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AUSTRALIAN AND PAPUAN TUSSOCK MOTHS OF THE *ORGYIA* COMPLEX (LEPIDOPTERA: LYMANTRIIDAE)[1]

By **J. C. E. Riotte**[2]

Abstract: Australian and Papuan members of *Orgyia* and *Teia* are treated. The latter genus is resurrected. All species treated are redescribed, with ♂ adults and their genitalia illustrated. Eggs, larvae, pupae, and ♀ genitalia are described and illustrated where available.

This is the first revision of Australian *Orgyia* Ochsenheimer since Turner (1920, 1931) revised generally the Australian lymantriids. Four species belong to the *Orgyia* complex in Australia and a 5th, described from New Guinea, may well also be found on the Australian continent. Two other species, *Oligeria hemicalla* (Lower) and *Acyphas pelodes* (Lower), originally described as *Orgyia* and sometimes still quoted as such (e.g., Kozhanchikov 1950), were correctly removed by Turner (1920, 1931). Genitalic dissection of specimens from most of the major Australian institutions showed that 2 genera make up the *Orgyia* complex: *Orgyia* Ochsenheimer and *Teia* Walker.

The abbreviations for sites of specimen deposition are as follows:

AM	Australian Museum, Sydney, New South Wales
ANIC	Australian National Insect Collection, Canberra, A.C.T.
BM	British Museum (Nat. Hist.), London, England
BISHOP	Bernice P. Bishop Museum, Honolulu, Hawaii
QM	Queensland Museum, Fortitude Valley, Queensland
SAM	South Australian Museum, Adelaide, South Australia
UQ	University of Queensland, St. Lucia, Queensland

The abbreviation n.f.d. (= no further data) is used in material examined sections, where collection data is not available.

Genus **Orgyia** Ochsenheimer

Orgyia Ochsenheimer, 1810, Schmetterlinge Europas **3:** 208 (type-species *Bombyx antiqua* Linné, fixed by Curtis, 1830).

Notolophus Germar, 1812, Prodromus **3:** 35 (type-species *Bombyx antiqua* Linné).

Lacida Walker, 1855: 803 (type-species *Lacida antica* Walker, fixed by Swinhoe, 1923).

Hemerocampa Dayr, 1897, Can. Entomol. **29:** 29 (type-species *Phalaena leucostigma* J. E. Smith).

1. Materials examined from Bishop Museum are partial results of fieldwork supported by grants from the U.S. National Science Foundation (G-4774, G-10734) to Bishop Museum and a grant to Dr J. L. Gressitt from the J. S. Guggenheim Foundation (1955–56).

2. Bishop Museum, Honolulu, Hawaii 96818, USA and Royal Ontario Museum, Toronto, Ontario, Canada M5S 2C6.

The above generic synonymy is restricted to names applied to Australian species. A more complete synonymy on a worldwide basis may be found in Bryk (1934).

Diagnosis. Unicolorous gray-brown moths. Posterior tibia with pair of middle spurs fully developed or asymmetrically arranged or vestigial or missing. ♂ genitalia: valve bifurcate; uncus slightly bent with apex rounded or pointed; gnathos absent. ♀ with very short rudimentary wings.

Remarks. Only an evaluation of the genitalic structure in the males gives a clear indication of generic limits within the *Orgyia* complex, especially in the Eurasian species. As far as is known all the American species have the above-mentioned ♂ genitalia. In *Orgyia* females, it is almost impossible to save the bursa copulatrix when dissecting, as it extends into the abdomen which is most often filled with eggs. In the case of old specimens available in the collections, there was no way to separate the bursa copulatrix from the interior of the abdomen. Females developing within pupae are often already filled with eggs.

Orgyia australis Walker

Orgyia australis Walker, 1855: 787 (♀ only, New Holland, ex coll. Lambert).—Turner, 1904: 476 (*O. canifascia* Walker synonymized).
Orgyia canifascia Walker, 1865: 325 (♂ only, Australia, ex coll. Diggle).

Egg. Laid on the cocoon as in *O. antiqua* (Linné), with no special cover. Color ivory, with a distinctly golden rosette around the micropyle. Scanning electron micrographs show surface sculpturing (Fig. 1–3) similar to that of the North American *leucostigma* group.

Larva (mature) (description from ANIC specimen no. 1278-42/62, Fig. 10). Head shiny coral red; shield and base of thoracic hair brushes coral red; thoracic hair brushes of blackish, modified hairs; very thin whitish hairs situated along outer margin of shield; ocelli as diagrammed, Fig. 18; mesal view of left mandible, Fig. 14; chaetotaxy of thoracic legs, Fig. 16; body dirty yellow above and beneath; spiracular and subspiracular lines of sooty dark brownish color present, more or less distinct, stronger especially around warts, sometimes fused; warts occur between 2 lines and in 2 rows below spiracles; the former on a yellow base, the latter on washed out coral red base; all legs splashed with some coral red; thoracic segments with very faint mid-dorsal band; 2 smaller medial warts and 2 larger lateral ones situated either side of mid-dorsal line on blackish-brown patch; tufts on abdominal segments 1 and 2 very thin, whitish, arising horizontally from subspiracular warts; usual thick brushlike tufts on each segment 1–4 beige-brown with very fine coral red tipped hairs in middle line; retractable glands on segments 6 and 7 coral red, originating out of lightly colored ring; segment 5 with only a dirty reddish colored patch; glands and tufts situated on a tuft-wide dorsal patchy band; warts on either side of glands and 5th-segment patch; 2 very small warts anterior to glands and patches; 8th segment with a single hair tuft of straight, long, modified hairs originating from 3 warts placed closely together; 9th segment with 3 warts on either side; all warts of the body bear light, yellowish brown hairs; spiracles yellow with blackish brown border.

Pupa. Not available for study.

Adult ♂ (Fig. 22). Anterior wing sepia-brown; slightly acute; 2 broadly separated purplish brown, transverse, postmedial bands; a weak median line, separated from the former bands by an irregular, wide, glaucous-whitish space that partly hides the purplish brown reniform; antemedian and basal bands almost imperceptible; adterminal line weak; a cinereous patch near the base and another towards interior angle; a glaucous-whitish, apical patch contiguous to 3 purplish black longitudinal streaks; the usual light patch in the submarginal region of the anal angle; outer margin straight, rather oblique; fringes checkered; underside of anterior wing little paler, very light along inner margin; posterior wing on both sides light sepia, extending a little beyond the abdomen, with a marginal "golden" line, fringes colored as the field of hindwing, inner margin almost straight and therefore anal angle slightly pointed; palpi porrect, very

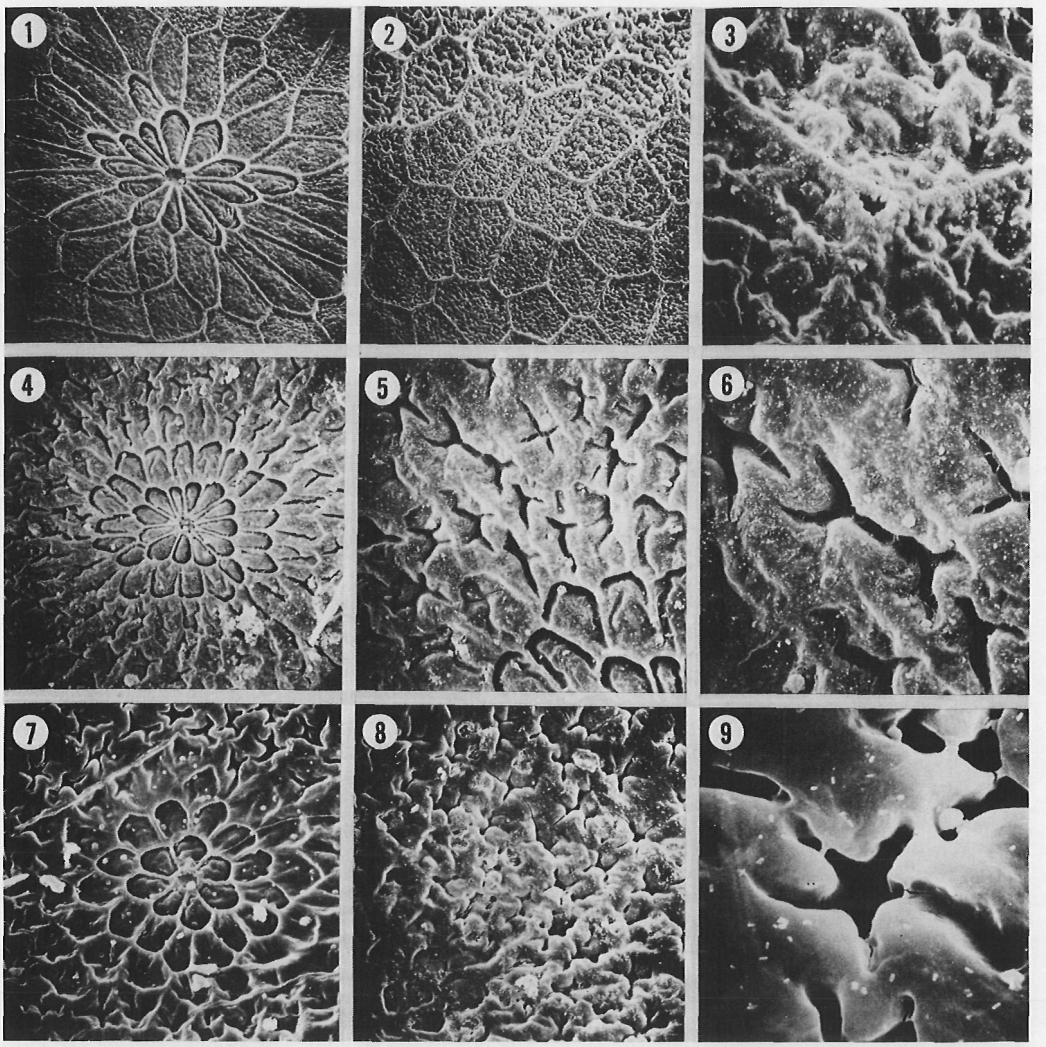


FIG. 1–9. Scanning electron micrographs of eggs (by E. Lin, Dept. Zool., Univ. of Toronto). 1–3, *Orgyia australis* Walker (from ♀, Brisbane, Qld, IV.1914, SAM collection): 1, micropyle rosette (×570); 2, aeropyles (×570); 3, same (×2848). 4–6, *Teia anartoides* Walker (from ♀, Victoria, SAM collection): 4, micropyle rosette (×342); 5, aeropyle (×684); 6, same (×1367). 7–9, *Teia athlophora* (Turner) (from ♀, Perth, W. A., October 1912, AM collection): 7, micropyle rosette (×456); 8, aeropyle (×518); 9, same (×2449).

stout, extending to middle of eyes; 3rd joint extremely short; antenna pectinate as usual in the genus; length of anterior wing 12–15 mm; dorsal tufts broadly leaved, metallic greenish (as in *O. leucostigma*). Legs: epiphysis on anterior legs as long as tibia, boomerang-shaped; middle and hind tibiae with only 1 pair of apical spurs. Genitalia: uncus elongate, slightly bent, apex as though rolled inward, blunt; gnathos absent; valves bifurcate; even width throughout, apex evenly rounded; process of sacculus outwardly bent, about ⅔ of length of valvula; aedeagus (in contrast to *O. papuana*) arched and not particularly short, contours rounded (FIG. 27–30).

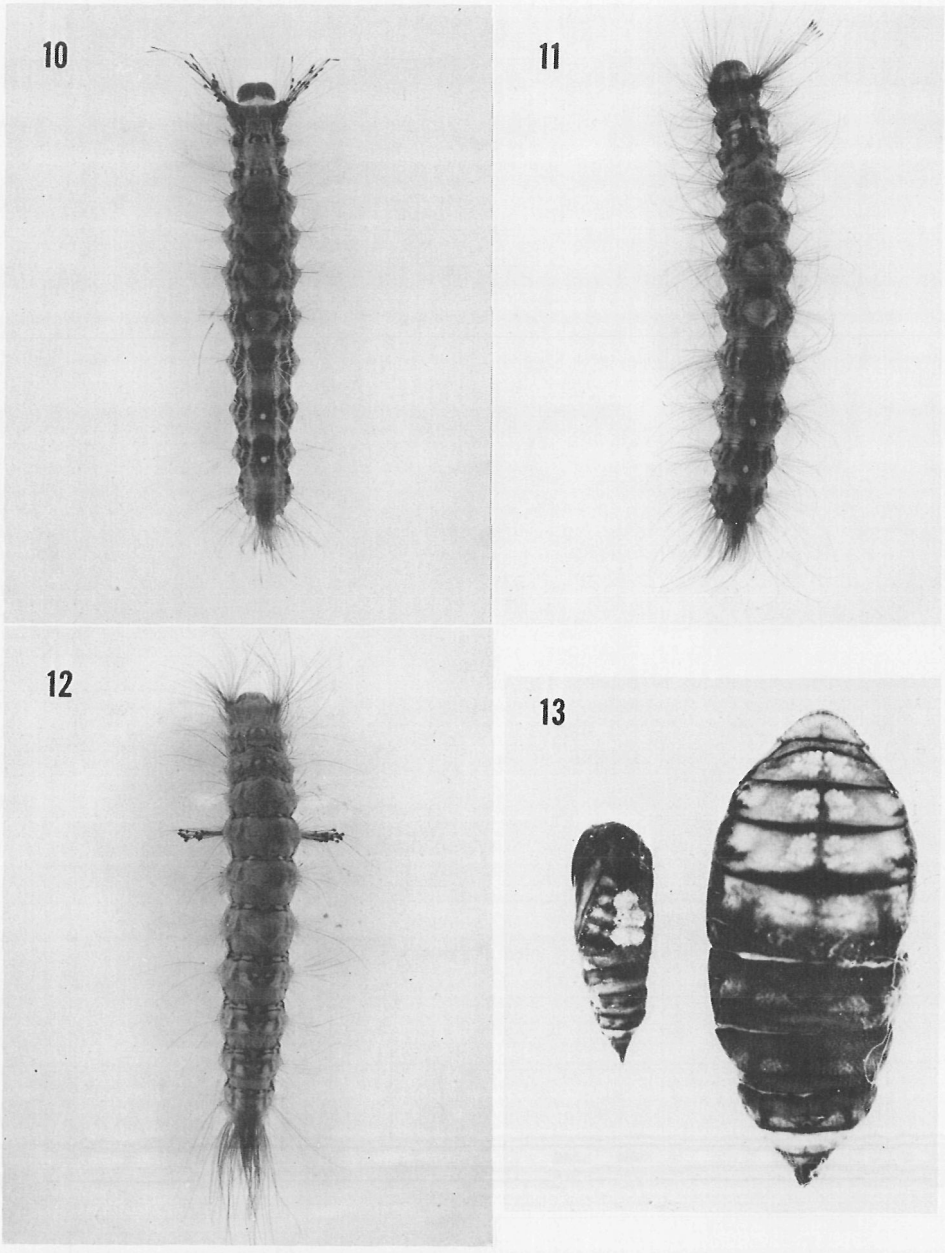


FIG. 10–13. 10–12, mature larvae (photo L. Warren, ROM): 10, *Orgyia australis* Walker, Eskdale West, Qld, 8.V.1962, on *Geranium,* ANIC no. 127-42/62; 11, *Teia anartoides* Walker, Black Mt, A.C.T., 20.IV.1960, on *Acacia filicifolia,* ANIC no. 47-27/60; 12, *Teia athlophora* (Turner), Porongorups Range, W. A., nr "Devil's Slide," at base of granite dome, 20.XI.1968, on *Brachysema subcordatum,* SAM collection. 13, ♂ and ♀ pupa *Teia anartoides* Walker, Norwood, S. A., V.1966, on *Hardenbergia violacea*, SAM collection (photo L. Warren, ROM).

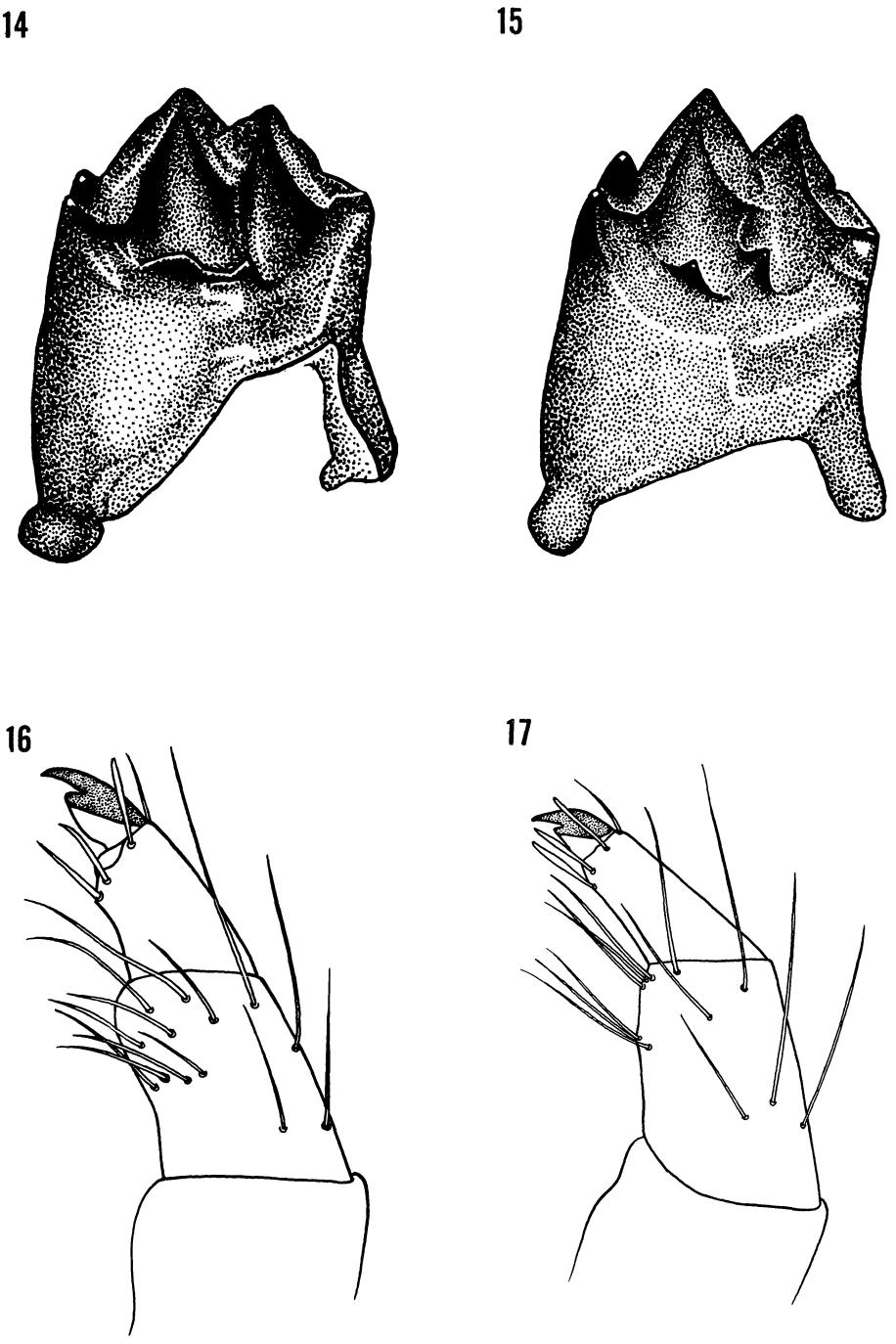


FIG. 14–17. 14–15, mesal view of left mandible of larvae: 14, of larva in FIG. 10; 15, of larva of *Orgyia papuana* Riotte (from larval skin from type specimen, NE Wau, V.1968, on *Lantana camara aculeata,* BISHOP collection). 16–17, chaetotaxy of thoracic legs of larvae: 16, of larva in FIG. 10; 17, of larva in FIG. 15. (Drawings by A. Odum, ROM.)

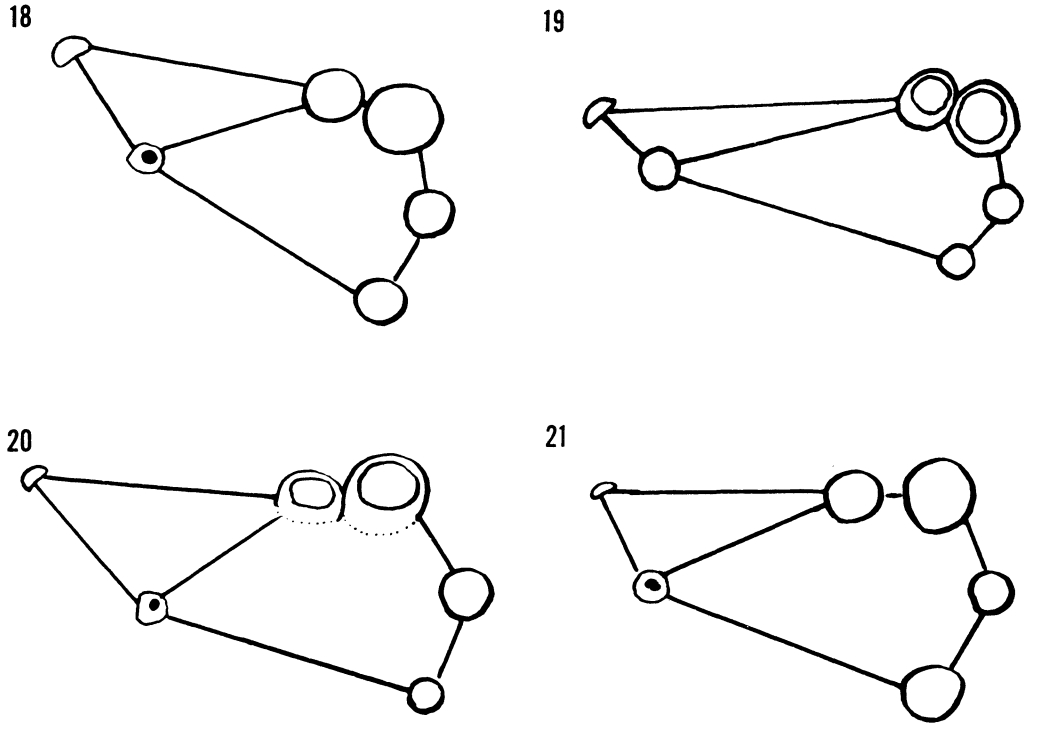


FIG. 18–21. Ocelli diagram of larvae: 18, of larva in FIG. 10; 19, of larva in FIG. 15; 20, of larva in FIG. 11; 21, of larva in FIG. 12. (Drawings by A. Odum, ROM.)

Adult ♀. Grayish brown, with rudimentary wings, antenna short, serrate; about 15 mm long. Genitalia: only the lamella antevaginalis is visibly and strongly sclerotized, forming a deep concavity cephalad (FIG. 41).

Type material. The types of *O. australis* and *O. canifascia* are in the collections of the British Museum (Nat. Hist.) and were on my behalf kindly inspected by E. G. Munroe (Biosystematics Research Institute, Ottawa, Canada) and A. H. Hayes (British Museum, Nat. Hist.). The latter generously provided a photograph of the slide-mounted genitalia of the type of *O. canifascia* (FIG. 27), which leaves no doubt that *O. canifascia* is, indeed, a ♂ of *O. australis*. The slide label reads BM Lymantrid (sic!) Slide No. 1069 (WHTT 1969/245).

Material examined. AUSTRALIA: New South Wales: 2 ♀, Ryde, 20.V.1961 (ANIC); 1 ♀, Sydney, n.f.d. (ANIC); Queensland: 1 ♂, Bandon, 14.IX.1942 (SAM); 1 ♂, Bell, 9.IV.1957 (ANIC); Brisbane: 1 ♂, 27.XI.1925; 1 ♂, 21.XI.1926 (AM); Brisbane: 2 ♂, n.f.d.; 1 ♂, 30.III.1903; 1 ♂, 31.V.1903; 1 ♂, 23.IV.1906; 1 ♂, 25.VIII.1906; 1 ♂, 2.IV.1910; 1 ♂, 4.XII.1924; 1 ♂, 16.IX.1928; 1 ♂, 28.V.1933; 1 ♂, 10.V.1941; 1 ♂, 7.IV.1946; 1 ♀, 3.V.1908; 1 ♀, 2.IV.1910 (ANIC); Brisbane: 1 ♂, 22.IV.1890; 1 ♂, 20.IV.1913; 1 ♂, 5.VIII.1913; 1 ♂, 5.X.1925; 2 ♀, n.f.d.; 1 ♀,

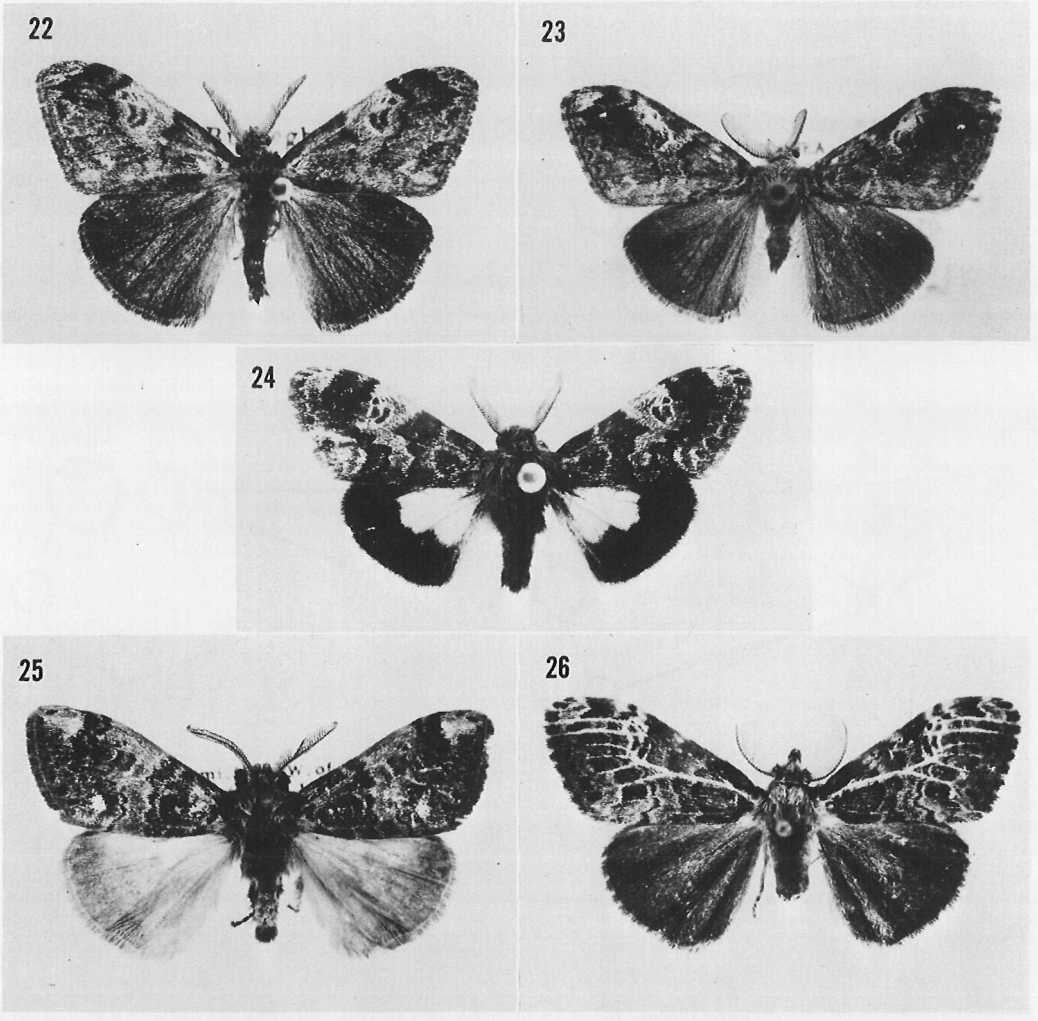
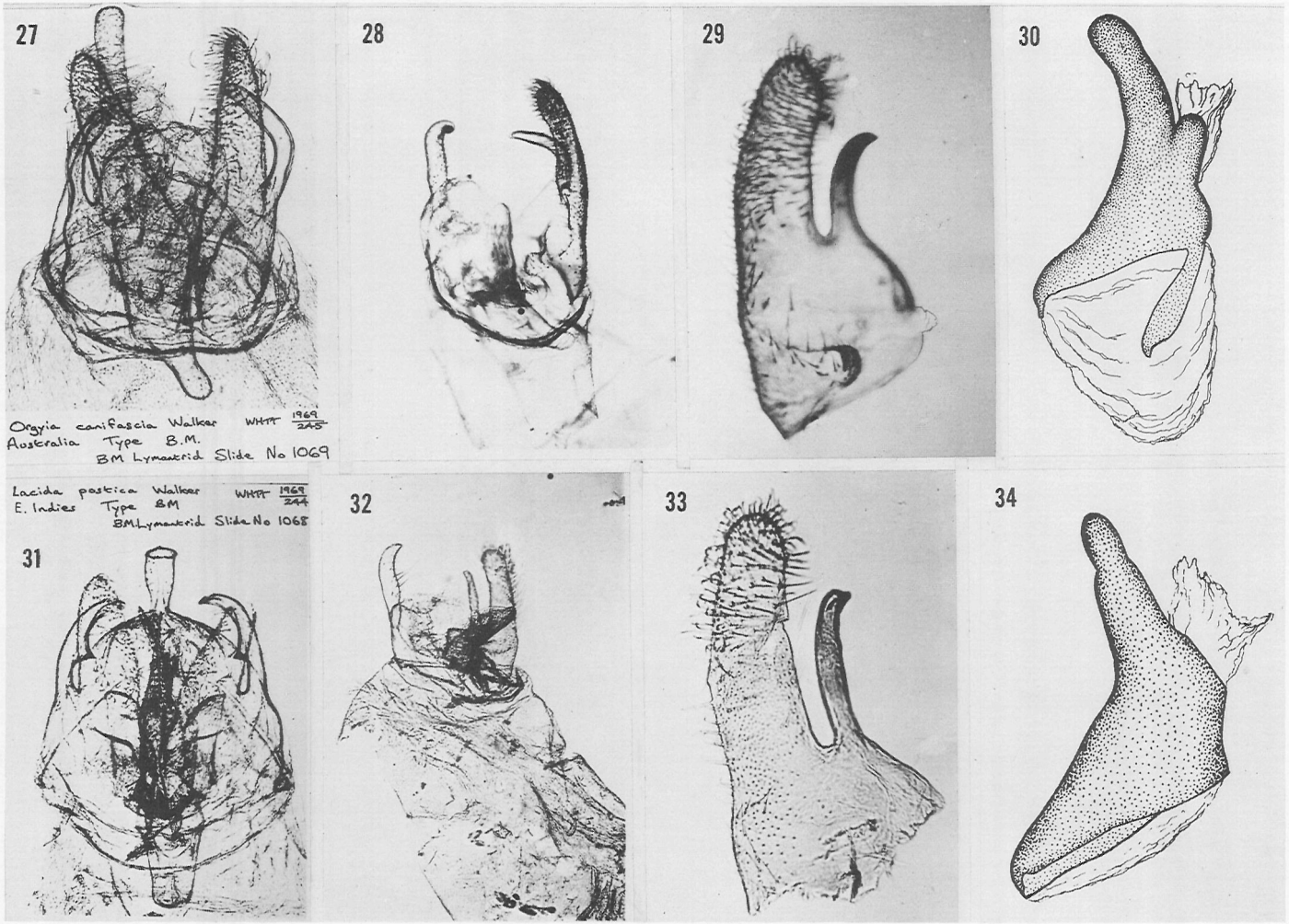


FIG. 22–26. 22, *Orgyia australis* Walker ♂, North Burleigh, Qld, 17.VI.1963, ANIC. 23, *Orgyia papuana* Riotte, ♂ holotype, Papua New Guinea, NE Wau, 1100–1200 m, V.1968, BISHOP collection. 24, *Teia anartoides* Walker ♂, Freycinet Natl Pk, Tasmania, 28.II.1963, ANIC. 25, *Teia athlophora* (Turner) ♂, 22 km NW by W of Mt Arid, W. A., 19.XI.1969, ANIC. 26, *Teia dewara* (Swinhoe) ♂, Natoko, Finisterre Range, Papua New Guinea, 29.VIII–24.IX.1958, ANIC. (Photos L. Warren, ROM.)

30.IV.1913 (QM); Brisbane: 17 ♂, n.f.d.; 2 ♂, III.1911; 1 ♂, IV.1911; 4 ♂, IV.1914; 8 ♂, IX.1914; 2 ♂, VII.1917; 1 ♂, VIII.1917; 3 ♀, n.f.d.; 1 ♀, 2.IV.1910; 1 ♀, IV.1914; 1 ♀, IX.1924 (SAM); Brisbane: 1 ♂, 18.VI.1925; 1 ♀, 28.X.1964 (UQ); 1 ♂, Eskdale West, 20.V.1962 (ANIC); 1 ♀ (ex pupa), Ipswich, 10.IX.1962 (UQ); 1 ♂, Lawgi, 7.IV.1957 (ANIC); 1 ♂, Maryborough, 5.V.1963 (UQ); 1 ♂, North Burleigh, 17.IV.1963 (ANIC); 1 ♂, Rosewood, 15.IX.1931 (ANIC); 1 ♂, Sandgate, 2.IX.(no year) (BISHOP); Toowoomba: 1 ♂, 22.IV.1921; 1 ♂, 29.XI.1924; 1 ♂,


27
Orgyia canifascia Walker WHTT 1969 245
Australia Type B.M.
BM Lymantrid Slide No 1069
28
29
30
Lacida postica Walker WHTT 1969 244
E. Indies Type BM
BM Lymantrid Slide No 1068
31
32
33
34

4.VIII.1926; 1 ♂, 29.I.1928; 1 ♂, 21.IV.1928 (QM); Toowoomba: 1 ♂, 4.II.1943; 1 ♂, 11.V.1943; 1 ♂, 7.X.1944; 1 ♂, 22.II.1960; 1 ♂, 21.II.1962; 1 ♂, 23.IV.1962; 1 ♂, 17.II.1963; 1 ♂, 5.IV.1963; 1 ♂, 10.IV.1963 (UQ); 1 ♂, Yarraman, IX.1962 (UQ). *Larvae*: Brisbane, on *Geranium,* 3.X.1969 (ANIC); Eskdale West, on *Geranium,* 8.V.1962; Western Australia: Kunnunurra, on *Acacia* sp., 11.IV.1962 (ANIC).

Flight period. January to May and July to December.

Distribution. Sydney and vicinity in New South Wales to Brisbane and vicinity in sourthern Queensland; recently documented by larvae from Western Australia.

Hosts. Geranium sp., *Pelargonium* sp., *Acacia* sp. (in Western Australia).

Remarks. The most dependable diagnostic characters in the larvae of the *Orgyia* complex are to be found in the arrangement of the ocelli, the mesal view of the mandibles and the chaetotaxy of the thoracic legs.

It should be remarked that Walker's description of *O. canifascia* agrees well with specimens of *O. australis.*

The distributional border between this species and the following one is not entirely clear, as there were no specimens available from between the Brisbane area and Townsville, which is the southernmost collection locality for the following species.

Orgyia papuana Riotte

Orgyia papuana Riotte, 1976: 89 (Wau, Papua New Guinea).
Orgyia postica: Swinhoe, 1903: 460 (part).—Strand, 1915, *in* Seitz **10:** 301 (part).—Kozhanchikov, 1950: 273 (part). [Not *Lacida postica* Walker.]
Orgyia australis: Turner, 1904: 476 (part), 1920: 494 (part) [not *O. australis* Walker].
Orgyia australis postica: Bryk, 1934: 76 (part).

Egg. Not known.

Larva (exuvium). Ocelli as diagrammed, mesal view of left mandible and chaetotaxy of thoracic legs illustrated (FIG. 15, 17, 19).

Pupa. Preserved pupal shell cylindrical.

Adult ♂ (FIG. 23). Anterior wing dark brown on both sides, along inner margin of underside slightly yellowish brown; apex rounded, not acute; 2 purplish brown broadly separated, transverse, postmedial bands; a well expressed median line separated from the former bands by an irregular, narrow, brown-gray space which partly hides the purplish brown reniform; antemedian and basal bands almost not perceptible; marginal lunules forming adterminal line; the usual light patch in the submarginal area of the anal angle; a dark brown patch near the base and another towards interior angle; a glaucous-whitish apical patch contiguous to 1–3 purplish brown, very short longitudinal streaks; outer margin slightly

←

FIG. 27–34. 27–30, ♂ genitalia of *Orgyia australis* Walker: 27, slide of type of *Orgyia canifascia* Walker (courtesy A. H. Hayes, BM); 28, ♂ from Brisbane, Qld, 21.IX.1920, AM collection, left valve removed; 29, same specimen, left valve; 30, same species, Brisbane, Qld, no data, SAM collection; 31, ♂ genitalia of *Lacida postica* Walker, slide of type (courtesy of A. H. Hayes, BM). 32–34, ♂ genitalia of *Orgyia papuana* Riotte: 32, ♂ from Normanby I, Wakaiuna, Sewa Bay, Papua New Guinea, 23.X.1956–11.I.1957, ANIC, left valve removed; 33, same specimen, left valve; 34, same species, aedeagus, Manumbo, Madang Distr, Papua New Guinea, summer 1914, SAM collection. (Photos D. Barr, ROM; drawings A. Odum, ROM.)

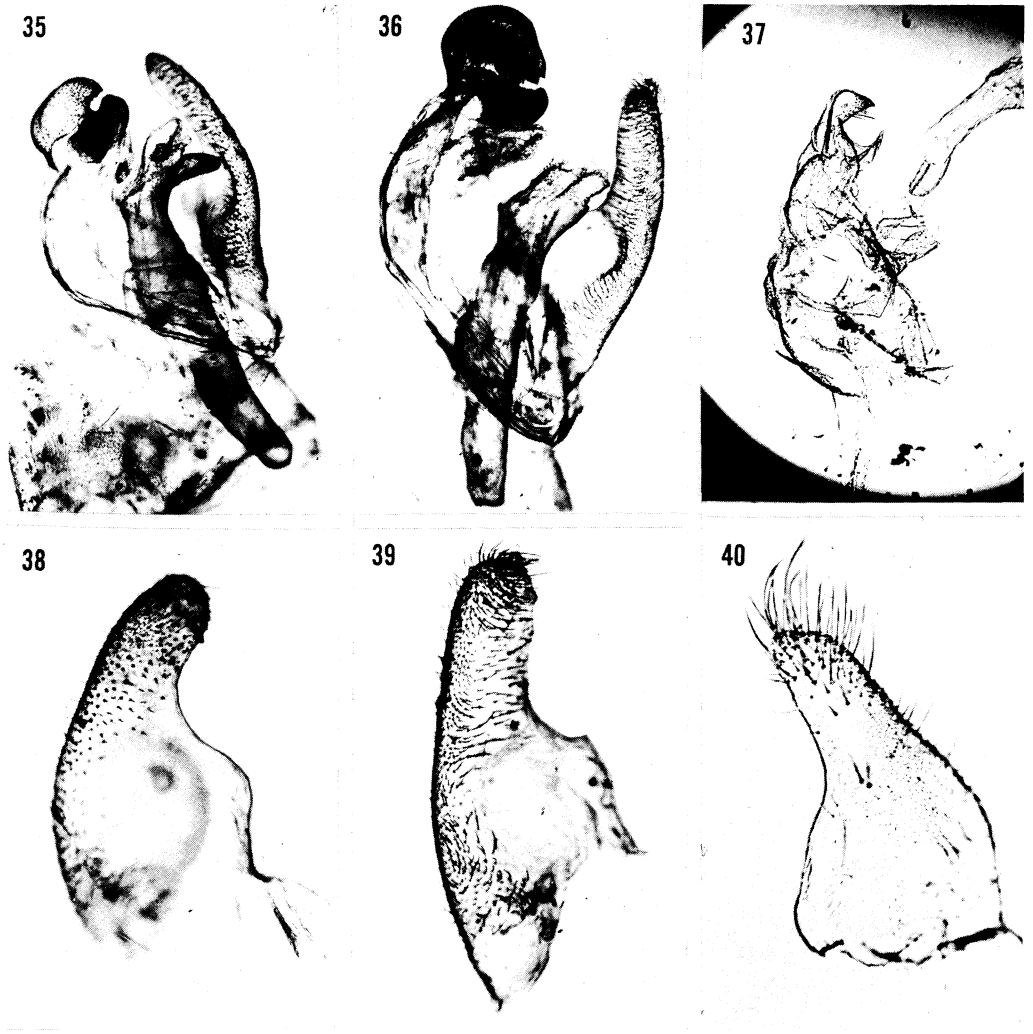


FIG. 35–40. 35, ♂ genitalia of *Teia anartoides* Walker, Bronte, N. S. W., 26.XI.1962, AM collection, left valve removed. 36, ♂ genitalia of *Teia athlophora* (Turner), Perth, W. A., no data, AM collection, left valve removed. 37, ♂ genitalia of *Teia dewara* (Swinhoe), same specimen as FIG. 26, left valve removed. 38, same specimen as FIG. 35, left valve. 39, same specimen as FIG. 36, left valve. 40, same specimen as FIG. 26, left valve. (Photos D. Barr, ROM.)

rounded; fringes checkered; posterior wing on both sides dark brown, not much extending over body length; fringes colored as field of hindwing; inner margin slightly rounded and therefore anal angle also rounded; palpi porrect, very stout, extending almost to upper margin of eyes; antenna pectinate; length of anterior wing 11–13 mm; dorsal tufts very broadly leaved, metallic greenish. Legs: epiphysis on anterior legs as long as tibia, boomerang-shaped; middle and hind tibiae with only 1 pair of apical spurs. Genitalia: uncus elongate, porrect, pointed; gnathos absent; valve bifurcate, at base conspicuously broad, costa almost straight, narrowing towards apex, process of sacculus somewhat interiorly bent; aedeagus very short, dorsally straight, contours not rounded (FIG. 32–34).

Adult ♀. Not known.

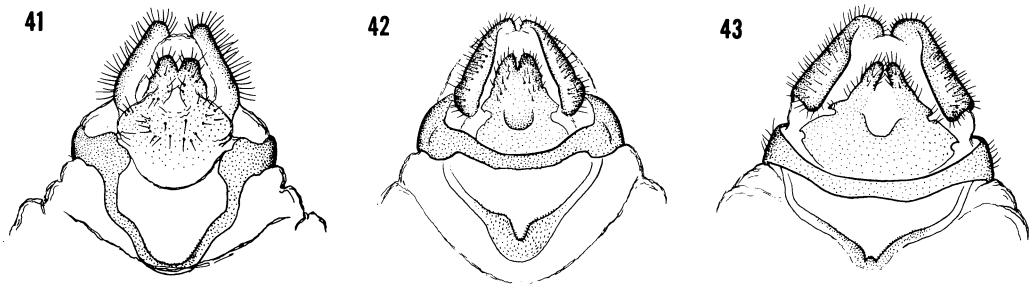


FIG. 41–43. ♀ genitalia: 41, of *Orgyia australis* Walker, Brisbane, Qld, 2.IV.1910, AM collection; 42, of *Teia anartoides* Walker, no data, AM collection; 43, of *Teia athlophora* (Turner), Perth, W. A., X.1912, AM collection (drawings A. Odum, ROM).

Type material. ♂ holotype in Bishop Museum (BISHOP 10,516), PNG [NEW GUINEA (NE):] Wau, 1100–1200 m, V.1968, N. L. H. Krauss. Paratypes (♂): [PNG: D'ENTRECASTEAUX IS:] Normanby I: Wakaiuna, Sewa Bay, 23.X.1956–11.I.1957, W. W. Brandt (ANIC); [PNG: NEW GUINEA (NE):] Wau: 25.VII.1961, J. & M. Sedlacek; 21–25.I.1963, J. Sedlacek, dissect. no. 11-400; [BISMARCK ARCH:] NEW BRITAIN: Gazelle Penin.: Gaulim, 21–27.X.1962, J. Sedlacek, dissect. no. 11-389; Malmalwan-Vunakanu, 8.V.1956, J. L. Gressitt, dissect. no. 11-398 (BISHOP); IRIAN: [NEW GUINEA (NW):] Wamena (Baliem Val), 10–25.II.1960, T. C. Maa, dissect. no. 11-397; 10–25.II.1960, Maa (BISHOP).

Material examined. AUSTRALIA: Northern Territory: 4 ♂, Darwin, XI.1908, XII.1908, 2.IV.1959, 4.IV.1959 (ANIC); 1 ♂, Humpty Doo, 6.IV.1959 (ANIC); 3 ♂, Kimberley Res. Station via Wyndham, 20.VII.1956, 28.VIII.1956, 22.VII.1960 (ANIC); Queensland: 2 ♂, Cairns (SAM); 2 ♂, Cape York, 19.X.1927, 30.X.1957 (UQ); 1 ♂, Cooktown, n.f.d. (SAM); 1 ♂, Iron Range, 12.IV.1964 (ANIC); 2 ♂, Kuranda, 10.V.(no year), F. P. Dodd (BISHOP), 12.III.1964 (ANIC); 1 ♂, Little Crystal Crk, Mt Spec, 29.V.1971 (ANIC); 1 ♂, Mareeba, 17.III.1963 (ANIC); 1 ♂, Mt Garnet, 20.IV.1969 (ANIC); 1 ♂, Ravenshoe, 21.IV.1969 (ANIC); 3 ♂, Cape York Penin., Silver Plains Homestead, 4.V.1962, 26.V.1963, 17.VI.1963 (ANIC); 1 ♂, Cape York Penin., Station Crk Spray, Silver Plains, 25.I.1959 (ANIC). IRIAN: NEW GUINEA (NW): 1 ♂, Bodem, 7–17.VII.1959, T. C. Maa (BISHOP); 1 ♂, Nabire, 2–9.VII.1962, J. L. Gressitt (BISHOP); 3 ♂, Wamena, 10–25.II.1960, Maa (BISHOP). PNG: BISMARCK ARCH.: NEW BRITAIN: Gazelle Penin.: 1 ♂, Gaulim, 21–27.X.1962, J. Sedlacek (BISHOP); 1 ♂, Malmalwan-Vunakanau, 8.V.1956, Gressitt (BISHOP); NEW GUINEA (NE): Kainantu: 2 ♂, 25–30.IX.1959, 1 ♂, 20–26.X.1959, Maa (BISHOP); 1 ♂, Kodama Range n.f.d. (ANIC); 2 ♂, Manumbo, V–VI.1914, VI–VII.1914 (SAM); 2 ♂, Mt Hagen, 23.V.1961, Gressitt (BISHOP); 4 ♂, Mt Hagen, n.f.d. (ANIC); 1 ♂, Sinofi, 4.X.1959, Maa (BISHOP); Wau, Sedlacek, (BISHOP): 1 ♂, 14.VI.1961; 3 ♂, 20–21.VI.1961; 2 ♂, 11.VII.1961; 1 ♂, 14.VII.1961; 3 ♂, 19.VII.1961; 2 ♂, 20.VII.1961; 12 ♂, 21.VII.1961; 13 ♂, 23.VII.1961; 1 ♂, 24.VII.1961; 1 ♂, 25.VII.1961; 2 ♂,

28.VII.1961; 2 ♂, 29.VII.1961; 2 ♂, 30.VII.1961; 2 ♂, 31.VII.1961; 2 ♂, 1.VIII.1961; 1 ♂, 1–4.VIII.1961; 2 ♂, 2.VIII.1961; 1 ♂, 4.VIII.1961; 1 ♂, 8.IX.1961; 2 ♂, 25–30.IX.1961; 1 ♂, 21–25.I.1963; 1 ♂, V.1968; 2 ♂, "Wx," n.f.d. (ANIC); LOUISIADE ARCH.: 3 ♂, Misima I, n.f.d. (SAM); D'ENTRECASTEAUX IS: Normanby I: 1 ♂, Wakaiuna, Sewa Bay, 23.X.1956–11.II.1957 (ANIC); NEW GUINEA (SE): 3 ♂, Port Moresby (ANIC).

Flight period. The above records suggest a year-round flight period.

Distribution. Irian Jaya, Papua New Guinea and Australia (Northern Territory and northern Queensland).

Hosts. The single known larva from which the type was reared was captured on *Lantana camara aculeata.* There may very well be other host plants.

Remarks. This species is not closely related to Walker's *Lacida postica* (East Indies; type in BM, investigated on my behalf by E. G. Munroe who remarked that this type and other Indian material seems to be quite different from Papua-Australian material). The ♂ genitalia of the type of *O. postica* (FIG. 31) show the process of the sacculus of the valves with a conspicuous triangular process, not known to me from any other species of *Orgyia.* Also, the uncus is clearly rolled inward. Both features are absent in the ♂ genitalia of *O. papuana.*

Genus **Teia** Walker

Teia Walker, 1865: 803 (type-species *T. anartoides* Walker, by monotypy).
Orgyia: Turner, 1904: 470, 476.

Diagnosis. Usually multicolorous moths. Posterior tibia with 1 pair of apical spurs. ♂ genitalia: valve entire; uncus complex, shaped like a helmet or wrench in lateral view, strongly curved, often separated below by a deep furrow, often also with split apices; gnathos almost always present, sometimes appearing like the lower piece of the "uncus helmet," sometimes like a crown, rarely absent, as in the Eurasian *T. ericae.* ♀ with very short rudimentary wings.

Remarks. Although Turner (1904: 470) synonymized *Teia* with *Orgyia* Ochsenheimer, this genus must be resurrected on the basis of the distinctive structure of the ♂ and ♀ genitalia. Kozhanchikov (1950) mentioned the diversity in the ♂ genitalia in species of what he considered to be *Orgyia* but went no further.

Based on genitalic drawings in Kozhanchikov (1950), this genus includes, besides the Australian *T. anartoides* and *T. athlophora* (n. comb.) and the Papuan *T. dewara* (n. comb.), species from Eurasia as well (and probably also some at least from Africa) like *T. aurolimbata* (Guenée) (n. comb.), *T. dubia* (Tauscher) (n. comb.), *T. ericae* (Germar) (n. comb.), *T. ochrolimbata* (Staudinger) (n. comb.), *T. recens* (Hübner) (n. comb.), and *T. trigotephras* (Boisduval) (n. comb.). Species which should remain in *Orgyia* include the Australian *O. australis* and *O. papuana,* all known American species, and certain species from Eurasia like the Japanese *O. thyellina* Butler, the Indian *O. postica* (Walker) and the holarctic *O. antiqua* (Linné).

Further evidence for this generic separation comes from Kozhanchikov (1950: 281), who reported that *Orgyia antiqua* could not be hybridized with *Teia recens,*

although it can be freely hybridized with *O. leucostigma* (J. E. Smith), *O. thyellina* and *O. vetusta* Boisduval.

Teia anartoides Walker

Teia anartoides Walker, 1855: 803 (Tasmania).
Teia anartoides var. β Walker, 1865: 803.
Teia pusilla Butler, 1882: 88 (Melbourne).—Kirby, 1892: 489 (*T. anartoides* var. β Walker synonymized).
Orgyia anartoides: Turner, 1904: 476 (*T. pusilla* Butler synonymized).

Egg. Grayish, laid on the cocoon; see FIG. 4–6 for details of surface.

Larva (mature) (description from ANIC specimen no. 47-27/60, FIG. 11). Head yellowish brown with dense maroon dots; shield same; base of thoracic warts strongly developed, with modified hair brushes; hairs also situated on anterior margin of shield (!); ocelli as diagrammed in FIG. 20; body light brownish to dirty yellow; spiracular and subspiracular lines present; interrupted intersegmentally; sooty-dark brown; warts between the lines and in 2 rows below spiracles, all on yellowish base; 2nd subspiracular row on sooty-dark brown band of variable intensity; thoracic segments with a pronounced mid-dorsal, longitudinal band, on segment II forming the well known figure "T"; 2 smaller warts on blackish band on segment III, on segment II on the yellow space between arms and trunk of "T"; larger warts laterally; tufts on abdominal segments 1–4 beige-brown; no horizontal ones on segments 1 and 2; retractable glands on segments 6 and 7 whitish with slight reddish tinge; on segment 5 only small line instead of gland; glands on a tuft-wide dorsal band which, however, appears between tufts only as moderately wide transverse line; 8th segment with a hair tuft originating from 2 large and 2 small separated warts; 9th segment with 3 warts on either side with the same brownish hairs found on all other warts; spiracles dirty yellowish, bordered by blackish brown.

Pupa (description from SAM specimens, FIG. 13). Brown to yellowish brown; conspicuous white scale agglomerations on abdominal segments 2–4; abdomen of entire pupa strongly hairy; cremaster evenly tapering to a rounded process with a set of little hooks; ♀ pupa considerably larger than ♂ pupa; scales arranged in 2 patches on segments 2–4, 1 patch on either side of a faint dorsal brown line; scales and pupal hairs not as much developed as in ♂; cremaster much shorter than in ♂.

Adult ♂ (FIG. 24). Anterior wing ferruginous brown, sprinkled with white forming 3 imperfect diffused bands and a costal subapical spot; 2 dark brown bands, antemedial and postmedial, the latter deeply undulating; underside dull pale luteous towards hind border; posterior wing luteous, with very broad black borders, suggesting the noctuid genus *Anarta*; fringes luteous; body and legs with grayish brown hairs; palpi very thickly set with hairs, 2nd joint longer than 1st, 3rd very small; antenna very deeply pectinate; length of anterior wing 15–17 mm; dorsal tufts broadly leaved, bluish metallic black; conspicuous lateral rosettes of luteous scales on thorax. Legs: epiphysis on anterior legs about 1.25× as long as tibia, sigmoidal, slender; hind tibia with 1 pair of apical spurs. Genitalia: uncus-gnathos wrench-like in lateral view (FIG. 35); uncus not partitioned, ending in a straight transverse line with some very small teeth; gnathos bipartite; valve without process of sacculus (FIG. 38); aedeagus (FIG. 35) almost straight, except for dorsal part which is curved almost 90° dorsally; middle part of aedeagus wider than proximal and dorsal parts.

Adult ♀. Grayish with short, rudimentary wings; about 15 mm long. Genitalia (FIG. 42): both lamellae vaginales well developed; lamella antevaginalis detached.

Type material. ♂ type in British Museum (Nat. Hist.) from "Tasmania," no further data. ♂ type of junior synonym *T. pusilla* in British Museum (Nat. Hist.) from Melbourne, Victoria, no further data; abdomen missing.

Material examined. AUSTRALIA: Australian Capital Territory: Black Mt: 2 ♂, 5–7.I.1956; 1 ♂, 1 ♀ (in cop.), 9.IV.1956; 1 ♂, 23.IV.1959; 1 ♂, 19.I.1960; 1 ♀, 11.II.1960; 1 ♂, 8.III.1967 (ANIC); 1 ♂, 4.I.1967 (UQ); 1 ♂, Molonglo, III.1941

(AM); New South Wales: Bronte: 1 ♂, 26.XI.1962; 1 ♀, XII.1966 (AM); 1 ♂, Mosman, II.1912 (AM); Narrabeen: 1 ♀, 25.I.1958; 2 ♂, 9.I.1963; 1 ♀, 12.I.1963; 1 ♂, 3.II.1963; 4 ♂, 26.II.1963; 1 ♂, 12.X.1963 (AM); 1 ♂, Natl. Park, 24.XII.1964 (AM); Sydney: 3 ♀, n.f.d.; 1 ♂, 7.IX.1920; 1 ♂, 12.X.1920; 1 ♂, 5.XI.1921; 1 ♂, XII.1929; 1 ♀, 2.VI.1940; 1 ♂, 25.III.1941; 1 ♂, 21.I.1966 (AM); Tuncurry: 1 ♂, n.f.d.; 2 ♂, 15.VI.1926; 2 ♂, 16.VI.1926; 1 ♂, 17.VI.1926; 2 ♂, 13.VIII.1926; 1 ♂, 16.VIII.1926; 1 ♂, 19.VIII.1926; 1 ♂, 20.VIII.1926; 1 ♂, 13.VIII.1928 (AM); Queensland: 1 ♂, Blackbutt, 22.IV.1914 (ANIC); 1 ♂, Cunningham's Gap, 9.I.1950 (UQ); 1 ♂, Lamington Natl. Park, II.1963 (UQ); Toowoomba: 4 ♂, n.f.d.; 1 ♂, 18.VII.1907; 1 ♂, 7.VII.1937; 1 ♀, 11.VII.1937; 1 ♂, 14.VII.1937; 1 ♂, 3.V.(no year); Toowoomba: 8 ♂, n.f.d.; 1 ♂, 11.IV.(no year); 2 ♂, 17.IV.(no year); 2 ♂, 18.IV.(no year); 1 ♂, 20.IV.(no year); 1 ♂, 3.V.(no year) (QM); Toowoomba: 1 ♂, n.f.d.; 1 ♂, 10.II.1920; 1 ♂, 1.II.1928; 1 ♂, 13.III.1928; 1 ♂, 8.V.1951; 1 ♂, 8.V.1962 (UQ); South Australia: 2 ♂, 1 ♀, n.f.d. (SAM); 1 ♂, Hyde Park, IX.1962 (SAM); 1 ♀, Prospect, 10.XII.1956 (SAM); TASMANIA: 10 ♂, n.f.d. (QM); 1 ♂, Freycinet Natl. Park, 28.II.1963 (ANIC); 1 ♂, Hobart, 22.X.1920 (AM); 1 ♀, Hobart, n.f.d. (SAM); Launceston: 10 ♂, n.f.d.; 1 ♂, 6.IV.1903; 6 ♂, 6,8,12,13,15.II.1905; 1 ♂, 4.III.1905 (SAM); 1 ♀, Scotsdale, VI.1914 (AM); Victoria: 1 ♂, n.f.d. (SAM); 1 ♂, Ferntree Gully, 22.XI.1927 (AM); 1 ♀, Girborne, n.f.d. (SAM); 6 ♂, 2 ♀, Melbourne, n.f.d. (SAM); 1 ♂, Malvern, 29.IX.1920 (AM); 1 ♂, Miti, 13.III.(no year) (AM); 1 ♂, Miti, 8.III.1928 (AM); 1 ♀, Horwell, 14.IV.1960 (ANIC); 1 ♂, Moe, 7.I.1935 (AM). *Larvae*: Black Mt, on *Acacia filicifolia,* 24.III.1960, 20.IV.1960 (ANIC); Blackwood, on *Acacia pycnantha,* late IX.1965 (SAM); on *Exocarpus cupressiformis,* late VIII.1966 (SAM); Kilkenny, late VI.1965 (SAM); Norwood, on *Hardenbergia violacea,* V.1966 (SAM). *Pupae*: Norwood, V.1966 (SAM).

Flight period. Adults recorded from all months of the year.

Distribution. Tasmania to northern Queensland.

Hosts. *Acacia filicifolia* (Black Mt); *Acacia longifolia* (Wollongong); *Acacia pycnantha* (Blackwood); *Exocarpus cupressiformis* (Blackwood); *Hardenbergia violacea* (Norwood); *Indigophora* sp. (Black Mt); "on lupinus" (probably Sydney); *Photinia* sp. (Yarralumba); *Pinus radiata* (Morwell, Nowra, Traralgan); *Pyrus* sp. (Wilton); *Rosa* sp. (Adelaide); *Tamarix* sp. (O'Connor); *Tamarix japonica plumosa* (Wollongong).

Teia athlophora (Turner), **new combination**

Orgyia athlophora Turner, 1920 [1921]: 493 (Perth, Swan Riv, Western Australia)

Egg. Laid on cocoon, covered with modified scales from anal tuft of ♀, grayish; surface features as in Fig. 7–9.

Larva (mature) (description from SAM specimen no. Lp. 14, Fig. 12). Head yellow with light brownish spots; shield yellow; base of warts on thoracic segment I also yellow; ocelli as diagrammed, Fig. 21; body creamy yellow; only spiracular line, interrupted intersegmentally; warts all on light base, 1 supraspiracular and 2 subspiracular rows; thoracic segments II and III with 3 warts on either side supraspiracularly; tufts on abdominal segments 1–4 grayish; horizontal tufts on segments 1 and 2, hairs on segment 1 thin and white, on segment 2 black and modified; retractable gland on segment 7 only; purplish red on yellow base;

on segments 5 and 6 round yellow spot only; big wart, of normal size, left and right of gland and spots; small warts anterior to gland and spots to the left and to the right; gland, spot and small warts on washed out brown patch; 8th segment with hair brushes originating from 4 separate warts, left and right of midline; 9th segment with 3 warts on either side with brownish hair brushes; there is no dorsal line, stripe or band, however, between segments black chain-like pattern transversely.

Pupa. None available for this study.

Adult ♂ (FIG. 25). Anterior wing triangular; costa straight to ¾, then strongly arched; apex rounded; outer margin slightly bowed, slightly oblique; pale ochreous brown; a blackish obliquely transverse basal band; a dentate, fuscous, transverse antemedial band, preceded by fine whitish line, edged posteriorly by narrow whitish suffusion; reniform slenderly outlined in whitish, not always distinct; blackish, finely dentate postmedial band, bent inwards below middle, then downwards to inner margin; whitish subapical patch; slender, interrupted whitish line from there to a whitish spot above anal angle; indistinct submarginal line, partly whitish, partly fuscous; underside pale ochreous gray, costal area to ¾ and a transverse line at ¾ suffusedly fuscous; fringes pale ochreous brown; posterior wing with outer margin rounded; ochreous whitish slightly suffused with fuscous towards outer margin; centrally a fuscous round spot; underside whitish ochreous; fuscous line from ¾ costa towards but not reaching anal angle; fringes concolorous; body whitish ochreous; palpi ochreous, upper edge fuscous, 2nd joint 1.5× longer than 1st, 3rd small; antenna pale fuscous, strongly pectinate; length of wing 17–18 mm; dorsal tufts slender, grass-like, brownish, some with metallic greenish shine. Legs: epiphysis on anterior legs about 1.2× longer than tibia, basal ½ straight, angulation at middle point, apical ½ slightly curved sigmoidally; hind tibia with 1 pair of apical spurs. Genitalia: (FIG. 36), uncus ending in kind of broad beak with straight, transverse end line with small processes at left and right ends; gnathos of 2 separated halves; valve without process of sacculus, interior angle sharply pointed rectangular (FIG. 39); aedeagus (in FIG. 36) of almost even width, not turned up at proximal end.

Adult ♀. Grayish with rudimentary wings, about 15 mm long. Genitalia: (FIG. 43) both lamellae vaginales well developed; lamella antevaginalis detached.

Type material. ♂ lectotype in ANIC, Western Australia, Swan Riv, L. J. Newman, no further data; labelled with an additional label in Turner's handwriting, "*Orgyia athlophora* Turn. TYPE" and another printed label, "Holotype"—this specimen designated as lectotype herewith. Paralectotypes (ANIC): ♂, Western Australia, Swan Riv, L. J. Newman (in letterpress); ♂, Perth, W. A. [Newman] (in Turner's handwriting, the specimen presumably having been received without label); ♀, Perth, W. A. [Newman] (in Turner's handwriting—see previous note); ♀, Western Australia, Swan Riv, L. J. Newman (in letterpress).

I. F. B. Common (in litt.) kindly explained the circumstances of these specimens, "Turner seldom gave the precise label data in his published descriptions and, in fact, often included in the one locality name places within a radius of 20 or more miles. L. J. Newman was the government entomologist in Perth from about 1920 to the late thirties and usually labelled specimens 'Sawan River.' Turner usually interpreted this as Perth in his published descriptions. There are 5 specimens in the ANIC, that originated in the Turner collection, which would in my view qualify as syntypes of *athlophora.* The 'Holotype' label was put on many years ago by one of my assistants at a time when we believed that the specimen labelled as 'Type' by the author of a species was in fact the holotype. This is not correct, of course, according to the present Code. Turner did not state that the 'type' was in any special collection and therefore the specimen he labelled as 'type' is merely one of the syntypes."

Material examined. AUSTRALIA: Western Australia: 1 ♀, n.f.d. (QM); 1 ♂, Al-

bany, 12.XI.1938 (ANIC); 1 ♂, Bunbury, 1.X.1951 (ANIC); 1 ♂, Esperance, 14.XI.1969 (ANIC); 1 ♂, Freemantle, 6.IX.1936 (ANIC); 6 ♂, Hopetown, 21.X.1971 (ANIC); 7 ♂, Mt Arid, 13.XI.1969 (ANIC); 5 ♂, Mt Arid, 19.XI.1969 (ANIC); 1 ♂, Nannup, 12.XI.1958 (ANIC); 1 ♂, Nedlands, 20.IX.1951 (ANIC); 1 ♂, Nedlands, 12.IV.1960 (ANIC); 2 ♂, Pemberton, 30.III.1968 (ANIC); 2 ♂, Perth (AM); 1 ♀, Perth, X.1912 (AM); 1 ♂, 1 ♀, Perth, n.f.d. (ANIC); 5 ♂, Perth, n.f.d. (QM); 2 ♂, 1 ♀, Swan Riv, n.f.d. (ANIC); 2 ♂, Swan Riv, n.f.d. (QM); 6 ♂, Yanchep, 10,11,12,13,16,19.IX.1938 (ANIC). *Larvae*: Esperance, on *Acacia heteroclita,* 27.XI.1968 (SAM); Porongorups Range, on *Brachysema subcordatum,* 20.XI.1968 (SAM).

Flight period. Main period September to November, 2nd generation March to April.

Hosts. *Acacia heteroclita* (Esperance); *Brachysema subcordatum* (Porongorups Range).

Remarks. Turner (1920) explains the specific name from Greek athlophorus, bearing the prize. Further collecting of this species may well show longer flight periods and additional hosts.

Teia dewara (Swinhoe), **new combination**

Orgyia dewara Swinhoe, 1903: 459 (Kapaur, Papua)

Egg, larva, pupa. Unknown.

Adult ♂ (Fig. 26). Anterior wing crossed by a number of dark reddish brown very irregular bands; a submarginal series of large brown spots on pale ground; in fresh specimens veins distinctly powdered very light brownish; posterior wing without markings, of uniform brownish color, much darker than anterior wing; fringes of both wings with ochreous white tips; underside of both wings much paler brown, uniform in color and without markings; body dark brown-pink, legs dull ochreous, with some dark stripes; palpi dull ochreous; antenna dark brown-pink, branches blackish, strongly pectinate; wing length 11–13 mm; dorsal tufts slender, grass-like, brownish, some with metallic greenish shine. Legs: epiphysis on anterior legs very strongly developed; reaching ½ of 1st joint of tarsus, with angular bend in middle but without sigmoidal apex. Genitalia: (Fig. 37), uncus helmet formed and like gnathos clearly separated into 2 equal halves, pointed at end; valve without process of sacculus, all rounded (Fig. 40); aedeagus (in Fig. 37) short, almost completely straight, proximal end bulbous, distal end not expanded; the entire genitalic structure only lightly chitinized.

Adult ♀. Unknown.

Type material. ♂ holotype (BM) bears a Swinhoe handwritten label "*Orgyia dewarra* (sic!) Swinhoe ♂ type" from Kapaur, SW New Guinea; W. Doherty; B.M. no. 1901-223.

Material examined. IRIAN: NEW GUINEA (NW): 1 ♂, Waris, S of Hollandia, 1–7.VIII.1959, T. C. Maa (Bishop). PNG: NEW GUINEA (NE): 1 ♂, Finisterre Range, Natoko, 29.VIII–24.IX.1958 (ANIC); 1 ♂, Morobe Distr., Wau, 13.X.1962, J. Sedlacek (Bishop); NEW GUINEA (SE): 1 ♂, Dogona (ANIC).

Flight period. All known specimens taken in second half of year.

Distribution. Papua New Guinea and Irian Jaya.

Hosts. Unknown.

Remarks. This species may well occur also on the Australian mainland. At present it is one of the most poorly known species in *Teia.*

APPENDIX

A. Species described as, or previously included in, *Orgyia* but now assigned to other genera.

Oligeria hemicalla (Lower)

Orgyia hemicalla Lower, 1905: 176 (Melbourne, Victoria).—Strand *in* Seitz, 1915: 302.—Kozhanchikov, 1950: 273.

Oligeria hemicalla: Turner, 1920: 480–481 (Sydney, New South Wales).

Turner mentioned 2 specimens received from the late Mr Masters. As they were taken many years ago and bore no labels, the locality (Sydney) needs confirmation. He lists also Melbourne, Victoria, the type locality.

Acyphas pelodes (Lower)

Euproctis pelodes Lower, 1893: 150 (Adelaide, South Australia).—Strand *in* Seitz, 1915: 360.—Bryk, 1934: 263, 388.

Acyphas pelodes: Turner, 1931: 325 (*O. retinopepla* Lower synonymized).

Orgyia retinopepla Lower, 1905: 176 (Broken Hills, New South Wales.—Strand *in* Seitz, 1915: 301.—Bryk, 1934: 76.—Kozhanchikov, 1950: 273.

Notolophus retnopepla (sic!): Swinhoe, 1923: 422 (print. err. "222") (Queensland).

Turner (1920) listed *E. pelodes* and *O. retinopepla* as unrecognized or species wrongly referred to the family. He thought the former was probably a synonym of *Epicoma tristis* Lewin (1805), which he understood to be a notodontid. This was then taken up later by Swinhoe (1923: 440, no. 1091) and by Bryk (1934: 388) who, however, quoted the wrong name for the notodontid: *Ochrogaster contraria* Walker. Turner (1931) revoked his previous statement and synonymized *Acyphas pelodes* = *Euproctis pelodes* = *Orgyia retinopepla*. He added, "New South Wales: Broken Hill in October; South Australia: Adelaide. Two specimens from the Lower Collection in the South Australian Museum. The latter is believed to be the type of *pelodes*, the former the type of *retinopepla*. The differences between them are, I am convinced, merely varietal." I inspected the specimens in question, which are still in the collection of SAM, and I agree with Turner's remarks. Accordingly, the holotypes are now labelled as such.

B. Species "incertae sedis."

Orgyia atra A. Pagenstecher

Orgyia atra A. Pagenstecher, 1900: 41 (Neu-Pommern = New Britain).—Strand *in* Seitz, 1915: 301.

Pagenstecher says (my translation): [In the Ribbe collection, there is a species of *Orgyia* of 10 mm width from Neu-Pommern (♂) which was unknown to Mr Snellen and probably not yet described. The little animal is entirely unicolorous black-brown

on abdomen and wings, without any pattern and has strongly pectinate black antennae.]

According to Horn & Kahle (1936), the remaining stock of the Lepidoptera collection of Carl Ribbe, Jr. went in 1934 through Staudinger & Bang-Haas (Dresden-Blasewitz) into other (not mentioned) collections.

The following institutions were contacted about the whereabouts of the types of *Orgyia atra*: Museum für Naturkunde an der Humboldt-Universität zu Berlin; Landessammlungen für Naturkunde Karlsruhe; Zoologische Sammlung des Bayerischen Staates München; Museum Wiesbaden Naturwissenschaftliche Sammlung; Staatliches Museum für Tierkunde Dresden and the British Museum (Natural History). All reported no trace of *Orgyia atra*. Dresden was mentioned as the most probable place for deposition. The Museum in Dresden wrote in response to my query (translation): [After thorough investigation of our collection we have to state regrettably that the specimens in question are not present here. It has to be assumed that in the case they had been with us, they were destroyed by fire during the war together with the main Lepidoptera collection.]

With this the case rests at the moment.

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REFERENCES CITED

Bryk, F. 1934. Lymantriidae. *In*: *Lepidopterorum Catalogus*, editus ab Embrik Strand, Pars 62, W. Junk, Berlin. 441 p.

Butler, A. G. 1882. On a small collection of Lepidoptera from Melbourne. *Ann. Mag. Nat. Hist.*, ser. 5, **9:** 84–103.

Curtis, J. 1830 [1823–1840]. British Entomology; being illustrations and descriptions of the genera of insects found in Great Britain and Ireland, 5. Lepidoptera, 1. 93 plates. London. Printed for the author.

Horn, W. & I. Kahle. 1936. Über entomologische Sammlungen, Teil II, *Entomol. Beihefte aus Berlin-Dahlem* **3:** 161–296.

Kirby, W. F. 1892. *A synonymic catalogue of Lepidoptera Heterocera (moths), 1, Sphinges and Bombyces.* Gurnery and Jackson, London. 951 p.

Kozhanchikov, I. V. 1950. Lepidopterous insects, 12, Orgyidae. *In*: *Fauna S.S.S.R. Izd. Ak. Nauk SSSR.* Moscow and Leningrad. 582 p.

Lewin, J. W. 1805. Prodromus Entomology (sic!). Natural history of lepidopterous insects of New South Wales, collected, engraved and painted after nature (with descriptions). London, T. Lewin.

Lower, O. B. 1893. New Australian Lepidoptera. *Trans. R. Soc. South Aust.* **17:** 146–85.

1905. Descriptions of new Australian Lepidoptera, with synonymic notes, XXIII. *Trans. R. Soc. South Aust.* **29:** 173–80.

Pagenstecher, A. 1900. Die Lepidopteren Fauna des Bismarck-Archipels. *Zoologica* (Stuttgart), **12**(29): 40–41.

Riotte, J. C. E. 1976. Kurze Notiz zur Kenntnis einer neuen Art der Gattung *Orgyia* von Papua New Guinea und Australien (Lep., Lymantriidae). *Entomol. Z.* **86:** 89–93.

Strand, E. 1915. Lymantriidae. *In*: A. Seitz, *Die Gross-Schmetterlinge der Erde, 10. Die Indo-Australischen Spinner und Schwärmer.* Alfred Kernen, Stuttgart, 1933. 909 p., 104 pl.

Swinhoe, C. 1903. Revision of the Old World Lymantriidae in the National Collection. *Trans. Entomol. Soc. London* **1903:** 375–498.

1923. A revision of the genera of the family Liparidae. *Ann. Mag. Nat. Hist. ser. 9,* **11:** 47–97, 400–42.

Turner, A. J. 1904. A classification of the Australian Lymantriadae (sic!). *Trans. Entomol. Soc. London* **1904:** 469–81.

1920. Revision of Australian Lepidoptera—Liparidae. *Proc. Linn. Soc. N. S. W.* **45:** 474–99.

1931. Revision of Australian Lepidoptera. Supplementary. *Proc. Linn. Soc. N. S. W.* **56:** 325–44.

Walker, F. 1855. List of specimens of Lepidopterous insects in the collection of the British Museum. Part IV: Lepidoptera Heterocera. p. 775–976. British Museum, London.

1865. List of specimens of Lepidopterous insects in the collection of the British Museum. Part XXXII: Suppl. Part 2. p. 323–706. British Museum, London.