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**HONORABLE
MENTION**





HONORABLE MENTIONS.— (Page 1) *Anisota dissimilis* (Saturniidae), Guerrero, Mexico, J. K. Adams (upper left). *Graphium sarpedon luctatus* (Papilionidae), Malaysia, J. J. Young (upper right). *Citheronia* sp. (Saturniidae), Ecuador, J. de Tonnancour (center left). *Hypobapta percomptaria* (Geometridae), South Australia, N. McFarland (center right). *Trogonoptera brookiana* (Papilionidae), Malaysia, D. Bridgnell (lower center right). (Sphingidae), Peru, J. de Tonnancour (lower center right). *Coryptilum rutilellum* (Tineidae), Malaysia, G. O. Krizek (lower right).

(Page 2) *Antheraea diehlii* (Saturniidae), Sumatra, Indonesia, J. H. R. Thiele (upper left). *Copaxa multifenestrata* (Saturniidae), Guerrero, Mexico, J. K. Adams (upper center). *Dalcerides ingenitus* (Dalceridae), Arizona, USA, N. McFarland (upper right/above). *Scopelodes* sp. (Pyralidae), Sumatra, Indonesia, J. H. R. Thiele (upper right/below). *Cethosia* sp. (Nymphalidae), Malaysia, H. H. Chuah (center right). *Hamadryas iphime* (Nymphalidae), SLO, Mexico, J. K. Adams (center left). *Caligo idomeneus* (Nymphalidae), Rondonia, Brazil, G. O. Krizek (lower left).

THE MALAYSIAN HAWKMOTHS: AN ANNOTATED AND ILLUSTRATED CHECKLIST (LEPIDOPTERA: SPHINGIDAE)

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ABSTRACT.— This preliminary list is based on literature records, on the collection of the Museum of Natural History in Vienna, and on personal investigations of the author: it lists 116 species, with 12 being doubtful for the Malay Peninsula.

KEY WORDS: *Acherontia*, *Acosmeryx*, *Agrilus*, *Ambulyx*, *Ampelophaga*, *Amplypterus*, *Angonyx*, behavior, Borneo, *Callambulyx*, *Cephonodes*, *Cechenena*, *Clanis*, *Cypa*, *Daphnis*, *Daphnusa*, *Degmaptera*, *Dolbina*, *Elibia*, *Enpinanga*, *Eurypteryx*, *Gehlenia*, *Giganteopalpus*, *Gnathothlibus*, *Gurelca*, *Hippotion*, Java, *Leucophlebia*, *Macroglossum*, Malay Peninsula, *Marumba*, *Megacorma*, *Meganoton*, *Nephele*, Oriental, *Panacra*, *Polyptychus*, *Psilogamma*, *Rhagastis*, *Rhyncholaba*, Sabah, *Sataspes*, *Smerinthulus*, Southeast Asia, *Sphingonaepiopsis*, Sumatra, *Theretra*.

Although a well studied group, the hawkmoths of the Malay Peninsula have not been revised properly. The attention of most authors has been focused on the fauna of the nearby big islands of Sundaland (Java, Sumatra and Borneo). Without doubt, the diversity of Malaysian Sphingidae species will turn out to be much higher than the list in this paper gives evidence for.

As nocturnal insects, hawkmoths are most welcome guests at each light catching site, and well-known for their "flapping appearance on stage." These splendid creatures always attract the attention of any collector. After a period of "looping," they tend to be mostly silent and gentle insects on the illuminated sheet. The occurrence of a high number of individuals, as is sometimes found in the tropics, in particular gives us a real feeling of entomological adventure. During the last trip to West Malaysia, during June and July 1992, the author was engaged in taking live-shots of the sitting and resting behavior of numerous species of moths. The results are presented here for the family Sphingidae.

More detailed investigations in the most northern part of the country (e.g., Perlis) will surely result in some additional species for the Burma-Thailand range.

The present taxonomy divides the family Sphingidae into two subfamilies: Sphinginae and Macroglossinae. Formerly, the group was split into 5 subfamilies: the Acherontiinae, Ambulicinae, Sesiinae [now preocc. by Sesiidae], Philampelinae and Choerocampinae. The first two can easily be subsumed under the Sphinginae, and the remaining groups under the Macroglossinae.

The Sphinginae can be recognised by the lack of a sensory-setal area on the inner surface of the first palpal segment. This area of setae is present in the Macroglossinae. A long proboscis is developed in many species of both subfamilies.

This paper presents an annotated list of species currently known to occur on the Malay Peninsula. The species from Malaysian Borneo are not included. A question mark indicates



Fig. 1. Fraser's Hill, jungle trail (near steakhouse).

species which probably, or most likely, occur on the Malaysian Peninsula but have not yet been recorded. The author tried to give the newest standard of nomenclature, and each species is given the full name, author and date of description.

Subfamily SPHINGINAE

1. *Agrius convolvuli* (Linnaeus, 1758)
2. *Megacorma obliqua* (Walker, 1856)
3. *Acherontia lachesis* (Fabricius, 1798)
4. *Acherontia styx medusa* Butler, 1876
5. *Meganoton analis* (Felder, 1868)
Samples from peninsular Malaysia are strikingly large, with a wingspan of more than 17cm being frequently encountered.
6. *Meganoton nyctiphanes* (Walker, 1856)
7. *Meganoton rufescens* (Butler, 1875)
8. *Psilogamma menephron* (Cramer, 1780)
9. *Dolbina krikkeni* Roesler & Küppers, 1975
10. *Amplypterus panopus* (Cramer, 1779)
11. *Amplypterus masoni* (Clark, 1924)
12. *Ambulyx sericeipennis* (Butler, 1875)
13. *Ambulyx joiceyi* Clark, 1923
Only one record is known to the author: Cameron Highlands, March 1981.
14. *Ambulyx obliterated* (Rothschild, 1920) (?)
15. *Ambulyx tattina* Jordan 1919
16. *Ambulyx substrigilis brooksi* Clark, 1923
17. *Ambulyx pryeri* (Distant, 1887)
18. *Ambulyx subocellata* (Felder, 1868)
19. *Ambulyx canescens* (Walker, 1864)
20. *Ambulyx clavata* Jordan, 1929
21. *Clanis bilineata sumatrana* Clark, 1936
22. *Clanis undulosa* Moore, 1879
In comparison to specimens of the northern part of its range, the samples from the Malay Peninsula have a giant wingspan (more than 18cm).
23. *Clanis stenosema* Rothschild & Jordan, 1907 (?)
24. *Clanis titan* Rothschild & Jordan, 1903
25. *Leucophlebia lineata* Westwood, 1848
26. *Polyptychus trilineatus kelanus* Jordan, 1930 (?)
27. *Marumba cristata titan* Rothschild, 1920
28. *Marumba spectabilis malayana* Rothschild & Jordan, 1903 (?)
29. *Marumba dryas javanica* (Butler, 1875)
30. *Marumba juvenis* Rothschild & Jordan, 1912
31. *Marumba decoratus* (Moore, 1872)
32. *Daphnusa ocellaris* Walker, 1856
33. *Cypa pallens* Jordan, 1926 (?)
34. *Cypa decolor* (Walker, 1856)
35. *Smerinthulus dohrni* Rothschild & Jordan, 1903
36. *Smerinthulus terranea* (Butler, 1876)
37. *Smerinthulus quadripunctatus* Huwe, 1895
38. *Degmaoptera olivacea* (Rothschild, 1894)
39. *Callambulyx rubricosa amanda* Rothschild & Jordan, 1903
40. *Callambulyx poecilus* (Rothschild, 1898)

Subfamily MACROGLOSSINAE

41. *Cephonodes hylas* (Linnaeus, 1771)
42. *Cephonodes picus* (Cramer, 1777)
43. *Sataspes infernalis* (Westwood, 1848) (?)
44. *Sataspes tagalica* Boisduval, 1875
45. *Gnathothlibus erotus* (Cramer, 1777)
46. *Daphnis nerii* (Linnaeus, 1758)
47. *Daphnis hypothous* (Cramer, 1780)
48. *Daphnis placida* (Walker, 1856)
49. *Ampelophaga rubiginosa* (Bremer & Grey, 1852)
A. rubiginosa and *A. khasiana malayana* sensu auct. may be two taxa that are conspecific, but so far this problem of synonymy remains unresolved.
50. *Ampelophaga dolichoides* (Felder, 1868)
51. *Elibia dolichus* (Westwood, 1847)
52. *Acosmeryx anceus subdentata* Rothschild & Jordan, 1903
53. *?Acosmeryx socrates* Boisduval, 1875
54. *Acosmeryx shervillii* Boisduval, 1875
The *Acosmeryx* complex is badly in need of revision. Additional information is provided by Holloway (1987).
55. *Acosmeryx sericeus* (Walker, 1856)
There are records from the Cameron Highlands for April and November 1980.
56. *Gehlenia falcata* Hayes, 1963
One record Cameron Highlands March 1980.
57. *Panacra busiris* Walker, 1856
58. *Panacra malayana* Rothschild & Jordan, 1903
59. *Panacra automedon* Walker, 1856
60. *Panacra dohertyi* Rothschild, 1894
61. *Panacra variolosa* Walker, 1856
62. *Panacra sinuata* Rothschild & Jordan, 1903 (?)
The distribution in the southern part of its range (Thailand?, Malaysia?) is doubtful.
63. *Panacra mydon elegantulus* (Herrich-Schäffer, 1856)
64. *Angonyx testacea* (Walker, 1856)
65. *Enpinanga assamensis vigens* (Butler, 1879)
66. *Enpinanga borneensis* (Butler, 1879)
67. *Nephele didyma* (Fabricius, 1775)
68. *Gurelca hyas* (Walker, 1856)
69. *Sphingonaepiopsis pumilio* (Boisduval, 1875)
70. *Eurypteryx bhaga* (Moore, 1865)
71. *Eurypteryx shelfordi* Rothschild & Jordan, 1903
72. *Giganteopalpus mirabilis* (Rothschild, 1894)
This species was taken by H. Barlow (in litt.).
73. *Macroglossum avicula* (Boisduval, 1875)
74. *Macroglossum gyrans* (Walker, 1856)
75. *Macroglossum pyrrhosticta* (Butler, 1875)
76. *Macroglossum troglodytus* (Boisduval, 1875)
77. *Macroglossum insipida* (Butler, 1875)
78. *Macroglossum sitiene* (Walker, 1856)
79. *Macroglossum heliophila* (Boisduval, 1875)
80. *?Macroglossum mediovitata* Rothschild & Jordan, 1903
81. *Macroglossum prometheus* (Boisduval, 1875)
82. *Macroglossum variegatum* Rothschild & Jordan, 1903
83. *Macroglossum glaucoptera* (Butler, 1875)
84. *Macroglossum semifasciata* (Hampson, 1892)
85. *Macroglossum aquila* (Boisduval, 1875)
86. *Macroglossum sylvia* (Boisduval, 1875)
87. *Macroglossum corythus luteata* (Butler, 1875)
88. *Macroglossum hemichroma* (Butler, 1875)
89. *Macroglossum faro* (Cramer, 1780)
90. *Macroglossum mitchelli imperator* (Butler, 1875)
91. *Macroglossum multifascia* Rothschild & Jordan, 1903 (?)
92. *Hippotion velox* (Fabricius, 1793)
93. *Hippotion celerio* (Linnaeus, 1758)
94. *Hippotion echeclus* (Boisduval, 1875)
95. *Hippotion rafflesi* (Butler, 1877)
96. *?Hippotion rosetta* (Swinhoe, 1892)



Fig. 2-12. 2. *Megalonotus analis*, Fraser's Hill (next to *Pogonopygia nigralbata*, Geometridae). 3. Same. 4. *Cyathea* sp., rainforest of Maxwell Hill (Bukit Larut). 5. *Megacorma obliqua*, at Maxwell Hill (Bukit Larut). 6. *Acherontia lachesis*, Fraser's Hill. 7. Same. 8. Same. 9. *Ambulyx tattina*, Fraser's Hill. 10. *Cechenena lineosa*, Fraser's Hill. 11. Same. 12. *Cechenena aegrota*, Maxwell Hill.

97. *Hippotion boerhaviae* (Fabricius, 1775)
98. *Theretra nessus* (Drury, 1773)
99. *Theretra boisduvali* (Bugnion, 1839)
100. *Theretra rhesus* (Boisduval, 1875)
101. *Theretra clotho* (Drury, 1773)
102. *Theretra latreillei lucasi* (Walker, 1856)
103. *Theretra alecto* (Linnaeus, 1758)
104. *Theretra suffusa* (Walker, 1856)
105. *Theretra lycetus* (Cramer, 1775) (?)
106. *Theretra oldenlandiae* (Fabricius, 1775)
107. *Theretra silhetensis* (Walker, 1856)
108. *Theretra pallicosta* (Walker, 1856) (?)
109. *Rhyncholaba acteus* (Cramer, 1779)
110. *Rhagastis rubetra* Rothschild & Jordan, 1907
111. *Rhagastis mjobergi* Clark, 1923

The synonymy of these two species has been briefly discussed by Diehl (1980) and D'Abrera (1986). The identities of both remain uncertain.

112. *Rhagastis acuta* (Walker, 1856)
113. *Rhagastis hayesi* Diehl, 1980
A sibling species of *R. acuta*. The author has seen a few specimens from the Cameron Highlands, which most likely belong to this species.
114. *Cechenena aegrota* (Butler, 1875)
115. *Cechenena helops* (Walker, 1856)
116. *Cechenena lineosa subangustata* Rothschild, 1920

It is interesting to compare the Malaysian results with those reported by authors dealing with the Sphingidae fauna of the neighboring islands: 121 species were recorded by Diehl (1980) for Sumatra; Dupont & Roepke (1941) listed a total of 97 species for Java; and Holloway (1976) reported 42 species from the Mount Kinabalu area of Sabah (Borneo). Holloway (1987) gives a total of 94 species for Borneo.

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