

The Sphingidae (Lepidoptera) of the Philippines

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Abstract: This publication covers all Sphingidae known from the Philippines at this time in the form of an annotated checklist. (A concise checklist of the species can be found in Table 4, page 120.) Distribution maps are included as well as 18 colour plates covering all but one species. Where no specimens of a particular species from the Philippines were available to us, illustrations are given of specimens from outside the Philippines. In total we have listed 117 species (with 5 additional subspecies where more than one subspecies of a species exists in the Philippines). Four tables are provided: 1) a breakdown of the number of species and endemic species/subspecies for each subfamily, tribe and genus of Philippine Sphingidae; 2) an evaluation of the number of species as well as endemic species/subspecies per island for the nine largest islands of the Philippines plus one small island group for comparison; 3) an evaluation of the Sphingidae endemism for each of VANE-WRIGHT'S (1990) faunal regions. From these tables it can be readily deduced that the highest species counts can be encountered on the islands of Palawan (73 species), Luzon (72), Mindanao, Leyte and Negros (62 each). The highest endemic counts occur on Luzon with 71 % of total Philippine endemics, followed by Mindanao (58 %), Negros (50 %), and Leyte (46 %). Palawan, despite a high species count, has a low endemic count (8 %) because of the close relationship to the Bornean fauna. The faunal regions exhibit a similar situation, except that the Mindanao region has the highest species count (78), followed by the Luzon region (77), the Palawan region (77) and the West Visayan region (69). 4) A compact list is given outlining all Sphingidae species, their distribution on the islands of the Philippines, whether endemic or not, as well as a degree of abundance based on personal experience. Two new species and one new subspecies are described and illustrated, together with the genitalia: *Ambulyx suluensis* sp. nov. from the Western Sulu Archipelago, *Macroglossum jani* sp. nov. from Palawan and Homonhon, and *Hippotion rafflesii dyoekae* ssp. nov. from Mindanao. In addition the genitalia of *Sataspes cerberus*, stat. rev. as species, are shown. Further changes comprise: *Ambulyx tattina uichancoi* (CLARK, 1938), stat. rev. as subspecies, *Elibia linigera* BOISDUVAL, [1875], stat. rev. as species, *Theretra insularis* (SWINHOE, 1892) stat. rev. as species, *Theretra insularis mollis* JORDAN, 1926 (stat. nov.) in St. Mathias and the Squally Islands, *Theretra insularis valens* JORDAN, 1926 (stat. nov.) in the larger islands of the Bismarck Archipelago, *Theretra insularis lenis* JORDAN, 1926 (stat. nov.) in the Solomon Islands (all as subspecies) and *Cypa euroa* ROTHSCCHILD & JORDAN, 1903, stat. nov., from New Guinea and Ceram, which is elevated to full species status.

Die Schwärmer (Lepidoptera: Sphingidae) der Philippinen

Zusammenfassung: In diesem Beitrag werden alle heute bekannten Schwärmerarten der Philippinen vorgestellt (eine kurzgefaßte Checkliste der 117 Arten siehe in Tabelle 4, Seite 120). Verbreitungskarten aller Arten sowie 18 Farbtafeln mit Abbildungen aller bis auf eine Art sind beigefügt. 117 Arten sind bekannt, dazu 5 zusätzliche Unterarten in Fällen, bei denen mehr als eine Unterart einer Art auf den Philippinen vorkommt. Mit Hilfe von 4 Tabellen werden die folgenden Angaben gegeben: 1) eine systematische Auswertung der Artenzahlen, 2) eine Auswertung des Endemiegrades (von Arten und Unterarten) der 9 größten Inseln und (zum Vergleich) einer Gruppe kleinerer Inseln; 3) Eine Auswertung der Verbreitungsangaben nach Inseln und zoogeografischen Regionen (gemäß VANE-WRIGHT 1990). Danach sind die höchsten Artenzahlen bekannt von der Insel Palawan (73 Arten), gefolgt von Luzon (72), Mindanao, Leyte und Negros (je 62). Der höchste Endemiegrad findet sich auf Luzon mit 71 % aller philippinischen Endemiten, gefolgt von Mindanao (58 %), Negros (50 %) und Leyte (46 %). Obwohl Palawan eine hohe Gesamtartenzahl hat, zeigt es einen niedrigen Endemiegrad (8 %) wegen der nahen Verwandtschaft mit der Fauna der benachbarten Insel Borneo. Die Zahlen für die faunistischen Regionen sind ähnlich, außer daß die Mindanao-Region die höchste Artenzahl aufweist (78), gefolgt von der Luzon-Region (77), der Palawan-Region (77) und der Westvisayas-Region (69). 4) wird eine kompakte Checkliste aller Arten gegeben mit ihrer Verbreitung auf den Philippineninseln, ihren Endemiegraden und einer Einschätzung ihrer Häufigkeit, basierend auf persönlicher Erfahrung. Zwei neue Arten und eine neue Unterart werden beschrieben und samt ihren ♂-Genitalien abgebildet: *Ambulyx suluensis* sp. nov. vom westlichen Sulu-Archipel, *Macroglossum jani* sp. nov. von Palawan und Homonhon sowie *Hippotion rafflesii dyokeae* ssp. nov. von Mindanao. Darüber hinaus werden die ♂-Genitalien von *Sataspes cerberus*, stat. rev. als separate Art, abgebildet. Weitere taxonomische Änderungen: *Ambulyx tattina uichancoi* (CLARK, 1938), stat. rev. als Subspecies, *Elibia linigera* BOISDUVAL, [1875], stat. rev. als Species, *Theretra insularis* (SWINHOE, 1892) stat. rev. als Species, *Theretra insularis mollis* JORDAN, 1926 (stat. nov.) von St. Mathias und den Squally-Inseln, *Theretra insularis valens* JORDAN, 1926 (stat. nov.) von den größeren Inseln des Bismarck-Archipels, *Theretra insularis lenis* JORDAN, 1926 (stat. nov.) von den Solomon-Inseln (alle als Unterarten) und *Cypa euroa* ROTHSCHILD & JORDAN, 1903, stat. nov., von Neuguinea und Ceram als separate Art.

Abbreviations of collections used in the text

BMNH	collection of the Natural History Museum, London
CCGT	collection of Colin G. TREADAWAY, assigned to the Senckenberg-Museum
SMFL	collection of the Senckenberg-Museum, Frankfurt am Main
ZMA	collection of the Zoölogisch Museum Amsterdam, Afdeling Entomologie
ZMUC	collection of the Zoological Museum of the University of Copenhagen

Annotated list of Sphingidae

Amplipterus panopus (CRAMER, 1779)

Sphinx panopus CRAMER (1779: 50)

Amplipterus panopus panopus (CRAMER, 1779)

Plate 18, Fig. A: ♀

Sphinx panopus CRAMER (1779: 50)

Amplipterus panopus CRAMER: HÜBNER ([1819]: 133 n. 1430)

Distribution and taxonomic notes: *A. panopus panopus* is known to occur from N.W. India to Vietnam, from Sri Lanka and the Andaman islands over the greater Sunda islands into the Philippines on Palawan and Bongao (map 1). Elsewhere in the Philippines it is replaced by subspecies *mindanaoensis* INOUE, 1996 and in Sulawesi by the subspecies *celebensis* (ROTHSCHILD & JORDAN, 1906). In the Philippines the species cannot be confused with any other hawkmoth.

Forewing length:

♂ min. 58 mm max. 64 mm av. 61.5 mm

♀ min. 68 mm max. 76 mm av. 72.0 mm

Number of Philippine specimens known to us: 9 from Palawan and Bongao.

Amplipterus panopus mindanaoensis INOUE, 1996

Plate 4, Fig. D: ♀

Calymnia panopus CRAMER: WALKER (1856: 124 n. 1), SEMPER (1896: 392 n. 24)

Compsogene panopus CRAMER: ROTHSCCHILD & JORDAN (1903: 189 n. 152), SEITZ, (1928: 532)

Compsogene panopus panopus CRAMER: ROTHSCCHILD & JORDAN (1907: 42)

Amplipterus panopus CRAMER: HOLLOWAY (1987: 128), D'ABRERA ([1987]: 52), LIN (1989: 6), LIN (1990: 86)

Amplipterus panopus panopus CRAMER: SCHÜTZ (1996: 44 n. 6), INOUE et al. (1997: 25)

Amplipterus panopus mindanaoensis INOUE (1996: 86)

Distribution and taxonomic notes: This subspecies was described from specimens originating from Luzon, Panay and Mindanao. It is, however, widely distributed in the Philippines and known from most major islands (map 1). In the Sulu Archipelago this subspecies is found westwards from Mindanao at least as far as Jolo Island. Further westwards the subspecies could meet the nominotypical subspecies *panopus* from which it can be distinguished by the subterminal dark band in the forewing which is much more sharply indented at vein R2.

Forewing length:

♂ min. 60 mm max. 68 mm av. 66 mm

♀ min. 70.5 mm max. 80 mm av. 76 mm

Number of Philippine specimens known to us: 192 from Mindoro, Luzon, Polillo, Romblon, Sibuyan, Panay, Negros, Cebu, Samar, Leyte, Mindanao, Jolo.

***Ambulyx staudingeri* ROTHSCHILD, 1894** Plate 1, Fig. A: ♀, Fig. B: ♂

Ambulyx staudingeri ROTHSCHILD (1894b: 300); SEMPER (1896: 392 n. 25), LIN (1990: 87), INOUE (1996: 88), SCHÜTZ (1996: 44 n. 7)

Oxyambulyx substrigilis staudingeri ROTHSCHILD: ROTHSCHILD & JORDAN (1903: 203 n. 164e), ROTHSCHILD & JORDAN (1907: 44), CLARK (1919: 100), SEITZ (1928: 534)

Oxyambulyx staudingeri ROTHSCHILD: JORDAN (1923: 51), JENSEN (1973: 2), D'ABRERA ([1987]: 58), LIN (1989: 7)

Distribution and taxonomic notes: *A. staudingeri* is endemic in the Philippines where it is common and widely distributed (map 1). In the Sulu Archipelago, specifically on Jolo and islands of the Tawitawi group, *A. staudingeri* flies sympatrically with *A. pryeri*. In this area the species could be confused with *A. pryeri* from which it differs in the submarginal line of forewing being in its lower one third closer to the termen. Moreover, most specimens of *A. staudingeri* bear a dark tornal shade in the forewing upperside, a characteristic that they share with *A. tattina*, which can be recognized by the absence of dark subbasal spots on the forewing.

Forewing length:

♂ min. 50 mm max. 61 mm av. 58 mm

♀ min. 59 mm max. 70 mm av. 66 mm

Number of Philippine specimens known to us: 491 from Mindoro, Luzon, Polillo, Marinduque, Sibuyan, Panay, Masbate, Negros, Siquijor, Cebu, Bohol, Samar, Leyte, Mindanao, Jolo, Tawitawi and Sanga Sanga.

***Ambulyx pryeri* DISTANT, 1887** Plate 1, Fig. C: ♂

Ambulyx moorei BOISDUVAL ([1875]: 189) (secondary homonym of *Ambulyx moorei* MOORE, [1858], which used to be *A. subocellata* FELDER, [1874])

Ambulyx pryeri DISTANT (1887: 271); INOUE (1996: 88)

Oxyambulyx substrigilis pryeri DISTANT: ROTHSCHILD & JORDAN (1903: 203 n. 164c)

Oxyambulyx pryeri DISTANT: JORDAN (1923: 51), JENSEN (1973: 2)

Distribution and taxonomic notes: *A. pryeri* is known from mainland Malaysia to Vietnam. In Sundaland it occurs in Sumatra, Java, Bali and Borneo from where it reaches the Philippines on Balabac and Palawan in

the north and the Sulu Archipelago in the south-east (map 1). In the Sulu Archipelago *A. pryeri* can be confused with *A. staudingeri*, from which it differs in the submarginal line on the forewing which is more straight than in *A. staudingeri* and clearly reaches the dorsum in the tornal area. In Balabac and Palawan it can be confused with *A. substrigilis*, from which it differs in being larger and having a more straight submarginal band. One ♀-specimen collected by the Noona Dan expedition in 1961 shows obvious costal spots in the forewing.

Forewing length:

♂	min. 55 mm	max. 61 mm	av. 59.5 mm
♀	min. 63 mm	max. 70 mm	av. 67.3 mm

Number of Philippine specimens known to us: 25 from Balabac, Palawan, Jolo and Sibutu.

Ambulyx tattina (JORDAN, 1919)

Oxyambulyx substrigilis tattina JORDAN (1919: 192)

Ambulyx tattina tattina (JORDAN, 1919)

Plate 1, Fig. E: ♂

Oxyambulyx substrigilis tattina JORDAN (1919: 192)

Oxyambulyx tattina JORDAN: JORDAN (1929: 62), JENSEN (1973: 2)

Oxyambulyx tattina borneensis GEHLEN (1940: 140)

Ambulyx tattina JORDAN: HOLLOWAY (1987: 130)

Distribution and taxonomic notes: *A. tattina tattina* occurs from mainland Malaysia to Vietnam and in Sundaland in Sumatra, Java and Borneo, from where it reaches the Philippines on Balabac and Palawan (map 2). Elsewhere in the Philippines *A. tattina* is represented by the subspecies *uichancoi*. On Palawan *A. tattina tattina* cannot be confused with any other *Ambulyx* species as it has no dark subbasal spots on the forewing.

Forewing length:

♂	min. 42 mm	max. 49 mm	av. 45 mm
♀	min. 50 mm	max. 50 mm	av. 50 mm

Number of Philippine specimens known to us: 14 from Balabac and Palawan.

Ambulyx tattina uichancoi (CLARK, 1938) **stat. rev.** Plate 1, Fig. F: ♂, G: ♀

Oxyambulyx tattina uichancoi CLARK (1938: 40); D'ABRERA ([1987]: 58)

Oxyambulyx tattina JORDAN: LIN (1989: 7)

Ambulyx tattina JORDAN: LIN (1990: 87), INOUE (1996: 90)

Ambulyx tattina uichancoi CLARK: SCHÜTZ (1996: 45 n. 8), INOUE et al. (1997: 32)

Distribution and taxonomic notes: *A. tattina uichancoi* is known from most major islands in the Philippines (map 2). We do not agree with INOUE that *uichancoi* is synonymous with the nominate subspecies from which it differs in having a noticeably darker ground colour and all dark elements in the maculation being more extended.

Forewing length:

♂	min. 46 mm	max. 49 mm	av. 48 mm
♀	min. 50 mm	max. 57 mm	av. 53 mm

Number of Philippine specimens known to us: 53 from Mindoro, Luzon, Panay, Negros, Leyte, Samar, Mindanao and Tawitawi.

Ambulyx sericeipennis luzoni (CLARK, 1924) Plate 1, Fig. D: ♀, H: ♂

Oxyambulyx sericeipennis luzoni CLARK (1924: 14); SEITZ (1929: 571), D'ABRERA ([1987]: 55)

Oxyambulyx sericeipennis luzonica [sic] CLARK: INOUE (1973: 108)

Ambulyx sericeipennis BUTLER, 1875: LIN (1990: 87)

Ambulyx sericeipennis luzoni CLARK: INOUE (1996: 87), INOUE et al. (1997: 27)

Distribution and taxonomic notes: *A. sericeipennis* s.l. occurs over a vast area stretching from N. India and Sundaland across the Philippines and Taiwan north to Japan and China. From the borders of this area a number of subspecies have been described from which *luzoni* has so far been found in central and northern parts of the Philippines (map 2), where it is infrequently encountered. *A. sericeipennis luzoni* could be confused with *A. immaculata* but is easily distinguished by the presence of an obvious, black costal spot on the forewings which is lacking on *immaculata*. The rear wings are only lightly washed with dark brown on a light reddish brown background. Moreover, the species stands out among all other species of *Ambulyx* on the Philippines by the strongly falcate apex of the forewing.

Forewing length:

♂	min. 47 mm	max. 49 mm	av. 48 mm
♀	min. 53 mm	max. 55 mm	av. 54 mm

Number of Philippine specimens known to us: 7 from Mindoro, Luzon and Negros.

Ambulyx immaculata (CLARK, 1924)

Plate 5, Fig. A: ♀; B: ♂; plate 18, Fig. F: ♂

Oxyambulyx immaculata CLARK (1924: 14); SEITZ (1929: 571), D'ABRERA ([1987]: 60)

Ambulyx immaculata CLARK: LIN (1990: 87), INOUE (1996: 88), SCHÜTZ (1996: 45 n. 9)

Distribution and taxonomic notes: This species is endemic to the Philippines, where it is not uncommon and known from all major islands (map 2). In shape and colouration it is similar to *A. sericeipennis luzoni*, but lacks the dark spots on the costa of the forewing. Moreover, the rearwings of *immaculata* are more heavily marked and have a dark submarginal spot that becomes broader from tornus towards apex. The apex of the rearwing upperside itself is marked by a clear yellow spot. The species can be distinguished from *A. sericeipennis luzoni* by the colour of the rear wing base, which is yellow rather than the red brown of *A. sericeipennis luzoni*. From Mindoro some specimens are known in which the very dark brown of the basal spots in forewing and the head and tegulae, is replaced by a bright orange brown.

Forewing length:

♂	min. 44 mm	max. 51 mm	av. 47.6 mm
♀	min. 52 mm	max. 56 mm	av. 54 mm

Number of Philippine specimens known to us: 95 from Mindoro, Luzon, Panay, Negros, Samar, Leyte and Mindanao.

Ambulyx moorei MOORE, [1858]

Plate 2, Fig. A: ♀; Fig. B: ♂

Ambulyx moorei MOORE ([1858]: 266); KITCHING & SPITZER (1995: 178), INOUE (1996: 90)

Oxyambulyx subocellata FELDER, [1874]: ROTHSCHILD & JORDAN (1903: 206 n. 169), JENSEN (1973: 2)

Distribution and taxonomic notes: This species occurs from N. India to China and Vietnam and further in Sri Lanka, the Andaman Islands, Sumatra, Java and Borneo, from where it just reaches the Philippines, occurring commonly on Balabac and Palawan (map 2). *A. moorei* is closely related to *A. bakeri* and *A. suluensis*, from which it can be immediately separated by the submarginal line in the forewing that runs straight to the dorsum. In the other species this line stops at vein R3. Also, *A. moorei* usually has three subbasal spots beneath the cell on forewing upperside, while the other species have only two. The ♀, usually is a darker chestnut brown, while the ♂, normally, is a lighter yellowish-brown.

Forewing length:

♂	min. 39 mm	max. 43 mm	av. 41 mm
♀	min. 45 mm	max. 52 mm	av. 50 mm

Number of Philippine specimens known to us: 31 from Balabac and Palawan.

***Ambulyx bakeri* (CLARK, 1929)** Plate 2, figs. C & E: ♀; figs. D & F: ♂*Oxyambulyx bakeri* CLARK (1929: 10)*Oxyambulyx subocellata bakeri* CLARK: D'ABRERA ([1987]: 60)*Oxyambulyx subocellata* FELDER, 1874: LIN (1989: 7)*Ambulyx subocellata* FELDER: LIN (1990: 87)*Ambulyx bakeri* CLARK: INOUE (1996: 90), SCHÜTZ (1996: 46 n. 10), INOUE et al. (1997: 35)

Distribution and taxonomic notes: *A. bakeri* is endemic to the Philippines, but common and known from all major islands except Palawan (map 2). The species is quite variable in colouration with some ♀♀ being of an almost blackish-brown and some ♂♂ of a light yellowish-brown. Though often compared with *A. moorei*, in structure and maculation the species shows more relationship to taxa in the *A. semifervens*-group (*A. semifervens semifervens* (WALKER, [1865]) from the northern Moluccas, *A. semifervens amboynensis* ROTHSCHILD, 1894 (?= *A. felixi* (CLARK, 1924)) from the southern Moluccas, *A. celebensis* (JORDAN, 1919) from Sulawesi and *A. suluensis* n. sp. from the Sulu Archipelago). Apart from the differences in ♂-genitalia, *A. bakeri* can be separated from *A. moorei* by the short submarginal line and absence of a third subbasal spot beneath the cell in the forewing and from *A. suluensis* by the dark shade between the submarginal line and termen of the forewing reaching tornus.

Forewing length:

♂ min. 37 mm max. 45 mm av. 41 mm

♀ min. 42 mm max. 50 mm av. 46 mm

Number of Philippine specimens known to us: 145 from Mindoro, Luzon, Marinduque, Panay, Negros, Siquijor, Cebu, Leyte, Samar and Mindanao.

***Ambulyx suluensis* n. sp.**

Plate 2, Fig. G: ♀; figs. H & J: ♂

Ambulyx bakeri CLARK, 1929: JENSEN (1973: 2)

Holotype: ♂, Philippines, Sulu Archipelago, Tawitawi group, Bongao Isl., Mt. Kabugan, 150 m, 10. ii. 1989, leg. J. SETTELE & T. ACHILLES (CCGT).

Paratypes: 6 ♂♂, same data as holotype; 2 ♂♂, Philippines, Sulu Archipelago, Tawitawi group, Sibutu Isl., Cavan Cavan, 5 m, 13. ii. 1989, leg. T. ACHILLES & C. G. TREADAWAY; 1 ♂, Philippines, Sulu Archipelago, Tawitawi group, Sibutu Isl., Talisay, 5 m, 13.-14. ii. 1989, leg. T. ACHILLES & C. G. TREADAWAY; 1 ♂, same data, leg. T. ACHILLES, T. BORROMEO & C. G. TREADAWAY; 1 ♂, same data, leg. T. ACHILLES & C. G. TREADAWAY; 1 ♀, same data, 12.-13. ii. 1989, leg. T. ACHILLES & C. G. TREADAWAY (all in CCGT and ZMA); 2 ♂♂, Philippines, Tawitawi, Tarawakan, North of Batu Batu, 11. xi. 1961 & 14. xi. 1961, Noona Dan Expedition 1961-62 (ZMUC).

Forewing length:

♂ min. 34.9 mm max. 41.5 mm av. 37 mm

♀ min. 44 mm max. 44 mm av. 44 mm

Number of Philippine specimens known to us: 15 from Bongao, Tawitawi and Sibutu.

Diagnosis and description: Very similar to the closely related species *Ambulyx semifervens* (WALKER, [1865]), *celebensis* (JORDAN, 1919) and *bakeri* (CLARK, 1929), but generally smaller and less variable in colour. The new species also differs in the genitalia of the ♂.

Description: ♂, length of forewing from base to apex 34.9–41.5 mm. Ground colour yellowish or brownish. The species appears to have a tendency to be more unicolorous than the other species; it absolutely lacks the beautiful purple, orange and brown shades of *A. celebensis* and *A. bakeri*. It is very variable in maculation, which is basically as in the other species of the group. The subbasal and subtornal spots of the forewing as well as the spots on the eight abdominal tergite can be very conspicuous, but also completely obsolete. All lines in fore and hindwings present, but in most specimens dissolving into loose spots. Submarginal line of forewing short and curved as in *A. semifervens*, *celebensis* and *bakeri*, but the darker shade enclosed by this line and termen, less extended than in the other species, never reaching tornus. Basal half of forewing underside with a light pinkish hue, which is never found in the related species. Maculation of head and body as in the related species, but the dark brown plumes on the last thoracal segment much more conspicuous than in the other species.

♀, length of forewing from base to apex 44 mm. The only ♀ known is almost unicolorous reddish brown, with only small dark spots as remnants of the lines.

Genitalia of ♂: As in *A. bakeri*, but harpe much broader and much more spatulate than in that species. Length and height of uncus intermediate between those of *A. bakeri* and *A. moorei* MOORE, [1858]. JENSEN (1973, f. 1) gives a drawing of the right valve of this species, but in that view it is difficult to see that the curved end of the harpe is broadly spatulate (see Genitalia Fig. 1).

Etymology: The species is named after the Sulu Archipelago.

Distribution and taxonomic notes: *A. suluensis* is known exclusively from islands in the Sulu Archipelago (map 2) where the species is geographically intermediate between *A. moorei* from Borneo and Palawan and *A. bakeri* from the other Philippine islands. Till now *A. suluensis* has not been found

sympatrically with either of these two species, but the characteristics of its genitalia are so different from the other two species that we consider it a good species. However, general maculation (for instance there are only two subbasal spots beneath the cell in the forewing) and structural characters of the ♂-genitalia show that the species is more related to members of the *A. semifervens*-group, which is distributed over the Philippines (*A. bakeri*), Sulawesi (*A. celebensis*) and the Moluccas (*A. semifervens*), than to the *A. moorei*-group with a Sundanian (*A. moorei*) and Papuan (*A. dohertyi* ROTHSCHILD, 1894) distribution.

***Ambulyx johnsoni* (CLARK, 1917)** Plate 3, Fig. F: ♂; figs. G & H: ♀

Oxyambulyx liturata johnsoni CLARK (1917: 61); SEITZ (1928: 534), D'ABRERA ([1987]: 56)

Oxyambulyx johnsoni CLARK: CLARK (1936: 91)

Oxyambulyx liturata BÜTLER [sic]: LIN (1989: 6)

Ambulyx liturata BUTLER, 1875: LIN (1990: 87)

Ambulyx johnsoni CLARK: INOUE (1996: 88), SCHÜTZ (1996: 46 n. 11)

Distribution and taxonomic notes: *A. johnsoni* is endemic in the Philippines where it is common and widely distributed (map 3). It is not known from Palawan or the Sulu Archipelago. Though the ♀♀ tend to be darker coloured than the ♂♂, the bright yellowish-brown ground colour of this species makes it impossible to confuse it with any other *Ambulyx* species in the Philippines. Some specimens from Mindoro are known in which the complete surface of the wings is covered with little brown scratches. Because in these specimens also the dark brown maculation of the body and head has changed into a bright russet brown, these insects give a completely different impression. There are, however, no structural differences with normally coloured specimens of *A. johnsoni*.

Forewing length:

♂	min. 43 mm	max. 50 mm	av. 46.5 mm
♀	min. 49 mm	max. 52 mm	av. 51 mm

Number of Philippine specimens known to us: 189 from Mindoro, Luzon, Marinduque, Panay, Negros, Siquijor, Cebu, Leyte, Samar and Mindanao.

***Ambulyx canescens* (WALKER, [1865])**

Basiana canescens WALKER ([1865]: 38)

***Ambulyx canescens canescens* (WALKER, [1865])**

Plate 3, Fig. A: ♀; Fig. B: ♂

Basiana canescens WALKER ([1865]: 38)*Oxyambulyx canescens* WALKER: ROTHSCHILD & JORDAN (1903: 205 n. 168)*Oxyambulyx canescens canescens* WALKER: JENSEN (1973: 2), D'ABRERA ([1987]: 60)*Ambulyx canescens* WALKER: HOLLOWAY (1987: 132)*Ambulyx canescens canescens* WALKER: KITCHING & SPITZER (1995: 179)

Distribution and taxonomic notes: *A. canescens canescens* occurs from Thailand over peninsular Malaysia to Vietnam and from the Andamans over Sumatra, Java and Borneo to Balabac and Palawan (map 3). With its greyish brown ground colour it cannot be confused with any other *Ambulyx* species.

Forewing length:

♂ min. 43 mm max. 46 mm av. 45 mm

♀ min. 53 mm max. 53 mm av. 53 mm

Number of Philippine specimens known to us: 10 from Balabac and Palawan.

***Ambulyx canescens flava* (CLARK, 1924)**

Plate 3, figs. C & E: ♀; Fig. D: ♂

Oxyambulyx canescens flava CLARK (1924: 16); SEITZ (1929: 571), D'ABRERA ([1987]: 60)*Oxyambulyx canescens* WALKER, [1865]: LIN (1989: 7)*Ambulyx canescens* WALKER: LIN (1990: 87)*Ambulyx canescens flava* CLARK: INOUE (1996: 88), SCHÜTZ (1996: 47 n. 12), INOUE et al. (1997: 35)

Distribution and taxonomic notes: *A. canescens flava* replaces *A. canescens canescens* in the Philippines, where it is common and known from all larger islands except Palawan (map 3). In the ♂♂ it differs from the nominate subspecies in being more yellow and all lines being more pronounced. The ♀♀ normally are somewhat darker than the ♂♂ and tend to be darker than the nominate subspecies ♀♀.

Forewing length:

♂ min. 37 mm max. 44 mm av. 41.7 mm

♀ min. 43 mm max. 49 mm av. 47 mm

Number of Philippine specimens known to us: 143 from Mindoro, Luzon, Panay, Negros, Samar, Leyte and Mindanao.

***Ambulyx wilemani* (ROTHSCHILD & JORDAN, 1916)**

Plate 4, Fig. H: ♀; Fig. I: ♂

Oxyambulyx substrigilis wilemani ROTHSCCHILD & JORDAN (1916 b: 254 n. 14); SEITZ (1928: 535)*Oxyambulyx wilemani* ROTHSCCHILD & JORDAN: CLARK (1919: 100)*Ambulyx wilemani* ROTHSCCHILD & JORDAN: CADIOU & HOLLOWAY (1989: 134, 154, f. 6), INOUE (1996: 87), SCHÜTZ (1996: 47 n. 13)

Distribution and taxonomic notes: *A. wilemani* is endemic to the Philippines where it replaces *A. substrigilis*. It is common and known from most islands including the Sulu Archipelago (map 3). *A. wilemani* is characterized by the strongly curved submarginal line that runs very close to termen from vein M1 to tornus. The forewing has a dark costal spot as well as a subbasal one. Most ♂ specimens, additionally, have a further postdiscal spot near the dorsum of the forewing. Females sometimes occur without the costal spots.

Forewing length:

♂	min. 41 mm	max. 47 mm	av. 44 mm
♀	min. 48 mm	max. 53 mm	av. 51.5 mm

Number of Philippine specimens known to us: 40 from Mindoro, Luzon, Marinduque, Panay, Negros, Samar, Leyte, Mindanao, Sibutu and Tawitawi.

***Ambulyx substrigilis substrigilis* WESTWOOD, 1847** Plate 3, Fig. I: ♂*Sphinx (Ambulyx) substrigilis* WESTWOOD (1847: [61], pl. 30, f. 2)*Ambulyx substrigilis* WESTWOOD: WALKER (1856: 122 n. 3)*Oxyambulyx substrigilis substrigilis* WESTWOOD: ROTHSCCHILD & JORDAN (1903: 202 n. 164 b), JENSEN (1973: 1)*Ambulyx substrigilis substrigilis* WESTWOOD: INOUE (1991: p. 126), INOUE (1996: 87), INOUE et al. (1997: 32)

Distribution and taxonomic notes: *A. substrigilis substrigilis* occurs from N. India to Vietnam, in Sri Lanka, the Andamans, Sumatra, Java and Borneo, from where it reaches Balabac and Palawan (map 3). On Palawan it could be confused with *A. pryeri*, from which it differs in being smaller and the submarginal line being more strongly curved inward. Moreover, *A. substrigilis* has a yellow ground colour in the forewings, which is brown in *A. pryeri*.

Forewing length:

♂	min. 40 mm	max. 46 mm	av. 43.5 mm
♀	min. 52 mm	max. 53 mm	av. 52.5 mm

Number of Philippine specimens known to us: 21 from Balabac and Palawan.

***Clanis stenosema* ROTHSCHILD & JORDAN, 1907** Plate 4, Fig. B: ♂*Clanis stenosema* ROTHSCHILD & JORDAN (1907: 93); JENSEN (1973: 2), INOUE (1996: 91)

Distribution and taxonomic notes: *C. stenosema* occurs in Sumatra, Java, Borneo, Balabac, and Palawan (map 4). Like most species in the genus it is nowhere common. Till now there is no evidence that any other species of *Clanis* occurs on Balabac or Palawan, so in the Philippines the species cannot be confused with others.

Forewing length:

♂	min. 64 mm	max. 70 mm	av. 67 mm
♀	min. 72 mm	max. 80 mm	av. 76.5 mm

Number of Philippine specimens known to us: 13 from Balabac and Palawan.

***Clanis negritensis* HOGENES & TREADAWAY, 1993** Plate 4, Fig. A: ♂*Clanis negritensis* HOGENES & TREADAWAY (1993: 534, 535 f. 1, 2, 536 f. 4); HAXAIRE (1994: 35), INOUE (1996: 91)

Distribution and taxonomic notes: *C. negritensis* is endemic to the Philippines. Until now it has been found on Luzon, Mindoro and Negros (map 4) and as most species in the genus it is uncommon and local. It may be expected that in future the species will be found elsewhere in the Philippines. The species is closely related to *C. titan* ROTHSCHILD & JORDAN, 1903, from the mainland and Sumatra, *C. stenosema* ROTHSCHILD & JORDAN, 1907, from Sundaland, *C. pratti okurai* CADIOU & HOLLOWAY, 1989, from Sulawesi, *C. pratti pratti* JOICEY & TALBOT, 1921, from the Moluccas and to *C. surigaoensis* CLARK, 1928, which has a more southern distribution in the Philippines. From these it differs in maculation and in the ♂ genitalia. From *C. surigaoensis* it can easily be recognized by the shape of the forewing which is more falcate in *surigaoensis* and by the large light costal area, which has a less conspicuous outward dent on vein R2. Our experience shows this species to be the rarest *Clanis* species on the Philippines.

Forewing length:

♂	min. 66 mm	max. 69 mm	av. 68 mm
♀	min. 73 mm	max. 73 mm	av. 73 mm

Number of Philippine specimens known to us: 7 from Mindoro, Luzon and Negros.

***Clanis surigaoensis* CLARK, 1928** Plate 4, Fig. C: ♂*Clanis surigaoensis* CLARK (1928: 41); INOUE (1996: 91), SCHÜTZ (1996: 48 n. 14)

Distribution and taxonomic notes: *C. surigaoensis* is endemic to the Philippines and now known from three large islands in the east and south (map

4). This distribution is completely vicariant with that of *C. negritensis* and everything said about that species, holds good for *C. surigaoensis*. It appears that *C. titan*, *stenosema*, *okurai*, *pratti*, *negritensis* and *surigaoensis* form a cline of closely related species, inhabiting a large area of S.E. Asia.

Forewing length:

♂ min. 65 mm max. 73 mm av. 71 mm

♀ min. 75 mm max. 75 mm av. 75 mm

Number of Philippine specimens known to us: 13 from Samar, Leyte and Mindanao.

Leucophlebia lineata WESTWOOD, 1847

Plate 18, Fig. C: ♂

Leucophlebia lineata WESTWOOD (1847: [46] pl. 32: 2); ROTHSCHILD & JORDAN (1903: 230 n. 191), ROTHSCHILD & JORDAN (1907: 49), SEITZ (1928: 537), LIN (1989: 2), LIN (1990: 87), INOUE (1990: 249), INOUE (1996: 91), INOUE et al. (1997: 40)

Leucophlebia lineata lineata WESTWOOD: INOUE (1973: 110)

Distribution and taxonomic notes: *L. lineata* occurs in a vast area from N. India through the Southeast Asian mainland to S. China, in Sri Lanka, Sumatra, Java, Bali, Sumba, Flores, Sulawesi, the Philippines, Botel Tobago and Taiwan. In the Philippines the species is extremely rare and up till now known from a few specimens from Palawan, Luzon and Mindanao (map 4). The species cannot be confused with any other hawkmoth in the area.

Forewing length:

♂ min. 28 mm max. 29 mm av. 28.7 mm

Number of Philippine specimens known to us: 3 from Palawan, Luzon and Mindanao.

Polyptychus trilineatus philippinensis ROTHSCHILD & JORDAN, 1903

Plate 5, Fig. C: ♂

Polyptychus dentatus CRAMER, [1777]: SEMPER (1896: 391 n. 22)

Polyptychus timesius STOLL: SEMPER (1896: 393 n. 23)

Polyptychus trilineatus philippinensis ROTHSCHILD & JORDAN (1903: 239 n. 195 e); ROTHSCHILD & JORDAN (1907: 50), SEITZ (1928: 538), D'ABRERA ([1987]: 68), INOUE (1996: 92), SCHÜTZ (1996: 48 n. 15), INOUE et al. (1997: 42)

Polyptychus trilineatus MOORE, 1888: MELL (1922: 124), LIN (1989: 7, 1990: 87)

Distribution and taxonomic notes: *P. trilineatus trilineatus* inhabits the Southeast Asian mainland from N. India to Vietnam. Subspecies have been described from Sri Lanka (*luteatus* ROTHSCHILD & JORDAN, 1903), Andaman Islands (*mincopicus* JORDAN, 1930), Sumatra, Java, Bali, Flores (*kelanus* JORDAN, 1930), Sulawesi (*celebensis* CLARK, 1929) and the Philippines (*philippin-*

ensis). Till now *P. trilineatus* is not known from Borneo, Palawan and the Sulu archipelago. *P. trilineatus philippinensis* is common in the Philippines and known from most major islands (map 4).

Forewing length:

♂	min. 43 mm	max. 49 mm	av. 45.7 mm
♀	min. 47 mm	max. 53 mm	av. 49.5 mm

Number of Philippine specimens known to us: 114 from Luzon, Panay, Negros, Siquijor, Cebu, Bohol, Leyte and Mindanao.

***Marumba amboinicus luzoni* CLARK, 1935** Plate 5, fig D: ♀; fig E: ♂

Polyptychus dyras WALKER: SEMPER (1896: 391 n. 21)

Marumba amboinicus luzoni CLARK (1935: 21); D'ABRERA ([1987]: 80), INOUE (1996: 92), SCHÜTZ (1996: 49 n. 16)

Marumba amboinicus FELDER, 1862: LIN (1989: 7), LIN (1990: 87)

Distribution and taxonomic notes: *M. amboinicus* is found in the Southern Moluccas (ssp. *amboinicus* FELDER, 1862), on Bacan (ssp. *rothschildi* HUWE, 1906), Sulawesi and Selayar (ssp. *celebensis* ROTHSCHILD & JORDAN, 1903), and the Philippines (ssp. *luzoni*). The ♂-genitalia of this species are in many aspects very variable and we experienced it to be difficult or impossible to identify the subspecies on genitalic characters. However, ssp. *luzoni* generally is larger and darker than the other subspecies and the termen of the forewing tends to be more heavily undulated. In the Philippines *M. amboinicus luzoni* appears not to occur in Palawan but otherwise is very common and known from most islands, including the Sulu Archipelago (map 5). In comparison with *M. dyras javanica*, with which it may easily be confused, *M. amboinicus luzoni* has heavier lines in the forewing and the outer margin of this wing is less regularly undulated, usually showing a lobe at the apex. The subspecies is rather variable in ground colour, with for example the rearwing upperside ranging from red-brown to a blackish-brown. SEMPER mentions the Luzon specimens that he saw, being less reddish than his Cebu specimens. Most likely these were representatives of this species.

Forewing length:

♂	min. 40 mm	max. 49 mm	av. 44.8 mm
♀	min. 48 mm	max. 56 mm	av. 52.5 mm

Number of Philippine specimens known to us: 127 from Mindoro, Babuyan, Luzon, Marinduque, Sibuyan, Panay, Negros, Siquijor, Cebu, Bohol, Samar, Leyte, Dinagat, Mindanao and Jolo.

***Marumba dyras javanica* (BUTLER, 1875)**

Plate 5, Fig. G: ♂

Triprogon javanica BUTLER (1875: 254 n. 42)*Marumba dyras javanica* BUTLER: ROTHSCHILD & JORDAN (1903: 276 n. 233 b), ROTHSCHILD & JORDAN (1907: 55), SEITZ (1928: 539), HOLLOWAY (1987: 136), D'ABRERA ([1987]: 80), INOUE (1996: 92), INOUE et al. (1997: 45)*Marumba dyras* WALKER, 1856: MELL (1922: 153), LIN (1990: 87)

Distribution and taxonomic notes: *M. dyras dyras* occurs in India and Sri Lanka, through S.E. Asia to Vietnam and S. China and in the Andaman Islands. *M. dyras javanica* is known from S. Sumatra, Java, Borneo and through Palawan to the Philippines. We have never seen specimens from the Lesser Sunda Islands or from the Moluccas and therefore we are not able to attribute such specimens to *M. dyras* or to any other species. Although known from all major islands (map 5), *M. dyras javanica* must be considered rare in the Philippines. The species can easily be confused with its congener *M. amboinicus luzoni*, from which it differs in being lighter, the ground colour more reddish-yellow than brownish, especially so in the rearwings, and having the outer forewing margin more regularly undulated.

Forewing length:

♂	min. 40 mm	max. 44 mm	av. 43 mm
♀	min. 53 mm	max. 54 mm	av. 53.5 mm

Number of Philippine specimens known to us: 11 from Palawan, Luzon, Negros, Cebu, Samar, Leyte and Mindanao.

***Marumba tigrina* GEHLEN, 1936**

Plate 5, Fig. F: ♂

Marumba tigrina GEHLEN (1936: 461)*Marumba juvenicus* ROTHSCH. & JORDAN, 1912: JENSEN (1973: 2), INOUE (1996: 92)

Distribution and taxonomic notes: *M. tigrina* flies in Sumatra, Java and Borneo and from there reaches Palawan (map 5), where it is uncommon. JENSEN (1973: 2) mentions a ♂ of *M. juvenicus* ROTHSCHILD & JORDAN, 1912 from Palawan. This specimen, which we were allowed to study, appears to be misidentified. However, *M. juvenicus* is a close relative of *M. tigrina*, and must be considered to be able to reach Palawan as well, as it occurs in Borneo, where it appears to be more common than *M. tigrina* (HOLLOWAY 1987).

Forewing length:

♂	min. 42 mm	max. 44 mm	av. 43 mm
♀	min. 52 mm	max. 52 mm	av. 52 mm

Number of Philippine specimens known to us: 14 from Palawan.

Daphnusa ocellaris WALKER, 1856

Plate 5, Fig. H: ♀

Daphnusa ocellaris WALKER (1856: 51 n. 1); SEITZ (1928: 540), HOLLOWAY (1987: 138), LIN (1990: 87), INOUE (1996: 92), SCHÜTZ (1996: 49 n. 17), INOUE et al. (1997: 39)

Daphnusa ocellaris ocellaris WALKER: ROTHSCHILD & JORDAN (1903: 284 n. 241 a), ROTHSCHILD & JORDAN (1907: 56), JENSEN (1973: 3)

Distribution and taxonomic notes: *D. ocellaris* occurs from N. India through the Southeast Asian mainland to Vietnam and in Sumatra, Java, Borneo and the Philippines, where it is common and known from most major islands (map 5). In Sulawesi the species is replaced by the sibling species *D. ailanti* (BOISDUVAL, [1875]). In the Philippines the species cannot be confused with any other sphingid. In collections the ♀♀ seem to be considerably less common than the ♂♂, perhaps because they are less attracted to light. The ♂♂ occur in a variety of colour variation, the ground colour ranging from light reddish-brown to greyish-brown.

Forewing length:

♂	min. 33 mm	max. 41 mm	av. 36.5 mm
♀	min. 48 mm	max. 49 mm	av. 48.5 mm

Number of Philippine specimens known to us: 25 from Palawan, Dumarán, Mindoro, Luzon, Negros, Cebu, Bohol, Leyte and Mindanao.

Cypa decolor (WALKER, 1856)

Plate 13, Fig. F: ♂; Fig. I: ♀

Smerinthus decolor WALKER (1856: 255 n. 19)

Cypa decolor manilae CLARK (1930: 28); JORDAN (1931: 236), D'ABRERA ([1987]: 86), SCHÜTZ (1996: 50 n. 18), INOUE et al. (1997: 52)

Cypa decolor decolor (WALKER): INOUE (1996: 92)

Cypa decolor WALKER: HOLLOWAY (1987: 139), LIN (1990: 88)

Distribution and taxonomic notes: *C. decolor* is known from Nepal and Sikkim through the Southeast Asian mainland to Vietnam, from Sumatra, Borneo and the Philippines. (*C. euroa* ROTHSCHILD & JORDAN, 1903 stat. nov., known from New Guinea and Ceram and described as a subspecies of *C. decolor*, is a distinct species, differing in colouration, shape of the wings and ♂ and ♀ genitalia.) In the Philippines *C. decolor* is not common but widespread and known from many islands, including the Sulu Archipelago (map 6). The species could easily be confused with *C. claggi*, from which it differs in being of a slightly darker overall colour, with the rear wing being usually noticeably darker than the forewing. Antennae of the ♂♂ tend to be somewhat shorter (0.7–0.85 cm) than in *C. claggi*, while the forewing marginal shape is rather more irregular.

Forewing length:

♂	min. 21 mm	max. 27 mm	av. 23 mm
♀	min. 28 mm	max. 30 mm	av. 29.5 mm

Number of Philippine specimens known to us: 56 from Mindoro, Luzon, Negros, Samar, Leyte, Mindanao and Jolo.

Cypa claggi CLARK, 1935

Plate 13, Fig. H: ♂

Cypa claggi CLARK (1935: 22): D'ABRERA ([1987]: 86), LIN (1989: 7), LIN (1990: 88), INOUE (1996: 93)

Distribution and taxonomic notes: *C. claggi* is endemic in the Philippines, very rare and till now known only from Luzon and Mindanao (map 6). Undoubtedly in future the species will be collected from more islands. It could be confused with *C. decolor*, but it can be recognized by the lighter overall colour with the rear wings not much darker than the forewings. The ♂♂ having longer antennae (1.0–1.1 cm), while the forewing margin tends to have less indentation.

Forewing length:

♂	min. 24 mm	max. 25 mm	av. 24.7 mm
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Number of Philippine specimens known to us: 4 from Luzon and Mindanao.

Callambulyx amanda ROTHSCHILD & JORDAN, 1903

Plate 5, Fig. I: ♀

Callambulyx rubricosa amanda ROTHSCHILD & JORDAN (1903: 309 n. 263 c)

Callambulyx amanda ROTHSCHILD & JORDAN: KITCHING & SPITZER (1995: 177)

Distribution and taxonomic notes: *C. amanda* occurs in Thailand, Peninsular Malaysia, Sumatra, Borneo and the Philippines on Balabac and Palawan (map 6). Originally it was described as a subspecies of *C. rubricosa*, but KITCHING & SPITZER (1995: 177) proved it to be distinct. In Palawan this beautiful insect is rare. It cannot be confused as in Palawan no congeneric species occur.

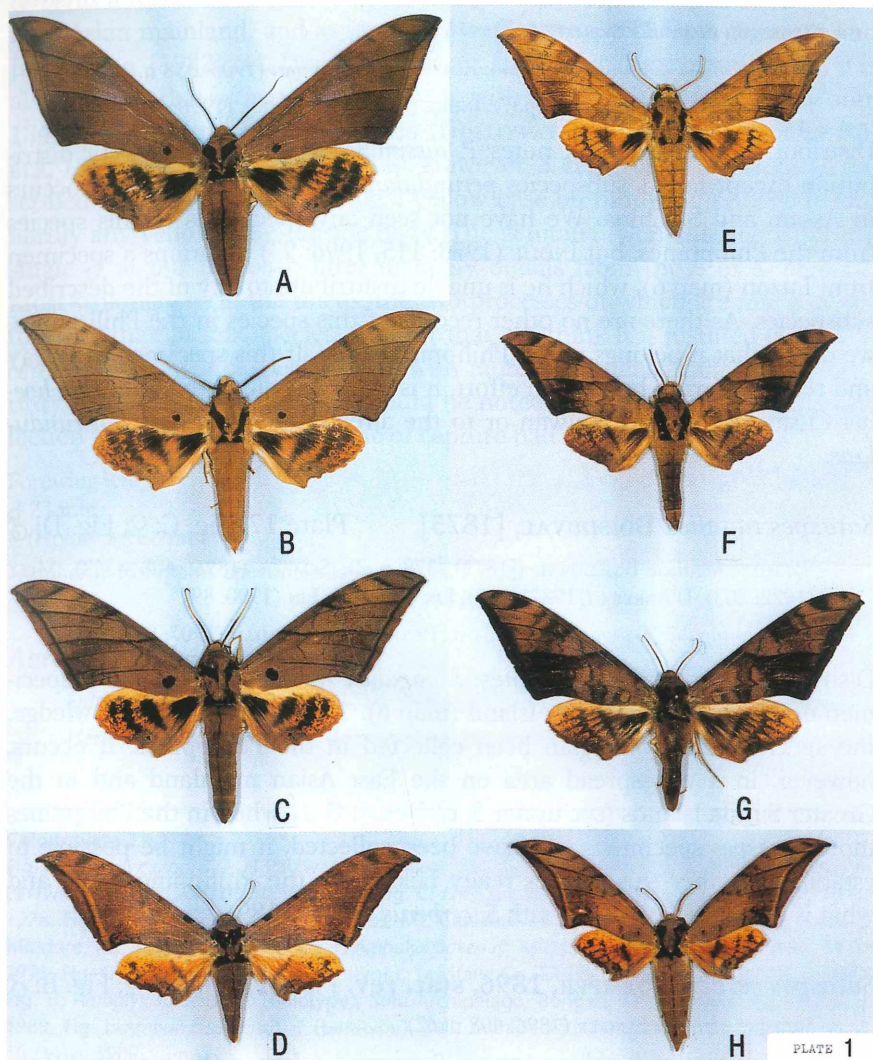
Forewing length:

♂	min. 44 mm	max. 46 mm	av. 45 mm
♀	min. 56 mm	max. 60 mm	av. 58 mm

Number of Philippine specimens known to us: 8 from Balabac and Palawan.

Colour plates

Plates 1 to 11 and Plate 18 are on the same relative scale. Plates 12 to 17 are on the same but larger relative scale.



Colour plate 1

Fig. A: *Ambulyx staudingeri* ♀, Leyte, Mt. Balocaue, 600 m, 11. iii. 1986. Fig. B: *Ambulyx staudingeri* ♂, Samar, nr. Bagacay, 250 m, 9. vii. 1979. Fig. C: *Ambulyx pryeri* ♂, Palawan, Salakot, 750 m, 18. iii. 1996. Fig. D: *Ambulyx sericeipennis luzoni* ♀, N Luzon, Mt. Polis, 1900 m, 4. V. 1988. Fig. E: *Ambulyx tattina tattina* ♂, Palawan, Aborlan, 3. xi. 1995. Fig. F: *Ambulyx tattina uichancoi* ♂, N Negros, Mt. Canlaon, 7. ix. 1996. Fig. G: *Ambulyx tattina uichancoi* ♀, S Mindanao, S Cotabato, Mt. Matutum, 13. i. 1996. Fig. H: *Ambulyx sericeipennis luzoni* ♂, N Luzon, Ifugao, Kinakin, 1200 m, 1. vi. 1988.

Phyllosphingia dissimilis* (BREMER, 1861)Triprogon dissimilis* BREMER (1861: 475 n. 26)*Phyllosphingia dissimilis* (BREMER): ROTHSCHILD & JORDAN (1903: 338 n. 279)*Phyllosphingia dissimilis* subsp.(?): INOUE (1973: 115), INOUE (1996: 93)

Distribution and taxonomic notes: *P. dissimilis* has an east palaeartic distribution except for its subspecies *perundulans* SWINHOE, 1897, which occurs in Assam and S. China. We have not seen any specimens of this species from the Philippines, but INOUE (1973: 115, 1996: 93) mentions a specimen from Luzon (map 6), which he is unable to attribute to any of the described subspecies. As there are no other records of this species in the Philippines, we doubt that it belongs to the Philippine fauna. If this specimen is a stray and reached Luzon by its own effort, it is likely to belong to either ssp. *hoeinei* CLARK, 1937, from Taiwan or to the already mentioned ssp. *perundulans*.

***Sataspes tagalica* BOISDUVAL, [1875]** Plate 17, Fig. C: ♀; Fig. D: ♂*Sataspes tagalica* BOISDUVAL ([1875]: 378 n. 2); SEMPER (1896: 408 n. 63), MELL (1922: 203), D'ABRERA ([1987]: 118), LIN (1989: 7), LIN (1990: 89)*Sataspes tagalica* f. *tagalica* BOISDUVAL: ROTHSCHILD & JORDAN (1907: 89)

Distribution and taxonomic notes: *S. tagalica* was described from a specimen originating from Burias Island (map 6). Thereafter, to our knowledge, the species has never again been collected in the Philippines. It occurs, however, in a widespread area on the East Asian mainland and in the Greater Sunda Islands (see under *S. cerberus*). Only when in the Philippines more *Sataspes* specimens will have been collected, it might be possible to establish whether this species really belongs to the Philippine fauna and what is its true relationship with *S. cerberus* SEMPER, 1896.

***Sataspes cerberus* SEMPER, 1896, stat. rev.** Plate 17, Fig. A: ♀; Fig. B: ♂*Sataspes cerberus* SEMPER (1896: 408 n. 62)*Sataspes tagalica* f. *cerberus* SEMPER: ROTHSCHILD & JORDAN (1903: 474 n. 402 e'), ROTHSCHILD & JORDAN (1907: 89)*Sataspes tagalica cerberus* SEMPER: SEITZ (1929: 546), INOUE (1996: 94), INOUE et al. (1997: 60)

Distribution and taxonomic notes: *S. cerberus* is endemic in the Philippines, very rare, and till now known from only a few specimens from Luzon. ROTHSCHILD & JORDAN (1903: 474) (followed by SEITZ and INOUE) considered

cerberus a form of *S. tagalica* BOISDUVAL [1875], which is recorded from the East Asian mainland, and as ssp. *javanica* ROEPKE, 1941 from Sumatra and Java (DIEHL [1982]: 34, DUPONT & ROEPKE 1941: 28). Zoogeographically, it is also possible that *cerberus* is conspecific with either *S. infernalis* WESTWOOD, 1847, which is known from Borneo (HOLLOWAY 1987: 143) or *S. ribbei* RÖBER, 1885, described from Sulawesi. However, *S. cerberus* differs from all described *Sataspes* forms in having a yellow base on hindwing underside and hardly any yellow scales on the body. The genitalia (Genitalia Fig. 2) of the single ♂ at our disposal differ in many details from those of *S. tagalica*. Most strikingly so in the uncus, the two processes of which are much closer together than in that species. And for that, we think it is justified to treat *S. cerberus* as a distinct species until, with more specimens available, the contrary can be demonstrated. It should be noted that the single ♂ in the collection CCGT already at the time of capture had badly rubbed wings.

Forewing length:

♂ 23 mm

♀ (Holotype) 26 mm

Number of Philippine specimens known to us: 2 from north Luzon.

Agrius convolvuli (LINNAEUS, 1758)

Plate 6, Fig. A: ♂

Sphinx convolvuli LINNAEUS (1758: 490 n. 6)

Herse convolvuli LINNAEUS: ROTHSCHILD & JORDAN (1903: 11 n. 5), JENSEN (1973: 3)

Colour plate 2

Fig. A: *Ambulyx moorei* ♀, N Palawan, Olanguan, 500 m, 9. vii. 1988. Fig. B: *Ambulyx moorei* ♂, Palawan, Langan, 200 m, 10. viii. 1988. Fig. C: *Ambulyx bakeri* ♀, Negros, Amlan, 400 m, 10. vi. 1978. Fig. D: *Ambulyx bakeri* ♂, N Negros, Mt. Canlaon, 14. ix. 1996. Fig. E: *Ambulyx bakeri* ♀, Mindoro, Mt. Sinai, 17. i. 1996. Fig. F: *Ambulyx bakeri* ♂, Mindanao, Bukidnon, Mt. Nebo, 11. v. 1993. Fig. G: *Ambulyx suluensis* ♀ (paratype), Tawitawi Gr., Sibutu, Talisay, 5 m, 12. /13. ii. 1989. Fig. H: *Ambulyx suluensis* ♂ (holotype), Sulu Archipelago, Bongao, Mt. Kabygan, 150 m, 10. ii. 1989. Fig. I: *Ambulyx suluensis* ♂ (paratype), Sulu Archipelago, Bongao, Mt. Kabugan, 150 m, 10./11. ii. 1989.

Colour plate 3

Fig. A: *Ambulyx canescens canescens* ♀, Palawan, Salakot, 330 m, 8. viii. 1996. Fig. B: *Ambulyx canescens canescens* ♂, Palawan, Salakot, 400 m, 1. xi. 1995. Fig. C: *Ambulyx canescens flava* ♀, Negros, nr. Amlan, 350 m, 24. xi. 1976. Fig. D: *Ambulyx canescens flava* ♂, Mindoro, Mt. Halcon, 19. X. 1993. Fig. E: *Ambulyx canescens flava* ♀, Mindoro, Mt. Sinai, 15. i. 1996. Fig. F: *Ambulyx johnsoni* ♂, C Leyte, Mt. Balocau, 600 m, 11. iii. 1986. Fig. G: *Ambulyx johnsoni* ♀, N Luzon, Banaue, 1150 m, 10. iv. 1990. Fig. H: *Ambulyx johnsoni* ♀, C Leyte, Mt. Balocau, 600 m, 26. iii. 1995. Fig. I: *Ambulyx substrigilis substrigilis* ♂, C Palawan, Irawan, 21. iv. 1996.

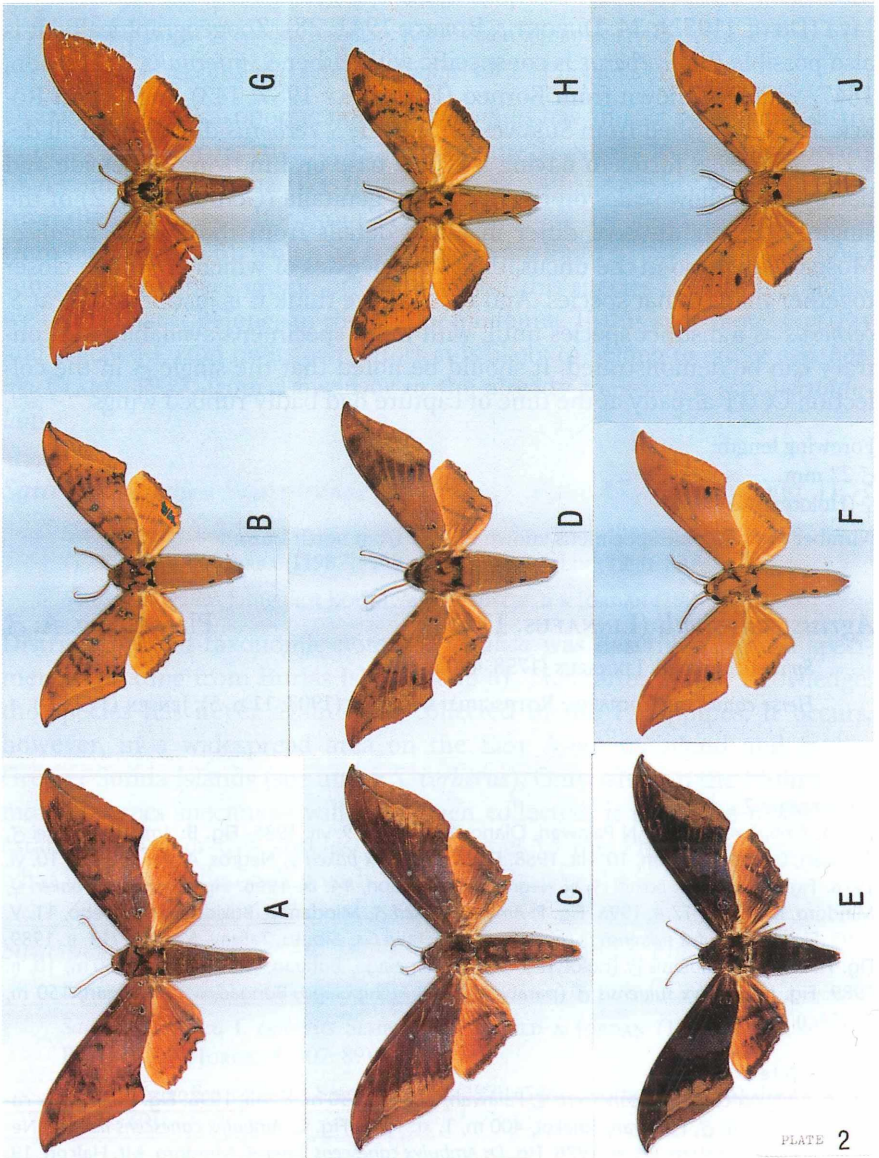
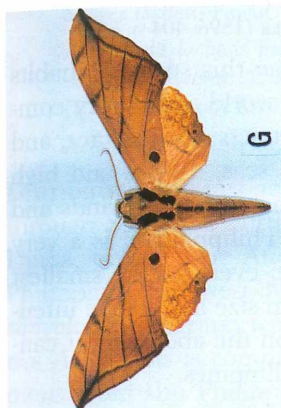
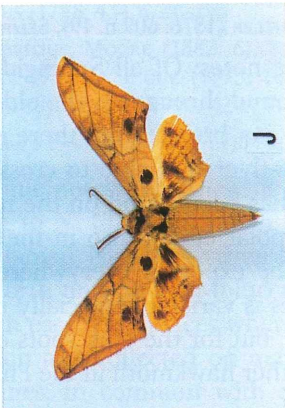


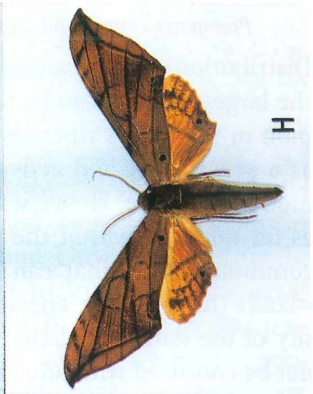
PLATE 2



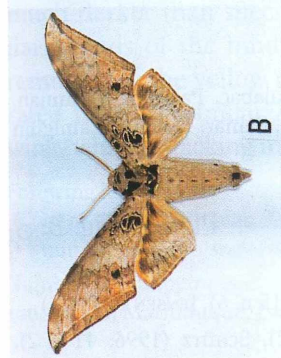
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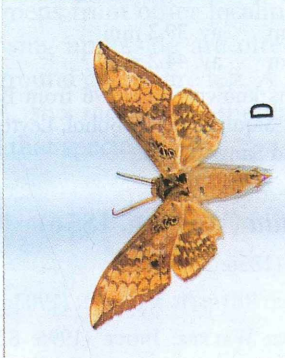
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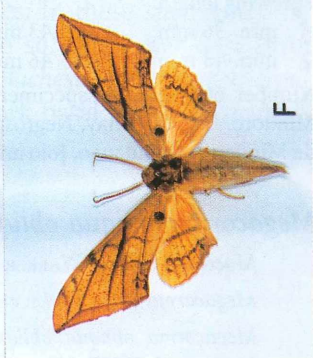
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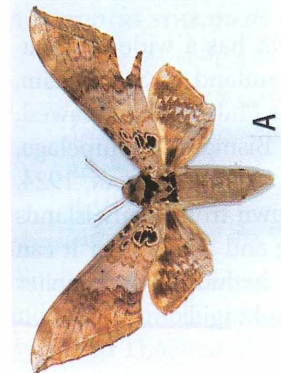
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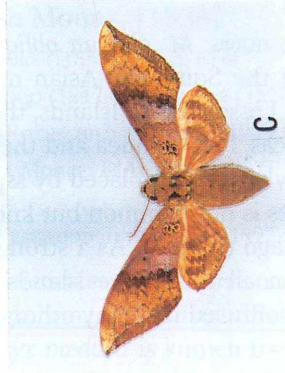
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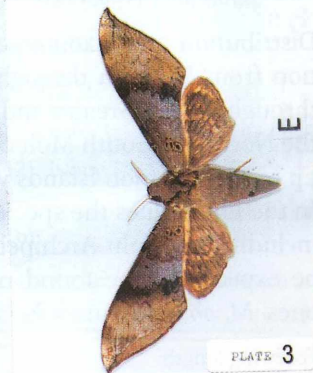
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A



C



E

Agrilus convolvuli LINNAEUS: HÜBNER ([1819]: 140), LIN (1990: 86), INOUE (1996: 82), SCHÜTZ (1996: 41 n. 1)

Protoparce convolvuli L.: BUTLER (1876: 609 n. 19), SEMPER (1896: 404 n. 51)

Distribution and taxonomic notes: Of all Sphingidae this species inhabits the largest area. It can be found throughout the old world and is very common in the places where it can breed. From there it acts as a migrant, and as a strong, fast and active flyer it is able to cross seas, deserts and high mountain ridges. Hence it has been found on the most remote islands and as far north as within the polar circle. Also in the Philippines it is a very common species that can be expected everywhere, even on the smallest islands (map 7). The species is variable, especially in size and in the intensity of the dark maculation, but for the pink spots on the abdomen, it cannot be confused with any other hawkmoth in the Philippines.

Forewing length:

♂	min. 36 mm	max. 43 mm	av. 39.3 mm
♀	min. 43 mm	max. 46 mm	av. 44.2 mm

Number of Philippine specimens known to us: 196 from Balabac, Palawan, Calamian, Mindoro, Luzon, Panay, Negros, Siquijor, Cebu, Bohol, Leyte, Samar, Dinagat, Camiguin de Mindanao, Mindanao, Jolo and Sanga Sanga.

Megacorma obliqua obliqua (WALKER, 1856)

Plate 6, Fig. B: ♂

Macrosila obliqua WALKER (1856: 208 n. 15)

Megacorma obliqua WALKER: ROTHSCH. & JORDAN (1903: 15 n. 6), JENSEN (1973: 3)

Megacorma obliqua obliqua WALKER: INOUE (1996: 82), SCHÜTZ (1996: 41 n. 2), INOUE et al. (1997: 15)

Distribution and taxonomic notes: *M. obliqua obliqua* has a wide distribution from N. India through the Southeast Asian mainland to S. Vietnam, throughout the Greater and Lesser Sunda Islands, the Philippines, Sulawesi, the North and South Moluccas, New Guinea and the Bismarck Archipelago, up to the Solomon Islands where it is replaced by ssp. *remota* JORDAN, 1924. In the Philippines the species is not common but known from many islands including the Sulu Archipelago (map 7). As a strong and active flyer it can be expected to be found on all Philippine islands, including the smaller ones. *M. obliqua* cannot be confused with any other sphingid.

Forewing length:

♂	min. 50 mm	max. 56 mm	av. 53 mm
♀	min. 63 mm	max. 70 mm	av. 65.5 mm

Number of Philippine specimens known to us: 22 from Balabac, Palawan, Luzon, Negros, Samar, Leyte, Mindanao and Jolo.

***Acherontia lachesis* (FABRICIUS, 1798)**

Plate 6, Fig. C: ♀

Sphinx lachesis FABRICIUS (1798: 434 n. 26-27)*Acherontia lachesis* FABRICIUS: MOORE (1882: 6), SEMPER (1896: 390 n. 20), ROTHSCHILD & JORDAN (1903: 17 n. 7), INOUE (1973: 104), D'ABRERA ([1987]: 12), LIN (1990: 86), INOUE (1996: 83), SCHÜTZ (1996: 42 n. 3)*Acherontia lachesis lachesis* FABRICIUS: JENSEN (1973: 4)

Distribution and taxonomic notes: *A. lachesis* is recorded from N.W. India through S.E. Asia, north to N. China, S. Japan and Taiwan, and from Sri Lanka, through the Andaman Islands, Greater and Lesser Sunda Islands, Philippines, Sulawesi, North and South Moluccas to Irian Jaya. Just as *A. convolvuli* it migrates with ease from places where it breeds. In the Philippines *A. lachesis* is common and collected on many islands (map 7). Specimens from the Philippines, in common with Sulawesian specimens, are much darker than specimens from other localities. In these specimens the dark bands of the hindwing upperside are often so broad that only little remnants of the yellow ground colour are left. *A. lachesis* can easily be separated from the similar *A. styx medusa* by the dark basal area of the hindwing, which is lacking in that species.

Forewing length:

♂	min. 49 mm	max. 54 mm	av. 51 mm
♀	min. 57 mm	max. 62 mm	av. 60.2 mm

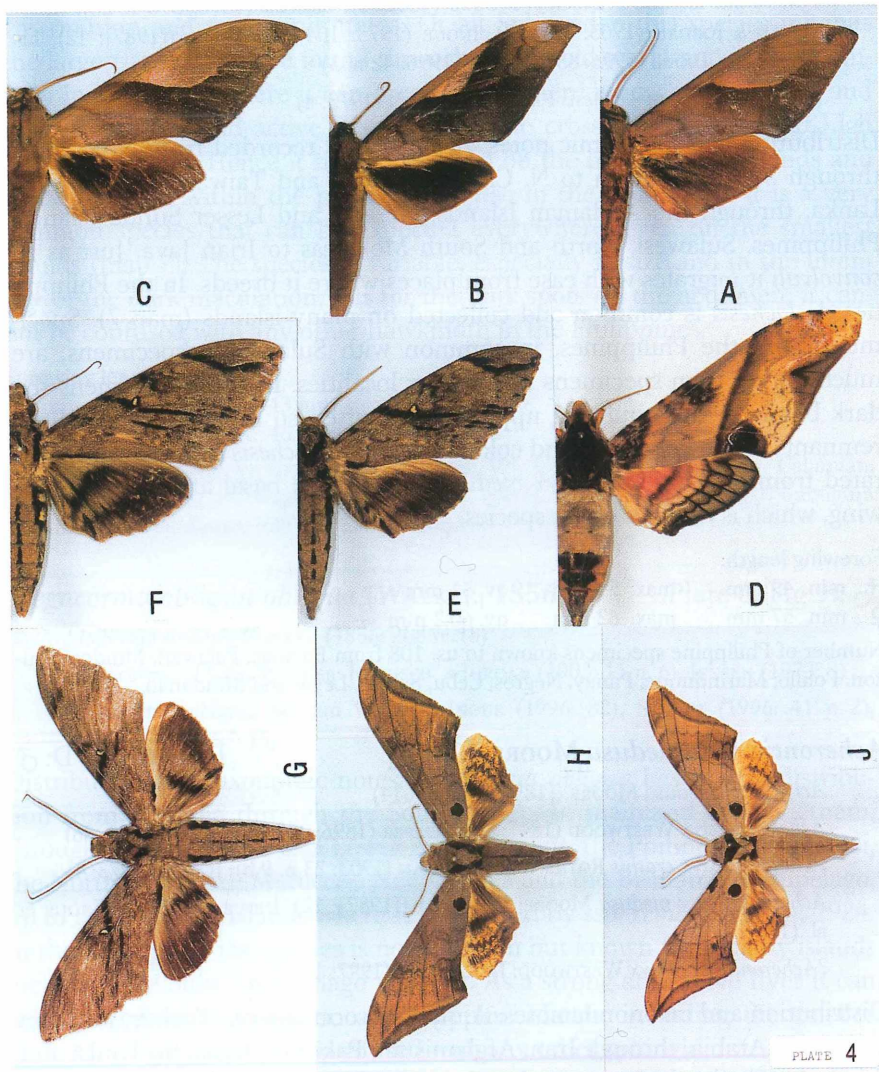
Number of Philippine specimens known to us: 108 from Balabac, Palawan, Mindoro, Luzon, Polillo, Marinduque, Panay, Negros, Cebu, Samar, Leyte and Mindanao.

***Acherontia styx medusa* MOORE, [1858]**

Plate 6, Fig. D: ♂

Acherontia medusa MOORE ([1858]: 267 n. 614)*Acherontia styx* WESTWOOD (1847: 88); SEMPER (1896: 390 n. 19), LIN (1990: 86)*Acherontia styx crathis* ROTHSCHILD & JORDAN (1903: 23 n. 9 b); JENSEN (1973: 4)*Acherontia styx medusa* MOORE: D'ABRERA ([1987]: 12), INOUE (1996: 83), INOUE et al. (1997: 17)?*Acherontia styx styx* WESTWOOD: INOUE et al. (1997: 16)

Distribution and taxonomic notes: *A. styx styx* occurs from Turkey, Jordania and Saudi Arabia, through Iran, Afghanistan, Pakistan, India, Sri Lanka and Burma to Thailand. *A. styx medusa* is known from Japan and China, southwards through the Indochina Peninsula to peninsular Malaysia and from there over Sumatra, Java, Borneo, the Lesser Sunda Islands and Sulawesi to the Philippines and the Southern Moluccas. As *A. lachesis* it migrates from localities where it breeds well. In the Philippines *A. styx medusa* is less com-



mon than *A. lachesis* and not yet found on Mindanao and the Sulu Archipelago (map 7). *A. styx medusa* can easily be distinguished from *A. lachesis* by the hindwing upperside, which lacks the dark basal patch of that species. INOUE et al. (1997: 17) record *A. styx styx* from Palawan and *A. styx medusa* from Borneo and the Philippines. We have never seen any specimen of *A. styx styx* originating from the southeast Asian archipelago and from Palawan, from where we have a reasonable series, we know only *A. styx medusa*.

Forewing length:

♂	min. 45 mm	max. 50 mm	av. 47.7 mm
♀	min. 53 mm	max. 55 mm	av. 54 mm

Number of Philippine specimens known to us: 20 from Balabac, Palawan, Luzon, Panay, Negros, Cebu and Leyte.

Meganoton nyctiphanes (WALKER, 1856)

Plate 6, Fig. E: ♀

Macrosila nyctiphanes WALKER (1856: 209 n. 16)

Meganoton nyctiphanes WALKER: BOISDUVAL ([1875]: 59 n. 1), ROTHSCCHILD & JORDAN (1903: 35 n. 15), ROTHSCCHILD & JORDAN (1907: 13), SEITZ (1928: 528), D'ABRERA ([1987]: 14), INOUE (1996: 84), INOUE et al. (1997: 19)

Pseudosphinx nyctiphanes WALKER: PAGENSTECHER (1890: 2 n. 2), SEMPER (1896: 405 n. 53)

Distribution and taxonomic notes: *M. nyctiphanes* occurs from N. India throughout the S.E. Asian mainland up to Vietnam, and in Sri Lanka, the Andaman Islands, Sumatra, Borneo and in the Philippines on Balabac and Palawan (map 8). Everywhere the species appears to be very rare. In Palawan the species could be confused with *M. rufescens thielei*, from which it can be distinguished by the hindwing upperside, which bears a median band of arrow-like yellow spots in *M. nyctiphanes*.

Forewing length:

♂	min. 56 mm	max. 56 mm	av. 56 mm
♀	min. 58 mm	max. 58 mm	av. 58 mm

Number of Philippine specimens known to us: 2 from Balabac and Palawan.

Colour plate 4

Fig. A: *Clanis negritensis* ♂ (holotype), Negros, nr. Mambucal, 17 viii. 1987 Fig. B: *Clanis stenosema* ♂, Palawan, Salakot, Napsan, 330 m, 8. viii. 1996. Fig. C: *Clanis surigaoensis* ♂, Samar, Bagacay, 325 m, 12. iv. 1986. Fig. D: *Amplypterus panopus mindanaoensis* ♀, Samar, Bagacay, 300 m, 8. iv. 1979. Fig. E: *Meganoton rufescens thielei* ♂, Palawan, Languan, 200 m, 6. vii. 1988. Fig. F: *Meganoton rufescens philippinensis* ♀, W Leyte, Baybay, Visca, 6. xii. 1980. Fig. G: *Meganoton rufescens philippinensis* ♂, S Leyte, St Bernard, Catmon, 165 m, 12. iii. 1979. Fig. H: *Ambulyx wilemani* ♀, Samar, Bagacay, 250 m, 10. viii. 1979. Fig. I: *Ambulyx wilemani* ♂, N Luzon, Ifugao, Banaue, 1, 150 m, 19. ix. 1988.

Meganoton rufescens* BUTLER, 1875Meganoton rufescens* BUTLER (1875: 260)***Meganoton rufescens philippinensis* CLARK, 1938**

Plate 4, Fig. F: ♀; Fig. G: ♂

Meganoton rufescens rufescens BUTLER, 1875: ROTHSCHILD & JORDAN (1903: 37 n. 16 a), ROTHSCH. & JORDAN (1907: 13), SEITZ (1928: 528), D'ABRERA ([1987]: 16)*Meganoton rufescens* BUTLER: MELL (1922: 30), LIN (1989: 6), LIN (1990: 86)*Meganoton rufescens philippinensis* CLARK (1938: 37); INOUE (1996: 85), SCHÜTZ (1996: 42 n. 4), INOUE et al. (1997: 19)

Distribution and taxonomic notes: *M. rufescens* s. l. always is a rare species, but occurs in a vast area, stretching from N. India, through S. China, Burma, Thailand and peninsular Malaysia, over the Andaman Islands, the whole of Indonesia and the Philippines to N.E. Australia. The number of eight subspecies described from this area suggests that the species is not an active migrant, and therefore not capable of regular exchange of genetic material between populations. *M. rufescens philippinensis* is now known from several of the major islands in the Philippines (map 8). It differs from the Sundanian *M. rufescens thielei* in having a distinct lighter discal band in the hindwings and the termen of the wings usually being more strongly undulated. D'ABRERA records occurrence of this species in the Sulu Archipelago. Though *M. rufescens* could be expected there we have never seen such specimens and therefore believe this record to be an erroneous interpretation of the collecting locality of the old Sula (*nec* Sulu!) specimen published by ROTHSCHILD & JORDAN (1903: 37).

Forewing length:

♂	min. 57 mm	max. 57 mm	av. 57 mm
♀	min. 69 mm	max. 72 mm	av. 70.4 mm

Number of Philippine specimens known to us: 8 from Luzon, Panay, Samar, Leyte and Mindanao.

***Meganoton rufescens thielei* HUWE, 1906**

Plate 4, Fig. E: ♂

Meganoton thielei HUWE (1906: 316)

Distribution and taxonomic notes: *M. rufescens thielei* is the subspecies from Sundaland. It is known from S. Thailand, peninsular Malaysia, Sumatra, Java, Borneo and Flores. This is the subspecies flying in Palawan (map 8). It differs from the Philippinian ssp. *philippinensis* in lacking the lighter discal band in the hindwing and in the termen of the wings being less undulated.

Both forms of *M. rufescens* could be confused with brown forms of *Psilogramma menephron*. In *M. rufescens*, however, the base of the rearwing upperside is always lighter than the apex.

Forewing length:

♂ 64 mm

Number of Philippine specimens known to us: 2 from Palawan.

Poliana albescens INOUE, 1996

Plate 6, Fig. H: ♂

Poliana albescens INOUE (1996: 85)

Distribution and taxonomic notes: This species was discovered in South Mindanao (map 8) in 1985.

Forewing length:

♂ 47 mm

Number of Philippine specimens known to us: 2 from Mindanao.

Psilogramma menephron menephron (CRAMER, 1780)

Plate 6, Fig. G: ♂; plate 18, Fig. K: ♂

Sphinx menephron CRAMER (1780: 164)

Macrostila [sic] *discistriga* WALKER, 1856: SEMPER (1867: 699 n. 8)

Diludia discistriga WALKER: PAGENSTECHE (1890: 2 n. 1)

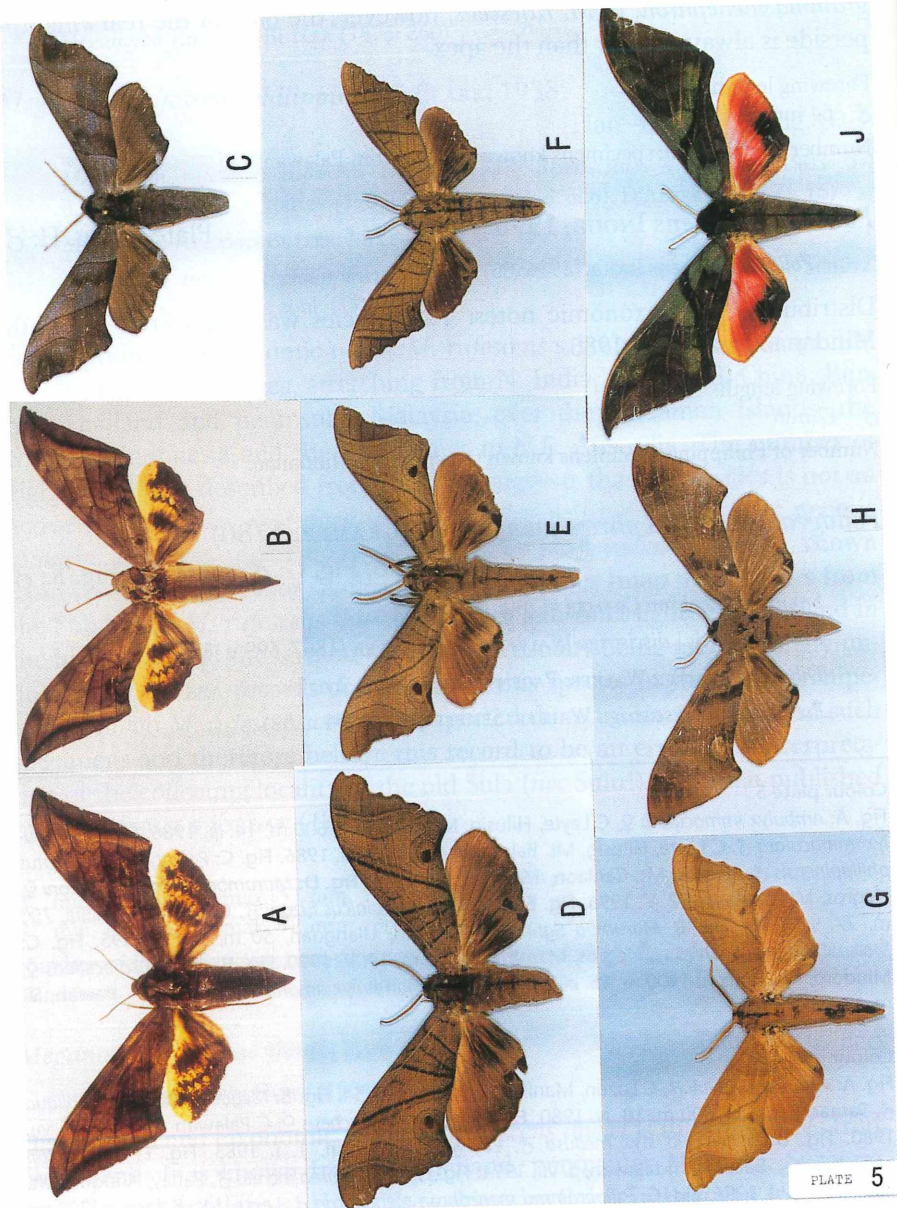
Pseudosphinx discistriga WALKER: SEMPER (1896: 404 n. 52)

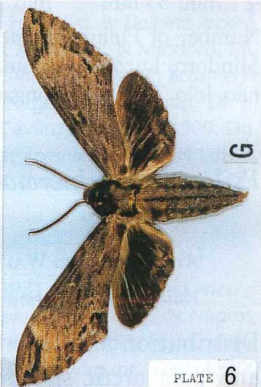
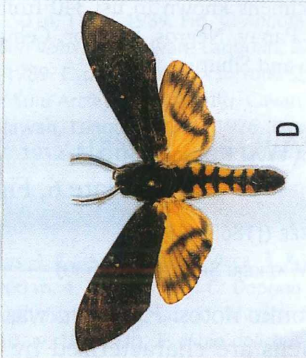
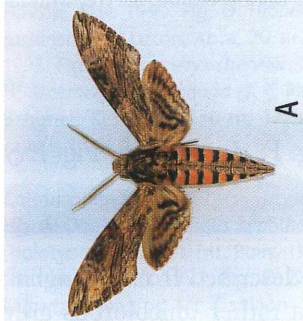
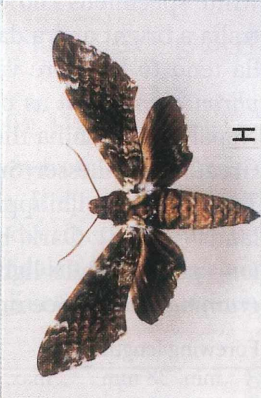
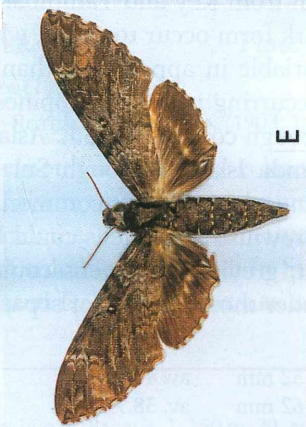
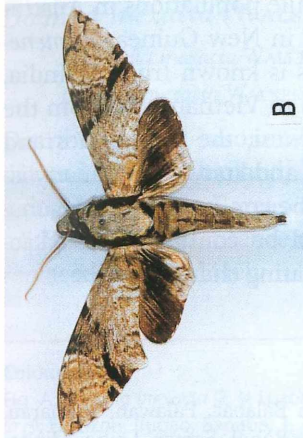
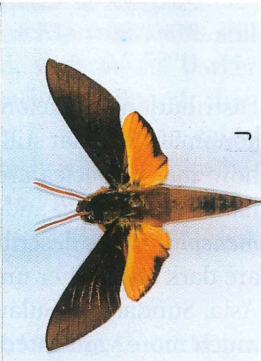
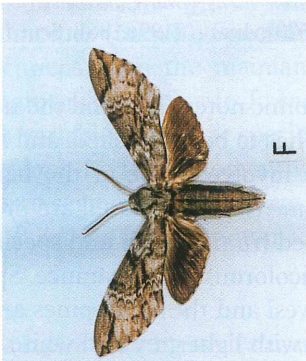
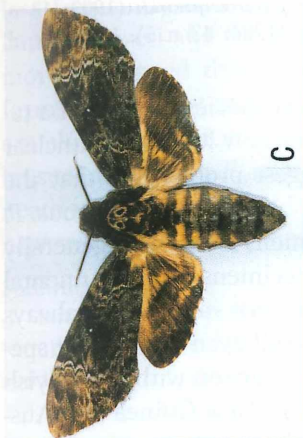
Colour plate 5

Fig. A: *Ambulyx immaculata* ♀, C Leyte, Hilusig, Mt. Balocaue, 600 m, 14. III. 1986. Fig. B: *Ambulyx immaculata* ♂, C Leyte, Hilusig, Mt. Balocaue, 600 m, 9. III. 1986. Fig. C: *Polyptychus trilineatus philippinensis* ♂, Negros, Mt. Canlaon, 165 m, 13. X. 1985. Fig. D: *Marumba amboinicus luzoni* ♀, Negros, Mt. Canlaon, 12. V. 1996. Fig. E: *Marumba amboinicus luzoni* ♂, Cebu, Minglanilla, 700 m, 27. VI. 1985. Fig. F: *Marumba tigrina* ♂, Palawan, Ulanguan, 50 m, 1. VIII. 1995. Fig. G: *Marumba dyras javanica* ♂, Negros, Mambucal, 250 m, 19. V. 1990. Fig. H: *Daphnusa ocellaris* ♀, Mindoro, Mt. Halcon, 1400 m, 18. IX. 1996. Fig. I: *Callambulyx amanda* ♀, C Palawan, Irawan, 50 m, 14. VIII. 1996.

Colour plate 6

Fig. A: *Agrilus convolvuli* ♂, C Luzon, Manila, 5 m, 13. VIII. 1954. Fig. B: *Megacorma obliqua obliqua* ♂, Samar, Bagacay, 600 m, 10. IV. 1980. Fig. C: *Acherontia lachesis* ♀, C Palawan, Languan, 6. VII. 1980. Fig. D: *Acherontia styx medusa* ♂, Palawan, Binduyan, 1. I. 1983. Fig. E: *Meganoton nyctiphanes* ♀, Balabac, Indalawan, 5. VII. 1994. Fig. F: *Psilogramma increta* ♂, Panay, Antique, Mt. Madja-as, 7. II. 1996. Fig. G: *Psilogramma menephron menephron* ♂, Leyte, Mt. Balocaue, 700 m, 1. IX. 1984. Fig. H: *Poliana albescens* ♂ (holotype), Mindanao, S Cotabato, Maitum, Motoklot, 650 m, 11. VIII. 1985. Fig. I: *Gnathothlibus erotus erotus* ♂, S Palawan, nr. Brookes Point, 20. IV. 1990.





Psilogramma menephron CRAMER: JENSEN (1973: 4), LIN (1990: 86)

Psilogramma menephron menephron CRAMER: ROTHSCHILD & JORDAN (1903: 43 n. 21 b), SEITZ (1928: 529), INOUE (1996: 86), SCHÜTZ (1996: 43 n. 5), INOUE et al. (1997: 22)

Distribution and taxonomic notes: This and the next species are part of a taxonomic knot that still has to be unravelled, and for now it is totally unclear how many species are involved. One of the biggest problems is that the names *menephron* and *incretata* as now used are probably both ambiguous. *P. menephron* was described from Ambon and specimens from there generally are dark and rather unicolorous in appearance. Specimens from continental Asia, Sundaland, Sulawesi and the Philippines are very variable but always much more variegated with light grey and white. Still even the lightest specimens from there are to be considered dark in comparison with the greyish white specimens known from Key and Tanimbar. In New Guinea and Australia a bright and a dark form occur together, while populations in Australia tend to be more variable in appearance than in New Guinea. *P. menephron menephron* as occurring in the Philippines is known from N. India, Nepal and S. China through continental S.E. Asia to Vietnam and from the Greater and Lesser Sunda Islands through Sulawesi, the Philippines and Taiwan. In the Philippines the species is common and known from many islands (map 8). Dark, brownish specimens could be confused with *Meganoton* species, while light, greyish specimens could be confused with *Psilogramma incretata*. See under those species for separating characteristics.

Forewing length:

♂	min. 38 mm	max. 52 mm	av. 47.4 mm
♀	min. 53 mm	max. 62 mm	av. 58.9 mm

Number of Philippine specimens known to us: 340 from Balabac, Palawan, Dumaran, Mindoro, Luzon, Masbate, Panay, Negros, Siquijor, Cebu, Bohol, Samar, Leyte, Mindanao, Jolo, Tawitawi, Bongao and Sibutu.

Psilogramma incretata (WALKER, [1865])

Plate 6, Fig. F: ♂; plate 18, Fig. I: ♀

Anceryx incretata WALKER ([1865]: 36)

Psilogramma incretata WALKER: SEITZ (1928: 530)

Distribution and taxonomic notes: *P. incretata* was described from Shanghai, and palaeartic specimens are characterized by a rather unicolorous grey ground colour. Specimens from tropical continental Asia referred to this species are usually slightly larger and a little more variegated than palae-

arctic specimens. In the southeast Asian archipelago the species is much less frequently encountered than *P. menephron* and known from Sundaland, Sulawesi and the Philippines (map 8). Specimens from there are still more variegated than specimens from the mainland, with in the darker forms a tendency to be confusingly similar to *P. menephron*, though they are always smaller and less variable than that species. *P. increta* can easily be separated from *P. menephron* by the abdomen which is pure white beneath in at least the first three segments in *P. increta* and never so in *P. menephron*. In the Philippines *P. increta* is uncommon.

Forewing length:

○ min. 38 mm max. 42 mm av. 39.5 mm

Number of Philippine specimens known to us: 10 from Palawan, Mindoro, Luzon, Negros and Panay.

Dolbina inexacta (WALKER, 1856)

Plate 7, Fig. A: ♀; Fig. B, ♂

Macrosila inexacta WALKER (1856: 208 n. 14)

Dolbina inexacta WALKER: ROTHSCHILD & JORDAN (1903: 160 n. 128)

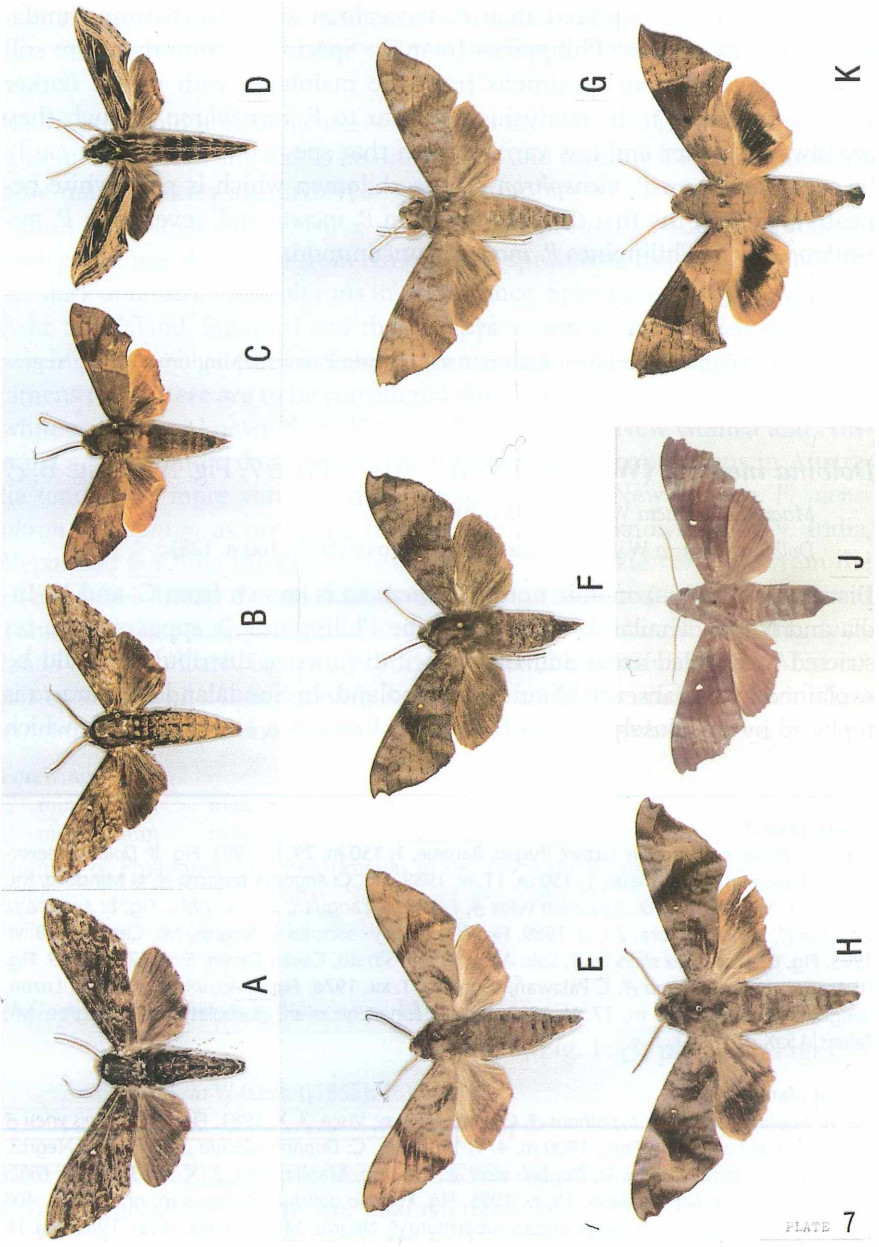
Distribution and taxonomic notes: *D. inexacta* is known from C. and N. India and Nepal, Thailand, Taiwan and the Philippines. It appears to be restricted to wooded areas and the known disjunctive distribution could be explained by the absence of suitable woodland. In Sundaland *D. inexacta* is replaced by the closely related *D. krikkeni* ROESLER & KÜPPERS, 1975, which

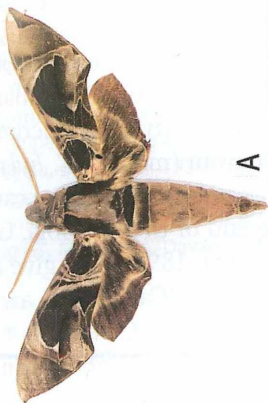
Colour plate 7

Fig. A: *Dolbina inexacta* ♀, N Luzon, Ifugao, Banaue, 1, 150 m, 29. iv. 1991. Fig. B: *Dolbina inexacta* ♂, N Luzon, Ifugao, Banaue, 1, 150 m, 11. iv. 1989. Fig. C: *Angonyx testacea* ♂, N Mindoro, Mt. Malcon, 4. iv. 1990. Fig. D: *Hippotion velox* ♂, Palawan, Languan, 27. vii. 1995. Fig. E: *Acosmeryx castanea* ♂, N Luzon, Abra, 20. iii. 1989. Fig. F: *Acosmeryx socrates* ♀, Negros, Mt. Canlaon, 28. vi. 1993. Fig. G: *Acosmeryx shervillii* ♂, Sulu Archipelago, Sibutu, Cavan Cavan, 5 m, 12. ii. 1989. Fig. H: *Acosmeryx pseudonaga* ♂, C Palawan, Languan, 1. xii. 1976. Fig. I: *Acosmeryx* sp. ♀, N Luzon, Benguet, Klondyke, 250 m, 17. V. 1912. Fig. K: *Eurypteryx alleni* ♂ (holotype), S Negros, Mt. Talinis, 15. X. 1988.

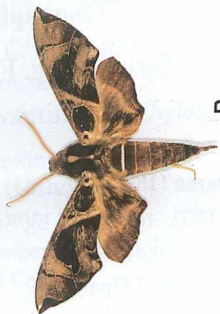
Colour plate 8

Fig. A: *Daphnis hypothous hypothous* ♂, C Leyte, Baybay, Visca, 3. X. 1981. Fig. B: *Daphnis vriesi* ♂ (holotype), N Luzon, Mt. Polis, 1900 m, 4. V. 1988. Fig. C: *Daphnis placida placida* ♂, N Negros, Mambucal, 7. xi. 1992. Fig. D: *Daphnis nerii* ♂, C Luzon, Manila, 5 m, 3. X. 1953. Fig. E: *Elibia linigera* ♂, Negros, Mt. Canlaon, 10. iv. 1995. Fig. F: *Elibia dolichus* ♂, Palawan, nr. Salakot, 400 m, 18. iii. 1996. Fig. G: *Acosmeryx anceus subdentata* ♂, Negros, Mt. Canlaon, 16. ix. 1985. Fig. H: *Cechenena subangustata* ♂, Balabac, Indalawan, 28. iii. 1994. Fig. I: *Cechenena pollux* ♀, S Palawan, Mantalingajan, 4. iv. 1994.





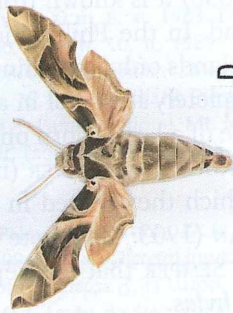
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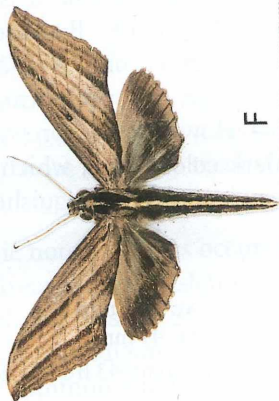
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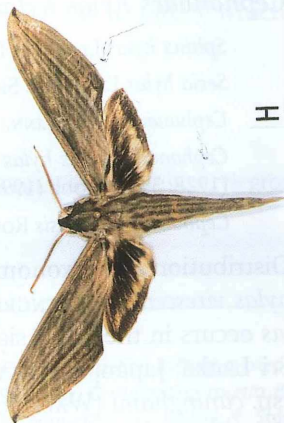
D



E



F



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G



J

till now is known from Sumatra and Borneo and might enter the Philippines in Palawan. In the Philippines *D. inexacta* is not common and known from Luzon and Mindanao only (map 8). Because of its almost unicolorous deep brown hind wings, ornamented only with a black tornal patch and a black and white alternated fringe, the species cannot be confused with any other hawkmoth in the area. However, the forewing upperside varies somewhat in intensity of the dark colouration, which in some specimens is almost black. From *D. krikkeni* it can be distinguished by slightly different genitalia.

Forewing length:

♂	min. 32 mm	max. 36 mm	av. 34.2 mm
♀	min. 41 mm	max. 41 mm	av. 41 mm

Number of Philippine specimens known to us: 43 from Luzon and Mindanao.

Cephonodes hylas hylas (LINNAEUS, [1771]) Plate 16, Fig. F: ♂

Sphinx hylas LINNAEUS ([1771]: 539)

Sesia hylas LINNAEUS: SEMPER (1867: 700 n. 16)

Cephonodes hylas LINN.: HÜBNER ([1819]: 131 n. 1402), SEMPER (1896: 407 n. 61)

Cephonodes hylas hylas LINNAEUS: ROTHSCHILD & JORDAN (1903: 468 n. 395 b), SEITZ (1928: 544), INOUE (1996: 93), INOUE et al. (1997: 61)

Cephonodes lifuensis ROTHSCHILD & JORDAN, 1894 [sic]: LIN (1989: 7 [?partim])

Distribution and taxonomic notes: *C. hylas* is known from a large area. As *C. hylas virescens* WALLENGREN, 1858 it inhabits the African continent; ssp. *hylas* occurs in the S.E. Asian continent from India to China and moreover in Sri Lanka, Japan, the Ryukyu Islands, Taiwan and the Philippines; and as ssp. *cuninghami* (WALKER, 1856) it is known from Flores, Timor, Tanimbar, New Guinea and Queensland. In the Philippines *C. hylas hylas* is uncommon and known from five islands only, including Palawan (map 9). *C. hylas* and *C. picus* are almost completely identical in appearance but *C. hylas* can be recognized by the absence of a large thorn on the end of the foretibia. G. SEMPER (1867: 700) and O. KOCH & A. SEMPER (in SEMPER 1896: 408) give a description of the larvae, which they reared in Luzon on “Cadampel” and “Rosal” ROTHSCHILD & JORDAN (1903: 469) state that SEMPER’s *C. hylas* is *C. picus*, but the specimens of SEMPER that are kept in the Senckenberg-Museum definitely belong to *C. hylas*.

Forewing length:

♂	min. 19 mm	max. 26 mm	av. 21.5 mm
♀	min. 26 mm	max. 28 mm	av. 26.8 mm

Number of Philippine specimens known to us: 11 from Palawan, Mindoro, Luzon, Negros, Camiguin de Mindanao, Mindanao and Tawitawi.

Cephonodes picus (CRAMER, 1777)

Plate 16, fig G: ♂

Sphinx picus CRAMER (1777: 38)

Cephonodes picus CRAMER: KIRBY (1892: 628 n. 9), ROTHSCHILD & JORDAN (1903: 469 n. 398), SEITZ (1929: 545), INOUE (1996: 93), INOUE et al. (1997: 62)

Cephonodes lifuensis ROTHSCHILD & JORDAN, 1894 [sic]: LIN (1989: 7 [?partim])

Distribution and taxonomic notes: *C. picus* occurs in S. India and Sri Lanka, replaces *C. hylas* in the Greater Sunda Islands and then joins this species again in the Philippines, the Lesser Sunda Islands, New Guinea and Queensland, from where it can migrate to remote pacific islands. In the Philippines *C. picus* is not common and known from only five islands (map >). *C. hylas* and *C. picus* are almost completely identical in appearance but *C. picus* can be recognized by a large thorn at the end of the foretibia, which wanting in *C. hylas*.

Forewing length:

♂	min. 24 mm	max. 28 mm	av. 26.8 mm
♀	min. 28 mm	max. 30 mm	av. 29.3 mm

Number of Philippine specimens known to us: 9 from Palawan, Luzon, Sibuyan, Negros and Cebu.

Colour plate 9

Fig. A: *Hippotion echeclus* ♂, C Luzon, Tondo, 10 m, 10. X. 1954. Fig. B: *Hippotion rafflesii dyokeae* ♂ (holotype), S Mindanao, S Cotabato, Mt. Matutum, 22. II. 1996. Fig. C: *Hippotion rosetta* ♂, Negros Or, nr. Valencia, Mt. Talinis, 1000 m, 8. XI. 1983. Fig. D: *Hippotion boerhaviae* ♂, Sulu Archipelago, Bongao, Mt. Kabuyan, 150 m, 10. II. 1989. Fig. E: *Hippotion celerio* ♂, Luzon, Manila, 5 m, 9. VII. 1956. Fig. F: *Hippotion brunneum* ♂, Mindanao, Mt. Apo, 28. II. 1994. Fig. G: *Pergesa actea* ♀, Luzon, Manila, 5 m, 19. I. 1956. Fig. H: *Theretra nessus* ♂, N Palawan, Olanguan, VIII. 1988. Fig. I: *Theretra manilae* ♂, Panay, Antique, Mt. Madja-as, 7. II. 1996. Fig. K: *Theretra sugii* ♂, Mindanao, Davao Norte, Mt. Tagubod, 1800 m, 7. X. 1996.

Colour plate 10

Fig. A: *Theretra clotho clotho* ♂, C Palawan, Solomon, 17. III. 1996. Fig. B: *Theretra rhesus* ♂, Panay, Mt. Madja-as, 500 m, 15. IX. 1996. Fig. C: *Theretra insularis insularis* ♂, Mindoro Or, Mt. Halcon, 18. X. 1993. Fig. D: *Theretra latreillii lucasii* ♂, N Luzon, Ifugao, Kiangan, 750 m, 9. IX. 1985. Fig. E: *Theretra silhetensis intersecta* ♀, C Leyte, Baybay, Visca, 1. VIII. 1961. Fig. F: *Theretra manilae* ♂, Mindoro, Mt. Sinai, 28. I. 1996 (brown form). Fig. G: *Rhagastis acuta* ♂, C Palawan, Salakot Falls, 300 m, 23. III. 1996. Fig. H: *Theretra suffusa* ♀, N Palawan, Olanguan, 1. V. 1988. Fig. I: *Theretra alecto* ♀, Mindanao, Bukidnon, Mt. Kitanglad, 30. III. 1994. Fig. K: *Theretra oldenlandiae oldenlandiae* ♂, Balabac, Indalawan, 1. V. 1995.

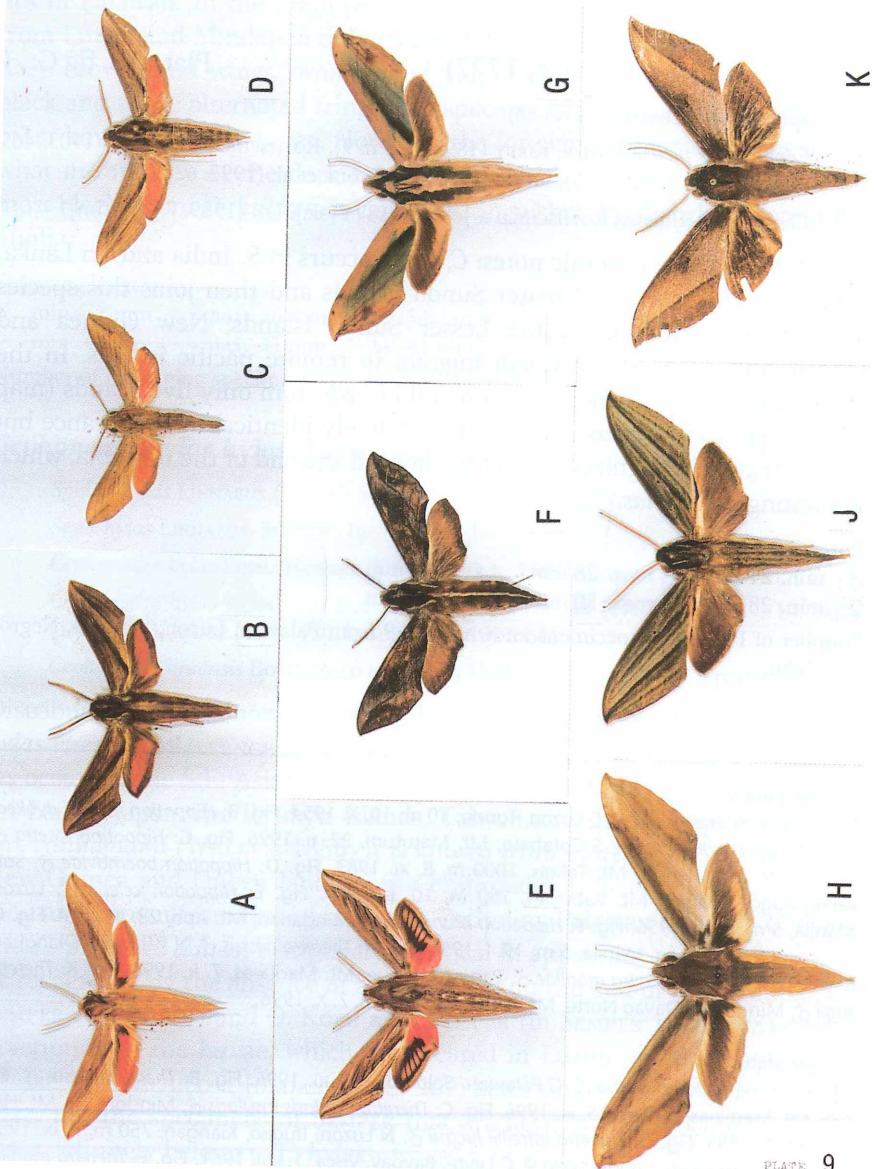


PLATE 9

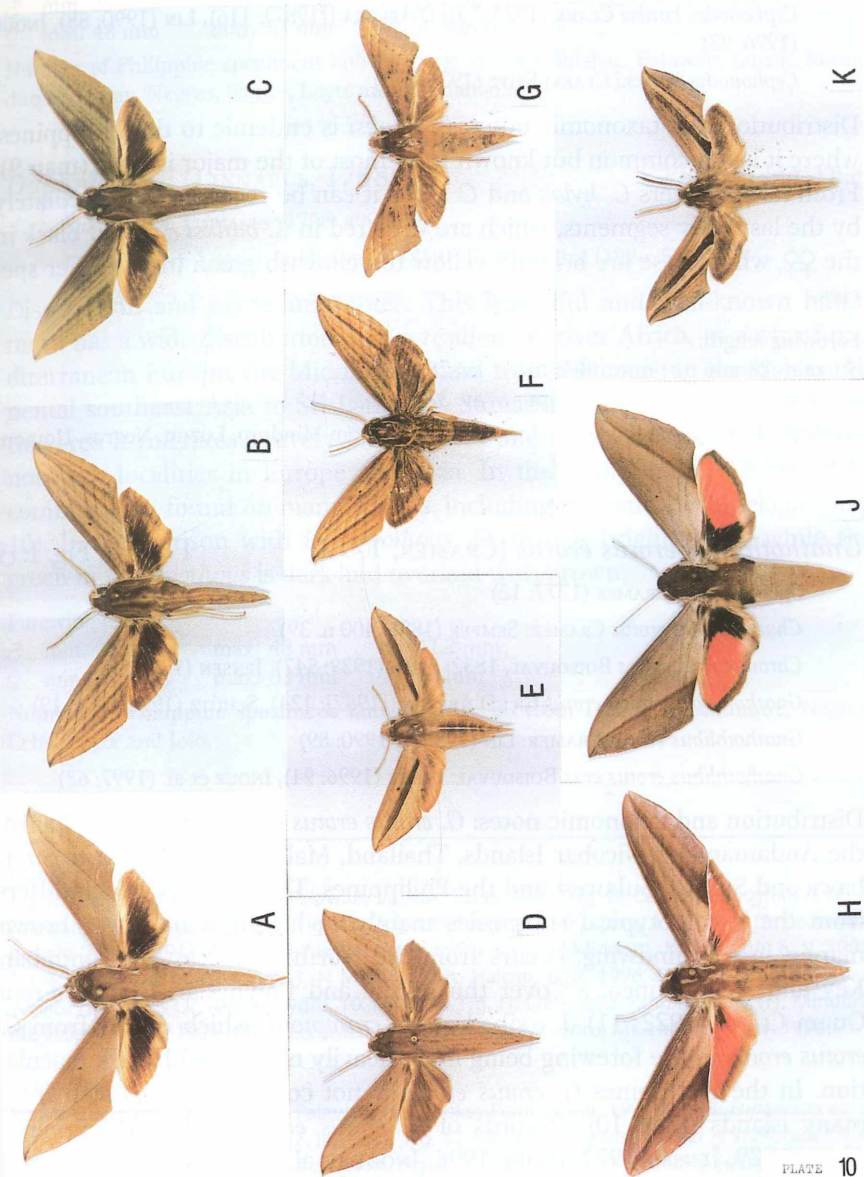


PLATE 10

***Cephonodes banksi* CLARK, 1923**

Plate 16, Fig. H: ♀; Fig. K: ♂

Cephonodes banksi CLARK (1923: 75); D'ABRERA ([1987]: 116), LIN (1990: 88), INOUE (1996: 93)*Cephonodes banksii* CLARK: SEITZ (1929: 571)

Distribution and taxonomic notes: *C. banksi* is endemic to the Philippines, where it is not common but known from most of the major islands (map 9). From its congeners *C. hylas* and *C. picus* it can be recognized immediately by the last body segments, which are wine red in *C. banksi* ♂♂ and black in the ♀♀, while these are brightly yellow to yellowish green in the other species.

Forewing length:

♂	min. 28 mm	max. 30 mm	av. 28.9 mm
♀	min. 31 mm	max. 34 mm	av. 32.4 mm

Number of Philippine specimens known to us: 24 from Mindoro, Luzon, Negros, Homonhon, Leyte and Mindanao.

***Gnathothlibus erotus erotus* (CRAMER, 1777)**

Plate 6, Fig. I: ♂

Sphinx erotus CRAMER (1777: 12)*Chaerocampa erotus* CRAMER: SEMPER (1896: 400 n. 39)*Chromis erotus eras* BOISDUVAL, 1832: SEITZ (1929: 547), JENSEN (1973: 4)*Gnathothlibus erotus erotus* CR.: D'ABRERA ([1987]: 124), SCHÜTZ (1996: 51 n. 19)*Gnathothlibus erotus* CRAMER: LIN (1989: 7, 1990: 89)*Gnathothlibus erotus eras* BOISDUVAL: INOUE (1996: 94), INOUE et al. (1997: 62)

Distribution and taxonomic notes: *G. erotus erotus* is known from Sri Lanka, the Andaman and Nicobar Islands, Thailand, Malacca, Sundaland to Sumbawa and Sumba, Sulawesi and the Philippines. The ssp. *eras*, which differs from the nominotypical subspecies mainly in having a narrower brown margin in the hindwing, occurs from the North Moluccas via Tanimbar, Key and New Guinea, all over the Pacific and Polynesian Islands. From Guam CLARK (1922: 11) described a ssp. *cramptoni*, which differs from *G. erotus erotus* in the forewing being more heavily marked with dark maculation. In the Philippines *G. erotus erotus* is not common, but known from many islands (map 10). Records of *G. erotus eras* from the Philippines (SEITZ 1929, JENSEN 1973, INOUE 1996, INOUE et al. 1997) are based on misidentification.

Forewing length:

	min. 39 mm	max. 43 mm	av. 40.2 mm
♂	min. 48 mm	max. 53 mm	av. 50.3 mm

Number of Philippine specimens known to us: 38 from Balabac, Palawan, Luzon, Marinduque, Panay, Negros, Samar, Leyte and Mindanao.

Daphnis nerii (LINNAEUS, 1758)

Plate 8, Fig. D: ♂

Sphinx nerii LINNAEUS (1758: 490 n. 5)

Daphnis nerii LINNAEUS: HÜBNER ([1819]: 134), SCHÜTZ (1996: 51 n. 20)

Distribution and taxonomic notes: This beautiful and well-known hawkmoth has a wide distribution. It is a resident all over Africa, in parts of mediterranean Europe, the Middle East, and from Afghanistan through continental southeast Asia to Sri Lanka, N. Sumatra and the Philippines. From this area it migrates actively to the north and has been collected in many northern localities in Europe and Asia. In the Philippines *D. nerii* is not common, but found on many islands, including the Sulu Archipelago (map 10). In comparison with *D. hypothous*, *D. nerii* is bright green, while the green in *D. hypothous* is dark and overlaid with brown.

Forewing length:

♂	min. 31 mm	max. 48 mm	av. 41.2 mm
♀	min. 47 mm	max. 53 mm	av. 50 mm

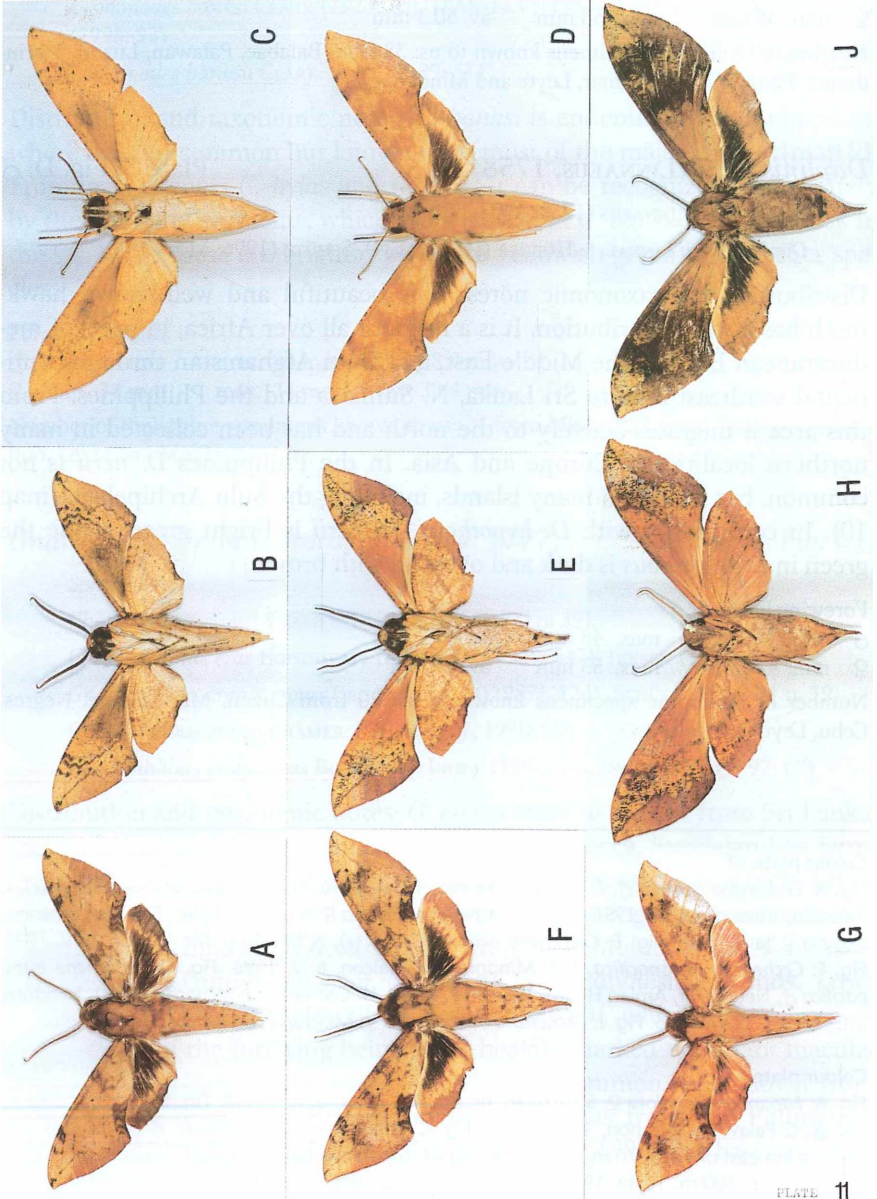
Number of Philippine specimens known to us: 20 from Luzon, Marinduque, Negros, Cebu, Leyte and Jolo.

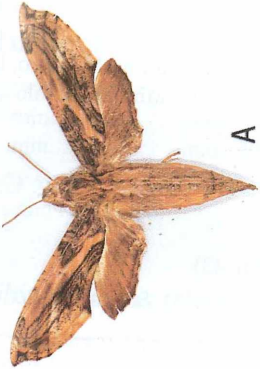
Colour plate 11

Fig. A: *Cechenena aegrota* ♂, C Palawan, Irawan, 16. ix. 1996. Fig. B: *Cechenena aegrota* ♂ (r), C Palawan, Irawan, 16. ix. 1996. Fig. C: *Cechenena aegrota* ♀ (r), Java, 1938. Fig. D: *Cechenena aegrota* ♀, Java, 1938. Fig. E: *Cechenena transpacificica* ♂ (r), N Mindoro, Mt. Halcon, 6. V. 1996. Fig. F: *Cechenena transpacificica* ♂, N Mindoro, Mt. Halcon, 6. V. 1996. Fig. G: *Cechenena transpacificica* ♂, Negros Or, Amlan Hydro, 10. vii. 1978. Fig. H: *Cechenena transpacificica* ♀ (r), Mindoro, Mt. Halcon, 15. iv. 1996. Fig. I: *Cechenena transpacificica* ♀, Mindoro, Mt. Halcon, 15. iv. 1996.

Colour plate 12

Fig. A: *Eupanacra variolosa* ♀, S Palawan, nr. Brookes Point, 8. viii. 1994. Fig. B: *Eupanacra variolosa* ♂, C Palawan, Solomon, 17. iii. 1996. Fig. C: *Eupanacra busiris schuetzi* ♂ (holotype), CW Leyte, 3 km east of Visca, 70 m, 5. V. 1994. Fig. D: *Eupanacra busiris schuetzi* ♀ (paratype), Leyte, Mt. Balocau, 600 m, 10. iii. 1986. Fig. E: *Eupanacra busiris busiris* ♂, Palawan, Ulanguan, 24. ii. 1995. Fig. F: *Eupanacra tiridates* ♂, Luzon, Manila, 5 m, 2. xi. 1953. Fig. G: *Eupanacra tiridates* ♀, Luzon, Manila, 5 m, 2. X. 1956. Fig. H: *Eupanacra elegantulus* ♂, Mindoro, Mt. Halcon, 2. V. 1996. Fig. I: *Eupanacra elegantulus* ♀, Negros, Mt. Canlaon, 4. ix. 1996.





A



B



C



G



F



D



J



H



E

***Daphnis hypothous hypothous* (CRAMER, 1779)** Plate 8, Fig. A: ♂*Sphinx hypothous* CRAMER (1779: 165)*Daphnis hypothous* [sic] CRAMER: HÜBNER ([1819]: 134)*Daphnis hypothous* CRAMER: SEMPER (1896: 401 n. 42)*Deilephila hypothous hypothous* CRAMER: ROTHSCHILD & JORDAN (1903: 510 n. 428 a), SEITZ (1929: 547), INOUE (1973: 116)*Daphnis hypothous hypothous* CRAMER: JENSEN (1973: 4), INOUE (1996: 94), SCHÜTZ (1996: 51 n. 21), INOUE et al. (1997: 64)

Distribution and taxonomic notes: *D. hypothous hypothous* is known from the Ryukyu Islands and Taiwan, all over continental southeast Asia, westwards to the Middle East and from Sri Lanka, the Greater and Lesser Sunda Islands, the Philippines, Sulawesi, the North and South Moluccas to Tanimbar and Key. Eastwards from here it is replaced by ssp. *pallescens* BUTLER, 1875, which to the east reaches Vanuatu. In the Philippines *D. hypothous hypothous* is very common and known from many islands including Palawan and the Sulu Archipelago (map 10). The species can be confused with all its congeners; from *D. nerii* it differs in having a dark green to brown ground colour, which is bright green in *nerii*; from *D. placida* it differs in being much larger and the bright antemedian band on the forewing being narrower; from *D. vriesi* it can best be distinguished by the subapical dark line that in *D. hypothous* widenes as it reaches costa and in *D. vriesi* bends basewards.

Forewing length:

♂ min. 42 mm max. 48 mm av. 46.1 mm

♀ min. 48 mm max. 55 mm av. 52 mm

Number of Philippine specimens known to us: 166 from Balabac, Palawan, Mindoro, Luzon, Polillo, Panay, Negros, Cebu, Bohol, Samar, Homonhon, Leyte, Mindanao, Jolo and Sanga Sanga.

***Daphnis placida placida* (WALKER, 1856)** Plate 8, Fig. C: ♂*Darapsa placida* WALKER (1856: 186 n. 8)*Daphnis angustans* FELDER, [1874]; SEMPER (1896: 401 n. 43)*Daphnis andamana* DRUCE, 1882; PAGENSTECHER (1890: 2 n. 3), SEMPER (1896: 401 n. 44)*Deilephila placida placida* WALKER: ROTHSCHILD & JORDAN (1903: 512 n. 430 a), SEITZ (1929: 548)*Daphnis placida* WALKER: LIN (1989: 7), LIN (1990: 89)*Daphnis placida placida* WALKER: D'ABRERA ([1987]: 128), INOUE (1996: 95), INOUE et al. (1997: 64)

Distribution and taxonomic notes: *D. placida* s.l. is known from the Andaman Islands, Thailand and peninsular Malaysia, all over Indonesia, the Philippines and Australia (ssp. *placida*) and from there eastwards to the Solomon Islands (ssp. *salomonis* (ROTHSCHILD & JORDAN, 1906)), New Caledonia and the Royalty Islands (ssp. *rosacea* ROTHSCHILD, 1894), Fiji (ssp. *toronia* DRUCE, 1882) and Samoa (ssp. *steffanyi* (CLARK, 1927)). In the Philippines *D. placida placida* is fairly common and known from many islands, including Palawan and the Sulu Archipelago (map 10). Dark specimens could be confused with small specimens of *D. hypothous* and *D. vriesi*. *D. placida* can be distinguished by having a much broader antemedian bright band on the forewing.

Forewing length:

♂	min. 31 mm	max. 37 mm	av. 33.3 mm
♀	min. 37 mm	max. 41 mm	av. 39.1 mm

Number of Philippine specimens known to us: 28 from Palawan, Mindoro, Luzon, Marinduque, Sibuyan, Panay, Negros, Cebu, Samar, Leyte, Mindanao, Tawitawi and Sibutu.

Daphnis vriesi HOGENES & TREADAWAY, 1993

Plate 8, Fig. B: ♂

Daphnis vriesi HOGENES & TREADAWAY (1993: 538 f. 3, 5); INOUE (1996: 94)

Distribution and taxonomic notes: *D. vriesi* is endemic to the Philippines and closely related to *D. hayesi* CADIOU, 1988 from Sulawesi. This species appears to be quite rare in the Philippines and currently known from few islands (map 10). Undoubtedly it will be discovered on more. *D. vriesi* could be confused with *D. hypothous* and *D. placida*. The differences are explained under those species.

Forewing length:

♂	min. 35 mm	max. 38 mm	av. 36.6 mm
♀	min. 38 mm	max. 42 mm	av. 41 mm

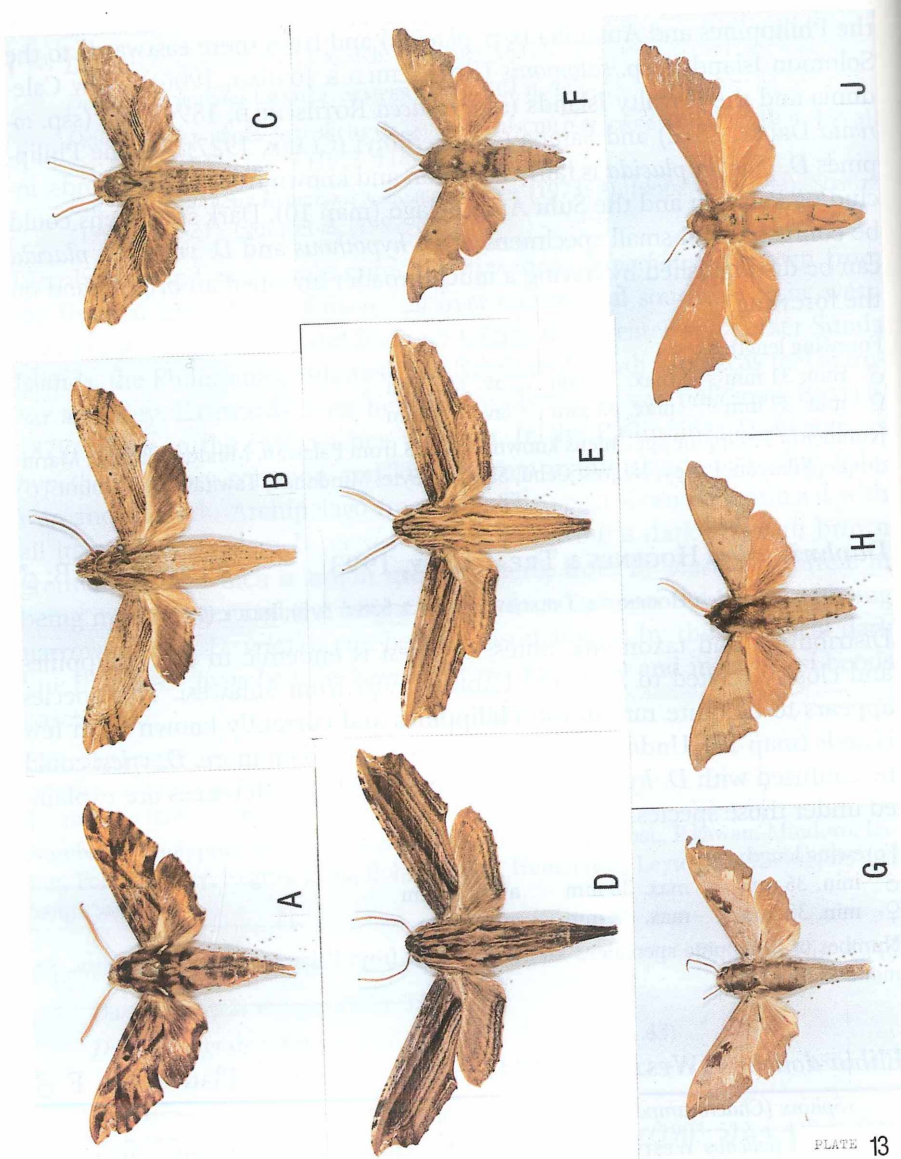
Number of Philippine specimens known to us: 24 from Palawan, N. Luzon, Negros, Samar and Mindanao.

Elibia dolichus (WESTWOOD, 1847)

Plate 8, Fig. F: ♂

Sphinx (*Chaerocampa*) *dolichus* WESTWOOD (1847: 61)

Elibia dolichus WESTWOOD: WALKER (1856: 149), SEMPER (1896: 403 n. 48), ROTHSCCHILD & JORDAN (1903: 521 n. 440, 1907: 99), SEITZ (1929: 549), JENSEN (1973: 6), HOLLOWAY (1987: 148), D'ABRERA ([1987]: 130), INOUE (1996: 95) [partim]; INOUE et al. (1997: 66)



Distribution and taxonomic notes: *E. dolichus* occurs from N. India through continental southeast Asia, from the Natuna Islands, Sumatra, Java and Borneo and from there reaches the Philippines in Palawan and the Tawitawi group of the Sulu Archipelago (map 11). In the Philippines the species is seldom encountered. *E. dolichus* could be confused with the congeneric *E. linigera*, which differs in lacking extra lines between the two thick oblique lines on the forewing. Till now the distribution of the two species appears to be vicariant.

Forewing length:

♂	min. 50 mm	max. 54 mm	av. 51.8 mm
♀	min. 55 mm	max. 55 mm	av. 55 mm

Number of Philippine specimens known to us: 9 from Palawan, Tawitawi and Sibutu.

Elibia linigera BOISDUVAL, [1875], **stat. rev.** Plate 8, Fig. E: ♂

Elibia linigera BOISDUVAL ([1875]: 80); SEMPER (1896: 403 n. 49)

Ampelophaga linigera BOISDUVAL: ROTHSCHILD & JORDAN (1903: 519 n. 438; 1907: 98), SEITZ (1929: 549), D'ABRERA ([1987]: 130), LIN (1990: 89), SCHÜTZ (1996: 52 n. 22), INOUE et al. (1997: 67)

Elibia dolichus linigera OBERTHÜR: SEITZ (1929: 571)

Elibia dolichus linigera [sic] OBERTHÜR: SEITZ (1929: 574)

Elibia dolichus (WESTWOOD, 1847): INOUE (1996: 95) [partim]

Distribution and taxonomic notes: *E. linigera* is endemic in the Philippines where it replaces *E. dolichus*. The species is not common and known from five of the larger islands (map 11). Although closely related, *E. linigera* differs in many aspects from *E. dolichus*. This, perhaps, explains why ROTHSCHILD & JORDAN, even after studying the genitalia, put the two species in different genera, while similarities in the genitalia and general maculation are reason to unite them in one genus. INOUE apparently did not have before him examples of this species when he synonymized it with *E. dolichus*.

Colour plate 13

Fig. A: *Eupanacra treadawayi* ♂ (paratype), N Luzon, Ifugao, Mt. Pulis, 1900 m, 9.–13. II. 1988. Fig. B: *Eupanacra dohertyi dohertyi* ♂, C Palawan, Salakot, 450 m, 19. III. 1996. Fig. C: *Eupanacra malayana* ♂, E Mindanao, Tboli, Salacafe, 500 m, 2. IV. 1985. Fig. D: *Eupanacra cadioui* ♀ (paratype), Leyte, Hilusig, Mt. Balocau, 600 m, 21. II. 1987. Fig. E: *Eupanacra cadioui* ♂ (holotype), N Luzon, Banaue, 1, 150 m, 13. VI. 1988. Fig. F: *Cypa decolor* ♂, N Mindoro, Mt. Halcon, 21. V. 1996. Fig. G: *Empinanga borneensis* ♂, Calamian Group, Busuanga, Malbato, 50 m, 15. IV. 1996. Fig. H: *Cypa claggi* ♂, Mindanao, Mt. Apo, 10. III. 1994. Fig. I: *Cypa decolor* ♀, N Luzon, Ifugao, Banaue, 1150 m, 9. IV. 1989.

The easiest way to distinguish it from *E. dolichus* is by the oblique area bordered by two thick lines in the forewing, which is not filled in with three more, weaker lines, as in that species.

Forewing length:

♂ min. 43 mm max. 48 mm av. 46.7 mm

♀ min. 53 mm max. 53 mm av. 53 mm

Number of Philippine specimens known to us: 12 from North Luzon, Panay, Negros, Samar, Leyte and Mindanao.

Acosmeryx anceus subdentata ROTHSCHILD & JORDAN, 1903

Plate 8, Fig. G: ♂

Acosmeryx anceoides BOISDUVAL ([1875]: 216 n. 2) (partim, Philippines)

Acosmeryx sericeus WALKER: SEMPER (1896: 393 n. 26), SEITZ (1929: 550)

Acosmeryx anceus subdentata ROTHSCHILD & JORDAN (1903: 528 n. 444 a); JENSEN (1973: 6), D'ABRERA ([1987]: 130), INOUE (1996: 95), SCHÜTZ (1996: 52 n. 23), INOUE et al. (1997: 69)

Acosmeryx anceus STOLL, [1781]: LIN (1990: 89)

Distribution and taxonomic notes: *A. anceus subdentata* occurs from N. India and Nepal through the southeast Asian mainland to Vietnam, and in Sumatra, Java, Borneo, the Philippines, Botel Tobago and Sulawesi, and the Lesser Sunda Islands eastwards to Flores. The nominotypical subspecies occurs from the Moluccas to New Guinea and Australia. In the Philippines *A. anceus subdentata* is very common and known from most islands including the Sulu Archipelago (map 12). The species, for its small size, could be confused with small specimens of *A. socrates*. *A. anceus subdentata* is brown in the forewings, with a strong purplish hue and the termen of this wing is strongly angulated in middle. On the underside the wings are reddish brown and variegated by the many strong lines. In comparison with all other *Acosmeryx* species in the Philippines the orange red spots on the ventral side of the abdomen are very large; they almost completely fill the available surface of the sternites. As far as we know *A. sericeus* WALKER, 1856 does not occur in the Philippines. Records of such by BOISDUVAL ([1875]: 2167), SEMPER (1896: 393), ROTHSCHILD & JORDAN (1903: 530, 1907: 100), SEITZ (1929: 550), D'ABRERA ([1987]: 132), and LIN (1989: 7) may be based on misidentification. The two specimens mentioned by SEMPER from Luzon are kept in the Senckenberg-Museum in Frankfurt am Main and belong to *A. anceus subdentata*.

Forewing length:

♂	min. 29 mm	max. 35 mm	av. 31.4 mm
♀	min. 34 mm	max. 37 mm	av. 35 mm

Number of Philippine specimens known to us: 157 from Balabac, Palawan, Calamian, Mindoro, Luzon, Marinduque, Panay, Negros, Cebu, Bohol, Samar, Leyte, Dinagat, Mindanao, Jolo, Tawitawi, Sanga Sanga and Sibutu.

Acosmeryx castanea ROTHSCHILD & JORDAN, 1903 Plate 7, Fig. E: ♂

Acosmeryx castanea ROTHSCHILD & JORDAN (1903: 531 n. 448)

Distribution and taxonomic notes: This species hitherto was known to occur in China, Japan and Taiwan. This range now has been extended into the Philippines. It is one of the rare examples of species that reached the Philippines from the north. *A. castanea* is extremely rare in the Philippines and has only been found in north Luzon (map 12). *A. castanea* can easily be distinguished from all other *Acosmeryx* species in the region, because it lacks the whitish or yellowish discal dot in forewing.

Remark: Though we identified this specimen as *A. castanea* it might very well belong to another closely related species (?*A. pseudomissa* MELL, 1922). For the time being, however, we think that the identification as *A. castanea* is more plausible.

Forewing length:

♂ 41 mm

Number of Philippine specimens known to us: 1 from N-Luzon.

Acosmeryx socrates BOISDUVAL, [1875] Plate 7, Fig. F: ♀

Acosmeryx socrates BOISDUVAL ([1875]: 219 n. 6); SEMPER (1896: 393 n. 27); HOLLOWAY (1987: 149); SCHÜTZ (1996: 53 n. 24)

Distribution and taxonomic notes: The correct interpretation of this species was cleared by HOLLOWAY (1987: 149–150). The range of *A. socrates* is restricted to the Philippines and Sulawesi. In the Philippines it is common and known from many islands, including the Sulu Archipelago and Palawan (map 12). The species is very similar to *A. pseudonaga* and *A. anceus subdentata*. In size *A. socrates* is intermediate between those species. The ground colour of the forewing is dark greyish brown, with a silvery hue, not reddish as in *A. anceus subdentata*. On the dark brown underside of the wings the lines are hardly visible. The orange red spots on the abdominal sternites are usually small.

Forewing length:

♂	min. 29 mm	max. 37 mm	av. 34 mm
♀	min. 37 mm	max. 40 mm	av. 37.8 mm

Number of Philippine specimens known to us: 233 from Palawan, Calamian, Mindoro, Luzon, Panay, Negros, Cebu, Bohol, Samar, Leyte, Mindanao, Tawitawi and Bongao.

Acosmeryx shervillii BOISDUVAL, [1875]

Plate 7, Fig. G: ♂

Acosmeryx shervillii BOISDUVAL ([1875]: 217); HOLLOWAY (1987: 149)

Acosmeryx socrates BOISDUVAL: SEITZ (1929: 550)

Acosmeryx cinerea BUTLER, 1875: JENSEN (1973: 6)

Acosmeryx socrates f. *cinerea* BUTLER: D'ABRERA ([1987]: 132)

Distribution and taxonomic notes: *A. shervillii* occurs from Nepal and N. India through continental southeast Asia to S. China and Vietnam, and in Sri Lanka, Sumatra, Java, Borneo, Sulawesi and the Philippines. In the Philippines the species is somewhat rare and till now known from Balabac and Palawan and from Tawitawi and Sibutu in the Sulu Archipelago (map 12). On Tawitawi *A. shervillii* occurs together with *A. socrates*. *A. shervillii* usually is larger than *A. socrates* and smaller than *A. pseudonaga*. Like in the latter the size of the orange red spots on the ventral side of the abdomen is intermediate between those of *A. socrates* and *A. anceus subdentata*. The spots fill about half of the available surface of the sternites. In comparison with *A. pseudonaga* the underside of the wings of *A. shervillii* is greyish intermingled with dull brass coloured areas, the dark fascia in the forewing upperside from mid costa to tornus is straight and the v-shaped markings on the abdominal tergites are barely visible.

Forewing length:

♂	min. 35 mm	max. 38 mm	av. 36.4 mm
♀	min. 38 mm	max. 45 mm	av. 40.6 mm

Number of Philippine specimens known to us: 33 from Balabac, Palawan, Tawitawi and Sibutu.

Acosmeryx pseudonaga BUTLER, 1881

Plate 7, Fig. H: ♂

Acosmeryx pseudonaga BUTLER (1881: 2); HOLLOWAY (1987: 149)

Acosmeryx socrates BOISDUVAL: JENSEN (1973: 6); LIN (1989: 7)

Acosmeryx socrates f. *socrates* BOISDUVAL: D'ABRERA ([1987]: 132)

Distribution and taxonomic notes: *A. pseudonaga* is known from Thailand and Malacca to S. China and Vietnam, and from Sumatra, Java, Borneo and from the Philippines from Balabac and Palawan (map 12). In Palawan the

species is very rare. *A. pseudonaga* is the largest of the *Acosmeryx* species known from the Philippines. From *A. anceus subdentata* and *A. socrates* it can be distinguished (at least in the ♂) by the size of the orange red spots on abdominal sternites; these are of the same size as in *A. shervillii*. In comparison with *A. shervillii*, *A. pseudonaga* has the underside of the wings brown, intermingled with red areas, the dark fascia in the forewing from mid costa to tornus is bent toward the apex and the v-shaped marks on the abdominal tergites are very prominent.

Forewing length:

♂	42 mm	max. 50 mm	av. 46.1 mm
♀	45 mm	max. 50 mm	av. 48 mm

Number of Philippine specimens known to us: 18 from Balabac and Palawan.

Acosmeryx spec.

Plate 7, Fig. I: ♀

Lepchina tridens OBERTHÜR, 1904 [sic]: D'ABRERA ([1987]: 132 [part.])

Distribution and taxonomic notes: Under the name of *Lepchina tridens*, D'ABRERA pictures a specimen collected on 17 May 1912 in Klondyke (Luzon, subprovince Benguet: map 12), by A. E. WILEMAN. This specimen certainly is not *Lepchina tridens*, but probably a ♀ (not a ♂, as erroneously stated by D'ABRERA) of an undescribed species of *Acosmeryx*. Only if comparable material becomes available, will it be possible to discern more about this specimen.

Forewing length:

♀ 38 mm

Enpinanga borneensis (BUTLER, 1879)

Plate 13, Fig. G: ♂

Angonyx borneensis BUTLER (1879: 261)

Enpinanga borneensis BUTLER: ROTHSCHILD & JORDAN (1903: 546 n. 468)

Distribution and taxonomic notes: *E. borneensis* occurs in Thailand, Malacca, Sumatra, Java, Borneo and in the Philippines, where till now it is only known from Calamianes (map 12). Although a species from lowland habitats it appears to be uncommon almost everywhere (in Brunei it is locally common). In the ♂ the species may be distinguished from *E. vigens* by the larger dark subcostal spot in the forewing in combination with the sinuous dark medial line and the white v-shaped spot between veins R3 and M1, and in the ♀ by the sinuous medial line in forewing, which is straight in *E. vigens*. Sometimes *Enpinanga* ♀♀ can very much resemble ♀♀ of *Eupanacra*

elegantulus. From these, however, they can be separated at once by the small basal spot in the forewing.

Forewing length:

♂ 25 mm

Number of Philippine specimens known to us: 1 from Busuanga in the Calamian group.

***Enpinanga vigens* (BUTLER, 1879)**

Plate 17, Fig. G: ♀

Angonyx vigens BUTLER (1879: 262)

Angonix virens [sic!] BUTLER: SEMPER (1896: 403 n. 50)

Enpinanga vigens BUTLER: ROTHSCHILD & JORDAN (1903: 546 n. 466; 1907: 103); SEITZ (1929: 553); HOLLOWAY (1987: 157); INOUE et al. (1997: 78)

Enpinanga assamensis vigens BUTLER: D'ABRERA ([1987]: 138)

Enpinanga assamensis WALKER, 1856: LIN (1989: 7; 1990: 89)

Distribution and taxonomic notes: *E. vigens* is known from S. Thailand, Malacca, Sumatra, Java, Borneo and the Philippines (map 12). In the ♂ *E. vigens* can be distinguished from *E. borneensis* by the smaller subcostal dark spot in the forewing, and in the ♀ by the straight (but oblique) medial line in forewing, which is sinuous in *E. borneensis* ♀♀. Sometimes *Enpinanga* ♀♀ can very much resemble ♀♀ of *Eupanacra elegantulus*. From these, however, they can be separated at once by the small basal spot in the forewing.

Number of Philippine specimens known to us: 1 from Palawan.

***Eupanacra busiris* (WALKER, 1856)**

Panacra busiris WALKER (1856: 158 n. 6)

***Eupanacra busiris busiris* (WALKER, 1856)**

Plate 12, Fig. E: ♂

Panacra busiris WALKER (1856: 158 n. 6)

Eupanacra busiris busiris WALKER: HOGENES & TREADAWAY (1996: 121)

Distribution and taxonomic notes: *E. busiris busiris* is known from N. India through continental southeast Asia to Vietnam, and from peninsular Malaysia, Sumatra, Java and Borneo in Sundaland and from Balabac and Palawan in the Philippines (map 13). Further *E. busiris atima* (ROTHSCHILD & JORDAN, 1915b) was described from S. India; *E. busiris marina* (ROTHSCHILD & JORDAN, 1915a) from the Andaman Islands; *E. busiris myosotis* CADIOU & HOLLOWAY, 1989 from Sulawesi; and *E. busiris schuetzi* HOGENES & TREADAWAY, 1996 from the Philippines. On Balabac and Palawan *E. busiris busiris* is rare. From ssp. *schuetzi* it can be distinguished by the vivid clear-green patch on the forewing.

Forewing length:

♂ min. 31 mm max. 32 mm av. 31.3 mm

Number of Philippine specimens known to us: 3 from Balabac and Palawan.

Eupanacra busiris schuetzi HOGENES & TREADAWAY, 1996

Plate 12, Fig. C: ♂; Fig. D: ♀

Panacra busiris busiris WALKER: D'ABRERA ([1987]: 134)

Panacra busiris WALKER: LIN (1989: 7; 1990: 89)

Eupanacra busiris ssp.: SCHÜTZ (1996: 53 n. 25)

Eupanacra busiris schuetzi HOGENES & TREADAWAY (1996: 118)

Distribution and taxonomic notes: *E. busiris schuetzi* is known from Leyte, Mindanao and Mindoro (map 13), and will probably be collected in other islands in the Philippines. In this subspecies the green oblique band of the forewing is much overlaid with brown.

Forewing length:

♂ min. 29 mm max. 32 mm av. 30.5 mm

♀ min. 33 mm max. 33 mm av. 33 mm

Number of Philippine specimens known to us: 11 from Mindoro, C-Leyte and S-Mindanao.

Eupanacra variolosa (WALKER, 1856) Plate 12, Fig. A: ♀; Fig. B: ♂

Panacra variolosa WALKER (1856: 156 n. 4)

Distribution and taxonomic notes: *E. variolosa* occurs from North India through continental southeast Asia to Vietnam, in Sumatra, Java and Borneo and reaches the Philippines in South and Central Palawan (map 13), where it is rare as elsewhere within its range. In Palawan the species could be confused with no other *Eupanacra* species for its slender wings and the apex of the forewings, which is much less falcate than in the other species.

Forewing length:

♂ 27 mm

♀ min. 30 mm max. 32 mm av. 31 mm

Number of Philippine specimens known to us: 3 from Palawan.

Eupanacra dohertyi dohertyi (ROTHSCHILD, 1894) Plate 13, Fig. B: ♂

Panacra dohertyi ROTHSCCHILD (1894: 81)

Eupanacra dohertyi dohertyi ROTHSCCHILD: SCHÜTZ (1996: 54 n. 26)

Distribution and taxonomic notes: *E. dohertyi dohertyi* occurs in Thailand, Malacca, Sumatra, Java, Borneo and the Philippines. *E. dohertyi continentalis* GEHLEN, 1930 was described from Assam. In the Philippines *E. dohertyi dohertyi* is known from Palawan (map 13) where it is very rare. The species can be confused with *E. tiridates* (see below) from which it can be distinguished by characters described under that species, and with *E. malayana* (see below) from which it can be distinguished by being usually larger and having a much weaker brown streak on R2 in the forewing.

Forewing length:

♂ min. 28 mm max. 32 mm av. 30 mm

Number of Philippine specimens known to us: 3 from Palawan.

Eupanacra tiridates (BOISDUVAL, [1875])

Plate 12, Fig. F: ♂; Fig. G: ♀; plate 17, Fig. E: ♀

Panacra tiridates BOISDUVAL ([1875]: 286 n. 3); ROTHSCHILD & JORDAN (1903: 538 n. 457; 1907: 101); SEITZ (1929: 552); D'ABRERA ([1987]: 135)

Panacra tridates [sic] BOISDUVAL: LIN (1990: 89)

Chaerocampa tiridates BOISDUVAL: SEMPER (1896: 398 n. 36)

Eupanacra tiridates BOISDUVAL: INOUE (1996: 96); SCHÜTZ (1996: 54 n. 27)

Distribution and taxonomic notes: *E. tiridates* is endemic to the Philippines. The species is local and never common. Till now it has been recorded from Mindoro, Luzon, Negros, Bohol, Leyte and Mindanao (map 13), and probably it will be found on other islands. *E. tiridates* is very close to *E. dohertyi* from which it sometimes can hardly be distinguished by external characters. Generally the lines on the body and the forewings are heavier in *E. dohertyi* while the white apical zigzag line of the forewing bisects the apical angle of that wing. On the underside of the wings the subterminal line of black dots is in *E. tiridates* farther from termen in both wings, while the apical zigzag line of the forewing is more irregular and appears as a white spotted line curving towards the dorsum. The ♀♀ of *E. tiridates* are always darker than the ♂♂ and can sometimes be very dark. The holotype of *Panacra tiridates* BOISDUVAL, [1875] is in the collection of the Senckenberg-Museum in Frankfurt am Main.

Forewing length:

♂ min. 19 mm max. 26 mm av. 22.9 mm

♀ min. 24 mm max. 29 mm av. 27 mm

Number of Philippine specimens known to us: 37 from Mindoro, Luzon, Negros, Bohol, Leyte and Mindanao.

Eupanacra malayana (ROTHSCHILD & JORDAN, 1903)

Plate 13, Fig. C: ♂; plate 17, Fig. F: ♀

Panacra malayana ROTHSCCHILD & JORDAN (1903: 537 n. 454); JENSEN (1973: 6)*Eupanacra malayana* ROTHSCCHILD & JORDAN: INOUE (1996: 96); INOUE et al. (1997: 129)

Distribution and taxonomic notes: *E. malayana* is known from Thailand and Malacca to Vietnam, and from Sumatra, Java, Borneo, Palawan and Mindanao. In the Philippines the species is extremely rare. It can be confused with *E. dohertyi* and especially with *E. tiridates*, but from both species *E. malayana* can be distinguished by the cinnamon brown streak on R2, which is very strong in this species and weak or even hardly visible in the others.

Forewing length:

♂	min. 23 mm	max. 24 mm	av. 23.3 mm
♀	min. 24 mm	max. 25 mm	av. 24.5 mm

Number of Philippine specimens known to us: 5 from Palawan and Mindanao.

Eupanacra elegantulus (HERRICH-SCHÄFFER, [1856])

Plate 12, Fig. H: ♂; Fig. I: ♀

Thyreus elegantulus HERRICH-SCHÄFFER ([1856]: f. 479)*Panacra scapularis* WALKER, 1856: SEMPER (1867: 699 n. 10); SWINHOE (1892: 12 n. 49)*Panacra mydon elegantulus* HERRICH-SCHÄFFER: SEITZ (1929: 552); D'ABRERA ([1987]: 136)*Panacra mydon* Wlk.: MELL (1922: 235); HOLLOWAY (1987: 155); LIN (1990: 89)*Eupanacra mydon elegantulus* HERRICH-SCHÄFFER: SCHÜTZ (1996: 54 n. 28)*Eupanacra elegantulus* HERRICH-SCHÄFFER: INOUE et al. (1997: 77)

Distribution and taxonomic notes: *E. elegantulus* occurs from N. Thailand and Malacca, through Sumatra, Java, Borneo and the Lesser Sunda Islands to Sumbawa, to Sulawesi and the Philippines. In the Philippines it is a common species known from many islands (map 13). In the southeast Asian archipelago *E. elegantulus* differs slightly from island to island, in colouration, maculation and structure. Specimens from the Philippines are rather constant in appearance and are very similar to specimens from Borneo. However, in the ♂ genitalia the harpe is much shorter than in Bornean specimens. In the Philippines *E. elegantulus* could only be confused with *E. treadawayi*, but that species can be distinguished by a white streak on the ventral side of thorax and abdomen and by a dark discal dot in the forewing.

Forewing length:

♂	min. 20 mm	max. 25 mm	av. 22.7 mm
♀	min. 23 mm	max. 28 mm	av. 25.7 mm

Number of Philippine specimens known to us: 67 from Palawan, Dumarán, Mindoro, Luzon, Marinduque, Sibuyan, Panay, Negros, Bohol, Leyte and Mindanao.

Eupanacra cadioui HOGENES & TREADAWAY, 1993

Plate 13, Fig. E: ♂; Fig. D: ♀

Eupanacra cadioui HOGENES & TREADAWAY (1993: 542); INOUE (1996: 96); SCHÜTZ (1996: 55 n. 29)

Distribution and taxonomic notes: This very rare endemic species has till now been found on Luzon, Panay, Leyte and Mindanao (map 13). For its *E. busiris*-like wingshape in combination with the dark streak running through the forewing it cannot be confused with any other *Eupanacra* species in the Philippines or elsewhere.

Forewing length:

♂	min. 27 mm	max. 30 mm	av. 28.2 mm
♀	min. 32 mm	max. 32 mm	av. 32 mm

Number of Philippine specimens known to us: 8 from Luzon, Panay, Leyte and Mindanao.

Eupanacra treadawayi CADIOU, 1995

Plate 13, Fig. A: ♂

Eupanacra treadawayi CADIOU (1995: 506 f. 11, 12)

Distribution and taxonomic notes: *E. treadawayi* was described from Luzon and until now the species is only known from this island (map 13). The species could be confused with *E. elegantulus* but can be distinguished by a white streak on the ventral side of thorax and abdomen and by a dark discal dot in the forewing. On the underside of the wings *E. treadawayi* shows more transverse lines than *E. elegantulus*.

Forewing length:

♂	min. 26.5 mm	max. 28 mm
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Number of Philippine specimens known to us: 8 from N. Luzon.

Angonyx testacea (WALKER, 1856)

Plate 7, Fig. C: ♂

Perigonia testacea WALKER (1856: 102 n. 3)

Angonyx testacea WALKER: ROTHSCHILD & JORDAN (1903: 544 n. 463a); RIOTTE (1981: 25); INOUE (1996: 96); SCHÜTZ (1996: 55 n. 30); INOUE et al. (1997: 80)

Distribution and taxonomic notes: *A. testacea* occurs from Nepal and N. India, through continental Asia to S. China and Vietnam, and from Sri Lanka and the Greater Sunda Islands to the Philippines, Sulawesi and the Mo-

luccas. Further to the east it is replaced by the closely related *A. papuana* ROTHSCHILD & JORDAN, 1903. In the Philippines the species is uncommon but known from many islands, including Palawan and the Sulu Archipelago (map 11). It cannot be confused with any other hawkmoth in the area.

Forewing length:

♂ min. 25 mm max. 27 mm av. 26.2 mm

♀ min. 28 mm max. 29 mm av. 28.5 mm

Number of Philippine specimens known to us: 23 from Balabac, Palawan, Dumaran, Mindoro, Luzon, Negros, Samar, Homonhon, Leyte and Jolo.

Neogurelca hyas (WALKER, 1856)

Plate 15, Fig. D: ♀

Lophura hyas WALKER (1856: 107 n. 3)

Gurelca hyas WALKER: KIRBY (1880: 330); SEMPER (1896: 405 n. 54); ROTHSCHILD & JORDAN (1903: 588 n. 524); MELL (1922: 240); SEITZ (1929: 554); INOUE (1973: 119); JENSEN (1973: 6); D'ABRERA ([1987]: 152); LIN (1989: 2; 1990: 90)

Neogurelca hyas WALKER: HOGENES & TREADAWAY (1993: 550); INOUE (1996: 97); SCHÜTZ (1996: 55 n. 31); INOUE et al. (1997: 82)

Distribution and taxonomic notes: *N. hyas* occurs from northwest India through continental Asia to China, Taiwan and Botel Tobago, and is further known from Sumatra, Java and the Philippines. As the species is not known to occur in Borneo and Sulawesi it is likely that *N. hyas* is one of the few examples of Sphingidae that reached the Philippines from the north. In the Philippines the species is not common but has a wide distribution, it is known from many islands including Balabac and Palawan (map 11). The species is sufficiently characterized by its small size in combination with the deeply incurved dorsum of the forewing.

Forewing length:

♂ min. 13 mm max. 16 mm av. 14.7 mm

♀ min. 17 mm max. 18 mm av. 17.7 mm

Number of Philippine specimens known to us: 20 from Balabac, Palawan, Luzon, Negros, Cebu, Leyte, Camiguin de Mindanao and Mindanao.

Eurypteryx alleni HOGENES & TREADAWAY, 1993

Plate 7, Fig. K: ♂

Eurypteryx alleni HOGENES & TREADAWAY (1993: 544); HAXAIRE (1994: 36); INOUE (1996: 97)

Distribution and taxonomic notes: *E. alleni* is now known to occur in Malacca, Sumatra, Borneo and the Philippines (map 11). The known distribution suggests that the Philippines were colonized from the west through Pala-

wan. The species is very rare as it is elsewhere in its range. *E. alleni* cannot be confused with any other sphingid in the area.

Forewing length:

♂	min. 38 mm	max. 40 mm	av. 38.8 mm
♀	min. 45 mm	max. 45 mm	av. 45 mm

Number of Philippine specimens known to us: 7 from Palawan, Mindoro, Panay and Negros.

***Macroglossum avicula* BOISDUVAL, [1875]** Plate 14, Fig. A: ♀

Macroglossa avicula BOISDUVAL ([1875]: 334 n. 3)

Macroglossum avicula BOISDUVAL: ROTHSCHILD & JORDAN (1903: 633 n. 566; 1907: 119); SEITZ (1929: 556); D'ABRERA ([1987]: 159); LIN (1989: 7; 1990: 90); INOUE (1996: 97)

Distribution and taxonomic notes: *M. avicula* is known from peninsular Malaysia, Sumatra, Java, and in the Philippines (map 14) where it is very rare. The species is very similar to *M. bombylans* from which it can be distinguished by the lighter parts on the underside of the body, that are yellowish.

Forewing length:

♀	min. 12 mm	max. 13 mm	av. 12.5 mm
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Number of Philippine specimens known to us: 2 from Palawan.

***Macroglossum bombylans* BOISDUVAL, [1875]** Plate 14, Fig. B: ♂; Fig. C: ♀

Macroglossa bombylans BOISDUVAL ([1875]: 334 n. 2)

Macroglossum bombylans BOISDUVAL: ROTHSCHILD & JORDAN (1903: 632 n. 565); INOUE et al. (1997: 88)

Distribution and taxonomic notes: *M. bombylans* occurs from Nepal and N. India through southeast Asian mainland to N. China and Korea, and over Japan and Taiwan to the Philippines. In the Philippines (map 14) the species meets *M. avicula*. The species is local but much commoner than *M. avicula*, from which it can be distinguished by the lighter parts on the underside of the body being white, not yellowish.

Forewing length:

♂	min. 17 mm	max. 19 mm	av. 18 mm
♀	min. 20 mm	max. 21 mm	av. 20.5 mm

Number of Philippine specimens known to us: 7 from Luzon and Negros.

***Macroglossum lepidum* ROTHSCHILD & JORDAN, 1915** Plate 14, Fig. K: ♀*Macroglossum lepidum* ROTHSCHILD & JORDAN (1915 a: 287)

Distribution and taxonomic notes: *M. lepidum* is currently known from Nias Borneo, Palawan, Panay and Leyte, but undoubtedly will be discovered from other islands (map 14). The species is easily recognized by the thin, light submarginal line in the forewing that, when it reaches M2, suddenly hooks towards tornus.

Forewing length:

♂ 20 mm

♀ 20 mm

Number of Philippine specimens known to us: 4 from Palawan, Panay, Central Leyte.

***Macroglossum caldum philippinense* CLARK, 1928** Plate 14, Fig. E: ♀*Macroglossum caldum philippinense* CLARK (1928: 46); D'ABRERA ([1987]: 160); INOUE (1996: 97)*Macroglossum caldum* JORDAN, 1926; LIN (1989: 7; 1990: 90)

Distribution and taxonomic notes: This subspecies, very rare in collections, is currently known from Luzon and Leyte (map 14). Because of the blueish white scales in the forewing the species cannot be confused with any other *Macroglossum* species in the area.

Forewing length:

♂ 21 mm

♀ min. 23 mm max. 23 mm av. 23 mm

Number of Philippine specimens known to us: 3 from Luzon and Leyte.

***Macroglossum pyrhostictum* BUTLER, 1875** Plate 14, Fig. F: ♀*Macroglossa pyrhosticta* BUTLER (1875: 242 n. 11); SEMPER (1896: 406 n. 56)*Macroglossum pyrhosticta* BUTLER: INOUE (1996: 98); INOUE et al. (1997: 90)

Distribution and taxonomic notes: *M. pyrhostictum* occurs from N. India through southeast Asian mainland to E. China, Japan, Taiwan and the Philippines (map 14), and from Sumatra over Java to Flores. The species can be confused with other *Macroglossum* species in which the antemedian band is only slightly curved, especially *M. troglodytus* and *M. variegatum*. *M. troglodytus* usually is slightly smaller than *M. pyrhostictum* and often, especially when fresh, has blueish scales in the forewing. Both *M. troglodytus* and *M. variegatum* are less variegated than *M. pyrhostictum* because the colours of ma-

culation and ground colour in forewing are closer together. In *M. variegatum* usually the paired dorsal spots on the abdominal segments are more distinct and the antemedian band in forewing is darker and more strongly convex.

Forewing length:

♀ min. 22 mm max. 25 mm av. 23 mm

Number of Philippine specimens known to us: 3 from Luzon and C. Leyte.

***Macroglossum troglodytus* BOISDUVAL, [1875]** Plate 14, Fig. G: ♂

Macroglossa troglodytus BOISDUVAL ([1875]: 344 n. 19)

Distribution and taxonomic notes: *M. troglodytus* currently is known from S. China through continental southeast Asia to India and from Sri Lanka, Sumatra and Java, and the Philippines. The species may be confused with *M. pyrrhostictum*, but can be distinguished by characters mentioned under that species.

Forewing length:

♂ min. 20 mm max. 20 mm av. 20 mm

Number of Philippine specimens known to us: 2 from Palawan and Mindanao

***Macroglossum insipidum insipidum* BUTLER, 1875**

Plate 14, Fig. H: ♂

Macroglossa insipida BUTLER (1875: 242 n. 12)

Macroglossum insipida insipida BUTLER: D'ABRERA ([1987]: 160)

Distribution and taxonomic notes: *M. insipidum insipidum* is known from Nepal and N. India to Thailand and peninsular Malaysia, from Sri Lanka, the Andaman Islands, Sumatra, Java, Flores, Borneo and the Philippines (map 15). From Australia and New Guinea and adjacent islands ROTHSCHILD & JORDAN (1903: 642) described the subsp. *papuanum*; this very likely is a distinct species. In the Philippines *M. insipidum* can be distinguished from other *Macroglossum* species by its small size and by the antemedian band in forewing which is abruptly narrowed in its costal part.

Forewing length:

♂ min. 15 mm max. 19 mm av. 17.3 mm

♀ min. 17 mm max. 19 mm av. 18 mm

Number of Philippine specimens known to us: 5 from Palawan, Leyte and Mindanao.

***Macroglossum unguis* ROTHSCHILD & JORDAN, 1903** Plate 14, Fig. I: ♂*Macroglossa gilia* HERRICH-SCHÄFFER, [1854]: SEMPER (1896: 406 n. 55)*Macroglossum unguis* ROTHSCHILD & JORDAN (1903: 643 n. 581); ROTHSCHILD & JORDAN (1907: 119); SEITZ (1929: 558); HOLLOWAY (1987: 167); INOUE (1996: 98)

Distribution and taxonomic notes: *M. unguis* is known from Sumatra, Java, the Lesser Sunda Islands to Sumba, Sulawesi, the North Moluccas and the Philippines. In the Philippines it is not uncommon and known from various islands (map 15) and will undoubtedly be discovered on still more. The species looks similar to a small specimen of *M. sitiene* but the yellow band in the hindwing is narrower than in that species and the proximal border of the antemedian band is not as sharply hooked.

Forewing length:

♂	min. 16 mm	max. 19 mm	av. 17.8 mm
♀	min. 20 mm	max. 21 mm	av. 20.3 mm

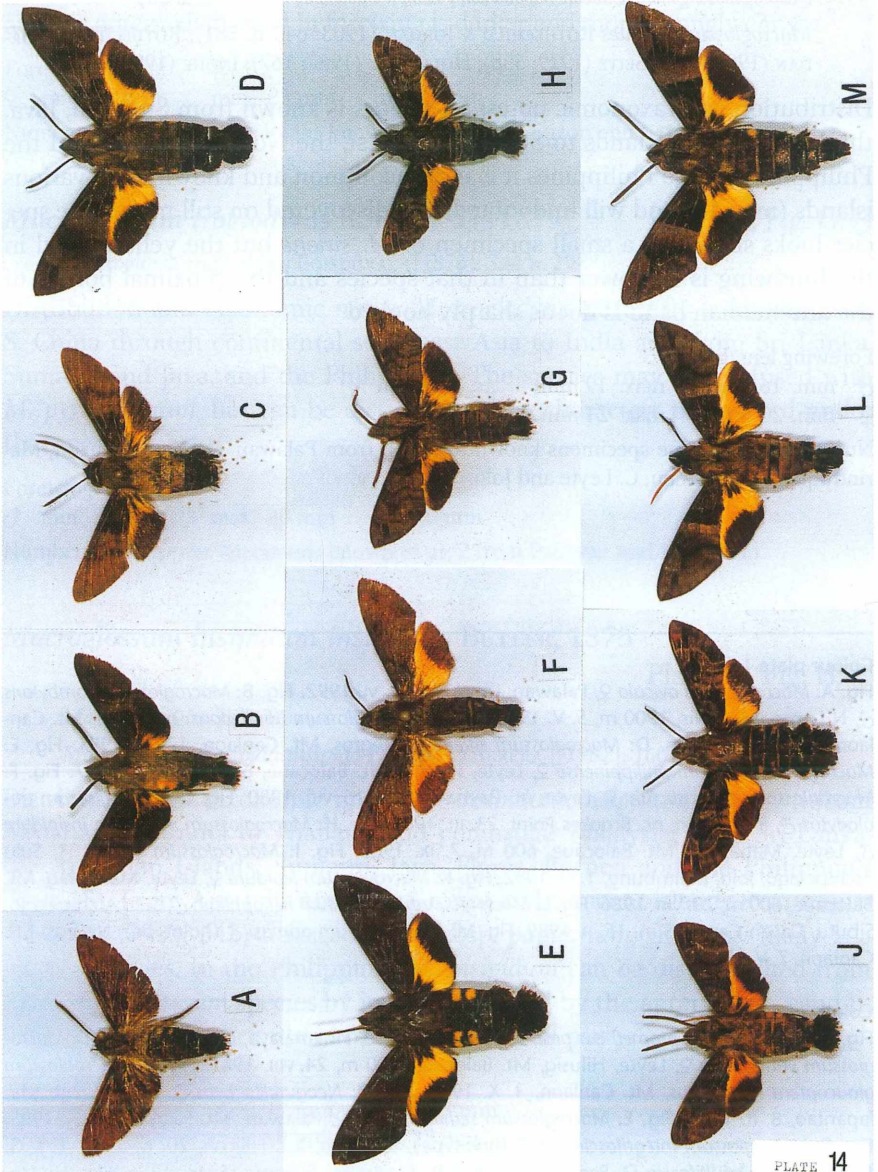
Number of Philippine specimens known to us: 10 from Palawan, Dumarán, Luzon, Marinduque, Panay, Cebu, C. Leyte and Jolo.

Colour plate 14

Fig. A: *Macroglossum avicula* ♀, Palawan, Languan, 15. vi. 1992. **Fig. B:** *Macroglossum bombylans* ♂, N Luzon, Mt. Polis, 1900 m, 5. V. 1988. **Fig. C:** *Macroglossum bombylans* ♀, Negros, Mt. Canlaon, 10. vii. 1991. **Fig. D:** *Macroglossum sitiene* ♀, Negros, Mt. Canlaon, 17. xi. 1991. **Fig. E:** *Macroglossum caldum philippinense* ♀, Leyte, Hilusig, Mt. Balocau, 600 m, 23. ii. 1987. **Fig. F:** *Macroglossum pyrrhostictum* ♀, Leyte, nr. Baybay, Visca, 15. viii. 1980. **Fig. G:** *Macroglossum troglodytus* ♂, S Palawan, nr. Brookes Point, 23. iii. 1981. **Fig. H:** *Macroglossum insipidum insipidum* ♂, Leyte, Mahaplag, Mt. Balocau, 600 m, 7. ix. 1986. **Fig. I:** *Macroglossum unguis* ♂, Sulu Archipelago, Jolo, Maimbung, 1. xi. 1992. **Fig. K:** *Macroglossum lepidum* ♀, Leyte, Mahaplag, Mt. Balocau, 600 m, 29. viii. 1986. **Fig. L:** *Macroglossum heliophilum heliophilum* ♂, Sulu Archipelago, Sibutu, Cavan Cavan, 5 m, 15. ii. 1989. **Fig. M:** *Macroglossum arimasi* ♂ (holotype), Negros, Mt. Canlaon, 7. V. 1991.

Colour plate 15

Fig. A: *Macroglossum prometheus prometheus* ♀, Mindoro, Pinamalaya, 5. iv. 1988. **Fig. B:** *Macroglossum variegatum* ♀, Leyte, Hilusig, Mt. Balocau, 600 m, 24. viii. 1987. **Fig. C:** *Macroglossum glaucoptera* ♂, Negros, Mt. Canlaon, 3. X. 1990. **Fig. D:** *Neogurelca hyas* ♀, Negros, Mt. Malapantao, 8. ii. 1994. **Fig. E:** *Macroglossum semifasciatum* ♀, Palawan, Mt. Salakot, 26. X. 1995. **Fig. F:** *Macroglossum integrifasciatum* ♂ (holotype), Mindoro, Mt. Halcon, 20. iv. 1994. **Fig. G:** *Macroglossum multifascia* ♀, Panay, Antique, Mt. Madja-as, 500 m, 15. ix. 1996. **Fig. H:** *Macroglossum corythus luteatum* ♀, N Luzon, Mt. Polis, 1900 m, 4. V. 1988. **Fig. I:** *Macroglossum jani* ♂ (holotype), Palawan, Languan, 25. vii. 1995. **Fig. K:** *Macroglossum jani* ♀ (paratype), Palawan, Ulanguan, 11. ix. 1995.



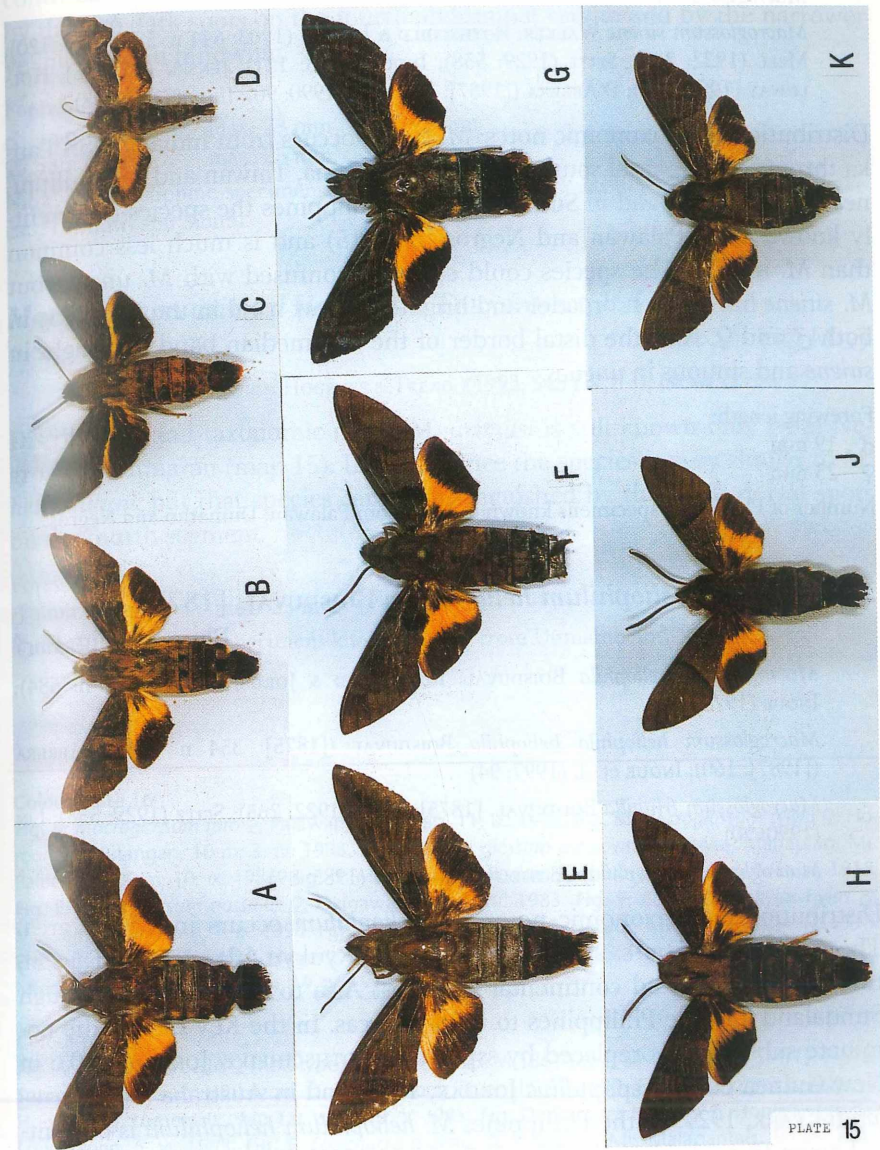


PLATE 15

***Macroglossum sitiene* WALKER, 1856**

Plate 14, Fig. D: ♀

Macroglossa sitiene WALKER (1856: 92 n. 13); SEMPER (1896: 406 n. 57)*Macroglossum sitiene* WALKER: ROTHSCHILD & JORDAN (1903: 644 n. 582; 1907: 120); MELL (1922: 268); SEITZ (1929: 558); INOUE (1973: 121); JENSEN (1973: 6); HOLLOWAY (1987: 167); D'ABRERA ([1987]: 160); LIN (1990: 90); INOUE (1996: 98)

Distribution and taxonomic notes: *M. sitiene* occurs from India and Sri Lanka through continental southeast Asia to S. China, Taiwan and the Philippines, and in Sundaland in Sumatra. In the Philippines the species is currently known from Palawan and Negros (map 15) and is much less common than *M. unguis*. The species could easily be confused with *M. unguis* but *M. sitiene* has a much broader and brighter yellow band in the hindwing in both ♂ and ♀. Also the distal border of the antemedian band is straight in *sitiene* and sinuous in *unguis*.

Forewing length:

♂ 19 mm

♀ 25 mm

Number of Philippine specimens known to us: 3 from Palawan, Dumaran and Negros.

***Macroglossum heliophilum heliophilum* BOISDUVAL, [1875]**

Plate 14, Fig. L: ♂

Macroglossum heliophila BOISDUVAL: ROTHSCHILD & JORDAN (1903: 645 n. 584); INOUE (1973: 121)*Macroglossum heliophila heliophila* BOISDUVAL ([1875]: 354 n. 36); D'ABRERA ([1987]: 160); INOUE et al. (1997: 94)*Macroglossum fringilla* BOISDUVAL, [1875]: MELL (1922: 265); SEITZ (1929: 558); LIN (1990: 90)*Macroglossum heliophilum* BOISDUVAL: MOULDS (1985: 89)

Distribution and taxonomic notes: *M. heliophilum* occurs in a wide area. The ssp. *heliophilum* s. str. occurs from the Ryukyu Islands and Taiwan, through S. China and continental southeast Asia to S. India, and through Sundaland and the Philippines to the Moluccas. In the Key islands the nominate subspecies is replaced by ssp. *melas* ROTHSCHILD & JORDAN, 1903; in New Guinea occurs ssp. *pullius* JORDAN, 1930, and in Australia ssp. *queenslandi* CLARK, 1927. In the Philippines *M. heliophilum heliophilum* is currently known from the Batanes Islands in the north, Palawan and the Sulu Archipelago in the west and Mindoro and Ticao in the centre of the archipelago (map 15). Undoubtedly the species will be found in more localities. For

the straight distal border of the antemedian band, *M. heliophilum* could be confused with *M. sitiene*; it can, however, be distinguished from that species by the two dark spots on the fourth abdominal tergite and by the narrower yellow band in hindwing.

Forewing length:

♂	21 mm	max. 23 mm	av. 22 mm
♀	23 mm	max. 25 mm	av. 23.6 mm

Number of Philippine specimens known to us: 11 from Palawan, Mindoro, Batanes, Ticao, Tawitawi and Sibutu.

Macroglossum arimasi HOGENES & TREADAWAY, 1993

Plate 14, Fig. M: ♂

Macroglossum arimasi HOGENES & TREAD. (1993: 548 f. 7, 13); INOUE (1996: 99)

Distribution and taxonomic notes: *M. arimasi* is still known only from Negros and Dumarán (map 15). In appearance the species is very similar to *M. heliophilum*, but that species can be distinguished by the black dorsal spots on the fourth segment.

Forewing length:

♂	min. 23 mm	max. 23 mm	av. 23 mm
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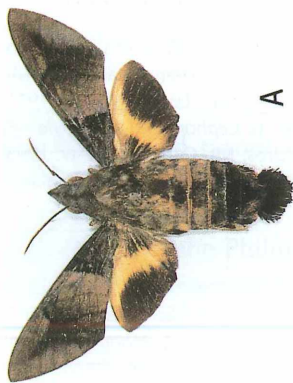
Number of Philippine specimens known to us: 2 from Dumarán and Negros.

Colour plate 16

Fig. A: *Macroglossum faro* ♀, Palawan, Ulangan, 11. ix. 1995. Fig. B: *Macroglossum sylvia* ♀, Homonhon, Bitangan, 10 m, 3. iv. 1988. Fig. C: *Macroglossum mediovitta* ♂, Leyte, Mahaplag, Mt. Balocau, 600 m, 10. ix. 1986. Fig. D: *Macroglossum haslami* ♀ (holotype), Luzon, Manila, 1915. Fig. E: *Macroglossum passalus* ♀, Okinawa, Higi, 1. vii. 1983. Fig. F: *Cephonodes hylas hylas* ♀, Mindoro, Mt. Halcon, 1. ix. 1996. Fig. G: *Cephonodes picus* ♂, Negros, Mt. Canlaon, 24. iv. 1993. Fig. H: *Cephonodes banksi* ♀, Negros, Mt. Mandalangan, 23. v. 1993. Fig. K: *Cephonodes banksi* ♀, Mindoro, Mt. Halcon, 1900 m, 19. iv. 1994.

Colour plate 17

Fig. A: *Sataspes cerberus* ♀ (holotype), NW Luzon, 29. v. 1861 (#62, SEMPER coll. in SMFL). Fig. B: *Sataspes cerberus* ♂, NE Luzon, Quirino, Sulong River, 15. v. 1990. Fig. C: *Sataspes tagalica* ♀, Hong Kong, Lamma Is., Mo Tat Wan, 19. v. 1993. Fig. D: *Sataspes tagalica* ♂, Hong Kong, Pak Long Tsuen, 5. vi. 1993. Fig. E: *Eupanacra tiridates* ♀, S Negros, Mt. Malapantag, 30. vii. 1994 (dark form). Fig. F: *Eupanacra malayana* ♀, Palawan, Mantalingajan, Pinigisan, 600 m, 10. ix. 1961, Noona Dan Expedition 1961/62 (ZMUC). Fig. G: *Enpinanga vigena* ♀, Java, Wangoenredja, 18. iii. 1949. Fig. H: *Macroglossum aquila* ♂, Thailand, Phrae, Wang Chin, 25. iv. 1989. Fig. I: *Macroglossum aquila* ♂ (r), Thailand, Phrae, Wang Chin, 25. iv. 1989.



A



B



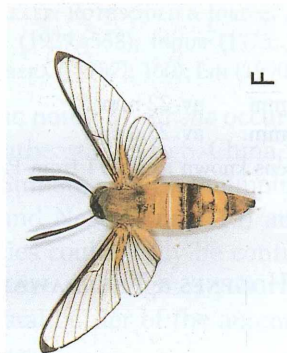
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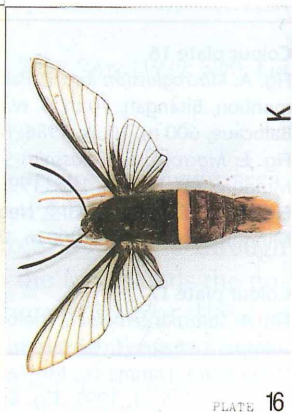
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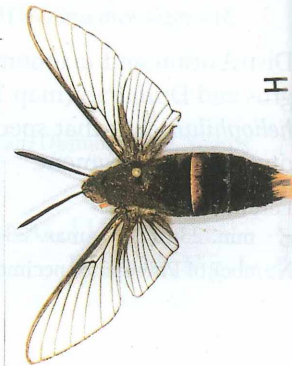
E



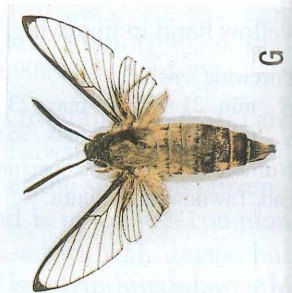
F



G



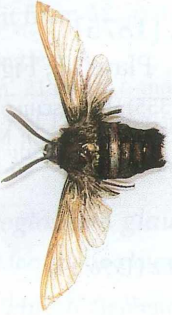
H



I



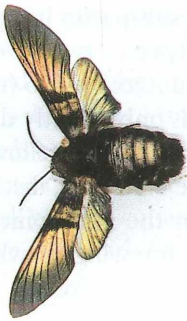
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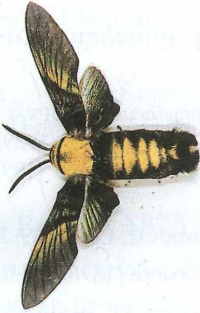
B



G



C



D



H



E



F



I

Macroglossum mediovitta ROTHSCHILD & JORDAN, 1903

Plate 16, Fig. C: ♂

Macroglossum mediovitta ROTHSCHILD & JORDAN (1903: 647 n. 587)

Distribution and taxonomic notes: Originally described from Okinawa, *M. mediovitta* was subsequently discovered in Sumatra, peninsular Malaysia, S. China, Thailand, Borneo, Sulawesi and the Philippines. The species is extremely rare in collections and from the Philippines it is known from a single specimen collected in central Leyte (map 16). Because of the white median band in the forewing which is slightly narrowed in middle, the species cannot be confused with any other *Macroglossum* species in the area.

Forewing length: ♂ 26 mm

Number of Philippine specimens known to us: 1 from C. Leyte.

Macroglossum prometheus prometheus BOISDUVAL, [1875]

Plate 15, Fig. A: ♀

Macroglossum prometheus prometheus BOISDUVAL ([1875]: 355); ROTHSCHILD & JORDAN (1903: 651 n. 592a; 1907: 120); SEITZ (1929: 559); JENSEN (1973: 7); MOULDS (1985: 90); D'ABRERA ([1987]: 163); INOUE (1996: 99); SCHÜTZ (1996: 56 n. 32); INOUE et al. (1997: 96)

Macroglossum prometheus BOISDUVAL: LIN (1989: 7)*Macroglossa passalus* DRURY: SEMPER (1896: 406 n. 58); INOUE (1996: 98)

Distribution and taxonomic notes: *M. prometheus prometheus* occurs in Sri Lanka, peninsular Thailand and Malaysia, the Greater and Lesser Sunda Islands, the Philippines and Sulawesi. In N. E. Australia and New Guinea and adjacent islands the nominate subspecies is replaced by ssp. *lineatum* LUCAS, 1891. In the Philippines the species is very common and encountered in most islands including the Sulu Archipelago (map 16). The oblique antemedian band in forewing, which is only slightly darker than the ground colour, in combination with the broad orange-yellow band in hindwing and the paired black dorsal dots on the abdomen, distinguishes this species from all other *Macroglossum* species in the Philippines. The ♀♀ can sometimes be very dark with blackish brown forewings in which the maculation can hardly be distinguished from the ground colour.

Forewing length:

♂	min. 22m	max. 25 mm	av. 24 mm
♀	min. 23 mm	max. 27 mm	av. 25.2 mm

Number of Philippine specimens known to us: 95 from Palawan, Mindoro, Marinduque, Panay, Negros, Bohol, Samar, Leyte, Mindanao, Tawitawi and Sibu.

***Macroglossum variegatum* ROTHSCHILD & JORDAN, 1903**

Plate 15, Fig. B: ♀

Macroglossum variegatum ROTHSCHILD & JORDAN (1903: 653 n. 594)

Distribution and taxonomic notes: *M. variegatum* is distributed from N. India, through continental southeast Asia to Vietnam, and from Sumatra through Borneo to the Philippines. In the Philippines the species is known from Palawan and the Sulu Archipelago and from Cebu and Leyte (map 16). There is no doubt that the species will be discovered on more Philippine islands. The species can easily be confused with many other *Macroglossum* species, but it can always be recognized by the antemedian band, which is dark and strongly contrasting with the ground colour (to distinguish it from *M. prometheus*), and strongly convex in outer border (to distinguish it from *M. sitiene* and *M. heliophilum*) and inner border (to distinguish it from *M. pyrrhostictum* and *M. unguis*).

Forewing length:

♀ min. 21 mm max. 24 mm av. 22.8 mm

Number of Philippine specimens known to us: 5 from Palawan, Cebu, Leyte, Tawitawi and Sibutu.

***Macroglossum glaucoptera* BUTLER, 1875**

Plate 15, Fig. C: ♂

Macroglossa glaucoptera BUTLER (1875: 241 n. 7)*Macroglossum glaucoptera* BUTLER: INOUE (1996: 98); INOUE et al. (1997: 98)

Distribution and taxonomic notes: *M. glaucoptera* is another species that is not very common in collections, hence it is currently known from a wide but rather disjunctive distribution area. The species can be expected in the area from Sri Lanka and India through continental southeast Asia up to S. China, and from Sundaland and the Philippines. Also in the Philippines the currently known distribution is disjunctive (map 16), but the species can be expected to occur on all islands. *M. glaucoptera* is very variable, especially in the width of the yellow band on the rear wings, but the species can always be recognized by the dark ground colour of the fore wings. *M. avicula* and *M. bombylans*, which have very dark fore wings, too, can be separated by the darker last segments of the body.

Forewing length:

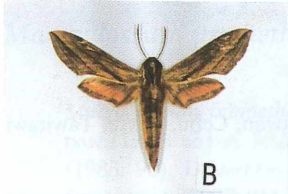
♂ min. 19 mm max. 24 mm av. 22.3 mm

♀ min. 22 mm max. 23 mm av. 22.5 mm

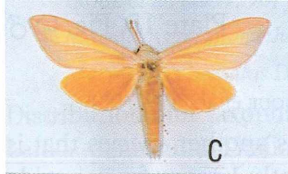
Number of Philippine specimens known to us: 6 from Camiguin de Luzon, Negros, Panay and Dinagat.



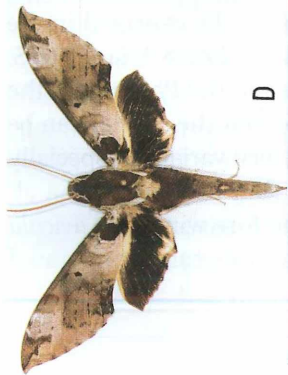
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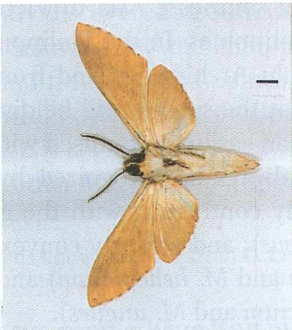
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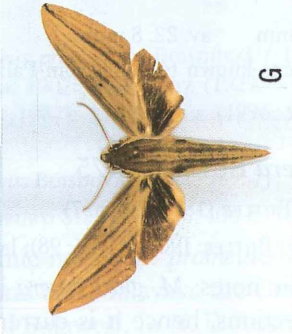
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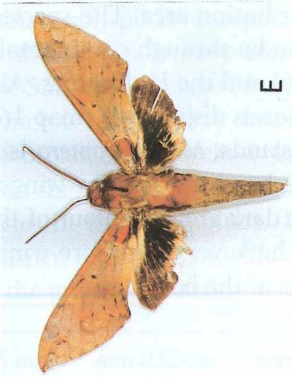
D



I



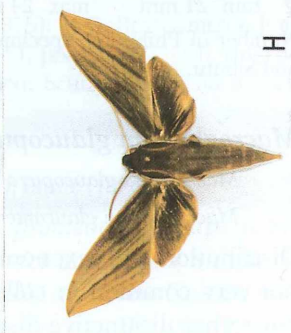
G



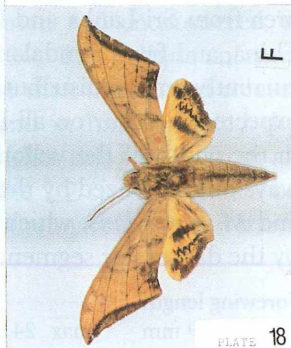
E



K



H



F

***Macroglossum semifasciatum* HAMPSON, [1893]** Plate 15, Fig. E: ♀*Macroglossa semifasciata* HAMPSON ([1893]: 115 n. 187)

Distribution and taxonomic notes: *M. semifasciatum* occurs from N. India through continental southeast Asia to Vietnam, and in Sumatra, Labuan and Palawan (map 16). As with many other *Macroglossum* species, the number of localities from where it is known is small, and its actual distribution area could be more extended than currently known. For its large size and the antemedian band of fore wing, which is only filled in in its lower half, the species cannot be confused with any other *Macroglossum* species in the Philippines.

Forewing length:

♂ min. 28 mm max. 29 mm av. 28.5 mm

♀ 32 mm

Number of Philippine specimens known to us: 3 from Palawan.

***Macroglossum aquila* BOISDUVAL, [1875]** Plate 17, figs. H & J: ♂*Macroglossa aquila* BOISDUVAL ([1875]: 340 n. 30)

Macroglossum aquila BOISDUVAL: ROTHSCHILD & JORDAN (1903: 657 n. 602; 1907: 121); SEITZ (1929: 560); HOLLOWAY (1987: 166); D'ABRERA ([1987]: 164); LIN (1989: 7; 1990: 90); INOUE (1996: 99); INOUE et al. (1997: 100)

Distribution and taxonomic notes: *M. aquila* is distributed from N. India through the southeast Asian mainland to Vietnam, and in Sumatra, Java and Borneo, and in the Philippines the species is recorded from Luzon (map 16). It appears that the species is locally more common in the continent than in the archipelago, from where it is known from only a few specimens. We know of only one recent collection of this species in the Philippines (BRECHLIN, pers. comm.). *M. aquila* can be distinguished from all other *Macroglossum* species by the large lobe on the costa of the hind wing.

Colour plate 18

Fig. A: *Amplypterus panopus panopus* ♀, Palawan, Langan, 5. X. 1993. Fig. B: *Hippotion rafflesii dyokeae* ♀ (paratype), Mindanao, Bukidnon, Mt. Kitanglad, 1500 m, 11. vi. 1995. Fig. C: *Leucophlebia lineata* ♂, Mindanao, Surigao, Aras Asan, 20. iii. 1978. Fig. D: *Cechenena helops helops* ♂, Mindanao, Mt. Apo, 27. iv. 1994. Fig. E: *Cechenena helops helops* ♂ (aberrant), Mindoro, Mt. Halcon, 10. xi. 1993. Fig. F: *Ambulyx immaculata* ♂ (aberrant), Mindoro, Mt. Halcon, 18. X. 1993. Fig. G: *Theretra rhesus* ♀, Cebu, Minglanilla, Mt. Luay, 600 m, 26. vii. 1984. Fig. H: *Theretra insularis insularis* ♀, Mindoro, Mt. Sinai, 1. ii. 1996. Fig. I: *Psilogramma increta* ♂ (r), Panay, Antique, Mt. Madja-as, 5. xii. 1996. Fig. K: *Psilogramma menephron menephron* ♂ (r), Leyte, Hilusig, Mt. Balocae, 700 m, 1. ix. 1984.

Forewing length:

♂ min. 23 mm max. 23 mm av. 23 mm

Number of Philippine specimens known to us: 3 from Palawan and Luzon.

***Macroglossum sylvia* BOISDUVAL, [1875]** Plate 16, Fig. B: ♀

Macroglossa sylvia BOISDUVAL ([1875]: 350 n. 29); PAGENSTECHER (1890: 2 n. 4)

Macroglossum sylvia BOISDUVAL: D'ABRERA ([1987]: 164); INOUE et al. (1997: 101)

Distribution and taxonomic notes: *M. sylvia* has often been confused with *M. corythus luteatum* and therefore it is very difficult to compose its distribution area from data in older literature. However, the species is with certainty known from a vast area, stretching from Sri Lanka and India, through the continent to Vietnam, S. China and Taiwan, and from the Andaman Islands through the archipelago up to Tanimbar. The species is an active migrant and has frequently been recorded from ships, navigating between Sundanian islands. In the Philippines *M. sylvia* is not common, but found on many islands (map 16). The species could only be confused with *M. corythus luteatum* from which it can easily be distinguished by the pure white patches on the underside of the abdomen, which are greyish white in *M. corythus luteatum*.

Forewing length:

♂ min. 25 mm max. 27 mm av. 26 mm

♀ min. 27 mm max. 28 mm av. 27.5 mm

Number of Philippine specimens known to us: 10 from Palawan, Mindoro, Luzon, Negros, Samar, Homonhon, Camiguin de Mindanao and Mindanao.

***Macroglossum corythus luteatum* BUTLER, 1875** Plate 15, Fig. H: ♀

Macroglossa luteata BUTLER (1875: 241 n. 9)

Macroglossa sylvia BOISDUVAL: SEMPER (1896: 407 n. 59); INOUE (1996: 98)

Macroglossum corythus luteatum BTL.: INOUE (1973: 122); SCHÜTZ (1996: 56 n. 33)

Macroglossum corythus luteata BUTLER: ROTHSCILD & JORDAN (1903: 661 n. 605b; 1907: 121); SEITZ (1929: 561); D'ABRERA ([1987]: 164); INOUE (1996: 99); INOUE et al. (1997: 102)

Macroglossum corythus luteatam [sic] (BÜTLER) [sic]: LIN (1989: 2)

Macroglossum corythus WALKER: MOULDS (1985: 95); LIN (1990: 90)

Distribution and taxonomic notes: *M. corythus* s. l. is distributed over a wide area from where nine subspecies have been described. *M. corythus luteatum* inhabits the central part of this area, which stretches from Taiwan, through continental southeast Asia to N. India and from the Andaman Islands through Greater and Lesser Sunda Islands to the Philippines, Sulawesi, Se-

layar, Flores and Sumba. In the Philippines it is with *M. prometheus* the only common *Macroglossum* species and known from many islands (map 17). Though not as active as *M. sylvia*, also *M. corythus luteatum* migrates between the islands in the archipelago. *M. corythus luteatum* can only be confused with *M. sylvia*, from which it can be distinguished by the patches on the underside of the abdomen, which are greyish white in *M. corythus luteatum* and white in *M. sylvia*.

Forewing length:

♂	24 mm	max. 28 mm	av. 25.7 mm
♀	min. 25 mm	max. 29 mm	av. 26.9 mm

Number of Philippine specimens known to us: 110 from Palawan, Mindoro, Camiguin de Luzon, Luzon, Panay, Negros, Bohol, Samar, Homonhon, Leyte, Dinagat, Mindanao and Sibutu.

Macroglossum integrifasciatum HOGENES & TREADAWAY, 1996

Plate 15, Fig. F: ♂

Macroglossum integrifasciatum HOGENES & TREADAWAY (1996: 117)

Distribution and taxonomic notes: This species is part of a small group of closely related species, including also *M. semifasciatum* HAMPSON, 1892, *M. nigellum* ROTHSCHILD & JORDAN, 1916 a from Java and *M. adustum* ROTHSCHILD & JORDAN, 1916 a from the Solomon Islands. Of these species only *M. semifasciatum* is known from a reasonable number of specimens. The others are known from a few specimens only. *M. integrifasciatum* is now known from two specimens from the same locality (map 17). From *M. semifasciatum* the species can be distinguished by the complete antemedian band.

Forewing length:

♂ 28 mm

Number of Philippine specimens known to us: 2 from Mindoro.

Macroglossum multifascia ROTHSCHILD & JORDAN, 1903

Plate 15, Fig. G: ♀

Macroglossum multifascia ROTHSCHILD & JORDAN (1903: 663 n. 606)

Distribution and taxonomic notes: *M. multifascia* is known from Malacca, Sumatra, Java, Borneo, Panay, Negros and Leyte (map 17). The species seems to be rare everywhere. The peculiar striping of the forewing makes it impossible to confuse this species with any other hawkmoth.

Forewing length:

♂	min. 24 mm	max. 25 mm	av. 24.5 mm
♀	min. 25 mm	max. 28 mm	av. 26.3 mm

Number of Philippine specimens known to us: 6 from Panay, N. Negros and C. Leyte.

***Macroglossum jani* n. sp.**

Plate 15, Fig. I: ♂; Fig. K: ♀

Macroglossa tinnunculus BOISDUVAL: SEMPER (1896: 407 n. 60)

Macroglossum hemichroma BUTLER: ROTHSCHILD & JORDAN (1907: 121 [partim]); SEITZ (1929: 561 [partim]); HOLLOWAY (1987: 165 [partim]); D'ABRERA ([1987]: 166 [partim]); LIN (1989: 7 [partim]; 1990: 90 [partim]); INOUE et al. (1997: 103 [partim])

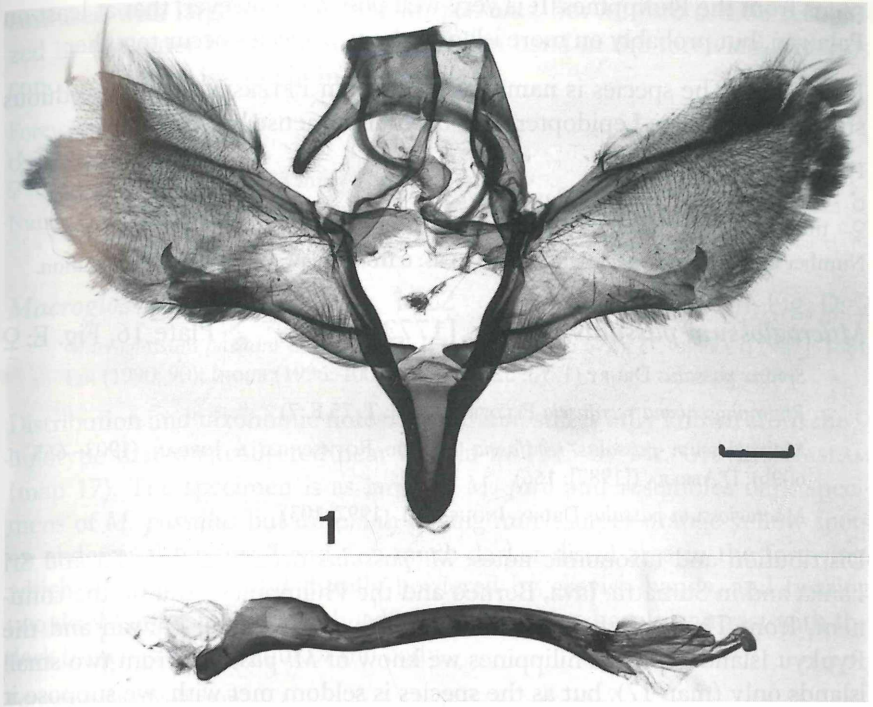
Holotype: ♂, Philippines, Palawan, Languan, 25. vii. 1995 (CCGT).

Paratypes: 1 ♂, Philippines, E. Samar Province, Homonhon Island, Cantilado, 3. iv. 1988, leg. DODONG; 1 ♀, Philippines, Palawan, Languan, 11. vi. 1995; 1 ♀, Philippines, Palawan, Languan, 23. vii. 1995; 1 ♀, Philippines, Palawan, Ulangan, 11. ix. 1995, leg. PETERSEN; 1 ♀, Philippines, Cebu (SMFL: SEMPER collection) (other paratypes in CCGT and ZMA).

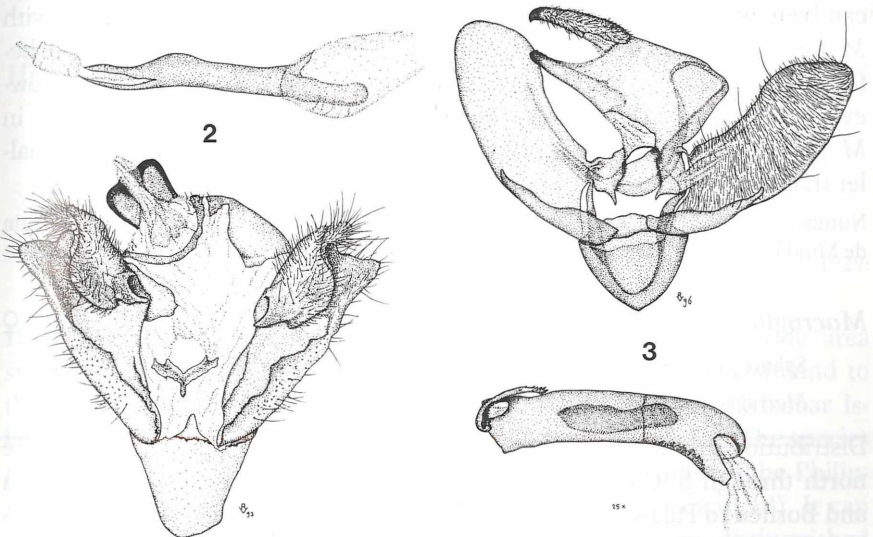
Discription: Very similar to *M. hemichroma* BUTLER, 1875 but overall darker and slightly smaller than that species. Areas in the forewing distad and proximad from the oblique straight median line of the same colour or nearly so, never strongly contrasting with the basal area much lighter than the apical one as in *M. hemichroma*. Antemedian band in the forewing hardly visible. Yellow lateral spots on abdomen much smaller, sometimes barely visible. Yellow band of rearwing narrower and much more yellow than the orange band of *M. hemichroma*. Basal and marginal dark brown bands of the rearwings connected in the centre of the wing by dark brown veins crossing the yellow median band. Underside of wings and body as in *M. hemichroma* but darker.

Genitalia, ♂: Process of harpe not triangular and pointed as in *M. hemichroma*, but more slender and slightly longer, ending in a somewhat blunt bulb, which is bent ventrally. Clasper without friction scales. Process of aedeagus placed as in *M. hemichroma*, but not tapering to a sharp point as in that species but flattened and equally broad over its full length. This process without the basal tooth of *M. hemichroma* but with small teeth placed irregularly along the edge (Genitalia Fig. 3).

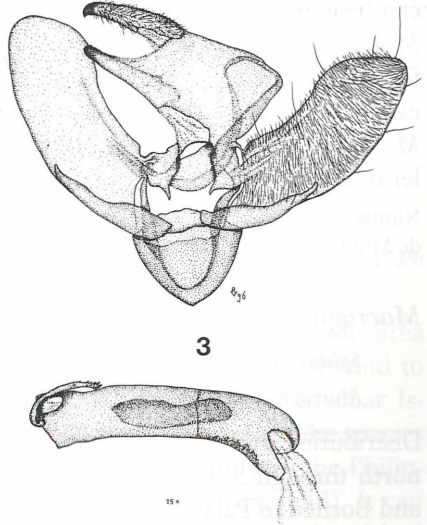
Distribution and taxonomic notes: *M. jani* appears to be endemic to the Philippines, from where it is currently known from three islands (map 17), but undoubtedly will be discovered on more. The new species could only be confused with *M. hemichroma*, from which we have never seen speci-



1



2



3

B/W illustrations of selected genitalia: Fig. 1: *Ambulyx suluensis* ♂ (from Copenhagen Zoological Museum Sphingidae slide no. 17). Fig. 2: *Satespes cerberus* ♂. Fig. 3: *Macroglossum jani* ♂.

mens from the Philippines. It is very well possible, however, that at least on Palawan, but probably on more islands, the two species occur together.

Etymology: The species is named after Mr. Jan PETERSEN, whose assiduous study of Philippine Lepidoptera has been of immense help to us.

Forewing length:

♂ min. 20.8 mm max. 22.9 mm av. 21.9 mm

♀ min. 22.1 mm max. 24 mm av. 23.2 mm

Number of Philippine specimens known to us: 6 from Palawan, Cebu and Homonhon.

Macroglossum passalus (DRURY, [1773])

Plate 16, Fig. E: ♀

Sphinx passalus DRURY (1773: 52)

Rhamphoschisma rectifascia FELDER ([1874]: T. 75 F. 7)

Macroglossum passalus rectifascia FELDER: ROTHSCHILD & JORDAN (1903: 665 n. 609b); D'ABRERA ([1987]: 166)

Macroglossum passalus DRURY: INOUE et al. (1997: 103)

Distribution and taxonomic notes: *M. passalus* occurs in S. India and Sri Lanka and in Sumatra, Java, Borneo and the Philippines. And on the continent, from Thailand to Vietnam and north to C. China, Taiwan and the Ryukyu Islands. In the Philippines we know of *M. passalus* from two small islands only (map 17), but as the species is seldom met with, we suppose it can be expected in many more localities. *M. passalus* can be confused with *M. fero*, because as in that species, it has the basal area of the fore wing, before the antemedian band, filled in with dark scales. In *M. passalus*, however, the outer border of the antemedian band is always straight, while in *M. fero* this is concave. Additionally *M. passalus* is usually somewhat smaller than *M. fero*.

Number of Philippine specimens known to us: 2 from Camiguin de Luzon and Camiguin de Mindanao.

Macroglossum fero (CRAMER, 1780)

Plate 16, Fig. A: ♀

Sphinx fero CRAMER (1780: 165)

Macroglossum fero CRAMER: ROTHSCHILD & JORDAN (1903: 665 n. 610)

Distribution and taxonomic notes: *M. fero* is known from Okinawa in the north through S. China and Indo China to India and from Sumatra, Java and Borneo to Palawan and Leyte. Like the previous one the species is rarely collected, and possibly inhabits more of the Philippinian islands (map 17). This is the largest *Macroglossum* species in the area and can only be

confused with large specimens of *M. passalus*, but *M. fero* can be recognized by the outer border of the antemedian band in the forewing, which is concave, while it is straight in *M. passalus*.

Forewing length:

♂ 28 mm

♀ min. 30 mm max. 33 mm av. 31.5 mm

Number of Philippine specimens known to us: 3 from Palawan and Leyte.

Macroglossum haslami CLARK, 1922

Plate 16, Fig. D: ♀

Macroglossum haslami CLARK (1922: 15); SEITZ (1929: 572); D'ABRERA ([1987]: 168); LIN (1990: 90); INOUE (1996: 100)

Distribution and taxonomic notes: *M. haslami* still is only known from the ♀ holotype that was collected near Manila in 1915 by Mr. Greville HASLAM (map 17). The specimen is as large as *M. fero* and resembles dark specimens of *M. passalus* but differs in having much larger orange-yellow spots on abdominal tergites 2 and 3, a much darker discal area in the forewing, which is proximally and distally bordered by greyish bands, and bearing two dorsal greyish bands on head and thorax that sharply contrast with the dark brown ground colour of the body.

Forewing length: 28 mm

Hippotion velox (FABRICIUS, 1793)

Plate 7, Fig. D: ♂

Sphinx velox FABRICIUS (1793: 378 n. 68)

Panacra vigil GUÉRIN-MÉNEVILLE, [1843]: SEMPER (1867: 699 n. 9)

Panacra lignaria WALKER, 1856: SWINHOE (892: 13 n. 51)

Chaerocampa vigil GUÉRIN: SEMPER (1896: 396 n. 34)

Hippotion velox FABRICIUS: ROTHSCHILD & JORDAN (1903: 749 n. 699); SEITZ (1929: 563); JENSEN (1973: 7); INOUE (1996: 102); SCHÜTZ (1996: 57 n. 34)

Distribution and taxonomic notes: *H. velox* is known from a wide area stretching from Sri Lanka and India through southeast Asian mainland to the Ryukyu Islands and Taiwan and from the Andaman and Nicobar Islands through the southeast Asian archipelago as far east as Fiji. The species is an active migrant and can be found on the smallest islands. In the Philippines *H. velox* is common and known from many islands (map 18). It can only be confused with *H. celerio* from which it can easily be distinguished by lacking the pink basal blotches in the rear wings.

Forewing length:

♂	min. 24 mm	max. 33 mm	av. 31.1 mm
♀	min. 34 mm	max. 36 mm	av. 35.2 mm

Number of Philippine specimens known to us: 63 from Balabac, Palawan, Calamian, Dumararan, Mindoro, Luzon, Marinduque, Panay, Negros, Cebu, Samar, Leyte, Mindanao and Sibutu.

Hippotion celerio (LINNAEUS, 1758)

Plate 9, Fig. E: ♂

Sphinx celerio LINNAEUS (1758: 491 n. 10)

Chaerocampa celerio LINNAEUS: SEMPER (1867: 700 n. 12; 1896: 395 n. 31)

Hippotion celerio LINNAEUS: ROTHSCHILD & JORDAN (1903: 751 n. 701); JENSEN (1973: 7); INOUE (1996: 102); SCHÜTZ (1996: 57 n. 35)

Distribution and taxonomic notes: *H. celerio* inhabits most of the Old World, where it is very common in the tropical parts becoming less common towards the north and the south. The species migrates actively and migrants have been found as far north as 60° N. In the Philippines the species is common and known from most islands (map 18). *H. celerio* could be confused with *H. velox*, but can immediately be recognized by the pink basal patches of the hindwing.

Forewing length:

♂	min. 25 mm	max. 33 mm	av. 28.6 mm
♀	min. 30 mm	max. 35 mm	av. 32.5 mm

Number of Philippine specimens known to us: 164 from Balabac, Palawan, Calamian, Dumararan, Mindoro, Luzon, Marinduque, Panay, Negros, Cebu, Bohol, Ticao, Samar, Leyte, Panaon, Mindanao, Jolo and Tawitawi.

Hippotion echeclus (BOISDUVAL, [1875])

Plate 9, Fig. A: ♂

Choerocampa echeclus BOISDUVAL ([1875]: 233)

Chaerocampa eson CRAMER, [1779]: SEMPER (1896: 394 n. 29)

Hippotion echeclus BOISDUVAL: ROTHSCHILD & JORDAN (1903: 754 n. 704; 1907: 132); SEITZ (1929: 564); HOLLOWAY (1987: 171); INOUE (1996: 100); SCHÜTZ (1996: 58 n. 36); INOUE et al. (1997: 107)

Distribution and taxonomic notes: *H. echeclus* is known from India to Thailand and Malacca, The Greater Sunda Islands, Bali, Lombok, Sumba and Flores, and from Sulawesi. Moreover the species has been recorded from the Ryukyu Islands. In the Philippines it is not common but known from most of the larger islands (map 18). *H. echeclus* is very similar to *H. rosetta*, *boerhaviae* and *rafflesii*, but from all these it can easily be distinguished by

the black basal spot on hindwing upperside for *rosetta* and *boerhaviae* and by the absence of the white line on the palpus, beneath the eye, for *rafflesii*.

Forewing length:

♂ min. 28 mm max. 30 mm av. 29.4 mm

♀ min. 30 mm max. 34 mm av. 32.5 mm

Number of Philippine specimens known to us: 20 from Luzon, Panay, Negros, Cebu, Bohol, Leyte and Mindanao.

Hippotion rosetta (SWINHOE, 1892)

Plate 9, Fig. C: ♂

Chaerocampa rosetta SWINHOE (1892: 16)

Hippotion rosetta SWINHOE: INOUE (1996: 100); SCHÜTZ (1996: 59 n. 37)

Distribution and taxonomic notes: Because of similarity in appearance this species has long been confused with the next species. *H. rosetta* is currently known to occur from India through southeast Asian mainland to Taiwan and the Ryukyu Islands, and from the Greater and Lesser Sunda Islands, the Philippines, Sulawesi, the Moluccas and New Guinea and adjacent islands. The species is common everywhere and in the Philippines it is known from many islands (map 19). Apart from the genitalia *H. rosetta* is hard to distinguish from *H. boerhaviae*. Usually *H. rosetta* has more convex termen in the forewing, a shorter dark streak above the pale lines running from mid-dorsum to apex in forewing, and a less obvious light mid-ventral line on abdomen. From *H. echeclus* the species can be distinguished by lacking the black basal spot in hindwing upperside and from *H. rafflesii* it differs by lacking the white line on the palpus beneath the eye.

Forewing length:

♂ min. 22 mm max. 27 mm av. 24.9 mm

♀ min. 24 mm max. 28 mm av. 26.1 mm

Number of Philippine specimens known to us: 175 from Balabac, Palawan, Mindoro, Luzon, Marinduque, Panay, Negros, Siquijor, Cebu, Bohol, Leyte, Mindanao, Jolo, Tawitawi, Bongao, Sanga Sanga and Sibutu.

Hippotion boerhaviae (FABRICIUS, 1775)

Plate 9, Fig. D: ♂

Sphinx boerhaviae FABRICIUS (1775: 542)

Chaerocampa boerhaviae FABRICIUS, possibly including *H. rosetta*: SEMPER (1896: 394 n. 30)

Hippotion boerhaviae FABRICIUS, possibly including *H. rosetta*: JENSEN (1973: 7); INOUE (1973: 125); LIN (1989: 3)

Hippotion boerhaviae FABRICIUS: INOUE (1996: 100); SCHÜTZ (1996: 59 n. 38); INOUE et al. (1997: 108)

Distribution and taxonomic notes: See the remarks under *H. rosetta*. *H. boerhaviae* occurs from Sri Lanka and N. India through the southeast Asian continent to Taiwan and the Ryukyu Islands, and from Sundaland through the Philippines, Moluccas and New Guinea, eastwards to Vanuatu and New Caledonia. In the Philippines *H. boerhaviae* appears less common than *H. rosetta*, but like that species it has been encountered in many islands, and can be expected to occur everywhere (map 19). Apart from the distinguishing characters mentioned under *H. rosetta*, when compared in larger series, *H. boerhaviae* on average appears to be slightly larger and to have narrower wings than *H. rosetta*. From *H. echeclus* and *H. rafflesii* it can be distinguished by the characters mentioned under *H. rosetta*.

Forewing length:

♂	min. 26 mm	max. 29 mm	av. 27.2 mm
♀	min. 26 mm	max. 29 mm	av. 27.3 mm

Number of Philippine specimens known to us: 27 from Palawan, Luzon, Sibuyan, Panay, Negros, Leyte, Mindanao and Jolo.

Hippotion rafflesii dyokeae nov. subsp.

Plate 9, Fig. B: ♂; plate 18, Fig. B: ♀

Chaerocampa rafflesii MOORE ([1858]: 276)

Hippotion rafflesii MOORE: INOUE (1996: 100); INOUE et al. (1997: 109)

Holotype: ♂ Philippines, Mindanao, S. Cotabato, Mt. Matutum, 22. ii. 1996, leg. Peter (CCGT).

Paratypes: 1 ♂, Philippines, Mindanao, S. Cotabato, Mt. Matutum, 16. i. 1996; 1 ♂, Philippines, Mindanao, S. Cotabato, Mt. Matutum, 7. i. 1996; 1 ♂, Philippines, Mindanao, S. Cotabato, Mt. Matutum, 29. i. 1996; 1 ♂, Philippines, Mindanao, Prov. Bukidnon, Mt. Kitanglad [Barrio: Intavas] 700 m, 13. xi. 1996 (coll. F. SMIT, Warmenhuizen); 1 ♂ Philippines, Mindanao, Bukidnon, Mt. Kitanglad, Intavas (coll. T. WITT, München); 1 ♀ Philippines, Mindanao, Bukidnon, Mt. Kitanlad, 1500 m; 7 ♂♂ Philippines, Mindanao, Davao del Sur, Mt. Apo, 1570 m, 10.-12. vii. 1996 (coll. R. BRECHLIN, Pasewalk); if not mentioned otherwise above the paratypes are kept in CCGT and ZMA.

Distribution and taxonomic notes: *H. rafflesii rafflesii* occurs from Sri Lanka and India to Thailand, S. China and Malacca, and from Sumatra through Java and Flores to Sulawesi. The nominate subspecies is not very variable in colour with the exception that specimens from Sulawesi tend to be slightly darker than specimens from elsewhere in its range. In the Philippines the species is found in the mountains of Mindanao (map 19), where it strikingly differs from the nominate subspecies in being overall much darker. There are however no differences in the genitalia. The species can be distinguish-

shed from the similar *H. echechus*, *rosetta* and *boerhaviae* by the white line on the palpus, beneath the eye.

Etymology: The subspecies is dedicated to Ms. Dyoke B. VAN ASSUM, without whose support the first author would not have been able to complete his study of Philippine Sphingidae.

Forewing length:

♂ min. 28 mm max. 28.2 mm av. 28.1 mm

♀ 25 mm

Number of specimens known to us: 14 from Mindanao.

Hippotion brunneum (SEMPER, 1896)

Plate 9, Fig. F: ♂

Chaerocampa brunnea SEMPER (1896: 400 n. 40)

Theretra brunnea SEMPER: ROTHSCHILD & JORDAN (1903: 785 n. 739; 1907: 135); SEITZ (1929: 567); D'ABRERA ([1987]: 198); LIN (1989: 7; 1990: 91)

Hippotion brunneum SEMPER: RIOTTE (1979: 225)

Hippotion brunnea SEMPER: INOUE (1996: 102)

Distribution and taxonomic notes: *H. brunneum* occurs in the Philippines, Sulawesi, the Moluccas and New Guinea. The species is nowhere common and in the Philippines until now it has been found on four islands only (map 19). The holotype of this species is still in the SEMPER collection in the Senckenberg-Museum in Frankfurt am Main. For its dark brown ground colour in combination with the beautiful white dorsal line on thorax and abdomen, in the Philippines the species cannot be confused with any other hawkmoth.

Forewing length:

♂ min. 27 mm max. 32 mm av. 30.2 mm

♀ min. 32 mm max. 34 mm av. 32.9 mm

Number of Philippine specimens known to us: 23 from Mindoro, N. Luzon, Negros and Mindanao.

Rhagastis acuta (WALKER, 1856)

Plate 10, Fig. G: ♂

Zonilia acuta WALKER (1856: 195 n. 7)

Rhagastis acuta WALKER: ROTHSCHILD & JORDAN (1903: 794 n. 751)

Distribution and taxonomic notes: *R. acuta* is currently known from N. India, Thailand and Malacca, and from Sumatra, Java, Bali and the Philippines, from where we know only two records (one in coll. R. BRECHLIN, the other in coll. A. ZWICK) (map 19). As no other *Rhagastis* species have ever

been found there, this species cannot be confused with any other hawk-moth in the Philippines.

Forewing length:

♂ min. 27 mm max. 27 mm av. 27 mm

Number of Philippine specimens known to us: 2 from Palawan.

***Theretra nessus* (DRURY, [1773])**

Plate 9, Fig. H: ♂

Sphinx nessus DRURY ([1773]: 46)

Theretra nessus DRURY: MOORE (1882: 22); SEMPER (1896: 401 n. 45); SEITZ (1929: 565); JENSEN (1973: 7); INOUE (1996: 102); SCHÜTZ (1996: 59 n. 39)

Distribution and taxonomic notes: *T. nessus* inhabits a wide area stretching from Sri Lanka, India and Nepal, through the southeast Asian continent and China to Japan and Taiwan, and through all of the southeast Asian archipelago to E. Australia and the Loyalty Islands. In the Philippines it is very common and known from many islands (map 20). The species is easily distinguished by its size and the gold stripes on the sides of the abdomen.

Forewing length:

♂ min. 40 mm max. 54 mm av. 48.2 mm

♀ min. 46 mm max. 56 mm av. 53.3 mm

Number of Philippine specimens known to us: 156 from Balabac, Palawan, Calamian, Mindoro, Luzon, Catanduanes, Marinduque, Sibuyan, Masbate, Panay, Siquijor, Negros, Cebu, Bohol, Samar, Leyte, Dinagat, Mindanao, Jolo and Sibu.

***Theretra manilae* CLARK, 1922**

Plate 9, Fig. I: ♂; plate 10, Fig. F: ♂

Theretra manilae CLARK (1922: 22); SEITZ (1929: 572); D'ABRERA ([1987]: 194); LIN (1989: 7; 1990: 91); INOUE (1996: 104); SCHÜTZ (1996: 60 n. 40)

Distribution and taxonomic notes: *T. manilae* is only known from Sulawesi and the Philippines. Within the Philippines it is not rare and known from a wide range, including Palawan (map 20). Though we know a few specimens of a definite brown form the species can generally be recognized by its green ground colour in combination with the silver stripes on the tegulae. Other sphingid species in the Philippines that have such silvery stripes on the tegulae (*T. oldenlandiae* and *T. silhetensis intersecta*) have a beige or light brownish ground colour. Specimens of *T. manilae* from Sulawesi are larger and more variegated in colouration than those from the Philippines.

Forewing length:

♂ min. 34 mm max. 38 mm av. 36 mm

♀ min. 36 mm max. 41 mm av. 38.8 mm

Number of Philippine specimens known to us: 47 from Palawan, Mindoro, Luzon, Panay, Negros, Siquijor, Samar, Leyte and Mindanao.

Theretra rhesus (BOISDUVAL, [1875])

Plate 10, Fig. B: ♂; plate 18, Fig. G: ♀

Chaerocampa rhesus BOISDUVAL ([1875]: 254 n. 36)

Theretra rhesus rhesus BOISDUVAL: SCHÜTZ (1996: 60 n. 41)

Theretra rhesus BOISDUVAL: SEMPER (1896: 402 n. 46); ROTH. & JORDAN (1916 b: 263); SEITZ (1929: 565 [partim]); D'ABRERA ([1987]: 194 [partim]); LIN (1990: 91)

Distribution and taxonomic notes: *T. rhesus* is known from Sumatra, Java, Bali, peninsular Malaysia, Borneo, Sulawesi and the Philippines. In the Philippines the species is common and recorded from many islands (map 20). It could be confused with *T. insularis* from which it differs in the lines on body and fore wings being much heavier.

Forewing length:

♂	min. 34 mm	max. 42 mm	av. 38.4 mm
♀	min. 38 mm	max. 47 mm	av. 42.2 mm

Number of Philippine specimens known to us: 79 from Balabac, Palawan, Mindoro, Luzon, Marinduque, Sibuyan, Panay, Negros, Siquijor, Cebu, Bohol, Samar, Leyte, Mindanao, Jolo and Bongao.

Theretra insularis insularis (SWINHOE, 1892) **stat. rev.**

Plate 10, Fig. C: ♂; plate 18, Fig. H: ♀

Chaerocampa insularis SWINHOE (1892: 18 n. 71)

Theretra rhesus insularis SWINHOE: ROTHSCHILD & JORDAN (1916 b: 263)

Theretra rhesus BOISDUVAL: SEITZ (1929: 565 [partim]); D'ABRERA ([1987]: 194 [partim])

Distribution and taxonomic notes: SWINHOE described *Chaerocampa insularis* from Ceram and Key. ROTHSCHILD & JORDAN first (1903: 767) considered *insularis* synonymous to *Chaerocampa rhesus* BOISDUVAL, [1875] and later (1916b: 263) reinstated the name for the eastern subspecies of *T. rhesus*. This subspecific status, however, can no longer be maintained, as both forms, *insularis* and *rhesus*, occur sympatrically in N. Borneo and the Philippines. Unfortunately the genitalia in this group of *Theretra* species (including also *T. boisdualii* (BUGNION, 1839), *T. clotho* (DRURY, [1773]) and *T. radiosa* ROTHSCHILD & JORDAN, 1916b) cannot be used to distinguish species as they are very much alike and in each species are variable in many small details. The thorns on the aedeagus cannot be used either, as these

are lost during or after mating. Nevertheless, *T. insularis* can easily be distinguished from *T. rhesus* by the most proximad oblique line in the forewing, that ends almost at the base of the wing in *T. rhesus* and at one third of dorsum from the base of the wing in *T. insularis*. Moreover, *T. insularis*, which has in fresh specimens an obvious green appearance, has a much less variegated appearance than *T. rhesus*, because the colour of the darker parts of the maculation stays much closer to the ground colour. Finally the lines on the body are much weaker (on thorax even vestigial) in *T. insularis*. *T. insularis insularis* is known from Botel Tobago, the Philippines, Sabah, Brunei, North and South Moluccas and New Guinea. East of New Guinea the nominotypical subspecies is replaced by subsp. *mollis* JORDAN, 1926 (nov. stat.) in St. Mathias and the Squally Islands, subsp. *valens* JORDAN, 1926 (nov. stat.) in the larger islands of the Bismarck Archipelago and subsp. *lenis* JORDAN, 1926 (nov. stat.) in the Solomon Islands. In the Philippines *T. insularis insularis* is not rare and widely distributed (map 20). The species is, however, nowhere as common as *T. rhesus*.

Forewing length:

♂	min. 36.5 mm	max. 41 mm	av. 39 mm
♀	min. 41 mm	max. 44 mm	av. 43 mm

Number of Philippine specimens known to us: 40 from Balabac, Mindoro, Luzon, Panay, Siquijor, Samar, Leyte and Mindanao.

Theretra sugii CADIOU, 1995

Plate 9, Fig. K: ♂

Theretra sugii CADIOU (1995: 506 f. 15-17)

Distribution and taxonomic notes: *T. sugii* is up till now known from the Philippines only and currently only known from Mindanao, where it is locally common (map 21). In Sulawesi occurs a similar appearing, undescribed species, which tends to be darker and less variegated than the specimens from Mindanao. The species is similar to *T. clotho*, but the apex of the forewing is more falcate than in that species and the line and discal dot in the forewing are much heavier.

Forewing length:

♂	min. 40 mm	max. 43 mm	av. 41.5 mm
♀	min. 48 mm	max. 48 mm	av. 48 mm

Number of Philippine specimens known to us: 52 from Mindanao.

Theretra clotho clotho (DRURY, [1773])

Plate 10, Fig. A: ♂

Sphinx clotho DRURY ([1773]: 48)

Chaerocampa clotho DRURY: SEMPER (1867: 700 n. 14; 1896: 399 n. 38)

Theretra clotho clotho DRURY: SEITZ (1929: 565); JENSEN (1973: 7); INOUE (1973: 127); LIN (1989: 3); INOUE (1996: 103); SCHÜTZ (1996: 61 n. 42); INOUE et al. (1997: 116)

Theretra clotho DRURY; LIN, 1990: 91

Distribution and taxonomic notes: *T. clotho clotho* occurs from Sri Lanka, India and Nepal, through the southeast Asian mainland north to N. China, Korea and Japan, and from the Andaman Islands through the Greater Sunda Islands to Flores, Timor, the Philippines and Taiwan. From Sulawesi and Selayar through the Moluccas and New Guinea as far east as New Caledonia the nominotypical subspecies is replaced by subsp. *celata* (BUTLER, 1877). In the Philippines *T. clotho clotho* is very common and known from many islands (map 21). The species is sufficiently characterized by its modest appearance. Confusion could only be possible with *T. sugii*, but that species is much more variegated than *T. clotho* and it has a more falcate apex of the fore wing.

Forewing length:

♂ min. 35 mm max. 42 mm av. 38.3 mm

♀ min. 43 mm max. 46 mm av. 44.3 mm

Number of Philippine specimens known to us: 183 from Balabac, Palawan, Calamian, Mindoro, Luzon, Sibuyan, Panay, Negros, Siquijor, Cebu, Bohol, Leyte, Samar, Mindanao, Jolo, Tawitawi, Bongao and Sibutu.

Theretra latreillii lucasii (WALKER, 1856)

Plate 10, Fig. D: ♂

Chaerocampa lucasii WALKER (1856: 141); SEMPER (1896: 398 n. 37)

Theretra latreillei lucasii WALKER: INOUE (1973: 127)

Theretra latreillei lucasi WALKER: ROTHSCHILD & JORDAN (1903: 773 n. 726b); MELL (1922: 297); SEITZ (1929: 566); JENSEN (1973: 8); D'ABRERA ([1987]: 196)

Theretra latreillii lucasi WALKER: LIN (1989: 3)

Theretra latreillei MACLEAY, [1826]: LIN (1990: 91)

Theretra latreillii lucasii WALKER: INOUE (1996: 103); SCHÜTZ (1996: 62 n. 43); INOUE et al. (1997: 114)

Distribution and taxonomic notes: *T. latreillii lucasii* occurs from Sri Lanka and India through the southeast Asian continent to S. China, Taiwan and Botel Tobago, and from the Andaman Islands, through the Greater Sunda Islands eastward to Flores, Sulawesi and the Philippines. From the Moluccas eastward to the Solomon Islands and N. Australia the subspecies is replaced by the nominotypical subspecies. Though never very common in the Philippines, *T. latreillii lucasii* is widely distributed and recorded from many

islands (map 21). For its short, broad wings, the species cannot be confused with any other *Theretra* species in the Philippines.

Forewing length:

♂ min. 29 mm max. 38 mm av. 34.1 mm

♀ min. 33 mm max. 39 mm av. 35.3 mm

Number of Philippine specimens known to us: 94 from Balabac, Palawan, Mindoro, Luzon, Negros, Siquijor, Cebu, Bohol, Leyte, Mindanao, Jolo, Tawitawi, Bongao and Sibutu.

Theretra suffusa (WALKER, 1856)

Plate 10, Fig. H: ♀

Chaerocampa suffusa WALKER (1856: 146 n. 32)

Theretra suffusa WALKER: KIRBY (1892: 650 n. 8)

Distribution and taxonomic notes: This species occurs from Nepal and N. India through southeast Asian mainland north to S. China, Taiwan and the Ryukyu Islands, and in Sumatra, Java and Borneo from where it reaches Palawan in the Philippines (map 21). *T. suffusa* is nowhere in its area common but in Palawan the species is extremely rare, and it is very well possible that only occasional strays reach this far to the east. In Palawan it could be confused with *T. alecto* from which it differs by having a stronger light mesal line on dorsum of thorax and abdomen, and by the black basal patch of the hindwing, which is triangular in *T. suffusa* and v-shaped in *T. alecto*.

Forewing length:

♀ 45 mm

Number of Philippine specimens known to us: 1 from Palawan.

Theretra alecto (LINNAEUS, 1758)

Plate 10, Fig. I: ♂

Sphinx alecto LINNAEUS (1758: 492 n. 18)

Chaerocampa alecto LINNAEUS: SEMPER (1867: 700 n. 13; 1896: 394 n. 28)

Theretra alecto alecto LINNAEUS: ROTHSCHILD & JORDAN (1903: 776 n. 730a); INOUE (1973: 127)

Theretra alecto LINNAEUS: SEITZ (1929: 566); INOUE (1996: 103); SCHÜTZ (1996: 62 n. 44); INOUE et al. (1997: 113)

Distribution and taxonomic notes: *T. alecto* occurs as far west as Greece in Europe and Egypt in Africa and eastward through Arabia, the Middle East and south Central Asia, India, China and continental southeast Asia to the Ryukyu Islands and Taiwan, and from the Greater and Lesser Sunda Islands to the Philippines, Sulawesi and the Moluccas east to Key. From localities where it breeds well the species migrates actively and specimens have

been found far beyond the boundaries from this area. In the Philippines the species is known from many islands, but nowhere it is very common (map 22). The species could be confused with *T. suffusa* but can be immediately distinguished by the v-shaped black basal patch in the hindwing upperside.

Forewing length:

♂ min. 30 mm max. 39 mm av. 35.8 mm

♀ min. 39 mm max. 48 mm av. 44.4 mm

Number of Philippine specimens known to us: 41 from Balabac, Palawan, Mindoro, Luzon, Marinduque, Panay, Negros, Cebu, Bohol, Leyte, Samar, Mindanao and Bongao.

Theretra oldenlandiae oldenlandiae (FABRICIUS, 1775)

Plate 10, Fig. K: ♂

Sphinx oldenlandiae FABRICIUS (1775: 542 n. 21)

Chaerocampa oldenlandiae FABRICIUS: SEMPER (1867: 700 n. 15; 1896: 395 n. 32); SWINHOE (1892: 20 n. 76)

Theretra oldenlandiae FABRICIUS: LIN (1990: 91)

Theretra oldenlandiae oldenlandiae FABRICIUS: ROTHSCHILD & JORDAN (1903: 782 n. 736a); SEITZ (1929: 567); JENSEN (1973: 8); INOUE (1996: 103); SCHÜTZ (1996: 63 n. 45); INOUE et al. (1997: 115)

Distribution and taxonomic notes: *T. oldenlandiae oldenlandiae* occurs from Sri Lanka, India and Nepal through continental southeast Asia to Vietnam, north to China, Korea and Japan, and from Sumatra and Java through the Lesser Sunda Islands to Timor, and through Borneo to the Philippines and Taiwan. Eastward the species is represented by subsp. *fuscata* GEHLEN, 1941 in Sulawesi and the Moluccas, by subsp. *firmata* (WALKER, 1856) in New Guinea and Australia and by subsp. *samoana* GEHLEN, 1941 from Melanesian Islands as far east as Samoa. In the Philippines *T. oldenlandiae oldenlandiae* is common and recorded from many islands (map 22). The species could be confused with *T. silhetensis intersecta*, but differs by having a double dorsal line on the abdomen.

Forewing length:

♂ min. 23 mm max. 33 mm av. 28.2 mm

♀ min. 30 mm max. 34 mm av. 32.5 mm

Number of Philippine specimens known to us: 55 from Balabac, Palawan, Mindoro, Luzon, Sibuyan, Panay, Negros, Siquijor, Cebu, Bohol, Samar, Leyte, Panaon, Mindanao, Jolo and Tawitawi.

***Theretra silhetensis intersecta* (BUTLER, 1875)**

Plate 10, Fig. E: ♀

Chaerocampa intersecta BUTLER (1875: 623)*Chaerocampa pinastrina* MARTYN, 1797: SEMPER (1896: 396 n. 33)*Theretra pinastrina intersecta* BUTLER: ROTHSCHILD & JORDAN (1903: 784 n. 737b); SEITZ (1929: 567); INOUE (1973: 129)*Theretra pinastrina* MARTYN: JENSEN (1973: 8)*Theretra silhetensis intersecta* BUTLER: ROTHSCHILD & JORDAN (1907: 135); D'ABRERA ([1987]: 198); INOUE (1996: 103); SCHÜTZ (1996: 64 n. 46); INOUE et al. (1997: 112)*Theretra pinastrina pinastrina* MARTYN: MELL (1922: 310); LIN (1989: 3)*Theretra silhetensis* WALKER: LIN (1990: 91)

Distribution and taxonomic notes: *T. silhetensis silhetensis* (WALKER, 1856) is known from Sundaland and Sri Lanka, and from continental southeast Asia from India to S. China, Vietnam, Botel Tobago, Taiwan and Japan. Subsp. *intersecta* occurs from the Philippines, Sulawesi and Sumba as far eastward as Fiji. In the Philippines the subspecies is common and known from many islands including Palawan and the Sulu Archipelago (map 22). The species could be confused with the preceding one, but can be recognized by the simple dorsal line on the abdomen.

Forewing length:

♂ min. 24 mm max. 28 mm av. 26.6 mm

♀ min. 27 mm max. 30 mm av. 27.7 mm

Number of Philippine specimens known to us: 152 from Balabac, Palawan, Calamian, Camiguin de Luzon, Luzon, Panay, Negros, Bohol, Samar, Leyte, Dinagat, Mindanao, Jolo and Tawitawi.

***Pergesa actea* (CRAMER, 1779)**

Plate 9, Fig. G: ♀

Sphinx acteus CRAMER (1779: 93)*Pergesa actaeus* [sic] CRAMER: SEMPER (1867: 699 n. 11)*Theretra acteus* CRAMER: SEMPER (1896: 402 n. 47)*Ryncholaba acteus* CRAMER: ROTHSCHILD & JORDAN (1903: 789 n. 746); SEITZ (1929: 568); D'ABRERA ([1987]: 198)*Ryncholaba acteus acteus* CRAMER: JENSEN (1973: 9)*Pergesa acteus* Cr.: LIN (1990: 91); INOUE (1996: 104); INOUE et al. (1997: 110)*Pergesa actea* CRAMER: SCHÜTZ (1996: 64 n. 47)

Distribution and taxonomic notes: *P. actea* is a common moth from Sri Lanka, India and Nepal, through the southeast Asian mainland to Vietnam and northward through China to the Ryukyu Islands, Taiwan and Botel Tobago, and from Sumatra, Java and Borneo to the Philippines, Sulawesi,

Buru, Ambon and Flores. In the Philippines the species is known from many islands and can be expected on many more (map 23). The species cannot be confused with any other hawkmoth in the area.

Forewing length:

♂ min. 22 mm max. 32 mm av. 27.5 mm

♀ min. 29 mm max. 38 mm av. 31.7 mm

Number of Philippine specimens known to us: 126 from Balabac, Palawan, Dumararan, Mindoro, Luzon, Marinduque, Masbate, Panay, Negros, Siquijor, Cebu, Bohol, Samar, Leyte, Dinagat, Mindanao, Jolo and Bongao.

Cechenena aegrota (BUTLER, 1875)

Plate 11, figs. A & B: ♂; figs. C & D: ♀

Pergesa aegrota BUTLER (1875: 246 n. 19)

Cechenena aegrota BUTLER: ROTHSCHILD & JORDAN (1903: 800 n. 760); D'ABRERA ([1987]: 204); LIN (1989: 7; 1990: 92); INOUE (1996: 105)

Cechenena aegrota aegrota BUTLER: SCHÜTZ (1996: 64 n. 48)

Distribution and taxonomic notes: *C. aegrota* is a rare hawkmoth, known from Nepal and N. India through the southeast Asian continent to Vietnam, and through Sumatra, Java and Borneo it reaches Palawan in the Philippines (map 23). *C. aegrota* can be kept apart from *C. transpacifica* by the black basis of the forewing underside; in *C. transpacifica* this is red.

Forewing length:

♂ min. 36 mm max. 39 mm av. 37.4 mm

Number of Philippine specimens known to us: 11 from Palawan.

Cechenena transpacifica (CLARK, 1923)

Plate 11, figs. E, F & G: ♂; figs. H & J: ♀

Xylophanes transpacifica CLARK (1923: 75)

Cechenena transpacifica CLARK: CLARK (1926: 59); INOUE (1996: 105)

Cechenena aegrota transpacifica CLARK: SEITZ (1929: 570, 572)

Distribution and taxonomic notes: *C. transpacifica* replaces *C. aegrota* in the Philippines proper. It is not very common but known from most of the major islands and will probably be discovered on still others (map 23). In appearance the ♂♂ of the species are similar to those of *C. aegrota* and SEITZ considered both conspecific. The two ♀♀ we know of *C. transpacifica*, however are very different from the ♂, while in *C. aegrota* ♂ and ♀ are similar in appearance. In ♀♀ of *C. transpacifica* the distal half of the forewing is al-

most completely darkened to brown, only a few yellow spots in the disc and apex of the wing are left. As the proximal half of the wing is almost unicolorous yellowish red with only traces of darker maculation and the upper-side of the rearwings lack the obvious darker margin of the ♂♂, the impression is of a yellowish red moth coloured with large patches of brown and black. In the ♂♂ this species appears to occur in two forms. Most specimens have a large black blotch in the base of the hindwing, as in *C. aegrota* (plate 11, Fig. F). Specimens occur however, in which this blotch is reddish brown to almost completely wanting (plate 11, Fig. G). In the ♂ genitalia *C. transpacific* has a broader harpe than *C. aegrota*. Without dissection the species can be distinguished by the basal part of the forewing underside which is red in *C. transpacific* and black in *C. aegrota*.

Forewing length:

♂	min. 33 mm	max. 42 mm	av. 38.3 mm
♀	min. 48 mm	max. 48 mm	av. 48 mm

Number of Philippine specimens known to us: 23 from Mindoro, Luzon, Panay, Negros, Samar and Leyte.

Cechenena helops helops (WALKER, 1856) Plate 18, figs. D & E: ♂

Philampelus helops WALKER (1856: 180 n. 12)

Cechenena helops helops WALKER: ROTHSCHILD & JORDAN (1903: 801 n. 761a); JENSEN (1973: 9); D'ABRERA ([1987]: 204); INOUE (1996: 104); SCHÜTZ (1996: 65 n. 49); INOUE et al. (1997: 126)

Cechenena helops WALKER: LIN (1989: 8; 1990: 92)

Distribution and taxonomic notes: *C. helops helops* occurs from Nepal and N. India, through continental southeast Asia to Vietnam, and in Sumatra, Java, Borneo, the Philippines and Sulawesi. Eastward the species is known as subsp. *interposita* JOICEY & TALBOT, 1921 from the Moluccas, and subsp. *papuana* ROTHSCHILD & JORDAN, 1903 from New Guinea and Australia. In the Philippines the nominotypical subspecies is very common and known from many islands (map 23). On Mindoro occasional specimens occur in which the black basal spots on the forewing and black markings on the thorax are a bright orange-brown. Such specimens have also an overall lighter appearance. The species is abundantly different from all other hawkmoths and cannot be confused.

Forewing length:

♂	min. 39 mm	max. 50 mm	av. 45.7 mm
♀	min. 47 mm	max. 54 mm	av. 52 mm

Number of Philippine specimens known to us: 71 from Balabac, Palawan, Mindoro, Luzon, Marinduque, Panay, Negros, Siquijor, Samar, Leyte, Dinagat and Mindanao.

Cechenena subangustata ROTHSCHILD, 1920

Plate 8, Fig. H: ♂

Cechenena lineosa subangustata ROTHSCHILD (1920: 482)

Cechenena subangustata ROTHSCHILD: INOUE (1990: 256)

Distribution and taxonomic notes: *C. subangustata* is known from Thailand and Malacca, and from Sumatra, Java, Borneo, Balabac and Taiwan. *C. subangustata* was long considered conspecific with *C. lineosa* (WALKER, 1856), but INOUE (1990: 256) proved them to be distinct species. The heavily striped forewings in combination with the light band on the rearwings make it impossible to confuse this species with any other hawkmoth in the Philippines.

Forewing length:

♂ 49 mm

Number of Philippine specimens known to us: 1 from Balabac (map 23).

Cechenena pollux (BOISDUVAL, [1875])

Plate 8, Fig. I: ♀

Chaerocampa pollux BOISDUVAL ([1875]: 261 n. 47)

Chaerocampa pollux BOISDUVAL: SEMPER (1896: 400 n. 41)

Cechenena pollux BOISDUVAL: ROTHSCHILD & JORDAN (1903: 804 n. 764; 1907: 137); SEITZ (1929: 570); D'ABRERA ([1987]: 204); LIN (1990: 92); INOUE (1996: 105)

Cechenena pollux [sic] BOISDUVAL: LIN (1989: 8)

Distribution and taxonomic notes: *C. pollux* has been recorded from Sumatra, Java and the Philippines. In the Philippines we know this rare species only from Palawan (map 23). Fresh specimens have a vivid green ground colour in the forewing that contrasts beautifully with the ochre yellow band of the hind wing. The combination of these characters render it impossible to confuse this species with any other hawkmoth.

Forewing length:

♂ min. 45 mm max. 45 mm av. 45 mm

Number of Philippine specimens known to us: 2 from Palawan.

Additionally recorded species

Additionally the following species have been recorded from the Philippines in literature. We have not been able to locate specimens of these species that could confirm their occurrence there.

Ambulyx obliterated ROTHSCHILD, 1920

D'ABRERA ([1987]: 56); LIN (1989: 6; 1990: 87)

A. obliterated is currently known from S. Thailand, peninsular Malaysia, Sumatra and Borneo. Its occurrence on Palawan is not impossible, but we have never seen specimens from there.

Cypa pallens JORDAN, 1926

LIN (1990: 88)

C. pallens occurs on the southeast Asian mainland and in Taiwan. From this area it might be possible for stray specimens to reach N. Luzon (see *Phyllosphingia dissimilis* and *Acosmeryx castanea*). We have, however, never seen specimens of this species from the Philippines, but know from there quite a number of the closely related, and very similar species *C. claggi* and *C. decolor*. Therefore, for the time being, we assume this record to be based on misidentification.

Gehlenia falcata HAYES, 1963

D'ABRERA ([1987]: 134); LIN (1989: 7; 1990: 89)

G. falcata was described from peninsular Malaysia and subsequently discovered in Sumatra and Borneo. Its occurrence on Palawan cannot be considered impossible, but up till now we were not able to trace specimens collected there.

Macroglossum fritzei ROTHSCHILD & JORDAN, 1903

LIN (1990: 90)

This species currently shows a disjunctive distribution within a vast area stretching from S. Japan through the southeast Asian mainland to Borneo. Its occurrence in the Philippines (as well as on Taiwan) must be considered possible.

Last minute information

Shortly before publication we were informed that *Ambulyx joiceyi* CLARK, 1923 has just recently been caught on Palawan (pers. comm. R. BRECHLIN).

Species distribution maps

Note: Distribution maps (maps 1–23) illustrate the distribution of each Sphingidae species on the Philippines as far as it is known to us.

Fig. 3
 ■ *Amblypterus panopus* *min. canescens*
 ● *Amblypterus panopus*
 ▲ *Amblypterus panopus*
 ○ *Amblypterus panopus*



Fig. 4
 ● *Amblypterus* *tartaria* *tartaria*
 ○ *Amblypterus* *tartaria* *johnsoni*
 ● *Amblypterus* *sericeiventris* *luzoni*
 ○ *Amblypterus* *sericeiventris*
 ▲ *Amblypterus* *noardi*
 ● *Amblypterus* *hackeri*
 ○ *Amblypterus* *hackeri*

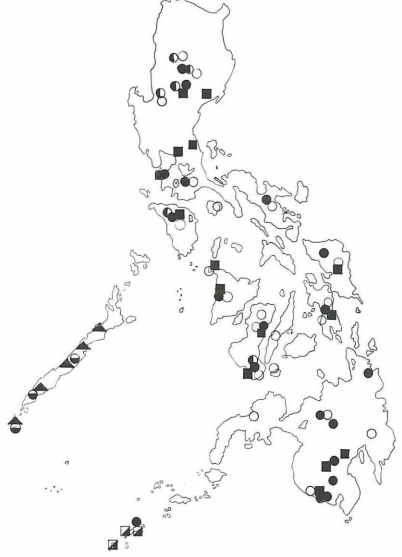


Fig. 5
 ▲ *Ambulyx johnsoni*
 ● *Ambulyx canescens* *canescens*
 ○ *Ambulyx canescens* *flava*
 ■ *Ambulyx vilsenani*
 ▲ *Ambulyx subtrigilis* *subtrigilis*

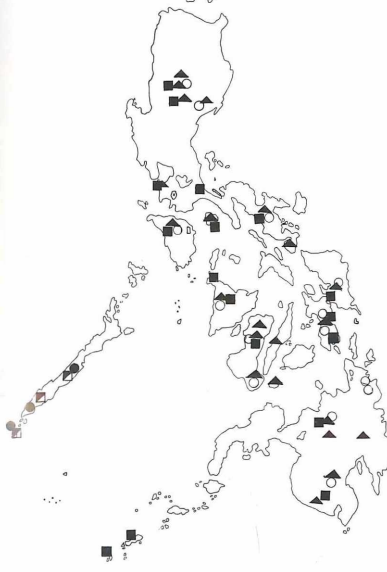


Fig. 6
 ● *Clanis stenocera*
 ○ *Clanis nebritensis*
 ● *Clanis surigaoensis*
 ○ *Leucophaea lineata*
 ▲ *Polyptychus trilineatus* *philippinensis*

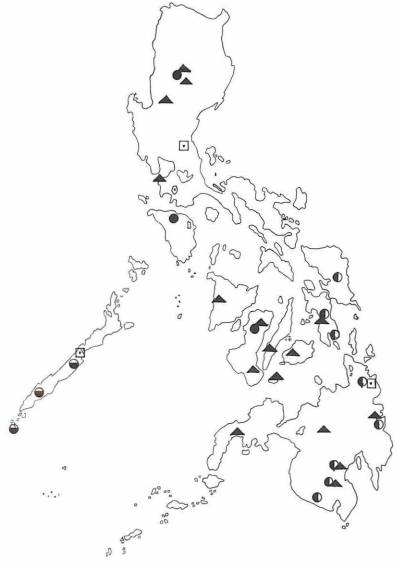


Fig. 3

- *Harumba amboinicus luzoni*
- *Harumba dyras javanica*
- *Harumba tigrina*
- ▲ *Daphnus ocellaris*

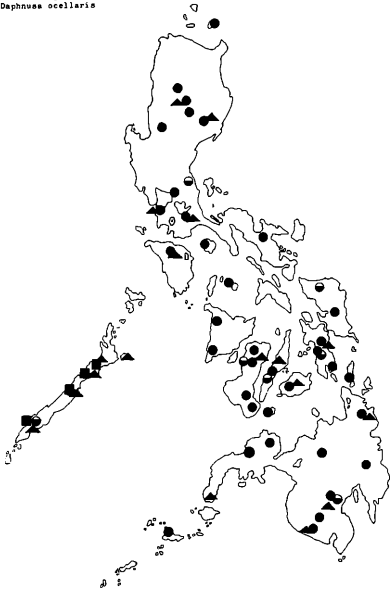


Fig. 4

- *Cyba decolor*
- *Cyba claggi*
- ▲ *Callibaibys ananda*
- *Phylloniphinia dissimilis* sp.
- *Sataspes cerberus*
- *-stipes tyroica*

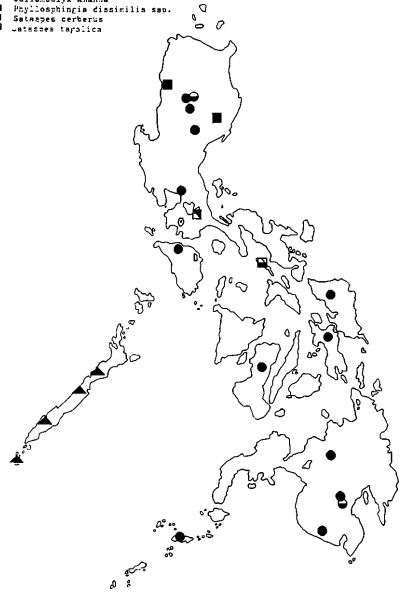


Fig. 5

- *Meganoton myciphana*
- *Meganoton rufescens philippinensis*
- *Meganoton rufescens thielei*
- *Holiana albescens*
- *Poliopterus macrodon menephron*
- *Poliopterus incerta*
- *Colbine inexacta*

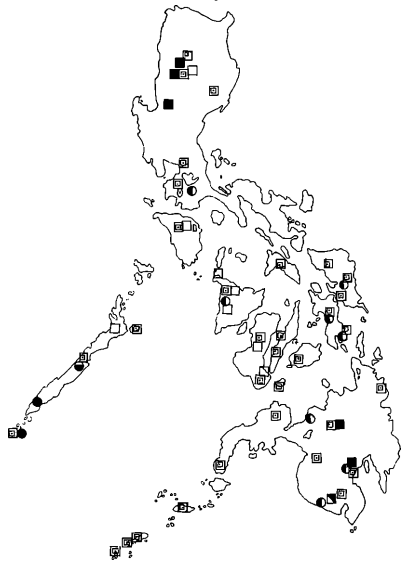
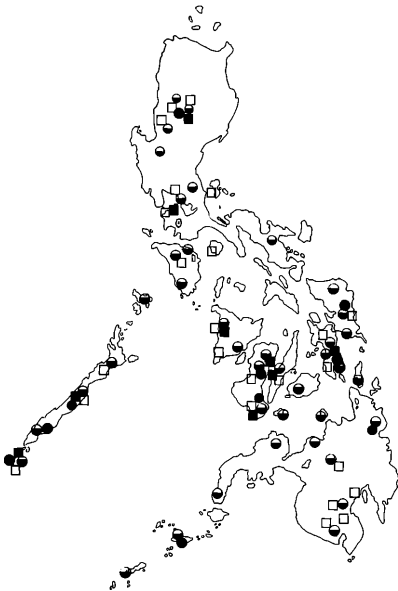


Fig. 9
 ● *Cephanodes hylae hylae*
 ○ *Cephanodes sicus*
 ▲ *Cephanotes banksi*

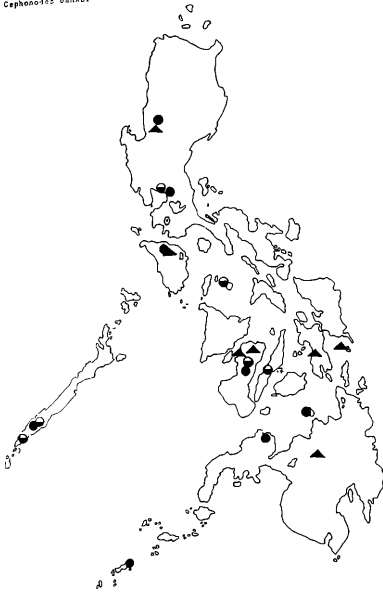


Fig. 10
 ▲ *Janatholibus erotus erotus*
 ● *Daphnia nerii*
 ○ *Daphnia hypothous hypothous*
 ■ *Daphnia placida placida*
 ▣ *Daphnia vriesi*

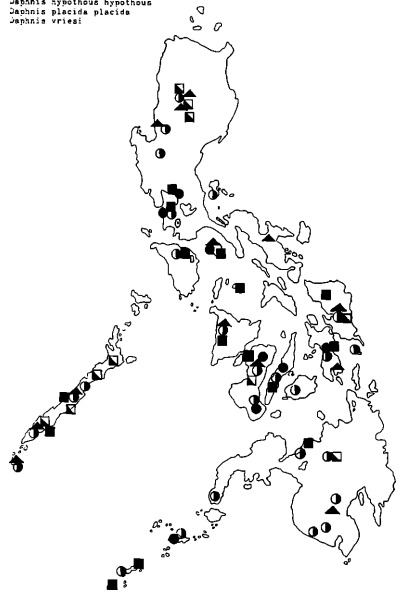


Fig. 11
 ○ *Elibia dolichus*
 ● *Elibia linizera*
 ▲ *Agonyx testacea*
 ■ *Agaurico hys*
 ● *Eurypteryx alleni*

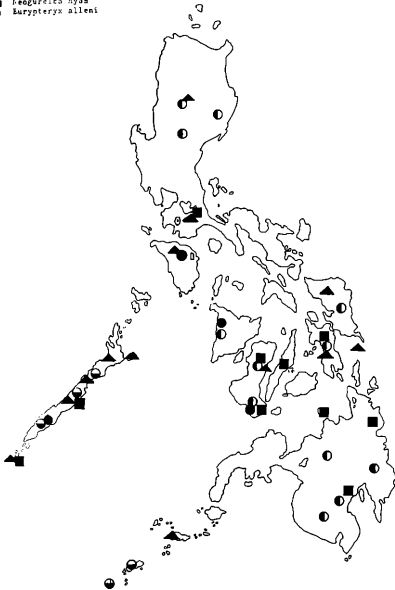


Fig. 12
 ● *Acosmeryx sacca subdentata*
 ○ *Acosmeryx castanea*
 ● *Acosmeryx socrates*
 ■ *Acosmeryx strevillii*
 ▲ *Acosmeryx pseudonaga*
 ● *Acosmeryx sp.*
 ○ *Acotina naga borneensis*
 ▣ *Acotina naga vigeri*

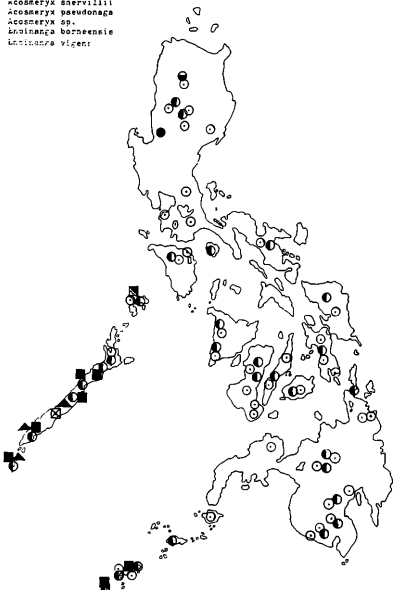


Fig. 13
 □ *Eupanacra buviria buviria*
 ■ *Eupanacra buviria schuetzi*
 ● *Eupanacra variolosus*
 ○ *Eupanacra dohertyi dohertyi*
 ○ *Eupanacra ti-idates*
 ○ *Eupanacra malayana*
 ○ *Eupanacra viciatulus*
 ▲ *Eupanacra cadioui*
 ● *Eupanacra treadwayi*

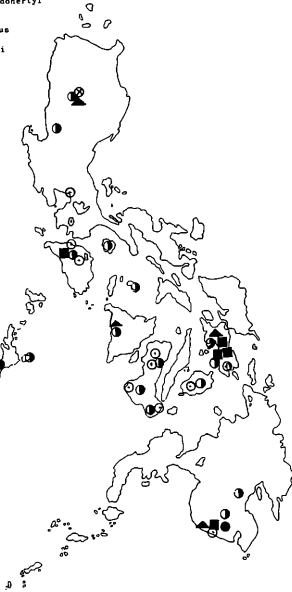


Fig. 14
 ● *Macroglossum avicula*
 ● *Macroglossum bonbylans*
 ● *Macroglossum lepidum*
 ■ *Macroglossum calidum philippinense*
 ▲ *Macroglossum pyrrhocticum*

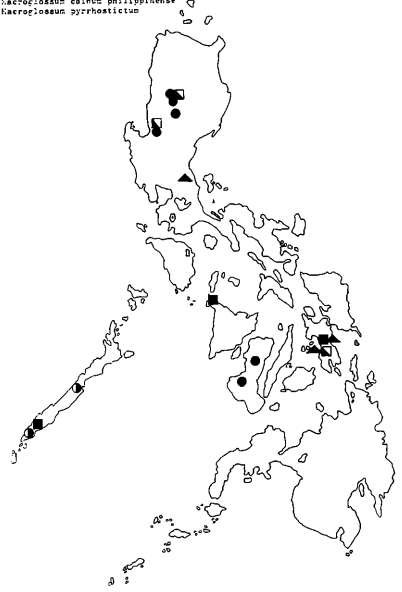


Fig. 15
 ● *Macroglossum troglodytes*
 ○ *Macroglossum insipidum insipidum*
 ○ *Macroglossum unguis*
 ■ *Macroglossum nitidum*
 ■ *Macroglossum heliophilum heliophilum*
 ▲ *Macroglossum arinasi*

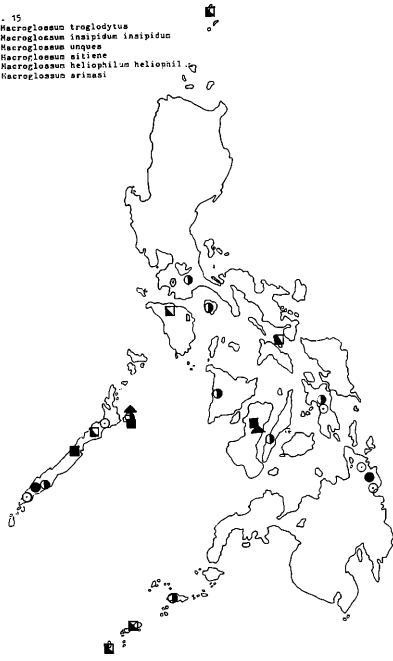


Fig. 16
 ● *Macroglossum mediavitta*
 ● *Macroglossum prometheus prometheus*
 ● *Macroglossum variegatum*
 ■ *Macroglossum clausopterum*
 ■ *Macroglossum semifasciatum*
 □ *Macroglossum aquila*
 ▲ *Macroglossum sylvia*

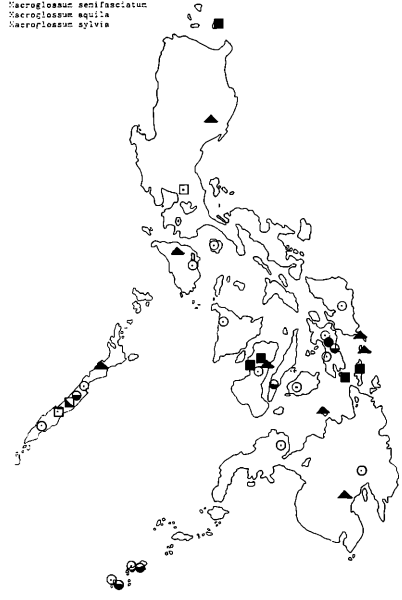


Fig. 17
 ● *Macropisum corythus luteatum*
 ○ *Macropisum integrifasciatum*
 ◐ *Macropisum multifascia*
 ◑ *Macropisum var.*
 ◒ *Macropisum passalus*
 ◓ *Macropisum fove*
 ▲ *Macropisum hesleri*

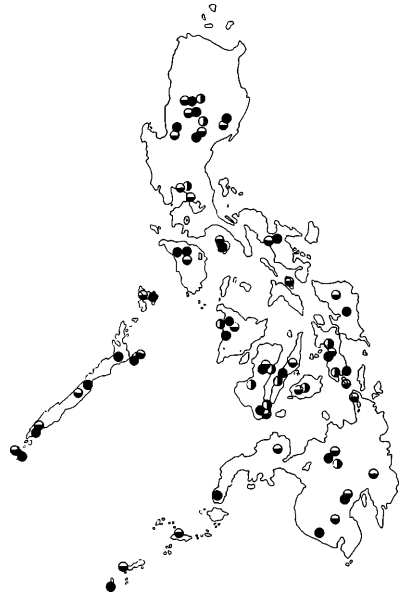
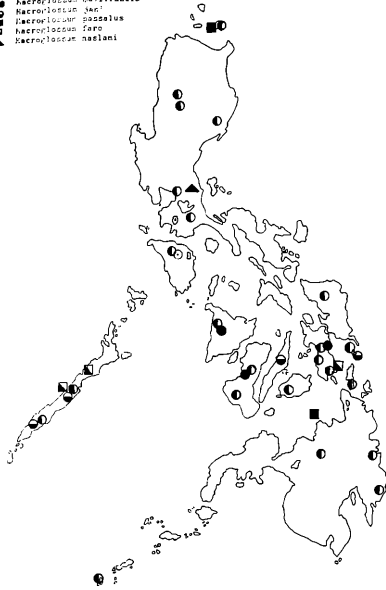


Fig. 20
 ● *Theretra neopus*
 ▲ *Theretra manila*
 ◐ *Theretra rhesus*
 ◑ *Theretra insulari*

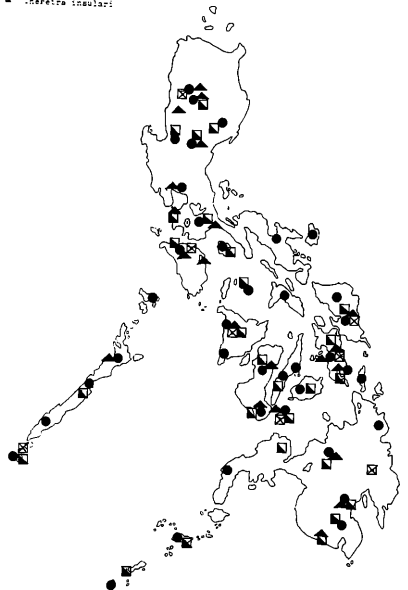
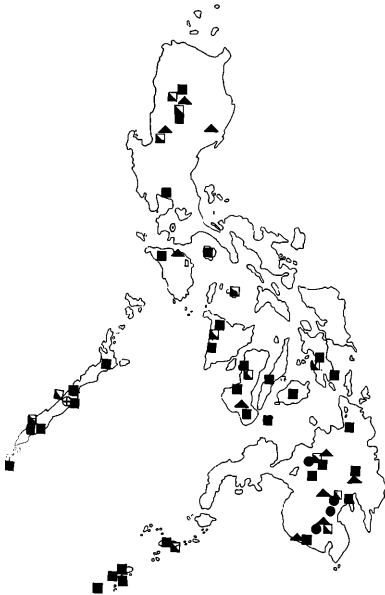


Fig. 22
■ *Theretra alecto*
● *Theretra odenlandiae odenlandiae*
▲ *Theretra odenlandiae intersepta*

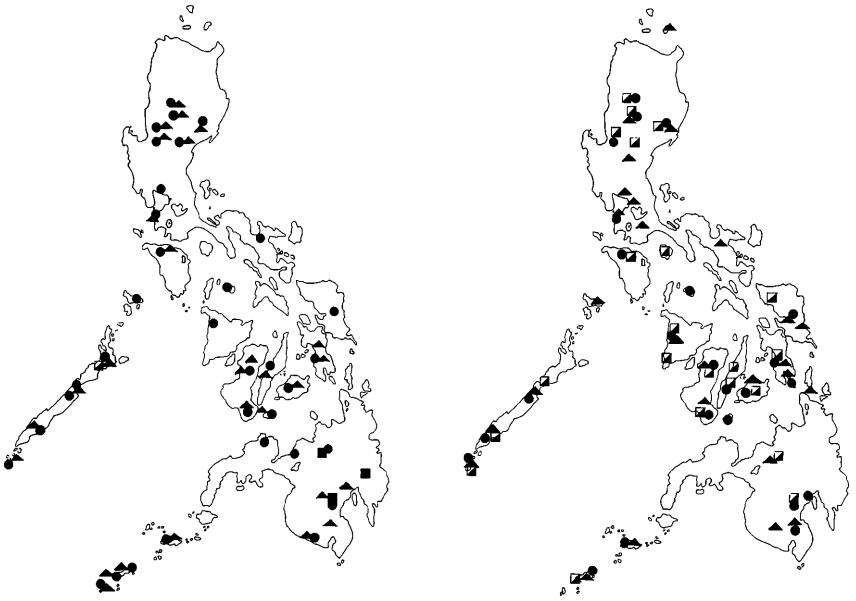
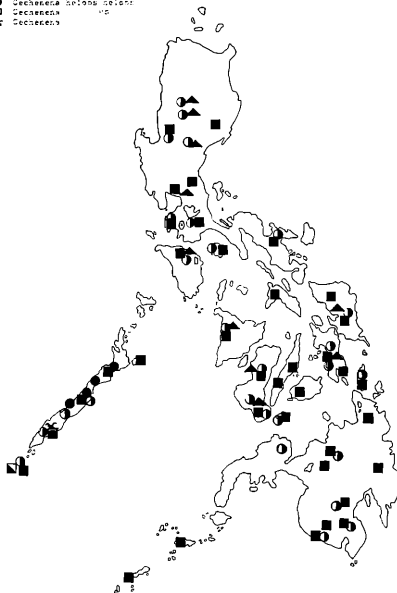


Fig. 23
■ *Geckeneria aenea*
● *Geckeneria serrata*
▲ *Geckeneria transpacifica*
○ *Geckeneria hololepis hololepis*
□ *Geckeneria* sp.
× *Geckeneria*



Three tables giving statistics on species and endemic species

Table 1: Breakdown of the number of species and endemic species/subspecies for each subfamily, tribe and genus of Philippine Sphingidae

Family Sphingidae			
	no. of species	no. of these species endemic to the Philippines	no. of endemic Philippine subspecies of widely distributed Asian species
Subfamily Sphinginae			
Tribe Smerinthini			
<i>Amplipterus</i>	1	—	1
<i>Ambulyx</i>	12	6	3
<i>Clanis</i>	3	2	—
<i>Leucophlebia</i>	1	—	—
<i>Polyptychus</i>	1	—	1
<i>Marumba</i>	3	—	1
<i>Daphnusa</i>	1	—	—
<i>Cypa</i>	2	1	—
<i>Callambulyx</i>	1	—	—
<i>Phyllosphingia</i>	1	—	—
<i>Sataspes</i>	2	1	—
Tribe Sphingini			
<i>Agrius</i>	1	—	—
<i>Megacorma</i>	1	—	—
<i>Acherontia</i>	2	—	—
<i>Meganoton</i>	2	—	1
<i>Poliana</i>	1	1	—
<i>Psilogramma</i>	2	—	—
<i>Dolbina</i>	1	—	—
Subtotal	38	11	7
Subfamily Macroglossinae			
Tribe Dilophonotini			
<i>Cephonodes</i>	3	1	—
Tribe Macroglossini			
<i>Gnathothlibus</i>	1	—	—
<i>Daphnis</i>	4	1	—
<i>Elibia</i>	2	1	—
<i>Acosmeryx</i>	6	1	—
<i>Enpinanga</i>	2	—	—
<i>Eupanacra</i>	8	3	1

<i>Angonyx</i>	1	–	–
<i>Neogurelca</i>	1	–	–
<i>Eurypteryx</i>	1	–	–
<i>Macroglossum</i>	25	4	1
Tribe Choerocampini			
<i>Hippotion</i>	7	–	1
<i>Rhagastis</i>	1	–	–
<i>Theretra</i>	11	1	–
<i>Pergesa</i>	1	–	–
<i>Cechenena</i>	5	1	–
Subtotal	79	13	3
Grand total	117 (100 %)	24 (20.5 %)	10

Table 2: An evaluation of the number of species as well as endemic species and subspecies per island for the nine largest islands of the Philippines plus one small island group for comparison. (All % figures are levelled to nearest whole number.)

Island	Pal	Mdo	Luz	Pan	Neg	Ceb	Sam	Ley	Mno	Tawitawi group
No. of species found per island	73	48	72	46	62	33	41	62	62	28
Total no. of species found on the Philippines	117									
% of total Philippine species found on each listed island	62	41	62	39	53	28	35	53	53	24
For each island listed no. of endemic species										
subspecies	2	10	17	8	12	4	9	11	14	3
	0	6	8	6	6	3	5	8	8	1
Total no. of Philippine endemic species	24									
For each island listed % of total Philippine endemic species	8	42	71	33	50	17	38	46	58	13
% of species found on each listed island that are endemic species	3	21	24	17	19	12	22	18	23	11

Table 3: Evaluation of the endemism for each of VANE-WRIGHT's faunal regions (see map in TREADAWAY 1998, in this volume). Abbreviations of the island names see TREADAWAY (1998, in this issue). (All % figures are levelled to nearest whole number.)

Faunal Regions	Pal	Mdo	Luz	West Visayan	Mindanao Region			Sulu
					total	consisting of:		
					East Visayan Subregion	Mindanao Subregion		
No. of species found in each faunal region	77	48	77	69	78	67	64	38
Total no. of species found on the Philippines	117							
% of total Philippine species found in each faunal region	66	41	66	59	67	57	55	33
For each faunal region no. of endemic								
species	3	10	17	14	16	13	14	3
subspecies	0	6	8	7	9	8	8	3
Total no. of Philippine endemic species	24 (= 20.5 % of the total number of species)							
For each faunal region % of total Philippine endemic species	13	42	71	58	67	54	58	13
% of species found in each faunal region that are endemic to the Philippines	4	21	22	20	21	19	22	8

Discussion

Looking at the origin of the species that are now occurring in the Philippines we see that by far the largest number of Philippine Sphingidae are of Sundanian origin, having penetrated the Philippines from Borneo through the Palawan or Sulu land bridges as indicated in the general introduction. The large number of 21 of these species are known in the Philippines from Palawan and adjacent islands only, and 4 species are known from Palawan and Sulu only. Of these 25 species, however, 14 are replaced on more eastward Philippine islands by closely related species or subspecies. The remaining

11 species (*Ambulyx moorei*, *Marumba tigrina*, *Callambulyx amanda*, *Megatonon nyctiphanes*, *Enpinanga borneensis*, *E. vigens*, *Eupanacra variolosa*, *Rhagastis acuta*, *Theretra suffusa*, *Cechenena subangustata* and *C. pollux*) have, as far as currently known, not been able to penetrate the true Philippine faunal regions.

Only a few species have reached the Philippines from the north: *Dolbina inexacta*, *Daphnis nerii*, *Neogurelca hyas* (though this species has a Sundanian distribution as well), *Macroglossum bombylans* and perhaps *Phyllosphingia dissimilis* and *Acosmeryx castanea*.

One species, *Theretra insularis*, appears to have found its way into the Philippines from the east, while the widely distributed *Theretra silhetensis* is represented by its eastern subspecies *intersecta* in the Philippines.

Very interesting is the small number of species-groups that is shared by Sulawesi and the Philippines, but found nowhere else: *Daphnis vriesi* (represented in Sulawesi by the closely related *D. hayesi*), *Acosmeryx socrates*, *Hippotion brunneum*, *Theretra manilae* and *Theretra sugii* (the last three species represented in Sulawesi by closely related, as yet undescribed species or subspecies). These species-groups suggest a period of contact, followed by isolation, between at least parts of Sulawesi and the Philippines as we now know them, in a time that there was no contact with any of the surrounding land masses. In addition there is the widely distributed *Acherontia lachesis*, which appears in Sulawesi as well as in the Philippines in a very dark form, which elsewhere in its range only can be found as a rare aberration. Like *A. lachesis*, also the Sundanian *Hippotion rafflesii* occurs in Sulawesi in a darker form, but specimens from Sulawesi are never as dark as *H. rafflesii dyokeae* from Mindanao, described in this paper.

Finally there are *Marumba amboinicus*, which inhabits apart from Sulawesi and the Philippines only the Molucas, and *Ambulyx bakeri* and *A. suluwensis*, which are representatives of a group of closely related species also known from Sulawesi, the Moluccas and the Philippines only.

Sphingidae are strong fliers, but nevertheless there are some obvious differences, with regard to the number of species encountered, between a number of the islands. As has been previously noted in a checklist of the butterflies (Lepidoptera: Rhopalocera) of the Philippine islands (TREADAWAY 1995), the larger islands with broader forested areas tend, understandably, to yield a higher number of species, e. g. Palawan 73, Luzon 72 species, Mindanao 62, Leyte 62, Negros 62. Palawan, although possessing many spe-

cies, has a low count of endemics (only 8 % of all Philippine endemics or 3 % of species found on Palawan), because of a close relationship to the Borneo fauna. Islands with very little forested areas are inclined to have fewer species: Panay 46 and Cebu 33 species. The Tawitawi group of islands, although there are still good forested areas on Tawitawi island itself, has a low count of species (28 or 24 % of the Philippine total), possibly because the islands are small with not varied enough vegetation. Further, like Palawan, the Tawitawi island group is closely associated with the Borneo fauna and thus, as can be expected, is low in endemics (13 % of total Philippine endemics or 11 % of the total species found on this island group). Additional intensive collection needs to be carried out on Mindanao, Mindoro and Samar, where our species count is somewhat lower than could be expected (Mindanao 62 or 53 % of total Philippine species, Mindoro 48 or 41 % and Samar 41 or 35 %). There are doubtless quite a number of species to be discovered on these islands. Certainly one can expect to find further new-to-science species on Mindanao, Mindoro as well as North Luzon and possibly the islands north of Luzon. It is probable that the Philippine islands between Palawan and Borneo could well yield Borneo species as yet undiscovered in the Philippines.

Considering VANE-WRIGHT's faunal regions (see TREADAWAY 1998: Fig. 3, in this issue), the species distribution changes slightly due to the larger areas covered – Mindanao region 78 species with 67 % of total Philippine species and 67 % of all endemics. For the Luzon region the equivalent figures are 77 species, 66 % and 71 %; for the Palawan region 77 species, 66 % and 13 %; for the West Visayan region 69 species, 59 % and 58 %; with the Mindoro and Sulu regions falling considerably behind. It is perhaps of interest to note that the East Visayan and Mindanao subregions species counts, although approximately the same for each, include a number of different species in each of the two subregions, thus giving the Mindanao region a more imposing total of species.¹

Such a species distribution by island and faunal region can only give a directional indication of the concentration of species on each of the islands/regions noted. It has been compiled primarily based on many years experience by the second author observing and collecting Spingidae on the Phil-

¹ Compare these numbers of species and endemics of Spingidae per island and zoogeographical regions with the corresponding numbers of the Lasiocampidae (ZOLOTUHN et al. 1998, in this issue) and Saturniidae (NÄSSIG & TREADAWAY 1998, in this issue) species of the Philippines. In both cases the percentage of endemic species is larger, often very drastically, than in case of the Spingidae. This probably correlates with the average mobility and flight abilities of the species of the three families involved.

ippines. However, some islands were visited more often and at different times of the year, others less frequently. For those interested, it can certainly be anticipated that a number of species will be found in the near future, either new to the Philippines or found on additional islands, thus expanding the known island distribution. Such research work should be carried out over the next five years, while there are still areas of primary and secondary forest existing.

A final note should be added concerning the island of Mindoro. From a few species, aberrative specimens have been collected in which the dark-brown parts of the maculation, especially on the body, the head and the base of the wings, is replaced by a much lighter bright russet-brown or even orange-brown, giving the specimens an appearance much different from the usual form. Till now these aberrants have been found from *Ambulyx immaculata*, *A. johnsoni* and *Cechenena helops* only on Mindoro, where they appear not to be rare. It must be expected that more species will show this phenomenon, and it will be noteworthy when this appears really to be restricted to the island of Mindoro.

Table 4: Summary of the distribution, endemicity and occurrence of Philippine Spingidae. Abbreviations of the islands see TREADAWAY (1998, in this issue).

Status	Occurrence
* species	1 very rare 4 common
endemic species	2 rare — no experience
	3 uncommon or local

Family Sphingidae Subfamily Sphinginae Tribe Smerinthini	Distribution	Status, Occurrence
<i>Amplypterus panopus panopus</i> (CRAMER 1779)	Bon, Pal	* 2
<i>Amplypterus panopus mindanaoensis</i> INOUE 1996	Ceb, Jol, Ley, Luz, Mdo, Mno, Neg, Pan, Pol, Rom, Sam, Sib	4
<i>Ambulyx staudingeri</i> ROTHSCHILD 1894	Boh, Ceb, Jol, Ley, Luz, Mar, Mas, Mdo, Mno, Neg, Pan, Pol, Sam, Sga, Sib, Siq, Tau	** 4
<i>Ambulyx pryeri</i> DISTANT 1887	Bal, Jol, Pal, Stu	* 3
<i>Ambulyx tattina tattina</i> (JORDAN 1919)	Bal, Pal	* 3
<i>Ambulyx tattina uichancoi</i> (CLARK 1938)	Ley, Luz, Mdo, Mno, Neg, Pan, Sam, Tau	3
<i>Ambulyx sericeipennis luzoni</i> (CLARK 1924)	Luz, Mdo, Neg	* 2
<i>Ambulyx immaculata</i> (CLARK 1924)	Ley, Luz, Mdo, Mno, Neg, Pan, Sam	** 3
<i>Ambulyx moorei</i> MOORE [1858]	Bal, Pal	* 3
<i>Ambulyx bakeri</i> (CLARK 1929)	Ceb, Ley, Luz, Mar, Mdo, Mno, Neg, Pan, Sam, Siq	** 4

<i>Ambulyx suluensis</i> HOGENES & TREADAWAY 1998	Bon, Stu, Taw	** 2
<i>Ambulyx johnsoni</i> (CLARK 1917)	Ceb, Ley, Luz, Mar, Mdo, Mno, Neg, Pan, Sam, Siq	** 4
<i>Ambulyx canescens canescens</i> (WALKER [1865] 1864)	Bal, Pal	* 3
<i>Ambulyx canescens flava</i> (CLARK 1924)	Ley, Luz, Mdo, Mno, Neg, Pan, Sam	4
<i>Ambulyx wilemani</i> (ROTHSCHILD & JORDAN 1916)	Ley, Luz, Mar, Mdo, Mno, Neg, Pan, Sam, Stu, Taw	** 4
<i>Ambulyx substrigilis substrigilis</i> WESTWOOD 1847	Bal, Pal	* 3
<i>Clanis stenosema</i> ROTHSCCHILD & JORDAN 1907	Bal, Pal	* 3
<i>Clanis negritensis</i> HOGENES & TREADAWAY 1993	Luz, Mdo, Neg	** 1
<i>Clanis surigaoensis</i> CLARK 1928	Ley, Mno, Sam	** 3
<i>Leucophlebia lineata</i> WESTWOOD 1847	Luz, Mno, Pal	* 1
<i>Polyptychus trilineatus philippinensis</i> ROTHSCCHILD & JORDAN 1903	Boh, Ceb, Ley, Luz, Mno, Neg, Pan, Siq	* 4
<i>Marumba amboinicus luzoni</i> CLARK 1935	Bab, Boh, Ceb, Din, Jol, Ley, Luz, Mar, Mdo, Mno, Neg, Pan, Sam, Sib, Siq	* 4
<i>Marumba dyras javanica</i> (BUTLER 1875)	Ceb, Ley, Luz, Mno, Neg, Pal, Sam	* 2
<i>Marumba tigrina</i> GEHLEN 1936	Pal	* 3
<i>Daphnusa ocellaris</i> WALKER 1856	Boh, Ceb, Dum, Ley, Luz, Mdo, Mno, Neg, Pal	* 4
<i>Cypa decolor</i> (WALKER 1856)	Jol, Ley, Luz, Mdo, Mno, Neg, Sam	* 3
<i>Cypa claggi</i> CLARK 1935	Luz, Mno	** 1
<i>Callambulyx amanda</i> ROTHSCCHILD & JORDAN 1903	Bal, Pal	* 2
<i>Phyllosphingia dissimilis</i> (BREMER 1861) ssp.	Luz	* —
<i>Sataspes cerberus</i> SEMPER 1896	Luz	** 1
<i>Sataspes tagalica</i> BOISDUVAL [1875]	Bur	* 1
Tribe Sphingini		
<i>Agrilus convolvuli</i> (LINNAEUS 1758)	Bal, Boh, Cal, Ceb, CmM, Din, Jol, Ley, Luz, Mdo, Mno, Neg, Pal, Pan, Sam, Sga, Siq	* 4
<i>Megacorma obliqua obliqua</i> (WALKER 1856)	Bal, Jol, Ley, Luz, Mno, Neg, Pal, Sam	* 3
<i>Acherontia lachesis</i> (FABRICIUS 1798)	Bal, Ceb, Ley, Luz, Mar, Mdo, Mno, Neg, Pal, Pan, Pol, Sam	* 4
<i>Acherontia styx medusa</i> MOORE [1858]	Bal, Ceb, Ley, Luz, Neg, Pal, Pan	* 3
<i>Meganoton nyctiphanes</i> (WALKER 1856)	Bal, Pal	* 1
<i>Meganoton rufescens philippinensis</i> CLARK 1938	Ley, Luz, Mno, Pan, Sam	* 2
<i>Meganoton rufescens thielei</i> HUWE 1906	Pal	1
<i>Poliana albescens</i> INOUE 1996	Mno	** 1
<i>Psilogramma menephron menephron</i> (CRAMER 1780)	Bal, Boh, Bon, Ceb, Dum, Jol, Ley, Luz, Mas, Mdo, Mno, Neg, Pal, Pan, Sam, Siq, Stu, Taw	* 4

<i>Psilogramma increta</i> WALKER [1865]	Luz, Mdo, Neg, Pal, Pan	* 2
<i>Dolbina inexacta</i> (WALKER 1856)	Luz, Mno	* 3
Subfamily Macroglossinae		
Tribe Dilophonotini		
<i>Cephonodes hylas hylas</i> (LINNAEUS [1771])	CmM, Luz, Mdo, Mno, Neg, Pal, Taw	* 3
<i>Cephonodes picus</i> (CRAMER 1777)	Ceb, Luz, Neg, Pal, Sib	* 3
<i>Cephonodes banksi</i> CLARK 1923	Hom, Ley, Luz, Mdo, Mno, Neg	** 3
Tribe Macroglossini		
<i>Gnathothlibus eronus eronus</i> (CRAMER 1777)	Bal, Ley, Luz, Mar, Mno, Neg, Pal, Pan, Sam	* 3
<i>Daphnis nerii</i> (LINNAEUS 1758)	Ceb, Jol, Ley, Luz, Mar, Neg	* 3
<i>Daphnis hypothous hypothous</i> (CRAMER 1779)	Bal, Boh, Ceb, Hom, Jol, Ley, Luz, Mdo, Mno, Neg, Pal, Pan, Pol, Sam, Sga	* 4
<i>Daphnis placida placida</i> (WALKER 1856)	Ceb, Ley, Luz, Mar, Mdo, Mno, Neg, Pal, Pan, Sam, Sib, Stu, Taw	* 4
<i>Daphnis vriesi</i> HOGENES & TREADAWAY 1993	N-Luz, Mno, Neg, Pal, Sam	** 2
<i>Elibia dolichus</i> (WESTWOOD 1847)	Pal, Stu, Taw	* 2
<i>Elibia linigera</i> BOISDUVAL [1875]	Ley, N-Luz, Mno, Neg, Pan, Sam	** 3
<i>Acosmeryx anceus subdentata</i> ROTHSCHILD & JORDAN 1903	Bal, Boh, Cal, Ceb, Din, Jol, Ley, Luz, Mar, Mdo, Mno, Neg, Pal, Pan, Sam, Sga, Stu, Taw	* 4
<i>Acosmeryx castanea</i> ROTHSCHILD & JORDAN 1903	N-Luz	* 1
<i>Acosmeryx socrates</i> BOISDUVAL [1875]	Boh, Bon, Cal, Ceb, Ley, Luz, Mdo, Mno, Neg, N-Pal, Pan, Sam, Taw	* 4
<i>Acosmeryx shervillii</i> BOISDUVAL [1875]	Bal, Pal, Stu, Taw	* 2
<i>Acosmeryx pseudonaga</i> BUTLER 1881	Bal, Pal	* 1
<i>Acosmeryx</i> sp. (in BMNH)	N-Luz	** —
<i>Enpinanga borneensis</i> (BUTLER 1879)	Cal	* 1
<i>Enpinanga vigens</i> (BUTLER 1879)	Pal	* —
<i>Eupanacra busiris busiris</i> (WALKER 1856)	Bal, Pal	* 2
<i>Eupanacra busiris schuetzi</i> HOGENES & TREADAWAY 1996	C-Ley, Mdo, S-Mno	3
<i>Eupanacra variolosa</i> (WALKER 1856)	C- & S-Pal	* 2
<i>Eupanacra dohertyi dohertyi</i> (ROTHSCHILD 1894)	Pal	* 1
<i>Eupanacra tiridates</i> (BOISDUVAL [1875])	Boh, Ley, Luz, Mdo, Neg, S-Mno	** 3
<i>Eupanacra malayana</i> (ROTHSCHILD & JORDAN 1903)	Mno, Pal	* 1
<i>Eupanacra elegantulus</i> (HERRICH-SCHÄFFER 1856)	Boh, Dum, Ley, Luz, Mar, Mdo, Mno, Neg, Pal, Pan, Sib	* 4
<i>Eupanacra cadioui</i> HOGENES & TREADAWAY 1993	C-Ley, N-Luz, S-Mno, W-Pan	** 1
<i>Eupanacra treadawayi</i> CADIOU 1995	N-Luz	** 1

<i>Angonyia testacea</i> (WALKER 1856)	Bal, Dum, Hom, Jol, Ley, Luz, Mdo, Neg, Pal, Sam	* 2
<i>Neogurelca hyas</i> (WALKER 1856)	Bal, Ceb, CmM, Ley, Luz, Mno, Neg, Pal	* 3
<i>Eurypteryx alleni</i> HOGENES & TREADAWAY 1993	Mdo, Neg, Pal, Pan	* 1
<i>Macroglossum avicula</i> BOISDUVAL [1875]	Pal	* 1
<i>Macroglossum bombylans</i> (BOISDUVAL [1875])	Luz, Neg	* 3
<i>Macroglossum lepidum</i> ROTHSCHILD & JORDAN 1915	C-Ley, Pal, Pan	* 2
<i>Macroglossum caldum philippinense</i> CLARK 1928	Ley, Luz	* 1
<i>Macroglossum pyrhostictum</i> BUTLER 1875	C-Ley, Luz	* 1
<i>Macroglossum troglodytus</i> BOISDUVAL [1875]	Mno (Surigao), Pal	* 2
<i>Macroglossum insipidum insipidum</i> BUTLER 1875	Ley, Mno, Pal	* 3
<i>Macroglossum unguis</i> ROTHSCHILD & JORDAN 1903	Ceb, Dum, Jol, C-Ley, Luz, Mar, Pal, Pan	* 3
<i>Macroglossum sitiene</i> WALKER 1856	Dum, Neg, Pal	* 2
<i>Macroglossum heliophilum heliophilum</i> BOISDUVAL [1875]	Bat, Mdo, Pal, Stu, Taw, Tic	* 3
<i>Macroglossum arimasi</i> HOGENES & TREADAWAY 1993	Dum, Neg	** 1
<i>Macroglossum mediovitina</i> ROTHSCHILD & JORDAN 1903	C-Ley	* 1
<i>Macroglossum prometheus prometheus</i> BOISDUVAL [1875]	Boh, Ley, Mar, Mdo, Mno, Neg, Pal, Pan, Sam, Stu, Taw	* 4
<i>Macroglossum variegatum</i> ROTHSCHILD & JORDAN 1903	Ceb, Ley, Pal, Stu, Taw	* 3
<i>Macroglossum glaucoptera</i> BUTLER 1875	CmL, Din, Neg, Pao	* 3
<i>Macroglossum semifasciatum</i> HAMPSON [1893]	Pal	* 1
<i>Macroglossum aquila</i> BOISDUVAL [1875]	Luz, Pal	* 1
<i>Macroglossum sylvia</i> BOISDUVAL [1875]	CmM, Hom, Luz, Mdo, Mno, Neg, Pal, Sam	* 3
<i>Macroglossum corythus luearum</i> BUTLER 1875	Boh, CmL, Din, Hom, Ley, Luz, Mdo, Mno, Neg, Pal, Pan, Sam, Stu	* 4
<i>Macroglossum integrifasciatum</i> HOGENES & TREADAWAY 1996	Mdo	** 1
<i>Macroglossum multifascia</i> ROTHSCHILD & JORDAN 1903	C-Ley, N-Neg, Pan	* 2
<i>Macroglossum jani</i> HOGENES & TREADAWAY 1998	Ceb, Hom, Pal	** 2
<i>Macroglossum passalus</i> (DRURY [1773])	CmL, CmM	* 1
<i>Macroglossum faro</i> (CRAMER 1780)	Ley, Pal	* 2
<i>Macroglossum haslami</i> CLARK 1922	Luz	** 1

Tribe Choerocampini		
<i>Hippotion velox</i> (FABRICIUS 1793)	Bal, Cal, Ceb, Dum, Ley, Luz, Mar, Mdo, Mno, Neg, Pal, Pan, Sam, Stu	* 4
<i>Hippotion celerio</i> (LINNAEUS 1758)	Bal, Boh, Cal, Ceb, Dum, Jol, Ley, Luz, Mar, Mdo, Mno, Neg, Pal, Pan, Pao, Sam, Tic	* 4
<i>Hippotion echeclus</i> (BOISDUVAL [1875])	Boh, Ceb, Ley, Luz, Mno, Neg, Pan	* 3
<i>Hippotion rosetta</i> (SWINHOE 1892)	Bal, Boh, Bon, Ceb, Jol, Ley, Luz, Mar, Mdo, Mno, Neg, Pal, Pan, Sga, Siq, Stu, Taw	* 4
<i>Hippotion rafflesii dyokeae</i> HOGENES & TREADAWAY 1998	C- & E-Mno	* 2
<i>Hippotion boerhaviae</i> (FABRICIUS 1775)	Jol, Ley, Luz, Mno, Neg, Pal, Pan, Sib	* 3
<i>Hippotion brunneum</i> (SEMPER 1896)	N-Luz, Mdo, Mno, Neg	* 2
<i>Rhagastis acuta</i> (WALKER 1856)	Pal	* 1
<i>Theretra nessus</i> (DRURY [1773])	Bal, Boh, Cal, Cat, Ceb, Din, Jol, Ley, Luz, Mar, Mas, Mdo, Mno, Neg, Pal, Pan, Sam, Sib, Siq, Stu	* 4
<i>Theretra manilae</i> CLARK 1922	Ley, Luz, Mdo, Mno, Neg, Pal, Pan, Sam, Siq	* 3
<i>Theretra rhesus</i> (BOISDUVAL [1875])	Bal, Boh, Bon, Ceb, Jol, Ley, Luz, Mar, Mdo, Mno, Neg, Pal, Pan, Sam, Sib, Siq	* 4
<i>Theretra insularis insularis</i> (SWINHOE 1892)	Bal, Ley, Luz, Mdo, Mno, Pan, Sam, Siq	* 4
<i>Theretra sugii</i> CADIOU 1995	Mno	** 3
<i>Theretra clotho clotho</i> (DRURY [1773])	Bal, Boh, Bon, Cal, Ceb, Jol, Ley, Luz, Mdo, Mno, Neg, Pal, Pan, Sam, Sib, Siq, Stu, Taw	* 4
<i>Theretra larreillii lucasii</i> (WALKER 1856)	Bal, Boh, Bon, Ceb, Jol, Ley, Luz, Mdo, Mno, Neg, Pal, Siq, Stu, Taw	* 3
<i>Theretra suffusa</i> (WALKER 1856)	Pal	* 1
<i>Theretra alecto</i> (LINNAEUS 1758)	Bal, Boh, Bon, Ceb, Ley, Luz, Mar, Mdo, Mno, Neg, Pal, Pan, Sam	* 3
<i>Theretra oldenlandiae oldenlandiae</i> (FABRICIUS 1775)	Bal, Boh, Ceb, Jol, Ley, Luz, Mdo, Mno, Neg, Pal, Pan, Pao, Sam, Sib, Siq, Taw	* 4
<i>Theretra silhetensis intersecta</i> (BUTLER 1875)	Bal, Boh, Cal, CmL, Din, Jol, Ley, Luz, Mno, Neg, Pal, Pan, Sam, Taw	* 4
<i>Pergesa aceta</i> (CRAMER 1779)	Bal, Boh, Bon, Ceb, Din, Dum, Jol, Ley, Luz, Mar, Mas, Mdo, Mno, Neg, Pal, Pan, Sam, Siq	* 4
<i>Cechenena aegrota</i> (BUTLER 1875)	Pal	* 2
<i>Cechenena transpacifico</i> (CLARK 1923)	Mdo, Neg, Ley, Luz, Pan, Sam	** 3
<i>Cechenena helops helops</i> (WALKER 1856)	Bal, Din, Ley, Luz, Mar, Mdo, Mno, Neg, Pal, Pan, Sam, Siq	* 4
<i>Cechenena subangustata</i> ROTHSCHILD 1920	Bal	* 1
<i>Cechenena pollux</i> (BOISDUVAL [1875])	Pal	* 1

Acknowledgements

We are most grateful to the following for the generous loan of specimens to photograph or who kindly gave us photos of specimens which were not available to us: Andreas ZWICK for the loan of *Rhagastis acuta* ♂; Hiroshi INOUE and Jean-Marie CADIOU for photographs of the holotype of *Poliana albescens*; Jean-Marie CADIOU for a photo of an *Acosmeryx* sp. ♀ in BMNH, London, as well as *Macroglossum haslamii*; Heinz SCHRÖDER and Wolfgang A. NÄSSIG of the Senckenberg-Museum for the loan of the *Sataspes cerberus* ♀ holotype.

For thought provoking advice, loan of specimens, supplying us with valuable specimens over a number of years, allowing us access to the museum collections they curate or help in any other way, we wish to thank most sincerely Thomas ACHILLES (Thailand), Peter ARIMAS (Philippines), Alistair BALLANTINE (Hong Kong), Theobaldo BORRROMEO (Philippines), Ron BRECHLIN (Pasewalk), Jean-Marie CADIOU (Brussels), John ELIOT (Taunton), Jean HAXAIRE (Laplume), Jeremy D. HOLLOWAY (London), Hiroshi INOUE (Iruma), Ole KARSHOLT (Copenhagen), Ian KITCHING (London), Louis VAN DER LAAN (Amsterdam), Kent LI (Hong Kong), Cheng-shing LIN (Taichung), Romeo LUMAWIG (Philippines), the MOHAGAN family (Philippines), Roland MÜLLER (Sankt Gallen), Hermel NUYDA (†, Philippines), Justin NUYDA (Philippines), Wolfgang A. NÄSSIG (Frankfurt), Jan PETERSEN (Philippines), Glen PING (Brunei), Bro. Amnuay PINRATANA (Bangkok), Ulrich RADDATZ (Frankfurt), Roy RODRIGUEZ (Philippines), Josef SETTELE (Leipzig), Heinz SCHRÖDER (Frankfurt), Heinrich SCHÖNIG (†, Philippines), Peter SCHÜTZ (Stuttgart), Frans SMIT (Warmenhuizen), Ben VILLAN (Philippines), Rob DE VOS (Zaandam), John DE VRIES (Rotterdam), Thomas WITT (München) and Andreas ZWICK (Schlitz).

References

- BOISDUVAL, [J. B. A.] (1832): Lépidoptères, pp. 181-189. — In: D'URVILLE, J. D., Voyage et découvertes de l'Astrolabe exécuté par ordre de Roi, pendant les années 1826-1827-1828-1829, sous le commandement de M. J. Dumont d'URVILLE. Faune entomologique de l'Océan Pacifique, avec l'illustration des insectes nouveaux recueillies pendant le voyage, 1. — Paris (J. Tastu).
- (1874 [1875]): Spécies général des Lépidoptères Héterocères. 1, Sphingidés, Sesiidés, Castniidés. — In: BOISDUVAL & GUENÉE, Histoire naturelle d'insectes 1. — Paris (De Roret), 380 pp.

- BREMER, O. (1861): Neue Lepidopteren aus Ost-Sibirien und dem Amur-Lande, gesammelt von RADDE und MAACK. — Bull. Acad. imp. Sci. St Pétersb. (Izv. imp. Akad. Nauk) 3: 462–496.
- BUTLER, A. G. (1875): Descriptions of new species of Sphingidae. — Proc. zool. Soc. Lond. 1875: 238–261, pls. 36, 37.
- (1876): Revision of the heterocerous Lepidoptera of the family Sphingidae. — Trans. zool. Soc. Lond. 9 (1877): 511–644, pls. xc–xciv.
- (1879): Descriptions of two new Lepidoptera of the family Sphingidae. — Trans. entomol. Soc. Lond. 1879: 261–262.
- (1881): Illustrations of typical specimens of Lepidoptera Heterocera in the collection of the British Museum, vol. 5: 1–17. — London (Trustees B.M.N.H.).
- CADIU, J.-M. (1988): A new sphingid from Sulawesi: *Daphnis hayesi* (Lepidoptera, Sphingidae). — Lambillionea 88 (9/10): 138–143.
- (1995): Seven new species of Sphingidae (Lepidoptera) — Lambillionea 95 (4): 499–515.
- , & HOLLOWAY, J. D. (1989): Endemic Sphingidae from Sulawesi. — Lambillionea 89 (9–12): 130–158.
- CLARK, B. P. (1917): New Sphingidae. — Proc. New Engl. zool. Club 6: 57–72.
- (1919): Some undescribed Sphingidae. — Proc. New Engl. zool. Club 6: 99–114.
- (1922): Twenty-five new Sphingidae. — Proc. New Engl. zool. Club 8: 1–23.
- (1923): Thirty-three new Sphingidae. — Proc. New Engl. zool. Club 8: 47–77.
- (1924): Twelve new Sphingidae. — Proc. New Engl. zool. Club 9: 11–21.
- (1926): Descriptions of twelve new Sphingidae and remarks upon some other species. — Proc. New Engl. zool. Club 9: 45–59.
- (1927): Descriptions of twelve new Sphingidae and remarks upon two other species. — Proc. New Engl. zool. Club 9: 99–109.
- (1928): Sundry notes on Sphingidae and descriptions of ten new forms. — Proc. New Engl. zool. Club 10: 33–46.
- (1929): Sundry notes on Sphingidae, descriptions of sixteen new forms, and of one new Genus. — Proc. New Engl. zool. Club 11: 7–24.
- (1930): Sundry notes on Sphingidae and descriptions of seven new forms. — Proc. New Engl. zool. Club 12: 25–30.
- (1935): Descriptions of twenty new Sphingidae and notes on three others. — Proc. New Engl. zool. Club 15: 19–39.
- (1936): Descriptions of twenty-four new Sphingidae and notes concerning two others. — Proc. New Engl. zool. Club 15: 71–91.

- (1938): Eight new Sphingidae and notes on two others. — Proc. New Engl. zool. Club 17: 37–44.
- CRAMER, P. (1777): *Uitlandsche Kapellen (Papillons exotiques)* vol. 2, 151 pp., pls. 97–192. — Amsterdam (S. J. Baalde), Utrecht (B. Wild).
- (1779): *Uitlandsche Kapellen (Papillons exotiques)* vol. 3, 176 pp., pls. 193–288. — Amsterdam (S. J. Baalde), Utrecht (B. Wild).
- (1780): *Uitlandsche Kapellen (Papillons exotiques)* vol. 4, 252 pp., pls. 289–400. — Amsterdam (S. J. Baalde), Utrecht (B. Wild).
- D'ABRERA, B. (1986 [1987]): *Sphingidae mundi, hawkmoths of the world.* — Faringdon (Classey), ix + 226 pp.
- DIEHL, E. W. (1980 [1982]): *Die Sphingiden Sumatras. Ergebnisse einer fast 20jährigen Sammeltätigkeit im Raum um Medan (Nord-Sumatra).* — *Heterocera Sumatrana* 1: vii + 97 pp.
- DISTANT, W. L. (1887): Notes on Sphingidae from the Malay Peninsula and description of a new species of *Ambulyx* from North Borneo. — *Ann. Mag. nat. Hist.* (5) 20: 270–272.
- DRUCE, H. (1882): Descriptions of new species of Aegeriidae and Sphingidae. — *Entomologist's mon. Mag.* 19: 16–18.
- DRURY, D. ([1773]): *Illustrations and natural history of exotic insects*, vol. 2, 9 + 90 pp., 50 pls. — London (the author).
- DUPONT, F., & ROEPKE, W. (1941): *Heterocera javanica*, Fam. Sphingidae, hawkmoths. — *Verh. ned. Akad. Wet., Afd. Natuurk.*, (2) 40 (1): 1–104.
- FABRICIUS, J. C. (1775): *Systema entomologicae, sistens insectorum classes, ordines, genera, species, adjectis synonymis, locis, descriptionibus, observationibus.* *Sphinx, Sesi*a, pp. 536–549. — Flensburg, Leipzig (Kortius).
- (1793): *Entomologia systematica emendata et aucta, secundum classes, ordines, genera, species, adjectis synonymis, locis, observationibus, descriptionibus.* 188. *Sphinx*, 189. *Sesia*, part. Vol. 3: 355–383. — Copenhagen (C. G. Proft).
- (1798): *Supplementum Entomologiae systematicae.* *Sphinx*, pp. 434–435. — Copenhagen (Proft & Storch).
- FELDER, C.² ([1874]), in: FELDER, C., FELDER, R., & ROGENHOFER, A. F., *Reise der österreichischen Fregatte Novara um die Erde in den Jahren 1857, 1858, 1859 unter den Befehlen des Commodore B. von WÜLLERSTORF-URBAIR, Zoologischer Theil, Zweiter Band, Zweite Abtheilung: Lepidoptera, Atlas [= Hefte 4 + 5].* — Vienna (K.-k. Hof- und Staatsdruckerei), pp. 1–9, 1–10, 1–20, pls. 1–140.

² The date [31. December 1874] for “Heft 4” containing the Sphingidae is from FLETCHER (1979: xi–xii). There is some ambivalence about the question who of the two FELDER brothers, Cajetan or Rudolph [or Rudolf], was the author; SPITZKA (1877) lists Rudolph, while FLETCHER wrote Cajetan.

- FLETCHER, D. S. (1979): Volume 3, Geometroidea. — In: NYE, I. W. B. (ed.), The generic names of moths of the world. — London (Trustees of the BMNH), xx + 243 pp.
- GEHLEN, B. (1936): Eine neue SpHINGIDE von Sumatra. — Entomol. Z., Frankfurt am Main 49: 461-462.
- (1940): Sieben neue SpHINGIDEN. — Entomol. Z., Frankfurt am Main 54: 139-144.
- HAMPSON, G. F. (1892 [1893]): The fauna of British India, including Ceylon and Burma. Moths, vol. 1. — London (Taylor & Francis), 527 pp.
- HAXAIRE, J. (1994): Notes sur quelques SpHINGIDAE ASIATIQUES. — Lambillionea 94: 35-38.
- HERRICH-SCHÄFFER, G. A. W. (1850-1858 [1854]): Sammlung neuer oder wenig bekannter aussereuropäischer Schmetterlinge, vol. 1, 84 + 18 pp., 120 pls. — Regensburg (G. J. Manz).
- HOGENES, W., & TREADAWAY, C. G. (1993): New hawkmoths from the Philippines (Lepidoptera, SpHINGIDAE). — Nachr. entomol. Ver. Apollo, Frankfurt am Main, N.F. 13 (4): 533-552.
- , & — (1996): New taxa of SpHINGIDAE (Lepidoptera) from the Philippines. — Nachr. entomol. Ver. Apollo, Frankfurt am Main, N.F. 17 (2): 117-122.
- HOLLOWAY, J. D. (1987): The moths of Borneo, part 3, Lasiocampidae, Eupterotidae, Bombycidae, Brahmaeidae, Saturniidae, SpHINGIDAE. — Kuala Lumpur (Southdene Sdn. Bhd.), 199 pp., 163 b&w pls., 20 col. pls.
- HÜBNER, J. ([1819]): Verzeichniss bekannter Schmettlinge, 431 pp. — Augsburg (the author).
- HUWE, A. (1906): Neue oder anscheinend noch unbeschriebene und wenig bekannte SpHINGIDEN meiner Sammlung. — Berl. entomol. Z. 50: 315-330, Tafel VI.
- INOUE, H. (1973): An annotated and illustrated catalogue of the SpHINGIDAE of Taiwan (Lepidoptera). — Bull. Fac. dom. Sci., Otsuma Wom. Univ. 9: 103-139.
- (1990): Supplementary notes on the SpHINGIDAE of Taiwan, with special reference to *Marumba spectabilis* complex. — Tinea 12: 245-258.
- (1991): Records of the SpHINGIDAE from Thailand, with descriptions of four new species. — Tinea 13 (14): 121-144.
- (1996): Records of the SpHINGIDAE (Lepidoptera) from the Philippines, with descriptions of a new species and a new subspecies. — Bull. Natn. Sci. Mus., Tokyo, Ser. A, 22 (2): 81-106.
- , KENNETT, R. D., & KITCHING, I. J. (1997): Moths of Thailand, vol. 2, SpHINGIDAE. — Bangkok (Chok Chai Press/Brothers of St. Gabriel in Thailand), vi + 149 pp., 44 col. pls.
- JENSEN, O. (1973): The SpHINGIDAE of the Noona Dan Expedition to the Philippine, Bismarck and Solomon Islands (Insecta, Lepidoptera). — Steenstrupia 3 (1): 1-10.

- JONG, R. DE, & TREADAWAY, C. G. (1993): The HesperIIDae (Lepidoptera) of the Philippines. — Zool. Verh., Leiden, 288: 1-125.
- JORDAN, K. (1919): Some Sphingidae from the East. — Novit. zool. 26: 190-192.
- (1923): Ueber einige alte und neue Sphingiden (Lep.). — Entomol. Mitt. 12 (1): 51-57.
- (1926): Some new Eastern Sphingidae in Tring Museum. — Ann. Mag. nat. Hist. (9)18: 207-209.
- (1929): On *Oxyambulyx substrigilis* and some allied Sphingidae. — Novit. zool. 35: 60-62.
- (1930): Description of new Sphingidae and remarks on some others. — Novit. zool. 36: 1-5.
- (1931): On *Cypa decolor* and some allied species (Lepid., Sphingidae). — Novit. zool. 36: 235-242.
- KIRBY, W. F. (1880): Catalogue of the Lepidoptera (Rhopalocera, Sphingidae, Castniidae, and Uraniidae) in the Museum of Science and Art, Dublin, with remarks on new or interesting species. — Scient. Proc. R. Dublin Soc. (N.S.) 2: 292-340.
- (1892): A synonymic catalogue of Lepidoptera Heterocera (moths). Vol. 1, sphinges and bombyces. — London/Berlin, xii + 951 pp.
- KITCHING, I. J., & SPITZER, K. (1995): An annotated checklist of the Sphingidae of Vietnam. — Tinea 14 (3): 171-195.
- LIN, C.-S. (1989): Sphingid moths of Botel Tobago. — Bull. nat. Mus. nat. Sci. 1: 1-10.
- (1990): Distribution of sphingid moths. — J. Taiwan Mus. 43 (1): 41-94.
- LINNAEUS, C. (1758): Systema naturae per regna tria naturae, secundum classes, ordines, genera, species, cum characteribus, differentiis, synonymis, locis. Tomus I (Animalia), Editio decima. *Sphinx* (part.), pp. 489-493. — Stockholm (Laurentius Salvius), 824 pp.
- ([1771]): Mantissa plantarum altera (Regni animalis appendix), p. 134-587 (*Sphinx*, pp. 521-552). — Stockholm.
- LÖDL, M. (1993): The Malaysian hawkmoths: An annotated and illustrated checklist (Lepidoptera: Sphingidae). — Trop. Lepid. 4 (1): 3-6.
- LUCAS, T. P. (1891): Butterflies and moths. Descriptions of two new butterflies and nine new Sphingidae or hawkmoths found in Queensland. — 4 pp., Brisbane (the author).
- MELL, R. (1922): Beiträge zur Fauna Sinica (II); Biologie und Systematik der südchinesischen Sphingiden; zugleich ein Versuch einer Biologie tropischer Lepidopteren überhaupt. 2., spezieller Teil, pp. 1-131, Berlin (Friedländer).

- MOORE, F. ([1858]), V. Tribe II. Sphinges. — In: HORSFIELD, T., & MOORE, F., A catalogue of the lepidopterous insects in the museum of the Honourable East-India Company, vol. 1: 257–278.
- MOULDS, M. S. (1985): A review of the Australian hawkmoths of the genus *Macroglossum* SCOPOLI (Lepidoptera: Sphingidae) — Austr. entomol. Mag. 12 (5): 81–106.
- NÄSSIG, W. A., & TREADAWAY, C. G. (1998): The Saturniidae (Lepidoptera) of the Philippines. — Nachr. entomol. Ver. Apollo, Frankfurt am Main, Suppl. 17: 223–424.
- PAGENSTECHE, A. (1890): Heteroceren der Insel Palawan. — Dtsch. entomol. Z. Iris, Dresden, 3: 1–33.
- PITTAWAY, A. R. (1993): The hawkmoths of the Western Palaearctic. — Colchester (Harley Books), London (The Natural History Museum), 240 pp.
- RIOTTE, J. C. E. (1979): Zur Gattungszugehörigkeit von „*Theretra*“ *brunnea* (Lep.: Sphingidae). — Entomol. Z., Stuttgart, 89 (20): 225–230.
- (1981): Bemerkungen zur Schwärmergattung *Angonyx* BOISDUVAL (Lep.: Sphingidae). — Entomol. Z., Stuttgart, 91 (4): 25–34.
- RÖBER, J. (1885): Ein paar neue Heterocera von Süd-Celebes. — Correspondenzbl. entomol. Ver. Iris 1 (2): 29–30.
- ROESLER, R. U., & KÜPPERS, P. V. (1975): Beiträge zur Kenntnis der Insektenfauna Sumatras, Teil 3: Drei neue Schwärmer-Formen (Lep., Sphingidae). — Entomol. Z., Stuttgart, 85: 177–186.
- ROTHSCHILD, W. (1894 a): Notes on Sphingidae, with descriptions of new species. — Novit. zool. 1: 65–98 pl. v–vii.
- (1894 b): Descriptions of new Sphingidae in the collection of Dr. Otto STAUDINGER. — Dtsch. entomol. Z. Iris 7: 297–302.
- (1896): [untitled] — Novit. zool. 3: pl. 13, fig. 3.
- (1920): Preliminary descriptions of some new species and subspecies of Indo-Malayan Sphingidae. — Ann. Mag. nat. Hist. (9) 5: 479–482.
- , & JORDAN, K. (1903): A revision of the lepidopterous family Sphingidae. — Novit. zool. 9, Suppl., cxxxv + 972 pp., 67 pls.
- , & —— (1906): New Sphingidae. — Novit. zool. 13: 178–185.
- , & —— (1907): New Sphingidae. — Novit. zool. 14: 92–95.
- , & —— (1912): Some new Sphingidae. — Novit. zool. 19: 128–135.
- , & —— (1915 a): Thirteen new Sphingidae. — Novit. zool. 22: 281–291.
- , & —— (1915 b): Some new Sphingidae in the collection of the British Museum. — Novit. zool. 22: 291–294.

- , & —— (1916 a): Corrections of and additions to our "Revision of the Sphingidae" – *Novit. zool.* 23: 115-123.
- , & —— (1916 b): Further corrections of and additions to our "Revision of the Sphingidae". – *Novit. zool.* 23: 247-263.
- SCHÜTZ, P. (1996): Feldökologische Untersuchungen an einer Schwärmerartengemeinschaft (Sphingidae, Lepidoptera) in West-Leyte, Philippinen. – Diplom thesis in biology, University of Hohenheim, Germany, & Visayas State College of Agriculture, Philippines.
- SEITZ, A. (1928, 1929): 16. Familie: Sphingidae; in: SEITZ, A. (ed.), *Die Gross-Schmetterlinge der Erde*, vol. 10, pp. 523-570, pls. 47, 56 c, 60-68; Stuttgart (A. Kernen).
- SEMPER, G. (1867): Beiträge zur Entwicklungsgeschichte einiger ostasiatischer Schmetterlinge. – *Verh. zool.-bot. Ges. Wien* 17: 697-702.
- SEMPER, G. (1896-1902), *Die Schmetterlinge der philippinischen Inseln. Beitrag zur indomalayischen Lepidopteren-Fauna. Zweiter Band [Zweite Abtheilung]: Die Nachtfalter. Heterocera.* [Ed. by C. SEMPER under the title: *Reisen im Archipel der Philippinen, zweiter Theil, Wissenschaftliche Resultate, Sechster Band.*] – Wiesbaden (C. W. Kreidel), pp. 381-728, pls. C-V [caterpillars], L-LXVI [imagines].
- SPITZKA, J. (1877): Übersichtliche Darstellung der unter dem Titel: „Reise der österreichischen Fregatte Novara um die Erde in den Jahren 1857, 1858, 1859 unter den Befehlen des Commodore B. VON WÜLLERSTORF-URBAIR“ erschienenen Publikationen. – Wien (k.u.k. Hof- u. Staatsdruckerei), XII pp.
- SWINHOE, C. (1892): *Catalogue of eastern and Australian Lepidoptera Heterocera in the collection of the Oxford University Museum*, vol. 1: 1-35.
- TREADAWAY, C. G. (1995): Checklist of the butterflies of the Philippine Islands (Lepidoptera: Rhopalocera). – *Nachr. entomol. Ver. Apollo, Frankfurt am Main, Suppl.* 14: 7-118.
- (1998): Short introduction to Philippine natural and geological history and its relevance for Lepidoptera. – *Nachr. entomol. Ver. Apollo, Frankfurt am Main, Suppl.* 17: 7-16.
- VANE-WRIGHT, R. I. (1990): Chapter 2: The Philippines – Key to the biogeography of Wallacea? – Pp. 19-34 in: KNIGHT, W. J., & HOLLOWAY, J. D. (eds.), *Insects and the rain forests of South East Asia (Wallacea)*. – London (Royal Entomological Society), iv + 343 pp.
- WALKER, F. (1856): List of the specimens of lepidopterous insects in the collection of the British Museum, vol. 8: 76-265. – London (Trustees B.M.N.H.)
- (1864 [1865]): List of the specimens of lepidopterous insects in the collection of the British Museum, vol. 31: 26-42. – London (Trustees B.M.N.H.)

WESTWOOD, J. O. (1847/1848): The cabinet of oriental entomology; being a selection of some of the rarer and more beautiful species of insects, natives of India and the adjacent islands, the greater portion of which are now for the first time described and figured. — London (W. Smith), 88 pp., 42 col. pls.

ZOLOTUHIN, V. V., TREADAWAY, C. G., & WITT, T. J. (1988): The Lasiocampidae (Lepidoptera) of the Philippines. — *Nachr. entomol. Ver. Apollo, Frankfurt am Main, Suppl.* 17: 133-222.

Received: 20. II. 1997, 22. v. 1997