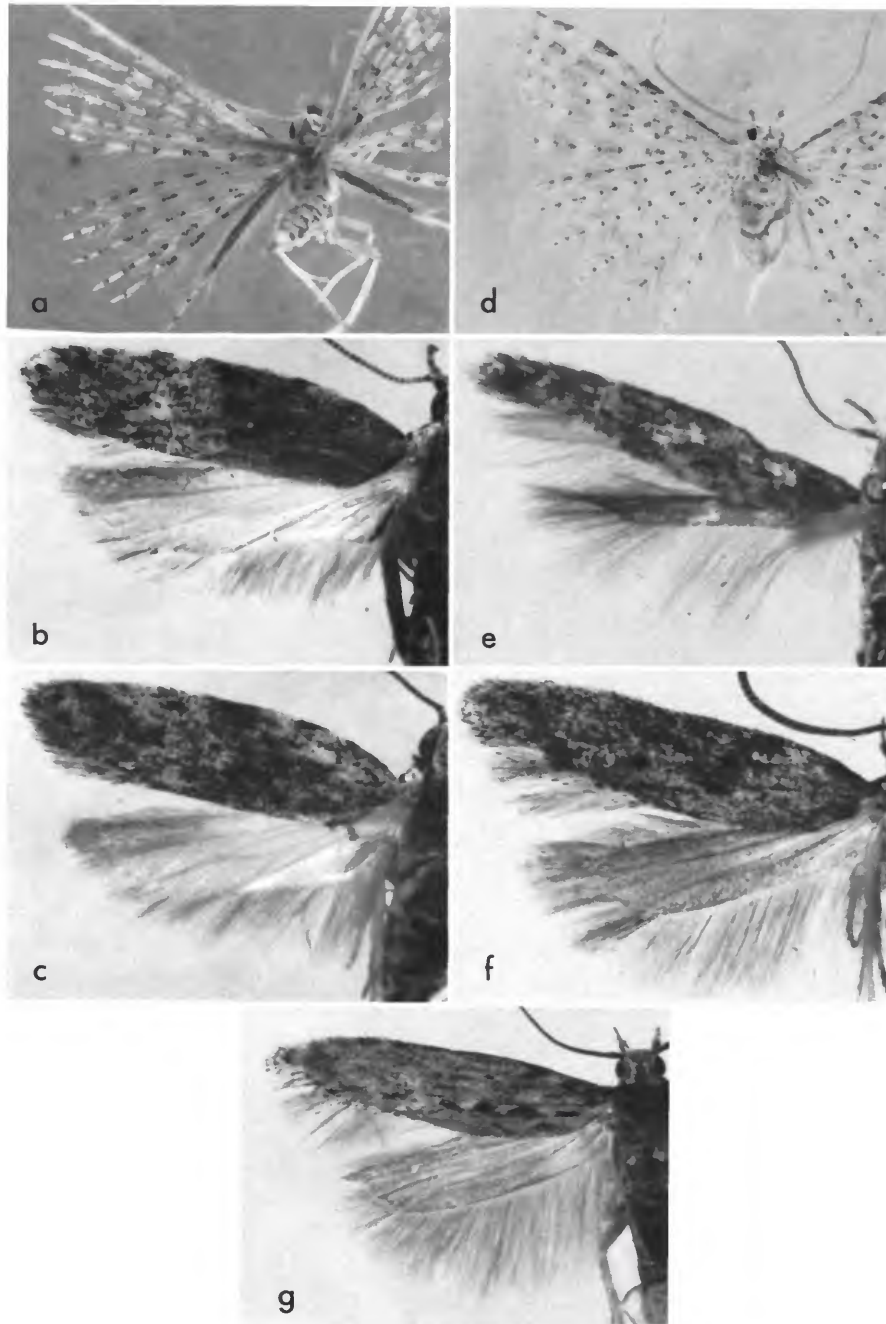


FIGURE 294.—*a*, *Orneodes pterochroma*, new species, ♂ holotype; *b*, *c*, *Chelophoba melaina*, new species (*b*, ♂ holotype; *c*, ♀ paratype); *d*, *Orneodes xanthozona*, new species, ♂ paratype; *e*, *Pitycona attenuata*, new species, ♀ holotype; *f*, *Ephysteris longicornis*, new species, ♂ holotype; *g*, *Phthorimaea operculella* (Zeller), ♂.

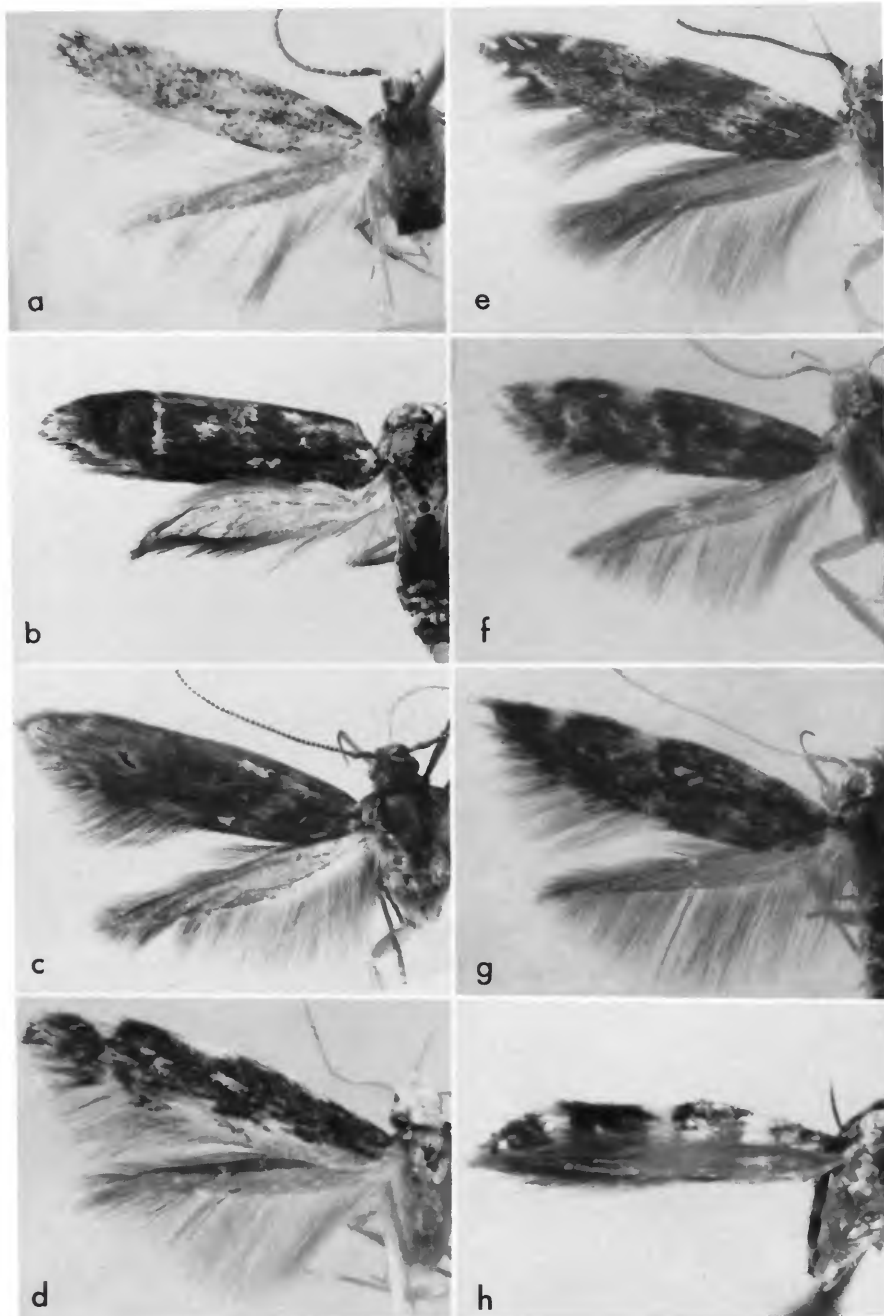


FIGURE 295.—*a*, *Asymphorodes macrogramma*, new species, ♂ holotype; *b*, *A. holoporphyra* Meyrick, ♀ holotype; *c*, *A. didyma*, new species, ♀ holotype; *d*, *A. plemmelia*, new species, ♂ holotype; *e*, *A. trigrapha*, new species, ♂ holotype; *f*, *g*, *A. nephocirca* Meyrick, (*f*, ♂; *g*, ♀); *h*, *A. astathopis* (Meyrick), ♀ holotype.

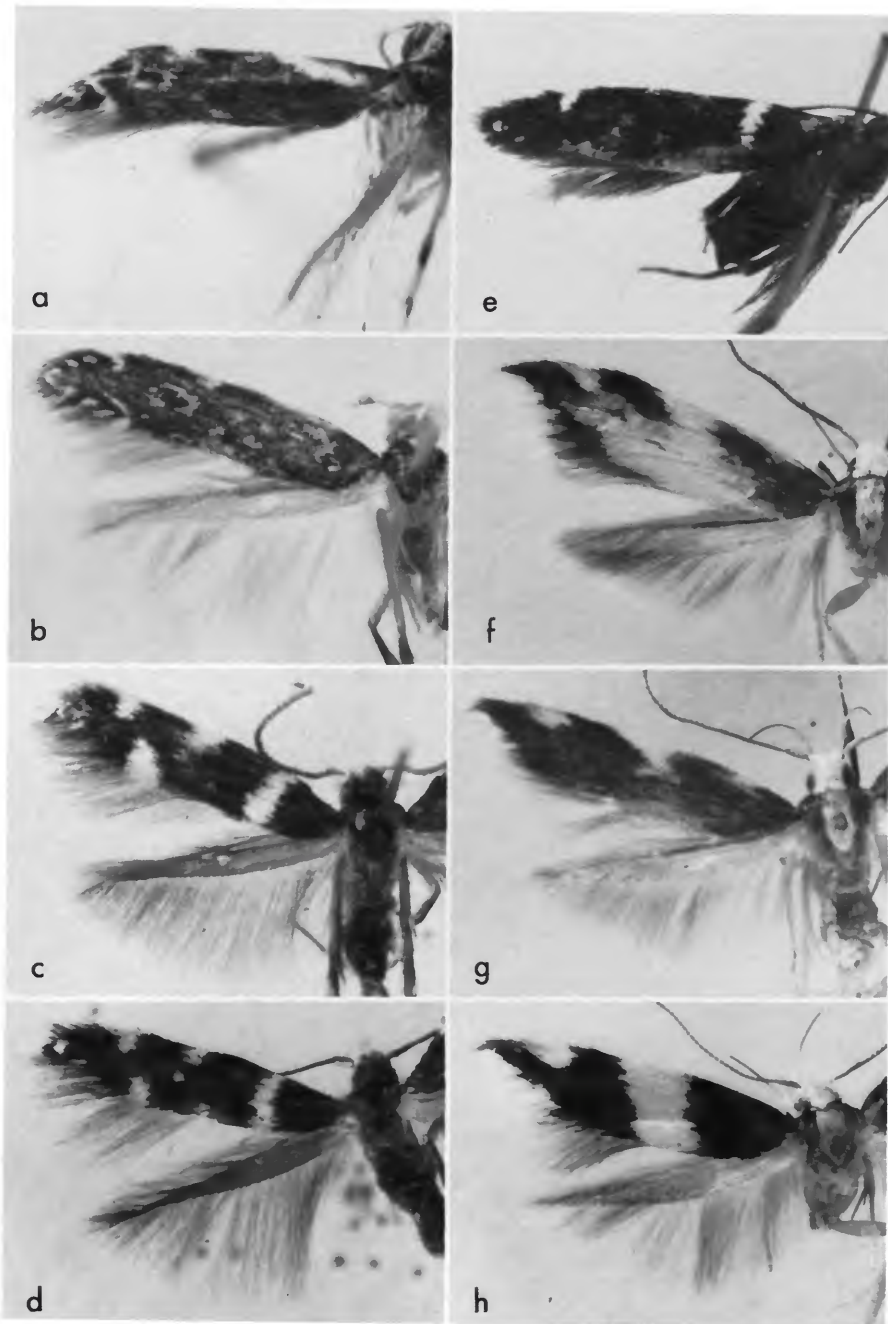


FIGURE 296.—*a, b, Asymphorodes acrophrictis* Meyrick, *a, ♂* holotype; *b, ♂*; *c, d, A. diamphidius*, new species (*c, ♂* holotype; *d, ♀* paratype); *e, A. spintheropus* (Meyrick), *♀* holotype (right wings reversed); *f-h, A. valligera* Meyrick (*f, g, ♂*; *h, ♀* (typical)).

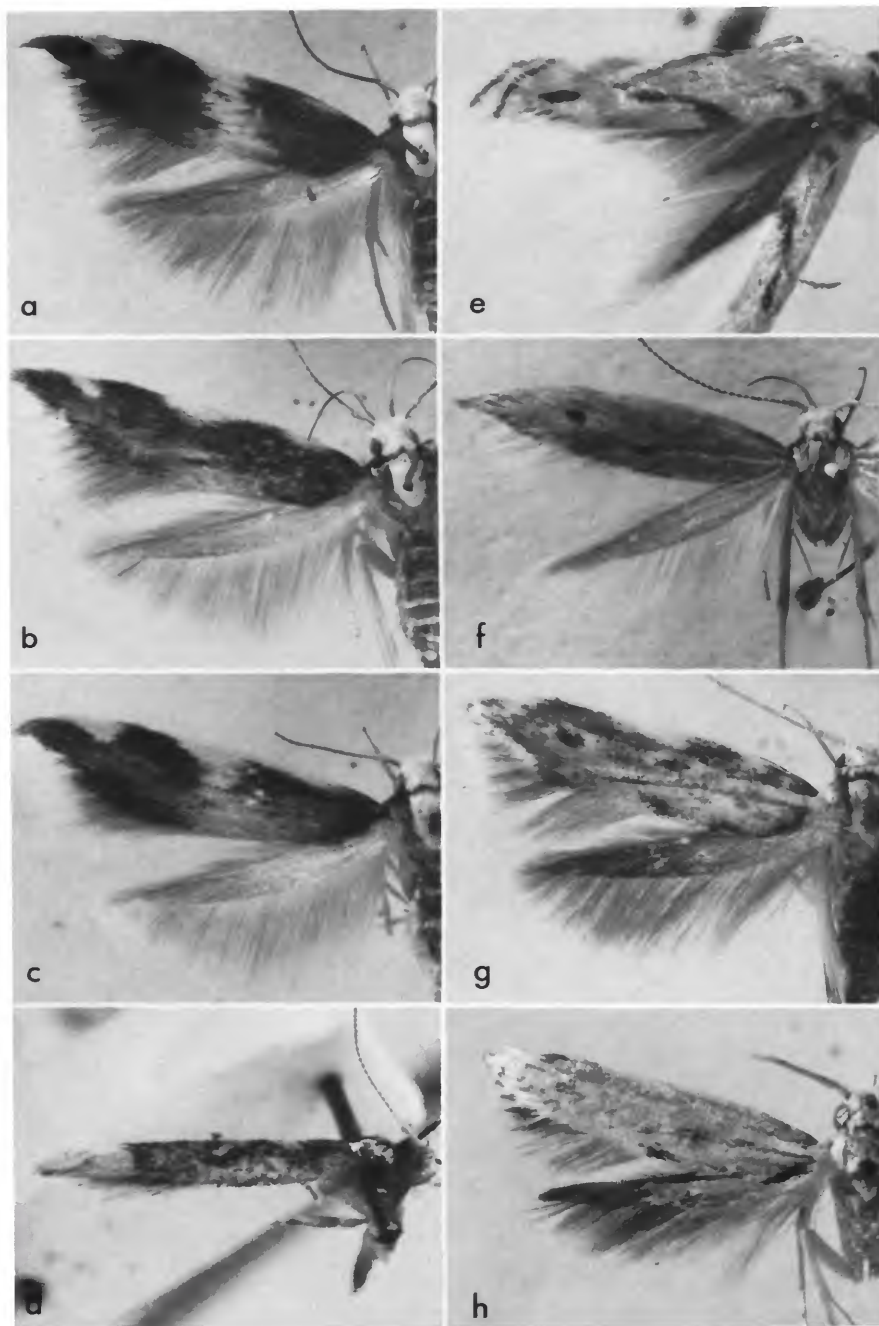


FIGURE 297.—a-c, *Asymphorodes valligera* Meyrick (a-c, ♀); d, *A. leucoterma* Meyrick, ♀ holotype; e, *A. admirandus* Meyrick, ♀ holotype; f, *A. pollutus* Meyrick, ♀; g, *A. aporia*, new species, ♀ paratype; h, *A. hypostema*, new species, ♂ holotype (right wings reversed).

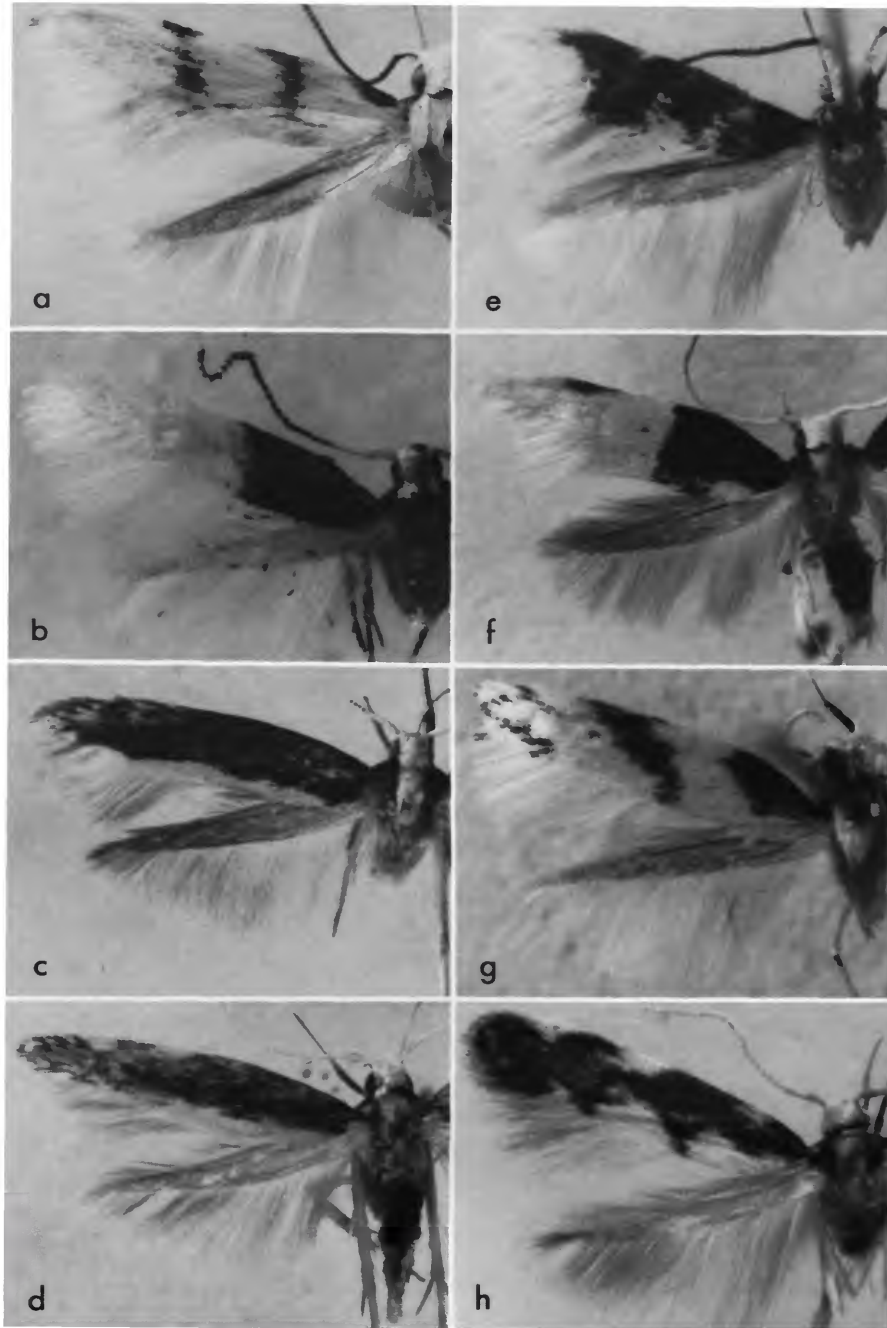


FIGURE 298.—*a*, *Asymphorodes brevimacula*, new species, ♂ holotype; *b*, *A. hemileucus*, new species, ♀ paratype; *c*, *A. cirsoides* Meyrick, ♀ (right wings reversed); *d*, *A. myronotus* Meyrick, ♀; *e*, *A. cuneatus*, new species, ♂ holotype; *f*, *A. seminiger*, new species, ♂ holotype; *g*, *A. albicoma*, new species, ♂ holotype; *h*, *A. semiluteus*, new species, ♂ holotype (right wings reversed).

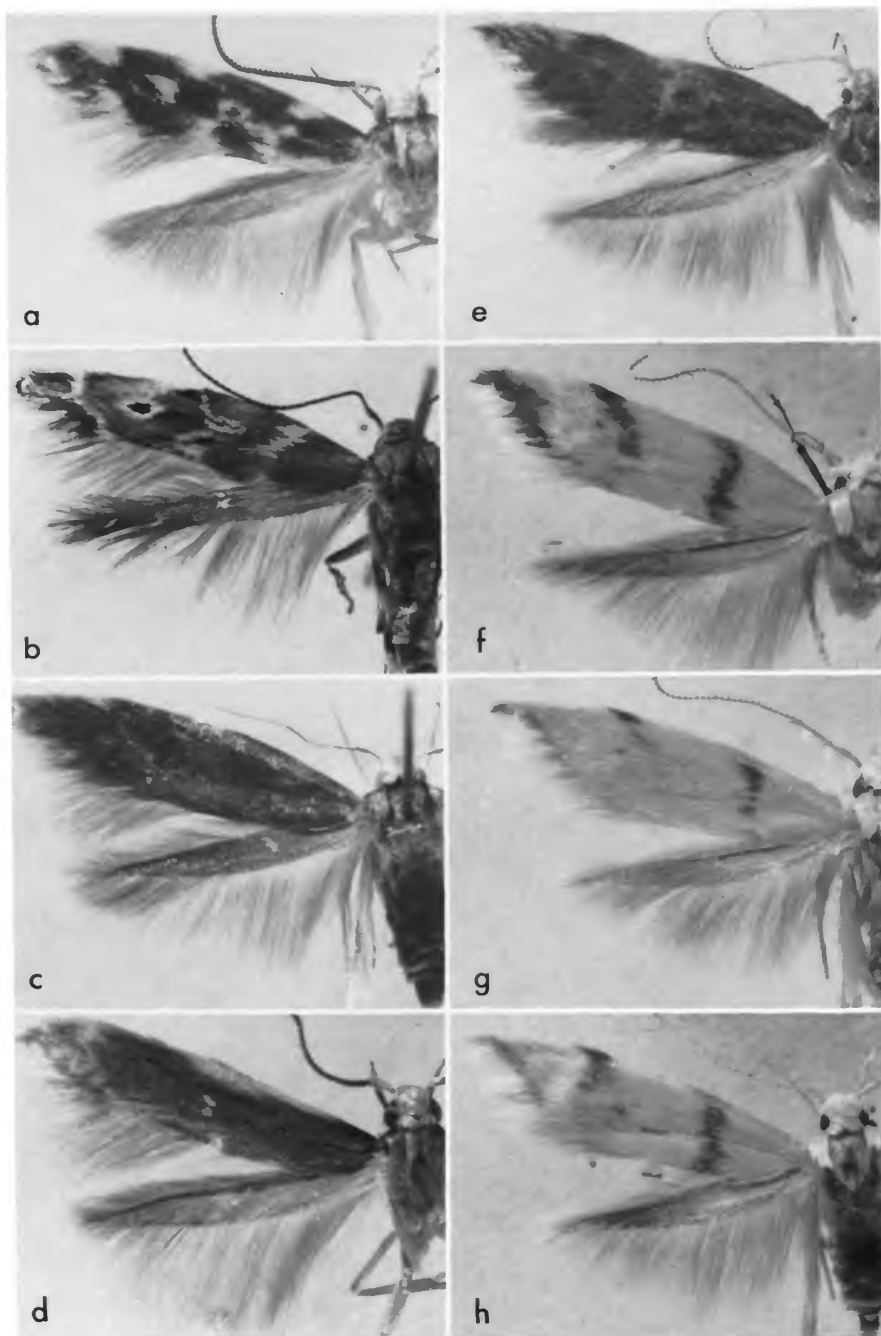


FIGURE 299.—*a*, *Asymphorodes nigricornis*, new species, ♂ holotype; *b*, *A. cicatricula*, new species, ♀ holotype; *c*, *A. amblysona*, new species, ♀ paratype; *d*, *A. chalcopterus*, new species, ♂ holotype; *e*, *A. lenticula*, new species, ♂ holotype; *f-h*, *A. xanthostola* Meyrick (*f*, *g*, ♂; *h*, ♀).

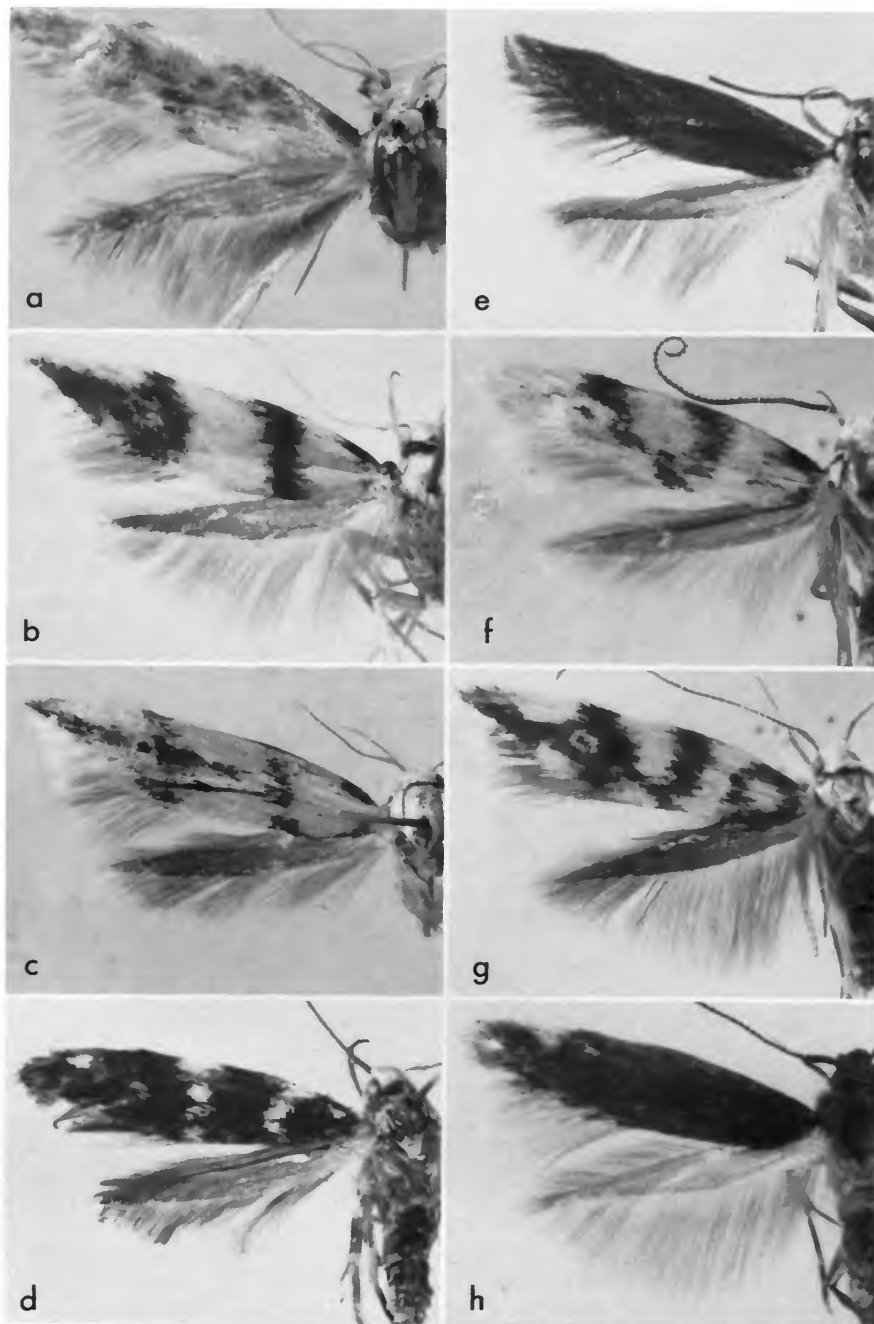


FIGURE 300.—*a*, *Asymphorodes chrysophanes*, new species, ♂ holotype (right wings reversed); *b*, *A. mesoxanthus*, new species, ♀ holotype; *c*, *A. adynatus*, new species, ♀ holotype (right wings reversed); *d*, *A. melanosoma*, new species, ♂ holotype; *e*, *A. chalcocoma*, new species, ♂ holotype; *f*, *g*, *A. oculisignis* Meyrick (*f*, ♂; *g*, ♀); *h*, *A. homosoma*, new species, ♀ paratype.

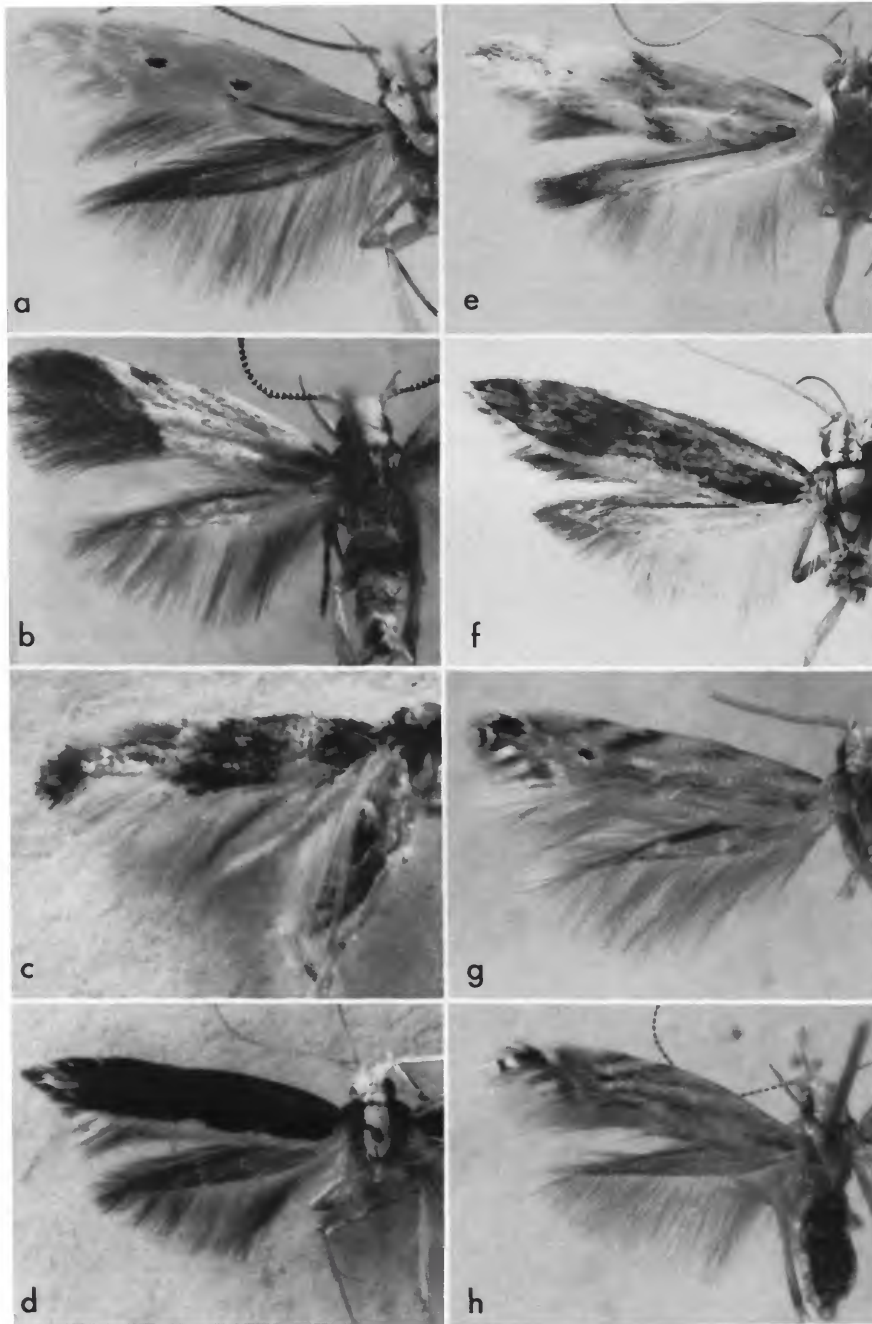


FIGURE 301.—*a*, *Asymphorodes bipunctatus*, new species, ♂ holotype; *b*, *A. coesyrius* Meyrick, ♂ (right wings reversed); *c*, *A. ergodes* Meyrick, ♂ holotype; *d*, *A. remigiata*, new species, ♂ paratype (right wings reversed); *e*, *A. emphereia*, new species, ♂ holotype; *f*, *A. regina*, new species, ♂ paratype; *g*, *h*, *A. sphenocopa* Meyrick (*g*, ♂; *h*, ♀).

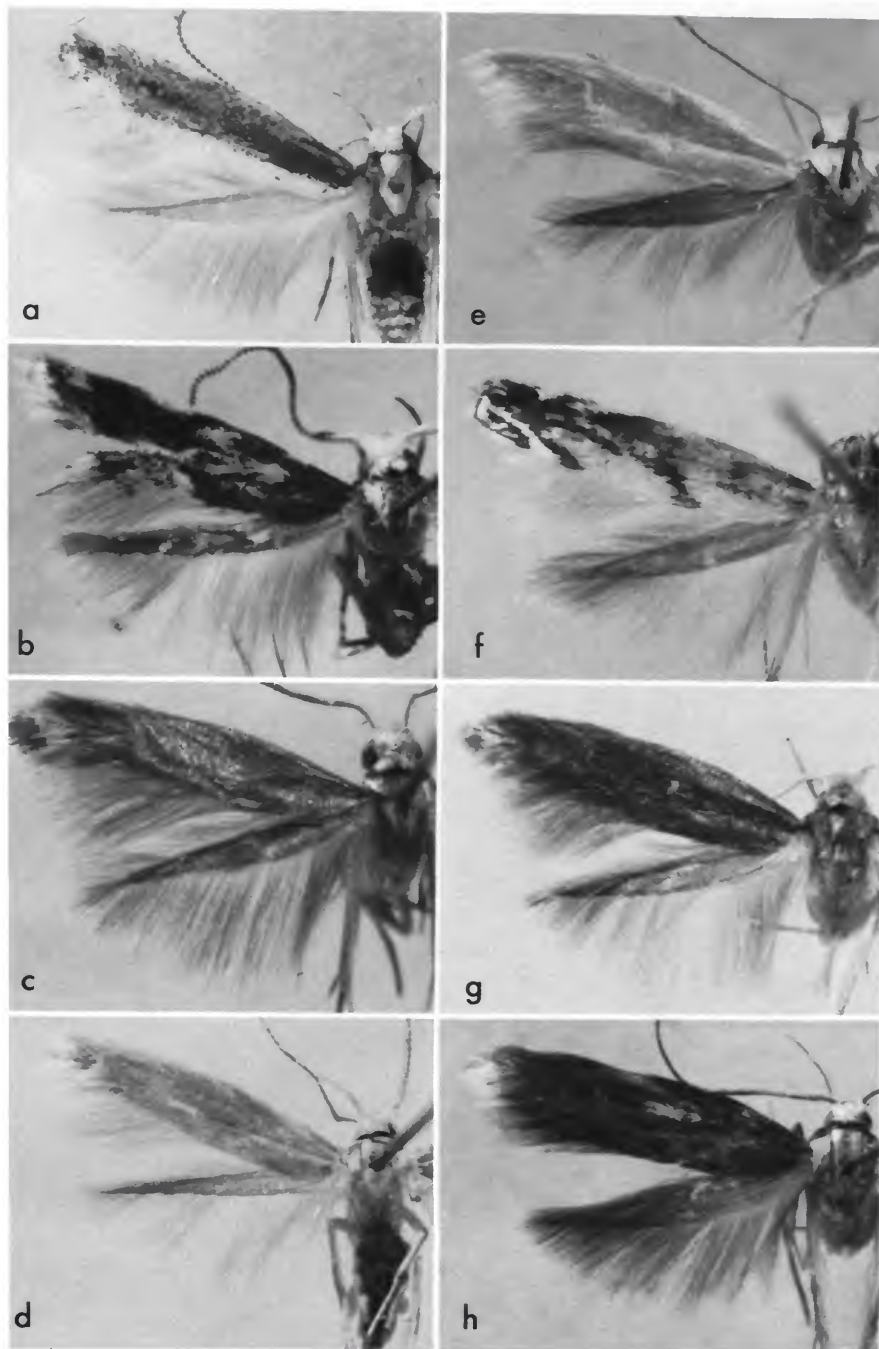


FIGURE 302.—*a*, *Asymphorodes poliopterus*, new species, ♀ paratype; *b*, *A. canicoma*, new species, ♂ paratype; *c*, *A. lucidus*, new species, ♂ holotype; *d*, *A. diffidentia*, new species, ♀ holotype; *e*, *A. culminis*, new species, ♀ holotype; *f*, *A. fractura*, new species, ♂ holotype (right wings reversed); *g*, *A. lucerna*, new species, ♂ holotype; *h*, *A. phalarogramma*, new species, ♂ holotype.

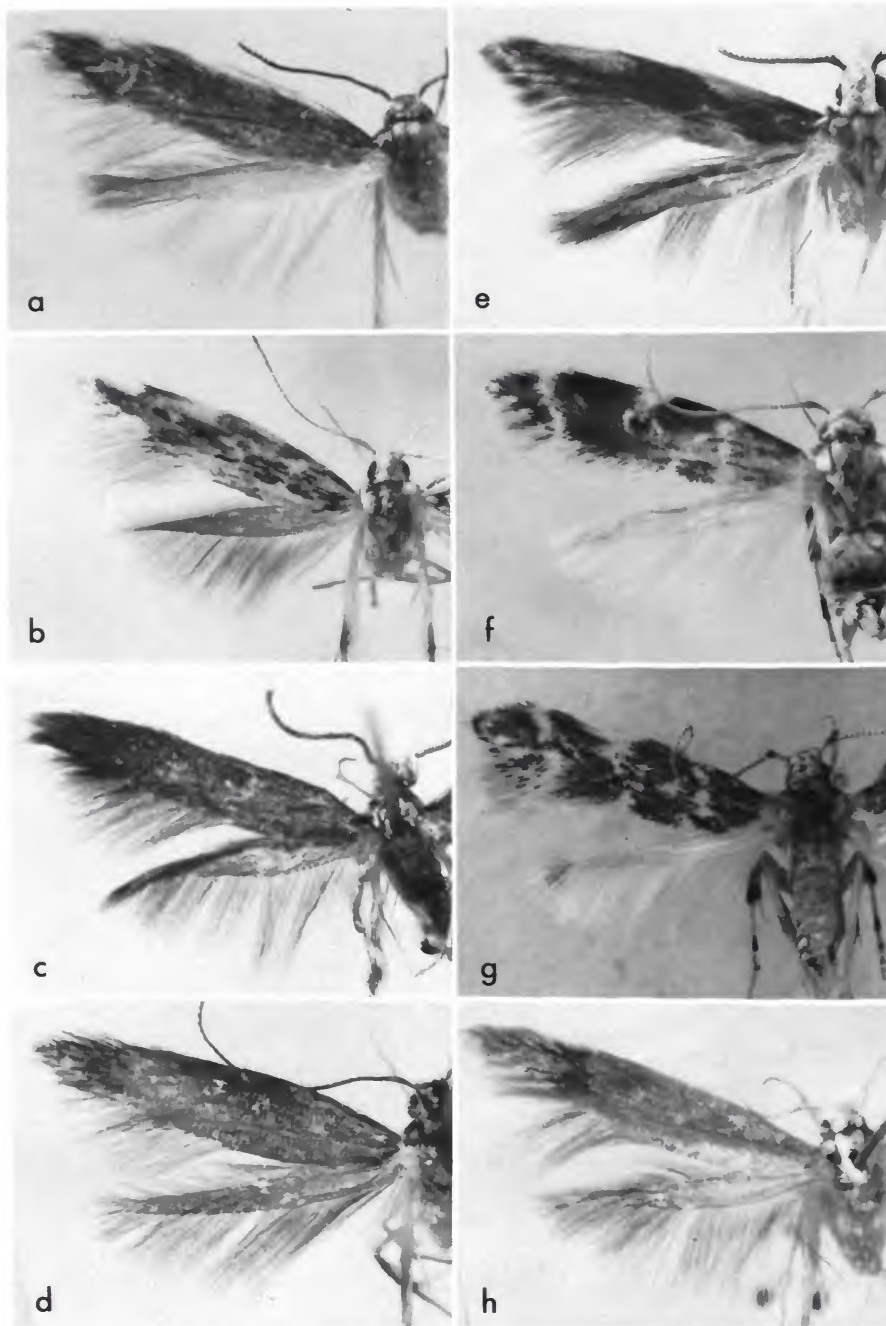


FIGURE 303.—a, *Asymphorodes leucoloma*, new species, ♀ holotype; b, *A. paraporia*, new species, ♀ holotype; c, *A. chalcosoma*, new species, ♂ paratype; d, *A. aenigma*, new species, ♀ holotype (right wings reversed); e, *A. montgomeryi*, new species, ♂ holotype; f, g, *A. nuciferae*, new species (f, ♂ holotype; g, ♀ paratype); h, *A. favilla*, new species, ♀ holotype.

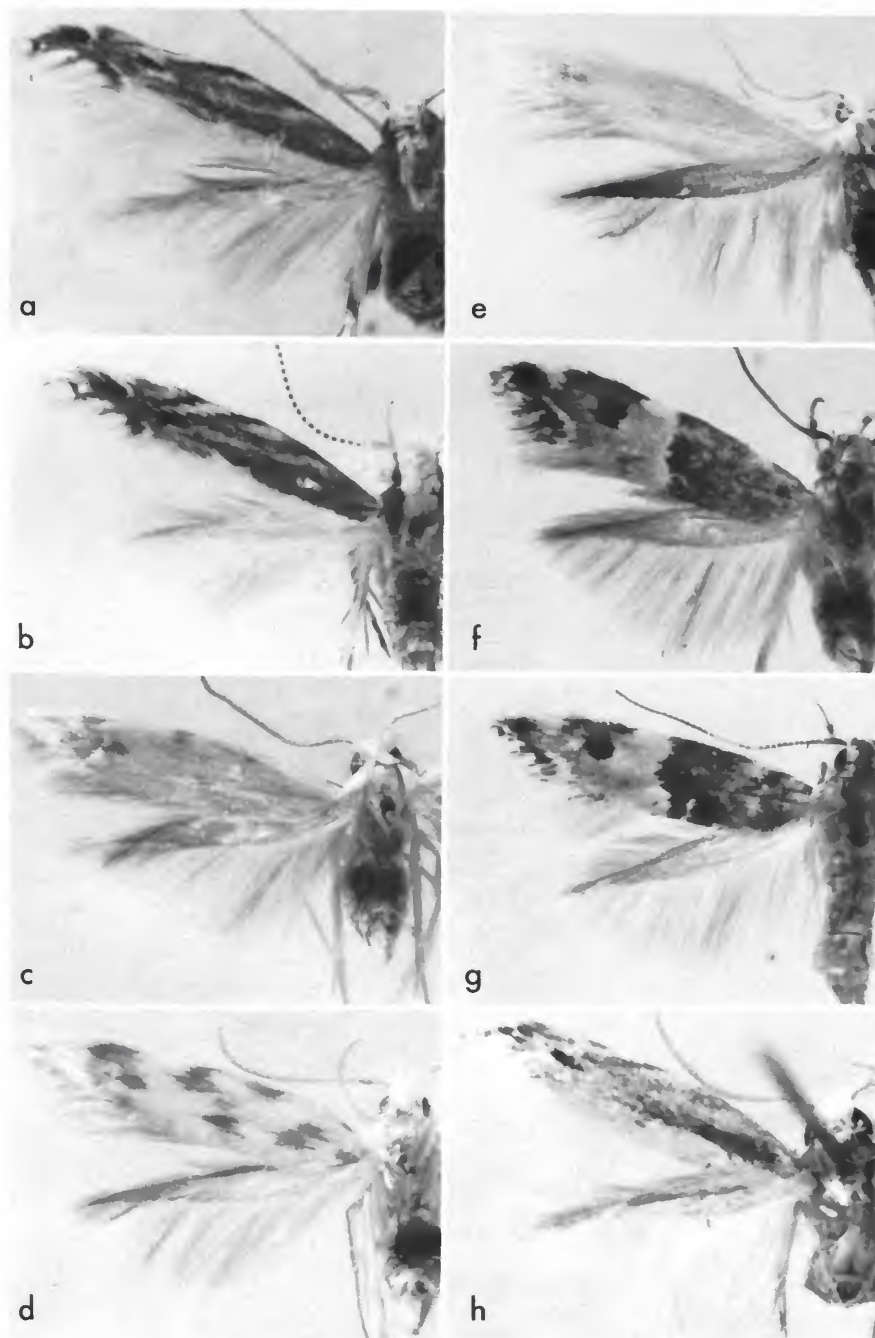


FIGURE 304.—*a, b*, *Asymphorodes trichogramma*, new species, paratypes, (*a*, ♂; *b*, ♀); *c-e*, *A. sericeus*, new species (*c*, ♂ holotype (right wings reversed); *d*, ♂ paratype; *e*, ♀ paratype); *f, g*, *A. circopis* Meyrick (*f*, ♂; *g*, ♀); *h*, *A. spodogramma*, new species, ♂ paratype.

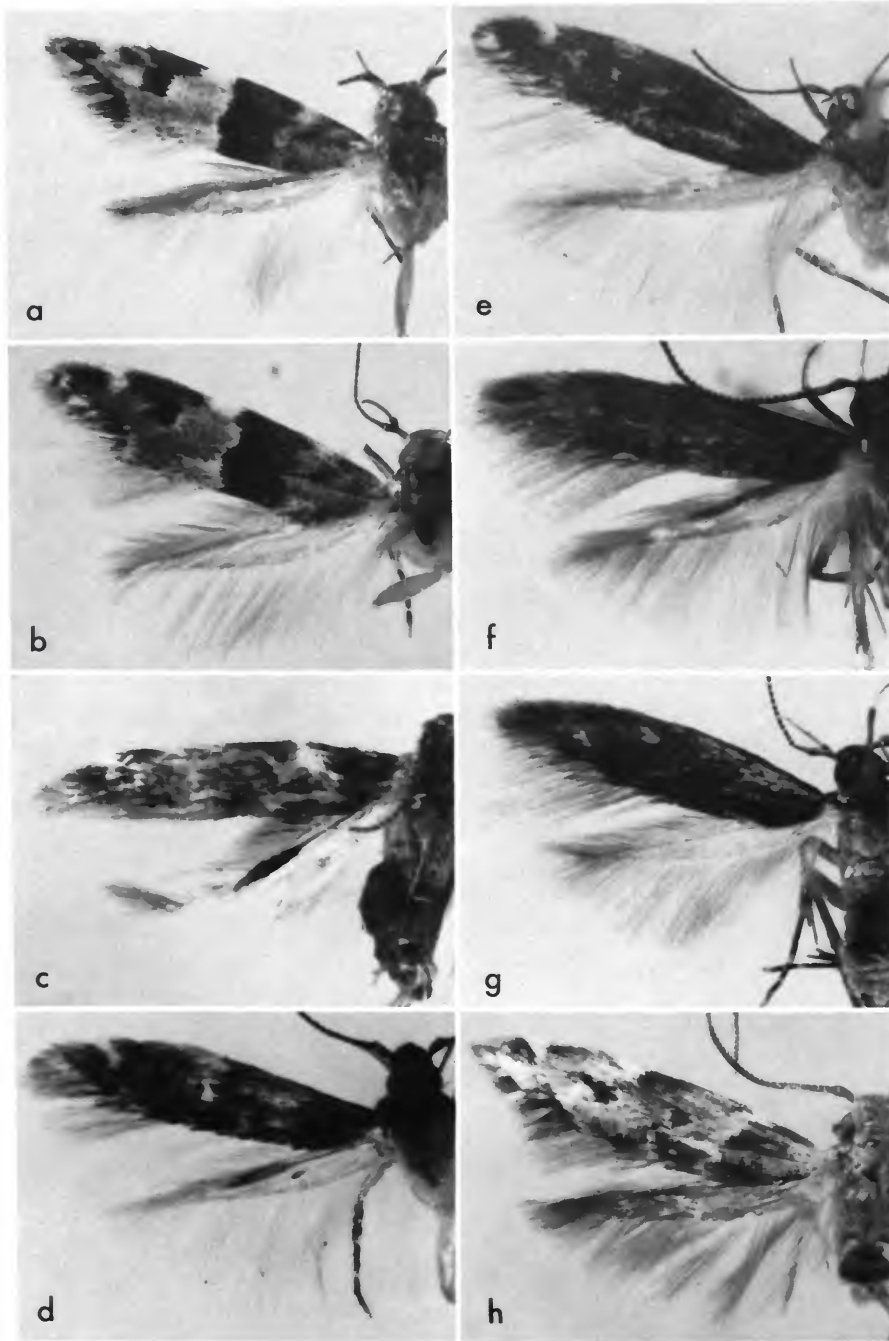


FIGURE 305.—*a, b*, *Asymphorodes acritopterus*, new species, paratypes (*a*, ♂; *b*, ♀); *c–e*, *A. balanotis* Meyrick (*c*, ♂ holotype; *d*, ♂; *e*, ♀); *f, g*, *A. acerbus* Meyrick (*f*, ♂; *g*, ♀); *h*, *A. honoria*, new species, ♂ holotype.

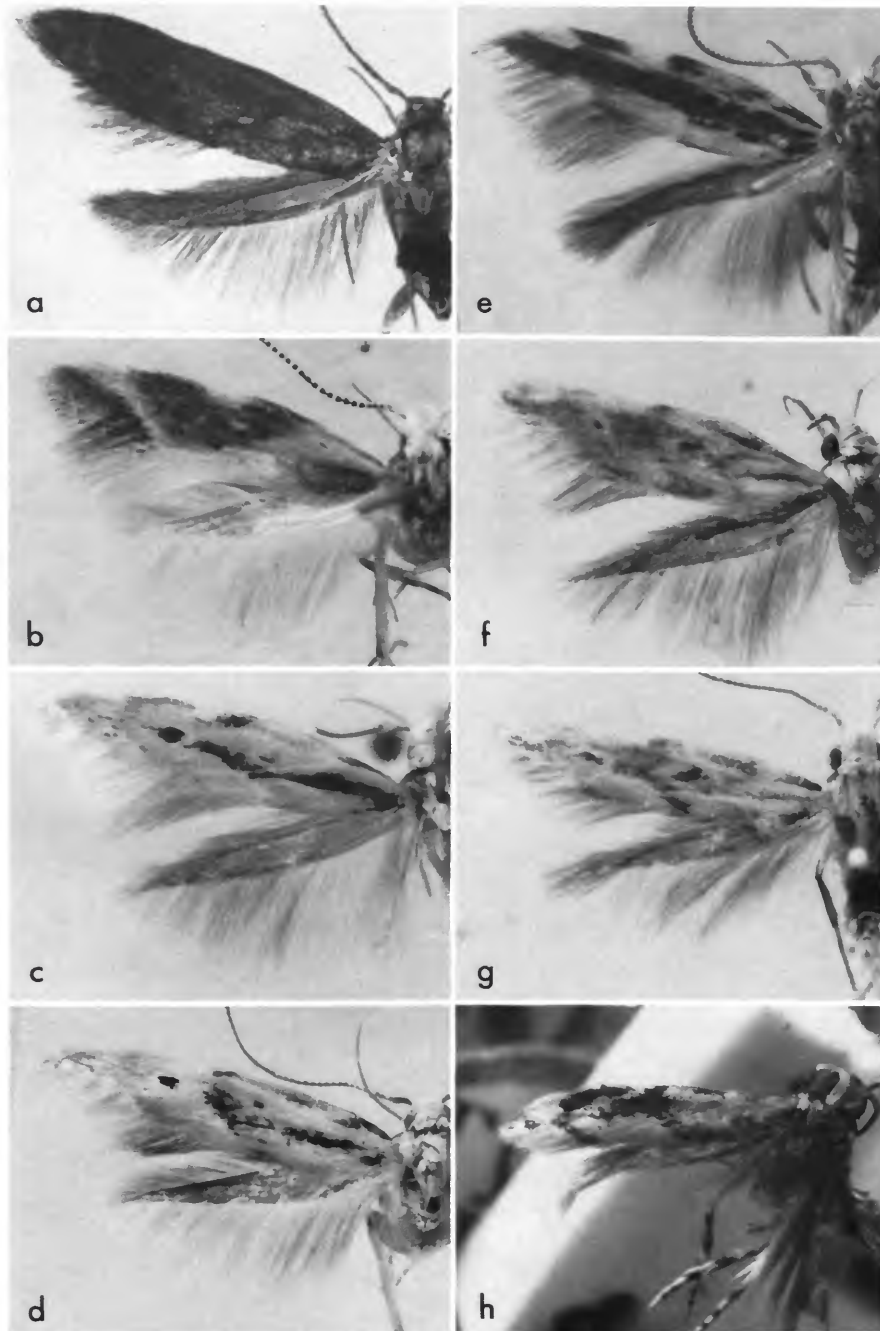


FIGURE 306.—*a*, *Asymphorodes porphyryrarcha* Meyrick, ♂; *b*, *A. phaeodelta*, new species, ♀ holotype; *c*, *d*, *A. leptotes*, new species (*c*, ♂ holotype; *d*, ♀ paratype); *e*, *A. mediostriatus*, new species, ♂ holotype; *f*, *g*, *A. nebias*, new species (*f*, ♂ holotype; *g*, ♀ paratype); *h*, *A. plectographa* Meyrick, ♂ holotype.

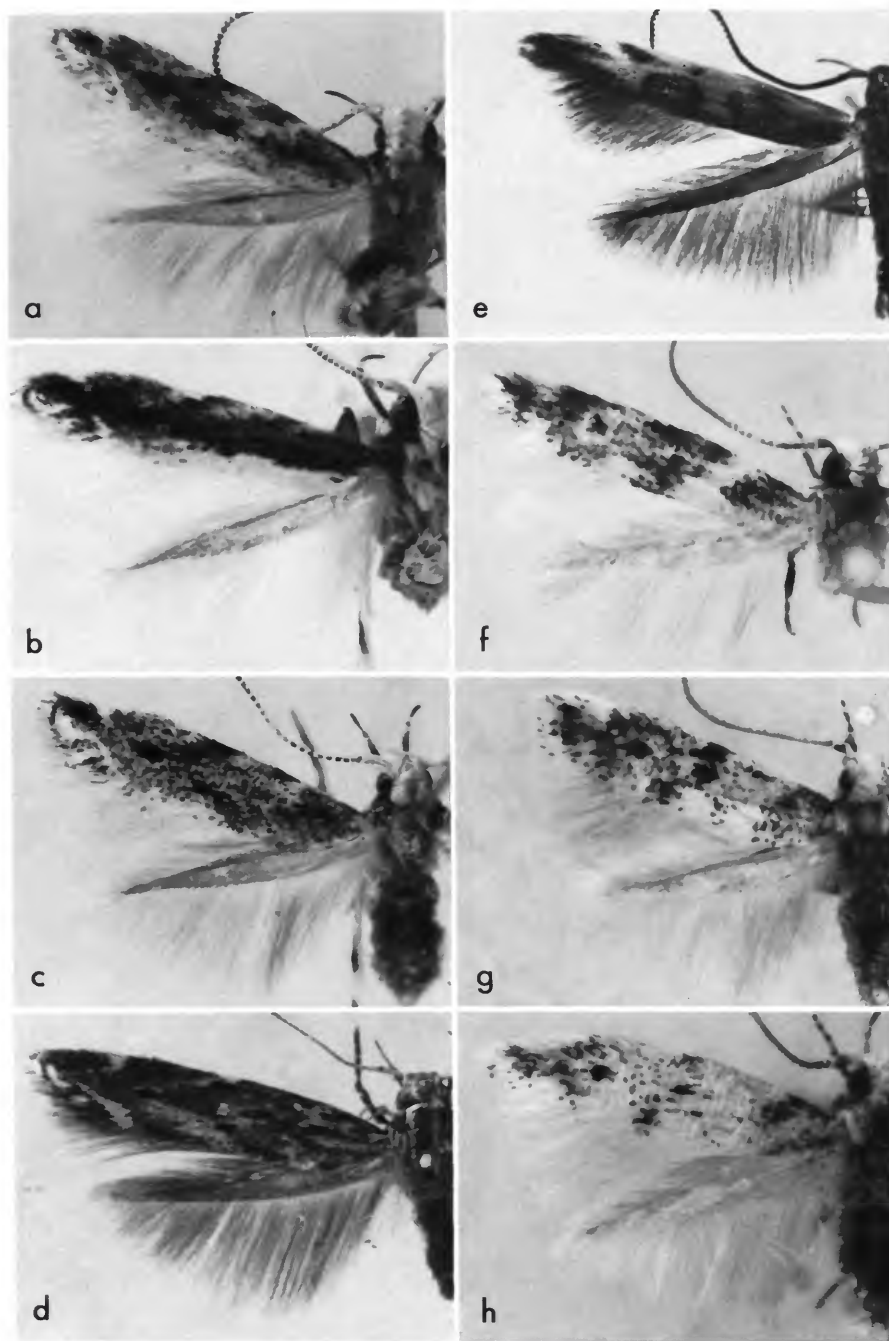


FIGURE 307.—*a-c*, *Asymphorodes phaeochorda* Meyrick (*a*, *b*, ♂; *c*, ♀); *d*, *A. ochrogramma*, new species, ♀, paratype; *e*, *Labdia dicyanitis* Meyrick, ♂; *f*, *Herlinda fasciola*, new species, ♂ holotype; *g*, *h*, *H. iota*, new species, ♂ paratypes.

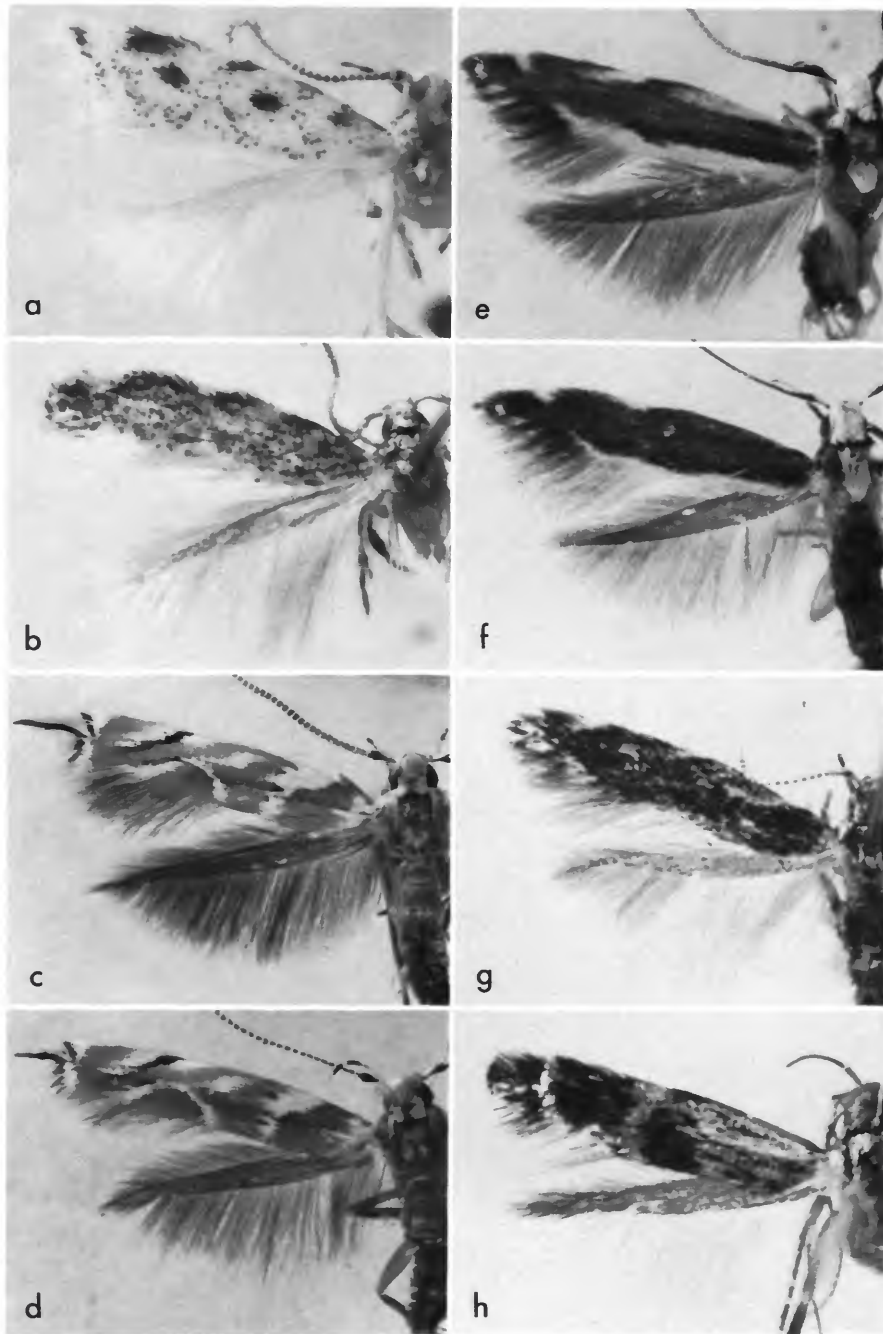


FIGURE 308.—*a*, *Herlinda oligoria*, new species, ♂ holotype (right wings reversed); *b*, *H. phaeoxantha*, new species, ♂ holotype; *c*, *d*, *Adeana leucoxantha* (Meyrick) (*c*, ♂; *d*, ♀); *e*, *f*, *Iressa neoleuca* Clarke (*e*, ♂; *f*, ♀); *g*, *I. microsema*, new species, ♀ holotype; *h*, *Acanthophlebia argentea*, new species, ♂ holotype (right wings reversed).

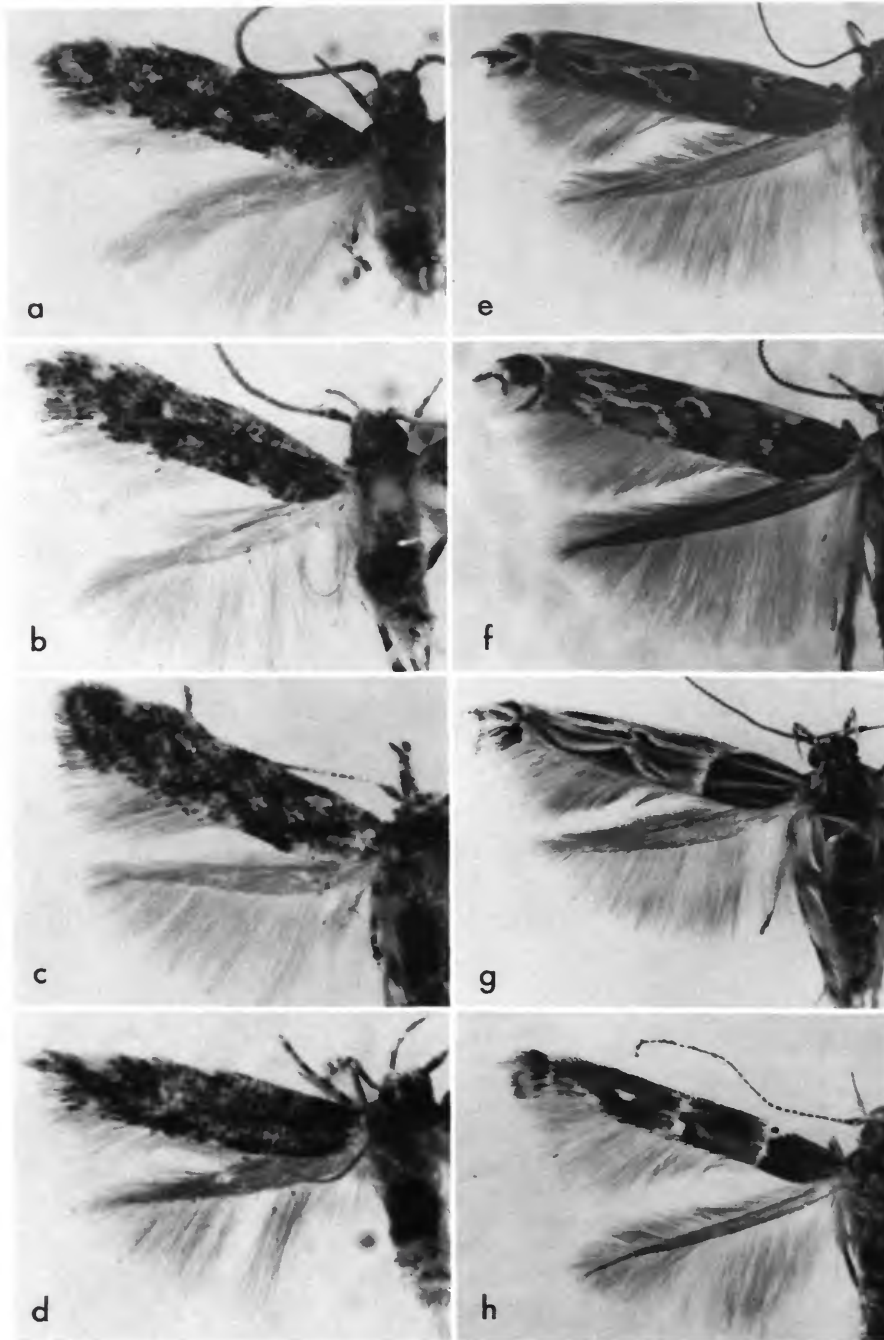


FIGURE 309.—a-d, *Microzestis inlegans* Meyrick (a, ♂; b, ♂; c, d, ♀ (right wings reversed)); e, *Anatrachyntis incertulella* (Walker), ♂; f, *A. megacentra* (Meyrick) ♀; g, *A. cyma* (Bradley) ♀; h, *A. lunulifera* (Meyrick), ♀.

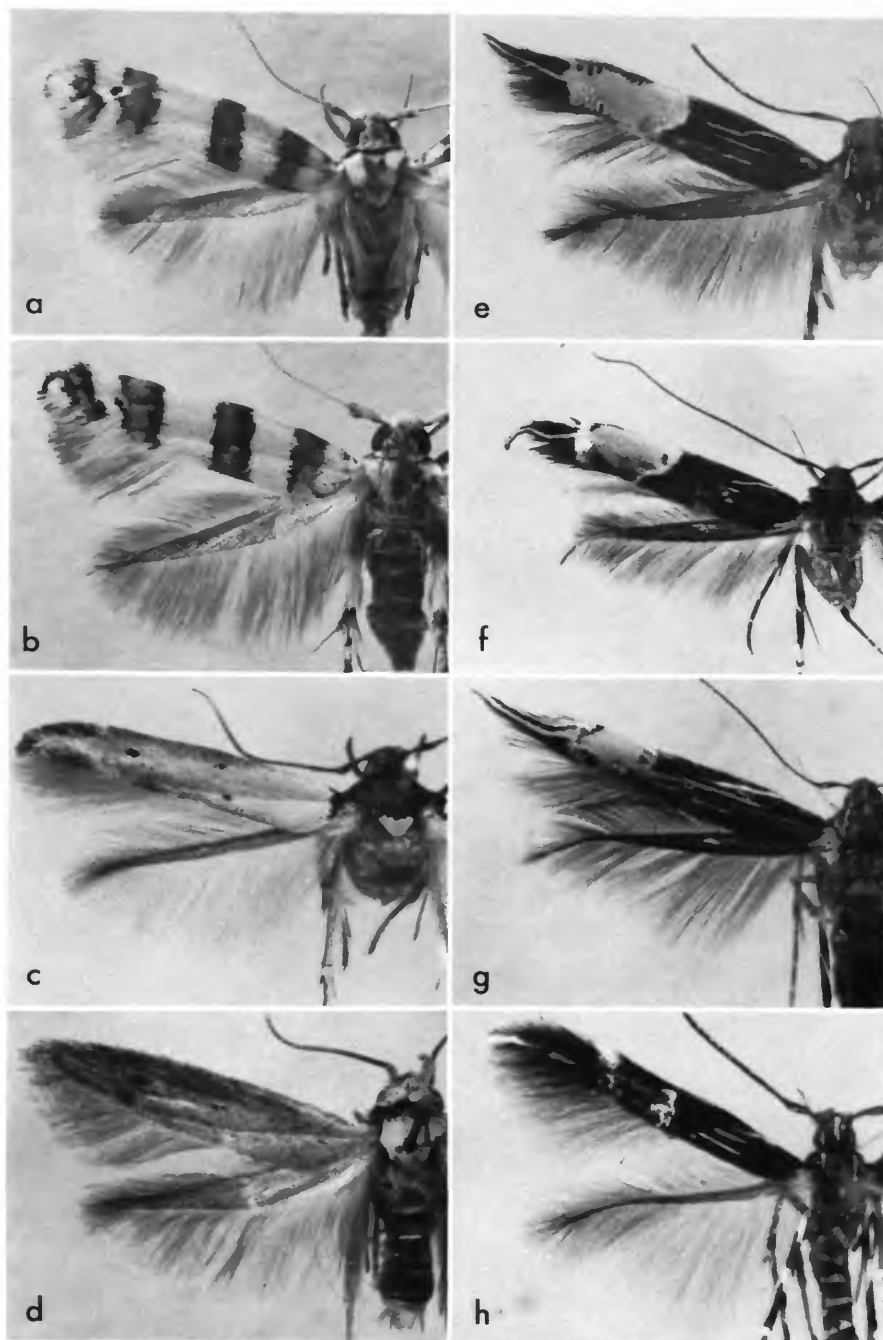


FIGURE 310.—*a, b*, *Trissodoris honorariella* (Walsingham) (*a*, ♂; *b*, ♀; *c*, *Melnea armigera* (Meyrick) ♀; *d*, *Blastobasis inana* (Butler), ♂; *e*, *Cosmopterix cericosma* (Meyrick), ♂; *f*, *C. nonna*, new species, ♀ holotype; *g*, *C. diandra*, new species, ♀ paratype; *h*, *C. melanarches* Meyrick, ♂.

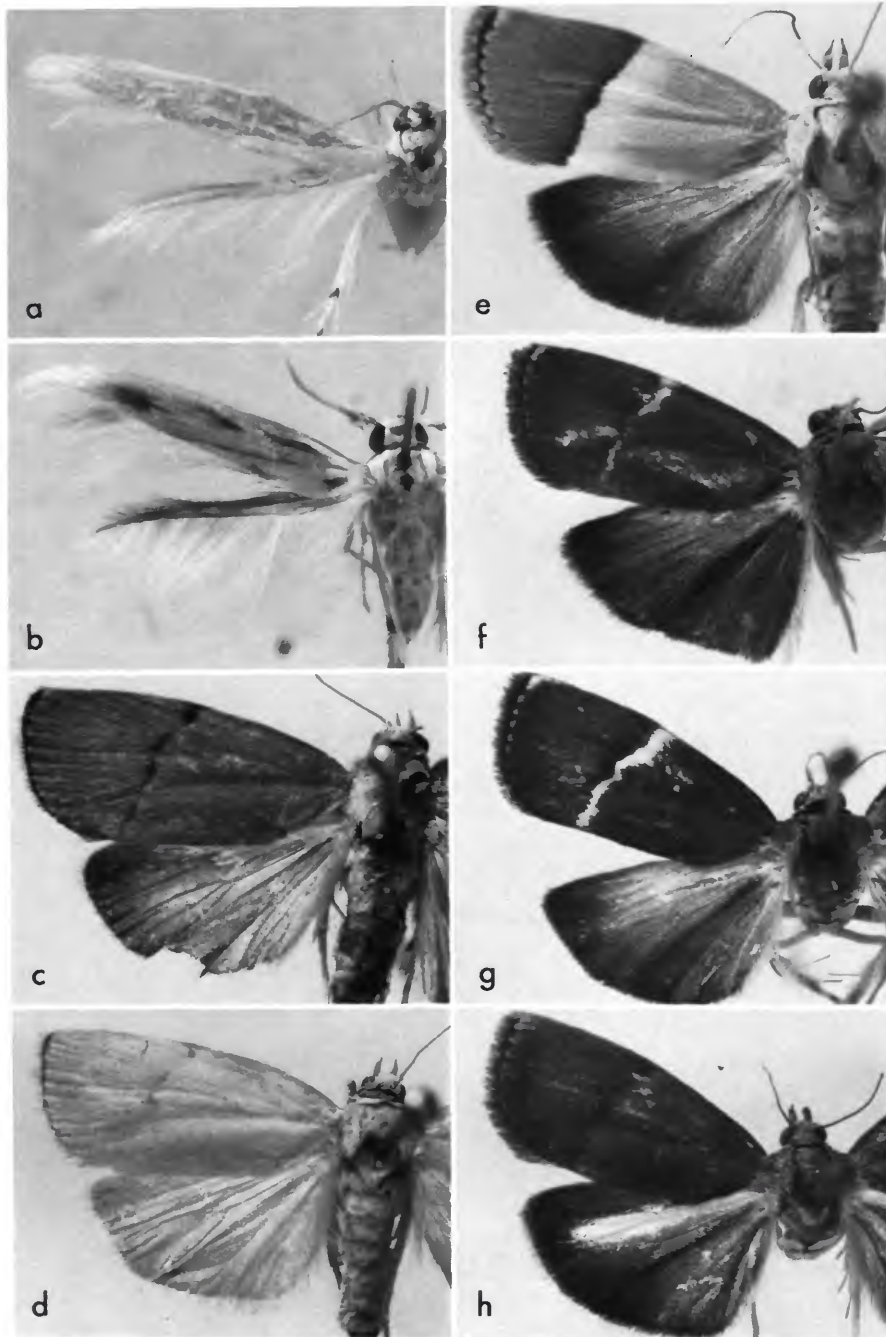


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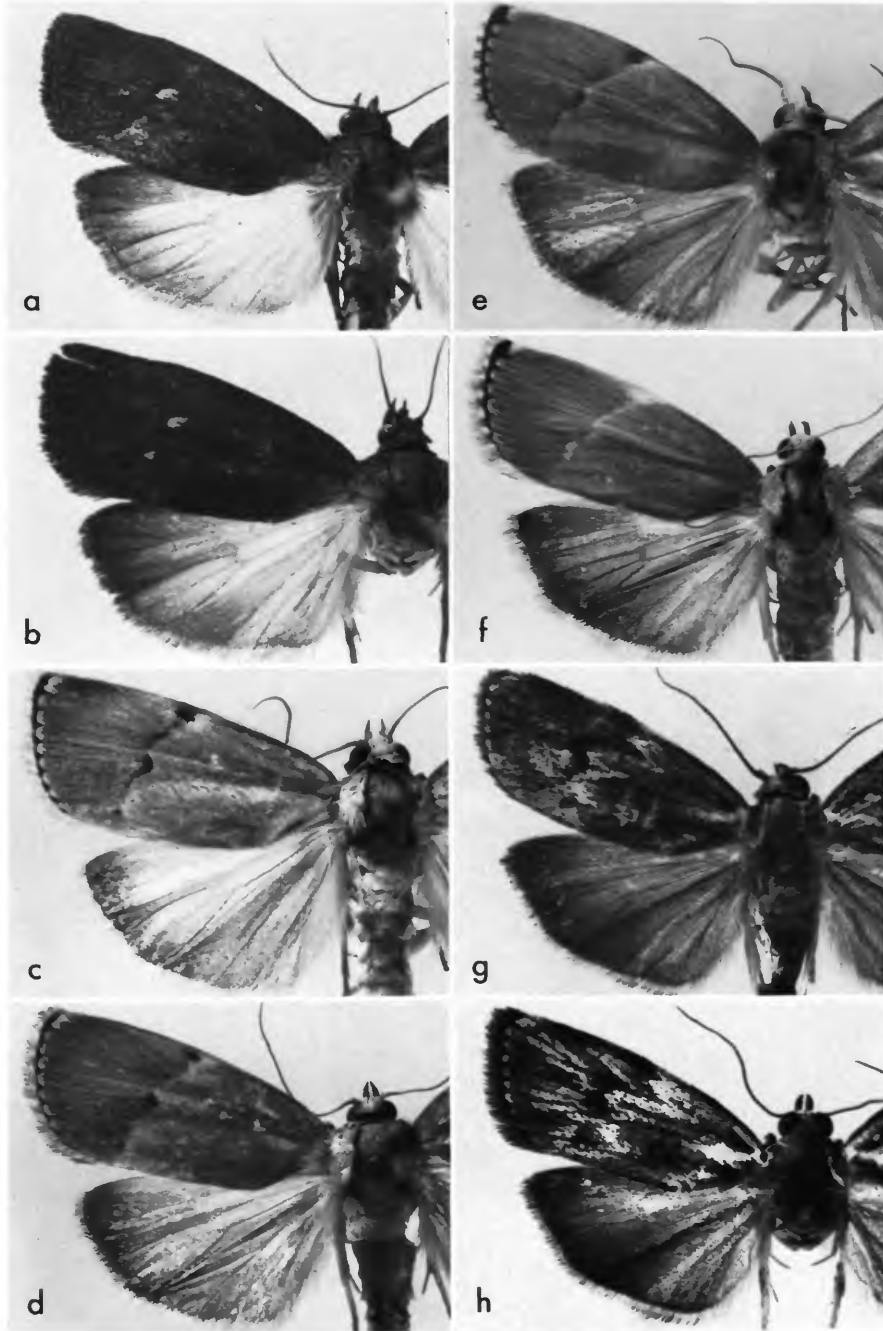


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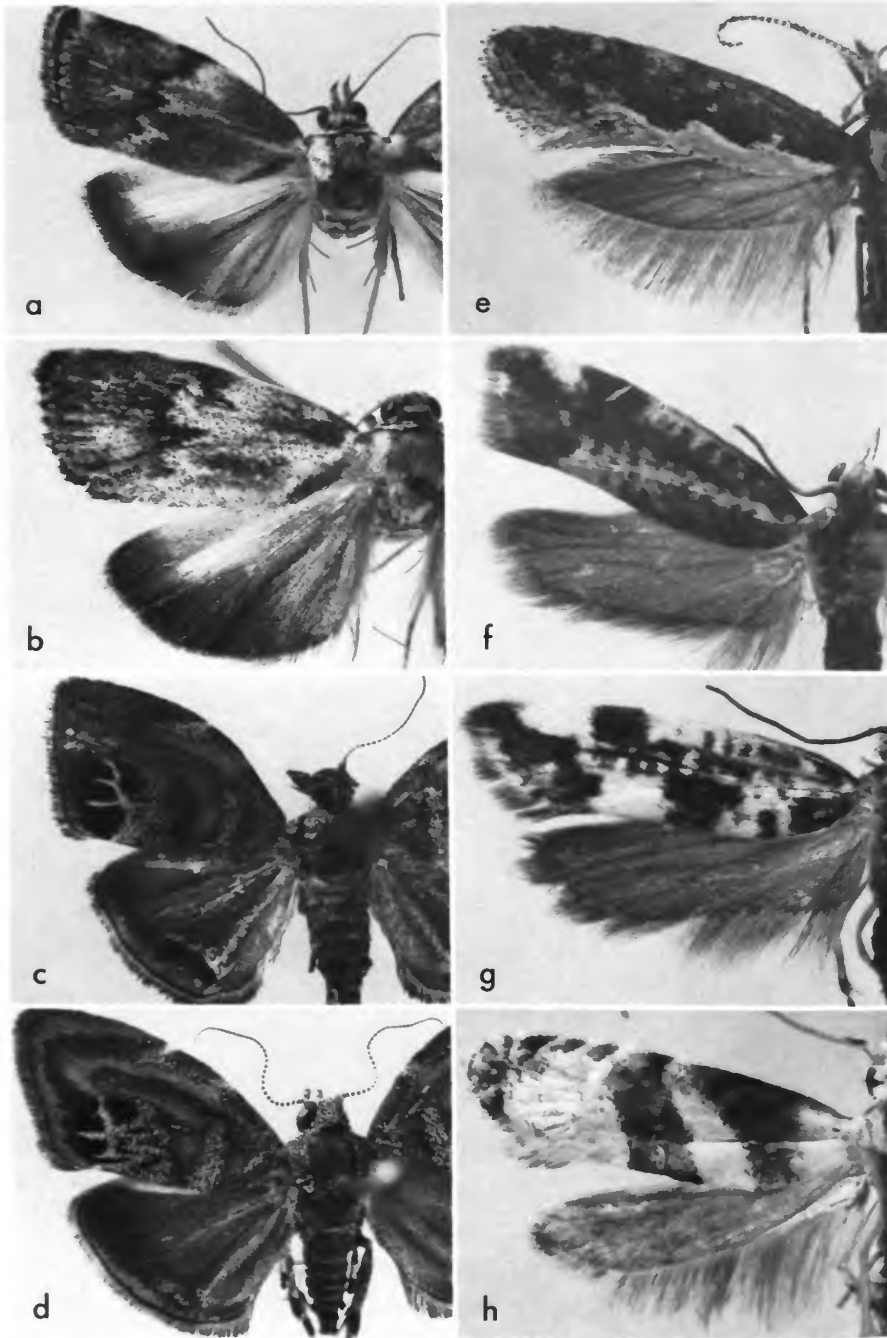


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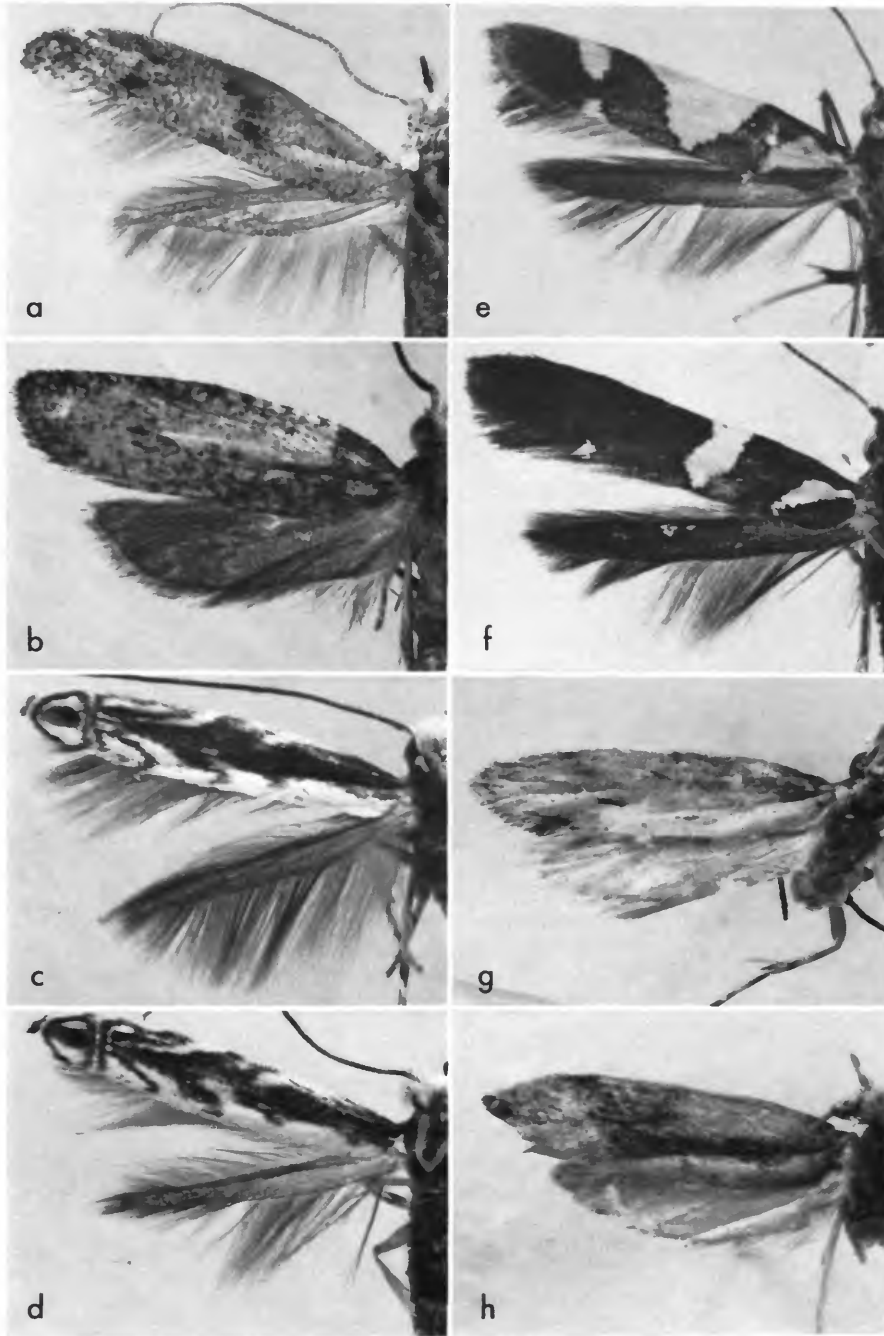


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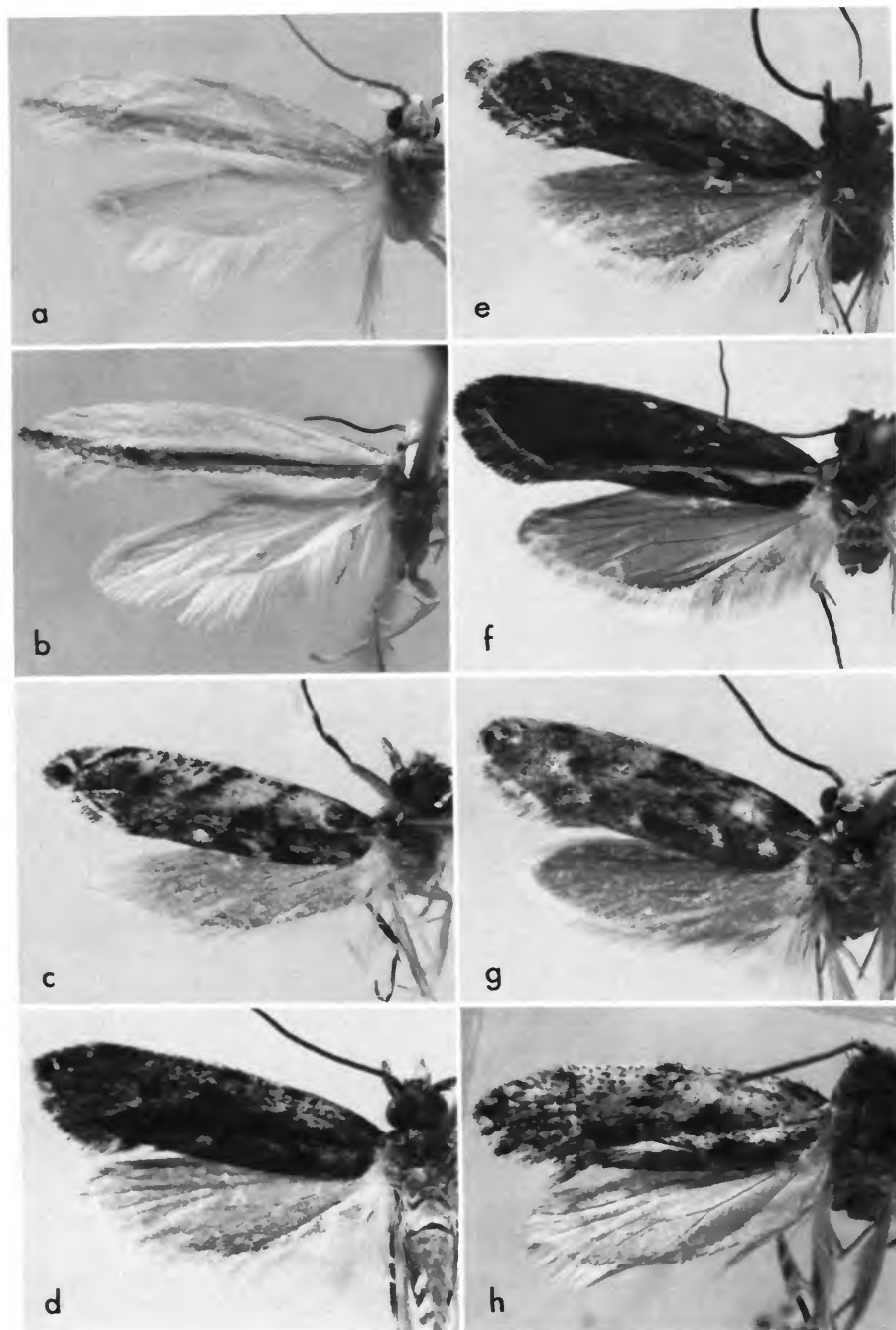


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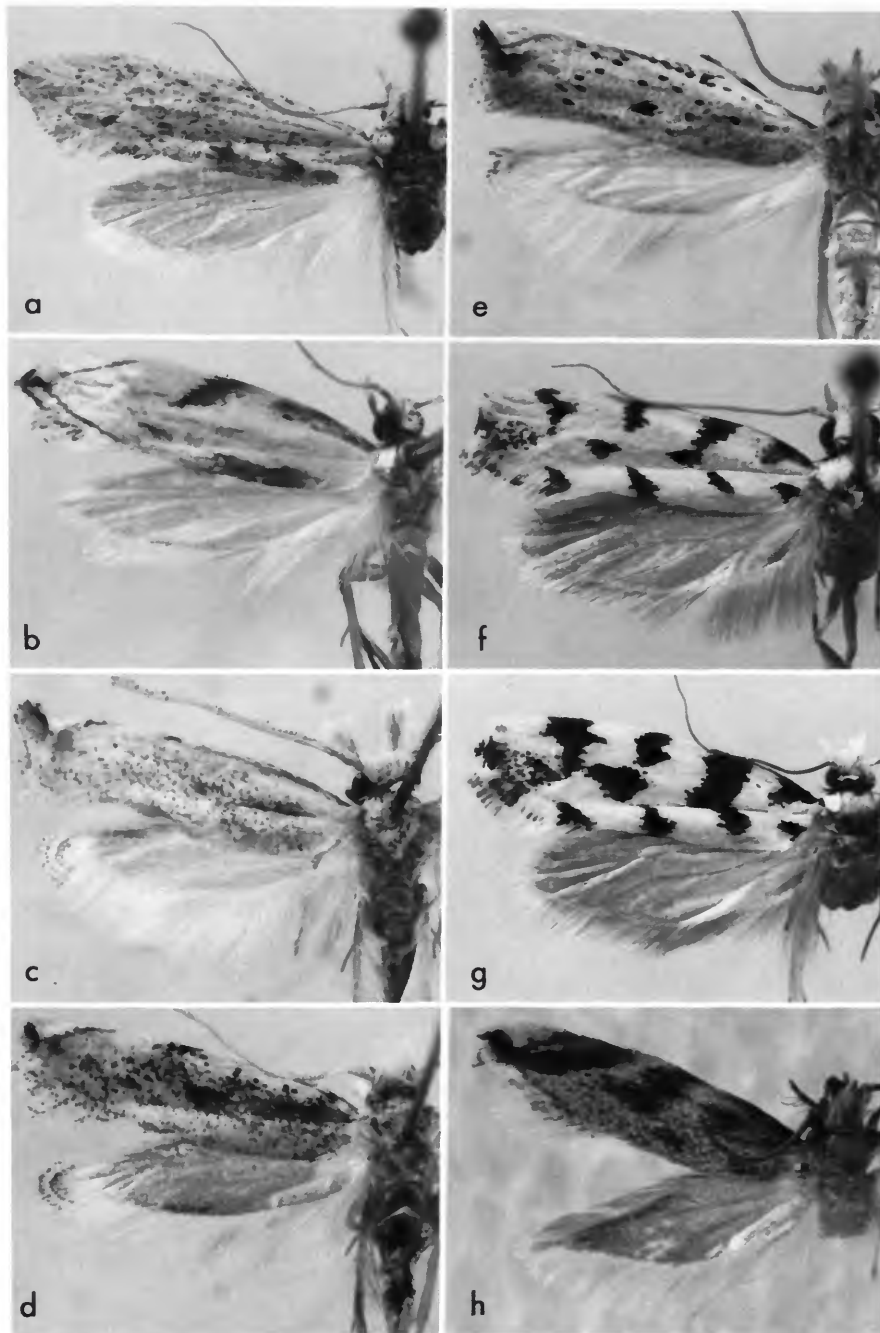


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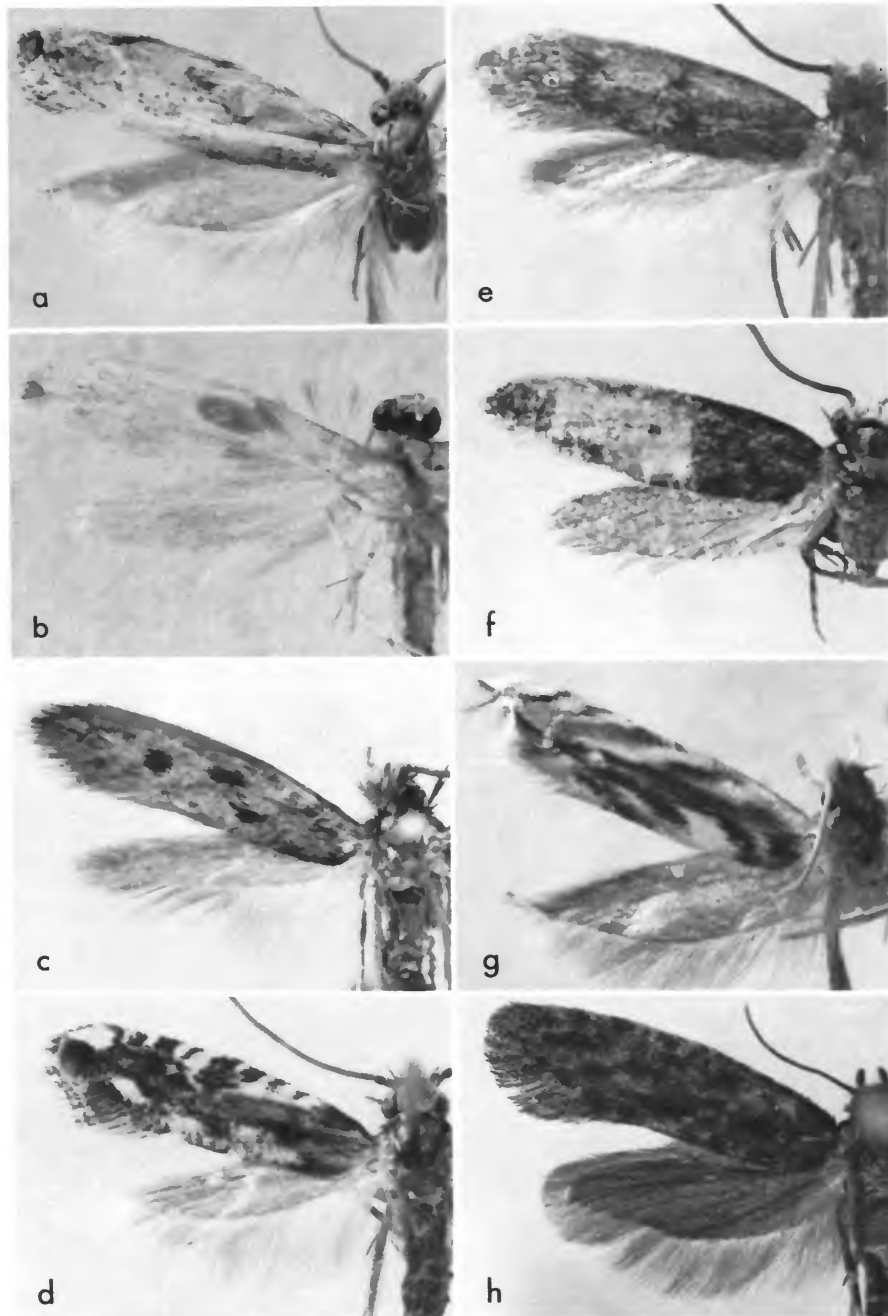


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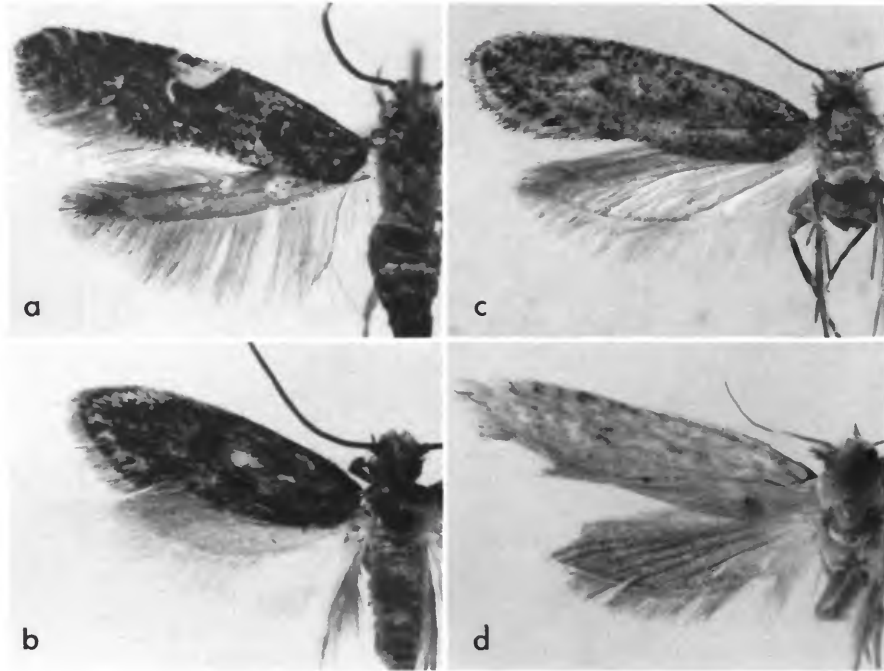


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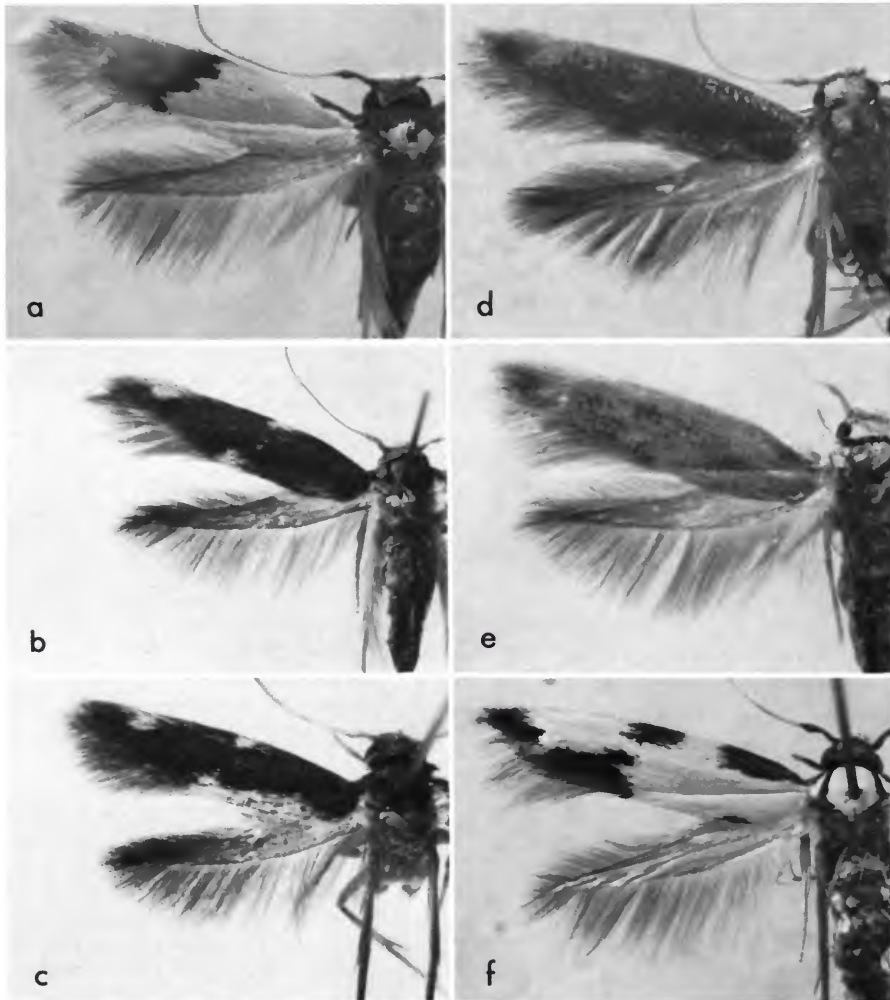


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