



Ecological and socioeconomic Functions of tropical lowland
rainForest Transformation Systems (Sumatra, Indonesia)

The Butterflies of Eastern Jambi (Sumatra, Indonesia)

-
An EFForTS Field Guide

Rawati Panjaitan, Purnama Hidayat,
Djunijanti Peggie, Damayanti Buchori,
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The Butterflies of Eastern Jambi (Sumatra, Indonesia) - An EFForTS Field Guide

Rawati Panjaitan, Purnama Hidayat¹, Djunijanti Peggie²,
Damayanti Buchori¹, Stefan Scheu³, Jochen Drescher³

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¹ Department of Plant Protection, Taxonomy Lab / P. Hidayat group, Bogor Agricultural University, Jalan Kamper Kampus IPB Darmaga, Bogor 16680, Indonesia

² Museum Zoologicum Bogoriense, Research Center for Biology, Indonesian Institute of Sciences, Cibinong, Indonesia

³ Department of Animal Ecology, University of Göttingen, J.-F.-Blumenbach-Institute for Zoology and Anthropology, Untere Karspüle 2, 37073 Göttingen, Germany

Correspondence: rawatibiologi@gmail.com, jdresch@gwdg.de

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The EFForTS project is a Collaborative Research Centre funded by the German Research Council (DFG) and focuses on the ecological and socioeconomic dimensions of rainforest conversion. For more information, see www.uni-goettingen.de/EFForTS.

Contributions

All 209 butterfly species were photographed by Rawati Panjaitan over the course of two field visits to EFForTS Core Plots, with the exception of *Troides amphrysus*, for which we used an image by Thomas Neubauer from the Natural History Museum Viena, Austria. All butterflies were identified by Rawati Panjaitan under supervision of Purnama Hidayat, Djunijanti Peggie and Damayanti Buchori. The guide was compiled by Rawati Panjaitan, Stefan Scheu and Jochen Drescher.

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I. Introduction

Butterflies are probably the most enigmatic insects among the arthropods. For centuries, both professional scientists and amateur enthusiasts have collected, catalogued and scientifically described butterflies from all over the world. Unsurprisingly, they belong to the most well-known insect groups in terms of taxonomy and global species record completeness. More than 17.500 described species are spread throughout the entire world, with the exception of Antarctica. Many species migrate annually to avoid unfavorable conditions in temperate regions. While most migrate only short distances of a few hundred kilometers, monarch butterflies and several other species can migrate up to thousands of kilometers, often over several generations per migration cycle.

Butterflies have the typical four-staged insect life cycle of the holometabolous insects, which includes egg, larva, pupa and adult. The larva differ greatly from the adults and are called caterpillars. Almost exclusively herbivorous, caterpillars are voracious feeders and some species can be severe agricultural pests. Larva of other butterflies are highly valued as sources of silk, food, or pest plant control. In the tropics, many butterflies have several generations per year, where the adult stage lasts about two months. Within the framework of the [EForTS Project](#), we counted and collected butterflies in a nested replicated design in four land use systems in Jambi Province, Sumatra, Indonesia: Old growth secondary lowland rainforest, jungle rubber (a form of extensive rubber cultivation), and monoculture plantations of rubber and oil palm (Fig. 1a-d).



Figure 1. Four land use systems are investigated in EForTS. (a) Old-growth secondary forest F, (b) Jungle rubber J (extensive rubber cultivation), (c), Rubber plantation R (*Hevea brasiliensis*) and (d) Oil Palm plantation O (*Elaeis guineensis*).

The EForTS study sites are located in and around two forest reserves, i.e. the Bukit Duabelas National Park and the lowland rainforest restoration concession of PT Restorasi Ekosistem Indonesia (PT REKI), also called Harapan Rainforest. In each of the two ‘landscapes’, we established a mirrored design of four plots of each land use type in each of the two landscapes, resulting in $4 \times 4 \times 2 = 32$ ‘core plots’ (Fig. 2). Each core plot measures 50×50 m. Butterflies were collected between August and October 2017 using sweep netting (exception: *Troides amphrysus* CRAMER 1779, identified on sight) on three parallel transects per core plot, with two transects located on the outer borders of the core plots, and the third transect located through the center of the core plot. Sweep netting was conducted twice per day per plot, mornings (8:00 – 11:00 am) and afternoons (13:00 – 16:00 pm). All butterfly individuals were released after identification in the evenings of the sampling day, with the exception of up to two dried/mounted individuals and five individuals in 99% EtOH p.A. per species, which were kept for species ID and further analysis. Our data is based on 6653 caught and/or observed butterfly individuals that we identified to 209 species from 106 genera, 19 subfamilies and 5 families.

This guide contains a checklist and images of all 209 species observed and collected. It provides scientists working in the region with an easy to use reference, and will be updated regularly.

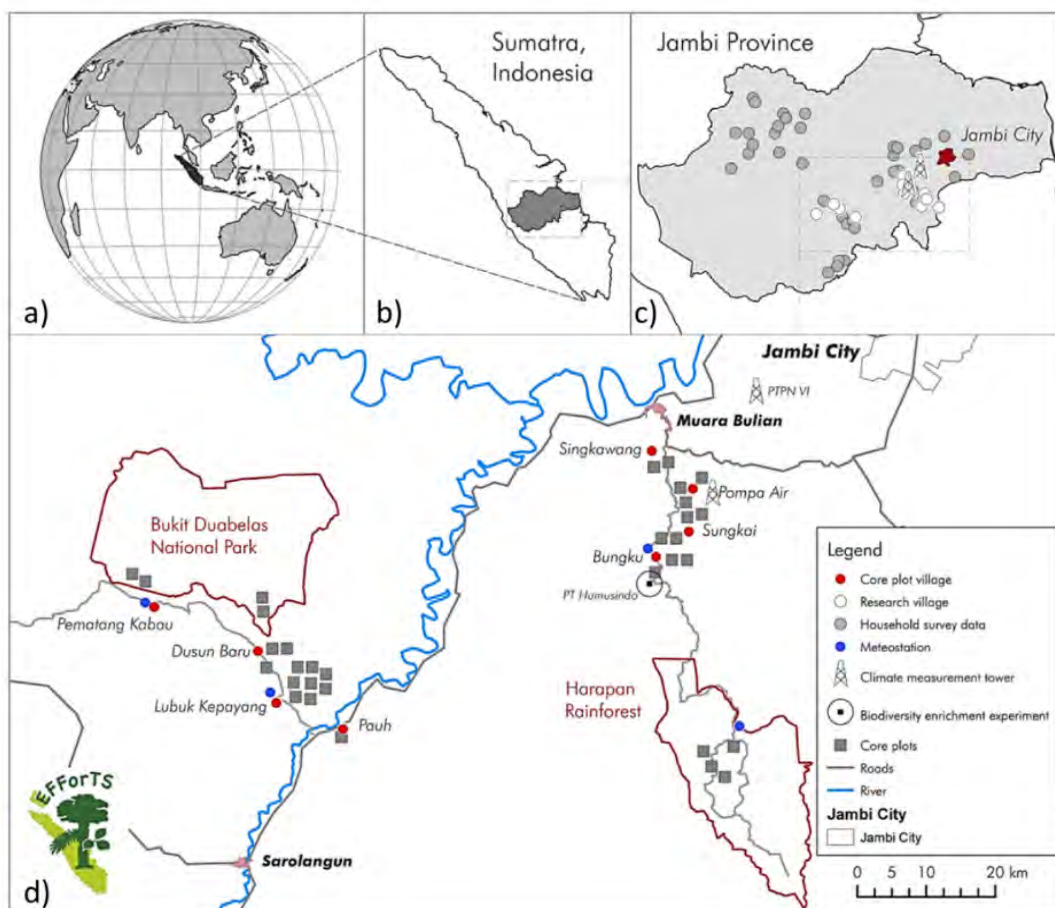


Figure 2. EForTS study sites in Sumatra (a, b) and Jambi Province (c, d). The core plot design (grey squares) is mirrored in two landscapes within and adjacent to two lowland rainforests, i.e. the Bukit Duabelas National Park and the Harapan Rainforest. Circles represent study villages and sites for socioeconomic surveys (map from: Drescher et al., 2016). Ecological and socio-economic functions across tropical land use systems after rainforest conversion. *Philos. Trans. R Soc. Lond. B Biol. Sci.*.



II. Species Checklist

This is a list of the 209 species we encountered in Jambi during visits to all EForTS core plots in Jambi dry season 2017. It contains the taxonomic resolution from family and subfamily to species, the land use systems the species were found in (, i.e. lowland rainforest F, jungle rubber J, rubber monoculture R and oil palm plantation O), and the figure numbers of the image section.

FAMILY	SUBFAMILY	BUTTERFLY SPECIES	LAND USE	FIGURES
LYCANEIDAE	CURETINAE	<i>Curetis tagalica</i>	F, J	3
		<i>Curetis thetis</i>	F	4
	MILETINAE	<i>Allotinus substrigosus</i>	F, J	5
		<i>Allotinus unicolor</i>	F, J	6
		<i>Logania marmorata</i>	J, O	7
		<i>Miletus chinensis</i>	F, J, O, R	8
		<i>Miletus gopara</i>	J	9
		<i>Spalgis epius</i>	J	10
		POLYOMMATINAE	<i>Acytolepis puspa</i>	O, R
	<i>Anthene licates</i>		F	12
	<i>Caleta caleta</i>		F	13
	<i>Discolampa ethion</i>		R	14
	<i>Euchrysops cnejus</i>		O	15
	<i>Everes lacturnus</i>		F, O	16
	<i>Jamides alecto</i>		F, J, O, R	17
	<i>Jamides celeno</i>		F, J, O, R	18
	<i>Jamides cunilda</i>		J	19
	<i>Jamides malaccanus</i>		J, O	20
	<i>Jamides philatus</i>		J, O	21
	<i>Lycaenopsis haraldus</i>		F	22
	<i>Nacaduba kurava</i>		F, J, O, R	23
	<i>Nacaduba subperusia</i>		J, R	24
	<i>Neopithecops zalmora</i>		F, J	25
	<i>Prosotas gracilis</i>		F, J	26
	<i>Zizula hylax</i>		O, R	27
	PORITIINAE		<i>Poritia sumatrae</i>	F, J
	THECLINAE	<i>Arhopala acetes</i>	F	29
		<i>Arhopala avatha</i>	F, J	30
		<i>Arhopala cleander</i>	F, J	31
		<i>Arhopala labuana</i>	F, J, R	32
		<i>Arhopala major</i>	J	33
		<i>Arhopala myrzala</i>	F, J	34
		<i>Arhopala philander</i>	J, R	35
		<i>Arhopala sceva</i>	J	36



FAMILY	SUBFAMILY	BUTTERFLY SPECIES	LAND USE	FIGURES
LYCAENIDAE	THECLINAE	<i>Arhopala trogon</i>	F	37
		<i>Catapaecilma elegans</i>	F	38
		<i>Cheritra freja</i>	F	39
		<i>Dacalana vidura</i>	F	40
		<i>Deudorix staudingeri</i>	F, J	41
		<i>Drupadia cineas</i>	F, J	42
		<i>Drupadia ravindra</i>	F, J, O, R	43
		<i>Eliotia jalindra</i>	F	44
		<i>Eooxylides tharis</i>	F, J, O, R	45
		<i>Flos fulgida</i>	J	46
		<i>Hypolycaena merguia</i>	F	47
		<i>Iraota rochana</i>	J, O	48
		<i>Loxura atymnus</i>	F	49
		<i>Rapala damona</i>	F, J, O	50
		<i>Rapala domitia</i>	F	51
		<i>Rapala tara</i>	F	52
		<i>Rapala vajana</i>	F, J, O	53
		<i>Sithon nedymond</i>	J, O, R	54
		<i>Spindasis lohita</i>	F, J, O	55
		<i>Surendra vivarna</i>	F, R	56
<i>Thamala marciana</i>	F	57		
<i>Thamala maultoni</i>	F	58		
NYMPHALIDAE	APATURINAE	<i>Eulaceura osteria</i>	F, J, R	59
		<i>Euripus nyctelius</i>	F, J	
	BIBLIDINAE	<i>Laringa castelnaui</i>	J	
		<i>Laringa horsfieldi</i>	F	
	CARAXINAE	<i>Agatasa calydonia</i>	F, J	
		<i>Charaxes durnfordi</i>	F	
		<i>Charaxes fervens</i>	F, J, O, R	
		<i>Charaxes solon</i>	J	
		<i>Polyura hebe</i>	F, J, O, R	
		<i>Prothoe franck</i>	F, J	
	CYRESTINAE	<i>Chersonesia peraka</i>	F, J	
		<i>Dichorragia nesimachus</i>	F	
	DANAINAE	<i>Danaus genutia</i>	F	
		<i>Danaus melanippus</i>	J, O, R	
<i>Euploea algea</i>		F		
<i>Euploea crameri</i>		F, J, O, R		
<i>Euploea eunice</i>		F, J, O, R		
<i>Euploea mulciber</i>		F, J, O, R		



FAMILY	SUBFAMILY	BUTTERFLY SPECIES	LAND USE	FIGURES
NYMPHALIDAE	DANAINAE	<i>Euploea radamanthus</i>	F	77
		<i>Idea lynceus</i>	F, J	78
		<i>Ideopsis gaura</i>	F, J, O	79
		<i>Ideopsis juvenata</i>	F, J, O, R	80
		<i>Ideopsis vulgaris</i>	F, J, O, R	81
		<i>Parantica aspasia</i>	F, J, O, R	82
		<i>Parantica melaneus</i>	F	83
	HELICONIINAE	<i>Acraea terpsicore</i>	J, O, R	84
		<i>Chetosia hypsea</i>	F, J, O, R	85
		<i>Cirrochroa emale</i>	F, J	86
		<i>Cupha arias</i>	F, J, O, R	87
		<i>Cupha maconides</i>	F	88
		<i>Phalanta phalanta</i>	R	89
		<i>Terinos terpander</i>	F, J, O	90
		<i>Vindula erota</i>	F, J, O	91
	LIMENITIDINAE	<i>Athyma cama</i>	F, J, O, R	92
		<i>Athyma gynea</i>	F	93
		<i>Athyma larymna</i>	F, J	94
		<i>Athyma perius</i>	F, O, R	95
		<i>Athyma reta</i>	F	96
		<i>Bassarona dunya</i>	F	97
		<i>Bassarona teuta</i>	F	98
		<i>Dophla evelina</i>	F, J, R	99
		<i>Euthalia adonia</i>	J, O, R	100
		<i>Euthalia agnis</i>	F, J, O, R	101
		<i>Euthalia alpheda</i>	F, J, O, R	102
		<i>Euthalia kanda</i>	R	103
		<i>Euthalia mahadeva</i>	J, O, R	104
		<i>Euthalia merta</i>	J	105
		<i>Euthalia monina</i>	F, J, O, R	106
		<i>Euthalia whiteheadi</i>	O	107
		<i>Lasippa tiga</i>	F, J, O, R	108
		<i>Lebadea martha</i>	F, J	109
	<i>Lexias pardalis</i>	F, J, O, R	110	
	<i>Moduza procris</i>	F, J, O, R	111	
	<i>Neptis harita</i>	O	112	
	<i>Neptis hylas</i>	F, J, O, R	113	
	<i>Neptis nata</i>	F, J, O, R	114	
	<i>Neptis soma</i>	R	115	



FAMILY	SUBFAMILY	BUTTERFLY SPECIES	LAND USE	FIGURES
NYPHALIDAE	LIMENITIDINAE	<i>Pandita sinope</i>	F, O, R	116
		<i>Pantophoria aurelia</i>	F	117
		<i>Tanaecia coelebs</i>	F, J, O, R	118
		<i>Tanaecia iapis</i>	F, J, O, R	119
		<i>Tanaecia palguna</i>	F, J, O, R	120
		<i>Tanaecia pelea</i>	F, J, O	121
	MORPHINAE	<i>Amathusia binghami</i>	F, J, O, R	122
		<i>Amathusia friderici</i>	F, J, O, R	123
		<i>Amathusia phidippus</i>	O	124
		<i>Amathusia schoenbergi</i>	F	125
		<i>Discophora timora</i>	F, J	126
		<i>Faunis canens</i>	F, J, O, R	127
		<i>Faunis gracilis</i>	F	128
		<i>Faunis kirata</i>	F	129
		<i>Faunis sappho</i>	F	130
		<i>Thaumantis diores</i>	J	131
		<i>Thaumantis klugius</i>	F, J	132
		<i>Thaumantis noureddin</i>	J	133
		<i>Thaumantis odana</i>	F	134
		<i>Zeuxidia amethystus</i>	F	135
		<i>Zeuxidia dohrni</i>	F	136
		<i>Zeuxidia masoni</i>	J	137
	NYPHALINAE	<i>Ariadne ariadne</i>	F, J, O, R	138
		<i>Doleschallia bisaltide</i>	J, O, R	139
		<i>Hypolimnias bolina</i>	J, O, R	140
		<i>Junonia almana</i>	J, O	141
		<i>Junonia atlites</i>	J, O, R	142
		<i>Junonia hedonia</i>	J, O, R	143
		<i>Junonia orithia</i>	J, O, R	144
		<i>Junonia vilida</i>	J, O, R	145
		<i>Rhinopalpa polynice</i>	F	146
	SATYRINAE	<i>Coelites epiminthia</i>	F, J	147
		<i>Coelites euptychioides</i>	F	148
		<i>Elymnias congruens</i>	J, O, R	149
<i>Elymnias hicetas</i>		F	150	
<i>Elymnias nesaea</i>		J, O, R	151	
<i>Elymnias panthera</i>		F, J, O, R	152	
<i>Elymnias penanga</i>		F	153	
<i>Erites argentina</i>		F, J	154	



FAMILY	SUBFAMILY	BUTTERFLY SPECIES	LAND USE	FIGURES
NYMPHALIDAE	SATYRINAE	<i>Lethe mekara</i>	F, O	155
		<i>Melanitis leda</i>	J, O, R	156
		<i>Melanitis phedima</i>	J, O, R	157
		<i>Mycalesis felderi</i>	F, J, O, R	158
		<i>Mycalesis fuscum</i>	F, J, R	159
		<i>Mycalesis ita</i>	F, J, O, R	160
		<i>Mycalesis janardana</i>	J	161
		<i>Mycalesis lepcha</i>	J, O, R	162
		<i>Mycalesis maianeas</i>	F, J, O	163
		<i>Mycalesis mineus</i>	F, J, O, R	164
		<i>Mycalesis mnasicles</i>	F	165
		<i>Mycalesis patiana</i>	F	166
		<i>Mycalesis perseoides</i>	J, O	167
		<i>Mycalesis perseus</i>	F, J, O, R	168
		<i>Mycalesis sirius</i>	J, O	169
		<i>Neorina lowii</i>	F	170
		<i>Orsotriaena medus</i>	J, O	171
		<i>Ragadia crito</i>	F, J	172
		<i>Ragadia makuta</i>	J	173
		<i>Ypthima metora</i>	F, O, R	174
<i>Ypthima philomela</i>	F, O, R	175		
<i>Ypthima praenubila</i>	F, J, O, R	176		
PAPILIONIDAE	PAPILIONINAE	<i>Atrophaneura priapus</i>	F, J	177
		<i>Graphium agamemnon</i>	F, J, O, R	178
		<i>Graphium eurypylus</i>	F, J	179
		<i>Graphium ramaceus</i>	F, R	180
		<i>Graphium sarpedon</i>	F, J, O	181
		<i>Pachliopta aristolochiae</i>	F, J, O, R	182
		<i>Pachliopta atropos</i>	J	183
		<i>Papilio demoleus</i>	J, O, R	184
		<i>Papilio demolion</i>	F, J, O, R	185
		<i>Papilio helenus</i>	J	186
		<i>Papilio iswaroides</i>	F, J, O, R	187
		<i>Papilio memnon</i>	F, J, O, R	188
		<i>Papilio nephelus</i>	F, J, O, R	189
		<i>Papilio polytes</i>	F, J, O, R	190
		<i>Pathysa euphrates</i>	F, J, O, R	191
		<i>Trogonoptera brookiana</i>	F	192
		<i>Troides amphrysus</i>	F	193



FAMILY	SUBFAMILY	BUTTERFLY SPECIES	LAND USE	FIGURES
PIERIDAE	COLIADINAE	<i>Catopsilia pomona</i>	O, R	194
		<i>Catopsilia scylla</i>	J, O, R	195
		<i>Eurema alitha</i>	F, J, O	196
		<i>Eurema hecabe</i>	F, J, O, R	197
		<i>Eurema simulatrix</i>	F, J, O, R	198
		<i>Gandaca harina</i>	F, J, O, R	199
	PIERINAE	<i>Appias lybithia</i>	F, J, O	200
		<i>Appias lycida</i>	O	201
		<i>Appias olferna</i>	F, J, O, R	202
		<i>Appias pandione</i>	F	203
		<i>Leptosia nina</i>	F, J, O, R	204
		<i>Phrissura aegis</i>	R	205
	RIODINIDAE	NEMEOBIINAE	<i>Abisara kausambi</i>	F, J, O, R
<i>Abisara savitri</i>			F	207
<i>Paralaxita orphana</i>			F, J, O, R	208
<i>Taxila haquinus</i>			F, J, O	209
<i>Zemeros emesoides</i>			F, J, O, R	210
<i>Zemeros flegyas</i>			R	211

III. Images

a. LYCANEIDAE

i. CURETINAE



Fig. 3. *Curetis tagalica*.



Fig. 4. *Curetis thetis*.

ii. MILETINAE



Fig. 6. *Allotinus substrigosus*.



Fig. 6. *Allotinus unicolor*.



Fig. 7. *Logania marmorata*.



Fig. 8. *Miletus chinensis*.



Fig. 9. *Miletus gopara*.



Fig. 10. *Spalgis epius*.

iii. POLYOMMATINAE



Fig. 11. *Acytolepis puspa*.



Fig. 12. *Anthene licates*.

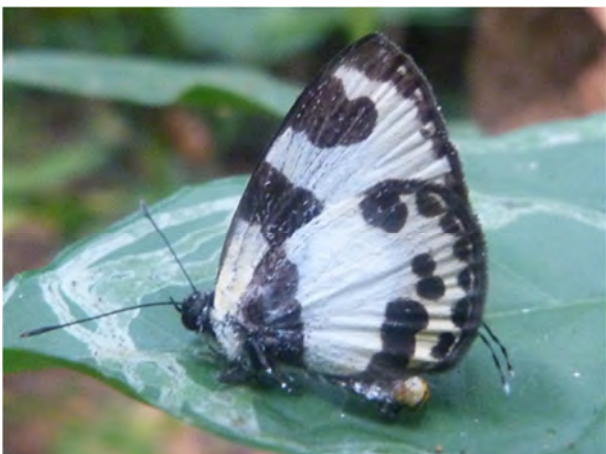


Fig. 13. *Caleta caleta*.



Fig. 14. *Discolampa ethion*.



Fig. 15. *Euchrysops cnejus*.



Fig. 16. *Everes lacturnus*.



Fig. 17. *Jamides alecto*.



Fig. 18. *Jamides celeno*.



Fig. 19. *Jamides cunilda*.



Fig. 20. *Jamides malaccanus*.



Fig. 21. *Jamides philatus*.



Fig. 22. *Lycaenopsis haraldus*.



Fig. 23. *Nacaduba kurava*.



Fig. 24. *Nacaduba subperusia*.



Fig. 25. *Neopithecops zalmora*.



Fig. 26. *Prosotas gracilis*.



Fig. 27. *Zizula hylax*.

iv. PORITIINAE



Fig. 28. *Poritia sumatrae*.

v. THECLINAE



Fig. 29. *Arhopala acetes*.

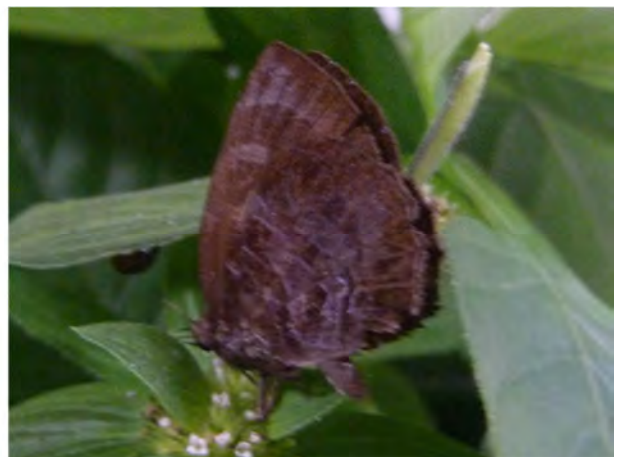


Fig. 30. *Arhopala avatha*.



Fig. 31. *Arhopala cleander*.



Fig. 32. *Arhopala labuana*.



Fig. 33. *Arhopala major*.



Fig. 34. *Arhopala myrzala*.

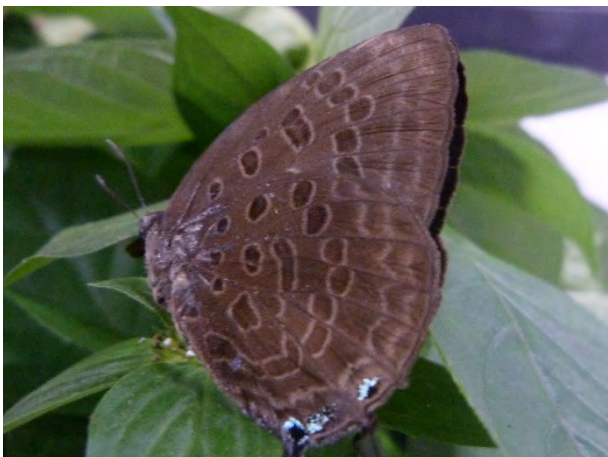


Fig. 35. *Arhopala philander*.



Fig. 36. *Arhopala sceva*.



Fig. 37. *Arhopala trogon*.



Fig. 38. *Catapaecilma elegans*.



Fig. 39. *Cheritra freja*.



Fig. 40. *Dacalana vidura*.



Fig. 41. *Deudorix staudingeri*.



Fig. 42. *Drupadia cineas*.



Fig. 43. *Drupadia ravindra*.



Fig. 44. *Eliotia jalindra*.



Fig. 45. *Eooxylides tharis*.



Fig. 46. *Flos fulgida*.

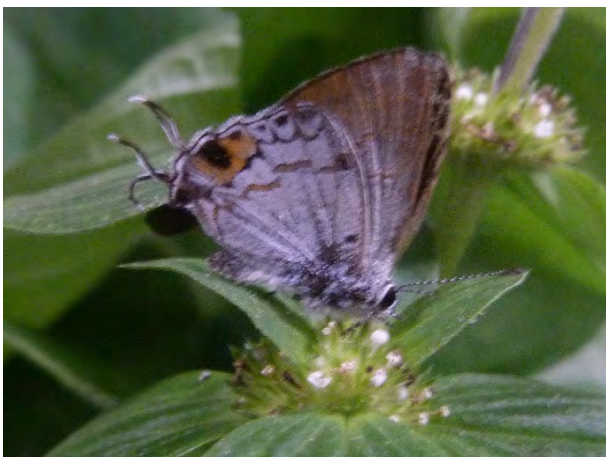


Fig. 47. *Hypolycaena merguia*.

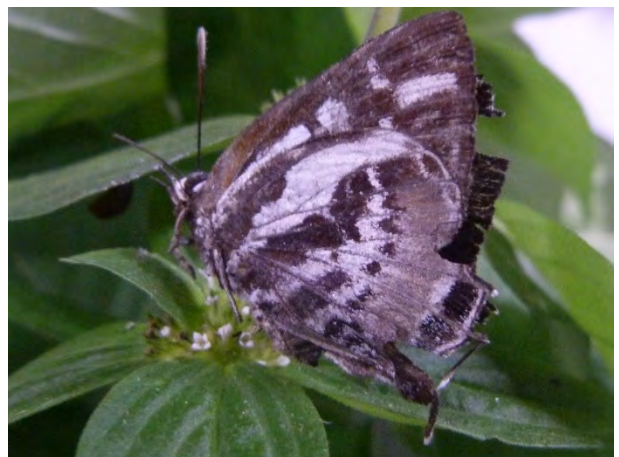


Fig. 48. *Iraota rochana*.



Fig. 49. *Loxura atymnus*.



Fig. 50. *Rapala damona*.



Fig. 51. *Rapala domitia*.



Fig. 52. *Rapala tara*.



Fig. 53. *Rapala vajana*.



Fig. 54. *Sithon nedymond*.



Fig. 55. *Spindasis lohita*.



Fig. 56. *Surendra vivarna*.



Fig. 57. *Thamala marciana*.



Fig. 58. *Thamala maultoni*.

b. NYMPHALIDAE

i. APARTURINAE



Fig. 59. *Eulaceura osteria*.



Fig. 60. *Euripus nyctelius*.

ii. BIBLIDINAE



Fig. 61. *Laringa castelnaui*.



Fig. 62. *Laringa horsfieldi*.

iii. CARAXINAE

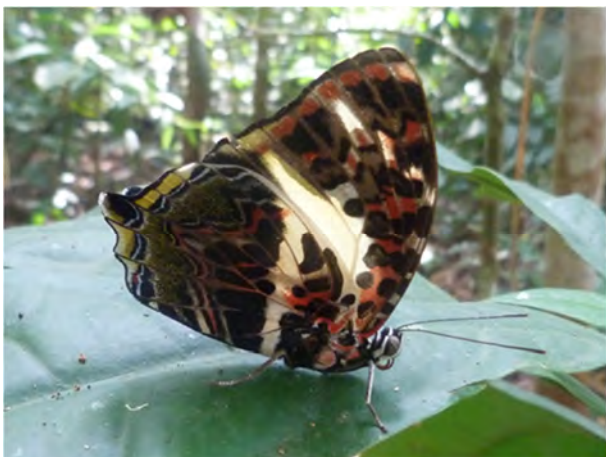


Fig. 63. *Agatasa calydonia*.



Fig. 64. *Charaxes durnfordi*.



Fig. 65. *Charaxes fervens*.



Fig. 66. *Charaxes solon*.



Fig. 67. *Polyura hebe*.



Fig. 68. *Prothoe franck*.

iv. CYRESTINAE



Fig. 69. *Chersonesia peraka*.

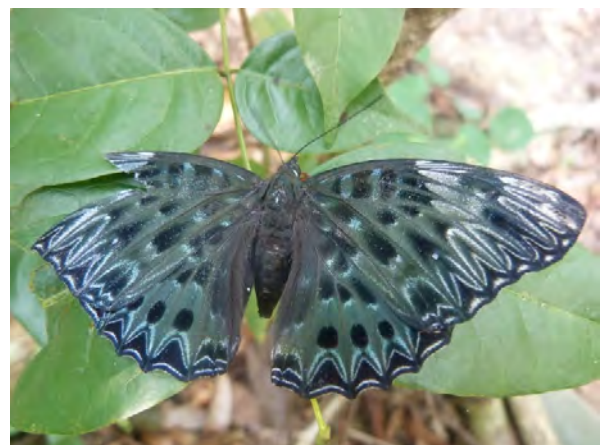


Fig. 70. *Dichorragia nesimachus*.

v. DANAINAE



Fig. 71. *Danaus genutia*.



Fig. 72. *Danaus melanippus*.



Fig. 73. *Euploea algea*.

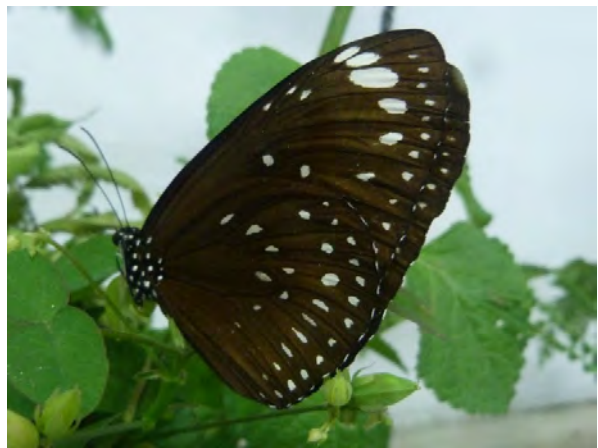


Fig. 74. *Euploea crameri*.



Fig. 75. *Euploea eunice*.



Fig. 76. *Euploea mulciber*.



Fig. 77. *Euploea radamanthus*.



Fig. 78. *Idea lynceus*.



Fig. 79. *Ideopsis gaura*.



Fig. 80. *Ideopsis juvena*.

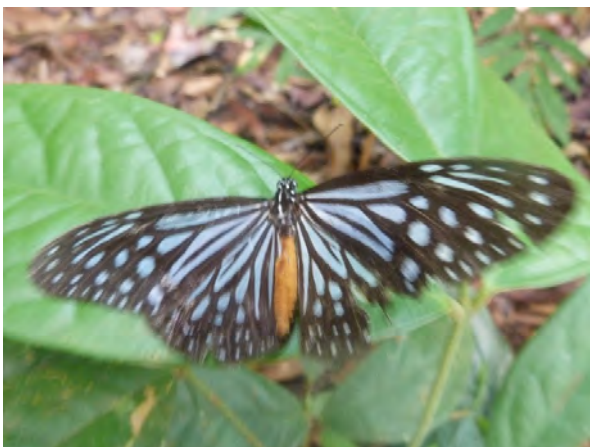


Fig. 81. *Ideopsis vulgaris*.



Fig. 82. *Parantica aspasia*.



Fig. 83. *Parantica melaneus*.

vi. HELICONIINAE



Fig. 84. *Acraea terpsicore*.



Fig. 85. *Chetosia hypsea*.

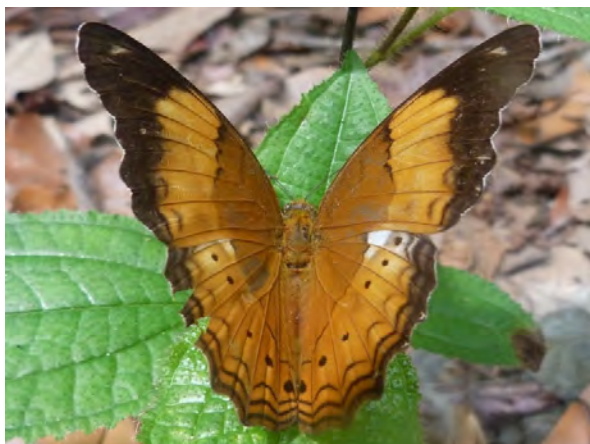


Fig. 86. *Cirrochroa emale*.



Fig. 87. *Cupha arias*.



Fig. 88. *Cupha maconides*.



Fig. 89. *Phalanta phalanta*.



Fig. 90. *Terinos terpander*.



Fig. 91. *Vindula erota*.

vii. LIMENITIDINAE



Fig. 92. *Athyma cama*.



Fig. 93. *Athyma gynea*.



Fig. 94. *Athena larymna*.



Fig. 95. *Athena perius*.

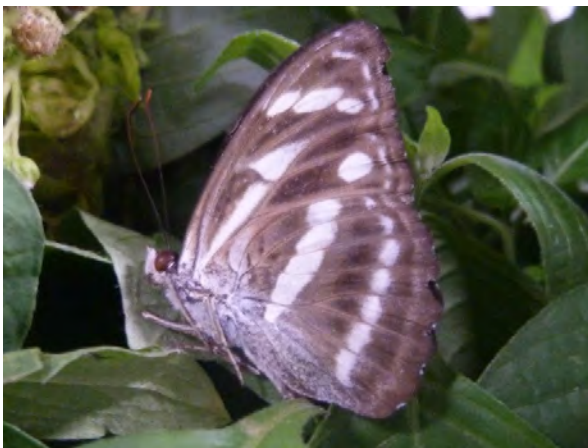


Fig. 96. *Athena reta*.



Fig. 97. *Bassarona dunya*.



Fig. 98. *Bassarona teuta*.



Fig. 99. *Dophla evelina*.



Fig. 100. *Euthalia adonia*.



Fig. 101. *Euthalia agnis*.



Fig. 102. *Euthalia alpheda*.



Fig. 103. *Euthalia kanda*.



Fig. 104. *Euthalia mahadeva*.



Fig. 105. *Euthalia merta*.



Fig. 106. *Euthalia monina*.



Fig. 107. *Euthalia whiteheadi*.



Fig. 108. *Lasippa tiga*.



Fig. 109. *Lebadea martha*.



Fig. 110. *Lexias pardalis*.



Fig. 111. *Moduza procris*.



Fig. 112. *Neptis harita*.



Fig. 113. *Neptis hylas*.



Fig. 114. *Neptis nata*.



Fig. 115. *Neptis soma*.



Fig. 116. *Pandita sinope*.

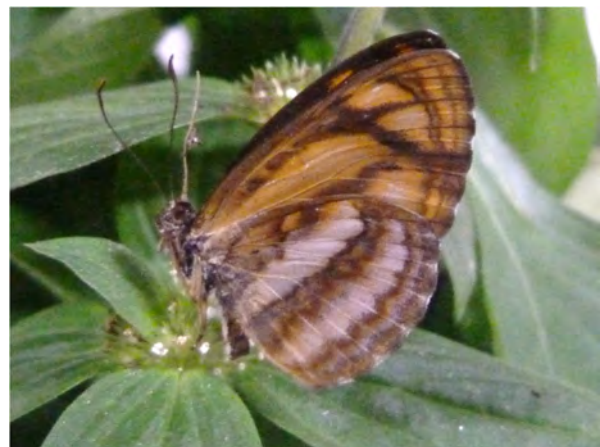


Fig. 117. *Pantophoria aurelia*.



Fig. 118. *Tanaecia coelebs*.



Fig. 119. *Tanaecia iapis*.



Fig. 120. *Tanaecia palguna*.



Fig. 121. *Tanaecia pelea*.

ix. MORPHINAE



Fig. 122. *Amathusia binghami*.



Fig. 123. *Amathusia friderici*.



Fig. 124. *Amathusia phidippus*.



Fig. 125. *Amathusia schoenbergi*.



Fig. 126. *Discophora timora*.



Fig. 127. *Faunis canens*.



Fig. 128. *Faunis gracilis*.



Fig. 129. *Faunis kirata*.



Fig. 130. *Faunis sappho*.



Fig. 131. *Thaumantis diores*.



Fig. 132. *Thaumantis klugius*.



Fig. 133. *Thaumantis noureddin*.

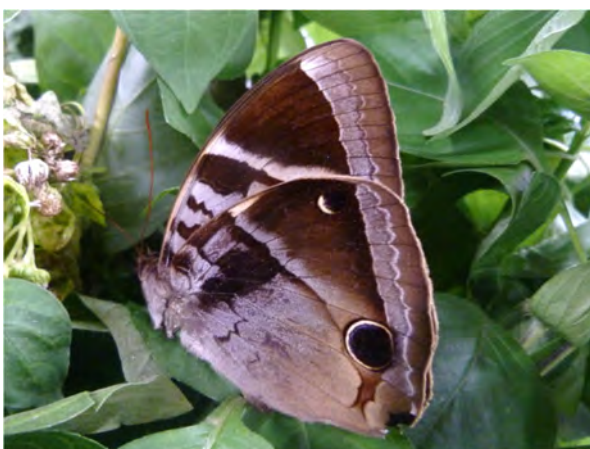


Fig. 134. *Thaumantis odana*.



Fig. 135. *Zeuxidia amethystus*.



Fig. 136. *Zeuxidia dohrni*.



Fig. 137. *Zeuxidia masoni*.

x. NYMPHALINAE



Fig. 138. *Ariadne ariadne*.



Fig. 139. *Doleschallia bisaltide*.



Fig. 140. *Hypolimnias bolina*.

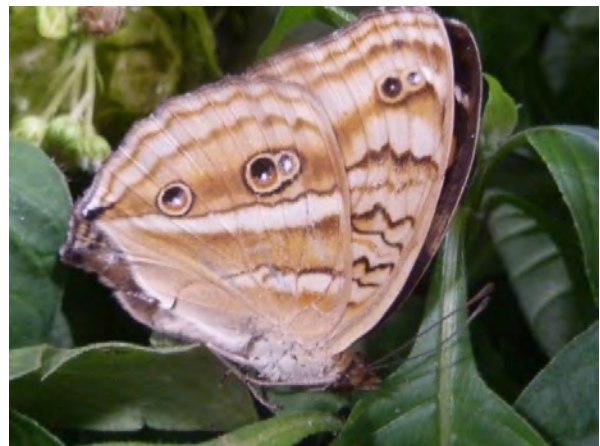


Fig. 141. *Junonia almana*.



Fig. 142. *Junonia atlites*.



Fig. 143. *Junonia hedonia*.



Fig. 144. *Junonia orithia*.



Fig. 145. *Junonia vilida*.



Fig. 146. *Rhinopalpa polynice*.

xi. SATYRINAE



Fig. 147. *Coelites epiminthia*.



Fig. 148. *Coelites euptychioides*.



Fig. 149. *Elymnias congruens*.



Fig. 150. *Elymnias hicetas*.



Fig. 151. *Elymnias nesaea*.



Fig. 152. *Elymnias panthera*.



Fig. 153. *Elymnias penanga*.



Fig. 154. *Erites argentina*.



Fig. 155. *Lethe mekara*.



Fig. 156. *Melanitis leda*.



Fig. 157. *Melanitis phedima*



Fig. 158. *Mycalesis felderi*.



Fig. 159. *Mycalesis fuscum*.



Fig. 160. *Mycalesis ita*.



Fig. 161. *Mycalesis janardana*.



Fig. 162. *Mycalesis lepcha*.



Fig. 163. *Mycalesis maianeas*.



Fig. 164. *Mycalesis mineus*.



Fig. 165. *Mycalesis mnasicles*.



Fig. 166. *Mycalesis patiana*.



Fig. 167. *Mycalesis perseoides*.



Fig. 168. *Mycalesis perseus*.



Fig. 169. *Mycalesis sirius*.

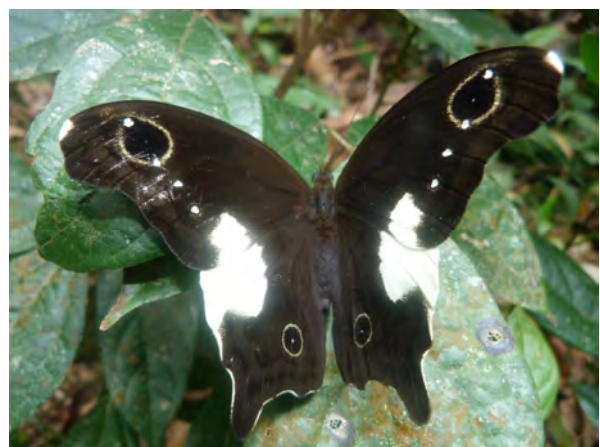


Fig. 170. *Neorina lowii*.



Fig. 171. *Orsotriaena medus*.



Fig. 172. *Ragadia crito*.



Fig. 173. *Ragadia makuta*.



Fig. 174. *Ypthima metora*.

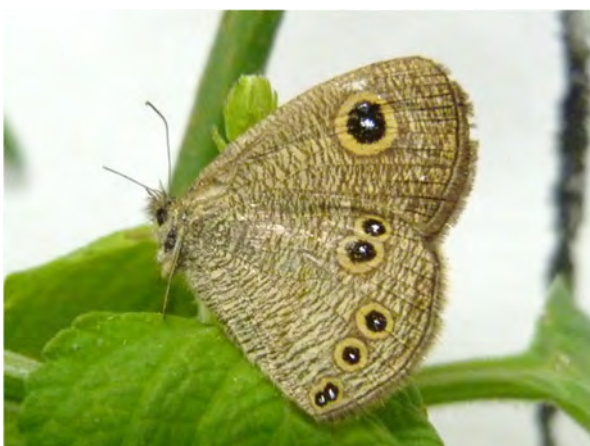


Fig. 175. *Ypthima philomela*.

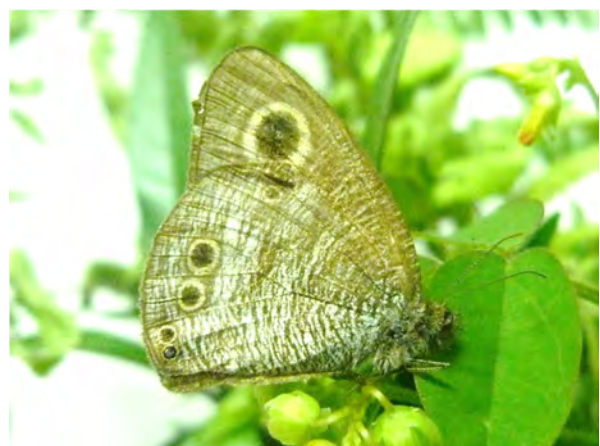


Fig. 176. *Ypthima praenubila*.

c. PAPILIONIDAE
i. PAPILIONINAE



Fig. 177. *Atrophaneura priapus*.



Fig. 178. *Graphium agamemnon*.



Fig. 179. *Graphium eurypylus*.



Fig. 180. *Graphium ramaceus*.



Fig. 181. *Graphium sarpedon*.

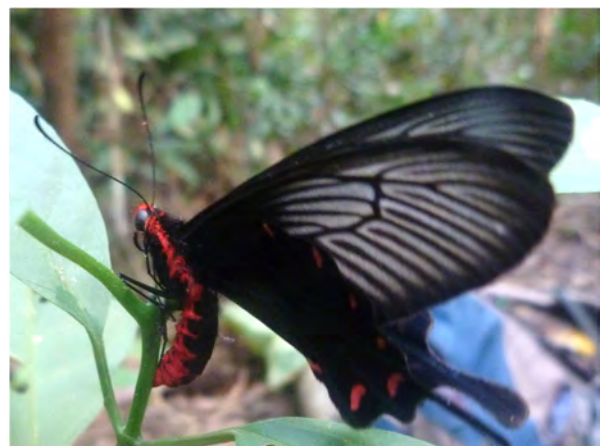


Fig. 182. *Pachliopta aristolochiae*.

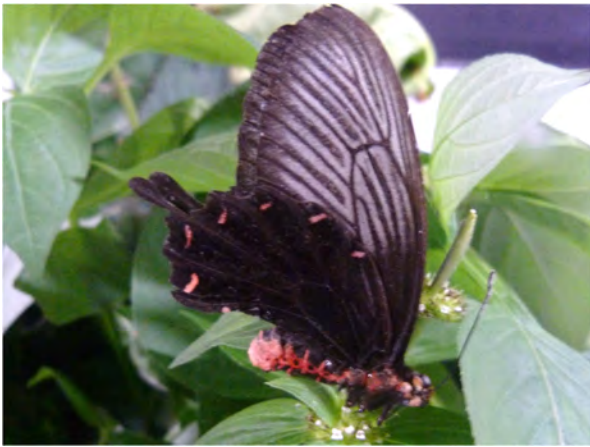


Fig. 183. *Pachliopta atropos*.



Fig. 184. *Papilio demoleus*.

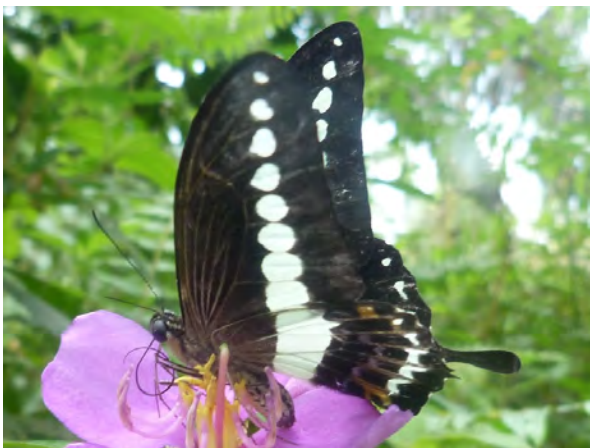


Fig. 185. *Papilio demolion*.



Fig. 186. *Papilio helenus*.



Fig. 187. *Papilio iswaroides*.

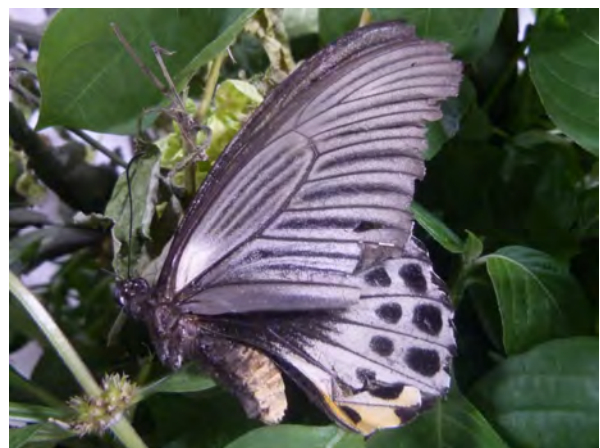


Fig. 188. *Papilio memnon*.



Fig. 189. *Papilio nephelus*.



Fig. 190. *Papilio polytes*.



Fig. 191. *Pathysa euphrates*.



Fig. 192. *Trogonoptera brookiana*.



Fig. 193. *Troides amphrysus*.

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d. PIERIDAE
i. COLIADINAE



Fig. 194. *Catopsilia pomona*.



Fig. 195. *Catopsilia scylla*.



Fig. 196. *Eurema alitha*.



Fig. 197. *Eurema hecabe*.



Fig. 198. *Eurema simulatrix*.



Fig. 199. *Gandaca harina*.

ii. PIERINAE



Fig. 200. *Appias lybithia*.



Fig. 201. *Appias lycida*.



Fig. 202. *Appias olferna*.

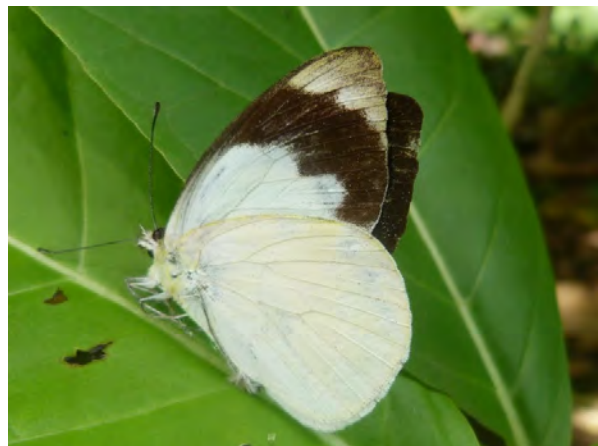


Fig. 203. *Appias pandione*.



Fig. 204. *Leptosia nina*.



Fig. 205. *Phrissura aegis*.

e. RIODINIDAE
i. NEMEOBIINAE



Fig. 206. *Abisara kausambi*.



Fig. 207. *Abisara savitri*.



Fig. 208. *Paralaxita orphana*.



Fig. 209. *Taxila haquinus*.

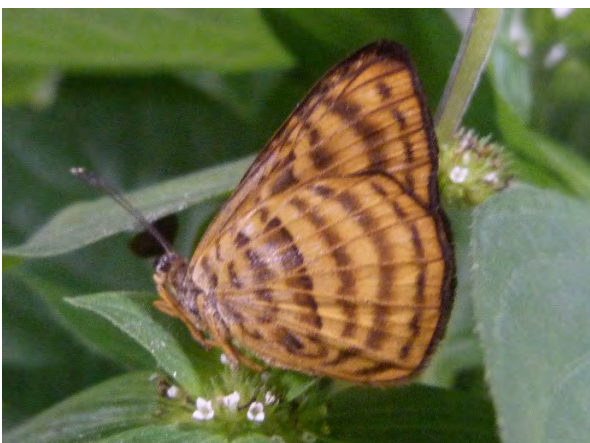


Fig. 210. *Zemerus emesoides*.



Fig. 211. *Zemerus flegyas*.



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