THE GENUS NYCTEMERA HUEBNER. II

BY

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Part I of this investigation, dealing with the Javanese and some other *Nyctemera*, has appeared in the *Trans. Royal Ent. Soc. of London*, already several years ago (ROEPKE, 1949, p. 47—70). In that paper some remarks were published about the nomenclature, the life-history which is known only very fragmentary, the behaviour of these moths, and their variability. The student is referred to these particulars. It was stated that these moths were day-flying, but this fact does not exclude that they are attracted by lamp-light too. The late Dr. TOXOPEUS told me that in Central Celebes *Nyctemera* regularly appeared in such numbers at the lamp as to become a nuisance.

The present paper deals with the species from Sumatra and Malaya and with some other species, and though it is not exhaustive nor does it solve all taxonomic and other problems, it may contribute to the settling of the complicated synonymy of the species involved and so to clear up the "formidable confusion" (ROEPKE, 1949, p. 48) which still prevails in the taxonomy of this genus. Much more collecting is required in the regions concerned before we arrive at a complete understanding of the many components and their relationships which constitute this interesting Arctiid genus.

Again I had full access to the collections of Leiden, Amsterdam, London, and Tring. The Museums of Oxford and Berlin sent valuable type-material. From the Museum Bogor, Indonesia, I had a series of specimens from different localities of the Archipelago. I take great pleasure in expressing my sincere gratitude to the authorities of the said Museums for the invaluable help they have always afforded me. The collection of the Agricultural University of Wageningen was also at my disposal. Last but not least I have to mention with gratitude the finantial support from the "Netherlands Organisation for Pure Scientific Research (Z.W.O.)" which enabled me to visit London and Tring at several occasions.

The following names proved to be synonyms or to refer to subspecies and varieties only.

Nyctemera

abraxina Roths. 1920	= *dentifascia* Snell. 1898
accepta Swinh. 1892	= *consobrina* Hopff. 1874
adversata Schaller 1788	= *plagifera* Walk. 1854
alba Pag. 1901	= *baulus* Boisd. 1832
amplificata Walk. 1865	= *latistriga* Walk. 1854
assimilis Seitz 1915 (nec Voll. 1863)	= *trita* Walk. 1854
battakorum Seitz 1915	= *trita* Walk. 1864

biserrata Seitz 1915	= *dentifascia* Snell. 1898
coaequalis Swinh. 1915	= *tripunctaria* L. 1758
crameri Rpke. 1949	= *regularis* Snell. 1880
cydippe Weym. 1894	= *tripunctaria* L. 1758
drucei Swinh. 1903	= *luctuosa* Voll. 1863
elzuniae-kruscheae Bryk 1937	= *tripunctaria* L. 1758
flavescens Voll. 1863	= *latistriga* Walk. 1854
harca Swinh. 1903	= *trita* Walk. 1854
hearca Roths. 1920	= *trita* Walk. 1854
herce Pag. 1901	= *trita* Walk. 1854
inconstans Voll. 1863	= *latistriga* Walk. 1854
infuscata Hopff. 1874	= *tripunctaria* L. 1758
instar Roths. 1920	= *sumatrensis* Heyl. 1890
mundipicta Walk. 1859	= *baulus* Boisd. 1832
nesites Seitz 1915	= *sumatrensis* Heyl. 1890
niasana Swinh. 1906	= *tripunctaria* L. 1758
nigrovena Swinh. 1903	= *baulus* Boisd. 1832
nisa Swinh. 1903	= *baulus* Boisd. 1832
optata Swinh. 1903	= *tripunctaria* L. 1758
perconfusa Rpke. 1949	= *tripunctaria* L. 1758
personata Talb. 1929	= *dentifascia* Snell. 1898
picata Butl. 1881	= *regularis* Snell. 1880
pratti B.-Bak. 1904	= *baulus* Boisd. 1832
reducta Roths. 1920	= *trita* Walk. 1854
seitzi Van Eecke 1930	= *trita* Walk. 1854
simulatrix Walk. 1864	= *baulus* Boisd. 1832
subvelata Walk. 1964	= *tripunctaria* L. 1758
tertiana Meyr. 1885	= *baulus* Boisd. 1832
tritoides Heyl. 1890	= *trita* Walk. 1854
variegata Reich 1932	= *ludekingii* Voll. 1863
velans Walk. 1864	= *tripunctaria* L. 1758
zerenoides Butl. 1881	= *arctata* Walk. 1856

For the sake of convenience a consistent terminology is used in the text to follow, indicating some details of the wing pattern.

Cross band: the oblique white band in fore wing running from near costa to near tornus. It is in certain species very broad and obvious, in others it is more or less reduced in size.

Basal striae: light yellowish or white coloured vein stems near base of fore wing, in some species rather obvious, in others obsolete or wanting.

Submedian streak: a white streak in fore wing below cell, often absent.

Terminal band: the greyish or blackish terminal border in hind wing, variable in shape and width.

THE *Nyctemera* SPECIES KNOWN FROM SUMATRA

In this survey two species are omitted, viz., *aequimargo* Roths. and *"consobrina* Hopff." Roths. 1920. The former is unrecognisable from the description. VAN

EECKE (1930, p. 55) supposes that it may be a *tripunctaria* L. *N. consobrina* does not occur in Sumatra, it is a typical Moluccan species confined to Celebes and adjacent islands. ROTHSCHILD's specimens could not be traced, neither in the British Museum nor in the Tring Museum. Untill his material will be rediscovered a correct identification of both species remains not well possible.

Nyctemera arctata zerenoides Butl.

BUTLER, 1881, p. 380 (*Trypheromera*): Sumatra. — SEITZ, 1915, p. 275 (*N. mülleri zerenoides*). — ROEPKE, 1948, p. 213 ♂ ♀, pl. 13, f. 11 ♂ (*arctata*): South Sumatra. — BRYK, 1937, p. 91 (*Deil. mülleri* forma *zerenoides*).

The typical *N. arctata* was described by WALKER (1856, p. 1664) from Cherra Punjee. Subsequently, several subspecies came to our knowledge, viz., *scalarium* Voll. from Java, *browni* Schultze from the Philippines and *albofasciata* Wilem. from Formosa. MATSUMURA (1930, p. 61), mentions it from the "Japanese Empire", perhaps is meant Formosa only. DANIEL (1943, p. 268) has recorded it from South China. It remained somewhat surprising that *arctata* was not recorded from Sumatra, until ROEPKE (1948) announced its occurrence on Mount Tanggamus in South Sumatra. Meanwhile I had the opportunity to see BUTLER's type specimen of *zerenoides* in the British Museum, with some additional material, and there can be little doubt that *zerenoides* represents *arctata* in Sumatra, as a well defined subspecies, if not as a related separate species.

Male genitalia: text-fig. 1a—f. Examined in two specimens of *arctata* from Assam, one specimen of *zerenoides* from South Sumatra, one specimen of *scalarium* from Tjinjiruan, West Java, and in one specimen from Nongkodjadjar, Tengger Mountains, East Java. They all are of a robust build, the tegumen is triangular, the uncus pointed, as shown in fig. 1d. The aedeagus, here figured from *zerenoides,* fig. 1c, and *scalarium*, fig. 1f, is simple, rather straight or slightly bent, its apical and basal parts somewhat thickened, with a pointed structure in its interior, probably a cornutus. The valva in *arctata,* fig. 1a, is elongate, consisting of a basal and an apical part, both of about equal length, the latter somewhat club-shaped, more than thrice as long as broad, without special structures. In *zerenoides,* fig. 1b, the apical part is much shorter and rounded, less than twice as long as broad. In *scalarium* (ROEPKE, 1949, fig. 1, and now here figured from a male from West Java, fig. 1e), the valva is rather different again from both the preceding.

It is undeniable that the genitalic structures of the three *arctata* subspecies under consideration differ strikingly. If these insects were inhabitants of the same locality, they were neccessarily to be treated as separate species, but as they occur in different regions and as their general features show considerable similarity, I prefer to attribute them to one species only. In many Lepidoptera the male genitalia show distinct subspecific characters.

It must be understood that *N. arctata* is an insect of the higher mountains, in Java and Sumatra up to 5000 feet or more. The species is not yet known from Malaya, but it may be expected there, from one higher locality or another. We may assume that it belongs to a group of insects that invaded the Archipelago during a great glacial period when the Java Sea had fallen dry and Java, Sumatra and Borneo were connected with the Asiatic Continent or even formed its South

Eastern border. Celebes, however, remained isolated by deep seas and had perhaps a higher temperature; this may explain the peculiar and more luxuriant character of its insect fauna, as well as the absence of *arctata*.

During the glacial period the advancing cold on the Continent forced many insects to migrate southwards, until they reached the Archipelago. When the ice retreated and the climate improved, the sea level rose again and the Archipelago became separated from the Continent, many insects, adjusted to a cooler climate, retired into the higher mountains, their return to the Continent being cut off by the restored Java Sea. In these lofty regions, they developed local populations through their isolation. In certain cases these populations reached the status of subspecies or even of doubtful species. I think that *N. arctata* is a good example of such an evolution.

The type specimens of *arctata* and *zerenoides* are in the British Museum, that of *scalarium* in the Leiden Museum.

Nyctemera baulus mundipicta Walk.

WALKER, 1859, p. 184 ♂ (*N. mundipicta*): Singapore. — SWINHOE, 1892, p. 141, pl. 5, fig. 14 ♂, holotype (*Leptosoma*). — VAN EECKE, 1930 sep., p. 209 (*baulus*). — ROEPKE, 1949, p. 52, pl. 1, f. 1 ♂, text-fig. 3, male genitalia.

Since the publication of my first paper in 1949 I arrived at the conclusion that the most western representatives of *baulus* — the typical species is from Buru — should be included in *mundipicta* Walk. from Singapore. This subspecies inhabits Malaya, Sumatra and Java, but I am not certain whether the *baulus* from Borneo belong to it or not as they seem to be slightly different. The bulk of the many *baulus*, extending eastwards from Celebes and the Lesser Sunda Islands to the Philippines and to the Oceanic region, have not yet received a careful treatment from a taxonomic point of view, but in future they will be classified as a number of subspecies. I shall turn to some of these subspecies later on (p. 168).

The type of *mundipicta* is in the Oxford Museum.

Nyctemera coleta coleta Cr.

CRAMER, 1782, p. 153 ♂ ♀, pl. 368, fig. H ♀ (*Phalaena Geometra coleta*): sine patria (Ambon, sec. BRYK, 1937). — SNELLEN, 1895, p. 141: Sumatra. — STRAND, 1910, p. 200: Sumatra. — VAN EECKE, 1930 sep., p. 208: Sumatra. — TAMS, 1935, p. 39: Sumatra. — ROEPKE, 1949, p. 52, pl. 1, f. 1 ♂, text-fig. 3, male genitalia.

A common, easily recognisable and widely spread species, less liable to variation. In the adjacent island of Nias a rather well defined subspecies occurs, *melanura* Butl. (1883, p. 161) which fact pleads for a geologically long separation of this island from the Sumatran mainland. In the island of Simalur a subspecies is found which comes very near to *melanura*, there are 8 ♀ of this subspecies in the Amsterdam Museum, coll. VAN DEN BERGH. Among the specimens received from the Bogor Museum there is a ♀, 45 mm, labelled Lubu Sikaping, Central West Sumatra, 450 m, 1923—27 (L. HUNDESHAGEN), which agrees perfectly with *melanura* from Nias, chiefly in having the terminal border narrow, with dark radiations on the veins 2—4, reaching midcell. The anal angle in hind wing is fairly white. One female which I had from the British Museum for examination as

Leptosoma nigrovenosum Moore, labelled Sumatra 84—65, has the veins 2—4 in hind wing also blackened.

CRAMER's type specimen is probably lost.

Nyctemera dentifascia Sn.

SNELLEN, 1898, p. 24 ♀, pl. 1, f. 1 ♀ : Sumatra. — SEITZ, 1915, p. 269, pl. 29 f ♀ (*biserrata*): Sumatra. — ROTHSCHILD, 1920, p. 135 ♀ (*Deil. abraxina*): Korintji. — TALBOT, 1929, p. 90 ♀ (*N. personata*): Korintji, 5000′. — VAN EECKE, 1930 sep., p. 210 ♀. — BRYK, 1937, p. 61. — ROEPKE, 1948, p. 212 ♂, pl. 13, f. 12 ♂ : Mount Tanggamus, South Sumatra.

An easily recognisable, endemic species, well figured by its author, but nevertheless described under different names by several subsequent authors. The name *biserrata* Seitz can be maintained for specimens with the dark pattern more prominent. The species is not common, the male was unknown until ROEPKE (1948) described and figured it.

SNELLEN's holotype, and the male described by ROEPKE are in the Leiden Museum, SEITZ's *biserrata* is in the Senckenberg Museum, Frankfurt-on-Main, and TALBOT's *personata* is in the British Museum. It is not known whether ROTHSCHILD's *abraxina* is preserved.

Nyctemera floresicola clarior subspecies nova

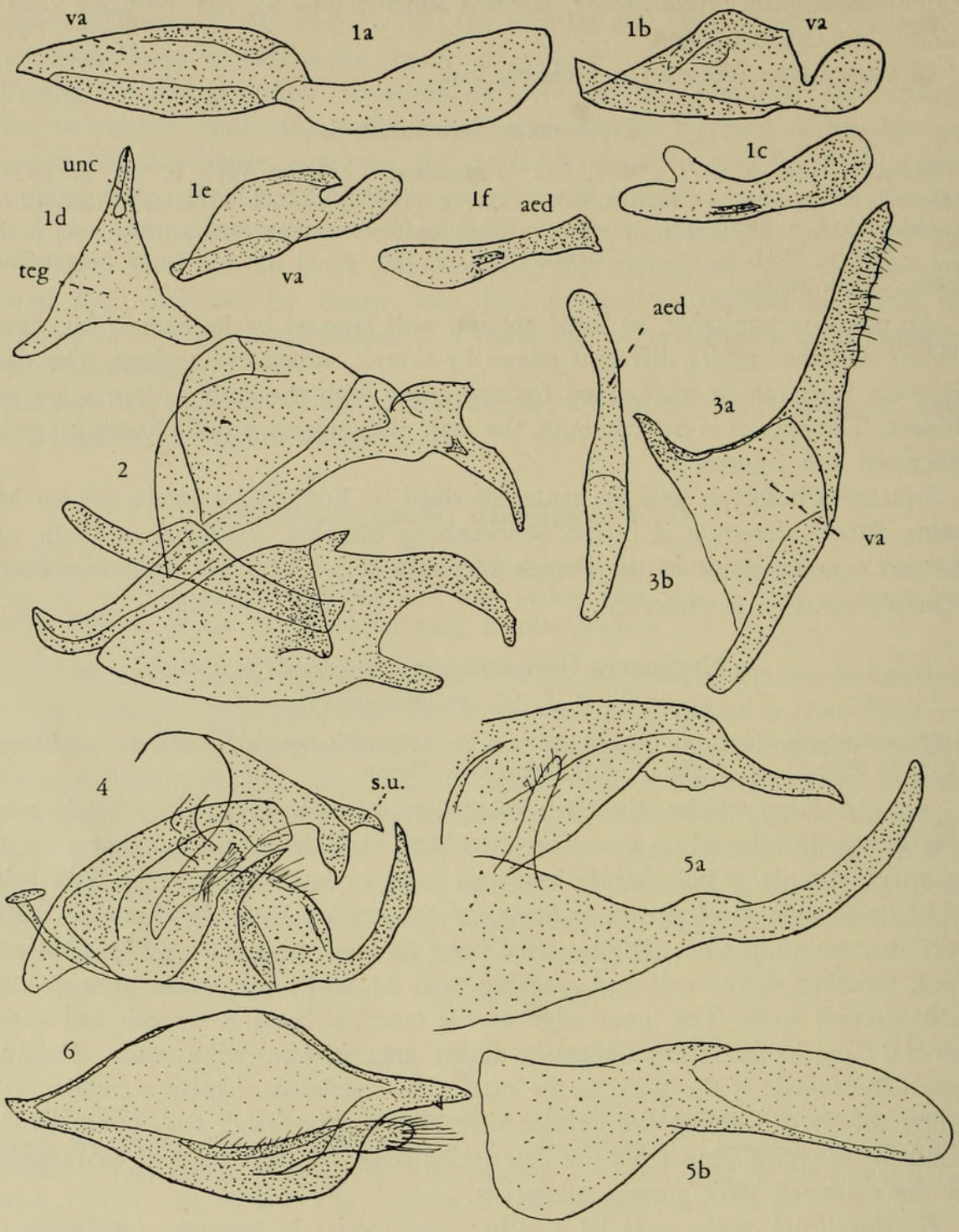
Pl. 8, f. 10 ♂ (holotype)

PAGENSTECHER, 1901, p. 139, pl. 2, f. 8 ♀ (*regularis* nec Sn.): Sumatra. — ROEPKE, 1954, p. 259 ♂, pl. 3, fig. 3 ♂ (*floresicola*): Flores.

♂ ♀. A large species, the dark coloration on both wings deep black, much contrasting with the white area. The cross band variable in size and shape, narrow or broad, sharply or not sharply bordered, more or less broken up by dark veins. Basal striae well developed or wanting, no submedian streak, hind margin with a very narrow white edge. The terminal band in hind wing narrow, broadest near apex, tapering downwards and reaching vein 2. Anal angle white or with some faint greyish spots. The inner edge of the terminal band is smooth and evenly curved. Cilia in fore wing lighter or darker grey, in hind wing white. Abdomen grey. The female is the same as the male. The specimens display a certain variability, chiefly concerning the development of the cross band, and it may be difficult to recognise them from the description only, yet they are well characterised by the extremely dark ground coloration.

N. floresicola clarior may be a rather rare species in Sumatra, inhabiting the mountainous regions. I have only 1 ♂, 39 mm, Kaju Aro, Mount Korintji, about 1600 m, (STRAATMAN), XI.1952, holotype, here figured, and 1 ♂, Dolok Ilir, Northeast Coast of Sumatra (UIL), 6.VI.1936. The British Museum sent me 1 ♀ for identification, from Lebong Tandai, Southwest Sumatra (BROOKS), VII.1923, allotype. There are more specimens in the British Museum, e.g., in the OBERTHÜR collection, from various localities in Sumatra. The Leiden Museum has one female, 39 mm, from Tandjong Morawa, Serdang, Northeast Sumatra (Dr. HAGEN).

Male genitalia : text-fig. 4. The uncus has a prominent dorsal appendage, as in *tripunctaria* L. (ROEPKE, 1949, p. 62), textfig. 8. In the following this structure shall be called superuncus, s.u. The valva is of about the same construction as with *tripunctaria,* but has the apical projection stronger, more bent inwards so that both



Figs. 1—6. Male genitalia of the genus *Nyctemera*. 1a—f, *arctata*; 1a, valva of *arctata* from India; 1b, the same of *zerenoides*: Sumatra; 1c, aedeagus of the same; 1d, tegumen and uncus of *arctata;* 1e, valva of *scalarium:* Java; 1f, aedeagus of the same; 2, *latistriga pallens* Voll.: Nias; 3a, valva of *regularis regularis* Sn.: Sumatra; 3b, aedeagus of the same; 4, *floresicola clarior* Rpke: Sumatra; 5a, tegumen, uncus, and valva laterally of *mülleri* Voll.; Sumatra; 5b, aedeagus of the same; 6, valva of *trita harca* Swinh.: Malaya (aed = aedeagus; s.u. = superuncus; teg = tegumen; unc = uncus; va = valva)

can be compared with a pair of tongs. The tooth-like projection near base of upper margin is strongly developed, pointed or more blunt. Near its base a small trumpet-shaped structure is visible. Aedeagus rather strong, slightly bent, with its base and orifice thickened, somewhat funnel-shaped, and bent laterally. By these genitalic

features the species proves to belong to the same section as *tripunctaria* L. Furthermore, it becomes clear that *clarior* is a subspecies of *floresicola* Rpke. 1954. Another subspecies, *floresicola corbeti,* is described hereafter from Malaya (p. 163).

The general features of the typical *floresicola* and its new subspecies *clarior* are very different, the former being much more darkened. Only after the examination of the male genitalia both turned out to be the same. This was surprising but it confirmed anew that the study of the male genitalia in the genus *Nyctemera* is of the greatest importance and is absolutely necessary.

In the beginning I wrongly identified *floresicola clarior* as *picata* Butl. of which I had only the photograph at my disposal, here reproduced on pl. 8, fig. 5. I was also mislead by BUTLER's name "*picata*" which means tarried or painted with tar alluding to the very dark ground coloration. When re-inspecting BUTLER's type specimen in the British Museum a short time ago, it was evident that *picata* is the same as *regularis* Sn. (see hereafter, p. 156).

Nyctemera latistriga latistriga Walk.

WALKER, 1854, p. 379: Moulmein. — VOLLENHOVEN, 1863, p. 44 ♂ ♀ (*Leptosoma leucostigma*): Java. — id., p. 46 ♂ (*nubecula*): Java; p. 45 ♂ (*pallens*): Java; p. 46 ♀ (*flavescens*); Sumatra; p. 47 (*inconstans*); Java; Borneo. — WALKER, 1865, p. 377 ♀ (*Tanada amplificata*): sine patria. — BUTLER, 1881a, p. 44, pl. 88, f. 1 ♂ (*Leptosoma*). — SNELLEN, 1892, p. 34, pl. 3, f. 11 ♂ (*L. inconstans*): Sumatra. — SWINHOE, 1903, p. 82 ♀ (*Deil. ovada*): Sumba. — STRAND, 1910, p. 200: Sumatra. — VAN EECKE, 1930 sep., p. 210. — BRYK, 1937, p. 67 (*latistriga* part.). — ROEPKE, 1949, p. 55 ♂ ♀, pl. 1, f. 4 ♂, pl. 2, f. 3 ♂ (*nubecula*); f. 7 ♂ (*leucostigma*).

The typical *latistriga* was described from Moulmein; the collective species has a wide range from Continental Asia to the Moluccas and the Philippines. It is not yet certain whether some insular forms have the rank of subspecies or not. Moreover, by its variability, the insect affords taxonomic difficulties which have caused much confusion. As in several *Nyctemera, latistriga* has the tendency to become darkened on the one hand, and pale or even whitish on the other.

Regarding the dark forms, they were already described as *leucostigma* and *nubecula* by VOLLENHOVEN, 1863, both from Java. *N. ovada* Swinh., as I have already shown (1949, p. 56) agrees perfectly with *nubecula* Voll. It is, however, not certain whether the old labelling in the Leiden Museum is reliable, and I should not be surprised if *leucostigma* (= *nubecula,* = *ovada*) proved to be an inhabitant of the Lesser Sunda Islands ! It has not been recorded or received again from Java since the days of BLUME, more than a century ago.

Considering the pale forms, the difficulties become still greater. Three of such "forms" were already described by VOLLENHOVEN (1863), viz., *pallens* from Java, *flavescens* from Sumatra and *inconstans* from Java and Borneo. In the latter the progress of fading is the least advanced (see SNELLEN's figure, 1892, of a male from Sumatra). Furthermore, there is an *amplificata* Walk. 1865, a female, unfortunately without locality. I had the opportunity to study this specimen carefully, but could hardly arrive at a conclusion regarding its origin and systematic position. It lacks every trace of the dark pattern, even the black spots on the abdomen and on the legs are completely absent. By its smaller size it may rank under *latistriga*, but then the name sinks automatically as a synonym of *pallens* Voll. from Java. Also *flavescens* Voll. from Sumatra may be treated as a synonym of *pallens.*

The Leiden Museum has a series of *pallens* from Nias, wrongly labelled as *cydippe* Weym. (see p. 158). The male genitalia, examined in one male of this series and here figured as text-fig. 2, agree perfectly with those of *latistriga* from the Sumatran mainland.

The dark and light forms of *latistriga* can be arranged as follows:

A. Dark forms. *A. latistriga* f. *leucostigma* Voll.: Java (doubtful = *nubecula* Voll.: Java = *ovada* Swinh.: Sumba).

B. Light forms. *N. latistriga* f. *pallens* Voll.: Java = *flavescens* Voll.: Sumatra = *amplificata* Walk.: patria ?

The form *inconstans* Voll. is intermediate, having the dark pattern well-developed, but more or less paler, see SNELLEN's excellent figure.

The type specimens of *latisriga, amplificata* and *ovada* are in the British Museum, of *pallens, flavescens, leucostigma* and *nubecula,* in the Leiden Museum.

Nyctemera ludekingii Voll.

VOLLENHOVEN, 1863, p. 49 ♀ (*Leptos.*): Sumatra. — HEYLAERTS, 1889, p. XXVI (*Nyct.*). — SNELLEN, 1891, p. 11; id., 1899, p. 108, pl. 5 B, f. 1: Sumatra; N. Borneo. — PAGENSTECHER, 1901, p. 141, pl. 2, f. 11 ♀. — SWINHOE, 1903, p. 67 (*Deil.*). — SEITZ, 1915, p. 274, pl. 30 d. — ROTHSCHILD, 1920, p. 135 ♂: Sumatra. — VAN EECKE, 1930 sep., p. 214 ♂ ♀ (*ludekingi*). — REICH, 1932, p. 236 ♂, pl. 2, f. 3 ♂ (*variegata*): N.E. Sumatra. — BRYK, 1937, p. 70.

Rather different in pattern from characteristic *Nyctemera,* both wings having dark grey spots on and between the veins. SEITZ (1915) has correctly figured it. The extent of the dark pattern, however, is liable to variation. The female has the antennae distinctly bipectinate.

Male genitalia: Examined in one specimen. Rather robust, tegumen triangular, uncus rather straight, narrow, pointed, strongly bent downwards, nearly as long as tegumen. Valva large and broad, bilobate, its upper lobe hook-shaped, its lower one broadly truncate, the excavation between them irregularly rounded. Aedeagus not surpassing valva, simple, only very slightly bent upwards. It is supported by a strongly developed juxta.

The species is not abundant, it occurs from the lowlands up to an altitude of 1400 m or more. SNELLEN (1899) is the first to mention a specimen from Borneo "in the Pommeranian Museum", probably Stettin is meant. PAGENSTECHER (1901) also gives Borneo, Mount Kinabalu, as a habitat, where the specimens are larger and more vividly coloured. He wrongly ascribes *zerenoides* Butl. to *ludekingii,* this error was already stated by SWINHOE (1903, p. 67).

The type specimen is in the Leiden Museum.

Nyctemera mülleri Voll.

Pl. 8, f. 4 ♂

VOLLENHOVEN, 1863, 41 (*Leptos.*): Sumatra. — PAGENSTECHER, 1901, p. 164 ♂ (*Deil.*): Borneo. — SWINHOE, 1903, p. 63 ♂ ♀: Borneo. — SEITZ, 1915, p. 275, pl. 30 g ♂ ♀. —— VAN EECKE, 1930 sep., p. 217. — BRYK, 1937, p. 91.

Belongs to the *evergista*-group, with the hind wing in the male abnormally shaped, *Deilemera* Hb. It is the only representative of this group in Sumatra and Borneo. The hind wing in the male has an abnormally enlarged and somewhat folded anal field, and on the underside the anal angle is filled out by an accumulation of light yellow scent scales extending to near vein 2.

PAGENSTECHER (1901), SEITZ (1915), and BRYK (1937) have wrongly included *N. zerenoides* Butl. under *mülleri* Voll. SEITZ's figure of his *zerenoides*, pl. 30 g, shows a female of *mülleri* with a slightly reduced dark pattern only.

Male genitalia: text-fig. 5a—b. Large and robust, but rather simple, as typical with the *Deilemera* group. Tegumen triangular, uncus somewhat elongated, slender, pointed. Valva with the apical part also much elongated, slender, slightly bent upwards. Near base of upper margin with a rather delicate digitiform appendage. Juxta not distinct. Aedeagus short and very stout, with its base broadened, but without special structures.

The species is not common in Sumatra, but I have seen a number of specimens from various localities, a.o., both sexes from Lebong Tandai, Southwest Sumatra (BROOKS), in the British Museum. The Leiden Museum has a male from Borneo, coll. JURIAANSE.

The type specimen of *N. mülleri* is in the Leiden Museum.

Nyctemera plagifera Walk.

Pl. 8, f. 3 ♀

SCHALLER, 1788, p. 52, pl. 1, f. 13 ♂ (*Phalaena Geometra adversaria*): sine patria. — WALKER, 1854, p. 400 (*N. plagifera*): Silhet. — VOLLENHOVEN, 1863, p. 50 (*Leptos.*): Japan. — BUTLER, 1881 a, p. 45, pl. 88, f. 3 (*Trypheromera*): Silhet; Hongkong. — HAMPSON, 1894, p. 474 (*Nyct.*). — PAGENSTECHER, 1901, p. 152. — SWINHOE, 1903, p. 67 (*Deil.*). — SEITZ, 1910, p. 103, pl. 18 h ♀ ; id. 1915, p. 237: Tibet; China; Formosa. — CANDÈZE, 1927, p. 107 (*Deil.*): Indochina. — DE JOANNIS, 1929 p. 431 (sep. p. 199): Tonkin. — MATSUMURA, 1930, p. 62: id. 1931, p. 974, f. ♂ . — REICH, 1932, p. 235, 350 (*laticolor*). — BRYK, 1937, p. 74. — DANIEL, 1943, p. 269; S. China.

A well-known and easily recognisable species recorded from many localities on the Asiatic Continent, such as India, South China, Indochina, Tonkin and Hongkong. Also known from Formosa. VOLLENHOVEN (1863) had already stated its occurence in Japan where it was collected by VON SIEBOLD, about a century ago. This statement was overlooked by all subsequent European authors. The Leiden Museum has still this material, three males, 51—60 mm, and two females, 56—64 mm, labelled Japan only. The white ground colour of these old specimens has turned slightly into yellowish.

The species was discovered in Northeast Sumatra by Mr. R. STRAATMAN, a skilful and ardent collector. His captures consist of a male, 48 mm, Bah Butong, about 1000 m, Pematang Siantar, 24.IX.1953, "ex copula", unfortunately the female was wanting when this came into my hands. One female, 48 mm, Kwala Simpang, lowland forest (A. SOLLART). There is a second female, 48 mm, in this series, labelled Penang, 14.XII.1945 which therefore is from Malaya. We have figured it here, as it agrees well with the female from Kwala Simpang. Both the Sumatran specimens are indistinguishable from Continental *plagifera*, as figured by BUTLER, HAMPSON, and SEITZ.

The occurrence of such a remarkable insect from Continental Asia in Northeast Sumatra is highly noteworthy.

Already SEITZ (1915) and later on BRYK (1937) have shown that the old name *adversata* Schaller 1788 has priority; SCHALLER's description and excellent figure leave no doubt; unfortunately he was not acquainted with its locality. It would be

regrettable, however, if the name *plagifera*, in common use since about a century, were to be replaced by an older unknown name. It is to be hoped that the International Commission for Zoological Nomenclature may validate WALKER's name *plagifera*.

The type specimen of *N. plagifera* is in the British Museum.

Nyctemera regularis regularis Sn.

Pl. 8, f. 5 ♀ (*picata* Butl., holotype), f. 14 ♂, f. 16 ♂, f. 17 ♀

SNELLEN, 1880, p. 34 ♀ (*Leptos.*). — BUTLER, 1881, p. 380 ♀ (*Secussio picatus*): Sumatra. — PAGENSTECHER, 1901, p. 139 (*Nyct. regularis* partim ?). — SWINHOE, 1903, p. 81 (*Deil.*). — SEITZ, 1915, p. 268 (partim ?). — ROTHSCHILD, 1920, p. 135 (*Deil.*). VAN EECKE, 1930 sep. p. 211 ♂ ♀, pl. 5, f. 2 ♂ (*Nyct.*). — BRYK, 1937, p. 76.

This species has also been rather doubtful to previous authors and was mixed up with *floresicola clarior* Rpke. by PAGENSTECHER, SEITZ, and VAN EECKE. PAGENSTECHER's and SEITZ's figures of what they call *regularis* and which VAN EECKE did not understand, clearly represent *floresicola clarior*. *N. regularis* is smaller than *floresicola clarior*, less robust and chiefly less black, but more greyish brown as in *trita* Walk. Cross band well-developed, from costa to vein 2, sometimes rather broad. Basal striae mostly well-developed. Terminal band somewhat broader and of more even width than in *floresicola clarior*, gently rounded, less or not tapering towards anal angle, reaching it or not. Abdomen grey, with the darker dorsal spots obsolete. VAN EECKE's figure of a male is reasonable.

Male genitalia: text-fig. 3 a—b. Uncus rather short and strongly hook-shaped, ventrally with a characteristic projection. The distal margin of the tegumen is rather broad. The valva is basally broad, with its distal part elongated, slender and more or less curved inwards; seen from above the valvae have the shape of a pair of tongs. Near its upper angle an obvious triangular process. The aedeagus is very simple, slightly bent, at both ends somewhat thickened, without special structures.

The species seems to be less common, but is spread all over the island. I have 3 ♂, 35—36 mm, and 3 ♀, 37—41 mm, from various parts of Sumatra. The Leiden Museum has a small series, the Amsterdam Museum has 1 ♂ and 1 ♀, Sumatra's East Coast, coll. VAN DEN BERGH. The British Museum has a series and sent me for identification 1 ♂ from Lebong Tandai, I.1922, (BROOKS). From the Bogor Museum I had 2 ♂ and 1 ♀, Lubu Sikaping, West Sumatra (HUNDESHAGEN) and 1 ♀, Takengon, Atjeh, 1400 m (VAN WAGENVELD).

N. regularis is also known from Borneo; STAUDINGER sold it, many years ago, as *snelleni*, but a description was never published. PAGENSTECHER (1901, p. 139) characterises this *regularis* from Borneo as follows (translated): "females before me have more white on the fore wings and the cross band as well as the basal striae are broader white". Therefore, PAGENSTECHER must be regarded as the author of *snelleni* Staud. in lit. The Leiden Museum has 1 ♂ and 1 ♀ ex coll. SNELLEN, probably original specimens from Dr. STAUDINGER. They are labelled Kinibalu, the male measures 35 mm, the female 40 mm; both are figured here, see pl. 9, f. 7 ♂ and f. 13 ♀. They have the cross band obviously broad, nearly thrice as long as broad in the male, a little narrower in the female. The terminal band is obviously narrow, not reaching anal angle in the male, but extending to

it in the female. The genitalia of this male agree with those of typical *regularis* from Sumatra.

In 1949 I have introduced the name *crameri* for a species from Java which was considered as *lacticinia* Cr. by our authors, but which proved to be quite different from the latter (ROEPKE, 1949, p. 53). The male genitalia indicate undoubtedly that *crameri* and *regularis* are the same and in future must be grouped as follows:

a. *N. regularis regularis* Sn. : Sumatra
b. *N. regularis snelleni* Pag.: Borneo
c. *N. regularis crameri* Rpke.: Java.

SNELLEN's type specimen of *regularis* was at Wageningen on loan when in May 1940 the war broke out, and was unfortunately destroyed by war action. The holotype of *snelleni* PAG. should be in the Berlin Museum or in the Wiesbaden Museum with the coll. PAGENSTECHER. ROEPKE's *crameri* is in the Wageningen collection.

Nyctemera sumatrensis sumatrensis Heyl.

Pl. 8, f. 13 ♂

HEYLAERTS, 1890, p. XVII (sep. p. 7) ♂ : Pahang, Sumatra. — SNELLEN, 1895, p. 141; id., 1898, p. 111. — PAGENSTECHER, 1901, p. 139 (partim ?). — SEITZ, 1915, p. 269 (*nesites*), pl. 29 f ♂ ♀ (*sumatrensis*). — ROTHSCHILD, 1920, p. 135 ♂ ♀ (*Deil. instar*) — VAN EECKE, 1930 sep., p. 213 (*nesites*), p. 216 (*instar*). — BRYK, 1937, p. 65 (*instar*), p. 81 (*sumatrensis*). — ROEPKE, 1948, p. 212 (*sumatrensis*).

Though this species is easily recognisable, it has already received two synonyms and is treated by several authors in a rather confusing manner. The name *sumatrensis* HEYL. has priority. PAGENSTECHER (1901) produces a translation of HEYLAERT's description and adds a few words from which we can conclude that he correctly understood this species. It is unfortunate, however, that his figure on pl. 2, f. 6 has nothing to do with this species but represents the larger *N. tripunctaria* L. with a somewhat reduced pattern. SEITZ (1915) adds to the confusion by describing the insect as a new species *nesites,* whereas he figures it excellently and correctly as *sumatrensis* on his pl. 29f ! ROTHSCHILD (1920) describes the species anew as *Deilemera instar.* It is understandable that in such confusing circumstances neither VAN EECKE nor BRYK really knew this species.

N. sumatrensis is at most a medium sized species, the dark coloration is more blackish than in *regularis*, though not so intensely black as in *floresicola clarior* Rpke. The cross band is well-developed, not markedly broken up by darkened veins; the basal striae are distinct, sharp, white to yellowish. The hind wing has the terminal border very characteristic, well-developed in the apical area, rapidly narrowing downwards to veins 3 or 4, usually continued as four black dots on the veins. Abdominal tergites dark grey, with their hind borders white. Anal tuft yellow. Sternites with a lateral row of dark grey dots. The figure in SEITZ (1915) is the only hitherto in existence, it gives an accurate picture of the species concerned. *N. sumatrensis* Heyl. seems to be endemic in Sumatra, it is not known from other regions. It is not rare, I have before me a nice series from various localities of this large island.

HEYLAERTS' type specimen is in the Leiden Museum, that of *nesites* SEITZ probably in the Senckenberg Museum, Frankfurt-on-Main, *instar* Roths. is in London.

Nyctemera tripunctaria tripunctaria L.

Pl. 8, f. 1 ♀ (light form), f. 2 ♀ (dark form)

LINNAEUS, 1758, p. 523 (*Phalaena Geometra*): Asia. — PAGENSTECHER, 1901, p. 137, 139, pl. 2, f. 6 ♀ (*sumatrensis* nec HEYL.). — STRAND, 1910, p. 200: Centr. Sumatra. — SEITZ, 1915, p. 267, pl. 29a ♀ (ab. *sumatrensis* Pag. nec Heyl.). — VAN EECKE, sep. 1930, p. 208. — BRYK, 1937, p. 82, 83, 92 ("forma *elzuniae-kruscheae*"). — ROEPKE, 1948, p. 212 (*trip. perconfusa*): Sumatra; id. 1949, p. 60, pl. 1, f. 5—6 ♂, 7—8 ♀, text-fig. 8 (male genitalia).

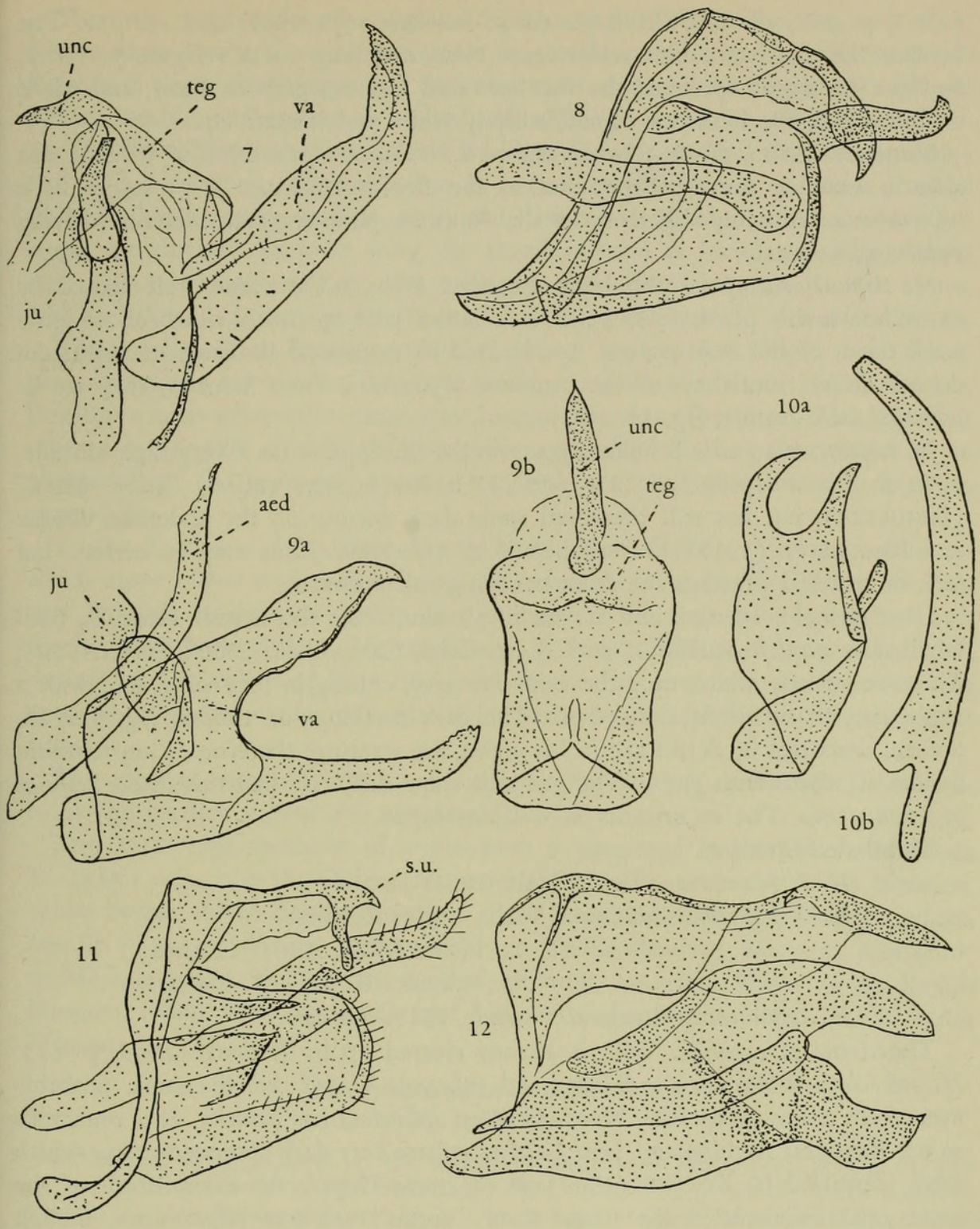
A large and conspicuous insect, but nevertheless with a complicated synonymy which I have already tried to unravel as much as possible (ROEPKE, 1949, p. 60). The difficulties are partly caused by the fact that LINNAEUS (1758) gives "Asia" only as its habitat. If this means Continental Asia, the insular *tripunctaria* are likely to be classified as subspecies and should be named trinominally. We cannot yet decide whether the Sumatran *tripunctaria* have the status of a subspecies or not. If this should be the case, we have to take into consideration the following names: *sumatrensis* Pag. 1901, nec HEYL. 1890, based only on an excellent figure (PAGENSTECHER, 1901, pl. 2, f. 6). This figure shows a female with the white pattern predominating and the terminal border extremely narrow. Unfortunately, this name is preoccupied by HEYLAERTS, see p. 157. SEITZ (1915) speaks of an "ab." *sumatrensis* Pag., indicating the specimens with a broad cross band and a narrow terminal band. Though names for systematic categories lower than subspecies have no nomenclatorial status at all, it is undesirable to retain this name, in order to avoid confusion. "Forma *elzuniae-kruscheae* (nomen novum)" was created by BRYK (1937, p. 83) at first without saying which name it has to replace, but on p. 91 this author states that it is intended for *sumatrensis* Pag. nec Heyl. Having overlooked this note I proposed the name *perconfusa* (ROEPKE, 1949, p. 212), but this must sink now as a synonym of *elzuniae-kruscheae*, whereas the latter may be a doubtful synonym of *tripunctaria* L.

The situation becomes the more complicated as *tripunctaria* tends to produce light-coloured variations as well as darkened ones. They may occur in different local populations, but more generally they are characteristic for certain geographic subspecies. The pale forms, hitherto on record, can be classified as follows:

N. tripunctaria celsa Walk. 1864: Cambodja; S. China
N. tripunctaria cydippe Weym. 1885: Nias
N. tripunctaria optata Swinh. 1903: Sumatra
N. tripunctaria gratia Schultze 1910: Luzon, Phil.
N. tripunctaria candidissima Seitz 1915: Hainan

N. tripunctaria celsa Walk. is said to prevail in South China; it has the original pattern still preserved, but the dark markings have turned into a pale brownish.

N. tripunctaria cydippe Weym. at first presented some difficulties. The Leiden Museum has a series of very pale specimens from Nias under this name. I examined the genitalia of a male and this turned out to be a *latistriga* Walk., and therefore should be named *latistriga pallens* Voll. (see p. 153). Having some doubt about the Leiden identification I wrote to Prof. HERING of the Berlin Museum for WEYMER's type specimen. He sent it most liberally with permission to dissect it.



Figs. 7—12. Male genitalia of the genus *Nyctemera*. 7, *malaccana* Rpke: Malaya; 8, *velans* Walk., holotype = *tripunctaria subvelata* Walk.: Celebes; 9a, aedeagus, juxta, and valva of *luctuosa* Voll.: Buru; 9b, tegumen and uncus of the same; 10a, valva of *baulus pratti* Beth.-Bak.: Dutch New Guinea; 10b, aedeagus of the same: Wissel Lakes; 11, *tripunctaria f. optata* Swinh., holotype: Sumatra; 12, *consorbina* Hopff.: *Celebes* (aed = aedeagus; ju = juxta; s.u. = superuncus; teg = tegumen; unc = uncus; va = valva)

So it is now possible to state that WEYMER's *cydippe* is a *tripunctaria*, the genitalia being exactly the same. Therefore, the pale *tripunctaria* from Nias must be called *tripunctaria cydippe* Weym. It may occur in the Sumatran mainland too, perhaps as a variety in certain populations. The *cydippe,* described and figured by SEITZ,

(1915, p. 267, pl. 29 b) is intermediate between *tripunctaria* and *cydippe*. The Leiden Museum has a nice series from Nias, matching SEITZ's figure perfectly. In WEYMER's type specimen the fore and mid legs are grey on outer, and white on inner side, the hind legs almost entirely white and immaculate.

SWINHOE (1906, p. 406) has described a *N. niasana* from Nias of which I was able to examine the type specimen in the British Museum. It proves to be a *tripunctaria,* only very slightly paler than normal specimens and, therefore, hardly deserving a name.

N. tripunctaria optata Swinh. is described from Sumatra and well-figured by its author in his pl. 4, f. 3 ♂. It is a rather pale specimen which shows only weak traces of the dark pattern. I examined its macerated abdomen, the genitalia do not differ from those of the common *tripunctaria* from Sumatra, they are illustrated here on text-fig. 11.

N. tripunctaria gratia Schultze occurs in the Philippines on a very high altitude, 2250 m (or a lapsus for 2250 feet ?). It has become entirely "snow white" (SCHULTZE), but has still preserved some dark dotting on the abdomen, thorax and legs. SEITZ (1915) has ascribed it to *tripunctaria*, this may be correct, but lack of material prevents me from verifying this statement.

I had a male, 40 mm, and a female, 39 mm, from the British Museum, both labelled as *amplificata* Walk., and "Cent. Cebu, Camp Taliti 2000', 7.VIII.1910". They are entirely white, only the veins are grey, chiefly in fore wing, and with a slight greyish suffusion along them. The dark markings on thorax, legs and abdomen, described by SCHULTZE in his *gratia*, are wanting; therefore, I am reluctant to identify them with *gratia.* The genitalia show distinctly that this insect belongs to *tripunctaria.* The superuncus in well-developed.

The dark forms are:

N. tripunctaria assimilis Voll. 1863: Java

N. tripunctaria subvelata Walk. 1864: Celebes

= *velans* Walk. 1864: Celebes

= *infuscata* Hopff. 1874: Celebes

N. tripunctaria coaequalis Swinh. 1915: Sumatra.

The status of *assimilis* Voll. is already cleared up by ROEPKE (1949, p. 62). *N. subvelata* Walk., *velans* Walk., and *infuscata* Hopff. are the same, probably even from the same locality, North Celebes; *subvelata* has priority. It is numerous in the Banggaai Archipelago, near Celebes, where very dark specimens occur which were identified by ROEPKE (1949) as *infuscata* Hopff. An examination of the male genitalia revealed that these three "forms" are true *tripunctaria*, though there are slight differences. In the dark Celebes specimens the valva is a little broader, the prong-like appendage somewhat shorter and stouter, the triangular appendage near basal angle of the valva is much reduced in size. The main difference, however, lies in the absence of the superuncus in the specimens from North Celebes; in the specimens from the Banggaai-Archipelago, on the contrary, it is well-developed. Text-fig. 8 illustrates the genitalia of WALKER's holotype of *N. velans* = *subvelata* Walk. I have examined HOPFFER's holotype of *infuscata,* from the Berlin Museum, it has the genitalia as in *tripunctaria,* but the superuncus is wanting. Its general coloration is somewhat lighter as in *subvelata,* about $^2/_3$ of the hind wing is white. Pl. 9, f. 3 illustrates this holotype.

There are two females of *coaequalis* Swinh., in the British Museum, both alike. I have never seen additional specimens. It resembles *subvelata* Walk. from North Celebes; a slight doubt regarding the correctness of its habitat "Sumatra", without precise locality, is therefore not misplaced, although darkened specimens may occur in certain Sumatran populations. Its large size and general shape demonstrate that it is *tripunctaria,* the coloration is a dark greyish brown, the cross band is ill-defined and smoky, broken up by the dark veins. Basal striae and submedian streak are distinct. In hind wing the terminal band is broad, extending along costa, its inner edge diffuse, the veins are dark. The abdomen is dark above, whitish below. I do not hesitate to treat it as *N. tripunctaria* f. *coaequalis* Swinh.

The text-fig. 11 in ROEPKE (1949, p. 59) of an *infuscata* Hopff. from Banggaai, shows the superuncus, which is wanting in *subvelata* from North Celebes. Possibly a new subspecific name may become necessary in future. This figure is otherwise not quite correct: the prong-like appendage of the valva, drawn as an elongation of the aedeagus, appears too long and the valva seems to have no appendage.

I have 2 ♂ and 4 ♀ from Dutch North New Guinea (VAN DEN BERGH) which agree rather well with *tripunctaria subvelata* from North Celebes. If VAN DEN BERGH's labelling is correct, this collector is the first to have obtained this species from New Guinea. Unfortunately, VAN DEN BERGH became seriously ill during his last collecting trip 1929—30 to the Far East, and in some cases he seems to have confounded paper-triangles which he had labelled before they were filled.

The adjacent island of Simalur, off the Northwest coast of Sumatra, is inhabiter by the smaller *tripunctaria simalura* (p. 176).

LINNAEUS' type specimen of *tripunctaria* is preserved in the Upsala Museum, WALKER's *celsa* is in the Oxford Museum, *cydippe* Weym. in the Berlin Museum, *optata* Swinh. in the British Museum, *gratia* Schultze in the Agricultural College, Manila (?), *candidissima* Seitz probably in the Senckenberg Museum, Frankfurt-on-Main, *assimilis* Voll. in the Leiden Museum, *subvelata* Walk. in the British Museum, *velans* Walk. in the Oxford Museum and *infuscata* Hopff. in the Berlin Museum.

Nyctemera trita tritoides Heyl.

Pl. 8, f. 15 ♂

HEYLAERTS, 1890, p. XVII ♀ (*N. tritoides*): Sumatra. — SEITZ, 1915, p. 268, pl. 29 e ♀ (*assimilis battakorum*). — ROTHSCHILD, 1920, p. 134 ♂ ♀ (*Deil. hearca reducta*): Korintji. — VAN EECKE, 1930 sep., p. 212, pl. 5, f. 3 ♂ (*seitzi*): Sumatra; id. p. 213, pl. 5 ♂, 4 ♀ (*tritoides*). — ROEPKE, 1949, p. 62, pl. 1, f. 21—23 ♂ ♀ (*trita trita*), text-fig. 13 (male genitalia): Java.

A small and inconspicuous species about which much confusion has arisen. The typical *trita* Walk. 1854 was described from Java, and ROEPKE (1949, p. 62) has tried to elucidate its taxonomic status as accurately as possible, chiefly by examination of the male genitalia. These structures are very peculiar and cannot be confounded with those of similar species. In the same way the Sumatran *trita* complex was tackled, and it was of a great advantage that the type specimens of *trita* Walk., *tritoides* Heyl., *harca* Swinh., *hearca reducta* Roths.. and *seitzi* Van Eecke were available for examination.

N. trita tritoides Heyl. can be confounded with *regularis* Sn., but it generally is slightly smaller and more delicate. The dark ground colour is somewhat lighter, the cross band is narrower or more or less reduced as in *reducta* Roths. The basal striae are less developed or obsolete, the terminal band is variable in width and shape, mostly it is broader than in *regularis,* its inner edge often less evenly curved but slightly angled on vein 5. In some specimens it is very thin and ends on vein 2, leaving the anal angle entirely white. In another specimen from the same locality and therefore, perhaps from the same population, the terminal band is very broad, occupying about one third of the hind wing surface. There is another female of the same series which has become very pale and which will be described below as f. *suprapallida*, see p. 163.

SEITZ's *assimilis*, as shown on his pl. 29e, seems to be a rather large *tritoides* with a broad cross band and a broad terminal band. His *battakorum*, pl. 29e, has the terminal band almost as in *regularis*, but the cross band is narrow as in *tritoides*. VAN EECKE's *seitzi* has the terminal band rather broad, the cross band normal.

BRYK (1937, p. 84) has included *harca*, *herce, hearca* and *reducta* in his *tripunctaria*, of course erroneously (see pag. 166).

The typical *trita* from Java is much darker than *tritoides* from Sumatra. There is a tendency in certain *Nyctemera* to become darker from the West to the East, we shall return to this point on p. 166.

Male genitalia: Already described and figured by ROEPKE (1949, text-fig. 13) from Java specimens. Quite a number of Sumatran *tritoides* were examined, they do not differ from those from Java. See also below, p. 166.

N. trita tritoides Heyl. is not rare in Sumatra, I was able to study a rich material from various localities, the males measuring 32—33, the females 34—37 mm. The Museum Bogor sent me 1 ♂ and 3 ♀ from Kutaradja, North Sumatra, XII.1940 and II.1941 (VAN WAGENVELD). These four specimens differ at the first glance from those from other Sumatran localities in being more robust, with the pattern more clear-cut and more contrasting. The ground colour is darker grey, the cross band broad, reaching anal angle, its inner edge evenly rounded. One might be inclined to think it a separate species; the examination of the genitalia in the only available male discloses, however, that it is a *trita,* though the apex of the valva is not bicuspidate, one of the terminal teeth being transposed a little basad. The setiferous "harp-like" appendage is slightly curved. The valva is figured in text-fig. 6. I suspect that this *trita* from the very North of Sumatra belongs to the subsp. *trita harca* Swinh. from Malaya, see below, p. 166. It may have reached Sumatra from the insular chain formed by the Andamans and Nicobars.

Nyctemera trita tritoides f. reducta Roths.

ROTHSCHILD, 1920, p. 134 ♂ ♀ (*Deil. hearca reducta*): Korintji. — VAN EECKE, 1930 sep., p. 208 (*N. trip. reducta*). — BRYK, 1937, p. 84 (*trip. reducta*).

As already pointed out this is a darkened *trita tritoides,* with the cross band more or less reduced until in becomes obsolete in extreme cases. There are all transitions between normal and darkened forms, the latter may prevail in certain local populations.

Nyctemera trita tritoides f. **suprapallida** nov.
Pl. 9, f. 17 ♀, holotype

♀. A very pale variety, the upper side of forewing shows the dark coloration only as a light greyish brown shade, and the white cross band is hardly contrasting, though discernible as a weak trace only. The veins are somewhat darker, chiefly towards termen. Cilia light greyish. Hind wing with the terminal band discernible, chiefly in apex, and though very pale it has the shape characteristic of *trita*. Abdomen white, with a weak indication of one row of light greyish dorsal spots. Underside with the dark ground coloration better preserved so that the typical *trita* pattern becomes visible, light greyish brown with the white cross band in fore wing and the grey terminal band in hind wing as in *tritoides*.

♂. Unknown.

1 ♀, 34 mm, Lubu Sikaping, Northwest Sumatra (W. HUNDESHAGEN).

Type specimens: *trita* Walk. in the British Museum, *tritoides* Heyl. in the Leiden Museum, *battakorum* and *assimilis* Seitz (nec Voll.) in the Senckenberg Museum, *reducta* Roths. in the British Museum, *seitzi* Van Eecke in the Leiden Museum and *suprapallida* in the coll. Wageningen.

THE *Nyctemera* SPECIES FROM MALAYA

Very little is known about the *Nyctemera* species from Malaya. SWINHOE (1903a, p. 66—67) mentions three species only, viz., *tripunctaria, harca*, and *coleta*. Therefore, I wellcome the opportunity to publish a modest contribution to the knowledge of this fauna, based on a small material that the British Museum kindly sent me for identification from the collection of the late Dr. A. S. CORBET and of the Department of Agriculture, Kuala Lumpur.

Nyctemera baulus mundipicta Walk.

Bibliography, see p. 150.

2 ♂ and 1 ♀, Singapore, the topotypical locality of WALKER's *mundipicta*. One of the males is more reddish brown, the other specimens are greyish. The *baulus* from Sumatra and Java can be certainly ascribed to this subspecies.

Nyctemera floresicola corbeti subspec. nova
Pl. 9, f. 1 ♂, 2 ♀ (holo- and allotype)

♂ ♀. Agrees with *floresicola clarior* Rpke., here described from Sumatra, vide antea, p. 151, by its large size and by the black ground coloration. The cross band, however, broader, running from costa to vein 2, about thrice as long as broad, only faintly marked by some dark veins. Basal striae sparse. In hind wing the terminal band much broader, tapering and just surpassing vein 1b.

The female is about the same as the male, the cross band heavier cut up by dark veins, the terminal band also much broader than in *floresicola clarior,* just surpassing vein 1b. Cilia in fore wing black, in hind wing whitish.

This new subspecies is defined by the stronger developed terminal band in hind wing which readily distinguishes it from the Sumatran subspecies *clarior*.

Male genitalia: The same as in typical *floresicola* and its subsp. *clarior,* vide antea, p. 151. and text fig. 4.

1 ♂, 45 mm, holotype, Bukit Kutu, 24.III.1928 (A. S. CORBET). 1 ♀, 45 mm, allotype, Tanah Rata, Cameron Highlands, 31.I.1930 (A. S. CORBET).

The occurrence of a subspecies of *floresicola* Rpke. in Malaya is of special interest. The typical *floresicola,* recently described by ROEPKE (1954, p. 259) from Flores, is much darker, chiefly in hind wing, and therefore, on the first sight, very different. The genitalia, however, leave no doubt that we have to do with the same species. It is not yet known from Java, and it is not very probable that it has been overlooked there.

The arrangement of the three *floresicola* subspecies is as follows:

N. floresicola floresicola Rpke.: Flores
N. floresicola clarior Rpke.: Sumatra
N. floresicola corbeti Rpke.: Malaya

Type specimens of *floresicola floresicola* and *floresicola clarior* are in the Wageningen collection, of *floresicola corbeti* in the British Museum.

Nyctemera coleta coleta Cr.

Bibliography, vide antea, p. 150.

1 ♂, Malacca, 1 ♀, Singapore.

They do not differ from the specimens of neighbouring regions.

Nyctemera lacticinia Cr.

CRAMER, 1775, p. 47, pl. 128 E ♂ (*Phalaena Geometra*): Coromandel. — WALKER, 1854, p. 395 ♂ ♀ (partim): India; Ceylon; Hongkong; Java (ex errore !). — HORSFIELD & MOORE, 1859, p. 331 (partim): Java (ex errore !); Ceylon. — WALKER, 1862, p. 93. — MOORE, 1865, p. 803: Bengal; id., 1877, p. 577. — BUTLER, 1886, p. 190: Upper Birma. — SWINHOE, 1892, p. 141; id. 1894, p. 47. — HAMPSON, 1893, p. 3. — SWINHOE, 1895, p. 18 (*Dilemera*). — HAMPSON, 1898, p. 12. — PAGENSTECHER, 1900, p. 53; id. 1901, p. 117. — SWINHOE, 1903, p. 74. — SEITZ, 1910, p. 103, pl. 18 h ♀ ; id. 1915, p. 270. — CANDÈZE, 1927, p. 107 ♂ ♀ : Indochina. — DE JOANNIS, 1929 sep., p. 340: Tonkin. — BRYK, 1937, p. 66. — DANIEL, 1943, p. 269: S. China.

A well-known species, characterised by a rather broad cross band which is broken up by several dark veins and which reaches vein 1a-b. Basal half of hind wing white. Terminal band in the female much broader than in the male, its projecting tooth on vein 2 very distinct. Abdomen above white, the intersegmental borders black, anal tuft yellow.

Male genitalia: Mr. TAMS (British Museum) was kind enough to dissect a

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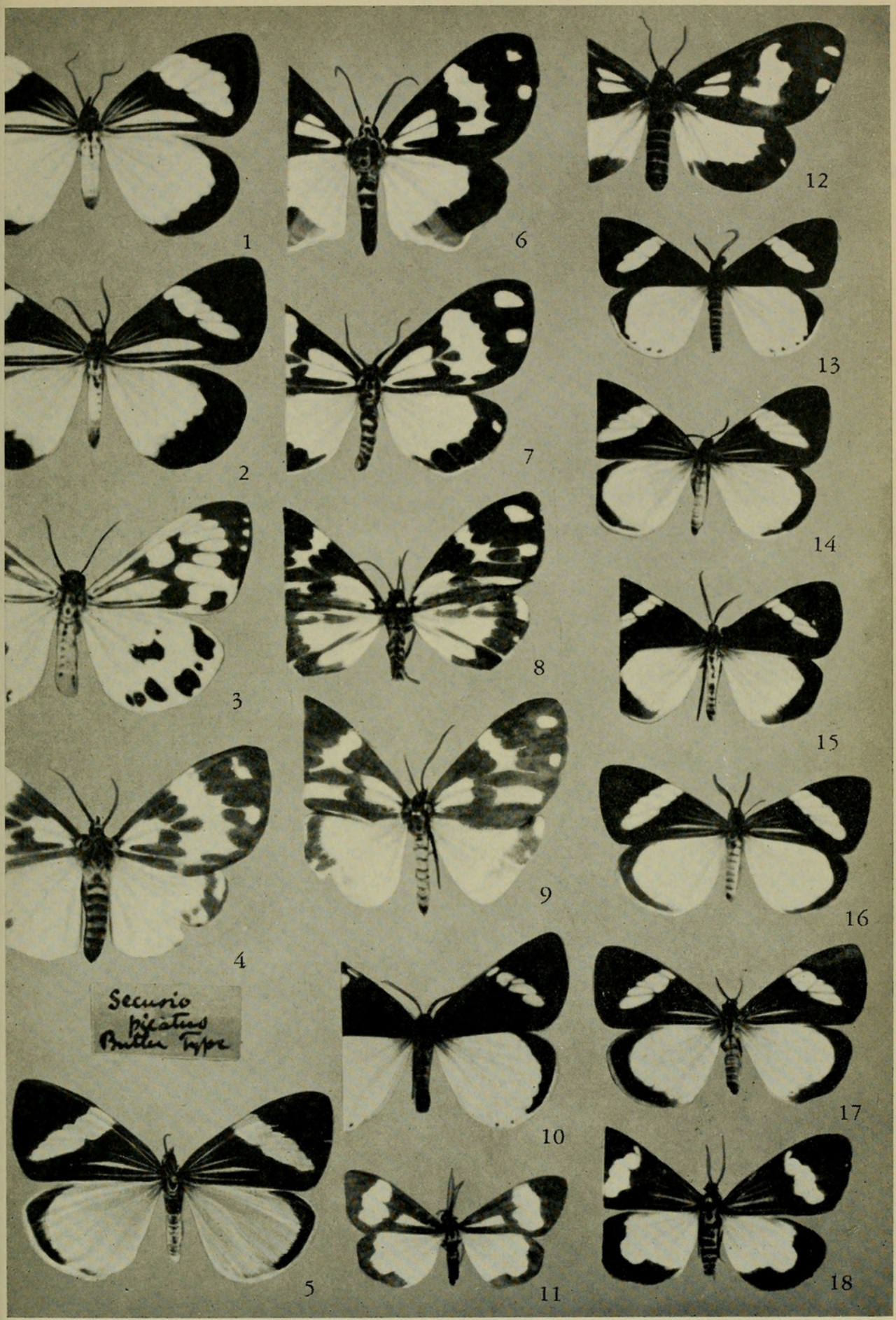
Fig. 1, *Nyctemera tripunctaria* L., ♀, Laut Tador, East Coast of Sumatra (light form); fig. 2, the same, ♀ (dark form); fig. 3, *N. plagifera* Walk. ♀, Penang; fig. 4, *N. mülleri* Voll., ♂, Mount Tanggamus, South Sumatra; fig. 5, *N. regularis* Sn. = *picata* Butl., ♀ (holotype), Sumatra; fig. 6, *N. aeres vandenberghi* Rpke., ♂ (holotype), North Celebes; fig. 7, the same, ♀ (allotype), North Celebes; fig. 8, *N. mülleri enganica* Rpke., ♀ (allotype), Engano Island; fig. 9, the same, ♂ (holotype), Engano Island; fig. 10, *N. floresicola clarior* Rpke., ♂ (holotype), Mount Korintji, West Sumatra; fig. 11, *N. luctuosa luctuosa* Voll., ♂, Central Buru; fig. 12, *N. aeres aeres* Boisd., ♀, Halmahera; fig. 13, *N. sumatrensis* Heyl., ♂, Bandar Baru, Northeast Sumatra; fig. 14, *N. regularis regularis* Sn., ♂, Bukit Itam, South Sumatra; fig. 15, *N. trita tritoides* Heyl., ♂, South Sumatra; fig. 16, *N. regularis regularis* Sn., ♂, South Sumatra; fig. 17, the same, ♀ ; fig. 18, *N. luctuosa kapaurensis* Swinh., ♂, Wissel Lakes, Central Dutch New. Guinea.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male and to send me a photograph. The valva is strongly bifurcate, the aedeagus long and slender, slightly bent upwards, without special structures. By the shape of the valva the species ranks near *latistriga* Walk., *luctuosa* Voll., etc.

1 ♂, Penang Hill, II.1932 (J. T. VAZ); 1 ♀, Kuala Lumpur, 6.XI.1930 (A. S. CORBET).

A common and widely spread species on the Asiatic Continent reaching Formosa eastwards and Malaya southwards. Since WALKER (1854) it has been recorded from Java and by subsequent authors from Borneo and even from Ceram ! I have never seen a specimen from the Archipelago and I am certain that these records are based on wrong identifications ! As far as Java is concerned I have shown that we have to do with a separate species, *crameri* Rpke., which has now turned out to be a subspecies of *regularis* Sn. (ROEPKE, 1949, p. 53, and antea, p. 157).

CRAMER's type specimen is probably lost.

Nyctemera malaccana spec. nova

Pl. 9, f. 6 ♂, 12 ♀ (holo- and allotype); text-fig. 7 (male genitalia)

♂ ♀. Antennae black, their bases yellow. Palpi yellow basally, distally grey. Head and thorax above black, patagia and tegulae narrowly bordered with yellow. Fore wings black, the cross band broad, extending from costa to vein 2 and slightly surpassing it, about 2.3 times as long as broad, its edges sharp, no dark veins in it. Basal striae weak, not obvious. Hind wings white, only with a trace of grey at base, terminal band blackish from apex to anal margin, broadest between veins 6 and 7, narrower in anal angle, though not markedly tapering. Hence the inner edge of the terminal band is more abruptedly curved on vein 3. Cilia in both wings greyish brown. Wings below about the same as above, legs whitish and grey, pectus anteriorly orange, spotted with black, the fore coxa with one black spot.

The female is larger, less dark, cross band broader than in the male, basal striae obsolete. Terminal band narrow, somewhat tapering towards anal angle and there slightly obsolescent. Abdomen above dark grey, hind borders of tergites fringed with white, anal tuft small, yellow.

Male genitalia: text-fig. 7. Examined in the holotype. Of a simple construction. Tegumen and uncus triangular, pointed, without special structures. Valva simple, rather slender, pointed and rather bent inwards, in outer third with a sharp edge adorned with a row of small chitinous teeth. Aedeagus slightly bent, rather slender without peculiar structures.

1 ♂, 32 mm, holotype, Pahang, Federated Malay States, Cameron Highlands, 4800 feet, 8.V.1932. 1 ♀, 35 mm, allotype, Tanah Rata, Cameron Highlands, 4000 feet, 31.I.1930 (A. S. CORBET).

Type specimens in the British Museum.

Nyctemera tripunctaria tripunctaria L.

SWINHOE, 1903a, p. 66 ♂ ♀ (*Deil.*): Malaya. — ROEPKE, 1949, p. 60 and antea, p. 150.

The four specimens from Malaya are of rather uniform type. They have the white pattern strongly developed, the cross band is broad, the terminal band of medium size.

1 ♂, Pulau Langkawi, I.1931 (IDRUS BEN ABDULLAH); 1 ♀, Sungei Bulo, 4.XII.1929 (A. S. CORBET); 1 ♀, Malacca, labelled 76.46; 1 ♀, Buang, labelled 78.85.

Nyctemera trita harca Swinhoe

Pl. 9, f. 14 ♂, 15 ♀; text-fig. 6 (male genitalia)

SWINHOE, 1893, p. 215 ♂ (*Leptos. harca*): Perak. — PAGENSTECHER, 1901, p. 138 (*Nyct. herce* Holland (lapsus !)). — SWINHOE, 1903, p. 81 (*Deil.*); id. 1903a, p. 67 ♀. — SEITZ, 1915, p. 267 (*N. tripunctaria harca*). — VAN EECKE, 1930 sep., p. 208. — BRYK, 1937, p. 84. — ROEPKE, antea, p. 161.

As already stated the *trita*-group has caused considerable taxonomic and nomenclatorial difficulties, chiefly by its geographical and individual variability, and by its inconspicuous general feature. Confusion with similar species, in the first place with *regularis* Sn., is possible indeed, and sometimes even easy. It remains incomprehensible, however, how SEITZ (1915) and subsequent authors could attribute it to the very different and much larger *tripunctaria* L.!

The matter becomes simple when the male genitalia are examined. These structures reveal that it is quite a distinct species without affinities with other known *Nyctemera.* The genitalia of *trita trita* are already briefly described and figured by ROEPKE (1949, p. 62, text-fig. 13). It may be added here that there exists a triangular, shield-like plate, between the lower bases of the valvae, which I have not yet seen in other species.

Male genitalia: text-fig. 6. I had the opportunity to examine a good series of *trita* from Java and Sumatra, including the type specimens of *tritoides* Heyl., and *seitzi* Van Eecke, besides specimens of f. *reducta* Roths. The two males from Malaya were dissected also. All these specimens show the typical *trita* character in their genitalia, with very slight differences only. In the *harca* specimens the prong-like appendage of the valva is not typically bicuspidate, one of the apical teeth being placed more basad.

Nyctemera trita harca from Malaya can be maintained as a subspecies characterised by the broader cross band and by the grey terminal band. As already stated earlier, vide antea, p. 162, several *Nyctemera* have the tendency to become darker from the west to the east. *N. trita harca* Swinh. from Malaya displays the broadest cross band, in *trita tritoides* Heyl. from Sumatra and still more in its f. *reducta* Roths., the cross band is much narrower, in *trita trita* from Java, the darkening, also on hind wing, reaches its maximum. *N. trita trita* is also recorded from Lombok, probably in a dark form (PAGENSTECHER, 1898, p. 198).

The *trita* complex can be grouped as follows:

N. trita harca Swinh.: Malaya

N. trita tritoides Heyl.: Sumatra

= *assimilis* Seitz (nec Voll.)

= *assimilis battakorum* Seitz

= *herce* Pag.

= *hearca reducta* Roths.

N. trita tritoides f. *suprapallida* Rpke.

N. trita trita Walk.: Java; Lombok.

SWINHOE's type specimen of *N. harca* is in the British Museum.

SOME NEW OR LITTLE KNOWN MALAYAN AND PAPUAN *Nyctemera* SPECIES

Nyctemera aeres aeres Boisd.

Pl. 8, f. 12 ♀

BOISDUVAL, 1832, p. 198 (*Leptos.*): Buru; N. Guinea. — SEITZ, 1915, p. 275 ♂ ♀, pl. 30 f ♂ ♀ (*Deil.*). — BRYK, 1937, p. 87.

The collective species is recorded from the Moluccas, New Guinea and the isles of Sangir (or Sangihe) and Talaud (of Talaut), North of Celebes.

I have before me 2 ♂ and 4 ♀ from Halmahera, and 2 ♂ from Batjan. The Museum Amsterdam has also 1 ♀ from Halmahera, measuring 50 mm. Both localities are new. The Leiden Museum has 1 ♀ from Halmahera (BERNSTEIN), 3 ♀ from Morotai (BERNSTEIN), and 7 ♀ from Buru (TOXOPEUS). The latter are very variable.

BOISDUVAL's type specimens may be preserved in the Paris Museum.

Nyctemera aeres vandenberghi subsp. nova

Pl. 8, f. 6 ♂, 7 ♀ (holo- and allotype)

Hitherto *N. aeres* was not known from Celebes. The Museum Amsterdam, coll. VAN DEN BERGH, has 1 ♂ and 1 ♀ of this species from North Celebes, the male, 46 mm, Minahassa, 1912, and the female, 55 mm, Bolaang Mongondouw, also Minahassa. The male is very different from typical *aeres*, as figured by SEITZ (1915, pl. 30 f), and from that of *aeres gerra* Swinh. (1903, pl. 4, f. 1) from Talaud. The white markings in both sexes are rather more ample, but the terminal band in the male is very broad, without white spots in it. This band just ends above anal angle, leaving the anal edge white. Cilia in both wings above vein 4 grey, below it whitish. The termen of hind wing between veins 1 and 2 markedly protruding, giving a peculiar appearance to the shape of the wing. On underside the grey terminal band ends before anal region, and this region is filled out with creamy coloured scent scales. These scales are shaped like a paddle, with a long thin handle.

The female has the white pattern rather amplified, the terminal band less broad than in the male, surpassing anal angle, and with one white spot in cell 5. Cilia also whitish below vein 4.

Type specimens in the Amsterdam Museum.

Nyctemera aeres leuctra forma extrema nova

Pl. 9, f. 11 ♀ (holotype)

SWINHOE (1903, p. 62 ♂ ♀, pl. 4, f. 5 ♀) has described and figured a *Deilemera leuctra* from Sangir and Talaud which is a subspecies of *aeres* only, as already stated by SEITZ (1915, p. 275). It is characterised by the extension of the white pattern, chiefly by the cross band having become very broad and irregular. Such specimens, however, do not yet represent the maximal amplification of the white pattern. The Amsterdam Museum, coll. VAN DEN BERGH, has 2 ♀, both 45 mm, from Sangir, which show the dark pattern much more reduced so that the white base, discal and apico-terminal patches become confluent. The terminal band is also reduced to several patches which fill out the anal angle.

Types in the Amsterdam Museum.

Nyctemera baulus simulatrix Walk.

Pl. 9, f. 16 ♂

WALKER, 1864, p. 198 ♂ (*N. simulatrix*): Celebes. — SNELLEN, 1879, p. 72, pl. 6, f. 3 ♂ (*latistriga* nec Walk.): Makassar. — MEYRICK, 1885, p. 15 (*tertiana* partim): Celebes; Australia; id. 1887, p. 761 ♂ ♀, Queensland; Celebes. — SWINHOE, 1892, p. 143 (*Leptos. simulatrix*): Makassar (type !). — PAGENSTECHER, 1898, p. 196 (*latistriga* Sn.); id. 1901, p. 116: Celebes. — SEITZ, 1915, p. 271, pl. 29 i ♀ (*N. baulus simulatrix*). — SWINHOE, 1903, p. 74 (*Deil.*) — BRYK, 1937, p. 56.

This is the first *baulus* subspecies described from Celebes, or more accurately, from Makassar, as already stated by SWINHOE (1892). WALKER's diagnosis, though superficial, suffices to show that this insect represents a rather dark species with the cross band "composed of six more or less connected spots of various size" and that the terminal band is "very broad". There can be no doubt that the insect, described and figured by SNELLEN as *latistriga* Walk., is the same. MEYRICK (1885) proposes the name *tertiana* for *latistriga* Sn. (nec Walk.), so that this name sinks as a synonym of *simulatrix* Walk. Unfortunately, he adds on p. 16: "the species occurs in Northwest Australia and Celebes" and, therefore, the name *tertiana* became applied to a *baulus* subspecies from North Australia. This procedure, however, is not justified, because MEYRICK based his name in the first place on SNELLEN's *latistriga* from South Celebes, whereas the Australian subspecies may be different and may require a new name.

I have before me a series of 25 ♂ and ♀ from the following localities: Makassar; Bantimurung; Para Salamakki; Lampo Battang; Parang Bobo Goa; Todjambu; Paletey; S. Bone; Malino, 1100 m; Posso, Minahassa. The series includes several specimens from Nulion, Banggaai Archipelago which are very dark. In extreme cases the cross band is reduced to two white spots only, in mid cell and in cell 2. This is the ab. *bipunctata* Nieuwenh. (1948, p. 142).

This material is rather variable. A number of specimens make a fairly uniform impression, matching WALKER's description of *simulatrix* and SNELLEN's figure of his *latistriga* perfectly. But there are also specimens of a lighter coloration, with the cross band broad and a well developed submedian streak fused with the lower end of the cross band. Basal streaks are obvious, and the terminal band is rather broad. Such specimens come very near to *N. baulus nisa* SWINH. (1903, p. 77, pl. 4, f. 7 ♂), from Sangir. At first I was inclined to think that Celebes was inhabited by more than one subspecies of *baulus*, viz., *simulatrix* WALK., and another like *nisa* SWINH. The Amsterdam Museum, however, has intermediate specimens. From the Berlin Museum I had one male, labelled 1920, Minahassa, which lacks the submedian streak completely, but the basal striae are obvious. It may be advisable not to introduce a new name but to group all these variable specimens under *simulatrix* WALK. It is not unlikely that we have to do with mixed populations. Invaders from neighbouring islands may have put their stamps on the indigenous and originally more uniform populations.

I examined the genitalia of several *simulatrix* males. The are just the same as in ordinary *baulus*.

The type specimen of WALKER's *simulatrix* is in the Oxford Museum. It is not known where or even whether MEYRICK's *tertiana* is preserved.

Nyctemera baulus simulatrix forma nigrovena Swinh.

SWINHOE, 1903, p. 74 ♀, pl. 3, f. 2 ♀ (*Deil. nigrovena*): S. Celebes. — SEITZ, 1915, p. 271, pl. 29 i (*N. baulus nigrovena*). — SWINHOE, 1916, p. 214 ♂ (*Deil.*): Samanga, S. Celebes. — BRYK, 1937, p. 56.

I am not acquainted with this insect. SWINHOE figures a large female with a normal cross band, strongly broken up by the dark veins, and the terminal band very broad, with obvious radiations along vein 1b and 2, latter reaching cell. In this feature it differs from *simulatrix* and may, therefore, be considered as a slightly darkened form only. The male is described by SWINHOE, 1916, as being identical with the female.

Nyctemera baulus nisa Swinh.

SWINHOE, 1903, p. 77 ♂ ♀, pl. 4, f. 7 ♂ (*Deil. nisa*): Sangir. — SEITZ, 1915, p. 271 (*N. baulus nisa*). — BRYK, 1937, p. 56.

This subspecies, beautifully illustrated by its author, shows clearly the characteristic feature of the Celebesian *baulus*-group, consisting in the well developed submedian streak which fuses with the cross band.

I have been able to examine 1 ♀, Salibabu, Talaud, from the Berlin Museum; furthermore, 1 ♂ and 2 ♀, Sangir, Amsterdam Museum, coll. VAN DEN BERGH.

Nyctemera baulus moluccana subsp. nova

♂ ♀. Ground colour rather dark greyish brown, in fore wing the cross band broad, about 5 × 11 mm, hardly or not broken up by the darkened veins. Basal striae mostly distinct, submedian streak wanting. In hind wing the terminal band moderately broad, the projection on vein 2 always distinct. Tergites with the anterior half blackish, the posterior half white to yellowish.

This subspecies is characterised by its clear-cut pattern, the large and broad cross band and the absence of the submedian streak. It shows no remarkable variability, and may, therefore, constitute a fairly pure population. A series of this insect clearly differs from Celebes, and other subspecies, hence a subspecific name seems to be justified. It is confined to the Northeast Moluccas.

7 ♂, 41—49 mm, with holotype, 10 ♀, 39—49 mm, with allotype, Halmahera (VAN DIJEN and VAN DEN BERGH); 1 ♀, Ternate, 46 mm, 1929 (VAN DEN BERGH); 3 ♂, 2 ♀ Ternate, Museum Bogor; 2 ♂ 46—49 mm, 3 ♀, 45—49 mm, Batjan, VII.1929 (ROEPKE).

There is a striking difference in the antennal structure in the two males from Batjan. The smaller one has the branches considerably shorter than the larger one. Two of the females from Batjan have the cross band extremely broad, nearly elliptical.

Types in the coll. Wageningen.

Nyctemara baulus pratti Beth.-Bak.

BETHUNE-BAKER, 1904, p. 412 ♂ ♀, pl. 4, f. 23 ♂ (*Deil. pratti*): Owen Stanley Range, British New Guinea. — SEITZ, 1915, p. 269, pl. 30 a (*N. pratti*). — BRYK, 1937, 75.

General coloration dull greyish brown. Fore head with the antennae and palpi brownish black, patagia, tegulae and notum of the same coloration, slightly edged

with whitish or yellowish. The cross band is broad, more or less suffused with brownish, its edges mostly less sharp, its inner edge rather straight, its outer edge curved and scalloped by the dark veins. Basal striae weak. Hind wing milky or cream white, terminal band rather dark grey, beginning as a narrow streak from one half costa, broadest in apex, narrowed on vein 3, surpassing anal angle and ending below half anal margin. The projection on vein 2, so typical in other *baulus* subspecies, is wanting. Base of hind wing not dusted with grey, cilia in both sexes grey brown. Abdomen grey brown, the posterior border of the tergites golden yellowish, on underside the yellowish coloration prevailing. Underside of both wings with the dark pattern more evenly brown, the cross band very broad.

Both sexes similar, regarding their general appearance, the female slightly larger.

27 ♂ and 21 ♀, 35—40 mm, Lake Paniai and Arabu Camp, about 1700 m, Wissel Lakes, Dutch New Guinea, IX.—X.1939 (BOSCHMA).

Male genitalia: text-fig. 10 a—b. The same as in other *baulus* subspecies, with the typical strongly bifurcate valva and the small digitiform process about halfway its lower margin. The aedeagus in all *baulus* subspecies examined is obviously long, surpassing valvae, sometimes even protruding from anal tip in dried specimens.

There remains some incertainty regarding the taxonomic status of this subspecies. It differs markedly from other *baulus* which I have from the North coast of West New Guinea. Of the latter I have 5 ♂ and 4 ♀ before me, measurung respectively 41—48 and 46—47 mm (VAN DEN BERGH). These specimens agree more with *baulus* from other islands, but they are remarkably different from *baulus moluccana*. Their ground colour is a lighter greyish brown, the cross band is less pure white, strongly broken up by the dark veins. Basal striae less distinct, submedian streak absent. Terminal band broad, its inner edge scalloped, projection on vein 2 less prominent, sometimes with a weak dark radiation on the veins in hind wing. I wish to abstain from giving a name to this subspecies, until the whole *baulus*-complex of the Papuan and Oceanic regions has become better studied. It may suffice to state that this *baulus* from the northwestern part of New Guinea is entirely different of what MEYRICK has described as *tertiana* from Northwest Australia and Celebes; vide antea p. 168.

N. baulus pratti Beth.-Bak. may be the subspecies of the highest elevations in the interior of New Guinea, or if we suppose that *baulus* has its centre of evo-

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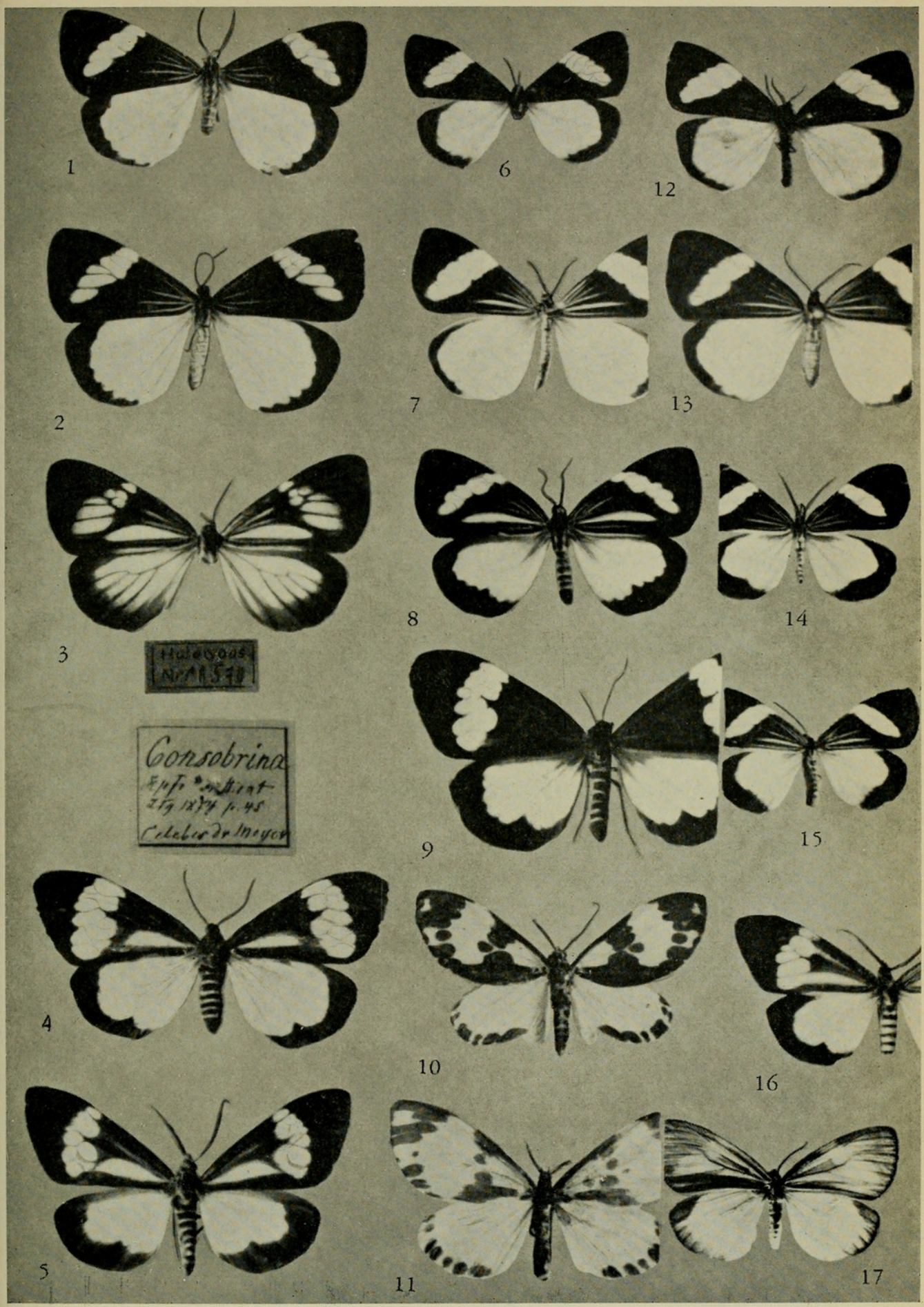
Fig. 1. *Nyctemera floresicola corbeti* Rpke., ♂ (holotype). Bukit Kutu, Malaya; fig. 2, the same, ♀ (allotype), Cameron Highlands, Malaya; fig. 3, *N. tripunctaria subvelata* Walk. = *infuscata* Hopff. (holotype), North Celebes; fig. 4, *N. consobrina* Hopff. ♀ (holotype), Gorontalo, North Celebes; fig. 5, the same, ♂, Malino, Celebes; fig. 6, *N. malaccana* Rpke., ♂ (holotype), Cameron Highlands, Malaya; fig. 7, *N. regularis snelleni* Pag., ♂, Kinabalu, North Borneo; fig. 8, *N. tripunctaria simalura* Rpke., ♀ (holotype), Simalur; fig. 9, *N. consobrina* f. *immaculata* Rpke., ♀ (holotype), Todjambu, Celebes; fig. 10, *N. formosana* Swinh., ♂, Formosa; fig. 11, *N. aeres leuctra* f. *extrema* Rpke., ♀ (holotype), Sangir; fig. 12, *N. malaccana* Rpke., ♀, (allotype), Cameron Highlands, Malaya; fig. 13, *N. regularis snelleni* Pag., ♀, Kinabalu; fig. 14, *trita harca* Swinh., ♂, Ampang, Malaya; fig. 15 the same, ♀, Kanching, Malaya; fig. 16, *N. baulus simulatrix* Walk., ♂, North Celebes; fig. 17, *N. trita tritoides* f. *suprapallida* Rpke., ♀ (holotype), Lubu Sikaping, Sumatra.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lution in the Papuan or the Moluccan regions whence it spread chiefly west- and eastwards, the subspecies *pratti* may belong to the oldest and most primitive components of the *baulus*-group.

The type specimens in the British Museum.

Nyctemera baulus alba Pagenst.

PAGENSTECHER, 1901, p. 135 ♂ (*N. alba*): Samoa. — SWINHOE, 1903, p. 83 (*Deil.*): Viti; Samoa. — REBEL, 1910, p. 423, pl. 18, f. 16 ♂ (*Nyct.*): Upolu. — SEITZ, 1915, p. 272, pl. 30 a ♂. — REBEL, 1915, p. 148, 157. — TAMS, 1935 a, p. 193 *(Deil)*. — BRYK, 1937, p. 49.

This insect has been somewhat enigmatic up to the present. PAGENSTECHER and all subsequent authors treated it as a separate species; SEITZ (1915) remarks correctly that it has nothing to do with *cydippe* Weym. from Nias nor with his *candidissima* from Hainan. The wings are entirely white, but the thorax and abdomen still have some black dots, the last abdominal tergites are bordered with black, the legs are black above and white below.

Male genitalia: Mr. TAMS dissected a male from the series in the British Museum; this left no doubt that *alba* is a subspecies of *baulus*.

The occurrence of such a white *baulus* in the Samoa Islands is interesting. SWINHOE (1903) has recorded it from Viti, Fiji islands. Extremely white *baulus* are unknown from other regions. Furthermore there occurs another subspecies of *baulus* in the Samoan islands, of a more normal appearance, which is described and figured by TAMS (1935a, p. 196, pl. 12, f. 4 ♀) as *D. mundipicta samoensis*. Mr. TAMS told me that the white *baulus alba* is confined to the island of Upolu, where it is rather common. At any rate, the Samoan islands are inhabited by two quite different subspecies of *baulus*. Nothing is known about the occurrence of *N. baulus* in the Fiji islands, besides that *alba* is recorded by SWINHOE from Viti. The possibility exists that *baulus* subspecies have become spread by interinsular traffic, so that certain regions became inhabited by different populations or the original populations became mixed.

The rich material of the British Museum is specified by TAMS (1935a).

It is not known whether PAGENSTECHER's type specimen of *alba* is in his collection in the Wiesbaden Museum, or in the Museum Senckenberg, Frankfurt-on-Main.

Nyctemera coleta melas Röb.

RÖBER, 1891, p. 326 (*N. coleta* var. *melas*): Ceram. — SEITZ, 1915, p. 267. — BRYK, 1937, p. 59.

The island of Celebes, in the South as well as in the North, the adjacent Banggaai Islands, the island of Ceram and probably some other neighbouring Moluccan islands, are inhabited by a darkened *coleta* described by Röber (1891), as "var. *melas*", in a few words (translated): "The white colour in fore and hind wing is much reduced". There can be no doubt that this "variety" has the status of a subspecies, though the intensity of the blackening is liable to variation. The lightest specimens differ hardly from common *coleta*.

The Wageningen collection has 3 ♂ and 8 ♀ from North, Central, and South

Celebes, and 1 ♀ from Nulion, Banggaai Archipelago. 4 ♂ and 23 ♀ from Celebes, mostly Minahassa, were mustered up in the Amsterdam Museum. The Leiden Museum has 1 ♂ and 6 ♀ from Nulion, imparted by Mr. NIEUWENHUIS, which are very dark. The Museum Bogor sent 1 ♀, Bantimurung, South Celebes, VIII.1949 (DIAKONOFF), and 1 ♀, Margasuka, Celebes, 6.V.1941. The latter has the terminal band very broad, occupying about one third of the hind wing. 1 ♂ and 1 ♀, Halmahera, in the Amsterdam Museum, may be ascribed to *melas* too, though the darkening is not so extreme as in certain specimens from other localities.

Nyctemera consobrina Hopff.

Pl. 9, f. 4 ♀ (holotype), 5 ♂, textfig. 12 (male genitalia)

HOPFFER, 1874, p. 54 ♀: Gorontalo, N. Celebes. — KIRBY, 1892, 421 (*inconstans* nec VOLL., partim). — SWINHOE, 1892, p. 143 ♀, pl. 5, f. 5 ♀ (*Leptos. acceptum*): Mindanao (lapsus ! rectius Minahassa). — PAGENSTECHER, 1897, p. 440 (*N. acceptum*): Rurukan, N. Celebes; id. 1901, p. 114 (*consobrina*), p. 115 (*acceptum*). — SWINHOE, 1903, p. 38 (*Deil. latistriga* nec Walk.); p. 79 ♀ (*accepta*): Celebes, ♂ Flores. — SEITZ, 1915, p. 270 (*consobrina*); p. 272, pl. 30 b (as *acceptans* !): Minahassa. — BRYK, 1937, p. 49 (*acceptum*); p. 60 (*consobrina*): Celebes.

Up to the present the species remained unrecognisable, its status, therefore, was never definitely settled and several authors ascribed it erroneously to *latistriga* Walk. = *inconstans* Voll. By the kindness of Dr. E. M. HERING of the Berlin Museum, I received HOPFFER's type specimen on loan, a female which is figured here. Furthermore, Dr. HERING sent several males which he suspected might belong to the same species. Now these males turned out to represent two quite different species, and this fact could be confirmed by studying a rather large series of specimens, from the Leiden Museum, the Amsterdam Museum and the Wageningen collection. The males were partly the same as *baulus simularix* Walk., vide antea, p. 168, partly they belonged to another species with very different genitalia. After carefully studying and grouping this material I became convinced that the other males, together with a number of females, were the true *consobrina* Hopff. The next step was to find out whether there are synonyms or not. After scrutinising the literature I arrived at the conclusion that *accepta* Swinh., 1892, is the same as *consobrina* Hopff. and therefore, sinks as a synonym.

The similarity between *simulatrix* and *consobrina* may be sometimes great, and one can confidently state that in all the *simulatrix* specimens the tergites are white, with only their anterior margins blackish, whereas in *consobrina* they are blackish with only a narrow posterior margin white. Furthermore, the dark ground colour in forewing is broadly projecting into the white cross band on lower angle of cell, though this projection is short. In *baulus* this projection is wanting or it is narrow and formed merely by a darkened vein. The cross band is largely developed, usually broader and more irregular than in *baulus*. The terminal band is broad or very broad, with a pointed projection on vein 2, as in *baulus*. The wings are broad. The ground colour is blackish, generally darker than in *baulus*, in the darkest specimens becoming sooty black. Basal striae are not developed. In hind wing the terminal band extends along costa, the wing base sometimes with a greyish suffusion.

HOPFFER's type specimen has a wedge-shaped submedian streak; also SWINHOE's type specimen of *accepta* is figured with such a streak. In three of the females before me this streak is well-developed, in five females it is completely wanting. The latter match more or less SWINHOE's figure of his *kala* (SWINHOE, 1892, p. 143, pl. 5 f. 8 ♀ : Key Islands) and the question arises whether *kala* Swinh. may be a subspecies of *consobrina* Hopff. = *accepta* Swinh. When *kala* males become available for genitalic examination, this question will be easily decided. For the present it seems advisable to name this *consobrina* without submedian streak f. **immaculata** nov., see pl. 9, f. 9 ♀.

VAN EECKE (1929, p. 349) has recorded three *N. kala* males, as he says, from Central Buru. I could only trace three females in the Leiden Museum from this locality. They are large and very black, and I think they are rather different from *consobrina* Hopff.

N. basinigra Niewenh. (1943, p. 143 ♀, pl. 2, f. 8 (nec ♂ !)) from Nulion, Banggaai Islands, based on one specimen only, may be a subspecies of *consobrina.*

The males of *N. consobrina* Hopff. are not yet clearly defined. I have before me six males which by their general facies, their broader wings, their predominating dark ground colour can be easily distinguished from *baulus simulatrix* and readily ascribed to the females under consideration. They all have the submedian streak large, in two specimens fusing with the cross band below cell 2.

Male genitalia: text-fig. 12. Very different from the *baulus* type, showing that *consobrina* has nothing in common with the *baulus* group. I was able to examine a male from Makassar (Berlin Museum) and a male from North New Guinea (coll. Wageningen). In both cases the genitalia prove to be of a more robust and stronger construction and of a rather simple but characteristic shape. Tegumen and uncus are rather long, the latter simple and pointed, straight, valva broad, with a large and somewhat irregular excavation at its apex so that it becomes bifurcate, as shown in the text-fig. 12. The aedeagus is inconspicuous, small, almost straight, not surpassing valva, without special structures.

The Berlin Museum sent me, besides HOPFFER's type specimen, 1 ♀, Celebes, indicated as "*basimacula M.*", an unpublished name; 1 ♀, "Minah. Pl." (= Minahassa, PLATEN ?), coll. STAUDINGER. The Amsterdam Museum has 10 ♀, Minahassa, coll. VAN DEN BERGH. The coll. Wageningen has 3 ♀, Lampo Battang, 1500—1600 m, Celebes (TOXOPEUS); 1 ♀, Todjambu, Celebes (TOXOPEUS); ♀, Malino, 110 m (KALIS). The following males were available for comparison: 1 ♂, Makassar, coll. STAUDINGER; 1 ♂, Minahassa, 85, PLATEN, coll. STAUDINGER, both from the Berlin Museum; 1 ♂, Posso, Amsterdam Museum, coll. VAN DEN BERGH; 2 ♂, Malino (KALIS), and 1 ♂, North New Guinea (VAN DEN BERGH), in coll. Wageningen. Unfortunately, VAN DEN BERGH's labelling is not absolutely reliable, as already mentioned above, p. 161. In the British Museum I saw a series of *immaculata* females from Celebes and three quite typical females, from Flores.

HOPFFER's type specimen is in the Berlin Museum, SWINHOE's *accepta* in the British Museum, *basinigra* Nieuwenhuis in the Leiden Museum and *immaculata* ROEPKE in the Wageningen coll.

Nyctemera formosana Swinh.

Pl. 9, f. 10 ♂

SWINHOE, 1908, p. 63 ♂ (*Deil.*): Formosa. — SEITZ, 1915, p. 276. — MATSUMURA, 1930, p. 61; id. 1931, p. 953, fig. ♂. — BRYK, 1937, p. 90.

A little known species. SWINHOE had only one male which he describes painstakingly. SEITZ was unacquainted with it.

The male is remarkable in the development of the anal fold in hind wing containing scent scales on the underside. The anal angle is strongly produced forming a distinct lobe. The female, not yet mentioned in European literature, has the antennae rather strongly bipectinate, the white markings in fore wing more ample, the cross band notably enlarged and reaching costa. The dark pattern is much lighter than in the male. It lacks, of course, the modification of the anal angle which is so conspicuous in the male. In hind wing veins 6 and 7, on a very short stalk in the male, hardly stalked in the female.

The Leiden Museum has 1 ♂, 43 mm, Kosempo IX.1908, and 1 ♀, 45 mm, Le Hi Ku, VII.1908 (H. SAUTER).

The species is figured here for the first time in European literature. From MATSUMURA's books, written entirely in Japanese — even the pagination is in this language — I cannot conclude whether he mentions or describes the female, therefore, the specimen in the Leiden Museum may be regarded as the neallotype. SWINHOE's holotype is in the British Museum.

The species comes nearest to *N. carissima* Swinh. 1891, recorded from Sikkim, Assam, and the Khassia Hills.

Nyctemera luctuosa luctuosa Voll.

Pl. 8, f. 11 ♂

VOLLENHOVEN, 1863, p. 42 ♂ ♀ (*Leptos.*): Batjan. — PAGENSTECHER, 1900, p. 54; id. 1901, p. 124: Moluccas; Celebes; Bismarck Archipelago; Australia; Philippines. — SWINHOE, 1903, p. 80 (*Deil.*): Sula etc. — SEITZ, 1915, p. 272, pl. 26 i. — ROTHSCHILD, 1915, p. 215 (*Deil.*). — SWINHOE, 1917, p. 415. — VAN EECKE, 1929, p. 349 ♂ ♀: Buru. — BRYK, 1937, p. 69.

This species is widely spread in the Eastern Malay Archipelago, including Papua, Australia and the Philippines. VOLLENHOVEN (1863) based his description on a single male from Batjan which is, therefore, the holotype. I could not trace this specimen in the Leiden Museum, it is probably lost. There is, however, a female from Halmahera indicated by a special blue label as type, but this is not correct. VAN EECKE (1929) has mentioned a number of specimens from Buru and they differ slightly from topotypical specimens, especially in the male, in being smaller and paler, with the white markings more extensive. One of these males is figured here, pl. 8 f. 11.

The specimens from the Moluccas which I saw display a certain similarity to *consobrina* Hopff., but they are generally smaller, the cross band is narrower and the terminal band is deeply excavated. Basal striae are more or less distinct, the submedian streak may be large and prominent, with its outer end broadened, or sometimes reduced.

Male genitalia: text-fig. 9a—b. Two males from Buru were dissected. Uncus linear, pointed, straight, tegumen rectangular, about twice as long as broad, valva