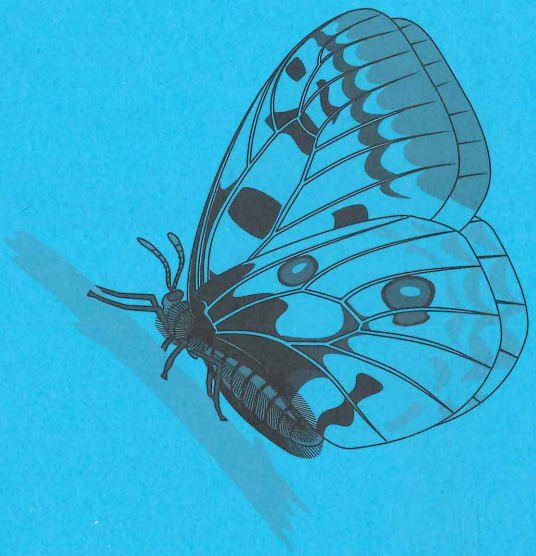
NEVA

Nachrichten des Entomologischen Vereins Apollo



Beiträge zur Kenntnis der Lepidopteren der Philippinen, II.
Contributions to the knowledge of the Lepidoptera of the Philippines, II.

zusammengestellt von
Wolfgang A. Nässig und Josef Settele

Supplementum 14
November 1995

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Mit Beiträgen von/With contributions by

Maria Juliet C. Ceniza, Karel Černý, Wolfgang A. Nässig, Macolm G. P. Page, Josef Settele, Colin G. Treadaway

Entomologischer Verein Apollo e. V.
Frankfurt am Main

Dipl.-Biol. Wolfgang A. NÄSSIG
Schumacherstrasse 8
D-63165 Mühlheim/Main
Germany

Dr. Josef SETTELE
UFZ Umweltforschungszentrum Leipzig-Halle GmbH
Projektbereich Naturnahe Landschaften
Permoserstrasse 15
D-04318 Leipzig
Germany

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Vorwort

Hiermit wird die vor zwei Jahren mit Supplementum 12 eröffnete Serie von „Philippinen-Sonderheften" innerhalb der Supplementa der Nachrichten des Entomologischen Vereins Apollo fortgeführt.

Die Reihe dient dem Ziel, Arbeiten aus allen Bereichen der philippinischen Lepidopterologie (und bei Bedarf auch allgemein Entomologie) zu publizieren, wobei bevorzugt umfangreichere Abhandlungen systematisch-ökologischer Art angenommen werden sollen. Jedoch sind auch kurze Beiträge willkommen, sofern sie nicht, zum Beispiel aus zeitlichen Gründen, im Rahmen der „Normalhefte" der Nachrichten des Entomologischen Vereins Apollo publiziert werden sollen.

Das vorliegende zweite Heft hat wieder einen systematisch-taxonomischen Schwerpunkt. Es leistet wiederum einen, wenn auch zwangsläufig immer nur bescheidenen, Beitrag zur Verbesserung unserer Kenntnis einer Fauna, die, vor allem durch die fortschreitende Vernichtung der letzten primären Wälder des Archipels, von uns überhaupt wohl nur noch bruchstückhaft wird analysiert werden können. Ist der faunistische Erfassungsgrad des Archipels schon dürftig, kann die Behandlung der Ökologie der Lepidopteren dieses Landes als praktisch nicht existent betrachtet werden. Werden ökologische Studien durchgeführt, dann in der Regel nur, wenn sie eine direkt angewandte Ausrichtung aufweisen (siehe den Beitrag von Ceniza & Settele im vorliegenden Heft). Daß selbst dann Familien noch als neu für das Land entdeckt werden (Batrachedridae), unterstreicht die eben gemachten Aussagen in kaum übertrefflicher Weise.

Zur Verbesserung der Grundlagen des Schutzes der philippinischen Fauna leistet die Checkliste der Tagfalter der Philippinen von Colin „Trig" Treadaway einen wesentlichen Beitrag. Wir freuen uns sehr, diese im Rahmen dieses Heftes präsentieren zu können. Weitere Arbeiten, zu denen teilweise wiederum „Trig" mit seinem nahezu unerschöpflichen Engagement beigetragen hat, sind taxonomischer Natur und behandeln neben den Tagfaltern noch Arctiiden und Eupterotiden.

Die Philippinen-Sonderhefte sollen unregelmäßig, je nach Eingang der entsprechenden Manuskripte und den zeitlichen Möglichkeiten der Redaktion sowie dem finanziellen Spielraum des Vereins, erscheinen. Wir bedanken uns bei „Trig" Treadaway für eine substantielle Spende als Zuschuß zu den Farbdruckkosten dieses Heftes.

Es finden die Autorenrichtlinien der Nachrichten des Entomologischen Vereins Apollo, Neue Folge, Anwendung. Diese sind von der Redaktion (c/o W. A. NÄSSIG, Anschrift siehe zweite Seite) kostenfrei erhältlich. Bevorzugt werden englischsprachige Beiträge veröffentlicht, um die Inhalte auch den philippinischen Lesern leichter zugänglich zu machen.

Manuskripte können an W. A. NÄSSIG oder J. SETTELE gesandt werden (Anschriften siehe Rückseite der Titelseite).

Josef SETTELE

Editorial

With this issue we continue the series of "Special Philippine Issues" within the Supplementa series of the journal Nachrichten des Entomologischen Vereins Apollo (ISSN 0723-9920), compiled by Wolfgang A. NÄSSIG and Josef SETTELE.

Within this series it is intended to publish research papers of all fields of Philippine lepidopterology (and entomology), preferably longer articles with special emphasis on systematics and ecology. However, also short contributions will be accepted, unless they will be published within the "normal" issues of the journal, which may sometimes be faster.

The second issue presented here again has an emphasis on systematics and taxonomy. It contributes to the improvement of our knowledge on a fauna, which still suffers from impoverishment due to the ongoing destruction of tropical primary forests. While the state of faunistics can be regarded as poor, ecological research is practically non-existent. Ecological studies are usually exclusively conducted for applied purposes (see the contribution of CENIZA & SETTELE in this volume), and even then entire families are reported as new for the Philippines (like, e.g., the Batrachedridae), emphasizing the statements made on the knowledge of the faunistics of the country.

As an important contribution to the improvement of the basics for conservation activities, we are proud to be able to present the checklist of the butterflies of the Philippines, authored by Colin "Trig" TREADAWAY. Further articles, partly again coauthored by him, are taxonomically oriented and deal with butterflies as well as arctiid and eupterotid moths.

The Philippine issues will be published irregularly, depending on the incoming manuscripts and time limitations of the editors as well as on the financial elbow-room of the society Apollo. We gratefully acknowledge a substantial financial support for colour printing by "Trig" TREADAWAY in this issue.

The "Guideline for authors" of the Nachrichten des Entomologischen Vereins Apollo, Neue Folge, will be applied here. They can be obtained free of charge from W. A. NÄSSIG (address see second page). Articles should preferably be written in English language as to facilitate the information flow to Philippine scientists.

Manuscripts may be sent to W. A. NÄSSIG or J. SETTELE (addresses see on page 2).

Josef SETTELE

Checklist of the butterflies of the Philippine Islands (Lepidoptera: Rhopalocera)

Colin G. TREADAWAY

Colin G. TREADAWAY F.R.E.S., Forschungsinstitut Senckenberg, Senckenberganlage 25, D-60325 Frankfurt am Main, Germany

Abstract: A checklist of lepidoptera: Papilionidae, Pieridae, Nymphalidae, Lycaenidae, Riodinidae and Hesperiidae found in the Philippines together with their island distribution, endemicity and occurrence (as experienced by the author) is given. A new Nymphalidae subspecies *Euripus nyctelius* ***marinduquanus*** is described and figured.

Illustrated are: a map of the Philippines showing the position of the Philippine Islands in relation to surrounding islands, a map of the Philippines with the larger islands identified, faunal regions of the Philippines as distinguished by VANE-WRIGHT (1990) based on a consensus of faunal regionalization by several authors, a map of the Philippines showing observing and collecting locations particularly for Papilionidae, representative species of each family/subfamily given in the checklist including *Euripus nyctelius* ***marinduquanus*** **n. ssp.** as well as two typical habitats of forest butterflies.

Todate 895 species of butterflies have been identified as occurring in the Philippines of which 352 or 39.3 % are endemic. Further, there are 890 subspecies. Because the Philippines consist of so many islands, many with differing origins, it is understandable that the number of subspecies is quite high on a comparative basis to other areas in South East Asia. For example while the Philippines have 895 species with 890 subspecies, ELIOT (1992) gives for West Malaysia 1,031 species with 135 subspecies.

Considering the species distribution by island, such a listing can only give a directional indication of the concentration of species on each of the islands noted. It has been compiled based on 40 years of experience of observing and collecting butterflies in the Philippines. However, some islands were visited more often and at different times of the year, others less frequently. It should also be kept in mind that much of the forested areas of the islands such as Cebu, Masbate and to a certain extend Panay have been cut down, which can mean that some species may no longer exist on these islands. Nonewithstanding, it can certainly be anticipated that a number of species will be found on additional islands thus expanding their known island distribution. New species, without doubt, are also waiting to be discovered.

As can be expected, the larger islands have a high number of species – Mindanao 528 and Luzon 439. Palawan also possesses many species (466), but a

low count of endemic species (66 or 14.2 %) because of a closer relationship to the Bornean fauna. Further, Mindanao also has the highest number of endemic species (219 or 41.5 %). At the other end of the scale are Cebu with 172 species of which 45 or 26.2 % are endemic, Masbate with 160 species of which 44 or 27.5 % are endemic and Panay with 225 species of which 75 or 33.3 % are endemic.

It is of interest to note that a very small island such as Sibutu still has 156 species (Masbate and Cebu level), but only 13 or 8.3 % endemic. This level of endemicity is understandable because the fauna of Sibutu is much more closely related to that of Borneo than to the Philippine fauna. Biogeographically, Sibutu situated at the western end of the Sulu Archipelago can be considered part of Borneo rather than the Philippines.

The remaining islands for which data are available are Leyte, Mindoro, Negros and Samar possessing respectively 347, 343, 285 and 299 species with between 35.3 % to 37.5 % endemic species. Thus, Mindanao is the island richest in butterfly fauna having 59 % of all species found on the Philippines and 62.2 % of all Philippine endemic species. Palawan on the other hand has 52.1 % of all species found on the Philippines, but only 18.8 % of all Philippine endemic species for reasons mentioned previously. For more details on the biogeography of the Philippines see DE JONG & TREADAWAY (1993: 81-88).

Systematisches Verzeichnis der Tagfalter der Philippinen (Lepidoptera: Rhopalocera)

Zusammenfassung: Ein systematisches Verzeichnis der auf den Philippinen vorkommenden Tagschmetterlingsfamilien Papilionidae, Pieridae, Nymphalidae, Lycaenidae, Riodinidae und Hesperiidae mit deren Inselverbreitung, Endemie und Vorkommenshäufigkeit (nach Kenntnis des Autors) wird gegeben. Abgebildet sind: eine Lagekarte der Philippinen mit Bezug auf die umliegenden Inseln; eine Landkarte der Philippinen, die die größeren Inseln ausweist; Faunengebiete der Philippinen wie von VANE-WRIGHT (1990) unterschieden aufgrund übereinstimmender Faunengebietsbestimmung durch mehrere Autoren; eine Karte der Philippinen, die Fundorte zeigt, an denen insbesondere Papilioniden beobachtet und gesammelt wurden; repräsentative Arten jeder im Verzeichnis angegebenen Familie/Unterfamilie einschließlich der neubeschriebenen *Euripus nyctelius* ***marinduquanus*** **n. ssp.** und zwei für Waldschmetterlinge typische Habitate.

Bis heute sind 895 Tagfalterarten auf den Philippinen festgestellt worden, von denen 352 oder 39,3 % endemisch sind. Überdies werden 890 Unterarten aufgeführt. Da sich die Philippinen aus zahlreichen Inseln teilweise sehr unterschiedlichen geologischen Ursprungs zusammensetzen, ist verständlicherweise die Anzahl der Unterarten, verglichen mit anderen Gebieten Südostasiens, verhältnismäßig hoch. ELIOT (1992) gibt beispielsweise für Westmalaysia 1031 Arten mit 135 Unterarten an.

Ein Verzeichnis wie das vorliegende kann hinsichtlich der Inselverbreitung nur Anhaltspunkte für die Artenkonzentration auf jeder der genannten Inseln liefern. Es beruht auf Erkenntnissen, die in einem Zeitraum von über 40 Jahren beim Beobachten und Sammeln von Tagfaltern auf den Philippinen erworben wurden. Einige Inseln wurden jedoch häufiger und zu verschiedenen Jahreszeiten besucht, andere hingegen weniger oft. Auch ist zu bedenken, daß viele bewaldete Gebiete einiger Inseln wie Cebu und Masbate und bis zu einem gewissen Grade auch Panay abgeholzt wurden. Dies kann bedeuten, daß einige Arten nicht mehr auf diesen Inseln vorkommen. Dennoch ist anzunehmen, daß eine Anzahl Arten auf weiteren Inseln gefunden wird, sich damit deren bekannte Inselverbreitung noch erweitern wird, und zweifelsohne warten auch noch unbeschriebene Arten auf ihre Entdeckung.

Wie zu erwarten, haben die größeren Inseln eine hohe Anzahl Arten – Mindanao 528 und Luzon 439. Auch auf Palawan sind viele Spezies bekannt (466), wegen der engen Verwandtschaft zur Fauna Borneos jedoch eine geringe Zahl endemischer Arten (66 oder 14,2 %). Mindanao besitzt die höchste Anzahl endemischer Arten (219 oder 41,5 %). An anderen Ende der Skala stehen Cebu mit 172 Arten, davon 45 oder 26,2 % endemische, Masbate mit 160 Arten (44 = 27,5 % endemisch) und Panay mit 225 Arten (75 = 33,3 % endemisch).

Es ist bemerkenswert, daß auf einer sehr kleinen Insel wie Sibutu dennoch 156 Arten nachgewiesen sind (vergleichbar mit Masbate oder Cebu), aber nur 13 (= 8,3 %) davon endemisch. Dieser niedrige Endemiegrad ist begreiflich, da die Fauna Sibutus viel enger mit der Borneos verwandt ist als mit der der Philippinen. Biogeografisch kann Sibutu, am westlichen Ende des Sulu-Archipels gelegen, eher als ein Teil Borneos als der Philippinen angesehen werden.

Die übrigen Inseln, für die Daten vorliegen, sind Leyte, Mindoro, Negros und Samar, auf denen jeweils 347, 343, 285 und 299 Arten bekannt sind mit einem Prozentsatz an endemischen Arten zwischen 35,3 und 37,5. Somit ist Mindanao die Insel mit der reichsten Tagschmetteringsfauna; sie weist 59 % aller von den Philippinen bekannten Rhopalocerenarten und 62,2 % aller endemisch philippinischen Arten auf. Palawan dagegen besitzt 52,1 % aller auf den Philippinen bekannten Arten, aber aus den erwähnten Gründen nur 18,8 % der endemischen Arten. Nähere Einzelheiten über die Biogeografie der Philippinen entnehme man der Arbeit von DE JONG & TREADAWAY (1993: 81-88).

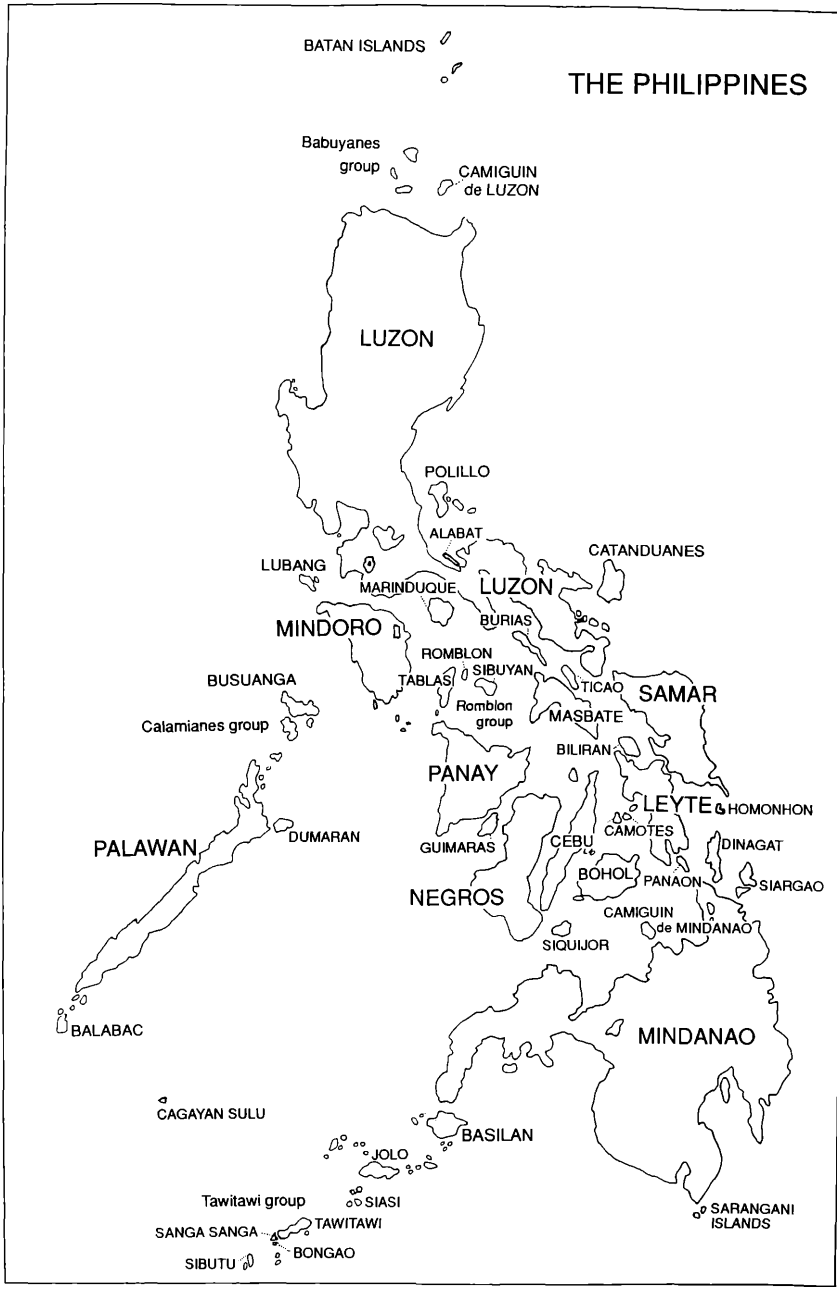
Introduction

Over the period 1953 to 1995, the author has been closely associated with the study of Philippine Lepidoptera. Apart from living there 1953 to 1956, he has made annual expeditions to the various islands of the Philippines from 1966 to 1992. Formerly, such visits lasted three to four weeks. However since 1987, the time for each annual stay has been extended to three to four months. Over such a prolonged period of years it has been possible to make extensive studies of Philippine butterflies. The objective of the studies carried out was to establish which species occurred in the Philippines and on which island/islands they were distributed. Every effort was made to locate and describe new species and subspecies before forested areas were cut down to make room for agriculture and settlements. It can be expected that additional, new to science species and subspecies will be discovered over the near future as the more isolated areas of the Philippines become accessible to researchers. A few areas are, at this time, difficult to visit due to civil unrest. An initial part of this overall study has already been published in "The Hesperiidae (Lepidoptera) of the Philippines", DE JONG & TREADAWAY (1993). Further parts are planned for the future to cover in detail individual families.

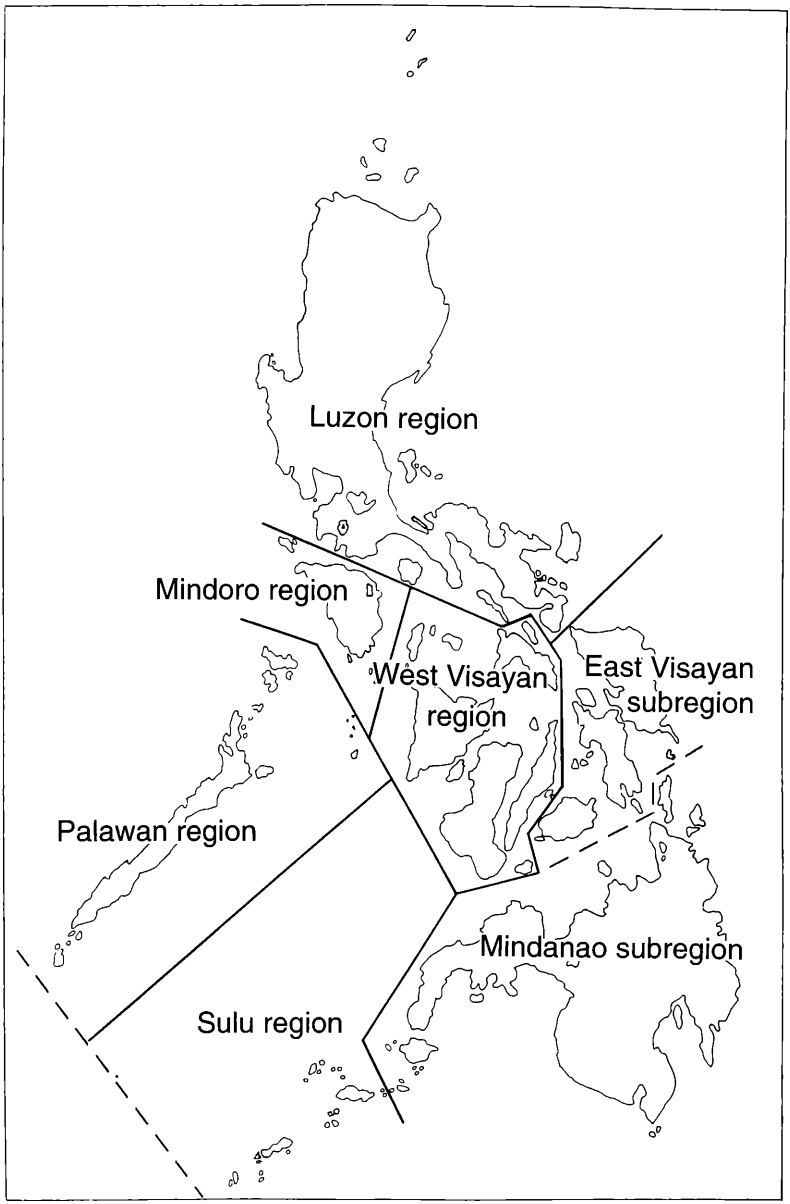
The Philippines consist of 7107 islands stretching from latitude 4°6' N of the equator to 21°4' N (1845 km) and between longitude 116°5' E and 127°0' E (1105 km). Only around 2100 islands are said to be inhabited and about 500 islands have an area of over one km². The eleven largest islands account for 96 % of the land area of the Philippines. The largest three islands in order of size are Luzon, Mindanao and Palawan. The highest mountain is Mt. Apo (2950 m) located in South-East Mindanao. 17 active volcanoes are recognized with eruptions occurring quite frequently (e.g. Mt. Pinatubo 1991, Mt. Mayon 1993).

Whereas the Philippines are noted in several reference books as a country with extensive forest coverage, this situation has certainly changed over the past 30 years. Space requirements for the explosive population increase coupled with the world demand for timber and the modern wood harvesting methods now used have resulted in substantially reducing the forested areas of the Philippines, particularly lowland forests. Fortunately, there are in existence 61 national parks and protected areas. The rapid elimination of forested areas obviously has had and will continue to have a very strong impact on forest dwelling butterflies.

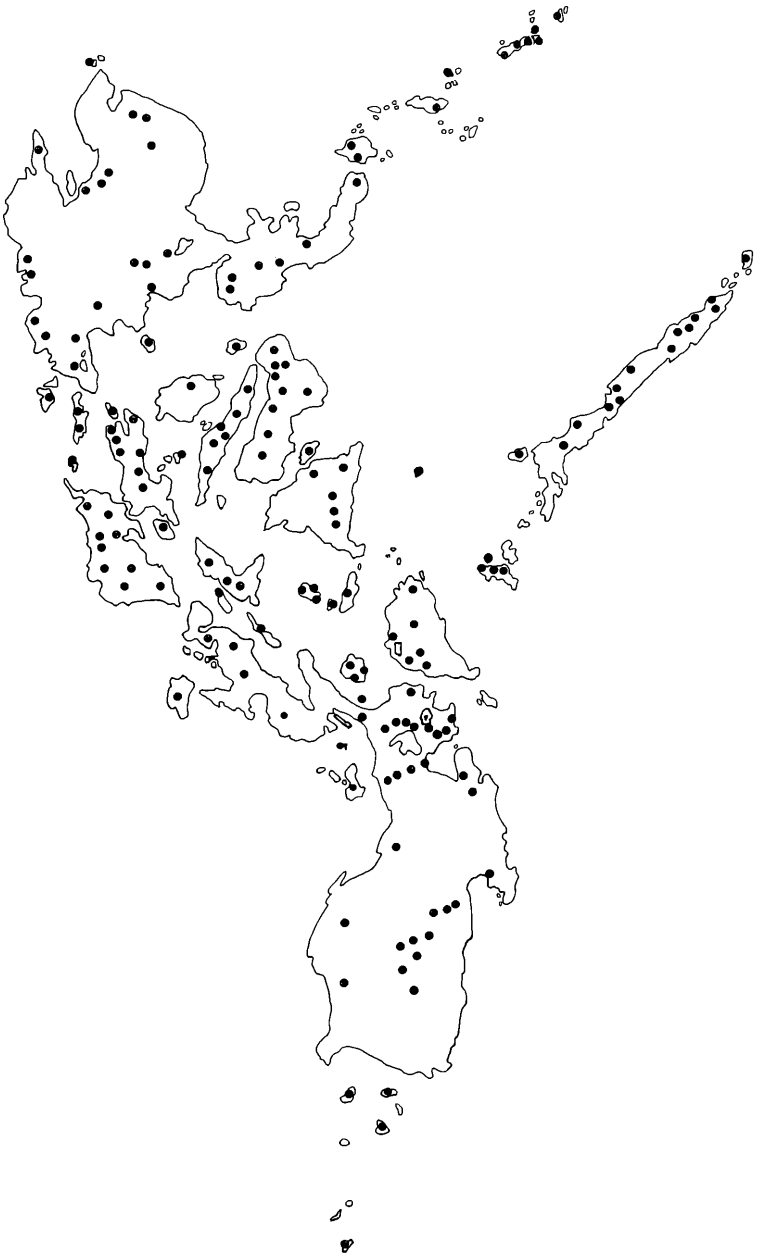
Map 1: Map of the Philippines showing the position of the Philippine Islands in relation to surrounding islands.



Map 2: Map of the Philippines with the larger islands identified.



Map 3: Faunal regions of the Philippines as distinguished by VANE-WRIGHT (1990), based on a consensus of faunal regionalization by several authors. (Homonhon may be better included in the Mindanao subregion, and the position of the line through the Sulu Archipelago is debatable.)



Map 4: Map of the Philippines showing observing and collecting locations, particularly for Papilionidae.

Codelist for the Islands of the Philippines

Ala	=	Alabat	Lub	=	Lubang
Bab	=	Babuyan	Luz	=	Luzon
Bal	=	Balabac	Mar	=	Marinduque
Bat	=	Batanes	Mas	=	Masbate
Bas	=	Basilan	Mdo	=	Mindoro
Bil	=	Biliran	Mno	=	Mindanao
Boh	=	Bohol	Neg	=	Negros
Bon	=	Bongao	Pal	=	Palawan
Bur	=	Burias	Pan	=	Panay
Bus	=	Busuanga	Pao	=	Panaon
CagSul	=	Cagayan Sulu	Phil	=	Philippines
Cal	=	Calamian	Pol	=	Polillo
Cam	=	Camarindes Norte	Rom	=	Romblon
CmL	=	Camiguin de Luzon	Sam	=	Samar
CmM	=	Camiguin de Mindanao	Sar	=	Sarangani
Cat	=	Catanduanes	Sga	=	Sanga Sanga
Ceb	=	Cebu	Sia	=	Siargo
Cts	=	Camotes	Sib	=	Sibuyan
Cuy	=	Cuyo	Siq	=	Siquijor
Din	=	Dinagat	Sis	=	Siasi
Dum	=	Dumaran	Stu	=	Sibutu
Gui	=	Guimaras	Sul	=	Sulu Archipelago
Hom	=	Homonhon	Tab	=	Tablas
Jol	=	Jolo	Taw	=	Tawitawi
Ley	=	Leyte	Tic	=	Ticao

N/W/E/S/C refers to North/West/East/South/Central

Checklist of Lepidoptera

Papilionidae, Pieridae, Nymphalidae, Lycaenidae, Riodinidae and Hesperiidae found in the Philippines together with their island distribution, endemicity and occurrence.

Occurrence

1	= very rare	*	= species
2	= rare	**	= endemic species
3	= uncommon or local	✪	= refers to comments
4	= common	Fig.	= illustrated
–	= no experience		

Family Papilionidae

Subfamily Papilioninae

Tribe Troidini

			[♂/♀]
Troides rhadamantus LUCAS 1835	Phil excl. Bal, Cal, Pal	**	4
Troides plateni STAUDINGER 1888	Bal, Cal, Pal		3
Troides magellanus magellanus C. & R. FELDER 1862 ✪ = *Troides magellanus apoensis* OKANO & OHKURA 1978 (syn.)	Boh, Bus, Ceb, Cuy, Hom, Ley, Luz, Mar, Mas, Mdo, Mno, Sam		3
Trogonoptera trojana HONRATH 1886	Pal		4
Trogonoptera brookiana brookiana WALLACE 1855	Bal		–
Atrophaneura semperi semperi C. & R. FELDER 1861	CmL, C/N-Luz, Pol		3
Atrophaneura semperi albofasciata SEMPER 1892	Mdo		3
Atrophaneura semperi aphthonia ROTHSCHILD 1908	Mno		3
Atrophaneura semperi baglantis ROTHSCHILD 1908	Neg, Mas		3/2
Atrophaneura semperi imogene SCHRÖDER & TREADAWAY 1979	Sib		2
Atrophaneura semperi lizae SCHRÖDER & TREADAWAY 1984	Pan		2
Atrophaneura semperi melanotus STAUDINGER 1889	Cal, Pal		3
Atrophaneura semperi sorsogona PAGE & TREADAWAY 1990	S-Luz		2
Atrophaneura semperi supernotatus ROTHSCHILD 1895	Boh, Ley, Pao, Sam		3
Pachliopta neptunus dacasini SCHRÖDER 1976	Pal		2
Pachliopta neptunus matbai SCHRÖDER & TREADAWAY 1990 ✪ Fig. 1/2	Taw		1
Pachliopta atropos STAUDINGER 1888	Bal, Bus, Pal		3
Pachliopta aristolochiae interpositus FRUHSTORFER 1904 ✪	Bat		4
Pachliopta kotzebuea kotzebuea ESCHSCHOLTZ 1821 ✪ = *Pachliopta kotzebuea asina* TSUKUDA & NISHIYAMA 1980 (syn.)	C- & W-Luz		4
Pachliopta kotzebuea bilara PAGE & TREADAWAY 1995	Boh, Ceb		3
Pachliopta kotzebuea deseileus FRUHSTORFER 1911	Mar, Mas, Mdo, Neg, Pan, Tic		4
Pachliopta kotzebuea mataconga PAGE & TREADAWAY 1995	S-Luz		3
Pachliopta kotzebuea philippus SEMPER 1891	Din, Hom, Ley, Mno, Pao, Sam, Sar		4
Pachliopta kotzebuea tindongana PAGE & TREADAWAY 1995	Bab, N-Luz		3
Pachliopta antiphus acuta DRUCE 1873 ✪	Bas, Sga, Stu, Taw		3
Pachliopta antiphus antiphulus FRUHSTORFER 1902	Jol		2
Pachliopta antiphus brevicauda STAUDINGER 1889	Cal, Cuy, Pal		4
Pachliopta antiphus elioti PAGE & TREADAWAY 1995	Sis		3

Pachliopta phlegon phlegon C. & R. Felder 1864	W-Mno	3
Pachliopta phlegon splendida Schröder & Treadaway 1984 ✪	Sib	3
Pachliopta phlegon strandi Bryk 1930	Gui, Luz, Mar, Mdo, Pan	3
Pachliopta mariae mariae Semper 1878	Boh, Ley, Mno, Sam	4
Pachliopta mariae almae Semper 1891	CE-Luz, Pol	3
Pachliopta mariae camarines Schröder & Treadaway 1978	S-Luz	3
Pachliopta leytensis Murayama 1978 ✪ = *Pachliopta buraki* Koçak 1983 **n. syn.**	Boh, Ceb, Din, Ley, Mno, Pao, Sam	3
Pachliopta schadenbergi schadenbergi Semper 1891	C- & NW-Luz	2
Pachliopta schadenbergi micholitzi Semper 1891	CmL, NE-Luz	2

Tribe Papilionini

Chilasa clytia cuyo Medicielo & Hanafusa 1994	Cuy	2
Chilasa clytia palephates Westwood 1845	CmL, Cat, Luz, Mar, Mdo, Rom, Sib	3
Chilasa clytia panopinus Staudinger 1889	Cal, Pal	3
Chilasa clytia visayensis M. & T. Okano 1987	Bas, Boh, Ceb, Jol, Ley, Mno, Neg, Pan, Sam, Siq	3
Chilasa osmana Jumalon 1967	S-Ley, NE-Mno	1
Chilasa carolinensis Jumalon 1967	E- & SE-Mno	1
Chilasa paradoxa melanostoma Jordan 1909	Pal	* 2/1
Papilio benguetanus Joicey & Talbot 1923	N-Luz	** 3/2
Papilio demoleus libanius Fruhstorfer 1908	Phil	4
Papilio demolion delostenus Rothschild 1908	Pal	3
Papilio antonio antonio Hewitson 1875	Ley, Mno	3
Papilio antonio negrosiana Schröder & Treadaway 1991	S-Neg	1
Papilio hystaspes C. & R. Felder 1862	Phil excl. Bal, Bon, Pal, Sga, Stu, Taw	4
Papilio helenus palawanicus Staudinger 1888	Bal, Pal	4
Papilio helenus boloboca Page & Treadaway 1995	Bon, Sga, Stu, Taw	3
Papilio hipponous hipponous C. & R. Felder 1862	Luz, Mar	3
Papilio hipponous bazilanus Fruhstorfer 1898	Bal, Bas, Boh, Cal, Ceb, Mno, Neg, Pal, Pan, Stu, Taw	3
Papilio karna irauana Jumalon 1975	Pal	2

Papilio daedalus daedalus C. & R. Felder 1861 ✪ Fig. 3	N-, C- & S-Phil excl. Bal, Cal, Pal, Sul	4
Papilio daedalus angustatus Staudinger 1888	Bal, Cal, Pal	3
Papilio chikae Igarashi 1965	N-Luz	2
Papilio hermeli Nuyda 1992 ✪ Fig. 83	N-Mdo (Mt. Halcon) **	1
Papilio polytes pasikrates Fruhstorfer 1908	Bat	4
Papilio alphenor ledebouria Eschscholtz 1821	Phil excl. Bat	4
Papilio lowi Druce 1873	Bal, Pal	4
Papilio rumanzovia rumanzovia Eschscholtz 1821	Phil excl. C- & S-Pal, Bal, Taw-group	4
Papilio rumanzovia tarawakana Page & Treadaway 1995	Bon, Sga, Stu, Taw	3
Papilio luzviae Schröder & Treadaway 1991 ✪ Fig. 77	Mar	1
Papilio memnon memnon Linnaeus 1758	Bon, Sga	1
Tribe Leptocircini		
Graphium empedovana empedovana Corbet 1941	Cal, Pal	3
Graphium codrus melanthus C. & R. Felder 1862	Boh, Ley, Luz, Mar, Mas, Mdo, Mno, Neg, Pan,Sam, Sib	3
Graphium codrus yayoeae Nihira & Kawamura 1986 ✪	Sga, Stu, Taw	3
Graphium sarpedon sarpedon Linnaeus 1758	Phil	4
Graphium sandawanum sandawanum Yamamoto 1977	S-Mno	3
Graphium sandawanum joreli Nuyda 1994	N-Mno (Mt. Kitanlad)	2
Graphium doson evemonides Honrath 1884	Bal, Sga, Stu, Taw	4
Graphium doson gyndes Fruhstorfer 1907	Cal, Pal	4
Graphium doson nauta Tsukada & Nishiyama 1980	Boh, Ceb, Din, Hom, Ley, Luz, Mar, Mas, Mdo,Mno, Neg, Pan, Pao, Sam, Sia, Sib, Siq, Tab, Tic	4
Graphium doson postianus Fruhstorfer 1902	Bat	4
Graphium eurypylus gordion C. & R. Felder 1864	Phil excl. Bal, Pal	4
Graphium eurypylus mecisteus Distant 1885	Bal, Pal	4
Graphium arycles perinthus Fruhstorfer 1915	Pal	* 3/2
Graphium bathycles bathycloides Honrath 1884	Pal	4
Graphium agamemnon agamemnon Linnaeus 1758	Phil	4
Graphium aristeus hermocrates C. & R. Felder 1864	Phil	3

Graphium decolor decolor STAUDINGER 1888 ✪	Bal, Cal, Pal, Stu, Taw	4
Graphium decolor atratus ROTHSCHILD 1895	Mdo	4
Graphium decolor neozebraica PAGE 1987	Boh, Ley, Luz, Mar, Mas, Neg, Pan, Sam, Tic	4
Graphium decolor sibuyana PAGE 1987	Sib	3
Graphium decolor tigris SEMPER 1893	Din, Mno	3
Graphium euphrates euphrates C. & R. FELDER 1862 ✪	Ley, Luz, Mar, Mdo, Mno, Sam	4
Graphium euphrates boholensis PAGE 1987	Boh	3
Graphium euphrates buhisanus PAGE 1987	Ceb	3
Graphium euphrates cuyoensis MEDICIELO & HANAFUSA 1994	Cuy	3
Graphium euphrates domaranus FRUHSTORFER 1903	Cal, Dum, Pal	4
Graphium euphratoides EIMER 1889 ✪	C-, S- & E-Mno	1
Graphium macareus palawanicola KOÇAK 1980	Pal	* 3/2
Graphium megaera STAUDINGER 1888	Bal, Pal	** 4/1
Graphium stratocles stratocles C. & R. FELDER 1861	Cal, Mdo, Pal	4
Graphium stratocles senectus TSUKADA & NISHIYAMA 1980	Luz, Mar	4
Graphium stratocles stratonices JORDAN 1909	Boh, Din, Ley, Mno, Pao, Sam	3
Graphium delesserti palawanus STAUDINGER 1889	Pal	* 3/2
Graphium idaeoides HEWITSON 1855 ✪	Ley, NE- & S-Luz, C/E-Mno, N-Sam	** 3/2
Lamproptera curius curius FABRICIUS 1787	Pal	4
Lamproptera meges decius C. & R. FELDER 1862	Phil excl. Bal, Bon, Dum, Pal, Sga, Stu, Taw	4
Lamproptera meges pessimus FRUHSTORFER 1909	Bal, Dum, Pal, Taw	3

Family Pieridae

Subfamily Coliadinae

Catopsilia pyranthe pyranthe LINNAEUS 1758	Phil	4
Catopsilia pomona pomona FABRICIUS 1775	Phil	4
Catopsilia scylla cornelia FABRICIUS 1787	Bal, Bon, Luz, Mar, Mdo, Pal, Sga, Stu, Taw	4
Catopsilia scylla asema STAUDINGER 1885 Fig. 29	Boh, Ceb, Din, Gui, Ley, Mas, Mno, Neg, Pan, Pao, Sam	4

Gandaca harina palawanica FRUHSTORFER 1910	Cal, Pal	4
Gandaca harina elis FRUHSTORFER 1910	Stu	4
Gandaca harina gardineri FRUHSTORFER 1910	Bas, Bon, Jol, Sga, Taw	3
Gandaca harina mindanaensis FRUHSTORFER 1910	Phil excl. Bas, Cal, Pal, Sul	4
Eurema brigitta baguioensis SCHRÖDER, TREADAWAY & NUYDA 1990 ✪	N-Luz	1
Eurema brigitta roberto SCHRÖDER, TREADAWAY & NUYDA 1990 ✪	N-Mno	3
Eurema brigitta sachikoi TREADAWAY & NUYDA 1993 ✪	N-Mdo	1
Eurema brigitta siquijorana SCHRÖDER, TREADAWAY & NUYDA 1990 ✪	Siq	2
Eurema laeta semperi MOORE 1906	N-Luz	3
Eurema hecabe hecabe LINNAEUS 1758	Bal, Cal, N-Luz, Pal	4
Eurema hecabe sintica FRUHSTORFER 1910	Mdo	3
Eurema hecabe tamiathis FRUHSTORFER 1910	Phil excl. Bal, Cal, N-Luz, Mdo, Pal	4
Eurema blanda visellia FRUHSTORFER 1910	Luz, Mdo	4
Eurema blanda mensia FRUHSTORFER 1910	Boh, Ceb, Ley, Neg, Pao, Sam	4
Eurema blanda vallivolans BUTLER 1883	Bas, Bon, Cal, Din, Mno, Pal, Stu, Taw	4
Eurema simulatrix simulatrix STAUDINGER 1891	Boh, Ley, Mno, Pao, Sam	3
Eurema simulatrix princesae MORISHITA 1973	Pal	3
Eurema andersonii prabha FRUHSTORFER 1910	Pal	3
Eurema hiurai hiurai SHIRÔZU & YATA 1977	Mno	2
Eurema hiurai admiranda MORISHITA 1981	Luz	2
Eurema sari obucola FRUHSTORFER 1910	Bal, Pal	3
Eurema sarilata sarilata SEMPER 1891	Din, Ley, Mno, Pao, Sam	3
Eurema sarilata aquila SHIRÔZU & YATA 1982	Ceb, Luz, Mar	3
Eurema sarilata boholensis M. & T. OKANO 1990	Boh	3
Eurema sarilata dayani SCHRÖDER, TREADAWAY & NUYDA 1990	Bon, Sga, Stu, Taw	3
Eurema sarilata mindorana BUTLER 1898	Mdo	2
Eurema sarilata perplexa SHIRÔZU & YATA 1982	Bas	2
Eurema sarilata risa MORISHITA 1981	Mas, Neg, Pan	3
Eurema sarilata rosario SCHRÖDER, TREADAWAY & NUYDA 1990 Fig. 34/35	Hom	3
Eurema sarilata sibuyanensis YATA & TREADAWAY 1982	Sib	3
Eurema lacteola lacteola DISTANT 1886	Stu	2

Eurema alitha alitha C. & R. Felder 1862	Mno	3
Eurema alitha bazilana Fruhstorfer 1900	Bas	3
Eurema alitha esakii Shirôzu 1953	Bat	3
Eurema alitha garama Fruhstorfer 1910	Bon, Jol, Sga, Stu, Taw	3
Eurema alitha jalendra Fruhstorfer 1910	Bal, Boh, Cal, Ceb, Dum, Luz, Mar, Mdo, Pal	3
Eurema alitha leytensis Fruhstorfer 1910	Cts, Ley	3
Eurema alitha samarana Fruhstorfer 1910	Sam	3

Subfamily Pierinae

Delias singhapura yusukei Nakano 1988	Pal	2
Delias themis themis Hewitson 1861 ✪	Boh, Ceb, Mno, Sam	3
Delias themis kawamurai Nakano 1993	Mdo	3
Delias themis mihoae Nakano 1993	Neg	3
Delias themis soteira Fruhstorfer 1910	Luz, Mar, Pol	3
Delias themis yuii Nakano 1993	Mas, Pan	2
Delias baracasa baracasa Semper 1890	Mno	3
Delias baracasa benguetana Inomata 1979	N-Luz	3
Delias nuydaorum Schröder 1975	N-Mno	2
Delias paoaiensis Nihira & Kawamura 1987	N-Luz	2
Delias hyparete luzonensis C. & R. Felder 1862	Boh, Ceb, Ley, Luz, Mar, Mdo, Neg, Pan, Pao, Pol, Sam, Sib	4
Delias hyparete domorana Fruhstorfer 1911	Dum	3
Delias hyparete lucina Distant & Pryer 1887	CagSul, Jol	1
Delias hyparete melville Yagashita 1993	Bal	3
Delias hyparete mindanaensis Mitis 1893	Din, Mno	4
Delias hyparete palawanica Staudinger 1889	Cal, Pal	4
Delias woodi woodi Talbot 1928	S-Mno (Mt. Apo)	3
Delias woodi colini Schröder 1977	N/NE-Mno	2
Delias woodi tboli Schröder & Treadaway 1984	S-Mno (Mt. Parker)	2
Delias blanca blanca C. & R. Felder 1862	N-Luz	2
Delias blanca apameia Fruhstorfer 1910	Mno	2
Delias blanca capcoi Jumalon 1975	Neg	2
Delias blanca uichancoi Jumalon 1975	Boh	1
Delias pasithoe balabaca Fruhstorfer 1911	Bal	2
Delias pasithoe mera Talbot 1928	Luz, Mno	1
Delias pasithoe pandecta Staudinger 1889	Pal	3
Delias hidecoae Nakano 1993	Mdo (Mt. Halcon)	2

Delias henningia henningia ESCHSCHOLTZ 1821	Ceb., Ley, Luz, Mar, Mas, Mdo, Neg, Pan, Sam	4
Delias henningia camotana FRUHSTORFER 1910	Cts	2
Delias henningia ochreopicta BUTLER 1869 **(n. stat.)**	Mno, Pao	4
Delias henningia pandemia WALLACE 1867 ✪	Cal, Pal	4
= *Delias henningia palawana* YAGASHITA 1993 **n. syn.**		
Delias henningia romblonensis NAKANO & YAGASHITA 1993	Rom, Sib	3
Delias henningia voconia FRUHSTORFER 1910	Boh	4
Delias ottonia SEMPER 1890 **(n. stat.)** ✪ Fig. 84/85	Mno	3
Delias mandaya YAMAMOTO & TAKEI 1982	E-Mno	2
Delias levicki levicki ROTHSCHILD 1927	S-Mno (Mt. Apo)	3
Delias levicki borromeoi SCHRÖDER & TREADAWAY 1984 ✪	SE-Mno (Mt. Parker)	2
Delias levicki justini SAMUSAWA & KAWAMURA 1988	N-Mno (Mt. Kitanlad)	2
Delias apoensis apoensis TALBOT 1928	S-Mno (Mt. Apo)	4
Delias apoensis maizurui YAGASHITA & NAKANO 1993	N-Mno (Mt. Kitanlad)	3
Delias ganymedes ganymedes OKUMOTO 1981	N-Neg	3
Delias ganymedes filarorum NIHIRA & KAWAMURA 1987	W-Pan	3
Delias ganymedes halconensis NAKANO & YAGASHITA 1993	N-Mdo (Mt. Halcon)	2
Delias georgina georgina C. & R. FELDER 1861	N-Luz	3
Delias schoenigi schoenigi SCHRÖDER 1975	S-Mno (Mt. Apo)	3
Delias schoenigi hermeli SAMUSAWA & KAWAMURA 1988	N-Mno (Mt. Kitanlad)	3
Delias schoenigi malindangeana NAKANO & YAGASHITA 1993	NW-Mno (Mt. Malindang)	3
Delias schoenigi pasiana YAGASHITA 1993	E-Mno (Mt. Pasian)	2
Delias diaphana diaphana SEMPER 1878	N-, S-, C-Mno	4
Delias diaphana basilisae SCHRÖDER & TREADAWAY 1983 Fig. 27/28	NW-Mno (Mt. Malindang)	2
Delias diaphana morishitai NAKANO 1993	E-Mno (Mt. Pasian)	2
Delias diaphana sakagutii TSUKADA & NISHIYAMA 1980	SE-Mno	3
Delias diaphana yatai NAKANO 1993	NE-Mno (Tandag)	2
Artogeia canidia canidia SPARRMAN 1767	N-Luz	4
Leptosia nina terentia FRUHSTORFER 1910	Bas, Cal, Ceb, Cuy, Mdo, Mno, Pal, Pan	4
Leptosia nina asukae NIHIRA & KAWAMURA 1986	Jol	3
Leptosia nina georgi FRUHSTORFER 1910	Luz	4
Leptosia nina malayana FRUHSTORFER 1910	Sga, Stu, Taw	3
Cepora boisduvaliana boisduvaliana C. & R. FELDER 1862	Luz, Mar, Mas, Mdo, Pan	4
Cepora boisduvaliana balbagona SEMPER 1890	CmM	3
Cepora boisduvaliana cebuensis SCHRÖDER 1977	Ceb	3

Cepora boisduvaliana cirta FRUHSTORFER 1910	Boh	4
Cepora boisduvaliana leytensis M. & T. OKANO 1991	Ley	3
Cepora boisduvaliana negrosensis M. & T. OKANO 1991	Neg	3
Cepora boisduvaliana semperi STAUDINGER 1890	Bas, Mno, Sam, Tic	4
Cepora boisduvaliana sibuyanensis SCHRÖDER 1977	Sib	3
Cepora aspasia olga ESCHSCHOLTZ. 1821	Luz excl. NW	4
Cepora aspasia anaitis FRUHSTORFER 1910	NW-Luz	3
Cepora aspasia fulcinea FRUHSTORFER 1911	Pol	–
Cepora aspasia irma FRUHSTORFER 1910	Bon, Jol, Sga, Sis, Taw	3
Cepora aspasia olgina STAUDINGER 1889	Cal, Pal	4
Cepora aspasia orantia FRUHSTORFER 1910	Boh, Ley, Mno	4
Cepora aspasia phokaia FRUHSTORFER 1910	Bal	3
Cepora aspasia poetelia FRUHSTORFER 1910	CmM	–
Cepora aspasia rhemia FRUHSTORFER 1910	Mas, Mdo, Neg, Pan, Sib	4
Cepora aspasia tolmida FRUHSTORFER 1911	Ceb, Cts	3
Cepora aspasia zisca FRUHSTORFER 1899	Bas	3
Appias olferna peducaea FRUHSTORFER 1910	Boh, Ceb, Jol, Luz, Mar, Mdo, Mno, Neg, Pal	4
Appias lyncida enaretina FRUHSTORFER 1900	Bal, Cal, Pal	4
Appias lyncida andrea ESCHSCHOLTZ 1821	Luz, Mar, Mdo, Mno	4
Appias lyncida lepidana FRUHSTORFER 1910	Gui, Neg, Pan, Rom, Sib	3
Appias lyncida maccina FRUHSTORFER 1911	Cuy, Dum	3
Appias lyncida subenarete SCHRÖDER & TREADAWAY 1989	Sga, Taw	3
Appias nero palawanica STAUDINGER 1889 ✪ Fig. 30/31	Bal, Pal	* 4/3
Appias nero corazonae SCHRÖDER & TREADAWAY 1989	Bon, Sga, Stu	3
Appias nero domitia C. & R. FELDER 1862	Luz, Mar, Mas	4/3
Appias nero fleminius FRUHSTORFER 1911	Mdo	4/3
Appias nero soranus FRUHSTORFER 1910	Ceb, Neg, Pan, Sib	4/3
Appias nero tibericus FRUHSTORFER 1910	Bas	–
Appias nero zamboanga C. & R. FELDER 1862 ✪ = *Appias nero boholensis* M. & T. OKANO 1989 **n. syn.**	Boh, Din, Ley, Mno, Pao, Sam	4/3
Appias nephele nephele HEWITSON 1861	Luz	3
Appias nephele aufidia FRUHSTORFER 1910	Bas	–
Appias nephele dilutior STAUDINGER 1889	Cal, Pal	3
Appias nephele elis FRUHSTORFER 1910	Mno	3
Appias nephele hostilia FRUHSTORFER 1910	Jol	1
Appias nephele invitabilis FRUHSTORFER 1910	Mdo	3
Appias nephele leytensis FRUHSTORFER 1911	Ley, Sam	2
Appias nephele tawitawiana SCHRÖDER & TREADAWAY 1993	Taw	2
Appias indra treadawayi SCHRÖDER 1975	N- & NW-Mno (Mt. Kitanlad & Malindang) *	2
Appias indra massilia FRUHSTORFER 1910	Pal	4
Appias phoebe phoebe C. & R. FELDER 1861	N-Luz	4

Appias phoebe mindana YAMAMOTO & TAKEI 1980	NW-Mno	2
Appias phoebe montana ROTHSCHILD 1896	Neg	4/3
= *Appias remedios canlaonensis* M. & T. OKANO 1992 **n. syn.**		
Appias phoebe rowelli SCHRÖDER & TREADAWAY 1982	S-Pal	3
Appias phoebe zamorra C. & R. FELDER 1862	Mdo	3
Appias paulina agave C. & R. FELDER 1882	Din, Hom, Ley, Luz, Mar, Mno, Neg, Pao, Sam	4
Appias paulina athena FRUHSTORFER 1902	Bon, Sga, Stu, Taw	3
Appias paulina nikomedeia FRUHSTORFER 1910	Bas	–
Appias paulina plaethoria FRUHSTORFER 1910	Bal	3
Appias paulina sithonia FRUHSTORFER 1911	Mdo	4
Appias paulina terentilia FRUHSTORFER 1910	Cal, Pal	4
Appias maria maria SEMPER 1875	Luz, Mar	3
Appias maria adorabilis FRUHSTORFER 1910	Ley, Mno, Neg, Sam	3
Appias maria dolorosa FRUHSTORFER 1910	Boh	3
Appias maria kobayashii NUYDA & KAWAMURA 1989	Pan	3
Appias albina albina BOISDUVAL 1836	Bal, Bon, C-/S-Pal, Sga, Stu, Taw	4
Appias albina pancheia FRUHSTORFER 1910	Mno, N-Pal	4
Appias albina semperi MOORE 1905	Bab, Boh, Ceb, Dum, Gui, Luz, Mar, Mdo, Neg	4
Appias remedios SCHRÖDER & TREADAWAY 1980	W-Pan	** 3/2
Appias waltraudae SCHRÖDER 1977	Pal	2
Appias aegis aegis C. & R. FELDER 1861	Ley, Mno, Sam	3
Appias aegis caepia FRUHSTORFER 1910	Pal	2
Appias aegis illana C. & R. FELDER 1862	Bab, Ceb, Luz, Mar, Mdo	3
Appias aegis sibutana SCHRÖDER & TREADAWAY 1989	Stu	1
Udaiana cynis suluensis SCHRÖDER & TREADAWAY 1989 ✪ Fig. 32/33	Bon, Sga, Taw	3
Ixias clarki AVINOFF 1925	N-Luz, Mno	1
Saletara panda nathalia C. & R. FELDER 1862	Luz, Mar, Mas, Neg, Pan, Pol	4
Saletara panda distanti BUTLER 1898	Sga, Taw	2
Saletara panda erebina FRUHSTORFER 1900	Pal	4
Saletara panda hostilia FRUHSTORFER 1910	Bal	2
Saletara panda martia FRUHSTORFER 1910	Bas	–
Saletara panda nargosa FRUHSTORFER 1913	Din, Hom, Ley, Mno, Pao, Sam	4
Pareronia valeria palawana FRUHSTORFER 1900	Bal, Cal, Pal	4
Pareronia valeria calliparga FRUHSTORFER 1910	Dum	3

Pareronia valeria gulussa FRUHSTORFER 1910	Cuy	3
Pareronia valeria valeriana SCHRÖDER & TREADAWAY 1991	Taw	4
Pareronia nishiyamai YATA 1981	Cal, Cuy, Pal	2
Pareronia phocaea phocaea C. & R. FELDER 1861	Mno	3
Pareronia phocaea ariamena FRUHSTORFER 1910	Bas	–
Pareronia boebera boebera ESCHSCHOLTZ. 1821	Luz, Mar, Mdo, Pol	4
Pareronia boebera arsamota FRUHSTORFER 1910	Boh, Ceb, Mas, Neg, Pan, Sib	4
Pareronia boebera bazilana FRUHSTORFER 1900	Bas	2
Pareronia boebera elaitia FRUHSTORFER 1910	Pao	2
Pareronia boebera joloana FRUHSTORFER 1911	Jol	2
Pareronia boebera mutya TREADAWAY & NUYDA 1994	Bon, Sga, Stu, Taw	3
Pareronia boebera trinobantes FRUHSTORFER 1911	Ley, Mno, Sam	4
Hebemoia glaucippe philippensis WALLACE 1863	C- & S-Luz, Mar	4
Hebemoia glaucippe boholensis FRUHSTORFER 1911	Boh, Mas, Neg, Pan	4
Hebemoia glaucippe cebuensis M. & T. OKANO 1994	Ceb	3
Hebemoia glaucippe cuyonicola FRUHSTORFER 1907	Cuy	3
Hebemoia glaucippe domoranensis FRUHSTORFER 1911	Dum	3
Hebemoia glaucippe erinna FRUHSTORFER 1910	Bab, Bat, N-Luz	4
Hebemoia glaucippe iliaca FRUHSTORFER 1911	Bon, Din, Jol, Ley, Mno, Pao, Sam, Sga, Stu, Taw	4
Hebemoia glaucippe mindorensis FRUHSTORFER 1911	Mdo	4
Hebemoia glaucippe palawensis FRUHSTORFER 1907	Bal, Cal, Pal	4
Hebemoia glaucippe reducta FRUHSTORFER 1907	Pol	–

Family Nymphalidae

Subfamily Nymphalinae

Tribe Biblidini

Ariadne merione crestonia FRUHSTORFER 1912	Bal, Pal	3
Ariadne merione luzonia FELDER 1867	Phil excl. Bab, Bal, N-Luz, Pal	3
Ariadne merione maculata SEMPER 1887	Bab, N-Luz	–
Ariadne taeniata taeniata C. & R. FELDER 1861	Bab, Luz, Mar, Mas, Mdo, Neg	3
Ariadne taeniata adelpha C. & R. FELDER 1861	Bas, Boh, Ceb, Ley, Mno	3
Laringa castelnaui ottonis FRUHSTORFER 1906	Pal	* 3/1

Tribe Heliconiini

Cethosia biblis barangingi TSUKADA 1985	Bon, Jol, Sga, Stu, Taw	3

Cethosia biblis insularis C. & R. Felder 1861	Bab, Luz	4
Cethosia biblis liacura Fruhstorfer 1912	C- & W-Mno	3
Cethosia biblis placito Tsukada 1985	E-Mno	2
Cethosia biblis sandakana Fruhstorfer 1899	Boh, Ceb, Cts, Cuy, Ley, Mar, Mas, Mdo, Neg, Pan, Sam, Sib	4
Cethosia hypsea palawana Fruhstorfer 1900	Bal, Cal, Pal	4
Cethosia mindanensis mindanensis C. & R. Felder 1863	Bas, SW-Mno	2
Cethosia mindanensis festiva Fruhstorfer 1909	Bon, Jol, Sga, Sis, Stu, Taw	3
Cethosia luzonica luzonica C. & R. Felder 1863	Luz	3
Cethosia luzonica boholica Semper 1888	Boh, Ceb, Ley, Pao, Sam	4
Cethosia luzonica magindanica Semper 1888	Mno	4
Cethosia luzonica pariana Semper 1888	Gui, Mas, Neg, Pan, Sib	4
Vindula erota montana Fruhstorfer 1899	Bal, Pal	3
Vindula dejone dejone Erichson 1834	Boh, Cal, Din, Ley, Luz, Mar, Mas, Mdo, Mno, Neg, N-Pal, Pan, Sam	4
Vindula dejone basanica Fruhstorfer 1912	Jol	1
Vindula dejone bongana Schröder & Treadaway 1989 ✪	Bon, Sga	3
Vindula dejone palawanica Fruhstorfer 1899 **(stat. rev.)**	Bal, S-Pal	3
Vindula dejone sibutuensis Schröder & Treadaway 1989 ✪ Fig. 4/5	Stu	4
Cupha erymanthis erymanthis Drury 1773	Bal, Bon, Cal, Pal, Sga, Sis, Taw	4
Cupha arias arias Felder 1867	Phil excl. Bas, Din, Ley, Mno, Pao, Sam, Stu, Taw	4
Cupha arias dapatana Grose-Smith 1887	Bas, Din, Ley, Mno, Pao, Sam, Stu, Taw	4
Phalanta phalantha phalantha Drury 1773	Phil	4
Phalanta alcippe alcippoides Moore 1900	Bal, Pal, Sga, Stu, Taw	4
Phalanta alcippe semperi Moore 1900	Phil excl. Bal, Bas, Pal, Sga, Stu, Taw	4
Phalanta alcippe violetta Fruhstorfer 1900	Bas	–
Vagrans sinha sinha Kollar 1844	Phil	4
Paduca fasciata fasciata C. & R. Felder 1860	Phil excl. Cal, Pal	3
Paduca fasciata palloris Fruhstorfer 1900	Cal, Pal	3

Cirrochroa tyche tyche C. & R. Felder 1861	Phil excl. Cal, Dum, Pal, Taw	4
Cirrochroa tyche laudabilis Fruhstorfer 1900	Cal, Dum, Pal	3
Cirrochroa tyche languyana Treadaway & Nuyda 1994	Taw	3
Cirrochroa satellita illergeta Fruhstorfer 1912	Pal	3
Cirrochroa menones Semper 1888	Din, Mno	3
Terinos clarissa homonhonensis Treadaway & Nuyda 1994	Hom	3
Terinos clarissa lucia Staudinger 1889	Pal	4
Terinos clarissa luciella Fruhstorfer 1912	Bal	3
Terinos clarissa lucilla Butler 1870	Ley, Mno, Sam	3
Terinos clarissa suluensis Treadaway & Nuyda 1994	Bon, Sga, Taw	4
Terinos romeo Schröder & Treadaway 1984	W-Pan	1
Argyreus hyperbius sagada Fruhstorfer 1900 ✪	N-Luz, N-Mdo	4

Tribe Nymphalini

Cynthia cardui Linnaeus 1761	Luz, Mno, Neg, Pal	3
Vanessa indica indica Herbst 1794	Luz, Mno, Pal	4
Vanessa dejeani mounseyi Talbot 1936	Mno, Sam	3
Kaniska canace benguetana Semper 1888	Luz, N-Mdo	4
Kaniska canace oreas Tsukada 1985	Pan	2
Kaniska canace oplentia Tsukada 1985	Mno	3
Symbrenthia lilaea semperi Moore 1899	Phil excl. Bal, Luz, Pal, Sul	4
Symbrenthia lilaea thimo Fruhstorfer 1907	Luz	3
Symbrenthia hippoclus anna Semper 1888	Boh, Ceb, CmM, Cts, Ley, Mno, Pao, Sam, Sia	4
Symbrenthia hippoclus aritus Fruhstorfer 1912	Cal	2
Symbrenthia hippoclus dissoluta Staudinger 1889	Bal, Pal	4
Symbrenthia hippoclus galepsus Fruhstorfer 1908	Luz, Mar, Mdo	4
Symbrenthia hippoclus jolonus Fruhstorfer 1912	Jol	–
Symbrenthia hippoclus sperchius Fruhstorfer 1908	Bas	–
Symbrenthia hypselis niphandina Fruhstorfer 1912	Pal	4
Symbrenthia hypatia mindanaensis Schröder & Treadaway 1979	Mno	2
Junonia iphita adelaida Staudinger 1889	Bal, Pal	4
Junonia hedonia ida Cramer 1775	Phil	4
Junonia atlites atlites Linnaeus 1758	Phil	4

Junonia almana almana LINNAEUS 1758	Phil	4
Junonia lemonias janome TSUKADA & KANEKO 1985	Ceb, Gui, Luz, Mar, Mdo, Pal	2
Junonia orithya leucasia FRUHSTORFER 1912	Phil excl. Stu	4
Junonia orithya metion FRUHSTORFER 1905	Stu	4
Rhinopalpa polynice amoenice FRUHSTORFER 1912 (**stat. rev.**) ✪	Mdo	4
Rhinopalpa polynice panayana FRUHSTORFER 1912	Ceb, Neg, W-Pan, Sib	4
Rhinopalpa polynice stratonice C. & R. FELDER 1867	Bab, Luz, Mar	4
Rhinopalpa polynice tamora FRUHSTORFER 1900	Bas	–
Rhinopalpa polynice tawanice SCHRÖDER & TREADAWAY 1989 ✪ Fig. 6/7	Bon, Sga, Stu, Taw	2
Rhinopalpa polynice validice FRUHSTORFER 1912	Boh, Din, Ley, Mno, Pao, Sam, Sia	4
Yoma sabina podium TSUKADA 1985	Phil	3
Hypolimnas anomala anomala WALLACE 1869	Phil	4
Hypolimnas misippus LINNAEUS 1769	Phil	4
Hypolimnas bolina joloana FRUHSTORFER 1912 (**stat. rev.**)	Bon, Jol, Sga, Stu, Taw	3
Hypolimnas bolina kezia BUTLER 1877	Bat	3
Hypolimnas bolina philippensis BUTLER 1874 ✪	Phil excl. Bat, Bon, Jol, Sga, Stu, Taw	4
Doleschallia bisaltide philippensis FRUHSTORFER 1899	Phil	4

Tribe Cyrestini

Cyrestis cassander cassander C. & R. FELDER 1863	Bat, Luz, Mar, Mdo	4
Cyrestis cassander dacebalus FRUHSTORFER 1912	Boh, Cts, Din, Gui Ley, Sam	4
Cyrestis cassander orchomenus FRUHSTORFER 1912	Bas, Mno	4
Cyrestis cassander thessa FRUHSTORFER 1889	Bal, Cal, Pal	4
Cyrestis maenalis maenalis ERICHSON 1834	Luz, Mar, Pan, Sib	4
Cyrestis maenalis aiedius FRUHSTORFER 1912	Bal	2
Cyrestis maenalis cebuensis M. & T. OKANO 1988	Ceb	4
Cyrestis maenalis eumelus FRUHSTORFER 1915	Bab	2
Cyrestis maenalis kynosura TSUKADA & NISHIYAMA 1985	Din, Ley, Pao	4
Cyrestis maenalis negros MARTIN 1903	Neg	4
Cyrestis maenalis obscurior STAUDINGER 1889	Cal, Pal	4
Cyrestis maenalis oebasius FRUHSTORFER 1912	Bas	–
Cyrestis maenalis rizali TSUKADA & NISHIYAMA 1985	Boh, E-Mno	4
Cyrestis maenalis rothschildi MARTIN 1903	Mdo	4
Cyrestis maenalis zamboangensis JUMALON 1975	SW-Mno	3
Cyrestis kudrati JUMALON 1975	Mno	3

Cyrestis nivea superbus STAUDINGER 1889	Cal, Pal	4
Chersonesia rahria rahria HORSFIELD & MOORE 1857	Bal, Pal, Sga, Stu, Taw	3
Chersonesia peraka peraka DISTANT 1884	Bal, Pal	2
Chersonesia intermedia intermedia MARTIN 1895	Mno, S-Pal	2

Tribe Limenitidini

Pandita sinope sinope MOORE 1858	Sga, Stu, Taw	3
Pandita sinope sinoria FELDER 1867	Cal, Pal	3
Moduza thespias SEMPER 1889	Boh, CmM, Ley, Mno, ** Neg, Pan, Pao, Sam	3
Moduza procris beckyae SCHRÖDER & TREADAWAY 1987	Bal	2
Moduza procris pausanias STAUDINGER 1889	Cal, Pal	4
Moduza procris liberalis TSUKADA 1991	Bon, Sga, Stu, Taw	3
Moduza mata mata MOORE 1858	Luz, Mar	3
Moduza mata amida FRUHSTORFER 1912	Ceb, Ley, Mas, Mno, Neg, Pan, Sib	3
= *Moduza mata negrosensis* M. & T. OKANO 1989 (syn.)		
Moduza mata mindorana TSUKADA 1991	Mdo	3
Moduza urdaneta urdaneta FELDER 1863	Luz, Mar	3
Moduza urdaneta aynii NUYDA 1993	CmL	3
Moduza urdaneta kawamurai HANAFUSA 1987	Pol	2
Moduza urdaneta miyabi TSUKADA 1991	Mdo	3
Moduza pintuyana pintuyana SEMPER 1878	Ley, Mno, Pao, Sam	3
Moduza pintuyana gahiti M. & T. OKANO 1989 ✪	Boh, Din, Hom	3
= *Moduza pintuyana nigrum* TSUKADA 1991 **n. syn.**		
Moduza pintuyana mahastha FRUHSTORFER 1913	Bas	1
Moduza pintuyana tawitawiensis TREADAWAY & NUYDA 1994	Sga, Taw	3
Moduza nuydai nuydai SHIRÔZU & SAIGUSA 1970	N-Luz	2
Moduza nuydai hyugai TREADAWAY & NUYDA 1993	N-Mdo (Mt. Halcon)	2
Moduza jumaloni jumaloni SCHRÖDER 1976	Mas, Neg, Pan	3
Moduza jumaloni punctata SCHRÖDER & TREADAWAY 1980	Sib	2
Athyma pravara arturodyi SCHRÖDER & TREADAWAY 1991	Stu	1
Athyma salvini FRUHSTORFER 1912	Pal	2
Athyma alcamene alcamene C. & R. FELDER 1863	Bas, Boh, Ley, Mno, Pao, Sam	3
Athyma alcamene angelesi SCHRÖDER & TREADAWAY 1992	Taw	1
Athyma alcamene baltazarae JUMALON 1975	Neg, W-Pan	2
Athyma alcamene generosior FRUHSTORFER 1906	Mdo	3
Athyma alcamene jagori FRUHSTORFER 1906	Luz	2

Athyma alcamene masbatensis SCHRÖDER & TREADAWAY 1991	Mas	2
Athyma reta suluana SCHRÖDER & TREADAWAY 1991	Taw	2
Athyma arayata C. & R. FELDER 1863	N-Luz	2
Athyma maenas maenas C. & R. FELDER 1863	Luz, Bur	3
Athyma maenas semperi MOORE 1896 ✪ = *Athyma maenas kikuchii* TSUKADA & KANEKO 1985 **n. syn.** = *Athyma maenas boholensis* M. & T. OKANO 1990 **n. syn.**	Bas, Boh, Din, Ley, Mno, Pao, Sam	3
Athyma speciosa speciosa STAUDINGER 1889	Cal, Pal	4
Athyma speciosa preciosa FRUHSTORFER 1912	Bal	3
Athyma kasa kasa MOORE 1858	Bab, Luz, Mar, Pol	4
Athyma kasa bignayana FRUHSTORFER 1906	Gui, Mas, Neg, Pan, Sib, Siq	4
Athyma kasa epimethis C. & R. FELDER 1863	Mdo	3
Athyma kasa gordia C. & R. FELDER 1863	Bas, CmM, Din, Mno	4
Athyma kasa leyteana MURAYAMA 1982	Ley, Sam	4
Athyma kasa paragordia SEMPER 1889	Boh	3
Athyma kasa parakasa SEMPER 1889	Ceb, Cts	4
Athyma saskia SCHRÖDER & TREADAWAY 1991 ✪ Fig. 8/9	NE- & CE-Luzon	1
Athyma godmani godmani STAUDINGER 1889	Pal	3
Athyma godmani reducta FRUHSTORFER 1906	Bal	–
Athyma venata STAUDINGER 1889	Bal, Pal	3
Athyma separata separata STAUDINGER 1889	Pal	3
Athyma separata gracilis SCHRÖDER, TREADAWAY & NUYDA 1990	Cal	3
Athyma asura tarpa STAUDINGER 1889	Cal, Pal	3
Athyma mindanica MURAYAMA 1978	Ley, Mno, Sam	2
Athyma obsoleta SCHRÖDER & TREADAWAY 1979	Din, N/C/E-Mno	2
Athyma perius perius LINNAEUS 1758	Cal (Bus)	2
Athyma nefte subrata MOORE 1858	Bon, Sga, Stu, Taw	3
Athyma selenophora shiraishii TSUKADA & KANEKO 1985	Pal	2
Tacola larymna agina FRUHSTORFER 1898	Pal	3
Tacola larymna negrosiana SCHRÖDER & TREADAWAY 1988	N-Neg	1
Tacola larymna panayana SCHRÖDER & TREADAWAY 1979	W-Pan	2
Tacola magindana magindana SEMPER 1878	Ley, Mno, Sam	3
Tacola magindana pizarrasi M. & T. OKANO 1988	Boh	–
Tacola magindana zilana FRUHSTORFER 1906	Bas	–
Tarratia gutama gutama MOORE 1858	Bab, Luz, Mdo	4
Tarratia gutama canlaonensis M. & T. OKANO 1986	Neg	3

Tarratia gutama cebuensis M. & T. Okano 1986	Ceb	2
Tarratia gutama sibuyana Tsukada 1991	Sib	3
Tarratia gutama teldeniya Fruhstorfer 1912	Bal, Cal, Pal	4
Tarratia cosmia cosmia Semper 1878 ✪	Boh, Bon, Cts, Din,	3
= *Tarratia cosmia samarensis* Jumalon 1975 **n. syn.**	Ley, Mno, Sam,	
= *Tarratia cosmia tawitawiensis* Medicielo & Hanafusa 1994 **n. syn.**	Sga, Stu, Taw	
= *Tarratia cosmia tenebrosa* Murayama 1982 **n. syn.**		
Tarratia cosmia pindola Fruhstorfer 1906	Bas	–
Lebadea martha jecieli Schröder, Treadaway & Nuyda 1990	Cal	3
Lebadea martha paulina Staudinger 1889	Bal, Pal	4
Lebadea martha tessellata Schröder, Treadaway & Nuyda 1990	Stu	4
Lebadea martha undulata Schröder, Treadaway & Nuyda 1990	Sga	3
Parthenos sylvia butlerinus Fruhstorfer 1898	Bal, Dum, Pal	4
Parthenos sylvia joloensis Fruhstorfer 1898	Jol	2
Parthenos sylvia philippensis Fruhstorfer 1898	Phil excl. Bal, Bon, Dum, Jol, Pal, Sga, Stu, Taw	4
Parthenos sylvia selene Schröder & Treadaway 1991	Bon, Sga, Stu, Taw	4
Tanaecia calliphorus calliphorus Felder 1863	Luz, Mar, Pol	4
Tanaecia calliphorus smaragdifera Fruhstorfer 1912	Mdo	3
Tanaecia calliphorus treadawayi Tsukada 1991	Sib	1
Tanaecia calliphorus volupia Tsukada & Nishiyama 1981	CmL	3
Tanaecia dodong Schröder & Treadaway 1978 **(n. stat.)**	Mas	2
Tanaecia susoni Jumalon 1975	Ceb	1
Tanaecia lupina lupina Druce 1874 ✪	Jol	1
Tanaecia lupina borromeoi Schröder 1977 **(n. stat.)**	Sib	3
Tanaecia lupina howarthi Jumalon 1975 **(n. stat.)**	Neg	3
Tanaecia lupina panayana Schröder & Treadaway 1980 **(n. stat.)**	Pan	3
Tanaecia leucotaenia leucotaenia Semper 1878 **(n. stat.)** ✪	Bil, Boh, Cts, Ley, Sam, Pao	4
Tanaecia leucotaenia aquamarina Fruhstorfer 1912 **(n. stat.)**	Mno	4
Tanaecia leucotaenia dinorah Fruhstorfer 1899 **(n. stat.)**	Bas	1
Tanaecia leucotaenia exul Tsukada & Nishiyama 1980 **(n. stat.)**	Din	3
Tanaecia leucotaenia kulaya Treadaway & Nuyda 1994	Hom	3
Tanaecia aruna palawana Staudinger 1889	Pal	4

Tanaecia aruna pallida SCHRÖDER, TREADAWAY & NUYDA 1990	Cal	3
Tanaecia aruna rudraca FRUHSTORFER 1913	Bal	2
Tanaecia pelea dohertyi BUTLER 1901	Sul	–
Cynitia cocytina darani FRUHSTORFER 1913	Jol	–
Cynitia cocytina uposatha FRUHSTORFER 1913	Bal	2
Cynitia phlegethon phlegethon SEMPER 1888	Mno	4
Cynitia phlegethon nirodha FRUHSTORFER 1913	Bas	1
Cynitia phlegethon visayana SCHRÖDER & TREADAWAY 1981	Ley, Sam	3
Cynitia godartii dhayma FRUHSTORFER 1913	Jol, Stu	2
Cynitia semperi semperi STAUDINGER 1889	Pal	3
Cynitia semperi candida SCHRÖDER, TREADAWAY & NUYDA 1990	Cal	3
Euthalia monina kayumanggia TREADAWAY & NUYDA 1994	Pal	3
Euthalia monina suluana FRUHSTORFER 1902	Sul (Jol)	1
Euthalia tanagra STAUDINGER 1889 (n. stat.) ✪ Fig. 86/87	Pal	2
Euthalia aconthea bongaoensis SCHRÖDER, TREADAWAY & NUYDA 1990	Bon, Sga, Taw	3
Euthalia aconthea joloana STAUDINGER 1889	Jol	2
Euthalia aconthea obatrata YOKOCHI 1994	Dum	3
Euthalia aconthea palawana STAUDINGER 1889	Cal, Pal	3
Euthalia aconthea sibutana SCHRÖDER, TREADAWAY & NUYDA 1990	Stu	3
Euthalia alpheda cusama FRUHSTORFER 1913	Din, Hom, Mno	3
Euthalia alpheda leytana SCHRÖDER & TREADAWAY 1982	Ley, Sam	3
Euthalia alpheda liaoi SCHRÖDER & TREADAWAY 1982	Neg, Pan	4
Euthalia alpheda mindorensis SCHRÖDER & TREADAWAY 1982	Mdo	4
Euthalia alpheda phelada SEMPER 1888	Luz	3
Euthalia alpheda rodriguezi SCHRÖDER & TREADAWAY 1982	Pal	2
Euthalia alpheda sibuyana SCHRÖDER & TREADAWAY 1982	Sib	3
Euthalia alpheda soregina FRUHSTORFER 1913	Sul (Jol?)	–
Euthalia lusiada lusiada C. & R. FELDER 1863	Bab, Luz, Mar	3
Euthalia lusiada malissia FRUHSTORFER 1913	Bas, Din, Hom, Ley, Mno, Pao, Sam	3
Euthalia lusiada mindorana FRUHSTORFER 1899	Mas, Mdo	3
Euthalia lusiada schoenigi SCHRÖDER & TREADAWAY 1978	Neg	2
Euthalia lusiada soloni M. & T. OKANO 1990	Boh	2
Euthalia mindanaensis SCHRÖDER & TREADAWAY 1978	E-Mno	1
Euthalia anosia tawitawia TREADAWAY & NUYDA 1994	Taw	1

Euthalia mahadeva dacasini HANAFUSA 1990 ✪ = *Euthalia mahadeva waltraudae* SCHRÖDER & TREADAWAY 1990 **n. syn.**	Bal	3
Euthalia mahadeva ingae SCHRÖDER & TREADAWAY 1990	Bon, Sga, Stu, Taw	3
Euthalia mahadeva rhamases STAUDINGER 1889	Cal, Pal	4
Euthalia mahadeva yui YOKOCHI 1994	Dum	3
Euthalia lubentina boholensis M. & T. OKANO 1990	Boh	2
Euthalia lubentina goertzi JUMALON 1975	Neg, Pan	3
Euthalia lubentina leytensis JUMALON 1975	Ley, Sam	2
Euthalia lubentina mindorana TSUKADA 1991	Mdo	3
Euthalia lubentina nadenya FRUHSTORFER 1913	Luz, Mar	2
Euthalia lubentina philippensis FRUHSTORFER 1899	Bas, Din, Mno	2
Euthalia djata ludonia STAUDINGER 1889	Pal	3
Euthalia adonia princesa FRUHSTORFER 1899	Pal	3
Bassarona piratica piratica SEMPER 1888	CmM, Mno	2
Bassarona piratica dinagatensis TSUKADA 1991	Din	1
Bassarona piratica negrosiana SCHRÖDER & TREADAWAY 1987	Neg	2
Bassarona piratica romeo SCHRÖDER & TREADAWAY 1987	N-Mdo	2
Bassarona piratica sarmana FRUHSTORFER 1913	Bas	1
Bassarona piratica subpiratica SCHRÖDER & TREADAWAY 1987	Luz	3
Bassarona dunya monara FRUHSTORFER 1913	Pal	3
Bassarona teuta balabacana TSUKADA 1991	Bal	3
Bassarona teuta eson DE NICÉVILLE 1894	Pal	3
Dophla evelina albusequus NIHIRA & KAWAMURA 1986	Sga, Taw	2
Dophla evelina balabacana TSUKADA 1991	Bal	3
Dophla evelina chloe SCHRÖDER & TREADAWAY 1990	Mas, Neg, Pan, Sib	3

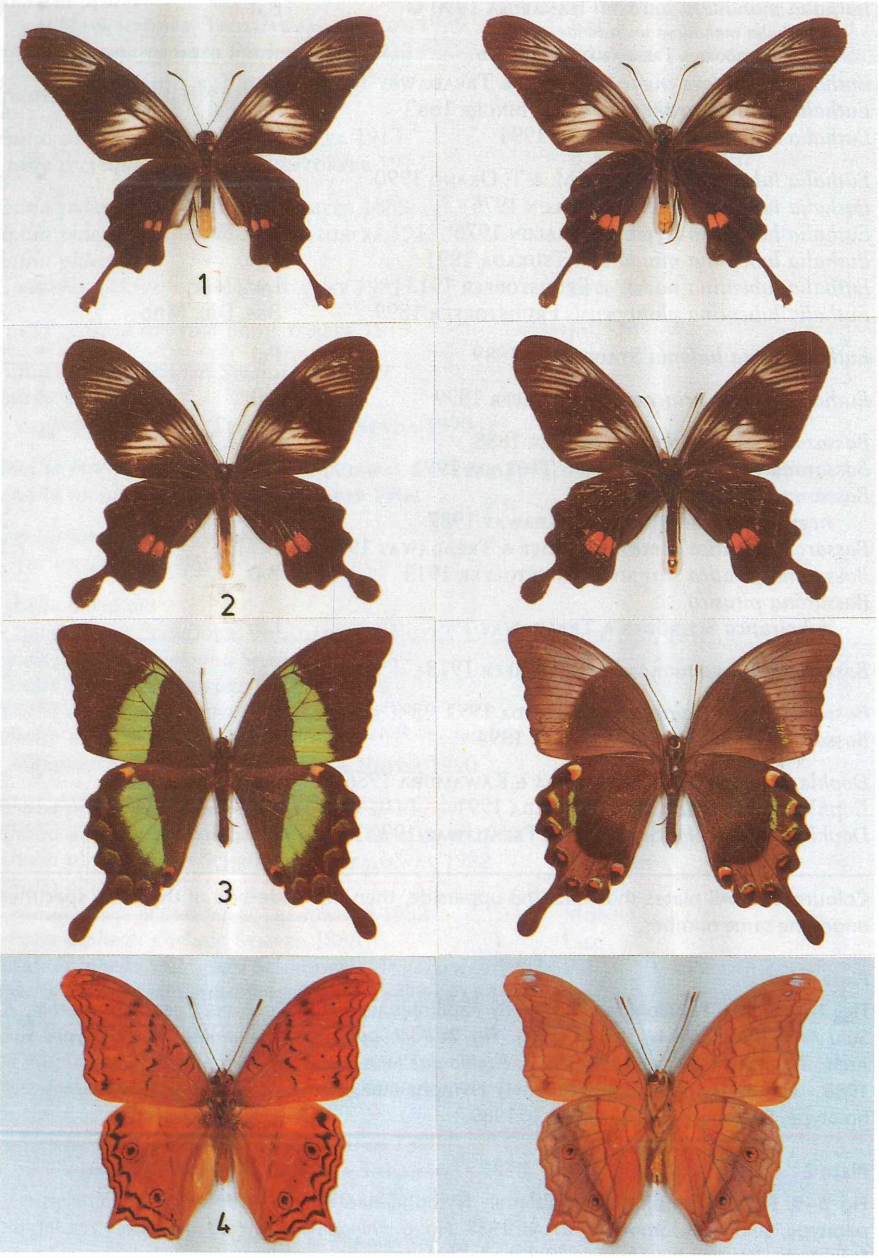
Colourplates: All plates show first the upperside, then the underside of the same specimen under the same number.

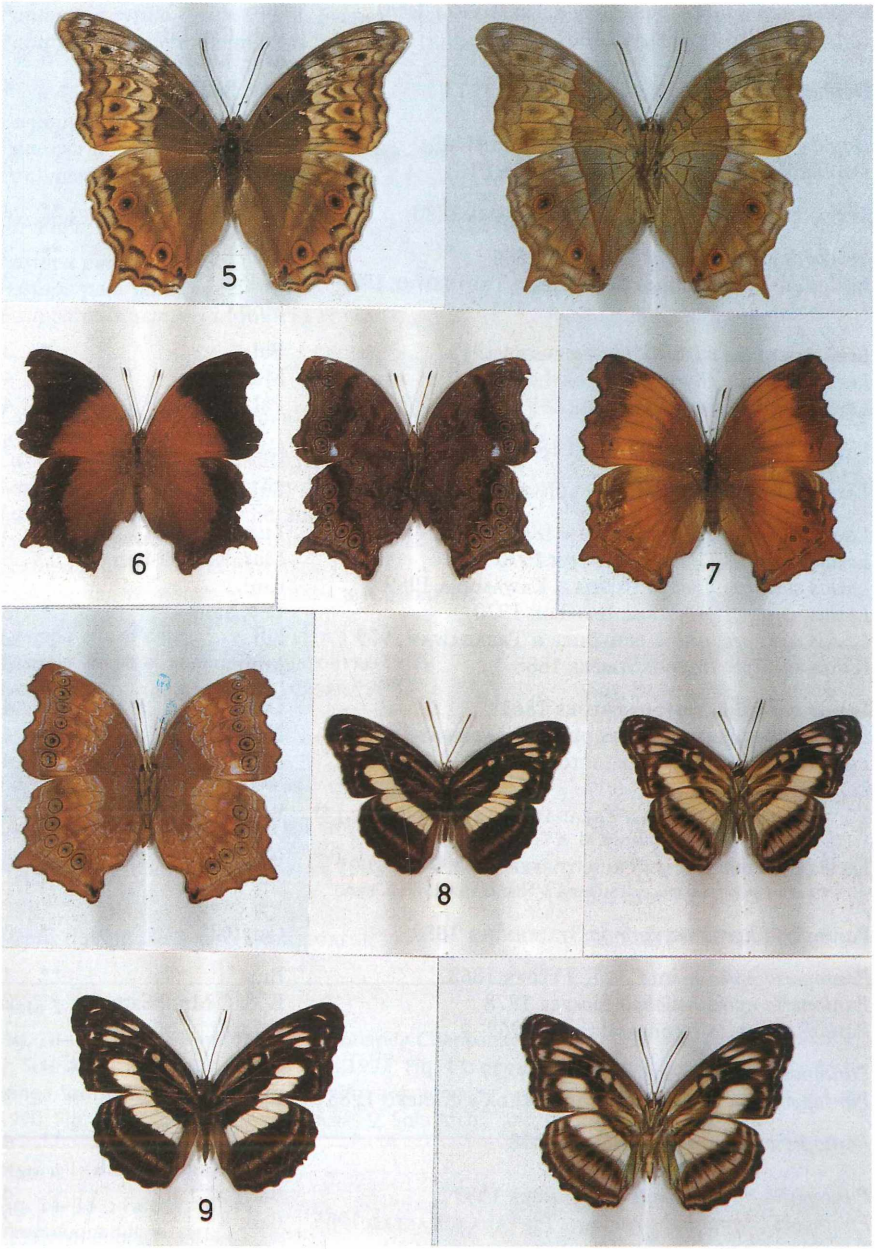
Plate 1

Fig. 1–4: Family Papilionidae, Subfamily Papilioninae: **Fig. 1:** *Pachliopta neptunus matbai,* ♂, Sulu Arch., Tawitawi Is., 16. III. 1991. **Fig. 2:** *Pachliopta neptunus matbai,* ♀, holotype, Sulu Arch., Tawitawi Is., 9. VI. 1990. **Fig. 3:** *Papilio daedalus daedalus,* aberrant ♂, Marinduque, IV. 1986. Family Nymphalidae, Subfamily Nymphalinae. **Fig. 4:** *Vindula dejone sibutuensis,* ♂, holotype, Sulu Arch., Sibutu Is., 14. II. 1989.

Plate 2

Fig. 5–9: Family Nymphalidae, Subfamily Nymphalinae: **Fig. 5:** *Vindula dejone sibutuensis,* ♀, paratype, Sulu Arch., Sibutu Is., 27. VI. 1988. **Fig. 6:** *Rhinopalpa polynice tawanice,* ♂, holotype, Sulu Arch., Bongao Is., 18. II. 1989. **Fig. 7:** *Rhinopalpa polynice tawanice,* ♀, Sulu Arch., Sanga Sanga Is., 11. VII. 1990. **Fig. 8:** *Athyma saskia,* ♂, holotype, Luzon, 30. IV. 1988. **Fig. 9:** *Athyma saskia,* ♀, paratype, Luzon, 27. V. 1990.





Dophla evelina circe SCHRÖDER & TREADAWAY 1990	Stu	3
Dophla evelina eva FELDER 1867	Bab, Cat, Luz, Mar, Mdo	4
Dophla evelina proditrix FRUHSTORFER 1913	Bas, Bil, Boh, CmM, Din, Ley, Mno, Pao	4
Dophla evelina samarensis TSUKADA 1991	Sam	3
Dophla evelina tyawena FRUHSTORFER 1913	Cal, Pal	3
Lexias hikarugenzi TSUKADA & NISHIYAMA 1980	N-Luz	2
Lexias damalis damalis ERICHSON 1834	Bab, Luz	3
Lexias damalis antiquea SCHRÖDER & TREADAWAY 1980	W-Pan	2
Lexias damalis galoa FRUHSTORFER 1913	Mdo	3
Lexias pardalis cavarna FRUHSTORFER 1913	Bal	3
Lexias pardalis ellora FRUHSTORFER 1890	Mdo	4
Lexias pardalis tethys TSUKADA 1991	Pal	4
Lexias dirtea palawana MOORE 1897	Cal, Pal	3
Lexias canescens leopardina FRUHSTORFER 1913	Sul (Jol?)	–
Lexias satrapes satrapes FELDER 1861	Luz, Mdo, Pol	3
Lexias satrapes amlana JUMALON 1970	Mas, Neg, W-Pan	3
Lexias satrapes hiwaga NUYDA & KAWAMURA 1989	CmL	2
Lexias satrapes ormocana JUMALON 1970	Ley, Sam	3
Lexias satrapes ornata SCHRÖDER & TREADAWAY 1979	Sib	2
Lexias satrapes trapesa SEMPER 1888	Mno	3
Lexias panopus panopus FELDER 1861	Luz	4
Lexias panopus ingae SCHRÖDER & TREADAWAY 1987	Neg, Pan	4
Lexias panopus miscus FRUHSTORFER 1913	Mno	4
Lexias panopus visayana SCHRÖDER & TREADAWAY 1987 **(stat. rev.)** ✪ = *Lexias panopus boholensis* M. & T. OKANO 1988 **n. syn.**	Boh, Ley, Sam	4
Lexias panopus vistrica FRUHSTORFER 1913 ✪ = *Lexias panopus macer* TSUKADA & NISHIYAMA 1980 **n. syn.**	Din, Hom	3
Pantoporia hordonia doronia STAUDINGER 1889	Cal, Pal	3
Pantoporia epira epira C. & R. FELDER 1863	Bur	1
Pantoporia epira heliobole SEMPER 1878	E- & C-Mno, Sam	2
Pantoporia epira luzonensis ELIOT 1969	N-Luz	1
Pantoporia paraka paraka BUTLER 1879	Stu	3
Pantoporia paraka olanguana TSUKADA & KANEKO 1985	Bal, Pal	3
Pantoporia dama dama MOORE 1858	Cat, Luz, Mar, Mas, Mdo, Neg, Pan, Sib	4
Pantoporia dama athene STAUDINGER 1889	Bal, Cal, Pal	4
Pantoporia dama babuyanensis TSUKADA & KANEKO 1985	Bab	2
Pantoporia dama camotesiana FRUHSTORFER 1912	Cts	–
Pantoporia dama commixta FRUHSTORFER 1908	Boh, Ceb, CmM, Din, Ley, Mno, Pao, Sam	4

Pantoporia cyrilla cyrilla C. & R. Felder 1863	CmL, Luz, Pol	3
Pantoporia cyrilla athenais C. & R. Felder 1863	Bas, Boh, Ceb, Cts, Din, Hom, Jol, Ley, Mno, Sam, Sar	3
Pantoporia cyrilla attica Semper 1889	CmM, Neg, Siq	1
Pantoporia cyrilla phrygia C. & R. Felder 1863	Cal, Mdo	3
Pantoporia cyrilla shunichii Tsukada & Kaneko 1985	Sga, Stu	3
Lasippa bella Staudinger 1889	Pal	3
Lasippa pata pata Moore 1858	Luz, Mar	3
Lasippa pata patalina Semper 1892	Mdo	2
Lasippa pata semperi Moore 1899	Boh, Din, Ley, E-Mno, Sam	3
Lasippa illigerella Staudinger 1889	Cal, Pal	3
Lasippa illigera illigera Eschscholtz 1821	N- & C-Luzon, Pol	3
Lasippa illigera alabatana Fruhstorfer 1908	Ala, S-Luz, Mar	2
Lasippa illigera calayana Fruhstorfer 1908	Bab	3
Lasippa illigera hegesias Fruhstorfer 1912	Gui, Neg, Pan	3
Lasippa illigera pia Fruhstorfer 1908	Bas	–
Lasippa illigera sibuyana Tsukada & Kaneko 1985	Sib	2
Lasippa ebusa ebusa C. & R. Felder 1863	Mdo	3
Lasippa ebusa euphemia Fruhstorfer 1908	Jol, Sga, Taw	3
Lasippa ebusa laetitia Fruhstorfer 1908	Bas, Boh, Ceb, CmM, Din, Hom, Ley, Mno, Sam	4
Lasippa pizarrasi M. & T. Okano 1986	Boh	1
Lasippa monata sibutuana Tsukada & Kaneko 1985	Stu	3
Neptis hylas sopatra Fruhstorfer 1907	Bon, Jol, Sga, Sis, Stu, Taw	3
Neptis duryodana emesa Fruhstorfer 1908	CagSul, Cuy, Pal	3

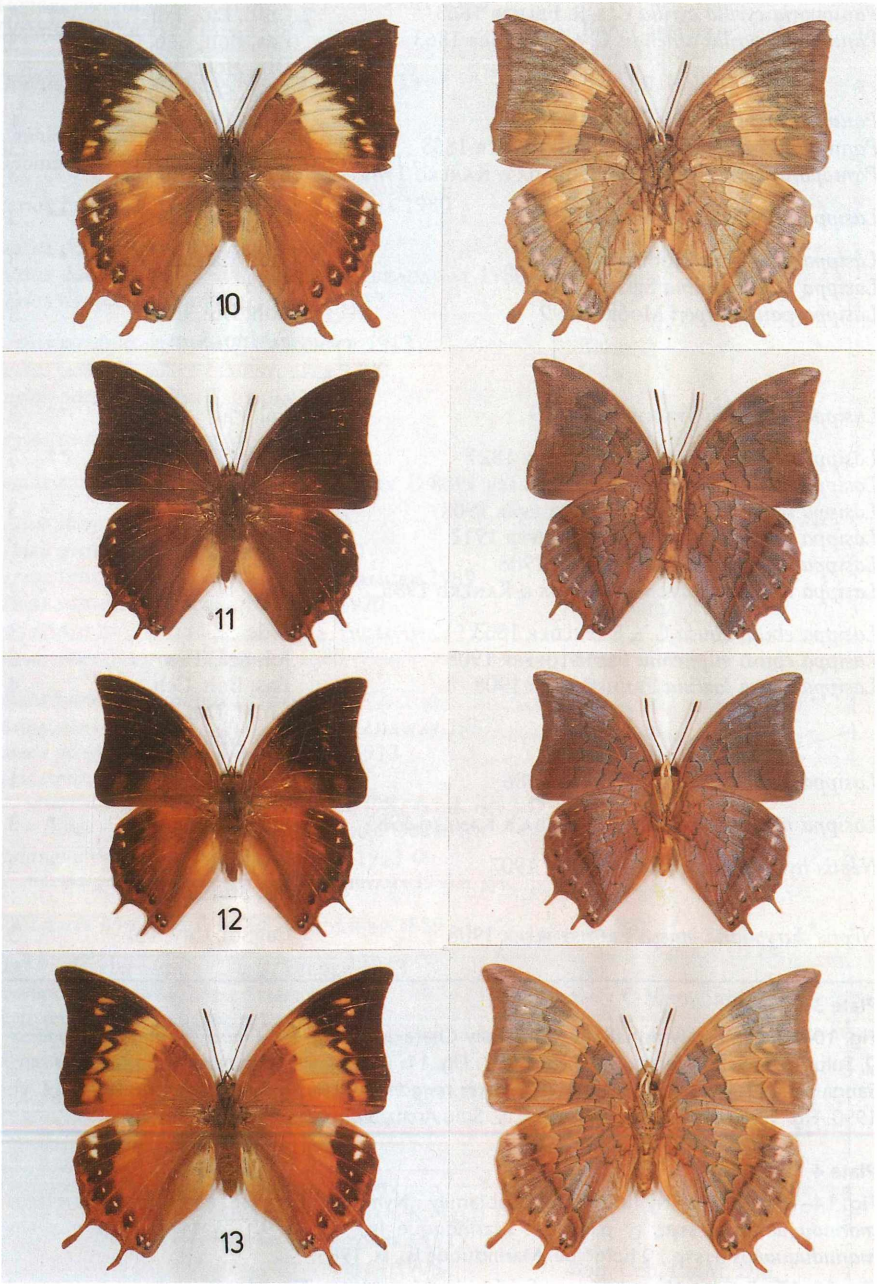
Plate 3

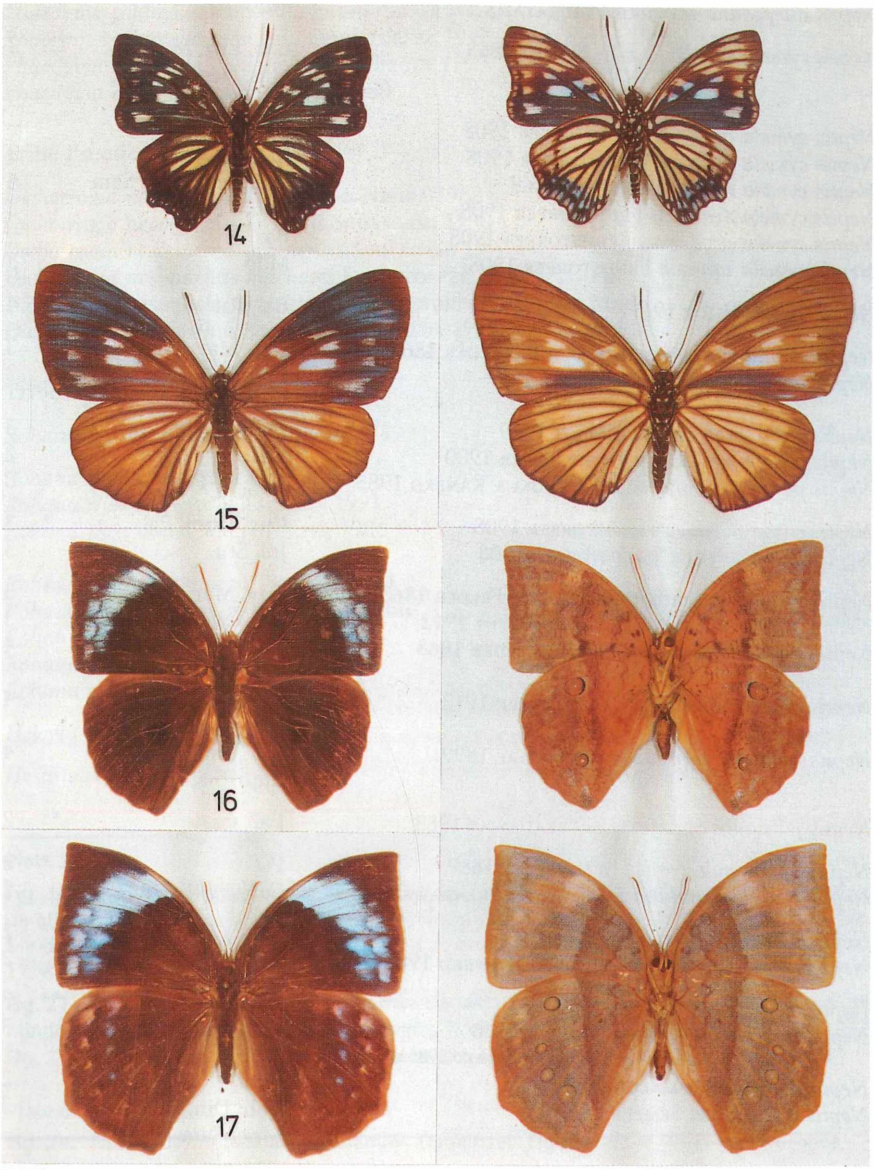
Fig. 10–13: Family Nymphalidae, Subfamily Charaxinae: **Fig. 10:** *Charaxes sangana sangana,* ♀, Sulu Arch., Sanga Sanga Is., 18. VI. 1992. **Fig. 11:** *Charaxes sangana sangana,* ♂, Sulu Arch., Sanga Sanga Is., 9. I. 1990. **Fig. 12:** *Charaxes sangana juwaki,* ♂, Sulu Arch., Sibutu Is., 14. VI. 1990. **Fig. 13:** *Charaxes sangana juwaki,* ♀, Sulu Arch., Sibutu Is., 13. II. 1989.

Plate 4

Fig. 14–15: Family Nymphalidae, Subfamily Nymphalinae: **Fig. 14:** *Euripus nyctelius* ***marinduquanus*** **n. ssp.,** ♂ paratype, Marinduque Is., VII. 1979. **Fig. 15:** *Euripus nyctelius* ***marinduquanus*** **n. ssp.,** ♀ holotype, Marinduque Is., IX. 1983.

Fig. 16–17: Family Nymphalidae, Subfamily Morphinae: **Fig. 16:** *Discophora dodong,* ♂ holotype, Negros Is., 21. V. 1981. **Fig. 17:** *Discophora dodong,* ♀, Panay Is., 6. III. 1980.





Neptis duryodana mindorica MURAYAMA 1983	Mdo	3
Neptis cymela cymela C. & R. FELDER 1863	Bab, Luz, Mar, Mas, Neg, Pan, Pao, Pol, Sib	3
Neptis cymela carvinus FRUHSTORFER 1908	CmM	–
Neptis cymela gatanga FRUHSTORFER 1908	Jol, Sga, Taw	3
Neptis cymela nitetus HEWITSON 1868	Din, Ley, Mno, Sam	4
Neptis cymela ormiscus FRUHSTORFER 1908	Boh, Ceb	3
Neptis cymela prodymus FRUHSTORFER 1908	Bas	–
Neptis cymela samiola FRUHSTORFER 1908	Mdo	3
Neptis sunica ELIOT 1969	Bal, Pal	4
Neptis pampanga pampanga C. & R. FELDER 1863	Luz, Mar	3
Neptis pampanga boholica MOORE 1899	Boh, Ceb, Ley, Mno, Sam	3
Neptis pampanga dormida ELIOT 1969	Mdo	3
Neptis pampanga lizana FRUHSTORFER 1900	Bas	2
Neptis pampanga myleenae TSUKADA & KANEKO 1985	Neg, W-Pan	3
Neptis clinia parthica FRUHSTORFER 1908	Cuy, Dum, Pal	3
Neptis clinia solygeia FRUHSTORFER 1908	Jol, Stu	3
Neptis mindorana mindorana C. & R. FELDER 1863	Cuy, Mar, Mdo	3
Neptis mindorana harpasa FRUHSTORFER 1912	Bal, Cal, Dum, Pal	3
Neptis mindorana ilocana C. & R. FELDER 1863	Cat, Gui, Luz, Neg, Pan, Pol, Sib, Siq	4
Neptis mindorana nosba FRUHSTORFER 1912	Boh, Ceb, Cts, Din, Ley, Pao, Sam	4
Neptis mindorana pseudosoma MOORE 1899	Bas, CmM, Jol, Mno, Sia	4
Neptis felisimilis SCHRÖDER & TREADAWAY 1983	Pal	2
Neptis harita palawanica STAUDINGER 1889	Pal	3
Neptis harita calamiana SCHRÖDER & TREADAWAY 1995	Cal	2
Neptis omeroda omeroda MOORE 1874	Stu	2
Neptis omeroda occultus TSUKADA & KANEKO 1985	Bal, Pal	2
Neptis cyra cyra C. & R. FELDER 1863	Luz	3
Neptis cyra canloana MURAYAMA 1983 ✪	Neg, Pan	3
= *Neptis cyra moonyeenae* TSUKADA & KANEKO 1985 **n. syn.**		
Neptis cyra elioti JUMALON 1975	Ceb	2
Neptis cyra vibusa SEMPER 1889	Boh, Din, Ley, Mno, Sam	3
Neptis anjana vidua STAUDINGER 1889	Pal	2
Phaedyma columella angara SEMPER 1889	CmM	–
Phaedyma columella eremita C. & R. FELDER 1867	Boh, Cat, Ceb, Gui,	4
= *Phaedyma columella guimarensis* FRUHSTORFER 1912 (syn.)	Luz, Mar, Mas, Neg, Pan, Rom, Sib	

Phaedyma columella eumenaia FRUHSTORFER 1912	Mdo	4
Phaedyma columella mesogaia FRUHSTORFER 1912	Ley, Mno, Sam	4
Phaedyma columella ophianella STAUDINGER 1899	Bal, Cal, Pal	4
Phaedyma columella soror SEMPER 1889	Cts	4
Tribe Pseudergolini		
Dichorragia nesimachus kawamurai NIHIRA 1982	Neg, Pan	3
Dichorragia nesimachus leytensis SHIMAGAMI 1990	Ley, Pao	3
Dichorragia nesimachus luzonensis SHIMAGAMI 1990	Luz, Mdo	3
Dichorragia nesimachus machates FRUHSTORFER 1903	Pal	3
Dichorragia nesimachus peisistratus FRUHSTORFER 1913	Mno	3
Dichorragia nesimachus samarensis TSUKADA 1991	N-Sam	3
Tribe Apaturini		
Rohana parisatis nana STAUDINGER 1889	Pal	3
Rohana rhea rhea FELDER 1863	Luz, Mar	4
Rohana rhea babuyana TSUKADA 1991	CmL	2
Rohana rhea danaë FRUHSTORFER 1906	Bil, Boh, Ley, Mno, Pao, Sam	3
Rohana rhea dinagatana TSUKADA 1991	Din	3
Rohana rhea mindora FRUHSTORFER 1906	Mdo	4
Rohana rhea negrosa TSUKADA 1991	Ceb, Neg, Pan	3
Rohana rhea rana STAUDINGER 1889	Pal	3
Rohana rhea suluana TSUKADA 1991	Bon, Sga, Stu, Taw	4
Helcyra miyazakii TSUKADA 1991	NW-Luz	1
Hestinalis dissimilis HALL 1935	N-Luz, N-Mdo	2

Plate 5

Fig. 18–20: Family Nymphalidae, Subfamily Satyrinae: **Fig. 18:** *Zophoessa dataensis nihirai,* ♂ paratype, Mindoro Is., 17. IV. 1992. **Fig. 19:** *Zophoessa dataensis nihirai,* ♀, form A, paratype, Mindoro Is., 19. V. 1992. **Fig. 20:** *Zophoessa dataensis nihirai,* ♀, form B, paratype, Mindoro Is., 17. V. 1992.

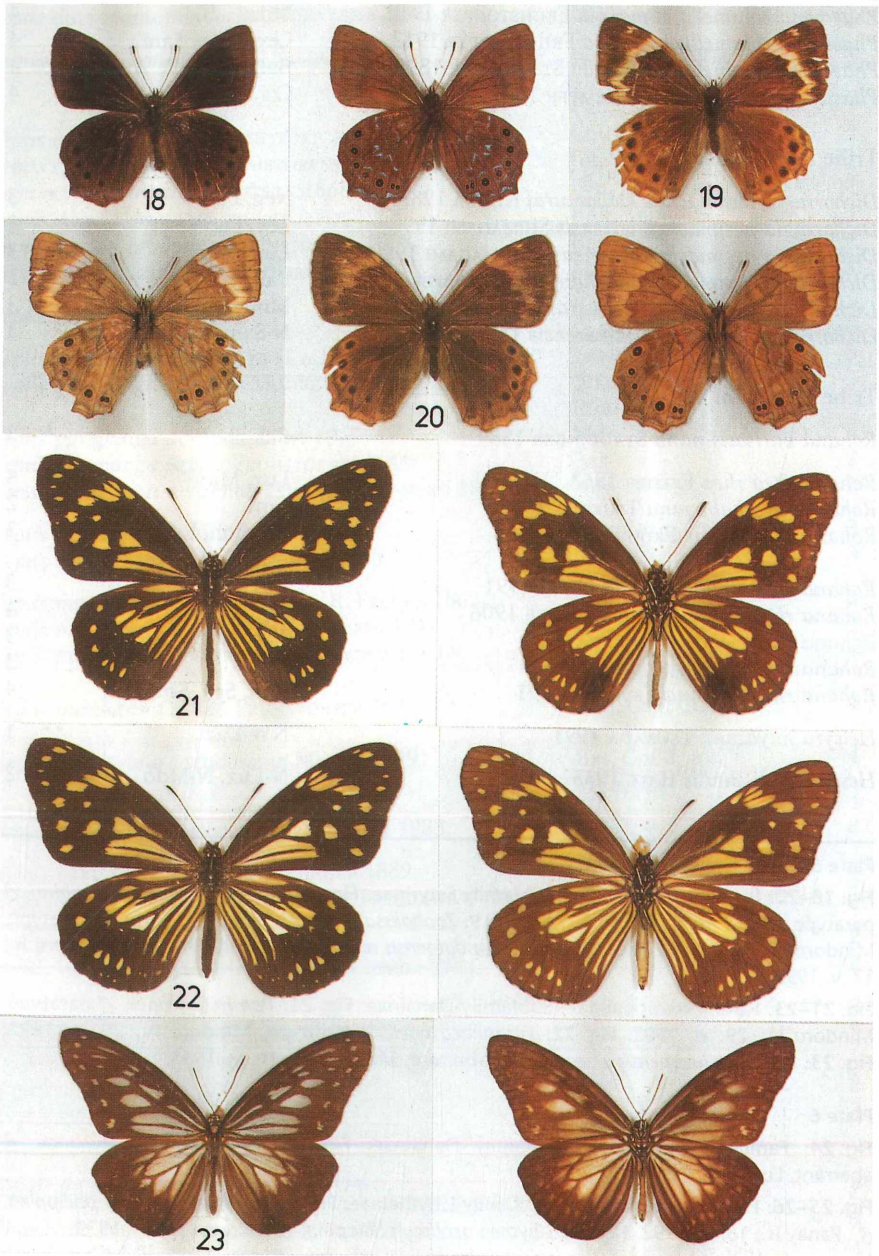
Fig. 21–23: Family Nymphalidae, Subfamily Danainae: **Fig. 21:** *Paranntica noeli,* ♂ paratype, Mindoro Is., 29. VI. 1992. **Fig. 22:** *Paranntica noeli,* ♀ paratype, Mindoro Is., 29. VI. 1992. **Fig. 23:** *Parantica luzonensis luzonensis,* ♂ aberrant, Marinduque Is., IX. 1984.

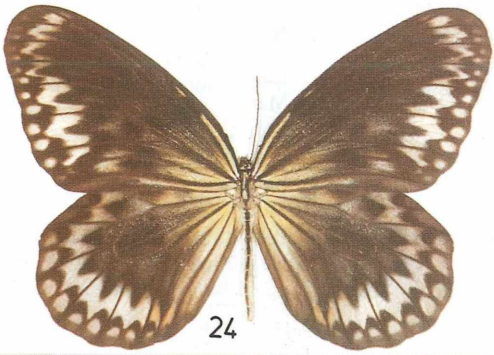
Plate 6

Fig. 24: Family Nymphalidae, Subfamily Danainae: **Fig. 24:** *Idea leuconoe leuconoe,* ♂ aberrant, Luzon Is., 12. V. 1993.

Fig. 25–26: Family Nymphalidae, Subfamily Libytheinae: **Fig. 25:** *Libythea geoffroy philippina,* ♂, Panay Is., 16. VI. 1992. **Fig. 26:** *Libythea geoffroy philippina,* ♀, Palawan Is., XII. 1979.

Fig. 27–28: Family Pieridae, Subfamily Pierinae: **Fig. 27:** *Delias diaphana basilisae,* ♂ paratype, Mindanao Is., Misamis Occ., 19. II. 1983. **Fig. 28:** *Delias diaphana basilisae,* ♀ holotype, Mindanao Is., Misamis Occ., 19. II. 1983.





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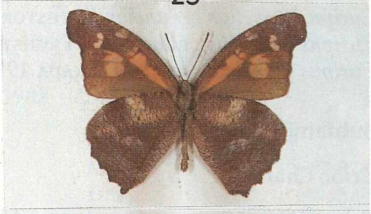

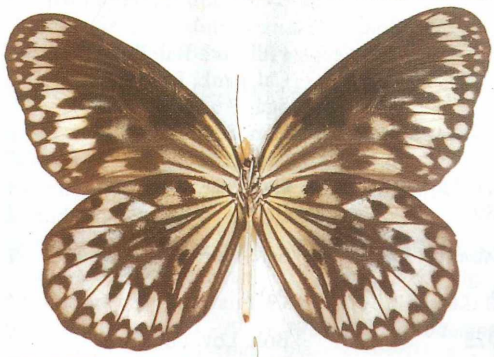

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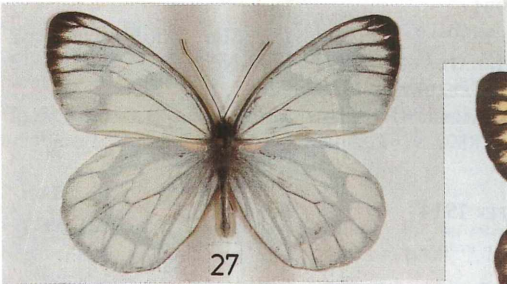

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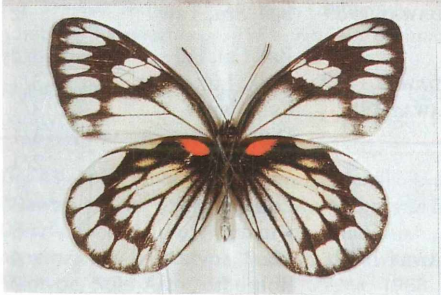
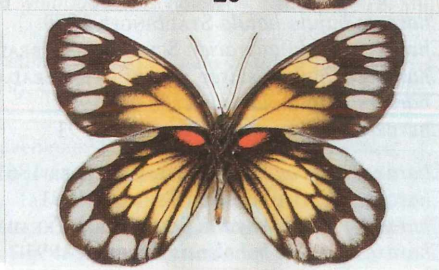




Hestinalis waterstradti waterstradti WATKINS 1928	S-Mno	2
Hestinalis waterstradti borealis TSUKADA 1991	N-Mno	2
Euripus nyctelius clytia C. & R. FELDER 1867	Luz	2
Euripus nyctelius ***marinduquanus*** **n. ssp.** ✪ Fig. 14/15	Mar	2
Euripus nyctelius nysia SEMPER 1887	Boh, CmM, Ley, Mno, Sam	2
Euripus nyctelius ophelion FRUHSTORFER 1914	Bal	2
Euripus nyctelius orestheion FRUHSTORFER 1914	Mdo	2
Euripus nyctelius palawanicus FRUHSTORFER 1899	Pal	2
Euripus nyctelius sparsus TSUKADA 1991	Neg, Pan	2

Subfamily Charaxinae

Tribe Charaxini

Polyura athamas acuta ROTHSCHILD 1899	Phil excl. Bal, Bon, Cal, CmL, Pal, Sga, Stu, Taw	4
Polyura athamas angustior SCHRÖDER & TREADAWAY 1990	Bon, Sga, Taw	2
Polyura athamas kotakaii HANAFUSA 1989	CmL	2
Polyura athamas palawanica ROTHSCHILD 1899	Cal, Pal	4
Polyura athamas uraeus ROTHSCHILD 1899	Bal	3
Polyura moori galeoni SCHRÖDER & TREADAWAY 1990	Sga, Taw	1
Polyura delphis nivea ROTHSCHILD 1899	Pal	3
Polyura schreiber bilarensis JUMALON 1975	Boh, Ley, Pao, Sam	2
Polyura schreiber delicatus TSUKADA 1991	Din	2
Polyura schreiber luzonica ROTHSCHILD 1899	Luz, Mar, Mdo	2
Polyura schreiber mizunumai SATO & HANAFUSA 1987	Mas, Neg	3
Polyura schreiber praedicta SCHRÖDER & TREADAWAY 1980	Pal	1
Polyura schreiber toshikoe SATO & NISHIYAMA 1987	Mno	2
Charaxes solon lampedo HÜBNER (1824)	Ceb, Luz, Mar, Mdo, Neg, Pan, Sib	3
Charaxes solon orchomenus FRUHSTORFER 1914	Bal, Cal, Pal	3
Charaxes solon shohgun TSUKADA 1991	Boh, Din, Ley, Mno, Pao, Sam	3
Charaxes solon tindongani SCHRÖDER & TREADAWAY 1989	Sga, Stu, Taw	2
Charaxes bajula bajula STAUDINGER 1889	Bal, Cal, Pal	** 3/2
Charaxes bajula adoracion SCHRÖDER & TREADAWAY 1989	CmL, Luz	3/1
Charaxes bajula basilisae SCHRÖDER & TREADAWAY 1982	Ceb, Pan	3/1
Charaxes bajula planitus TSUKADA 1991	Din, E-Mno	3/1
Charaxes bajula remulus TSUKADA 1991	Mar	2/1
Charaxes amycus amycus C. & R. FELDER 1861	Luz, Pol	3
Charaxes amycus basilium TSUKADA 1991	Din	3
Charaxes amycus bayanii SCHRÖDER & TREADAWAY 1982	Mar	4
Charaxes amycus boholensis TSUKADA 1991	Boh	2
Charaxes amycus carolus ROTHSCHILD 1900	CmM, Mno	4

Charaxes amycus georgius STAUDINGER 1892	Mdo	3
Charaxes amycus leonido TSUKADA 1991	N-Sam	3
Charaxes amycus leytensis M. & T. OKANO 1986	Bil, Ley, Pao	3
Charaxes amycus marion SCHRÖDER & TREADAWAY 1981	Sib	2
Charaxes amycus negrosensis SCHRÖDER & TREADAWAY 1982	Neg	3
Charaxes amycus shunichii HANAFUSA 1989	CmL	2
Charaxes amycus theobaldo SCHRÖDER & TREADAWAY 1982	Mas, W-Pan	3
Charaxes sangana sangana SCHRÖDER & TREADAWAY 1988 (stat. rev.) ✪ Fig. 10/11	Sga, Taw	2
Charaxes sangana juwaki SCHRÖDER & TREADAWAY 1988 (stat. rev.) ✪ Fig. 12/13	Stu	3
Charaxes antonius antonius SEMPER 1878	Mno	** 3/2
Charaxes antonius dinagatensis TSUKADA 1991	Din	3/2
Charaxes antonius osadai HANAFUSA 1985	Boh, Ley, Pao, Sam	3/2
Charaxes plateni plateni STAUDINGER 1889	Bal, Pal	** 3/2

Plate 7

Fig. 29: Family Pieridae, Subfamily Coliadinae: **Fig. 29:** *Catopsilia scylla asema,* mosaic gynandromorph, Cebu Is., 10. VII. 1991.

Fig. 30–33: Family Pieridae, Subfamily Pierinae: **Fig. 30:** *Appias nero palawanica,* mosaic gynandromorph, Palawan Is., 5. I. 1991. **Fig. 31:** *Appias nero palawanica,* mosaic gynandromorph, Palawan Is., 27. III. 1981. **Fig. 32:** *Udaiana cynis suluensis,* ♂ holotype, Sulu Arch., Sanga Sanga Is., 29. VI. 1988. **Fig. 33:** *Udaiana cynis suluensis,* ♀ paratype, Sulu Arch., Sanga Sanga Is., 25. VI. 1988.

Fig. 34–35: Family Pieridae, Subfamily Coliadinae: **Fig. 34:** *Eurema sarilata rosario,* ♂ holotype, E. Samar Prov., Homonhon Is., 21. V. 1988. **Fig. 35:** *Eurema sarilata rosario,* ♀ paratype, E. Samar Prov., Homonhon Is., 23. V. 1988.

Fig. 36: Family Lycaenidae, Subfamily Liphyrinae: **Fig. 36:** *Lyphyra brassolis hermelnuydae,* ♀ holotype, E. Samar Prov., Homonhon Is., 14. V. 1988.

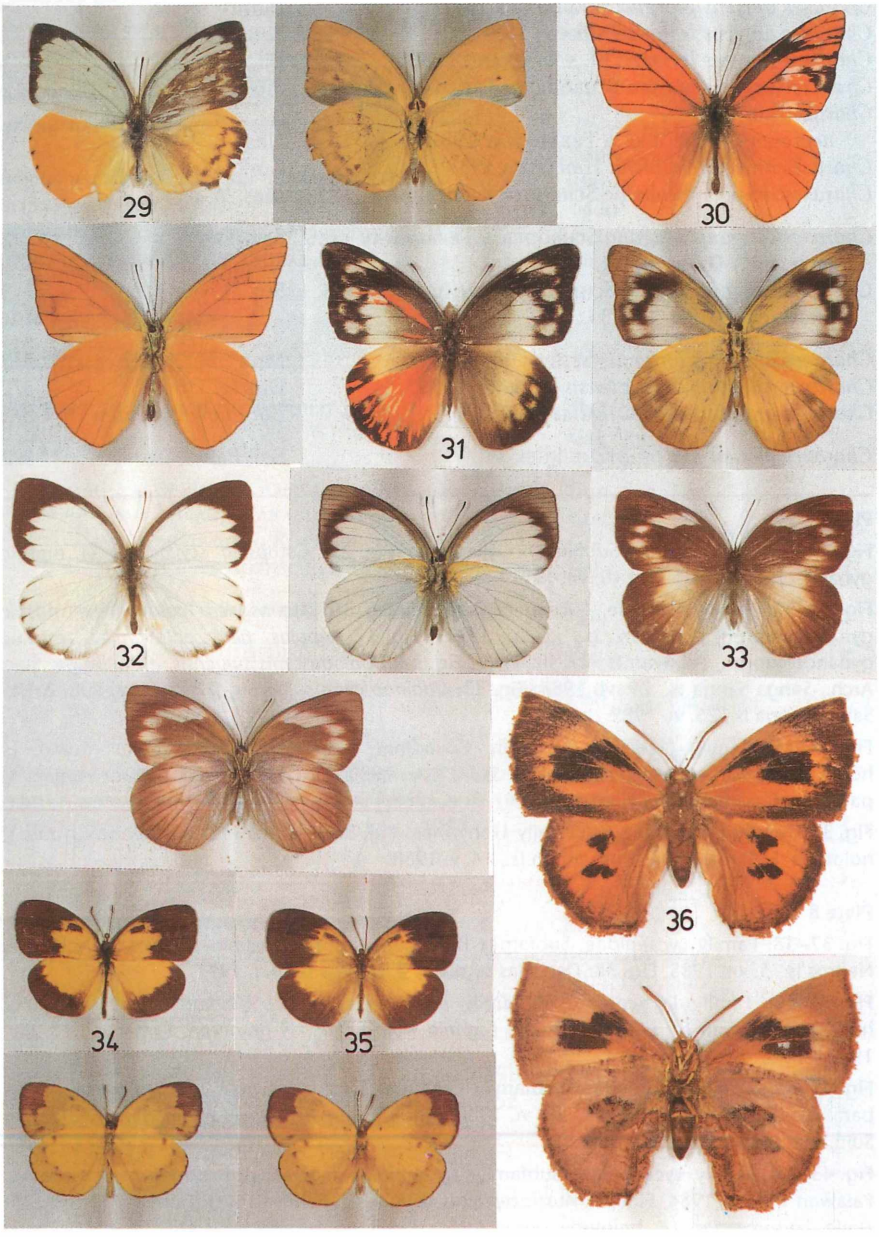
Plate 8

Fig. 37–38: Family Lycaenidae, Subfamily Poritiinae: **Fig. 37:** *Deramas sumikat,* ♂ holotype, Negros Is., 5. XII. 1985. **Fig. 38:** Deramas sumikat, ♀, Negros Is., 9. I. 1991.

Fig. 39–40: Family Lycaenidae, Subfamily Miletinae: **Fig. 39:** *Allotinus apries ristus,* ♂ holotype, Palawan Is., I. 1981. **Fig. 40:** *Logania waltraudae,* ♂ holotype, Samar Is., 18. VIII. 1980.

Fig. 41–42: Family Lycaenidae, Subfamily Curetinae: **Fig. 41:** *Curetis tagalica takanamii,* ♂ paratype, Sulu Arch., Sibutu Is., 27. VI. 1988. **Fig. 42:** *Curetis tagalica takanamii,* ♀ holotype, Sulu Arch., Sibutu Is., 27. VI. 1988.

Fig. 43–48: Family Lycaenidae, Subfamily Lycaeninae: **Fig. 43:** *Austrozephyrus reginae,* ♂, Palawan Is., VIII. 1984. **Fig. 44:** *Austrozephyrus reginae,* ♀, Palawan Is., 31. VII. 1983. **Fig. 45:** *Drina borromeorum,* ♂ holotype, Sulu Arch., Tawitawi Is., 16. III. 1991. **Fig. 46:** *Drina borromeorum,* ♀ paratype, Sulu Arch., Tawitawi Is., 15. III. 1991. **Fig. 47:** *Drupadia hayashii,* ♂ holotype, Sulu Arch., Sibutu Is., 27. VI. 1988. **Fig. 48:** *Drupadia hayashii,* ♀ paratype, Sulu Arch., Sibutu Is., 13. II. 1989.



Charaxes plateni latifascia Schröder, Treadaway & Nuyda 1991	Cal	1
Charaxes bupalus bupalus Staudinger 1889	Pal	** 3/1
Charaxes bupalus rowelii Schröder & Treadaway 1993	Bal	2
Charaxes harmodius harpagon Staudinger 1889	Cal, Pal	3
Tribe Prothoini		
Prothoe franck aphrodite Fruhstorfer 1900	Bal, Pal	3
Prothoe semperi semperi Honrath 1884	Ley, C- & W-Mno, Pao	3
Prothoe semperi boholensis M. & T. Okano 1989	Boh	3
Prothoe semperi gregalis Tsukada 1991	E-Mno	2
Prothoe semperi samarensis Tsukada 1991	N-Sam	3
Prothoe plateni Semper 1892	S-Luz, Mdo	2
Agatasa chrysodonia chrysodonia Staudinger 1890 = *Agatasa chrysodonia orientalis* Medicielo & Hanafusa 1994 **n. syn.**	Mno, Sam	2
Agatasa chrysodonia heterodonia Semper 1892	Mdo	2
Agatasa chrysodonia luzonensis Schröder & Treadaway 1988	Luz	2
Subfamily Morphinae		
Tribe Amathusiini		
Faunis phaon phaon Erichson 1834	Bab, N- & C-Luz, Mar, Pol	4
Faunis phaon carfinia Fruhstorfer 1911	Gui, S-Luz, Mas, Neg, Pan	4
Faunis phaon leucis C. & R. Felder 1861	Bas, Mno	4
Faunis phaon lurida C. & R. Felder 1867	Mdo	4
Faunis phaon sibuyanensis Aoki & Uémura 1982	Sib	3
Faunis stomphax plateni Staudinger 1889	Bal, Dum, Pal	4
Faunis sappho sappho Semper 1878	Boh	4
Faunis sappho ameinokleia Fruhstorfer 1911	CmM	3
Faunis sappho dinagatensis Aoki & Uémura 1982	Din	3
Faunis sappho kleis Semper 1878	Cts, Ley, Pao, Sam, Sia	4
Taenaris horsfieldi plateni Staudinger 1889	Pal	3
Discophora sondaica semperi Moore 1895	E- & C-Mno	1
Discophora sondaica camdao Schröder & Treadaway 1995	CmM	1
Discophora sondaica samarana Schröder & Treadaway 1995	Sam	1

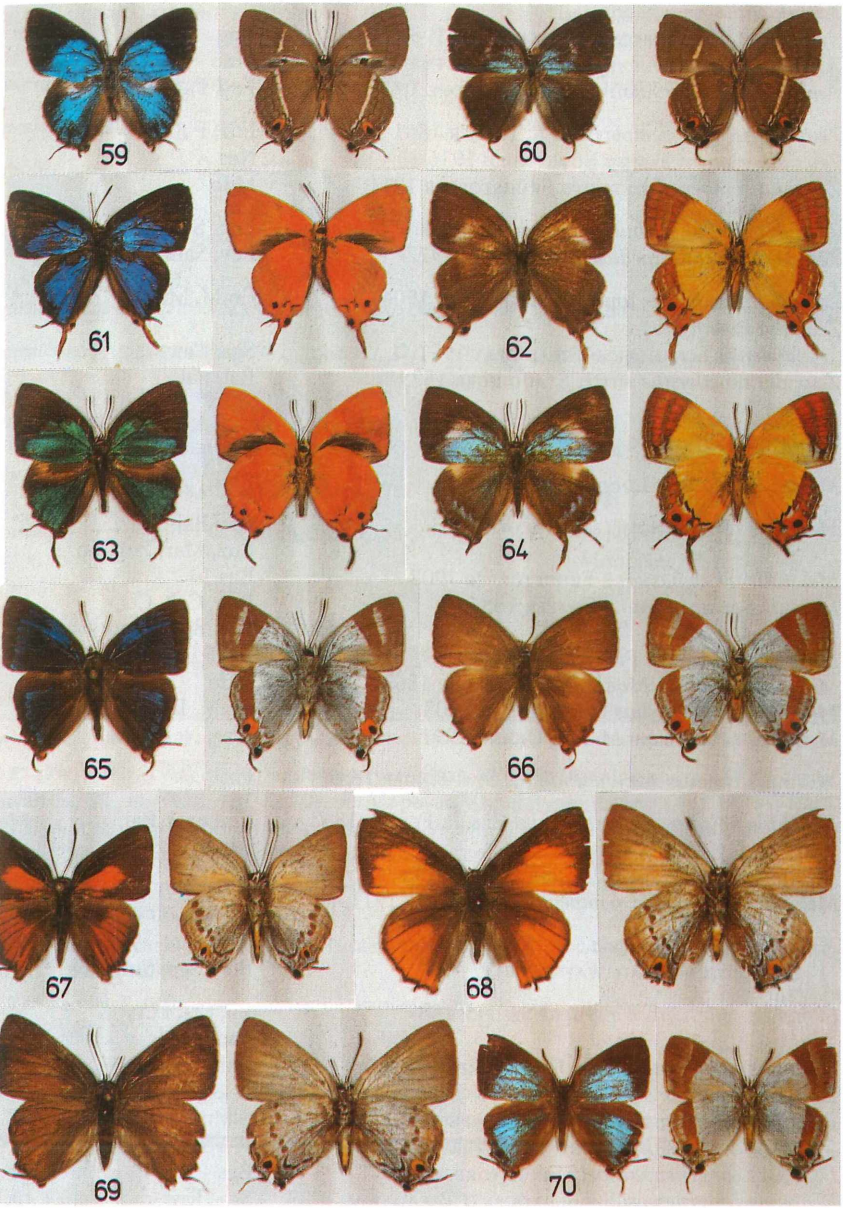
Discophora simplex simplex STAUDINGER 1889	Cal, Pal	2
Discophora necho confluens SCHRÖDER & TREADAWAY 1989	Stu	3
Discophora necho erasimus FRUHSTORFER 1911	Jol, Sga, Taw	3
Discophora necho guyi TREADAWAY & NUYDA 1994	Sib	2
Discophora necho mariebellae NIHIRA, NUYDA & KITAMURA 1994	Pan	2
Discophora necho mindorana FRUHSTORFER 1911	Mdo, Mar	3
Discophora necho odora FRUHSTORFER 1900	Cal, Pal	3
Discophora necho sahi TREADAWAY & NUYDA 1994	Bal	2
Discophora philippina MOORE 1895	Bas, Boh, Ceb, CmM, Cts, Jol, Ley, Mno, Pao, Sam	3
Discophora ogina ogina GODART 1824	Luz, Mar, Mdo, Pol	3
Discophora ogina pulchra NIHIRA 1987	Mas, Neg, Pan	3
Discophora dodong SCHRÖDER & TREADAWAY 1981 ✪ Fig. 16/17	Neg, Pan	3
Amathusia phidippus phidippus LINNAEUS 1763	Bon, Sga, Stu, Taw	3
Amathusia phidippus cebuensis M. & T. OKANO 1986	Ceb	4
Amathusia phidippus negrosensis M. & T. OKANO 1986	Mas, Neg, Pan, Sib	3
Amathusia phidippus pollicaris BUTLER 1870	Phil excl. Bon, Ceb, Mas, Neg, Pan, Sga, Sib, Stu, Taw	4

Plate 9

Fig. 49–58: Family Lycaenidae, Subfamily Lycaeninae :**Fig. 49:** *Cheritra aenea,* ♂, Mindoro Is., 3. v. 1982. **Fig. 50:** *Cheritra aurea aurea,* ♂, Palawan Is., 5. xi. 1980. **Fig. 51:** *Tajuria alangani,* ♂ paratype, Mindoro Is., vii. 1991. **Fig. 52:** *Tajuria alangani,* ♀ paratype, Mindoro Is., 15. viii. 1992. **Fig. 53:** *Matsutaroa iljai,* ♂, Negros Is., 20. vii. 1985. **Fig. 54:** *Matsutaroa iljai,* ♀, paratype, Panay Is., 21. ix. 1977. **Fig. 55:** *Tajuria jalajala steffi,* ♂ holotype, E. Samar Prov., Homonhon Is., 5. iii. 1988. **Fig. 56:** *Tajuria jalajala steffi,* ♀ paratype, E. Samar Prov., Homonhon Is., 3. iv. 1988. **Fig. 57:** *Neocheritra manata gertrudes,* ♂ holotype, Mindanao, iii. 1978. **Fig. 58:** *Neocheritra manata gertrudes,* ♀ paratype, Mindanao, 15. vi. 1976.

Plate 10

Fig. 59–70: Family Lycaenidae, Subfamily Lycaeninae: **Fig. 59:** *Dacalana polyorketes laduanae,* ♂ holotype, E. Samar Prov., Homonhon Is., 16. v. 1988. **Fig. 60:** *Dacalana polyorketes laduanae,* ♀ paratype, E. Samar Prov., Homonhon Is., 5. iv. 1988. **Fig. 61:** *Paruparo violacea,* ♂ holotype, Mindanao Is., iv. 1977. **Fig. 62:** *Paruparo violacea,* ♀, Mindanao Is., i. 1982. **Fig. 63:** *Paruparo lumawigi lumawigi,* ♂, Marinduque Is., viii. 1979. **Fig. 64:** *Paruparo lumawigi lumawigi,* ♀, Marinduque Is., vii. 1979. **Fig. 65:** *Eliotia circumdata* circumdata, ♂ holotype, Marinduque Is., vii. 1979. **Fig. 66:** *Eliotia circumdata circumdata,* ♀, Marinduque Is., v. 1982. **Fig. 67:** *Deudorix philippinensis,* ♂ holotype, Marinduque Is., vi. 1980. **Fig. 68:** *Deudorix philippinensis,* ♀ form A, paratype, Mindanao Is., i. 1979. **Fig. 69:** *Deudorix philippinensis,* ♀ form B, Negros, 12. viii. 1988. **Fig. 70:** *Eliotia australis,* ♀ holotype, W. Mindanao Is., 15. ix. 1989.



Amathuxidia amythaon negrosensis SCHRÖDER & TREADAWAY 1980	Neg	1
Amathuxidia amythaon perinthas FRUHSTORFER 1911	Mno	3
Amathuxidia amythaon philippina MOORE 1895	Ley, Pao, Sam	2
Zeuxidia semperi semperi C. & R. FELDER 1861	Luz, Pol	3
Zeuxidia semperi excelsa ROTHSCHILD 1916	Neg	2
Zeuxidia semperi therionarca FRUHSTORFER 1911	Mdo	2
Zeuxidia sibulana sibulana HONRATH 1884	E- & S-Mno	3
Zeuxidia sibulana medicieloi SCHRÖDER 1977	Ley, Sam	3
Zeuxidia amethystus amethystina STICHEL 1906	CmM, Mno	3
Zeuxidia amethystus tawiensis SCHRÖDER & TREADAWAY 1991 ✪	Sga, Taw	2
Zeuxidia amethystus victrix STAUDINGER 1889	Bal, Pal	3

Subfamily Satyrinae

Melanitis leda leda LINNAEUS 1758	Phil	4
Melanitis atrax atrax C. & R. FELDER 1863	Ala, Bab, Bur, Luz, Mar, Pol, Sib	4
Melanitis atrax bazilana FRUHSTORFER 1908	Bas	2
Melanitis atrax cajetana SEMPER 1886	Boh, Ceb, Cts, Ley, Sam	4
Melanitis atrax elya FRUHSTORFER 1911	Jol, Sga, Stu, Taw	3
Melanitis atrax erichsonia C. & R. FELDER 1863	Mdo	3
Melanitis atrax lucillus FRUHSTORFER 1908	CmM, Din, Mno	4
Melanitis atrax soloni M. & T. OKANO 1991	Mas, Neg, Pan	3
Melanitis zitenius xantophthalmus STAUDINGER 1889	Pal	3
Melanitis boisduvalia boisduvalia C. & R. FELDER 1863	Phil excl. Bal, Bas, Pal, Sul	3
Melanitis boisduvalia palawanica FRUHSTORFER 1908	Bal, Pal	3
Melanitis boisduvalia pompeja FRUHSTORFER 1911	Bas	–
Elymnias nesaea tawicola SCHRÖDER & TREADAWAY 1989 ✪	Bon, Sga, Stu, Taw	3
Elymnias congruens congruens SEMPER 1887	Bil, Cts, Ley, Pao, Sam	4
Elymnias congruens endida FRUHSTORFER 1911	Boh	3
Elymnias congruens jekei SCHRÖDER & TREADAWAY 1989	C- & N-Luz	2
Elymnias congruens phaios FRUHSTORFER 1907	S-Mno	3
Elymnias congruens photinus FRUHSTORFER 1907	N-Mno	3
Elymnias congruens rafaela FRUHSTORFER 1907	Bas	–
Elymnias congruens salipi SCHRÖDER & TREADAWAY 1989	Sga, Taw	2
Elymnias congruens subcongruens SEMPER 1892	S-Luz, Mar, Mdo	3
Elymnias panthera suluana FRUHSTORFER 1899	CagSul	–

Elymnias parce STAUDINGER 1889	Bal, Cal, Dum, S-Mdo, Pal	4
Elymnias dara albofasciata STAUDINGER 1889	Bal, Dum, Pal	3
Elymnias sansoni JUMALON 1975	Ceb, Neg, Pan	4
Elymnias luteofasciata OKUBO 1980	S- & SE-Mno	2
Elymnias melias melias C. & R. FELDER 1863	Bur, C- & S-Luz, Pol	4
Elymnias melias malis SEMPER 1887	N-Luz	4
Elymnias beza beza HEWITSON 1877	Mno	4
Elymnias beza samarana SCHRÖDER & TREADAWAY. 1980	Ley, Sam	2
Elymnias kochi SEMPER 1887 ✪ Fig. 88/89	E-Luz	1
Elymnias casiphonides casiphonides SEMPER 1892	Mno	3
Elymnias casiphonides sanrafaela SCHRÖDER & TREADAWAY 1980	N-Sam	1
Elymnias kanekoi TSUKADA & NISHIYAMA 1980	N-Neg	3
Elymnias esaca egialina C. & R. FELDER 1863	Bab, NE-Luz, Mar, N-Mdo, Neg, Pan	2
Elymnias esaca georgi FRUHSTORFER 1907	Ley, Mno, Sam	2
Neorina lowii princesa STAUDINGER 1889	Bal, Pal	4
Zethera hestioides C. & R. FELDER 1861	Mno	3

Plate 11

Fig. 71–74: Family Lycaenidae, Subfamily Lycaeninae: **Fig. 71:** *Deudorix* apayao, ♂ holotype, Palawan Is., 21. III. 1978. **Fig. 72:** *Deudorix* apayao, ♀ paratype, Palawan Is., 14. III. 1981. **Fig. 73:** *Araotes* perrhaebis, ♂, Mindanao Is., 9. III. 1992. **Fig. 74:** *Tarucus* waterstradti *simillimus*, ♀ holotype, Mindanao Is., 23. IX. 1978.

Fig. 75: Family Riodinidae, Subfamily Riodininae: **Fig. 75:** *Dodona* deodata *malindangensis*, ♂ holotype, Mindanao Is., Misamis Occ., 14. VI. 1987

Fig. 76: Family Lycaenidae, Subfamily Lycaeninae: **Fig. 76:** *Arhopala* tindongani, ♂ paratype, Luzon Is., 12. VII. 1989.

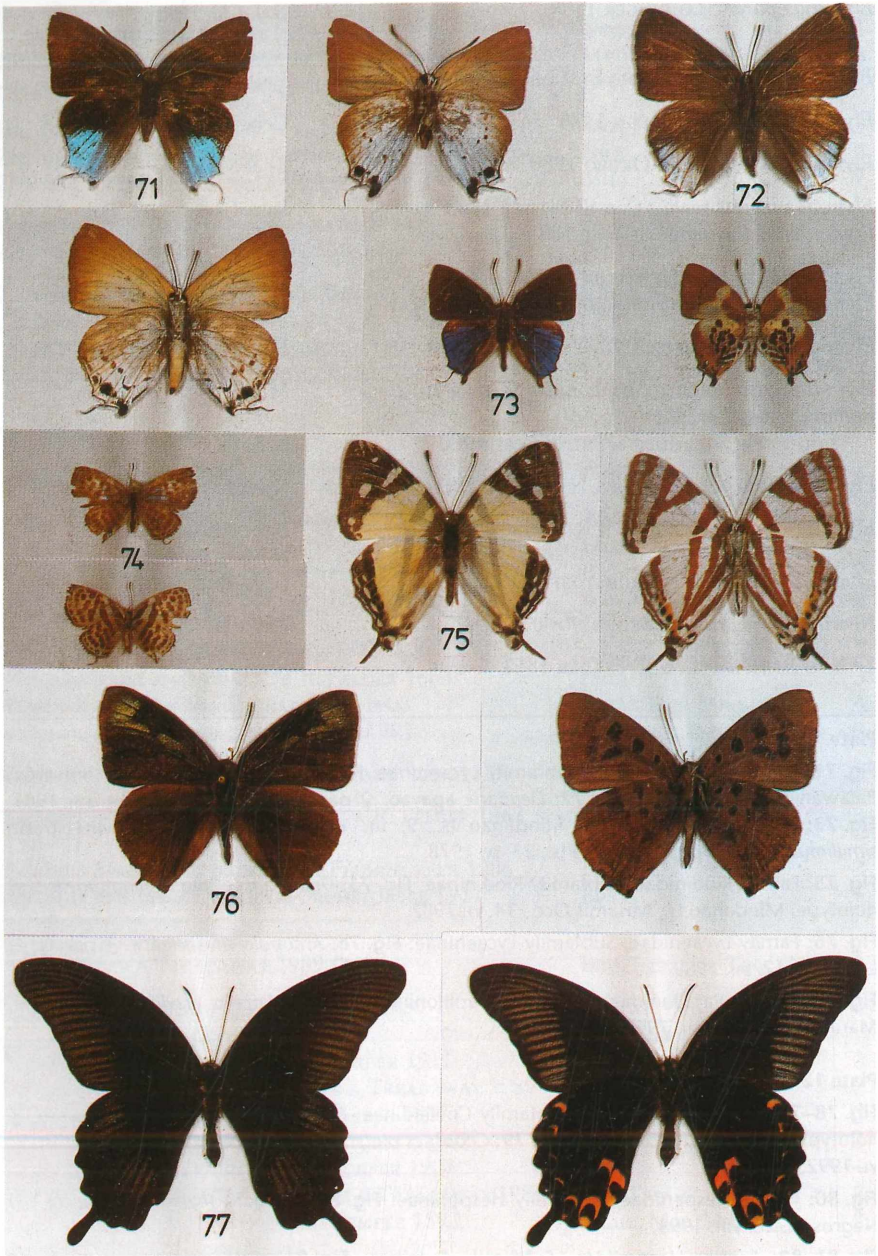
Fig. 77: Family Papilionidae, Subfamily Papilioninae: **Fig. 77:** *Papilio luzviae*, ♂ holotype, Marinduque Is., 1. XII. 1990.

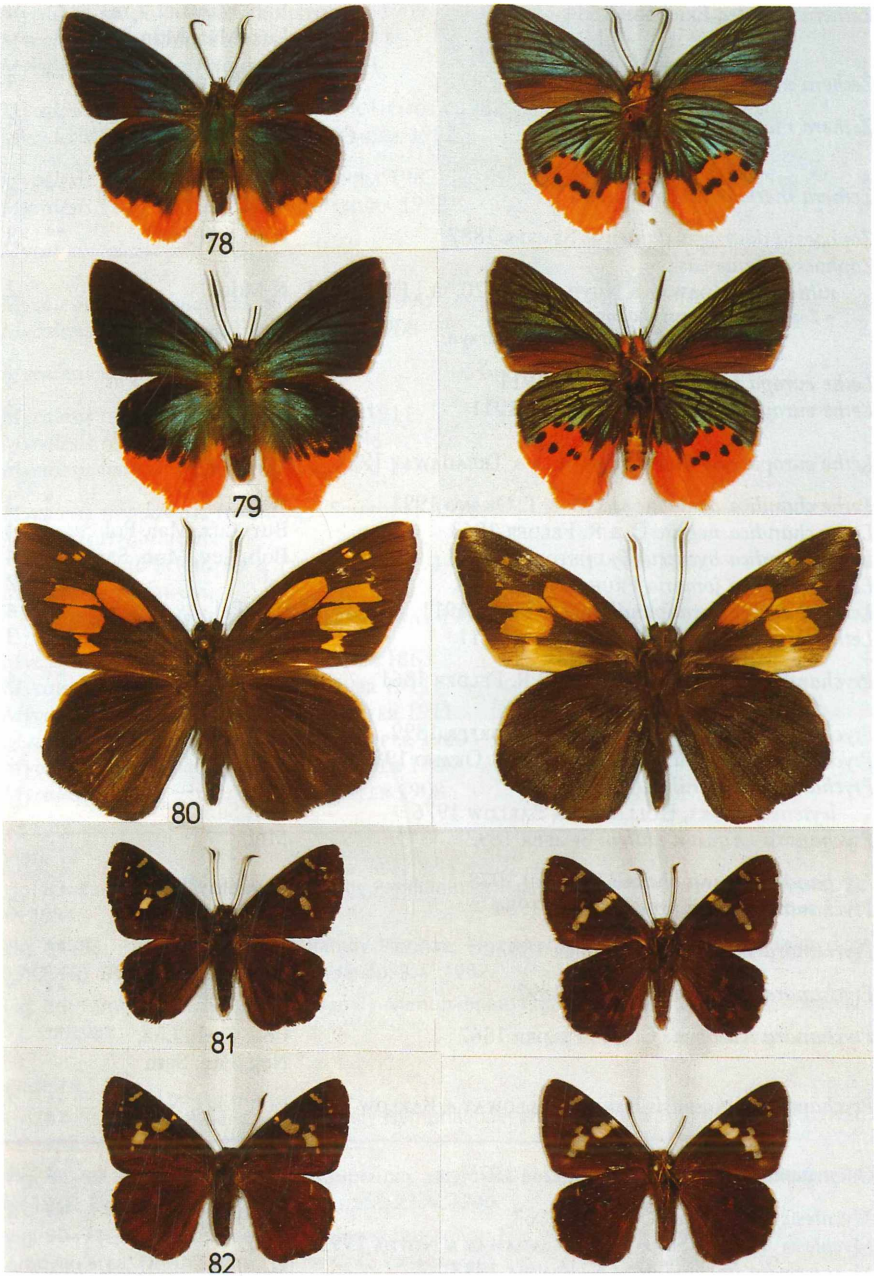
Plate 12

Fig. 78–79: Family Hesperiidae, Subfamily Coeliadinae: **Fig. 78:** *Choaspes plateni negrosa*, ♂ holotype, Negros Is., 10. V. 1990. **Fig. 79:** *Choaspes plateni boreus*, ♀ paratype, Mindoro Is., 3. VI. 1992.

Fig. 80: Family Hesperiidae, Subfamily Hesperiinae: **Fig. 80:** *Gangara thyrsis magnificens*, ♂, Negros Is., 28. VIII. 1993.

Fig. 81–82: Family Hesperiidae, Subfamily Pyrginae: **Fig. 81:** *Celaenorrhinus halconis*, ♂ paratype, Mindoro, 3. VI. 1992. **Fig. 82:** *Celaenorrhinus halconis*, ♀ paratype, Mindoro, 7 II. 1991





Zethera pimplea ERICHSON 1834	Bab, Bur, Cat, CmL, Luz, Mar, Mdo, Pol	4
Zethera musa C. & R. FELDER 1861	Bas, Mno	4
Zethera musides SEMPER 1878	Ceb, Gui, Mas, Neg, Pan, Siq, Tic	4
Zethera thermaea HEWITSON 1877	Boh, Ley, Pao, Sam	4
Zophoessa dataensis dataensis SEMPER 1887	NW- & S-Luz	3
Zophoessa dataensis nihirae TREADAWAY & NUYDA 1993 [20. III.] Fig. 18–20 = *Zophoessa dataensis halcona* YAMAMOTO & TAKEI 1993 [30. III.] **n. syn.**	N-Mdo	2
Lethe europa alaca FRUHSTORFER 1911	Bal, Cal, Dum, Pal	4
Lethe europa cevanna FRUHSTORFER 1911	Phil excl. Bal, Cal, Dum, Pal, Sga, Stu	3
Lethe europa acutefascia SCHRÖDER & TREADAWAY 1991	Sga, Stu	3
Lethe chandica canlaonensis M. & T. OKANO 1991	Neg	3
Lethe chandica negrito C. & R. FELDER 1863	Bur, Luz, Mar, Pol	4
Lethe chandica byzaccus FRUHSTORFER 1911	Boh, Ley, Mno, Sam	4
Lethe chandica jomaria FRUHSTORFER 1911	Jol	2
Lethe chandica ratnapandi FRUHSTORFER 1911	Cal, Pal	4
Lethe chandica sisapon FRUHSTORFER 1911	Mdo	3
Ptychandra lorquinii lorquinii C. & R. FELDER 1861	CmL, Luz, Mar, Mdo, Pol	4
Ptychandra lorquinii bazilana FRUHSTORFER 1899	Bas	–
Ptychandra lorquinii boholensis M. & T. OKANO 1989	Boh	2
Ptychandra lorquinii leytensis BANKS, HOLLOWAY & BARLOW 1976	Ley, Sam	4
Ptychandra lorquinii plateni SEMPER 1892	Mno	3
Ptychandra ohtanii ohtanii HAYASHI 1978	S-Mno (Mt. Apo)	2
Ptychandra ohtanii lizae HAYASHI 1984	Ley	2
Ptychandra schadenbergi SEMPER 1887	Mno	3
Ptychandra mindorana SEMPER 1892	Mar, Mdo	3
Ptychandra leucogyne C. & R. FELDER 1867	Ceb, CmL, Luz, Neg, Pan, Sam	3
Ptychandra negrosensis BANKS, HOLLOWAY & BARLOW 1976	Boh, Mas, Neg, W-Pan	3
Orsotriaena medus medus FABRICIUS 1775	Phil	4
Mycalesis ita ita C. & R. FELDER 1863	Ala, Luz, Mar	4
Mycalesis ita jmeli SCHRÖDER, TREADAWAY & NUYDA 1991	CmL	3
Mycalesis ita imeldae AOKI & UÉMURA 1982	Mno	4
Mycalesis ita maitim AOKI & UÉMURA 1982	Boh, Ley, Sam	3

Mycalesis ita palawensis FRUHSTORFER 1909	Pal	2
Mycalesis ita sinonia FRUHSTORFER 1911	Mdo	3
Mycalesis ita teatus FRUHSTORFER 1911	Gui, Neg, Pan	4
Mycalesis kashiwaii kashiwaii AOKI & UÉMURA 1982	Mdo	2
Mycalesis kashiwaii pula AOKI & UÉMURA 1982	Luz, Mar	2
Mycalesis georgi georgi AOKI & UÉMURA 1982	C- & S-Luz, Mar, Neg **	4
Mycalesis georgi ilocano AOKI & UÉMURA 1982	N-Luz	2
Mycalesis felderi felderi BUTLER 1868	Bas, Ceb, Din, Ley, Mno, Sam, Sia	3
Mycalesis felderi bilara M. & T. OKANO 1990	Boh	2
Mycalesis felderi jolana FRUHSTORFER 1908	Jol, Sga, Taw	2
Mycalesis kurosawai KASHIWAI 1986	Sib	2
Mycalesis teatus teatus FRUHSTORFER 1911	Gui, Mas, Neg, Pan	3
Mycalesis teatus ardens KASHIWAI 1986	Tab	1
Mycalesis teatus romblonana KASHIWAI 1986	Rom	2
Mycalesis treadawayi treadawayi SCHRÖDER 1976	N-Mno	3
Mycalesis treadawayi cotabatana SCHRÖDER & TREADAWAY 1991	E- & S-Mno	4
Mycalesis treadawayi malindangensis SCHRÖDER & TREADAWAY 1991	NW-Mno	2
Mycalesis tagala tagala C. & R. FELDER 1863	Bur, Luz, Mar	4
Mycalesis tagala hernica FRUHSTORFER 1911	Jol	1
Mycalesis tagala mataurus FRUHSTORFER 1911	Gui, Neg, Pan	3
Mycalesis tagala mindorana FRUHSTORFER 1900	Mdo	3
Mycalesis tagala palawana FRUHSTORFER 1908	Bal, Pal	3
Mycalesis tagala semirasa FRUHSTORFER 1908	Bas, Mno	3

Plate 13

Fig. **83:** Family Papilionidae, Subfamily Papilioninae: **Fig. 83:** *Papilio hermeli,* ♀, Mindoro, 22. IV. 1994.

Fig. **84–85:** Family Pieridae, Subfamily Pierinae: **Fig. 84:** *Delias ottonia,* ♂, Mindanao, 3. v. 1982. **Fig. 85:** *Delias ottonia,* ♀, Mindanao, 3. v. 1982.

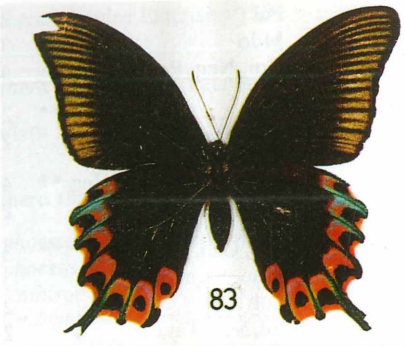
Fig. **86:** Family Nymphalidae, Subfamily Nymphalinae: **Fig. 86:** *Euthalia tanagra,* ♀, Palawan, 14. VII. 1988.

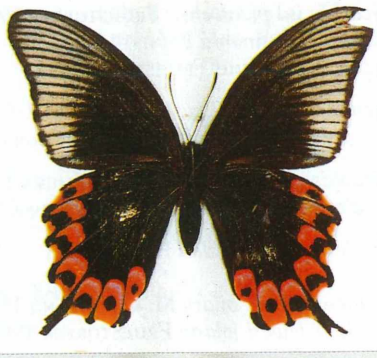
Plate 14

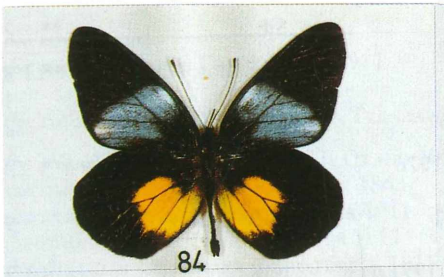
Fig. **87:** Family Nymphalidae, Subfamily Nymphalinae: **Fig. 87:** *Euthalia tanagra,* ♂, Palawan, 1982.

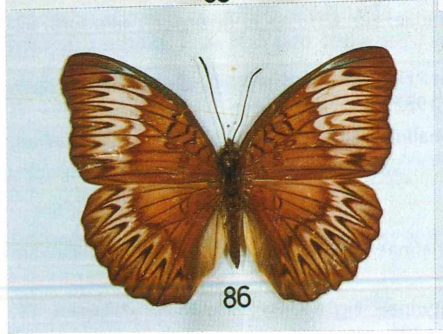
Fig. **88–89:** Family Nymphalidae, Subfamily Satyrinae: **Fig. 88:** *Elymnias kochi,* ♂, Luzon, 16. VI. 1988. **Fig. 89:** *Elymnias kochi,* ♀, Luzon, 23. v. 1990.

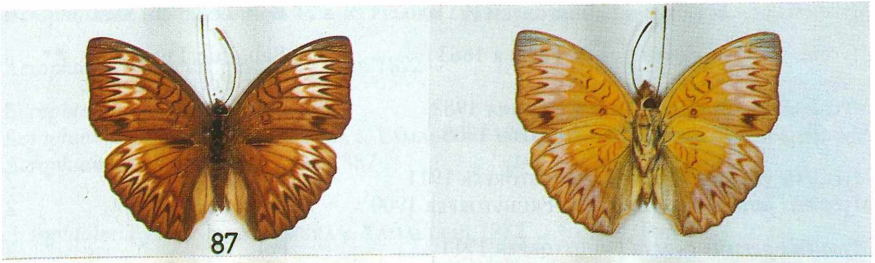
Fig. **90–91:** Two typical habitats of forest butterflies: **Fig. 90:** Primary forest over 1000 m: Mt. Amuyao area, North Luzon (photo C. G. TREADAWAY). **Fig. 91:** Mt. Canlaon, Negros (2438 m) showing lower forest elimination for agriculture and upper mountain forest destruction through volcanic action (photo C. G. TREADAWAY).











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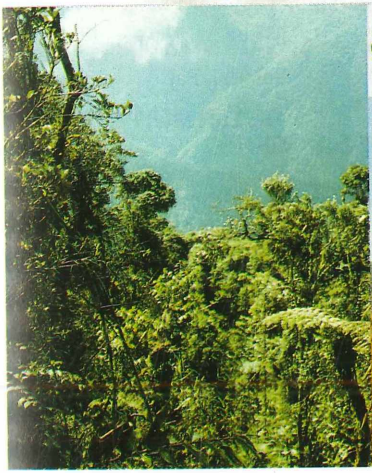

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Mycalesis tagala venostes FRUHSTORFER 1911	Boh, Ley, Pao, Sam	4
Mycalesis bisaya bisaya C. & R. FELDER 1863	Bab, Bur, Luz, Mar, Pol	3
Mycalesis bisaya baboy AOKI & UÉMURA 1982	Ley	3
Mycalesis bisaya samina FRUHSTORFER 1908	Mdo	2
Mycalesis janardana circella FRUHSTORFER 1911	Boh, Ley, Pao	2
Mycalesis janardana micromede FRUHSTORFER 1900	Bas, Mno	2
Mycalesis perseus acarya FRUHSTORFER 1911	Pal	3
Mycalesis perseus caesonia WALLENGREN 1860	Boh, Ceb, Ley, Luz, Mdo, Mno, Neg, Pan	3
Mycalesis mineus philippina MOORE 1892	Ala, Boh, Cts, Cuy,Gui, Luz, Mdo, Neg, Pal	3
Mycalesis horsfieldi leucinoe FRUHSTORFER 1908	Jol, Pal	1
Mycalesis igoleta igoleta C. & R. FELDER 1863	Ala, Bab, Ley, Luz, Mar, Sam	4
Mycalesis igoleta mangyan AOKI & UÉMURA 1982	Mdo	1
Mycalesis igoleta negrosensis AOKI & UÉMURA 1982	Boh, Gui, Neg, Pan, Rom	3
Mycalesis frederici AOKI & UÉMURA 1982	Boh, CmM, Ley, Mno, Sam, Sia	3
Mycalesis tamarau AOKI & UÉMURA 1982	Mdo	1
Mycalesis orseis flavotincta STAUDINGER 1889	Bal, Pal	3
Mycalesis aramis HEWITSON 1866	N-Luz	2
Erites argentina ochreana STAUDINGER 1889	Bal, Cal, Pal	3
Ragadia luzonia luzonia C. & R. FELDER 1861	Ala, Luz, Mar, Pol	4
Ragadia luzonia luteofasciata YAMAGUCHI & AOKI 1982	Sib	3
Ragadia luzonia masbatensis YAMAGUCHI & AOKI 1982	Mas	3
Ragadia luzonia negrosensis YAMAGUCHI & AOKI 1982	Neg	3
Ragadia luzonia obscura YAMAGUCHI & AOKI 1982	Cat	2
Ragadia luzonia treadawayi YAMAGUCHI & AOKI 1982	W-Pan	4
Ragadia crohonica SEMPER 1886	Ley, Pao, Sam	4
Ragadia maganda YAMAGUCHI & AOKI 1982	Pal	2
Ragadia tsukadai YAMAGUCHI & AOKI 1982	Pal	2
Ragadia mindorana SEMPER 1892	Mdo	3
Ragadia melindena melindena C. & R. FELDER 1863	CmM, Mno, Sar	3
Ragadia melindena boholensis M. & T. OKANO 1990	Boh	2
Ragadia melindena kakahuyan YAMAGUCHI & AOKI 1982	Ley, Sam	3

Acrophtalmia artemis artemis C. & R. Felder 1861	Bab, Cat, Luz, Mar, Mas	4
Acrophtalmia artemis misarte Semper 1892	Mdo	3
Acrophtalmia leto leto Semper 1887	Boh	3
Acrophtalmia leto leytensis Uémura & Yamaguchi 1982	N-Ley	3
Acrophtalmia leto ochine Semper 1887	Bas, Din, C/S-Ley, Mno, Pao, Sam, Sia	4
Acrophtalmia yamashitai Uémura & Yamaguchi 1982	Neg, Pan	3
Acrophtalmia albofasciata Uémura & Yamaguchi 1982	C- & S-Mno	3
Acrophtalmia luzonica Uémura 1992	N-Luz	2
Ypthima baldus selinuntius Fruhstorfer 1911	Bal, Pal	3
Ypthima stellera stellera Eschscholtz 1821	Bas, Boh, Ceb, Cts, Luz, Ley, Mar, Mdo, Mno, Neg, Pan, Pao, Rom, Sam, Sia	4
Ypthima stellera galeria Fruhstorfer 1911	Bal, Cal, Pal	4
Ypthima norma aei Shirôzu & Shima 1977	N-Luz	3
Ypthima sempera sempera C. & R. Felder 1863	Ala, Boh, Cts, Gui, Ley, Luz, Mar, Mas,Mdo, Neg, Pan, Pao, Sam	4
Ypthima sempera aquillius Fruhstorfer 1911	Bal, Cal, Cuy, Pal	3
Ypthima sempera calanus Fruhstorfer 1911	Jol, Sga, Stu, Taw	3
Ypthima sempera chaboras Fruhstorfer 1911	CmM, Bas, Mno, Sar	3
Ypthima sensilis Kashiwai 1982	Mno	2

Subfamily Danainae

Tribe Danaini

Parantica aspasia cerilla Fruhstorfer 1911	Bal, Cal, Pal	3
Parantica aspasia flymbra Fruhstorfer 1911	Dum	2
Parantica vitrina vitrina C. & R. Felder 1861	Luz, Mar, Mdo	4
Parantica vitrina oenone Butler 1865	Boh, Ceb, Ley, Mno, Neg, Pan, Sam	4
Parantica phyle C. & R. Felder 1863	N-Luz	4
Parantica milagros milagros Schröder & Treadaway 1980	SE-Luz	3
Parantica milagros fideli Treadaway & Nuyda 1993	N-Mdo	3
Parantica luzonensis luzonensis C. & R. Felder 1863 Fig. 23	Phil excl. Bal, Pal	4
Parantica luzonensis simonides Fruhstorfer 1911	Bal, Pal	4

Parantica schoenigi JUMALON 1971	Mno	2
Parantica sita oblita TSUKADA & NISHIYAMA 1980	S-Pal	2
Parantica sita santomasi SCHRÖDER & TREADAWAY 1982	Bab, N-Luz	2
Parantica davidi SCHRÖDER 1976	N-Neg	2
Parantica dannatti dannatti TALBOT 1936	S-Mno (Mt. Apo)	3
Parantica dannatti diuataensis TAKEI & YAMAMOTO 1979	N/NE-Mno	3
Parantica dannatti malindangensis YAMAMOTO & TAKEI 1980	NW-Mno (Mt. Malindang)	3
Parantica dannatti reyesi SCHRÖDER & TREADAWAY 1984	S-Mno (Mt. Parker)	2
Parantica noeli TREADAWAY & NUYDA 1993 ✪ Fig. 21/22	N-Mdo (Mt. Halcon) **	1
Ideopsis vulgaris palawana STAUDINGER 1889	Bal, Cal, Dum, Pal	4
Ideopsis juventa kinitis FRUHSTORFER 1904	Bal, Cal, Pal	4
Ideopsis juventa luzonica MOORE 1883	Bab	–
Ideopsis juventa manillana MOORE 1883	Phil excl. Bab, Bal, Cal, Pal, Sul	4
Ideopsis juventa suluana TALBOT 1943	Bon, Jol, Sga, Sis, Stu, Taw	4
Ideopsis gaura anapina SEMPER 1892	Ley, Mdo, Sam	3
Ideopsis gaura anapis C. FELDER 1861	Luz (excl. NE-Luz), Mar	3
Ideopsis gaura bracara FRUHSTORFER 1910	NE-Luz	3
Ideopsis gaura canlaonii JUMALON 1971	Neg	3
Ideopsis gaura glaphyra MOORE 1883	Mno excl. E/S/SE-Mno	3
Ideopsis gaura messala FRUHSTORFER 1910	E-Mno	3
Ideopsis gaura palawana FRUHSTORFER 1910	Cal, Pal	3
Ideopsis gaura panayana SCHRÖDER & TREADAWAY 1984	Pan	3
Ideopsis gaura pellucida TALBOT 1940	S/SE-Mno	3
Tirumala septentrionis palawana FRUHSTORFER 1899	Pal, Pan	4
Tirumala septentrionis suanetes FRUHSTORFER 1911	Bal	3
Tirumala septentrionis valentia FRUHSTORFER 1911	S- & SE-Mno	4
Tirumala hamata nephthys FRUHSTORFER 1911	Jol, Sga, Stu, Taw	2
Tirumala hamata orientalis SEMPER 1879	Phil excl. Cuy, Cts, Jol, Sga, Stu, Taw	4
Tirumala hamata pelagia FRUHSTORFER 1911	Cuy	–
Tirumala hamata tibula FRUHSTORFER 1911	Cts	–
Tirumala limniace orestilla FRUHSTORFER 1910	Luz, Mar, Mas, Mdo, Neg, Pan	4
Tirumala limniace tumanana SEMPER 1886	S-Mno, Sar	2
Tirumala ishmoides sontinus FRUHSTORFER 1911	Luz, Mar, Mas, Mdo, Neg, Rom	3
Tirumala ishmoides strymon FRUHSTORFER 1911	Boh, Ceb, Mno	3
Tirumala ishmoides vetus TALBOT 1943	Jol, Sis	2
Danaus chrysippus chrysippus LINNAEUS 1758	Phil	4

Danaus melanippus edmondii LESSON 1837	Phil excl. Bal	4
Danaus melanippus mezentius FRUHSTORFER 1910	Bal	3
Danaus affinis abigar ESCHSCHOLTZ 1821	Luz, Mar, Mdo	3
Danaus genutia genutia CRAMER 1779	Bal, Pal	3
Danaus genutia adnana SWINHOE 1917	Phil excl. Pal	4

Tribe Euploeini

Euploea blossomae blossomae SCHAUS 1929	N-Luz	3
Euploea blossomae corazonae SCHRÖDER 1977	Neg, Pan	3
Euploea blossomae escapardae MORISHITA 1974	S-Pal	3
Euploea blossomae hilongensis YAMAMOTO & TAKEI 1992	NE-Mno	2
Euploea blossomae sibulanensis JUMALON 1971	Mno excl. NE	3
Euploea blossomae tamaraw NUYDA & MORIMOTO 1991	N-Mdo (Mt. Halcon)	2
Euploea tobleri tobleri SEMPER 1878	N- & C-Luz	3
Euploea tobleri inouei OSADA & HASHIMOTO 1982	N-Neg	2
Euploea tobleri lasamasamai TREADAWAY & NUYDA 1994	Din, Hom	3
Euploea tobleri mangyan YAMAMOTO & TAKEI 1988	Mdo	2
Euploea tobleri peducaea FRUHSTORFER 1911	Bas	1
Euploea tobleri romeo SCHRÖDER & TREADAWAY 1978	Cat, S-Luz	1
Euploea tobleri silmae SCHRÖDER & TREADAWAY 1978	Boh, Ley, Sam	3
Euploea tobleri snelleni MOORE 1883	Mno	3
Euploea tobleri yoshioi NUYDA & KAWAMURA 1989	CmL	2
Euploea camaralzeman claudina STAUDINGER 1889	Cal, Pal	3
Euploea camaralzeman cratis BUTLER 1866	Bab, N-Luz	3
Euploea eyndhovii distinctissima FRUHSTORFER 1911	Bal, Pal	3
Euploea algea cyllene STAUDINGER 1889	Bal, Pal	3
Euploea swainson swainson GODART 1823	Cat, NE-, C- & S-Luz, Mar, Sib	4
Euploea swainson butra STAUDINGER 1889	Cal, Pal	4
Euploea swainson donovani C. & R. FELDER 1865	Mno	3
Euploea swainson duplex HULSTAERT 1931	Bas	–
Euploea swainson jadiva FRUHSTORFER 1911	Bal	3
Euploea swainson panayensis SCHRÖDER & TREADAWAY 1983	Pan	2
Euploea swainson suluana MOORE 1883	Bon, Jol, Sga, Stu, Taw	3
Euploea sylvester bazilana FRUHSTORFER 1900	Bas	3
Euploea sylvester dotata FRUHSTORFER 1900	Bal, Cal, Dum, Pal	3
Euploea sylvester laetifica BUTLER 1866	Ceb, CmL, Ley, Luz, Mar, Mdo, Mno, Neg, Sam, Sib	3
Euploea sylvester schoenigi SCHRÖDER & TREADAWAY 1983	Pan	2
Euploea sylvester tyrianthina MOORE 1883	Jol, Sga, Stu, Taw	3
Euploea mulciber barsine FRUHSTORFER 1904	Bat	3

Euploea mulciber cebuensis M. & T. Okano 1986	Ceb	4
Euploea mulciber dinagatensis Tsukada & Nishiyama 1979	Din	4
Euploea mulciber dufresne Godart 1823 ✪	Luz, Pol	4
Euploea mulciber guimarasensis M. & T. Okano 1990	Gui	2
Euploea mulciber kochi Moore 1883	Neg	4
Euploea mulciber masbatensis Schröder & Treadaway 1978	Mas, Pan	4
Euploea mulciber mindanensis Staudinger 1885	Mno	4
Euploea mulciber paupera Staudinger 1889	Bal, Cal, Dum, Pal	4
Euploea mulciber portia Fruhstorfer 1904 ✪	Stu	1
Euploea mulciber semperi C. & R. Felder 1865	Mdo	4
Euploea mulciber seraphita Fruhstorfer 1900	Bas, Jol	3
Euploea mulciber subvisaya Schröder 1977	Mar	3
Euploea mulciber tawitawiensis Hashimoto 1986 ✪	Sga, Taw	3
Euploea mulciber ticaoana Schröder & Treadaway 1981	Tic	3
Euploea mulciber triggia Schröder 1977	Sib	3
Euploea mulciber visaya Semper 1886 ✪	Boh, Cts, Ley, Pao, Sam	4
Euploea tulliolus aristotelis Moore 1883	Bon, Jol	3
Euploea tulliolus monilina Fruhstorfer 1910	Bas, SW-Mno	4
Euploea tulliolus palawana Fruhstorfer 1900	Bal, Cal, Cuy, Dum, S-Mdo, Pal, W-Pan	4
Euploea tulliolus pollita Erichson 1834	Bab, Boh, Ceb, CmM, Cts, Din, Gui, Ley, Luz, Mar, Mas, C- & N-Mdo, Mno (excl. SW), Neg, Pao, Sam, Sib, Tic	4
Euploea phaenareta althaea Semper 1878	Din, E- & C-Mno, Pao	2
Euploea phaenareta grandis Moore 1883	Jol	–
Euploea phaenareta lornae Schröder & Treadaway 1979	Hom, Sam	2
Euploea phaenareta margaretae Schröder & Treadaway 1988	CmL, Luz, Pol	2
Euploea phaenareta salvini Staudinger 1889	Bal, Pal	3
Euploea eunice eunice Godart 1819	Phil excl. Bal, Cal, Pal	4
Euploea eunice syra Fruhstorfer 1901	Bal, Cal, Pal	4
Euploea midamus absitus Hashimoto 1986	Sga, Stu, Taw	3
Euploea midamus clorinde Staudinger 1889	Bal, Cal, Pal	4
Euploea midamus cornificia Fruhstorfer 1910	Mdo	2
Euploea midamus hypaspistes Fruhstorfer 1910	Bas	–
Euploea midamus meldolae Moore 1883	Boh, CmM, Ley, Mno, Pan, Sam	2
Euploea midamus simillima Moore 1883	Cat, Luz	3
Idea stolli hypata Fruhstorfer 1910	Jol	1
Idea electra electra Semper 1878	N/NE/C/NW-Mno	3
Idea electra harmonia Fruhstorfer 1910	SE-Mno	1
Idea leuconoe leuconoe Erichson 1834 Fig. 24	Ala, Luz	4

Idea leuconoe athesis FRUHSTORFER 1911	Pol	2
Idea leuconoe esanga FRUHSTORFER 1898	Sar	3
Idea leuconoe gamaoi JUMALON 1975	Ceb	3
Idea leuconoe gordita FRUHSTORFER 1911	Mar, Mdo, Rom, Sib	3
Idea leuconoe nigriana GROSE-SMITH 1895	Bal, Stu, Taw	4
Idea leuconoe obscura STAUDINGER 1889	Bas, Boh, Din, Hom, C- & S-Ley, Mas, Mno, Neg, Pan, Sia	4
Idea leuconoe princesa STAUDINGER 1889	Pal	4
Idea leuconoe samara FRUHSTORFER 1910	N-Ley, Sam	4
Idea leuconoe solyma FRUHSTORFER 1910	CmL	4

Subfamily Libytheinae

Libythea myrrha iwanagai HAYASHI 1976	Pal	1
Libythea narina luzonica MOORE 1901	Luz, N-Mdo, Pal	3
Libythea geoffroy bardas FRUHSTORFER 1914	Ceb, Luz, Mar, Mdo	4
Libythea geoffroy philippina STAUDINGER 1889 ✪ Fig. 25/26	Boh, CmM, Mno, Pal, Pan, Pao, Stu, Taw	4

Family Lycaenidae

Subfamily Poritiinae

Tribe Poritiini

Cyaniriodes libna miotsukushi HAYASHI 1976	Pal	2
Cyaniriodes libna samarana SCHRÖDER & TREADAWAY 1994	Sam	1
Cyaniriodes libna tawicolana SCHRÖDER & TREADAWAY 1994	Taw	1
Cyaniriodes siraspiorum SCHRÖDER & TREADAWAY 1976 = *Cyaniriodes siraspiorum leyte* MEDICIELO 1993 **n. syn.**	Ley, Luz, E-Mno, Sam	2
Poritia philota glennuydai SCHRÖDER & TREADAWAY 1989	CW-Luz	3
Poritia philota mindora OSADA 1994	Mdo	4
Poritia philota phare DRUCE 1895 = *Poritia philota sugimotoi* HAYASHI 1978 (syn.)	Boh, Din, Ley, Mno, Neg, Pao, Sam	4
Poritia talophi HAYASHI, SCHRÖDER & TREADAWAY 1984	Boh, Ley, Mno, Sam	2
Poritia erycinoides kinoshitai HAYASHI 1976	Pal	2
Poritia hewitsoni solitaria SCHRÖDER & TREADAWAY 1989	C-Luz	1
Poritia phama palawana OSADA 1994	Pal	2
Poritia plateni STAUDINGER 1889	Pal	3

Poritia languana SCHRÖDER & TREADAWAY 1986	Pal	3
Simiskina phalena hayashii SCHRÖDER & TREADAWAY 1979	Boh, Ley, Mno	3
Simiskina phalena howarthi HAYASHI 1976	Pal	3
Simiskina phalena ilagana OSADA & HASHIMOTO 1987	NE-Luz	2
Simiskina phalia morishitai HAYASHI 1976	S-Pal	2
Simiskina pasira pasira MOULTON 1911	Pal	1
Simiskina pasira semperi FRUHSTORFER 1919	CmM	–
Poriskina phakos DRUCE 1895	Luz, Mno, Sam	2
Deramas bidotata FRUHSTORFER 1914 = *Deramas philippinensis* HAYASHI 1981 (syn.)	CmL, Luz, Mar, Mdo **	3
Deramas evelynae evelynae SCHRÖDER & TREADAWAY 1978 = *Deramas kawazoei* HAYASHI 1981 (syn.)	S-Luz, Mar	1
Deramas evelynae nahomiae TAKANAMI 1985	N-Neg	2
Deramas evelynae tsuiso TAKANAMI 1987	Mdo	2
Deramas ikedai HAYASHI 1978	S-Mno (Mt. Apo)	2
Deramas mindanensis ELIOT 1964	Mno	2
Deramas nelvis manobo SCHRÖDER & TREADAWAY 1978	S-Mno (Mt. Apo)	4
Deramas livens montana SCHRÖDER & TREADAWAY 1978	N-Mno (Mt. Kitanlad) *	4
Deramas sumikat SCHRÖDER & TREADAWAY 1986 ✪ Fig. 37/38	S-Neg	1
Deramas tomokoae HAYASHI 1978	Ley, Mno	2
Deramas toshikoae HAYASHI 1981	Ley	2
Deramas treadawayi HAYASHI 1981	S-Mno (Mt. Apo)	2
Subfamily Liphyrinae		
Tribe Liphyrini		
Liphyra brassolis hermelnuydae SCHRÖDER & TREADAWAY 1988 ✪ Fig. 36	Hom	1
Liphyra brassolis justini SCHRÖDER & TREADAWAY 1988	E-Luz	1
Subfamily Miletinae		
Tribe Miletini		
Allotinus fallax fallax C. & R. FELDER 1865	Boh, Ceb, Ley, Luz, Mar, Mas, Mdo, Pan, Sam, Sib	4

Allotinus fallax aphacus FRUHSTORFER 1913	CmM, Din, Hom, Mno, Pao	4
Allotinus fallax eryximachus FRUHSTORFER 1913	Mdo	2
Allotinus fallax dotion FRUHSTORFER 1913	Bas	1
Allotinus fallax tymphrestus FRUHSTORFER 1916	Jol, Stu, Taw	2
Allotinus subviolaceus subviolaceus C. & R. FELDER 1865	Cal, Luz, Mno, Pal, Stu *	3
Allotinus punctatus SEMPER 1889	Mno	4
Allotinus nigritus SEMPER 1889	Mno	2
Allotinus kudaratus TAKANAMI 1990	S-Mno (Mt. Apo)	1
Allotinus sarrastes FRUHSTORFER 1913	NE-Mno (Surigao)	1
Allotinus melos DRUCE 1896	Bal, CagSul, Ley, Mno, Pal, Pan	3
Allotinus samarensis samarensis ELIOT 1986	Ley, Mno, Sam	2
Allotinus luzonensis ELIOT 1967	Luz	2
Allotinus albatus mendax ELIOT 1986	Luz, Mar, Sam	3
Allotinus apries ristus ELIOT 1986 Fig. 39	Pal	3
Allotinus corbeti Eliot 1956	Mno	2
Allotinus unicolor georgius FRUHSTORFER 1913	Boh, Mdo, Sga, Taw	2
Allotinus nivalis felderi SEMPER 1889	Hom, Ley, Luz, Mar, Mno, Neg, Sam, Sib, Taw	3
Allotinus substrigosus ballantinei ELIOT 1986	Pal	3
Allotinus substrigosus yusukei ELIOT 1986	Mno	2
Logania malayica subura FRUHSTORFER 1914	Ley, Mno, Sam	3
Logania waltraudae ELIOT 1986 Fig. 40	Sam	1
Logania regina evora FRUHSTORFER 1916 (stat. rev.)	Sga, Taw	3
Logania marmorata faustina FRUHSTORFER 1914	Jol, Ley, Mno, Sam, Taw	4
Logania marmorata hilaeira FRUHSTORFER 1914	CagSul	1
Logania marmorata palawana FRUHSTORFER 1914	Bal, Cal, Luz, Mar, Pal	4
Logania marmorata samosata FRUHSTORFER 1914	Ceb, Mdo	4
Logania distanti distanti SEMPER 1889	Ceb, Luz, Mno, Neg, Sam	2
Logania distanti drucei MOULTON 1911	Bal	1
Lontalius eltus treadawayi ELIOT 1986	Sam	1
Miletus gopara eustatius FRUHSTORFER 1913	Sga, Stu, Taw	3

Miletus symethus edonus FRUHSTORFER 1913	Pal	2
Miletus symethus hierophantes FRUHSTORFER 1916	Jol, Mno, Taw	2
Miletus symethus phantus ELIOT 1986	Luz, Mar	3
Miletus symethus philopator FRUHSTORFER 1914	Mdo	2
Miletus atimonicus MURAYAMA & OKAMURA 1973	Luz, Mar, Neg	1
Miletus melanion melanion C. & R. FELDER 1865	Luz, Mno, Neg, Pal	4
Miletus melanion euphranor FRUHSTORFER 1914	Ley, Mdo	4
Miletus bazilanus FRUHSTORFER 1913	Bas, Mno	3
Miletus takanamii ELIOT 1986	NE-Mno (Surigao)	1
Miletus drucei drucei SEMPER 1889	Bal, Boh, Ceb, Luz, Mdo, Pal, Sam	3

Tribe Spalgini

Spalgis epius WESTWOOD 1851 = *Spalgis epius georgi* FRUHSTORFER 1919 (syn.) = *Spalgis epius semperi* FRUHSTORFER 1923 (syn.) = *Spalgis epius strigatus* SEMPER 1889 (syn.)	Boh, Ceb, Ley, Luz, Mar, Mas, Mno, Neg, Pal, Sga, Stu, Taw	4
Spalgis takanamii ELIOT 1984	S-Mno (Mt. Apo)	1

Subfamily Curetinae

Curetis nesophila FELDER 1862	Bas, Boh, Ley, Mar, Mno, Neg, Pao, Sam	3
Curetis tagalica tagalica FELDER 1862	Phil excl. Bal, Dum, Pal, Stu	4
Curetis tagalica palawanica STAUDINGER 1889	Bal, Dum, Pal	4
Curetis tagalica takanamii SCHRÖDER & TREADAWAY 1989 ✪ Fig. 41/42	Stu	3

Subfamily Lycaeninae

Tribe Polyommatini

Anthene emolus modesta STAUDINGER 1889	Luz, Pal	2
Anthene licates addenda FRUHSTORFER 1916	Sga, Pal	2
Anthene lycaenina miya FRUHSTORFER 1916	Pal	2
Anthene lycaenina villosina FRUHSTORFER 1923	Luz, Mdo, Mno	3
Niphanda tessellata aristarcha FRUHSTORFER 1919	Luz, Mar, Mno, Sga	3
Una philippensis SCHRÖDER & TREADAWAY 1986	Mno (Bukidnon)	1

Nacaduba sericina sericina Felder 1865	Bab, Ley, Luz, Mar, Mas, Mdo, Neg, Pan, Pol, Sam, Sib	3
Nacaduba sericina palawana Hayashi 1977	Pal	3
Nacaduba sericina thaumus Fruhstorfer 1916	Bas, Bon, Mno, Sga, Taw	2
Nacaduba angusta angusta Druce 1873 = *Nacaduba angusta hondai* Hayashi 1977 (syn.)	Pal	3
Nacaduba angusta limbura Fruhstorfer 1916	Phil excl. Pal	4
Nacaduba pactolus neaira Fruhstorfer 1916	Bas, Boh, Luz, Mno, Pao, Pal, Sam, Taw	3
Nacaduba pavana asaga Fruhstorfer 1916	Pal	2
Nacaduba pavana georgi Fruhstorfer 1916	Ley, Mno, Sib	3
Nacaduba hermus tairea Fruhstorfer 1916	Bas, Mar, Mno	3
Nacaduba sanaya elioti Corbet 1938	Taw	1
Nacaduba sanaya metallica Fruhstorfer 1916	Ceb, Ley, Luz, Mno	2
Nacaduba berenice zygida Fruhstorfer 1916	Bas, Ley, Luz, Mno, Neg, Pal, Taw	3
Nacaduba kurava fujiokai Hayashi 1976	Luz, Mar, Mno, Neg, Pal	2
Nacaduba beroe beroe C. & R. Felder 1865	Ley, Luz, Mar, Mno, Neg, Pal	3
Nacaduba subperusia paska Eliot 1955	Jol, Ley, Luz, Mar, Mdo, Mno, Pal, Sib, Stu	3
Prosotas aluta philiata Fruhstorfer 1916	Bas, Mar, Mno, Pal, Sam, Sga	3
Prosotas maputi Semper 1889	Mno, Mar	3
Prosotas gracilis donina Snellen 1901	Pal	2
Prosotas gracilis ssp.	Luz, Mno	1
Prosotas nora semperi Fruhstorfer 1916	Bas, Ley, Luz, Mar, Mdo, Mno, Neg, Sam	4
Prosotas nora superdates Fruhstorfer 1916	Pal, Stu	3
Prosotas dubiosa lumpura Corbet 1938	Luz, Mar, Mno, Neg	3
Prosotas dubiosa subardates Piepers & Snellen 1918	Pal	2
Prosotas nelides de Nicéville 1895	Pal	–
Ionolyce helicon merguiana Moore 1884	Pal	4
Ionolyce helicon ssp.	Phil excl. Pal	1

Catopyrops ancyra almora DRUCE 1873	Ley, Luz, Mar, Mno, Pal, Stu	4
Petrelaea dana DE NICÉVILLE 1884	Mno, Pal	3
Caleta roxus angustior STAUDINGER 1889	Bon, Cal, Ceb, CmM, Din, Luz, Mar, Mas, Mdo, Mno, Pal, Pan, Sga, Stu, Taw	4
Caleta elna elvira FRUHSTORFER 1918	Pal	3
Caleta caleta argola HEWITSON 1876	Bas, Ley, Mno, Sam, Sul	3
Caleta caleta gerasa FRUHSTORFER 1918	CmM	–
Discolampa ethion negrosiana MURAYAMA 1983	Neg	4
Discolampa ethion ulysses STAUDINGER 1889	Ley, Luz, Mar, Mdo, Mno, Pal, Pao, Sga, Taw	4
Danis schaeffera schaeffera ESCHSCHOLTZ 1821	Bal, Boh, Ceb, Cts, Luz, Mas, Mdo, Mno, Neg, Pal, Sga, Sib, Taw, Tic	3
Jamides bochus georgi FRUHSTORFER 1916	Ley, Mno, Sam	4
Jamides bochus herodicus FRUHSTORFER 1916	Cat, Ceb, Luz, Mas, Mdo, Neg, Pan, Sib	4
Jamides bochus nabonassar FRUHSTORFER 1916	Bal, Cal, Pal, Taw	3
Jamides celeno optimus RÖBER 1886	Jol, Luz, Mdo, Mno, Pal	3
Jamides pura eordaea FRUHSTORFER 1916	Bal, Pal, Stu, Taw	3
Jamides philatus amphyssina STAUDINGER 1889	C- & S-Phil, Bas, Jol, Pal, Stu, Taw	3
Jamides philatus osias RÖBER 1886	Luz, Mar, Mdo	3
Jamides elpis phaliga FRUHSTORFER 1916	Bas, Mno, Sam, Ley	3
Jamides elpis pseudelpis BUTLER 1879	Bal, Pal	3
Jamides virgulatus ssp.	Pal	1
Jamides alsietus alsietus FRUHSTORFER 1916	Bas, Mno, Neg	3
Jamides alsietus camarines TAKANAMI 1990	Luz	3
Jamides alsietus sabatus FRUHSTORFER 1916	Pal	2
Jamides aratus adana DRUCE 1875	Stu	2
Jamides aratus nausiphanes FRUHSTORFER 1916	Bal, Pal	2
Jamides cunilda sekii TAKANAMI 1988	Pal	2
Jamides alecto kawazoei HAYASHI 1976	Pal	3

Jamides alecto manilana TOXOPEUS 1930	Cat, Ceb, Ley, Luz, Mar, Mas, Mdo, Mno, Neg, Pan, Sam	3
Jamides cyta natsumiae HAYASHI 1976	Pal	3
Jamides cyta raddatzi SCHRÖDER & TREADAWAY 1984	CmL, Ley, Luz, Mar, Mno, Neg, Pan, Sam, Sga, Sib, Taw	3
Jamides cyta koenigswarteri SCHRÖDER TREADAWAY & NUYDA 1993	Mdo	1
Jamides cleodus cleodus C. & R. FELDER 1865	Luz, Neg, Sib	4
Jamides cleodus itumunus TREADAWAY & NUYDA 1995	Hom	2
Jamides cleodus manias FRUHSTORFER 1916	Ley, Mno, Sam	4
Jamides cleodus potidalon FRUHSTORFER 1916	Bas, Jol, Sga	1
Jamides cleodus semperi FRUHSTORFER 1916	Mdo	3
Jamides cleodus trichonis FRUHSTORFER 1916	Bal, Pal	3
Jamides schatzi jumaloni HAYASHI 1976	Pal	2
Jamides schatzi nakamotoi HAYASHI 1977	Ceb, Ley, Luz, Mar, Mas. SE-Mno, Neg, Pan, Sib	3
Jamides suidas suidas C. & R. FELDER 1865	Bab, Boh, Ley, Luz, Mar, Mdo, Mno, Sib, Pol	4
Jamides rothschildi aritai HAYASHI 1976	Pal	2
Jamides rothschildi mindanensis HAYASHI 1977	Luz, Mas, Mno, Neg, Pan	3
Jamides callistus callistus RÖBER 1886	Luz, Mar, Sib	1
Jamides callistus amastris FRUHSTORFER 1916	Ley, Mno	1
Jamides callistus cleitus FRUHSTORFER 1916	Bas	–
Jamides callistus mioae HAYASHI 1976	Cal, Pal, Stu	2
Jamides callistus neaethus FRUHSTORFER 1916	Mdo, Pan	2
Catochrysops strabo luzonensis TITE 1959	Bal, Bas, Boh, Din, Dum, Jol, Ley, Luz, Mas, Mdo, Mno, Pal, Pan, Sam	4
Catochrysops panormus exiguus DISTANT 1886	Bal, Mno, Pal, Stu, Taw	4
Lampides boeticus LINNAEUS 1767	Phil	4
Leptotes plinius leopardus SCHULTZE 1910	Ley, Luz, Mno (Surigao, S-Cotabato)	2
Castalius rosimon monrosi SEMPER 1889	Luz, Sam	2
Tarucus waterstradti simillimus SCHRÖDER & TREADAWAY 1985 Fig. 74	Mno (Surigao)	1

Zizeeria karsandra MOORE 1865	Jol, Luz, Mno, Pal	3
Pseudozizeeria maha okinawana MATSUMURA 1929	N-Luz	2
Zizina otis otis FABRICIUS 1787	Boh, Ceb, Jol, Ley, Luz, Mno, Pal	3
Zizula hylax FABRICIUS 1775	Ley, Luz, Mar, Pal, Stu, Taw	3
Famegana alsulus HERRICH-SCHÄFFER 1869	Luz	3
Everes lacturnus lacturnus GODART 1824	Luz, Mno, Pal, Taw	4
Pithecops corvus FRUHSTORFER 1919	Bas, Boh, Ley, Luz, Mar, Mas, Mdo, Mno, Pal, Pan, Pao, Sam, Sga, Sib	4
Neopithecops zalmora zalmora BUTLER 1870	Ceb, Ley, Luz, Pal, Taw	3
Neopithecops iolanthe boholicus ELIOT & KAWAZOÉ 1983	Boh	1
Megisba malaya sikkima MOORE 1884	Bal, Ley, Luz, Mar, Mas, Mdo, Mno, Neg, Pal, Pan, Sam, Sib, Stu, Taw	4
Cebrella penelope penelope ELIOT & KAWAZOÉ 1983	N/NE/S-Mno (Mt. Apo, Mt. Kitanlad, Agusan)	1
Cebrella penelope kashiwaii ELIOT & KAWAZOÉ 1983	W-Pan	1
Lestranicus yoshidai ELIOT & KAWAZOÉ 1983	Mno	3
Udara dilecta dilecta MOORE 1879	Mno	4
Udara placidula placidula DRUCE 1895	N-Mdo	2
Udara placidula kawazoei HAYASHI 1976	Luz, Mno, Pal	1
Udara cyma elioti HAYASHI 1976	Pal	1
Udara camenae filipina MURAYAMA & OKAMURA 1973	Luz, Mdo, Mno	3
Udara dilectissima luzona ELIOT & KAWAZOÉ 1983	Luz, Mar, Mno	2
Udara dilecta paracatius FRUHSTORFER 1917	N-Mdo	2
Udara selma arsina FRUHSTORFER 1922	Mdo	1
Udara selma mindanensis ELIOT & KAWAZOÉ 1983	Mno, Neg, Pal	3
Udara santotomasana santotomasana ELIOT & KAWAZOÉ 1983	C- & N-Luz, N-Mdo	3
Udara santotomasana subpura ELIOT & KAWAZOÉ 1983	S-Mno (Mt. Apo)	1
Udara aemulus ELIOT & KAWAZOÉ 1983	S-Mno (Mt. Apo)	1

Udara wilemani ELIOT & KAWAZOÉ 1983	N-Luz	2
Udara nishiyamai ELIOT & KAWAZOÉ 1983	S-Mno (Mt. Apo)	3
Udara tyotaroi ELIOT & KAWAZOÉ 1983	S-Mno (Mt. Apo)	3
Sidima murayamai ELIOT & KAWAZOÉ 1983	N-Mno (Misamis)	3
Acytolepis puspa bazilana FRUHSTORFER 1910	Bas, CmM, Jol, Ley, Mno, Sam, Taw	4
Acytolepis puspa cagaya C. & R. FELDER 1865	Luz, Mdo, Pal	4
Celarchus archagathos archagathos FRUHSTORFER 1910	Bas, CmM, Mno	3
Celarchus archagathos leytensis ELIOT & KAWAZOÉ 1983	S-Ley	3
Celarchus hermarchus hermarchus FRUHSTORFER 1910	Luz, Mar, Mas, Neg	4
Celarchus hermarchus vesontia FRUHSTORFER 1917	Ley, Mdo, Rom, Sam, Sib	3
Celastrina argiolus sugurui ELIOT & KAWAZOÉ 1983	N-Luz	1
Celastrina philippina philippina SEMPER 1889	Cts, Luz, Mas, Mno, Neg, Pal	4
Celastrina algernoni algernoni FRUHSTORFER 1917	Ley, Luz, Mno	4
Celastrina algernoni kadazanensis BARLOW, BANKS & HOLLOWAY 1971	Pal	2
Celastrina lavendularis hermesianax FRUHSTORFER 1910	Ley, Luz, Mas, Mdo, Mno, Neg	3
Callenya kaguya ELIOT & KAWAZOÉ 1983	Pal	2
Monodontides apona FRUHSTORFER 1910	S-Mno (Mt. Apo)	2
Monodontides luzonensis ELIOT & KAWAZOÉ 1983	N-Luz, N-Mdo	3
Monodontides kolari Ribbe 1926	Mno	2
Monodontides hondai ELIOT & KAWAZOÉ 1983	Luz, Mas, Mdo, Mno, ** Neg, Pal, Pan	4
Euchrysops cnejus cnejus FABRICIUS 1798	Ceb, Ley, Luz, Pal, Taw	4
Chilades lajus athena C. & R. FELDER 1865	Boh, Hom, Ley, Mno, Pal, Sam, Taw	4
Chilades mindora C. & R. FELDER 1865	Bon, Cal, Ceb, CmL, Hom, Ley, Luz, Mar, Mas, Mdo, Mno, Pal, Sam, Sga, Taw, Tic	4
Chilades pandava vapanda SEMPER 1889	Luz	3
Chilades parrhasius FABRICIUS 1793	Boh, Cts, Ley, Luz, Mno	2

Freyeria trochylus gnoma SNELLEN 1876	Luz	2
Tribe Aphnaeini		
Spindasis syama negrita FELDER 1862	Boh, Ceb, CmL, Cts, Ley, Luz, Mar, Mas, Mdo, Mno, Neg, Pan, Pol, Sam	4
Tribe Theclini		
Austrozephyrus reginae SCHRÖDER & TREADAWAY 1982 Fig. 43/44	S-Pal	1
Arhopala anthelus impar EVANS 1957	Mdo	4
Arhopala anthelus marinduquensis HAYASHI, SCHRÖDER & TREADAWAY 1984	Mar	3
Arhopala anthelus paradisii SCHRÖDER & TREADAWAY 1990	Din	2
Arhopala anthelus reverie SEKI 1994	Pan	4
Arhopala anthelus sanmariana OSADA & HASHIMOTO 1987	NE-Luz	2
Arhopala anthelus saturatior STAUDINGER 1889	Pal	4
Arhopala anthelus sotades FRUHSTORFER 1914	Boh, Ley, S-Luz, Mno, Sam	4
Arhopala eridanus dilutior STAUDINGER 1889	Bal, Cuy, Pal	3
Arhopala trionoea SEMPER 1890 = *Arhopala hollowayi* HAYASHI 1981 (syn.)	Ley, Luz, Mar, Mno, Sam	3
Arhopala alexandrae SCHRÖDER & TREADAWAY 1978	Mno	2
Arhopala annulata annulata FELDER 1860 = *Arhopala schroederi* HAYASHI 1981 (syn.)	Mno, Pal	3
Arhopala aedias agnis C. & R. FELDER 1865	Stu	3
Arhopala aedias oenotria HEWITSON 1869	Ceb, Ley, Luz, Mdo, Mno, Pal	3
Arhopala sakaguchii HAYASHI 1981	Neg	2
Arhopala myrzala myrzala HEWITSON 1869	Luz, Mno	3
Arhopala allata allata STAUDINGER 1889	Pal	4
Arhopala allata pambihira TAKANAMI 1982	Luz, Mno, Sam	2
Arhopala atosia aricia STAUDINGER 1889	Pal	3
Arhopala agesilaus agesilaus STAUDINGER 1889	Pal	3
Arhopala agesilaus philippa EVANS 1857	Boh, Ley, Mdo, Mno	3
Arhopala major STAUDINGER 1889	Luz, Pal	2
Arhopala amphimuta amphimuta FELDER 1860	Luz, Pal	3
Arhopala hesba HEWITSON 1869	Boh, Ley, Mdo, Mno, Sam	4

Arhopala anamuta SEMPER 1890	Mdo, Mno	2
Arhopala luzonensis TAKANAMI & BALLANTINE 1987	NE- & SE-Luz	1
Arhopala grandimuta grandimuta SEKI 1993	Ley	3
Arhopala grandimuta takanamii SEKI 1993	Mno	1
Arhopala agesias HEWITSON 1862	Phil	3
Arhopala abseus abseus HEWITSON 1862	Bon, Cal, Pal, Taw	4
Arhopala abseus amphea C. & R. FELDER 1865	Bas, Boh, CmL,	4
= *Arhopala abseus oghatinna* FRUHSTORFER 1914 n. syn.	Luz, Mar, Mdo, Mno, Neg, Pao, Sam	
Arhopala theba HEWITSON 1863	Ley, Luz, Mar, Mdo, Mno, Neg, Pan, Sam	4
Arhopala matsutaroi HAYASHI 1979	N/C/S/SE-Mno	3
Arhopala aronya aronya HEWITSON 1869	Din, Ley, Luz, Mar, Mdo, Mno	3
Arhopala aronya natsumiae HAYASHI 1981	Neg	3
Arhopala cleander malayica BETHUNE-BAKER 1903	CmL, Ley, Luz, Mno, Neg, Stu	3
Arhopala athada wilemani EVANS 1957	Mno	2
Arhopala rudepoema SEKI 1994	Ley, Mar, Mdo, Mno, Neg, Pal	3
Arhopala silhetensis philippina HAYASHI 1981	Ley, Luz, Mar, Mdo, Mno, Neg	4
Arhopala zambra kitamurai SEKI 1994	Mdo	2
Arhopala zambra plateni EVANS 1957	Ley, Mno	2
Arhopala zambra triviata SEKI 1994	Neg	2
Arhopala agrata shirozui HAYASHI 1976	Pal	2
Arhopala evansi CORBET 1941	Stu	2
Arhopala aroa aroa HEWITSON 1863	Bas	–
Arhopala selta hislopi ELIOT 1962	Taw	2
Arhopala phaenops phaenops C. & R. FELDER 1865	Boh, CmL, CmM, Luz, Mdo, Mno	3
Arhopala phaenops detrita STAUDINGER 1889	Pal	3
Arhopala phaenops sandakani BETHUNE-BAKER 1896	Taw	3
Arhopala phaenops termerion FRUHSTORFER 1914	Bas	–
Arhopala sublustris sublustris BETHUNE-BAKER 1904	Taw	3
Arhopala alitaeus mindanaensis BETHUNE-BAKER 1903	Ley, Mno, Pao, Sam	4
Arhopala alitaeus myrtale STAUDINGER 1889	Pal	3

Arhopala alitaeus shigae MURAYAMA & OKAMURA 1973	Bab, Boh, Luz, Mar, Neg, Sib	4
Arhopala alitaeus zilensis FRUHSTORFER 1914	Bas	–
Arhopala myrtha STAUDINGER 1889	Pal	3
Arhopala tephlis unnoi HAYASHI 1976	Bab, Boh, Cal, Ceb, Luz, Mno, Pal, Sam, Sib	3
Arhopala bazalus asagiae HAYASHI 1978	Mno	3
Arhopala horsfieldi palawanica HAYASHI 1976	Pal	3
Arhopala eumolphus aristomachus FRUHSTORFER 1914	Pal	4
Arhopala staudingeri staudingeri SEMPER 1890	Boh, Ley, Mno, Pao, Sam	4
Arhopala staudingeri castagnedai OSADA & HASHIMOTO 1987	Luz	3
Arhopala staudingeri negrosiana HAYASHI 1981	Neg	4
Arhopala chamaeleona maputi TAKANAMI 1984	Luz, Mar, Mdo	3
Arhopala chamaeleona mizunumai HAYASHI 1978	Din, Ley, Mno, Neg, Pao, Sam	4
Arhopala tindongani NUYDA & TAKANAMI 1990 Fig. 76	N-Luz	1
Arhopala corinda corinda HEWITSON 1869	Bas, Boh, Ley, Luz, Mar, Mas, Mdo, Mno, Neg, Sam, Sib	4
Arhopala agaba HEWITSON 1862	Mno	–
Arhopala pseudocentaurus aglais C. & R. FELDER 1865 = *Arhopala setsuroi* HAYASHI 1981 (syn.)	Bab, Cuy, Din, Dum, Hom, Ley, Luz, Mar, Mas, Mdo, Mno, Pol, Sam, Sib, Taw	4
Arhopala buddha cooperi EVANS 1925	Phil	2
Arhopala ocrida ocrida HEWITSON 1869	Boh, Ley, Luz, Mno, Sam, Sib	3
Arhopala ocrida cionnii SCHRÖDER & TREADAWAY 1994	Sga, Taw	2
Arhopala hinigugma TAKANAMI 1985	Ley, Luz, Mno, Neg	2
Arhopala alesia alesia C. & R. FELDER 1865	Ley, Luz, Mar, Mdo, Mno, Taw	3
Arhopala alesia mio HAYASHI 1981	Neg	2
Arhopala alaconia oberthüri STAUDINGER 1889	Pal	2
Arhopala ilocana OSADA & HASHIMOTO 1987	N-Luz	2
Arhopala arsenius arsenius C. & R. FELDER 1865	Luz, Neg	3

Arhopala arsenius everetti EVANS 1957	Mdo	2
Arhopala epimete epimete STAUDINGER 1889	Pal	3
Arhopala epimete magindana OSADA 1987	NE-Mno	2
Arhopala inornata inornata C. & R. FELDER 1860	Phil	3
Arhopala avatha avatha DE NICÉVILLE 1896	Taw	3
Arhopala avatha lana EVANS 1957	Mno, Pan	2
Arhopala davaona SEMPER 1890	Mno	2
Arhopala fulla santa EVANS 1957	Luz, Mar, Mdo, Mno	* 3/2
Arhopala paraganesa tomokoae HAYASHI 1976	Pal	1
Arhopala birmana hiurai HAYASHI 1976	Pal	3
Flos diardi capeta HEWITSON 1878	Ley, Luz, Mar, Mas, Mdo, Mno, Neg, Pal, Sam, Sga, Stu, Taw	4
Flos fulgida zilana FRUHSTORFER 1900	Bas, Boh, Mdo, Mno	4
Flos anniella anniella HEWITSON 1862	Ley, Luz, Mar, Mdo, Mno, Neg, Pal	4
Flos apidanus himna FRUHSTORFER 1914	Mno	3
Flos apidanus palawanus STAUDINGER 1889	Bal, Boh, Luz, Mdo, Pal, Pan, Sam	4
Flos apidanus saturatus SNELLEN 1890	Taw	3
Flos iriya FRUHSTORFER 1914	Bas, Luz, Mdo, Mno, Pan	3
Flos morphina morphina DISTANT 1884	Pal	1
Surendra manilana manilana C. & R. FELDER 1862	Luz, Mar, Mdo, Mno, Neg, Pan	4
Surendra manilana johnelioti SCHRÖDER & TREADAWAY 1993	Bon	3
Surendra vivarna palowna STAUDINGER 1889	Bal, Cal, Pal	4
Semanga superba superba DRUCE 1873	Sga	1
Amblypodia narada erichsonii FELDER 1865	Bas, Boh, Ceb, Ley, Luz, Mar, Mdo, Neg, Pal, Taw	4
Amblypodia narada sibutuensis TREADAWAY & NUYDA 1993	Stu	4
Amblypodia narada plateni RILEY 1922	Mno	3
Iraota rochana austrosuluensis SCHRÖDER & TREADAWAY 1989	Bon, Sga, Taw	3
Iraota rochana boudanti TREADAWAY & NUYDA 1993	Stu	2
Iraota rochana indalawanae SCHRÖDER & TREADAWAY 1993	Bal	3

Iraota rochana garzoni Schröder & Treadaway 1986	Neg	3
Iraota rochana lazarena C. & R. Felder 1862	Bab, Boh, Ceb, Din, Ley, Luz, Mar, Mdo, Mno, Pao, Sam	4
Iraota rochana ottonis Fruhstorfer 1907	Cal, Pal	4
Catapaecilma gracilis Semper 1890	Boh, Ceb, Ley, Luz, Mdo, Mno, Pao, Sam	3
Catapaecilma nakamotoi Hayashi 1979	E-Mno	1
Catapaecilma evansi evansi Pendlebury 1933	Pal	1
Catapaecilma evansi parva Schröder & Treadaway 1988	N-Neg	1
Catapaecilma evansi rizali Takanami 1984	CmL, Mar, Luz, Mdo	2
Catapaecilma nuydai Takanami 1988	Mno (Bukidnon)	2
Hypothecla astyla astyla C. & R. Felder 1862	Luz, Mar, Mdo	4
Hypothecla astyla mindanaensis Fruhstorfer 1912 = *Hypothecla astyla cebuensis* M. & T. Okano 1991 **n. syn.**	Bil, Boh, Ceb, Ley, Mno, Pao, Sam	4
Hypothecla astyla palawensis Hayashi 1976	Pal	4
Hypothecla astyla tegea Fruhstorfer 1912	Bas	–
Loxura cassiopeia owadai Hayashi 1977	Ceb, Mno	2
Loxura cassiopeia yilma Fruhstorfer 1926	Pal	3
Loxura atymnus luzonica Swinhoe 1917	Luz	1
Eooxylides tharis tharisides Fruhstorfer 1904	Bal, Pal	4
Eooxylides meduana Hewitson 1869	Boh, Ceb, Din, Ley, Mno, Pao, Sam	4
Eooxylides etias shahaniae Treadaway & Nuyda 1994	Bas	1
Drina discophora C. & R. Felder 1862	Ala, Bat, Luz, Mar, Mdo	3
Drina mavortia Hewitson 1869	Boh, Ceb, Ley, Mno, Sam	3
Drina borromeorum Schröder & Treadaway 1991 ✪ Fig. 45/46	Taw	2
Horaga lefebvrei lefebvrei C. & R. Felder 1862	Luz	4
Horaga lefebvrei osma Fruhstorfer 1912	Boh, Ley, Mno, Neg, Pao, Sam	3
Horaga lefebvrei osmana Cowan 1966	Mdo	4
Horaga chalcedonyx ssp.	Luz, Mar, Neg	2
Horaga natsumiae Hayashi 1984	CmL, Ley, Mar, Mdo, Mno, Neg	2
Horaga bilineata Semper 1890	CmL, Ley, Luz, Mar, Mdo, Mno, Neg, Pao	3

Horaga albimacula anytus STAUDINGER 1889	Pal	1
Horaga syrinx ashinica MURAYAMA & OKAMURA 1973 (stat. rev.)	Boh, CmL, Ley, Luz, Mar, Mas, Mdo, Mno, Neg, Pan, Pao, Sib, Siq	3
Horaga syrinx camiguina SEMPER 1890	CmM	2
Horaga syrinx decolor STAUDINGER 1889	Pal	3
Horaga syrinx joloana FRUHSTORFER 1912	Jol, Stu, Taw	3
Horaga syrinx paulla FRUHSTORFER 1912	Bas	–
Horaga amethysta sibutuensis SCHRÖDER & TREADAWAY 1990	Stu	1
Cheritra aenea SEMPER 1890 Fig. 49	Mdo	1
Cheritra orpheus orpheus C. & R. FELDER 1862	Luz, Mar, Mdo, Neg, Tic	4
Cheritra orpheus eurydice FRUHSTORFER 1912	Cal, Pal	4
Cheritra orpheus orphnine COWAN 1967	Ley, Mno, Sam	4
Ritra aurea aurea DRUCE 1873 Fig. 50	Bal, Pal	1
Drupadia hayashii SCHRÖDER & TREADAWAY 1989 ✪ Fig. 47/48	Stu	1
Drupadia ravindra balabacola SCHRÖDER & TREADAWAY 1990	Bal	3
Drupadia ravindra joloana STAUDINGER 1889	Jol, Sga, Stu, Taw	4
Drupadia ravindra okurai M. & T. OKANO 1991	Mno	2
Drupadia ravindra ravindrina STAUDINGER 1889	Pal	4
Drupadia ravindra resoluta COWAN 1974	Luz, Mdo, Pol	4
Drupadia rufotaenia praecox COWAN 1974	Mdo	2
Drupadia rufotaenia torquata COWAN 1974	Bal, Pal	3
Drupadia theda theda C. & R. FELDER 1862	Luz, Mar, Mas, Pan	4
Drupadia theda miyo TAKANAMI 1987	Mdo	3
Drupadia theda osadai TAKANAMI 1987	Boh	2
Drupadia theda pekas TAKANAMI 1982	Ley, NE-Mno, Pao, Sam	3
Drupadia theda tawiensis SCHRÖDER & TREADAWAY 1989	Sga, Taw	2
Drupadia theda unicolor STAUDINGER 1889	Pal	3
Drupadia niasica florens COWAN 1974	Ley, Mno, Pao	2
Drupadia niasica natinus TAKANAMI 1987	Mdo	2
Drupadia niasica thaenia DRUCE 1895	Jol	2
Drupadia niasica ssp.	Luz, Mar, Pol, Sib	1
Pratapa ismaeli HAYASHI, SCHRÖDER & TREADAWAY 1983	N/S-Mno (Mt. Apo, Mt. Kitanlad)	2
Pratapa tyotaroi tyotaroi HAYASHI 1981	Mar	2
Pratapa tyotaroi mindorensis TREADAWAY & NUYDA 1995	Mdo	2
Pratapa icetoides marikit SCHRÖDER & TREADAWAY 1986	Dum, Pal	2

Pratapa deva devana Druce 1895	Luz, Mno	1
Tajuria igolotiana igolotiana Murayama & Okamura 1973	Luz	4
Tajuria igolotiana fumiae Hayashi 1984	Mno	4
Tajuria deudorix deudorix Hewitson 1869	Ley, Mno	3
Tajuria deudorix primitivoi Osada 1987	Boh	1
Tajuria deudorix yuhkichii Hayashi 1984	Pal	2
Tajuria deudorix zoletai Osada 1987	CmL, Luz, Mar, Mdo	2
Tajuria alangani Schröder, Treadaway & Nuyda 1993 Fig. 51/52	Mdo	2
Tajuria mantra mantra C. & R. Felder 1860	Pal	2
Tajuria mantra kimia Treadaway & Nuyda 1995	Sga	2
Tajuria mantra lucrosa Fruhstorfer 1912 = *Tajuria mantra visayana* M. & T. Okano 1991 (syn.)	Boh, Ley, NE-Mno, Neg, Pao, Sam	3
Tajuria mantra vergara Semper 1890	Mno excl. NE-Mno	4
Tajuria isaeus isaeus Hewitson 1865	Pal	2
Tajuria berenis berenis Druce 1896	Mno	1
Tajuria dominus dominus Druce 1895	Dum, Pal	1
Tajuria matsutaroi Hayashi 1984	Ley, S-Mno (Mt. Apo)	1
Tajuria mizunumai Hayashi 1978	S-Mno (Mt. Apo)	2
Tajuria jalajala jalajala Felder 1862 = *Tajuria jalajala pinamalaya* Takanami 1987 (syn.)	Boh, CmM, Ley, Luz, Mar, Mas, Mdo, Mno, Neg, Pan, Pao, Pol, Sam **	4
Tajuria jalajala steffi Schröder & Treadaway 1988 Fig. 55/56	Hom	3
Matsutaroa iljai Hayashi, Schröder & Treadaway 1984 Fig. 53/54	Mas, N-Neg, W-Pan	3
Dacalana sannio sannio Druce 1895	Mno, Sul	2
Dacalana sannio lucillae Hayashi, Schröder & Treadaway 1983	Luz	3
Dacalana aristarchus Fruhstorfer 1912 = *Dacalana natsumiae* Hayashi 1983 (syn.)	Bas, Mno	3
Dacalana kurosawai Hayashi 1976	Cal, Pal	2
Dacalana monsapona monsapona Schröder & Treadaway 1978 = *Dacalana sannio sugimotoi* Hayashi 1978 (syn.)	Mno	4
Dacalana monsapona marinduquensis Hayashi, Schröder & Treadaway 1983	Luz, Mar, Mdo	4
Dacalana akayamai Hayashi, Schröder & Treadaway 1983	Mno	2

Dacalana liaoi HAYASHI, SCHRÖDER & TREADAWAY 1983 = *Dacalana liaoi negrosensis* M. & T. OKANO 1991 **n. syn.**	Neg, Pan	3
Dacalana irmae HAYASHI, SCHRÖDER & TREADAWAY 1983	Sib	3
Dacalana mio HAYASHI, SCHRÖDER & TREADAWAY 1983	Mno	3
Dacalana polyorketes polyorketes FRUHSTORFER 1912	Ley, Mno, Pao, Sam	3
Dacalana polyorketes kawamurai TAKANAMI 1988	Sga	3
Dacalana polyorketes laduanae SCHRÖDER & TREADAWAY 1989 **(stat. rev.)** Fig. 59/60	Hom	2
Dacalana treadawayi HAYASHI 1984	Mno	2
Neocheritra manata manata SEMPER 1890	Mno (Surigao & S-Cotabato)	1
Neocheritra manata gertrudes SCHRÖDER & TREADAWAY 1978 Fig. 57/58 = *Jacoona amrita toshikoae* HAYASHI 1978 (syn.)	S-Mno (Mt. Apo)	2
Manto hypoleuca martina HEWITSON 1869 = *Manto hypoleuca paluana* STAUDINGER 1889 (syn.)	Bal, Pal	3
Paruparo mamertina mamertina HEWITSON 1869	E/S/C-Mno	4
Paruparo mamertina jeanhooperae SCHRÖDER & TREADAWAY 1988	Hom, N-Sam	3
Paruparo mamertina rahmani JUMALON 1975	S-Ley	2
Paruparo cebuensis cebuensis JUMALON 1975	Ceb	4
Paruparo cebuensis amethystina SCHRÖDER & TREADAWAY 1988	Hom	2
Paruparo cebuensis chotaroi HAYASHI 1977	Mno	4
Paruparo cebuensis medicieloi M. & T. OKANO 1991	Ley	2
Paruparo cebuensis soloni M. & T. OKANO 1990	Boh	2
Paruparo cebuensis treadawayi JUMALON 1975	Neg	1
Paruparo annie TAKANAMI 1982	Luz	2
Paruparo rosemarie SEKI 1993	Ley	1
Paruparo violacea SCHRÖDER & TREADAWAY 1978 Fig. 61/62	NE-Mno	1
Paruparo lumawigi lumawigi SCHRÖDER 1976 Fig. 63/64	CmL, Luz, Mar	3
Paruparo lumawigi jumaloni TREADAWAY & NUYDA 1993	Sib	1
Paruparo lumawigi mindorana SCHRÖDER & TREADAWAY 1993	Mdo	1
Paruparo lumawigi panayensis HAYASHI, SCHRÖDER & TREADAWAY 1984	Mno, W-Pan	2
Paruparo mio HAYASHI, SCHRÖDER & TREADAWAY 1984	Mno (Surigao)	1
Eliotia mioae HAYASHI 1978	E-Mno	3

Eliotia australis SCHRÖDER & TREADAWAY 1990 Fig. 70	SW-Mno	1
Eliotia circumdata circumdata SCHRÖDER, TREADAWAY & HAYASHI 1981 Fig. 65/66	Luz, Mar, Mdo	3
Eliotia circumdata panayensis SCHRÖDER, TREADAWAY & HAYASHI 1981 = *Eliotia circumdata negrosensis* M. & T. OKANO 1990 **n. syn.**	Neg, Pan	2
Eliotia jalindra balabacensis SCHRÖDER & TREADAWAY 1986	Bal	2
Eliotia jalindra maganda TAKANAMI 1982	Mno	2
Eliotia jalindra mindorensis SCHRÖDER & TREADAWAY 1985	Mdo	2
Eliotia jalindra palawandra STAUDINGER 1889	Dum, Pal	4
Eliotia jalindra shiraishii TAKANAMI 1984	NW-Luz	1
Eliotia jalindra obsoleta SCHRÖDER & TREADAWAY 1993	Sga, Taw	1
Eliotia plateni plateni SEMPER 1890 ✪ = *Eliotia navales* SCHRÖDER & TREADAWAY 1986 **n. syn.**	Bas, Ley, Mno, Sam	1
Eliotia plateni parvula SCHRÖDER & TREADAWAY 1989	Sga	1
Eliotia mariaba HEWITSON 1869	Ley, Mno, Sam	2
Suasa lisides liris STAUDINGER 1889	Pal	4
Remelana davisi davisi JUMALON 1975	Mno	4
Remelana davisi fulminans SCHRÖDER & TREADAWAY 1978	Luz, Mar	3
Remelana davisi negrosensis M. & T. OKANO 1990	Neg	4
Remelana davisi noeli TREADAWAY & NUYDA 1993	Mdo	1
Remelana jangala esra FRUHSTORFER 1907	Cal, Dum, Pal	4
Remelana jangala westermanni C. & R. FELDER 1865	Bal, Bas, Boh, Bon, Ceb, CmL, Cts, Din, Hom, Ley, Luz, Mar, Mas, Mdo, Mno, Neg, Pan, Pao, Rom, Sam, Sga, Sib, Stu, Taw	4
Ancema blanka blanka DE NICÉVILLE 1894	Pal	1
Pseudotajuria donatana bilara M. & T. OKANO 1990	Boh	1
Pseudotajuria donatana mansaka OSADA 1987	SE-Mno	1
Hypolycaena thecloides camotana FRUHSTORFER 1912	Cts	–
Hypolycaena thecloides philippina STAUDINGER 1889	Cal, Ceb, CmM, Luz, Mdo, Mno, Pal, Sib	4
Hypolycaena thecloides vardara FRUHSTORFER 1912	Sia	–
Hypolycaena erylus aimnestus FRUHSTORFER 1912	Cuy, Dum, Pal	4
Hypolycaena erylus georgius FRUHSTORFER 1912	Bon, Jol, Sga, Sis, Stu, Taw	3
Hypolycaena erylus orsiphantus FRUHSTORFER 1912	Bas, CmM, Din, Ley, Mno, Sam	3
Hypolycaena erylus tmolus C. & R. FELDER 1862	CmL, Luz, Mar, Mas, Mdo, Neg, Pan, Rom, Sib	4

Hypolycaena sipylus tharrytas C. & R. Felder 1862	Ala, Bal, Bas, Boh, Ceb, CmM, Jol, Ley, Luz, Mar, Mas, Mdo, Mno, Pal, Pan, Sam	4
Hypolycaena ithna Hewitson 1869	Ceb, CmL, Dum, Luz, ** Mar, Mno, Pal, Pan, Sga, Sib, Sis, Taw	4
Hypolycaena othona waltraudae Treadaway & Nuyda 1994	Pal	1
Hypolycaena irawana Hayashi, Schröder & Treadaway 1984	Pal	1
Hypolycaena schroederi Hayashi 1984	Sam, Mno	1
Hypolycaena shirozui shirozui Hayashi 1981	Ley, Mno, Sam	2
Hypolycaena shirozui madilimi Treadaway & Nuyda 1995	Neg	1
Hypolycaena toshikoae Hayashi 1984	Luz	2
Zeltus amasa masaya Takanami 1984	Mno	4
Zeltus amasa miyatakei Hayashi 1977	Pal	4
Deudorix epijarbas epijarbas Moore 1858	Cat, Ceb, Ley, Luz, Mar, Mas, Mdo, Mno, Neg, Pal, Pan, Sam, Stu, Taw	4
Deudorix philippinensis Schröder, Treadaway & Hayashi 1981 ✪ Fig. 67–69	Mar, Mas, Mdo, Mno, Neg, Sib	** 3/2
Deudorix apayao Schröder & Treadaway 1983 ✪ Fig. 71/72	N- & C-Pal	1
Virachola smilis vocetius Fruhstorfer 1912	Bab, Luz, Mar, Mdo, Mno, Pal	3
Virachola kessuma deliochus Hewitson 1874	Mno, Pal	1
Virachola masamichii Okubo 1983	SE-Mno	1
Sinthusa mindanensis mindanensis Hayashi, Schröder & Treadaway 1978	S-Mno (Mt. Apo)	3
Sinthusa mindanensis stephaniae Hayashi, Schröder & Treadaway 1978	Ley, N-Mno (Bukidnon), Sam	3
Sinthusa mindanensis yoshiae Hayashi 1981	Neg	3
Sinthusa natsumiae natsumiae Hayashi 1979	Ley, Mno	3
Sinthusa natsumiae ondai Takanami 1982	Luz, Mar, Mdo, Neg	3
Sinthusa privata kawazoei Hayashi 1976	Pal	3
Sinthusa nasaka ogatai Hayashi 1976	Pal	2
Sinthusa peregrinus Staudinger 1889	Bas, Mno, Pal	3

Araotes lapithis arianus FRUHSTORFER 1912	Pal	3
Araotes perrhaebis SEMPER 1890 Fig. 73	Bas, Mno	2
Bindahara phocides phocides FABRICIUS 1793	Bal, Cal, Pal, Taw, Sga, Stu	4
Bindahara phocides origenes FRUHSTORFER 1912	Cat, Ceb, CmM, Cts, Luz, Mar, Mas, Mdo Mno, Pan, Sam, Sib	4
Rapala diopites diopites HEWITSON 1869	CmL	2
Rapala diopites alcetas STAUDINGER 1889	Bal, Cal, Pal	4
Rapala diopites alcetina SEMPER 1890	Bas, Boh, Ceb, CmM, Cts, Din, Gui, Ley, Luz, Mar, Mas, Mdo, Mno, Neg, Pan, Sam, Sga, Sib, Stu, Taw	4
Rapala elcia HEWITSON 1863	Luz, Mar, Pol	2
Rapala hades DE NICÉVILLE 1895	Mno, S-Neg, Pan	1
Rapala masara OSADA 1987	SE-Mno	1
Rapala tomokoae tomokoae HAYASHI, SCHRÖDER & TREADAWAY 1978	Ley, Mno, Sam, Taw **	4
Rapala tomokoae bilara M. & T. OKANO 1990	Boh	3
Rapala tomokoae takanamii HAYASHI 1984	Neg, Pan	4
Rapala tomokoae ssp. in litt.	Siq	3
Rapala zamona FRUHSTORFER 1912	Bab, Luz	3
Rapala manea ingana FRUHSTORFER 1912	Pal	3
Rapala manea philippensis FRUHSTORFER 1912	Boh, Luz, Mar, Mdo, Mno, Neg, Stu, Taw	4
Rapala varuna nada FRUHSTORFER 1912	Bal, Luz, Mar, Mno, Neg, Pal	3
Rapala varuna ssp. in litt.	Sga, Stu, Taw	3
Rapala rhoecus melida FRUHSTORFER 1912	Pal	2
Rapala scintilla nemana SEMPER 1890	Bab, CmM, Ley, Mar, Mno, Pal, Pao, Sam	2
Rapala dieneces dieneces HEWITSON 1878	Bas, Mno, Pal, Sga	3
Rapala caerulescens STAUDINGER 1889	Bas, Ceb, Jol, Luz, Mar, Mdo, Mno, Sib	4
Rapala suffusa anabasis STAUDINGER 1889	Bal, Pal	4
Rapala phrangida FRUHSTORFER 1912	Ley, Luz	3
Rapala damona SWINHOE 1890	Mdo, Pal	2

Family Riodinidae

Subfamily Riodininae

Tribe Hamearini

Zemeros flegyas hondai HAYASHI 1976	Pal	1
Dodona deodata aponata SEMPER 1889	S-Mno (Mt. Apo)	3
Dodona deodata malindangensis SCHRÖDER & TREADAWAY 1988 ✪ Fig. 75	NW-Mno (Mt. Malindang)	2
Dodona deodata ohtsukai HAYASHI 1984 = *Dodona mizunumai* HANAFUSA 1989 **n. syn.**	Neg (Mt. Canlaon)	3
Dodona deodata sakaii HAYASHI 1976	Pal	1
Dodona deodata treadawayi HANAFUSA 1989	N-Luz	3
Taxila haquinus palawanicus STAUDINGER 1889	Bal, Pal	4
Abisara kausambi aja FRUHSTORFER 1904	Bal, Cal, Pal	4
Abisara echerius bazilensis FRUHSTORFER 1900	Bas	1
Abisara echerius cavana SCHRÖDER & TREADAWAY 1995	Stu	3
Abisara echerius laura FRUHSTORFER 1904	Luz, Mdo	4
Abisara echerius palawana STAUDINGER 1889	Pal	2
Abisara echerius panayensis MEDICIELO & HANAFUSA 1994	Pan	3
Abisara echerius simillima SCHRÖDER & TREADAWAY 1995	Bon, Sga, Taw	3
Abisara saturata corbeti BENNETT 1950	Mno	–
Abisara mindanaensis boholensis M. & T. OKANO 1993	Boh, Ley	2
Abisara mindanaensis canlaonensis MEDICIELO & HANAFUSA 1994	Neg	3
Abisara mindanaensis cudaca FRUHSTORFER 1914	Luz	2
Abisara mindanaensis mindanaensis SEMPER 1892	Mno	4
Abisara mindanaensis mudita FRUHSTORFER 1914	Mdo	3
Abisara geza litavicus FRUHSTORFER 1912	Pal	1

Family Hesperiidae

Subfamily Coeliadinae

Bibasis oedipodea oedipodea SWAINSON 1820	Bal, Pal, Sga, Stu, Taw *	2
Bibasis oedipodea paltra EVANS 1949	Ceb, Ley, Luz, Mar, Mdo, Mno, Neg, Pan, Sam	2
Bibasis etelka HEWITSON 1867	Mno, Pal	1
Bibasis harisa consobrina PLÖTZ 1884	Sga, Stu	2
Bibasis harisa pala DE JONG & TREADAWAY 1993	Pal	2
Bibasis harisa grandis DE JONG & TREADAWAY 1993	Din, Ley, Sam	1

Bibasis gomata lorquini MABILLE 1876	Cal, CmL, Ley, Luz, Mar, Mdo, Mno, Neg, Pal, Pan, Pol	4
Bibasis sena palawana STAUDINGER 1889	Boh, Cal, Ceb, Hom, Ley, Luz, Mar, Mno, Neg, Pal, Pan, Pol, Sga, Sib, Stu, Taw	4
Hasora proxissima proxissima ELWES & EDWARDS 1897	Ley, Mdo, Mno	3
Hasora proxissima siva EVANS 1932	Pal	2
Hasora borneensis luza EVANS 1949	Ley, Luz, Mas, Mdo, Mno	3
Hasora mavis EVANS 1934	Luz, Neg, Pao, Sam	3
Hasora chromus chromus CRAMER 1782	Bas, Ley, Mar, Neg, Taw, Tic	2
Hasora taminatus malayana C. & R. FELDER 1860	Bal, S-Pal	4
Hasora taminatus padma FRUHSTORFER 1911	Bas, Boh, Ceb, CmL, Hom, Ley, Luz, Mar, Mas, Mdo, Mno, Neg, C- & N-Pal, Pan, Pao, Rom, Sib, Taw, Tic	4
Hasora schoenherr babuyana TREADAWAY & NUYDA 1995	Bab	3
Hasora schoenherr chuza HEWITSON 1867	Bal, Pal	4
Hasora schoenherr saida HEWITSON 1867	Boh, CmM, Ley, Luz, Mar, Mdo, Mno, Neg, Pan, Pao, Sam, Sib	4
Hasora mixta mixta MABILLE 1876	Bas, Bil, Ceb, CmL, Ley, Luz, Mar, Mas, Mdo, Mno, Neg, Pan, Pao, Sam, Sib	4
Hasora mixta prabha FRUHSTORFER 1911	Bal, Pal, Taw	3
Hasora badra badra MOORE 1858	Bal, Cal, Pal	3
Hasora quadripunctata gnaeus PLÖTZ 1884	CmM, Din, Ley, Mdo, Mno, Sam	3
Hasora vitta proximata STAUDINGER 1889	Bal, Luz, Mdo, Mno, Pal	3
Hasora moestissima moestissima MABILLE 1876	CmM, Hom, Ley, Luz, Mas, Mdo, Mno, Neg, Sam	4
Hasora caeruleostriata DE JONG 1982	Hom, Ley, Luz, Mas, Neg, Pal, Pan, Sam	4

Hasora khoda minsona SWINHOE 1907	Bal, Ley, Luz, Mar, Neg, Pal, Pan, Sam, Taw	3
Hasora leucospila leucospila MABILLE 1891	Bas, Hom, Ley, Luz, Mdo, Mno, Neg, Pal, Sam	3
Badamia exclamationis FABRICIUS 1775	Bas, Hom, Ley, Luz, Mar, Mdo, Mno, Neg, Pal, Pol, Sam, Stu, Taw, Tic	4
Choaspes plateni adhara FRUHSTORFER 1911	Mno	3
Choaspes plateni negrosa DE JONG & TREADAWAY 1993 ✪ Fig. 78	Neg	3
Choaspes plateni boreus DE JONG & TREADAWAY 1993 ✪ Fig. 79	Luz, Mdo	2
Choaspes plateni visaya DE JONG 1980	Bil, Boh, Ley, Pao, Sam	4
Choaspes plateni caudatus EVANS 1932	Pal	1
Choaspes estrella estrella DE JONG 1980	Luz, Mdo, Neg, Pan	3
Choaspes estrella pallens SCHRÖDER & TREADAWAY 1986	Ley, Mno, Sam	3
Choaspes subcaudatus crawfurdi DISTANT 1886	Taw	2

Subfamily Pyrginae

Celaenorrhinus nigricans mindanus DE JONG 1981	Ley, Luz, Mno	2
Celaenorrhinus putra brahmaputra ELWES & EDWARDS 1897	Pal	1
Celaenorrhinus treadawayi treadawayi DE JONG 1981	Mno	2
Celaenorrhinus treadawayi samarensis DE JONG 1981	Sam	1
Celaenorrhinus asmara palajava STAUDINGER 1889	Pal	3
Celaenorrhinus ficulnea ficulnea HEWITSON 1868	Pal	1
Celaenorrhinus bazilanus bazilanus FRUHSTORFER 1909	Bas, Mno	–
Celaenorrhinus halconis DE JONG & TREADAWAY 1993 ✪ Fig. 81/82	Mdo	1
Tapena thwaitesi bornea EVANS 1931	Bal, Pal	3
Darpa pteria pteria HEWITSON 1868	Ley, Luz, Mno	2
Darpa pteria dealbata DISTANT 1886	Pal	2
Odina cuneiformis SEMPER 1892	CmL, Ley, Luz, Mar, Mdo, Pal	3

Coladenia igna igna Semper 1892	Ley, Luz, Mdo, Mno, Sam	1
Coladenia igna marinda de Jong & Treadaway 1992	Mar	2
Coladenia ochracea de Jong & Treadaway 1992	Ley, Mno, Pan	1
Coladenia semperi Elwes & Edwards 1897	CmM, Ley	1
Coladenia minor Chiba 1991	Luz, Mar, Mdo	2
Coladenia similis de Jong & Treadaway 1992	CmM, Luz, Mar, Mno **	2
Coladenia palawana Staudinger 1889	Pal	1
Gerosis limax philippina Evans 1932	Bal, Pal	3
Gerosis corona corona Semper 1892	Ala, CmM, Ley, Luz, Mas, Mdo (excl. Mt. Halcon), Mno, Pan, Sam	3
Gerosis corona halcona Treadaway & Nuyda 1995	N-Mdo (Mt. Halcon)	2
Tagiades japetus titus Plötz 1884	Bas, Bil, Boh, Cal, Ceb, CmL, CmM, Cts, Gui, Ley, Lub, Luz, Mas, Mdo, Mno, Neg, Pal, Pan, Pol, Sam, Sia, Sib, Stu, Taw	4
Tagiades gana gana Moore 1865	Pal, Stu, Taw	3
Tagiades gana elegans Mabille 1877	Bas, Bil, Boh, CmM, Cts, Din, Ley, Luz, Mar, Mas, Mdo, Mno, Neg, Pan, Pao, Pol, Sam, Sia, Sib	4
Tagiades gana semperi Fruhstorfer 1910	CmL	–
Tagiades parra parra Fruhstorfer 1910	Pal	2
Tagiades parra n. ssp. in litt.	Ley, Mas	2
Tagiades ultra Evans 1932	Pal	2
Tagiades trebellius martinus Plötz 1884	Bab, Bas, Boh, Ceb, CmM, Din, Hom, Ley, Luz, Mar, Mdo, Mno, Pal, Pan, Pol, Sam, Sib, Taw, Tic	4
Mooreana princeps Semper 1892	Ley, Mno, Pao, Sam	3
Mooreana trichoneura trichoneuroides Elwes & Edwards 1897	Pal	3

Odontoptilum angulatum helisa SEMPER 1892	Bas, Boh, Ceb, Ley, Mdo, Mno, Neg, Pan, Sam	3
Odontoptilum angulatum sinka EVANS 1949	Luz, Mar, Pol	2
Odontoptilum pygela pygela HEWITSON 1868	Pal, Sga, Taw	3
Odontoptilum leptogramma HEWITSON 1868	Ceb, Ley, Luz, Mdo, Mno, Sam, Sib	3

Subfamily Hesperiinae

Aeromachus musca MABILLE 1876	Ceb, Luz, Mdo, Mno, Neg, Sia	3
Aeromachus plumbeola FELDER 1867	Bil, Ley, Luz, Mas, Mdo, Mno, Neg, Pan, Sam	4
Thoressa justini justini INOUE & KAWAZOÉ 1969	N-Luz	1
Thoressa justini raphaeli NUYDA & KITAMURA 1994	Ley	1
Halpe mahapara FRUHSTORFER 1911 (stat. rev.)	Cal, Pal	3
Halpe palawea STAUDINGER 1889	Cal, Pal	3
Halpe luteisquama MABILLE 1876	Bas, Ceb, CmL, Ley, Luz, Mar, Mdo, Mno, Neg, Pal, Pan, Sam, Sib, Stu, Taw	4
Halpe latipinna DE JONG & TREADAWAY 1993	Mdo	1
Halpe dante dante EVANS 1949	Neg	1
Halpe dante luzona EVANS 1949	Luz	2
Halpe dante tilia EVANS 1949	Ley, Mno	1
Halpe sulphurifera HERRICH-SCHÄFFER 1869	Jol, Ley, Luz, Mar, Mas, Mdo, Mno, Neg, Pal, Sib, Taw	4
Halpe toxopea EVANS 1932	Cal, Pal	2
Halpe pelethronix pelethronix FRUHSTORFER 1910	Pal	1
Halpe inconspicua DE JONG & TREADAWAY 1993	Ley, Pao, Sam	1
Halpe purpurascens DE JONG & TREADAWAY 1993	Ley, Mas, Mno, Neg, Pan	2
Koruthaialos rubecula atra EVANS 1949	Ceb, Ley, Mno, Neg, Sam	4
Koruthaialos rubecula luzonensis FRUHSTORFER 1910	Luz, Mar	4
Koruthaialos rubecula palawites STAUDINGER 1889	Cal, Pal	3

Koruthaialos sindu sindu C. & R. Felder 1860	Pal	2
Psolos fuligo fuligo Mabille 1876	Bal, Bas, Boh, Ceb, CmM, Cts, Jol, Ley, Luz, Mas, Mdo, Mno, Neg, Pal, Pan, Sam, Sib, Stu, Taw	4
Ancistroides nigrita fumatus Mabille 1876	Bab, Bal, Bas, Bil, Boh, Ceb, CmM, Gui, Ley, Luz, Mas, Mdo, Mno, Neg, Pal, Pan, Sam, Sib	4
Notocrypta paralysos chunda Fruhstorfer 1911	Bal, Cal, Pal	4
Notocrypta paralysos varians Plötz 1882	Stu	4
Notocrypta paralysos volux Mabille 1883	Bas, Bil, Ceb, Din, Hom, Ley, Luz, Mar, Mas, Mdo, Mno, Neg, Pan, Pol, Sam, Sib, Taw	4
Notocrypta clavata clavata Staudinger 1889	Pal	1
Notocrypta howarthi Hayashi 1980	Mno	1
Notocrypta feisthamelii alinkara Fruhstorfer 1911	Bab, Cal, Ceb, Ley, Luz, Mar, Mdo, Mno, Neg, Pal, Pan, Pao, Pol, Sam, Sib	4
Suada catoleucos Staudinger 1889 = *Suada catoleucos treadawayi* Hayashi 1980 (syn.)	Mno, Pal	3
Suada albina Semper 1892	Bas, Ley, Luz, Mno, Pol	3
Suastus minutus scopas Staudinger 1889	Pal	3
Suastus minutus compactus de Jong & Treadaway 1993	Cal	3
Suastus migreus Semper 1892	Bab, Ceb, Hom, Ley, Luz, Mar, Mdo, Mno, Sib, Taw	3
Cupitha purreea Moore 1877	Bal, Pal	3
Zographetus pallens de Jong & Treadaway 1993	CmL, Mar	1
Zographetus ogygia durga Plötz 1884	CmM, Ley, Luz, Mar, Mdo, Mno, Neg, Pal, Pan, Pol, Sam	3
Zographetus ogygioides Elwes & Edwards 1897	Mas, Pan, Sib, Taw	3
Zographetus doxus Eliot 1959	Pal	1

Zographetus abima HEWITSON 1877	Pal	–
Zographetus rama MABILLE 1876	Ley, Mdo, Sam	1
Oerane microthyrus microthyrus MABILLE 1883	Ley, Luz, Mar, Mdo, Mno, Sam	3
Hyarotis adrastus praba MOORE 1866	Cal, Mno, Pal	4
Hyarotis microsticta microsticta WOOD-MASON & DE NICÉVILLE 1887	Luz, Mdo	2
Hyarotis iadera DE NICÉVILLE 1895	Pal	1
Quedara monteithi monteithi WOOD-MASON & DE NICÉVILLE 1887	Bal	2
Quedara monteithi noctis STAUDINGER 1889	Cal, Ley, Mno, Pal, Sam	3
Isma bipunctata ELWES & EDWARDS 1897	Mno, Pal	1
Isma binotatus ELWES & EDWARDS 1897	Mno	1
Isma feralia n. ssp. in litt.	Ley, Mno, Sam	1
Pyroneura flavia flavia STAUDINGER 1889	Pal	2
Pyroneura agnesia limbanga ELIOT 1967	Pal	1
Pyroneura liburnia liburnia HEWITSON 1868	Luz, Mar, Pol	4
Pyroneura liburnia divinae SCHRÖDER & TREADAWAY 1987	Pan, Rom, Sib	3
Pyroneura liburnia dora DE JONG & TREADAWAY 1993	Mdo	2
Pyroneura liburnia minda EVANS 1941	Hom, Ley, Mno	3
Pyroneura liburnia rosa DE JONG & TREADAWAY 1993	Neg	3
Pyroneura liburnia wita DE JONG & TREADAWAY 1993	Taw	1
Pyroneura derna EVANS 1941	Pal	1
Pyroneura niasana burmana EVANS 1926	Pal	3
Pyroneura toshikoae HAYASHI 1980	E-Mno	1
Plastingia naga DE NICÉVILLE 1884	Bal, CmL, Ley, Luz, Mar, Mdo, Mno, Pal, Pao	4
Plastingia pellonia FRUHSTORFER 1909	Pal	1
Plastingia viburnia SEMPER 1892	Luz, Mdo, Mno, Neg, Pal, Sam	2
Salanoemia sala HEWITSON 1866	Pal	1
Salanoemia similis ELWES & EDWARDS 1897	Dum, Pal	1

Xanthoneura telesinus Mabille 1878	Boh, Ley, Luz, Mdo, Mno, Neg, Sam	4
Lotongus calathus calathus Hewitson 1876	Pal	1
Lotongus calathus shigeoi Treadaway & Nuyda 1994	Bas	1
Zela excellens Staudinger 1889	Pal	–
Zela zeus zeus de Nicéville 1895	Taw	2
Zela zeus major Evans 1932	Hom, Ley, Luz, Mdo, Mno, Sam, Sib	3
Zela zenon de Nicéville 1895	Pal	2
Gangara thyrsis thyrsis Fabricius 1775	Pal	3
Gangara thyrsis philippensis Fruhstorfer 1910 ✪	CmL, Ley, Luz, Mdo, Mno, Pao, Sam, Sib	3
Gangara thyrsis magnificens de Jong & Treadaway 1993 ✪ Fig. 80	Neg, Pan	1
Gangara lebadea janlourensi Schröder & Treadaway 1987	Ley	1
Gangara lebadea ustini Treadaway & Nuyda 1995	Pal	2
Erionota thrax thrax Linnaeus 1767	Ceb, Cts, Luz (excl. N/NW), Mar, Mas, Mdo, Neg, Pal, Pan, Pol, Sib, Stu, Taw	4
Erionota thrax alexandra Semper 1892	N/NW-Luzon	3
Erionota thrax mindana Evans 1941	Din, Hom, Jol, Ley, Mno, Sam	4
Erionota hiraca apex Semper 1892	Ley, Luz, Mdo, Mno, Pal, Pol, Sam, Tic	2
Erionota surprisa de Jong & Treadaway 1992	Bab, Ceb, Ley, Luz, Mar, Mdo, Mno, Neg, Pal, Pan, Pol, Sam, Taw, Tic	4
Erionota sybirita Hewitson 1876	Pal	1
Erionota torus Evans 1941	Ceb, Din, Ley, Mno, Neg, Pan, Sam	4
Matapa aria Moore 1866	Cal, Cts, Hom, Ley, Luz, Mdo, Mno, Neg, Pal, Pan, Sib	4
Matapa intermedia nigrita de Jong 1983	Sam	2
Matapa celsina Felder 1867	Mno	1
Unkana ambasa ambasa Moore 1857	Pal	4
Unkana ambasa batara Distant 1886	Stu, Taw	3

Unkana ambasa mindanaensis FRUHSTORFER 1911	Boh, CmL, Din, Hom, Ley, Luz, Mdo, Mno, Neg, Pan, Sam, Sib	4
Hidari irava MOORE 1858	Mno, Sul	1
Acerbas anthea anthea HEWITSON 1868	Ley, Mno, Pao	3
Acerbas anthea luzona DE JONG 1982	Luz	2
Acerbas duris duris MABILLE 1883	CmL, CmM, Ley, Luz, Mas, Mdo, Mno, Neg	2
Pirdana hyela hyela HEWITSON 1867	Luz, Pal	3
Pirdana fusca DE JONG & TREADAWAY 1993 = *Pirdana nishiyamai* CHIBA & TSUKIYAMA 1993 n. syn.	Mno, Sam	1
Taractrocera luzonensis luzonensis STAUDINGER 1889	Bal, Bas, Ceb, Din, Ley, Luz, Mar, Mas, Mdo, Mno, Neg, Pal, Pan, Sam, Sib	4
Taractrocera luzonensis stella EVANS 1934	Stu, Taw	4
Oriens paragola DE NICÉVILLE 1896	Pal	1
Oriens gola pseudolus MABILLE 1883	Bal, Cal, Luz, Pal	3
Oriens californica SCUDDER 1872	Bal, Hom, Jol, Ley, Luz, Mas, Mdo, Mno, Pan, Pol, Sam, Sib, Taw	4
Oriens fons EVANS 1949	Bas, Luz, Mdo, Mno, Pan, Sam	2
Potanthus omaha bione EVANS 1949	Mno	1
Potanthus omaha maesina EVANS 1934	Taw	1
Potanthus fettingi alpha EVANS 1934	Luz	–
Potanthus niobe niobe EVANS 1934	Din, Mno, Neg, Sib	1
Potanthus niobe hyugai DE JONG & TREADAWAY 1993	N-Luz, N-Mdo	1
Potanthus confucius yojana FRUHSTORFER 1911	Pal	–
Potanthus mingo mingo EDWARDS 1866	Bas, Jol, Ley, Luz, Mas, Mdo, Mno, Neg, Pan, Sam, Sga, Taw	3
Potanthus pava lesbia EVANS 1934	Din, Luz, Mdo, Mno, Pol, Sib	3
Potanthus ganda marla EVANS 1949	Cal, Pal	3

Potanthus hetaerus hetaerus MABILLE 1883	Bon, Hom, Ley, Luz, Mdo, Mno, Neg, Pan, Pol, Rom, Sga, Sib, Taw	3
Potanthus serina PLÖTZ 1883	Bal, Cal, Pal, Stu	3
Telicota colon vaja CORBET 1942	Boh, Luz, Mar, Mas, Mdo, Mno, Neg, Pal, Sib	3
Telicota augias augias LINNAEUS 1763	Pal	3
Telicota augias pythias MABILLE 1878	Boh, Ceb, CmM, Cts, Gui, Ley, Luz, Mar, Mdo, Mno, Neg, Pan, Sam, Sib, Taw	4
Telicota ancilla minda EVANS 1934	Bas, Hom, Ley, Luz, Mas, Mdo, Mno, Neg, Rom, Sam, Tic	4
Telicota ancilla santa EVANS 1934	Pal	2
Telicota ohara jania EVANS 1949	Bal, Bas, Hom, Ley, Mar, Mas, Mdo, Mno, Neg, Pal, Pan, Pol, Sam, Sib	3
Telicota hilda palawana MURAYAMA & UEHARA 1992	Pal	1
Cephrenes acalle chrysozona PLÖTZ 1883	Boh, Ceb, CmM, Cts, Ley, Luz, Mar, Mdo, Mno, Neg, Pan, Pol, Sam, Sib	4
Cephrenes acalle kliana EVANS 1934	Bal, Pal, Stu	4
Prusiana prusias matinus FRUHSTORFER 1911	Bas, Boh, Ceb, CmL, CmM, Cts, Gui, Hom, Ley, Luz, Mar, Mdo, Mno, Neg, Pal, Pan, Pol, Sib, Taw	4
Parnara bada borneana CHIBA & ELIOT 1991	CmL, Hom, Ley, Luz, Mas, Mdo, Mno, Rom, Pal, Sib, Taw	3
Parnara kawazoei CHIBA & ELIOT 1991	Hom, Ley, Luz, Mdo, Mno, Neg, Pan, Sam, Sib	4
Borbo cinnara WALLACE 1866	Bal, CmM, Jol, Ley, Lub, Luz, Mas, Mdo, Mno, Neg, Pal, Pan, Sam, Sga, Stu, Taw	4

Pelopidas agna agna Moore 1866	Bal, Bas, Ceb, CmL, Hom, Jol, Ley, Luz, Mas, Mdo, Mno, Neg, Pal, Pao, Sam, Sib, Stu, Taw, Tic	3
Pelopidas mathias mathias Fabricius 1798	Boh, Ceb, CmL, CmM, * Cts, Gui, Hom, Jol, Ley, Luz, Mar, Mas, Mdo, Neg, Pal, Pan, Pao, Sam, Taw	4
Pelopidas conjuncta conjuncta Herrich-Schäffer 1869	Bas, Boh, Ceb, CmL, Cts, Din, Hom, Ley, Luz, Mar, Mas, Mdo, Mno, Neg, Pal, Pan, Pao, Sam, Sib, Stu, Taw	4
Polytremis lubricans lubricans Herrich-Schäffer 1869	Stu, Taw	2
Baoris oceia Hewitson 1868	Bab, Bal, Bas, Bil, Boh, * Cal, Ceb, CmM, Cts, Hom, Jol, Ley, Luz, Mar, Mdo, Mno, Neg, Pal, Pan, Pao, Sam, Sib, Stu, Taw, Tic	4
Caltoris brunnea caere de Nicéville 1891	Cal, Pal	2
Caltoris bromus bromus Leech 1893	Ley, Mas, Mno, Pal, Pan, Sam	2
Caltoris cormasa Hewitson 1876	Hom, Ley, Luz, Mar, Mdo, Mno, Pal, Sam, Sib, Stu, Taw	3
Caltoris philippina philippina Herrich-Schäffer 1869	Bal, Bas, Ceb, CmM, Ley, Luz, Mdo, Mno, Neg, Pal, Pan, Stu, Taw	4

Comments

In the following section data is provided only on selected species of special interest. Later publications by family will provide relevant information on most individual species/subspecies.

Family Papilonidae, Subfamily Papilioninae

Troides magellanus magellanus. In-depth studies of numerous specimens from all the islands noted on the checklist where *magellanus* occurs, fully support HAUGUM's & LOW's (1985: 346–353) approach in which they group together all forms found in the Philippines as *Troides magellanus magellanus.*

Pachliopta neptunus matbai (Plate 1, Fig. 1 and 2). This is a very recent discovery. Previously, only the Palawan subspecies was known for the Philippines. It can be recognized by the very much reduced red patches on the hindwing upperside which are overlaid with numerous black scales. For fresh specimens, the red discal patches have a shimmering violet reflection. The male flies very close to the ground and occurs primarily inside the forest in relatively dark areas. Surprisingly, the female is commoner and flies higher (seen up to 4 m). The females are most often encountered at the edge of cleared areas in the forest or along forest trails. In flight, the female can readily be mistaken for a female of *Papilio alphenor* which is quite common in the same area.

Pachliopta aristolochiae/kotzebuea/antiphus. See PAGE & TREADAWAY (1995, page 125–148 in this issue) for an explanation of the distribution and separation of these three species on the Philippines.

Pachliopta phlegon splendida. This subspecies was encountered in small cleared areas in the forest very early in the morning shortly after sunrise. Both males and females were met in fairly large numbers about 30 to 50 cm above the ground feeding on a small blue flower (species unknown). By 8:30 am all had disappeared from this area. During the day, occasional specimens were seen in the forest flying at 5 to 15 m above the ground.

Pachliopta leytensis. This name was first given to what was thought to be a subspecies of *phegeus.* Careful study of a considerable number of specimens from several islands has shown that *phegeus* and *leytensis* occur together and are joined by innumerable intermediate forms with minor ge-

nitalia variations totally overlapping. Thus *phegeus* and *leytensis* are identical. Later (1983) KOÇAK showed that the name *phegeus* was not available and invalid and substituted the name *buraki*. However, *leytensis* MURAYAMA 1978 takes precedence over *buraki* KOÇAK 1983, which must therefore be considered a synonym.

Papilio daedalus daedalus occurs occasionally in a most interesting aberrant form (Plate 1, Fig. 3) in which patches of bright green scales occur on the underside.

Papilio hermeli (Plate 13, Fig. 83). A new species only very recently discovered near the summit of Mt. Halcon, North Mindoro. It is closely related to *Papilio chikae*, but apparently differs slightly in the genitalia.

Papilio luzviae (Plate 11, Fig. 77). There is some doubt as to the validity of this species. However, a number of males were caught in the wild in different months of different years. All were uniformly marked lacking any basal red patch on the underside for either wing and possessing a patch of blue scales in the costal/apical area on the hindwing underside. With respect to the forewing length, *luzviae* ranges from 49-52 mm. In comparison *P. rumanzovia* ranges from 61-73 mm and *P. lowi* from 62-72 mm. There is the possibility that it could be a hybrid of *rumanzovia/lowi* or *rumanzovia/memnon* or *lowi/memnon*. However, *lowi* and *memnon* do not occur on Marinduque. The assuption then would be that either *lowi* or *memnon* were brought there and raised on one of the butterfly breeding stations together with *rumanzovia*. So that *luzviae* could be caught in the wild would then require the progeny of any hybridization to have escaped from the breeding farm on a random basis over different years. The *luzviae* female has not been identified with certainty.

At this time, there appears to be a large selection of hybrid specimens both male and female (probably *rumanzovia/lowi*) stemming from Marinduque breeding stations. However, all of these are very variable, have the *rumanzovia* basal red area on the underside of both wings and additionally lack the *luzviae*-patch of blue scales on the underside of the hindwing. Females of this probable hybrid are very similar although smaller in size to the known forms of *P. lowi*. Further studies need to be made in the field to sort out this problem.

Graphium codrus yayoiae. This subspecies was encountered on the Tawitawi Group of Islands. It is very local in occurrence keeping to small iso-

lated wooded areas. It flies erratically and fast between 2 m and 20 m above the ground usually pitching on a leaf 5 to 10 m up in a tree. However, they do come down in the early part of the morning to feed on *Lantana*. On both Sanga Sanga Island and Sibutu Island *yayoiae* were extraordinarily numerous in left over tiny patches of forest very close to the sea. Notwithstanding they were seldom seen, as are other *codrus* subspecies, flying along the beach.

Graphium euphrates/euphratoides/decolor. The distribution of these species and their differences as they occur on the Philippines are well covered by PAGE (1987: 227-250).

Graphium idaeoides is a remarkable mimic of *Idea leuconoe*. In Northeast Luzon *idaeoides* tends to be lighter in appearance matching *Idea leuconoe leuconoe*. On Samar occurs the darkest form, again matching *Idea leuconoe samara*. On Mindanao it is intermediate to the above two forms, again matching *Idea leuconoe obscura*. Its normal flight is identical to an *Idea*. It is not uncommon in Northeast Luzon to find in the net what was thought to be an *Idea leuconoe*, to be in reality *Graphium idaeoides*. However, when disturbed their flight is typically *Graphium* – fast and erratic.

Family Pieridae, Subfamily Coliadinae

Eurema brigitta. On every island on which this pierid was encountered, it was found at the edge of grassy clearings in the forest where trees had been recently cut down. *E. brigitta* appears to be a very timid butterfly keeping close to the ground, flying slowly in between weeds, grass or bushes. They were never encountered inside the forest, always in the open at the edge of the forest.

Family Pieridae, Subfamily Pierinae

Delias themis. Very recently a number of island subspecies have been described. However, examining long series one finds a great breadth of variation in each location which would seem to cover all subspecies listed. It might perhaps be better to consider *D. themis themis* for all locations where *themis* occurs in the Philippines. Further in-depth study needs to be carried out. Therefore all subspecies have been included in this checklist.

Delias henningia pandemia. Examination of an extended series of *Delias henningia* from Palawan demonstrated that the variation was such to fit well within the normal variation of the Bornean population. On this basis, the name *Delias henningia pandemia* WALLACE 1867 is reinstated for the Palawan population making *D. h. palawana* YAGASHITA 1993 a synonym.

Delias ottonia (Plate 13, Fig. 84 and 85). In keeping with TALBOT's (1928-1937: 303-304) remarks, it is considered that the genitalia difference to *henningia* is such that *ottonia* should again (SEMPER 1890) be assigned the status of a full species. It occurs in several locations on Mindanao together with *henningia,* but usually at medium to high altitudes. Both the male and female are consistent in their markings and can easily be separated from *henningia.* In the male hindwing upperside the typical *henningia* bluish grey discal band beginning in the costal area is totally lacking while for the hindwing underside the red subbasal band is interrupted in 1b, 1c and often in the cell. For the female, apart from the interrupted red subbasal band, the cell of the hindwing upperside is, except for the basal area, fully yellow while for *henningia ochreopicta* the upper half of the cell is grey-black. Long series are totally consistent in markings and genitalia.

Delias levicki borromeoi. This subspecies is found only on the Mt. Parker Range, particularly around Lake Maugham at about 1300 m. Both sexes were met flying quite fast in the open 2 to 5 m above the ground. Within the forest it remains in and above the forest canopy. It is given to ascending the mountain early in the morning from 7 to 10 am flying above the trees but lower over cleared areas. It can be very common for a few weeks of the year (the latter half of April). Otherwise it seems to be quite a rarity.

Appias nero zamboanga occurs on Leyte, Mindanao and Samar. Comparisons of long series from these islands with *A. nero* from Bohol yields no grounds for separating the *A. nero* from Bohol as *boholensis.* This subspecies is therefore synomized as the minor variations noted fit well within the variations found for *A. nero zamboanga* across its distribution. On Plate 7, Fig. 30 and 31, mosaic gynandromorphs *of A. nero palawanica* are illustrated.

Udaiana cynis suluensis (Plate 7, Fig. 32 and 33) is a common butterfly in specific areas at certain times of the year. It was particularly common on Sanga Sanga Island in a small coastal patch of forest (recently cut down)

during the months of February to June. The males fly erratically for relatively short distances along forest trails and in clearings but usually not above 2 to 3 m. The females though equally as common as the males keep on the other hand closer to the ground flying more slowly and are often seen resting on a leaf close to the ground. In the resting position the female is much more difficult to pick out than the male. Further east on Tawitawi Island *suluensis* seems to be considerably less common.

Family Nymphalidae, Subfamily Nymphalinae

Vindula dejone (Plate 1, Fig. 4 and Plate 2, Fig. 5). It is interesting to note that the *dejone* subspecies from Sibutu Island particularly in the female has developed so differently to the *dejone* subspecies found on Sabah, Northeast Borneo as well as the subspecies from Sanga Sanga and Bongao Islands of the Sulu Archipelago. Sibutu Island lies some 40 km east of Sabah, Borneo, and approximately the same distance west from Sanga Sanga and Bongao Islands. On Sibutu the female, predominantly orange-brown in colour, is common and flies in the open along pathways and in clearings. On Sanga Sanga and Bongao Islands the female is more greenish brown and much more secretive, being seldom seen and only encountered within the forest.

Argyreus hyperbius sagada. To date within the Philippines this species has only been found on the high mountains of North Luzon and on Mt. Halcon, North Mindoro, at altitudes of 1500 m or above. Although Mindoro is generally considered a separate faunal region, a number of the species previously thought only to exist on the higher mountains of North Luzon have recently been discovered on Mt. Halcon, North Mindoro, e.g., *Zophoessa dataensis*, *Hestinalis dissimilis*, *Moduza nuydai* as well as *Argyreus hyperbius*. Additionally, the relationship between *Papilio chikae* of North Luzon and *Papilio hermeli* of North Mindoro is very close.

Rhinopalpa polynice amoenice as a subspecies has been reinstated, because comparing long series of specimens from Luzon and Marinduque with Mindoro demonstrates that the basal chestnut brown areas on the fore- and hindwings for both sexes, but particularly in the female, are consistently smaller for Mindoro versus Luzon and Marinduque specimens.

Rhinopalpa polynice tawanice (Plate 2, Fig. 6 and 7). This species, in various subspecies, is found all over the Philippines except on the Palawan Group of Islands. This particular subspecies found at the western end of the Sulu Archipelago, as perhaps could be expected, bears a much closer resemblance to the Borneo subspecies than to the subspecies found on the rest of the Philippines. It would seem that the *Rhinopalpa polynice* found its way to the Philippines over the Sulu Archipelago.

Hypolimnas bolina philippensis is very variable and has many forms. It should be noted that very occasionally females are found with an orange-brown patch in the tornal area of the forewing. I caught one specimen in South Cotabato, Mindanao, and another on Homonhon Island. These two match very well females of *Hypolimnas bolina bolina* from Java.

Moduza pintuyana gahiti. Both M. & T. OKANO (1989: 5, as *gahiti*) and TSUKADA (1991: 313, as *nigrum*) described a *Moduza pintuyana* subspecies from Bohol – a relatively small island. From the descriptions and illustrations given, *gahiti* and *nigrum* are identical. Thus it is necessary to synomize *M. pintuyana nigrum.*

Athyma maenas semperi. Long series of *A. maenas* from Bohol, Samar, Leyte, Mindanao, Dinagat and Panaon clearly show that there is no justification for creating separate subspecies from Bohol or Samar. Particularly for Samar I have a good series of *A. maenas* caught on the same date (June 1st, 1980) and in the same location (Bagacay) as the solitary holotype. All of these specimens show no more variation than a series from Mindanao or Leyte.

Athyma saskia (Plate 2, Fig. 8 and 9) is a recently described species found so far only on the east side of Luzon in the Sierra Madre Mountains. Its flight is typically *Athyma* and it pitches usually from 1 to 3 m above the ground at the edge of secondary or primary forest wings open obviously enjoying the sunshine.

Tarratia cosmia cosmia is a very variable butterfly in all locations where it is found. Long series from Bohol, Dinagat, Leyte, Mindanao, Samar, Sanga Sanga, Sibutu and Tawitawi contain for each island all the forms separated under the subspecies *samarensis*, *tenebrosa* and *cosmia*. Such forms occur in the same locality in the same month. Thus it would seem correct to retain *T. cosmia cosmia* SEMPER 1878 and *T. cosmia pindola* FRUHSTORFER 1906 (Basilan), but regard *T. cosmia tenebrosa* MURAYAMA

1982, *T. c. samarensis* JUMALON 1975, and *T. c. tawitawiensis* MEDICIELO & HANAFUSA 1994 as synonyms.

Clarification for the positioning of ***Tanaecia lupina*** and its subspecies as well as ***Tanaecia leucotaenia*** and its subspecies has been covered in detail by TREADAWAY & NUYDA (1994: 14, 15, 21).

Euthalia tanagra (Plate 13, Fig. 86 and Plate 14, Fig. 87) is once again reestablished as a distinct species. It can easily be separated visually from *E. monina* by the hindwing upperside where the zigzag submarginal line reaches the margin at each vein. For *monina* this zigzag submarginal line is always a perceivable distance from the margin even at the veins.

Euthalia mahadeva dacasini **HANAFUSA 1990** and *Euthalia mahadeva waltraudae* SCHRÖDER & TREADAWAY 1990 were names published for the Balabac subspecies. However, HANAFUSA's description has priority as it was published a few weeks earlier. Thus *E. mahadeva waltraudae* must be considered a synonym.

Lexias panopus vistrica **FRUHSTORFER 1913.** The holotype of this subspecies is in the BMNH and matches exactly *L. panopus macer* TSUKADA & NISHIYAMA 1980. Thus it is necessary to synomize the subspecies name *macer*. Similarly, M. & T. OKANO described *L. panopus boholensis* in 1988 which is identical to ***L. panopus visayana*** **SCHRÖDER & TREADAWAY 1987.** Therefore, the subspecies *boholensis* must be considered a synonym of *visayana*.

Neptis cyra canloana. MURAYAMA (1983: 18–20) described *Lasippa canloana* from Negros which in reality was a subspecies of *Neptis cyra*. TSUKADA (1985: 206) published *Neptis cyra moonyeenae* from Negros. As these two subspecies are identical, *Neptis cyra moonyeenae* is considered a synonym of *N. cyra canloana*.

Euripus nyctelius. The females of *Eur. nyctelius* across the Philippines mimic extraordinarily well *Euploea* native to the specific island. The *nyctelius* found on Marinduque is no exception. The female mimics the female of *Euploea mulciber subvisaya,* a subspecies endemic to Marinduque. *Euripus nyctelius* ***marinduquanus*** **ssp. nov.** (Plate 4, Fig. 14 and 15) is easily distinguished in the female by the unique colouration of the forewing upperside which in the subapical area has the same restricted violet blue patch as in *Eup. mulciber subvisaya* with the subapical band of small greyish spots very faintly indicated while for *Eup. mulciber subvisaya* they are

small but clearly distinct. The new subspecies is closest to *Eur. nyctelius clytia* from Luzon and Polillo, the female of which normally closely mimics the female of *Eup. mulciber dufresne* with its broad white subapical band on a larger violet blue patch. The hindwing upperside of *Eur. nyctelius marinduquanus* female with its broad dark brown submarginal band and with the space between veins 1b, 2, 3 and 4 completely covered with brown scales is also darker in appearance than the normal *clytia*. Females of both *clytia* and *marinduquanus* occasionally mimic other *Euploea*, e.g., for *clytia* the male of *Eup. mulciber dufresne*, for *marinduquanus* the female of *Eup. swainson swainson*. The male of *marinduquanus* is very close to the male of *clytia*, but has slightly darker markings on the upper- and underside of both wings. Length of forewing (FWL) ♂ (n = 10) 26.0 mm (range 25-27 mm), FWL ♀ (n = 7) 38.9 mm (range 37-41 mm).

Holotype: ♀, Philippines, Marinduque, Binunga, IX. 1983.

Paratypes: 1 ♂, Philippines, Marinduque, nr. Boac, v. 1973; 1 ♂, same data but VI. 1973; 1 ♂, same data but VII. 1973; 2 ♀♀, same data but IX. 1973; 1 ♀, same data but IV. 1976; 2 ♂♂, same data but VII. 1979; 1 ♀, same data but 17. VII. 1979; 4 ♂♂, Philippines, Marinduque, Binunga, VIII. 1979; 1 ♂, same data but XII. 1981; 1 ♀, same data but II. 1983; 1 ♀, same data but IX. 1983.

All specimens in collection TREADAWAY which is assigned to the Senckenberg-Museum, Frankfurt/Main.

Family Nymphalidae, Subfamily Charaxinae

Charaxes sangana occurs as two subspecies, *C. sangana sangana* (Plate 3, Fig. 10 and 11) from Sanga Sanga and Tawitawi Islands and *C. sangana juwaki* (Plate 3 Fig. 12 and 13) from Sibutu Island. These two subspecies differ in that for *sangana sangana* the male has a reduced and darker basal brown area and thus an increased black area on the upperside of both the fore- and hindwing. The female has a white discal band on the forewing upperside. For the *sangana juwaki* male, the brown areas are slightly lighter in colour and larger with equivalent reduction of the outwardly black areas of the upperside of the fore- and hindwing. Further, for the *juwaki* male the hindwing upperside submarginal black area is narrower and indicated only by circular spots in the tornal area. The female not only has a bright yellow discal band on the forewing upperside

but also the wings themselves are more falcated. In the late '80s *sangana juwaki* was quite common on the tiny Island of Sibutu in the forested areas. However, since then the forest has been considerably reduced such that it can be expected that this subspecies may soon be extinct. All examples of *sangana* illustrated by TSUKADA (1991: 220) are subspecies *juwaki* from Sibutu Island.

Agatasa chrysodonia. Originally it was thought that this species was restricted to Mindanao and Mindoro. Recently it has been discovered on the east side of North and Central Luzon, in the Sierra Madre Mountains and also in Central Samar. It is easily attracted to overripe pineapple. When approaching such bait, it tends first to pitch some 4 to 5 m above the ground on the trunk of a nearby tree in a head-down position with wings closed. Despite the striking colours of the underside (black, yellow, red, white, brown) it is often difficult to discern. A good series of *A. chrysodonia* from both Mindanao and Samar islands has been examined. The Samar specimens fit well within the variation for Mindanao specimens leaving no justification for establishing a separate Samar subspecies, thus making *A. chrysodonia orientalis* MEDICIELO & HANAFUSA 1994 a new synonym of *A. chrysodonia chrysodonia* STAUDINGER 1890. It is very likely that *A. chrysodonia* will soon be found on Leyte.

Family Nymphalidae, Subfamily Morphinae

Discophera dodong (Plate 4, Fig. 16 and 17) is found within the forest, both primary and secondary, where it can be seen flying fast and erratically close to the ground. However, it never seems to fly very far before pitching. It comes eagerly to overripe fruit.

Zeuxidia amethystus tawiensis. Both the males and females of this subspecies were readily attracted to overripe pineapple touched up with a few drops of rum. Both sexes are occasionally encountered flying quite fast inside the forest very close to the ground. If disturbed they fly rapidly into the nearest thick undergrowth on the floor of the forest. Most specimens were attracted to bait in the early evening just before sunset and a few also early in the morning just after sunrise.

Family Nymphalidae, Subfamily Satyrinae

Elymnias nesaea tawicola. This subspecies was first discovered as a rarity on Sibutu Island. The few specimens observed there visited our camp in secondary forest. On Bongao Island in a patch of destroyed secondary forest at the border of Bongao Town, local inhabitants were bottling a self-made alcoholic beverage. Understandably, left over remnants created a strong odour to which dozens of *E. nesaea tawicola* both males and females were attracted. Many were soon almost incapable of flight apparently through overimbibing. This gave us a good opportunity to study the extent of variation particularly for the females.

Family Nymphalidae, Subfamily Danainae

Parantica noeli (Plate 5, Fig. 21 and 22). This is perhaps the rarest Philippine Danainae which is found only at high altitude on Mt. Halcon in a very limited area. Its flight is similar to that of the common *P aspasia* and in appearance it is quite close to the Sulawesi *species P menadensis* though (pers. com. P. ACKERY) since the yellow markings are membrane colour rather than yellow scales it cannot be a *menadensis* subspecies.

Euploea mulciber wherever found stays very close to a given area – usually where its larva food source exists. There are 17 subspecies of *mulciber* in the Philippines. Even islands quite close to each other can have totally different appearing subspecies, e.g. South Luzon and North Samar (20 km apart) ssp. *dufresne* and ssp. *visaya*, Sibutu Island and Sanga Sanga Island (40 km apart) ssp. *portia* and ssp. *tawitawiensis*. *E. mulciber dufresne* on Luzon is strikingly marked and flies relatively slowly and aimlessly in a given area. In the Sierra Madre Mountains of East Luzon it is worthwhile to observe carefully all *mulciber dufresne* specimens seen because not only *Euripus nyctelius clytia* females mimic this *mulciber* subspecies but also both sexes of ***Elymnias kochi*** mimic the male. At one time at Angat Dam, Centraleast Luzon what I thought to be the male of *E. mulciber dufresne* continued to fly around me to the point of annoyance. Eventually in order to get rid of it I decided to catch it. Only when I had it in the net did I realize that it was the very rare *E. kochi* (Plate 14, Fig. 88 and 89). The reason for the aggravating flight was then understandable – *Elymnias*, especially *E. kochi*, are very attracted to overripe fruit. As I had pre-

viously been preparing pineapple bait for a *Charaxes* trap, I probably had some on my clothing.

Family Nymphalidae, Subfamily Libytheinae

Libythea geoffroy philippina (Plate 6, Fig. 25 and 26). This species is found all over the Philippines where it is usually encountered singly and seems nowhere to be common. It favours plants and bushes along sunny roads through secondary forest or in forest clearings where it flutters about 1 m above the ground moving from one leaf to another never pausing very long.

Family Lycaenidae, Subfamily Poritiinae

Deramas sumikat (Plate 8, Fig. 37 and 38) is a fast flyer for short distances. Unlike many *Poritia* which are found fairly close to the ground *D. sumikat* tends to be encountered at 4 to 8 m above the ground in the upper branches of small trees and shrubs within secondary forest clearings. When disturbed it tends to fly only a few metres, sometimes returning to the exact leaf from which it was disturbed. This is a rare *Deramas*. Perhaps its normal habitat is in the canopy of the forest and only very occasionally does it venture out from this habitat. This may explain its extreme rarity.

Family Lycaenidae, Subfamily Liphyrinae

Liphyra brassolis (Plate 7, Fig. 36). In the Philippines this is a very rare butterfly with two subspecies, one known from the Sierra Madre Mountains, East Luzon and the other from Homonhon Island, which belongs to the Mindanao faunal subregion. Its remarkable life history in which the larval development takes place within the nest of a weaver ant (*Oecophylla*) in a tree is very well covered by COTTRELL (1987: 5-12). As in other countries where *Liphyra* occurs, though the butterfly is very rare, the host ant is very abundant. This may imply that there are other important perhaps highly specialized variants on which *Liphyra* is dependent. Subspecies *hermelnuydae* was encountered during sunny days before noon in broken secondary forest and wasteland. Several specimens we disturbed flew rapidly a few metres and then dived into a bush or shrub at about

1.5 to 2 m above ground where it was difficult to discern them. In fact the first such specimen encountered was thought to be a moth. Quite a number of individual wings of *L. brassolis* were found on the ground. As there were many birds in this area including numerous swallows, there is a strong possibility that in flight they easily fall prey to birds. This may explain the short flight and nose-dive into cover.

Family Lycaenidae, Subfamily Curetinae

Curetis tagalica takanamii (Plate 8, Fig. 41 and 42) is very common on Sibutu Island where it can be seen flying at 2 to 3 m from one tree/bush to another. Curiously, in flight one is aware of the silvery grey underside and not very conscious of the bright orange (especially in the males) of the upperside. When in repose it is nearly always seen with its wings closed and consequently tends to blend in with its background. This subspecies is active from approximately 8:00 to 14:00 hrs in sunny weather. This subspecies is only found on Sibutu Island where sadly the forest is disappearing very rapidly. Fortunately, this species seems to be able to survive in wasteland as long as there is a scattering of small trees and bushes.

Family Lycaenidae, Subfamily Lycaeninae

Drina borromeorum (Plate 8, Fig. 45 and 46). Found so far only on Tawitawi Island within secondary and primary forest where it usually keeps in the shade under the forest canopy. In flight in resembles a *Jamides* though flight distance is only about 20 m. Once it alights amongst the leaves of a tree it tends to disappear – the grey and brown underside matching old leaves. However, its tails trembling in the air movement, tend to give it away. Many specimens we observed lacked tails and had the lower half of the hindwings missing indicating lizard attacks. Small lizards were very plentiful in this area.

Drupadia hayashii (Plate 8, Fig. 47 and 48) is a rare and very localized *Drupadia* so far found only on Sibutu Island in small clearings in secondary forest. Normally they are seldom seen in flight and it is necessary to create movement amongst the bushes and lowest branches of trees in such a clearing in order to disturb these butterflies. Both the male and female are very small and have a weak flight, so it is not surprising that

they seldom fly more than 3 to 5 m before they settle on a leaf and then often crawl under it. Since most of the secondary forest on this island has either been cut down or burnt, it is possible that this species is either close to extinction or perhaps already extinct.

Eliotia plateni plateni. TAKANAMI's examination of the type series *of E. plateni* in the Humboldt-Museum, Berlin revealed that *E. navales* SCHRÖDER & TREADAWAY 1986 should be considered a synonym of *E. plateni plateni* SEMPER 1890.

Deudorix philippinensis (Plate 10, Fig. 67, 68 and 69). Though found on several islands on the Philippines it is nowhere common. This species is given to imbibing (for its size) vast quantities of water – to the point that it sometimes has difficulty flying. This seems to be particularly the case with females. It can be found in forest clearings usually near streams or rivers where it flies quite low but (when not waterlogged) rather fast. It is interesting to note that this species has two quite different appearing females, one all dark brown and the other mostly orange on both wings upperside. Both forms of females occur together.

Family Riodinidae, Subfamily Riodininae

Dodona deodata malindangensis (Plate 11, Fig. 75). There is only one species of *Dodona* occurring in the Philippines. It is always ecountered at relatively high altitudes and has developed several distinct subspecies on isolated mountain ranges, e.g. Mt. Apo, Southeast Mindanao, Mt. Malindang, West Mindanao, Mt. Canlaon, North Negros, Mt. Pulog area in Centralnorth Luzon and Maribon, South Palawan. It is a fast flyer but is not easily disturbed once it pitches. There is not a great deal of variation amongst each subspecies except for subspecies *ohtsukai* from Negros where particularly in the male the hindwing orange tornal patch varies in size as does the extent of the black basal area of both wings upperside. In a few specimens there is only a narrow discal yellow band left between the basal and postdiscal to marginal black areas. Very occasionally (October/November) very dark male specimens occur without even the yellow spots in the subapical area of the forewing upperside. The genitalia seems to be identical for all such forms.

Tab. 1: Breakdown of the number of species and also endemic species for each family and subfamily of Philippine butterflies

Family	Subfamily	# species	# endemic	% endemic
Papilionidae	Papilioninae	**56**	**24**	**42,9**
Pieridae	**Total**	**58**	**24**	**41,4**
	Coliadinae	15	2	13,3
	Pierinae	43	22	51,2
Nymphalidae	**Total**	**283**	**138**	**48,8**
	Nymphalinae	145	61	42,1
	Charaxinae	16	9	56,3
	Morphinae	15	7	46,7
	Satyrinae	68	50	73,5
	Danainae	36	11	30,6
	Libytheinae	3	0	0,0
Lycaenidae	**Total**	**334**	**128**	**38,3**
	Poritiinae	23	12	52,2
	Liphyrinae	1	0	0,0
	Miletinae	30	10	33,3
	Curetinae	2	0	0,0
	Lycaeninae	278	106	38,1
Riodinidae	Riodininae	**8**	**1**	**12,5**
Hesperiidae	**Total**	**156**	**37**	**23,7**
	Coeliadinae	23	2	8,7
	Pyrginae	28	11	39,3
	Hesperiinae	105	24	22,9
	Grand Total	**895**	**352**	**39,3**

Tab. 2: Breakdown of the total number of species as well as number of endemic species found on each of ten large islands of the Philippines plus one very small island at the western end of the Sulu Archipelago (Sibutu) for comparative studies. **Tab. 2.A:** Number of species per family on the islands. A = number (#) of species, B = # of endemic species, C = percentage (%) of endemic species

	Papilionidae			Pieridae			Nymphalidae			Lycaenidae			Riodinidae			Hesperiidae			Total		
Island	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
Cebu	18	5	27,8	19	4	21,1	66	23	34,8	42	8	19,0	0	0	0,0	27	5	18,5	172	45	26,2
Leyte	25	11	44,0	21	5	23,8	106	51	48,1	112	41	36,6	0	0	0,0	83	22	26,5	347	130	37,5
Luzon	26	12	46,2	37	10	27,0	132	64	48,5	160	48	30,0	3	1	33,3	81	22	27,2	439	157	35,8
Masbate	17	5	29,4	14	3	21,4	60	21	35,0	39	9	23,1	0	0	0,0	30	6	20,0	160	44	27,5
Mindanao	30	15	50,0	42	18	42,9	141	71	50,4	220	89	40,5	3	1	33,3	92	25	27,2	528	219	41,5
Mindoro	22	8	36,4	26	8	30,8	115	50	43,5	108	38	35,2	2	1	50,0	70	16	22,9	343	121	35,3
Negros	19	6	31,6	25	8	32,0	101	45	44,6	82	31	37,8	2	1	50,0	56	12	21,4	285	103	36,1
Palawan	34	7	20,6	30	4	13,3	141	28	19,9	155	19	12,3	6	0	0,0	100	8	8,0	466	66	14,2
Panay	19	6	31,6	20	7	35,0	94	38	40,4	46	14	30,4	1	0	0,0	45	10	22,2	225	75	33,3
Samar	24	9	37,5	21	6	28,6	107	51	47,7	85	29	34,1	0	0	0,0	62	16	25,8	299	111	37,1
Sibutu	14	2	14,3	16	2	12,5	62	6	9,7	41	2	4,9	1	0	0,0	22	1	4,5	156	13	8,3

Tab. 2.B: Evaluation of the endemicity per island.

Island	Totals by Island # of species	# of endemic	% endemic	Total # of Species for Philippines	% by island of Philippine species total	Total # of endemic species for Philippines	% by island of Philippines endemic total
Cebu	172	45	26,2	895	19,2	352	12,8
Leyte	347	130	37,5	895	38,8	352	36,9
Luzon	439	157	35,8	895	49,1	352	44,6
Masbate	160	44	27,5	895	17,9	352	12,5
Mindanao	528	219	41,5	895	59	352	62,2
Mindoro	343	121	35,3	895	38,3	352	34,4
Negros	285	103	36,1	895	31,8	352	29,3
Palawan	466	66	14,2	895	52,1	352	18,8
Panay	225	75	33,3	895	25,1	352	21,3
Samar	299	111	37,1	895	33,4	352	31,5
Sibutu	156	13	8,3	895	17,4	352	3,7

Family Hesperiidae, Subfamily Coeliadinae

Choaspes plateni negrosa (Plate 12, Fig. 78). This subspecies is found on Negros Island in primary and secondary forest usually under 1000 m. It flies sluggishly during the daytime inside the forest at about 1 to 2 m, but is more active at sunset when the males can be found hilltopping 5.30 to 6.30 p.m. between 2 to 4 m above ground using a short repetitive flight path. Plate 12, Fig. 79 shows for comparison the Mindoro/Luzon subspecies *C. plateni boreus*, which can be found up to 1500 m.

Family Hesperiidae, Subfamily Pyrginae

Celaenorrhinus halconis (Plate 12, Fig. 81 and 82). Normally encountered in primary forest at altitudes around 1500 m. This species is usually found during the day inside the forest in the shade, but early morning or late afternoon can be met in sunny patches within the forest. It usually flies between 1 to 3 m above the ground.

Family Hesperiidae, Subfamily Hesperiinae

Gangara thyrsis occurs on the Philippines in three subspecies, one of which, *G. thyrsis magnificens*, is illustrated on Plate 12, Fig. 80. *G. thyrsis* is normally day-flying but can be seen at sunset and early evening in and around small villages close to the forest. It is also attracted to ultraviolet light. It ranges from sea-level to around 650 m in and around secondary and primary forest as well as in cleared partly cultivated lowlands. At rest its wings are closed. Perhaps because it is usually found on the underside of a leaf, it seems loath to move when disturbed and only then flying a few metres before pitching again. It can be encountered between 1 and 5 m above the ground.

One-time observations not included in the checklist

- *Troides amphrysus ruficollis* Druce 1873 on Sanga Sanga Island, Sulu Archipelago.
- *Charaxes durnfordi* ssp. on Tawitawi Island, Sulu Archipelago.

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Revisional notes on Philippine Eupterotidae: *Sarmalia* WALKER 1866 another new synonym of *Eupterote* HÜBNER [1822] (Lepidoptera: Eupterotidae)[1]

Wolfgang A. NÄSSIG

Dipl.-Biol. Wolfgang A. NÄSSIG, Schumacherstrasse 8, D-63165 Mühlheim am Main, Germany

Abstract: The type species of *Sarmalia, radiata* WALKER 1866 from Luzon, agrees in all apomorphic characters of the male genitalia with the species of *Eupterote*. From the southern Philippines (Mindanao) there are specimens known (probably an undescribed new species) which are intermediate between the normal pattern and colouration of small yellow *Eupterote* species and *"Sarmalia" radiata*. The species *radiata* is therefore combined with *Eupterote* (**comb. nov.**), resulting in the **new synonymy** of *Sarmalia* with *Eupterote*. The two further species described in *Sarmalia, S. alba* SWINHOE 1892 and *S. decolorata* GRÜNBERG 1914 (of which at least *S. alba* shares the synapomorphies of the male genitalia with *Eupterote*), are combined with *Eupterote*, **comb. nov.** The relationships within the presumably not monophyletic group are tentatively discussed. *Apha gonioptera* WEST 1932 is a **new synonym** of *Pseudoganisa currani* SCHULTZE 1910.

Anmerkungen zu einer Revision der philippinischen Eupterotidae: *Sarmalia* WALKER 1866 ein weiteres neues Synonym von *Eupterote* HÜBNER [1822] (Lepidoptera: Eupterotidae)

Zusammenfassung: Die Typusart von *Sarmalia, radiata* WALKER 1866 aus Luzon, die wegen ihrer einfarbig gelben Farbe in ein separates Genus gestellt wurde, stimmt in allen apomorphen Merkmalen der ♂ Genitalarmaturen mit der Gattung *Eupterote* überein. Auf südlichen Philippineninseln (z. B. Mindanao) gibt es eine Art (noch unbeschrieben), die habituell intermediär zwischen den kleinen gelben *Eupterote*-Arten und *„Sarmalia" radiata* steht. Deswegen wird *radiata* hier mit *Eupterote* kombiniert (**comb. nov.**); daraus ergibt sich automatisch die Synonymie von *Sarmalia* mit *Eupterote* (**n. syn.**). Zwei weitere *Sarmalia*-Arten, *S. alba* SWINHOE 1892 and *S. decolorata* GRÜNBERG 1914, von denen zumindest die erste auch die synapomorphen Merkmalsausprägungen in Genitalapparat zeigt, werden gleichfalls zu *Eupterote* gestellt (**comb. nov.**). Die Verwandtschaftsverhältnisse in der Gruppe werden andiskutiert; für eine detaillierte Ausarbeitung sind noch zuwenig Daten bekannt.

[1] Studies of Eupterotidae (Eupterotiden-Studien) no. 2. (No. 1: NÄSSIG, W. A., 1989: A new species of the genus *Eupterote* HÜBNER [1822] from Sumatra (Lepidoptera, Eupterotidae). – Heterocera Sumatrana 2 (7): 169-174.)

Innerhalb der Großgattung *Eupterote* wird die Verwendung von Untergattungen zur feineren Untergliederung empfohlen. *Apha gonioptera* WEST 1932 ist ein **neues Synonym** von *Pseudoganisa currani* SCHULTZE 1910.

Introduction

The family Eupterotidae was never thoroughly revised. There is no treatment of the family within the "Lepidopterorum Catalogus", and the paragraph on the group in SEITZ (by SEITZ & STRAND 1922 for the Indo-Australian area), the only compilation of eupterotid taxa of the Indo-Australian area besides unpublished museum catalogues, is not very accurate in details, long outdated, and contains numerous errors. No recent revision has been published except the revisional analysis on generic level by FORBES (1955) and some notes by HOLLOWAY (1982, 1987). A revision based on phylogenetic reasoning is lacking.

During studies on bombycoid moths *sensu lato* of the Philippines some new results were achieved concerning endemic taxa of Eupterotidae.

Presently, there are two genera of Eupterotidae known confined to the Philippine Islands: *Pseudoganisa* SCHULTZE 1910 (only species included and type species by original designation: *Pseudoganisa currani* SCHULTZE 1910; **new synonym:** *Apha gonioptera* WEST 1932; HT in BMNH, London, examined), and *Sarmalia* WALKER 1866 (two Philippinian species; for the North Indian species see below).

According to its ♂ genitalia morphology, *Pseudoganisa* is related to *Ganisa* WALKER 1855 (not to *Apha* WALKER 1855), but sufficiently distinct in external morphology so that the genus can be taken as typologically valid for the time being. But closer examination of *Sarmalia* resulted in evidence that this genus must be synonymized with *Eupterote*.

Sarmalia a new synonym of *Eupterote*

The genus *Sarmalia* was described within the family Saturniidae by WALKER (1866; List Specimens Lepid. Insects Coll. Brit. Mus. **35**: 1945). Its type species by monotypy is *Sarmalia radiata* WALKER 1866 (List Specimens Lepid. Insects Coll. Brit. Mus. **35**: 1945) from the [northern] Philippine Islands [most likely Luzon].

The type species of *Sarmalia, radiata,* is a monochromous yellow species, commonly found in North Luzon. The "radiation" responsible for the

species' name is not a colour pattern; the wing venation is visible through the scaling of the wings, and when a specimen becomes worn, the veins are much more visible. This visibility of the wing venation is at least partially an artifact; it is mostly expressed in old, worn specimens, which had undergone a very wet relaxing period before setting, because the veins turn blackish through this process. Fresh specimens from Luzon, ♂♂ as well as ♀♀, usually are uniform yellow with only a weak pronounciation of the veins. Only a very few specimens exhibit traces of two faint dark dots in the anal edge of the forewings and of a postdiscal fascia. The ground colour is variable to some degree, from bright yellow to deep yellow, but always the whole specimen is uniform yellow (except the antennae, which can be blackish in some individuals).

Dissection of the male genitalia of *"Sarmalia" radiata* (Fig. 1) revealed that the valves as well as the uncus are strongly reduced to some kind of hooks and are nearly immobile, fixed to the tegumen-complex; in addition, also the tube of the aedeagus is somehow fused with the juxta (or annellus or vinculum of authors[2]), that the tube cannot be moved as much as usual; only the scobinate vesica can be everted. This construction is typical for the genus *Eupterote* HÜBNER [1822]. Illustrations for this type of construction in other species can be found, for example, in HOLLOWAY (1976: Fig. 354; 1987: Figs. 75-83) and NÄSSIG (1989: Figs. 7 & 8). These hooks do no longer work like a triple forceps, as they do in many other lepidoptera (in fact, in most other groups of the Bombycoidea *sensu lato*); the only part of the male genitalia which still is truely moveable is only the vesica of the aedeagus. This is a highly modified, apomorphic construction and surely represents a valuable synapomorphy, which induced HOLLOWAY's (1982, 1987) synonymizations.

There are specimens of an apparently undescribed yellow *Eupterote* species known from the island of Mindanao (in colls. NÄSSIG and TREADAWAY) which exhibit an intermediate external appearance between *Eupterote radiata* and other small yellow *Eupterote* species like, for example, *E. lineosa* WALKER 1855, *E. todara* MOORE 1884 and others from the Asiatic mainland or *E. kageri* NÄSSIG 1989 from Sumatra, etc. These specimens show a faint brownish pattern (especially two dark dots in the anal edge of the forewings and a postdiscal line) more prominent than in any of the

[2] A convincing phylogenetic interpretation of the evolutionary origin and internal relationships of the different parts of the ♂ genitalia of the *Eupterote* group is thus far lacking; there are only some interesting ideas in FORBES' (1955) paper, which need a re-evaluation on a phylogenetic base.

Fig. 1: Male genitalia of *"Sarmalia" radiata* = *Eupterote radiata,* **comb. nov.,** Luzon (dissection no. 686/93 NÄSSIG, scale = 1 mm).

Luzon specimens of *E. radiata,* but less prominent than in, e.g., *E. kageri* and are perfect intermediates between these two taxa with respect to habitus. The antennae are to some degree individually variable in most of these taxa: most often yellow, but sometimes blackish.

These morphological studies result in the following: The type species of *Sarmalia, radiata,* belongs to the genus *Eupterote,* **comb. nov.,** which automatically results in the synonymy of *Sarmalia* with *Eupterote,* **syn. nov.**

Other species described in *Sarmalia* and combined with it by, e.g., SEITZ & STRAND (1922) are the following:

- *Sarmalia alba* SWINHOE 1892 (Catalogue of the eastern and Australian Lepidoptera Heterocera in the Collection of the Oxford University Museum. 1. Sphinges and Bombyces: 275); locus typicus (l. t.) Philippines [Luzon?].

  "S." alba (illustrated in SEMPER 1896) is a somehow aberrant species both in colouration and pattern, but basically the genitalia do not differ from typical *Eupterote.* On the other side, there appears not to be any close relationship with *E. radiata: E. radiata* obviously belongs to the group of "small yellow" *Eupterote* species of North India, the Indomalayan Peninsula and Sundaland, while we do not know the

closest relative of *alba* presently. Thus, "*S.*" *alba* may be an old endemic species of the Philippines with several autapomorphic character states. Therefore, the classic concept of *Sarmalia* evidently was not monophyletic anyway. "*S.*" *alba* must be combined with *Eupterote* as well, **comb. nov.**

- *Sarmalia decolorata* GRÜNBERG 1914 (Entomol. Rundsch. **31** (13): 76); l. t. Assam, Khasi Hills.

  E. decolorata is known from the type series only (1 ♂, 1 ♀, in Zoologisches Museum der Humboldt-Universität, Berlin, examined). These two specimens appear to be aberrant specimens; I suppose that they may be individual aberrations of one of the North Indian "small yellow" *Eupterote* species. No additional specimens have obviously ever been collected. I have not yet dissected them, but there is no doubt to me that they belong to the "small yellow" *Eupterote* species as well, **comb. nov.**

Notes about the relationships of *Eupterote* and the Eupterotini

HOLLOWAY (1982, 1987) based a new, much wider concept of the genus *Eupterote* on these similarities in evidently synapomorphic character states of the male genitalia cited above. I support this view; however, the new concept is such broad that it comprises probably far more than a hundred species now. The use of subgenera could be a tool to bring some structure into that large pool. I do not propose any changes here, as there are still many taxa which I have not yet examined. In addition, a phylogenetic interpretation of the relationships within the new, wide concept of *Eupterote* is still lacking; such subgenera should be monophyletic and therefore must be defined by apomorphic character states.

Many genera have been described in the Asiatic Eupterotidae based on external evidence only. Closer examination, especially studies of the male genitalia armatures, resulted in many synonymies, as published by, e.g., HOLLOWAY. According to HOLLOWAY (1987), the synonymy of *Eupterote* comprised no less than 10 genera; besides *Sarmalia*, further additional genera like, e.g., *Dreata* WALKER 1855 will later as well have to be synonymized with it, according to preliminary studies. Even *Apona* WALKER 1856 and *Palirisa* MOORE 1884 share the very special male genitalia, although their diverging wing pattern may, in a typological view, support their exclusion as separate genera for the time being.

FORBES' (1955) concept of a tribe Eupterotini – mainly based on wing venation – included several Asiatic genera which do not share these genitalia apomorphies listed above: *Melanothrix* FELDER 1874, *Apha* WALKER 1855, *Ganisa* WALKER 1855, *Pseudojana* HAMPSON [1893] and others. I think that FORBES' concept needs a re-evaluation on basis of phylogenetic reasoning; the question whether these genera really are Eupterotini, i.e., whether they share relevant synapomorphies with *Eupterote* etc., is not yet satisfactorily solved.

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Revision of the classification of *Pachliopta aristolochiae* (FABRICIUS, 1775) (Lepidoptera, Papilionidae) with special reference to the Philippine Islands

Malcolm G. P. PAGE and Colin G. TREADAWAY

Malcolm G. P. PAGE, Davidsbodenstrasse 71, CH-4056 Basel, Switzerland
Colin G. TREADAWAY F.R.E.S., Forschungsinstitut Senckenberg, Senckenberganlage 25, D-60325 Frankfurt am Main, Germany

Abstract: The systematics of *Pachliopta aristolochiae* (FABRICIUS, 1775) and related species have been investigated. Six sibling species are recognized: *Pachliopta aristolochiae* (FABR.), *P. antiphus* (FABRICIUS, 1793) **stat. nov.**, *P. adamas* (ZINKEN, 1831) **stat. nov.**, *P. polydorus* (LINNAEUS, 1763), *P. kotzebuea* (ESCHSCHOLTZ, 1821) and *P. polyphontes* (BOISDUVAL, 1836). **New synonymies:** *P. aristolochiae yoshikoae* OKANO, 1988 of *P. antiphus brevicauda* (STAUDINGER, 1889); *P. a. poseidippus* (FRUHSTORFER 1911) of *P. antiphus acuta* (DRUCE, 1873); *P. kotzebuea asina* (TSUKADA & NISHIYAMA, 1980) of *P. k. kotzebuea.* **New subspecies:** *P. antiphus **elioti*** from Siasi, and the following new subspecies of *Pachliopta kotzebuea* are described: *P. k. **tindongani*** (N.E. Luzon), *P. k. **mataconga*** (S. Luzon), and P. *k. **bilara*** (Cebu and Bohol).

Revision der Artengruppe von *Pachliopta aristolochiae* (FABRICIUS 1775) (Lepidoptera: Papilionidae) unter besonderer Berücksichtigung der Philippinischen Inseln

Zusammenfassung: Die Artengruppe von *Pachliopta aristolochiae* (FABRICIUS 1775) wird analysiert. Sechs nahverwandte Arten werden anerkannt: *Pachliopta aristolochiae* (FABR.) (Verbreitung: kontinentales Asien, Taiwan, Ryukyu, Batanes-Inseln), *P. antiphus* (FABRICIUS 1793) **stat. nov.** (Sundaland ohne Westmalaysia, südwestliche kleine Inselgruppen der Philippinen: Sulu-Archipel), *P. adamas* (ZINKEN 1831) **stat. nov.** (Java, Kleine Sundainseln), *P. polydorus* (LINNAEUS 1763) (Ostindonesien ab den Molukken, N-Australien, bis zu den Salomonen), *P. kotzebuea* (ESCHSCHOLTZ 1821) (Philippinen) und *P. polyphontes* (BOISDUVAL 1836) (Sulawesi bis Halmahera). Die Arten sind größtenteils allopatrisch, Arealüberlappung gibt es nur bei *P. polyphontes* und *P. polydorus* auf einigen Molukkeninseln und bei *P. antiphus* und *P. adamas* auf Ostjava. **Neue Synonymien:** *P. aristolochiae yoshikoae* OKANO 1988 von *P. antiphus brevicauda* (STAUDINGER 1889), *P. a. poseidippus* (FRUHSTORFER 1911) von *P. antiphus acuta* (DRUCE 1873) und *P. kotzebuea asina* (TSUKADA & NISHIYAMA 1980) von *P. k. kotzebuea.* Folgende **neue Unterarten** werden beschrieben: *P. antiphus **elioti*** von Siasi, *P. kotzebuea **tindongani*** von NO-Luzon, *P. kotzebuea **mataconga*** von S-Luzon und *P. kotzebuea **bilara*** von Cebu und Bohol; Holotypen in coll. TREADAWAY im Senckenberg-Museum, Frankfurt am Main.

Introduction

Papilio aristolochiae (FABRICIUS, 1775) is a well-known butterfly, with a wide distribution throughout South-East Asia. The status of this species and its relatives in the Philippines has been particularly confusing because of the local development of melanic races. Therefore, we have undertaken a detailed investigation of the island populations in and around the Philippines. In the course of this work, it became evident that there are several groups of organisms which are sufficiently differentiated to be treated as sibling species.

Part I: The relationship between *P. aristolochiae* (FABRICIUS,1775) and *P. kotzebuea* (ESCHSCHOLTZ, 1821)

Morphological characteristics

Male genitalia

The ♂ genitalia of *Pachliopta* are highly specialized, with the socii being produced to form an additional pair of claspers (MUNROE 1960). The structures of the superuncus, and both pairs of claspers (Figs. 1-3) indicate four groups of organisms (Table 1).

Female genitalia

The external parts of the ♀ genitalia are formed from three structures (Fig. 4). These are:

(1) the lamella postvaginalis, which forms a flat plate,

(2) the operculum, which is the chitinized end of the ductus bursae, and

(3) the lamella antevaginalis, which is formed from two bowed plates.

There are consistent differences between the four sibling species, as described in Table 2.

Tibial spur of the male foreleg

This feature was used by HIURA & ALAGAR (1971) as a justification of separating *P. aristolochiae* from *P. kotzebuea*. Typical specimens of *P. aristolochiae* from the Asian continent have a large spur that is surrounded by copious scaling and long hair-like scales. The populations ascribed to *P. antiphus* (FABRICIUS, 1793) from Sumatra, Borneo, Palawan

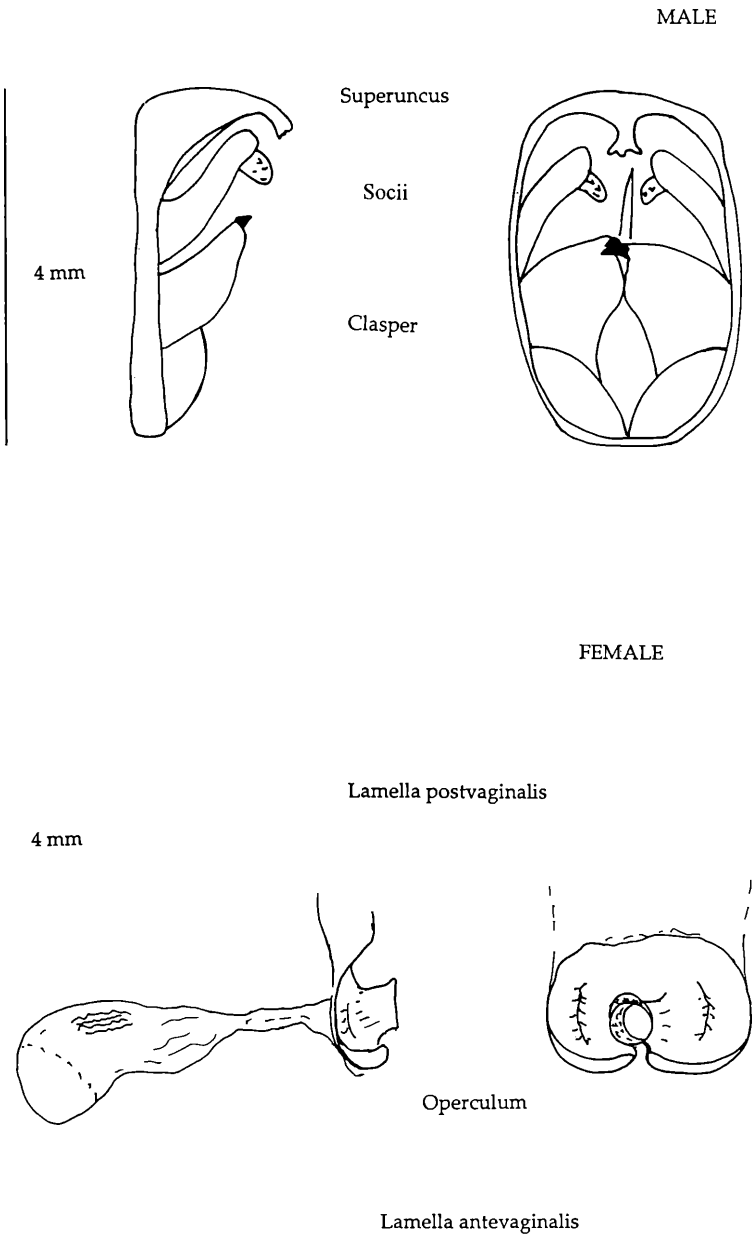

Fig. 1: Schematic diagram of the external structure of the genitalia of *Pachliopta aristolochiae* and its relatives.

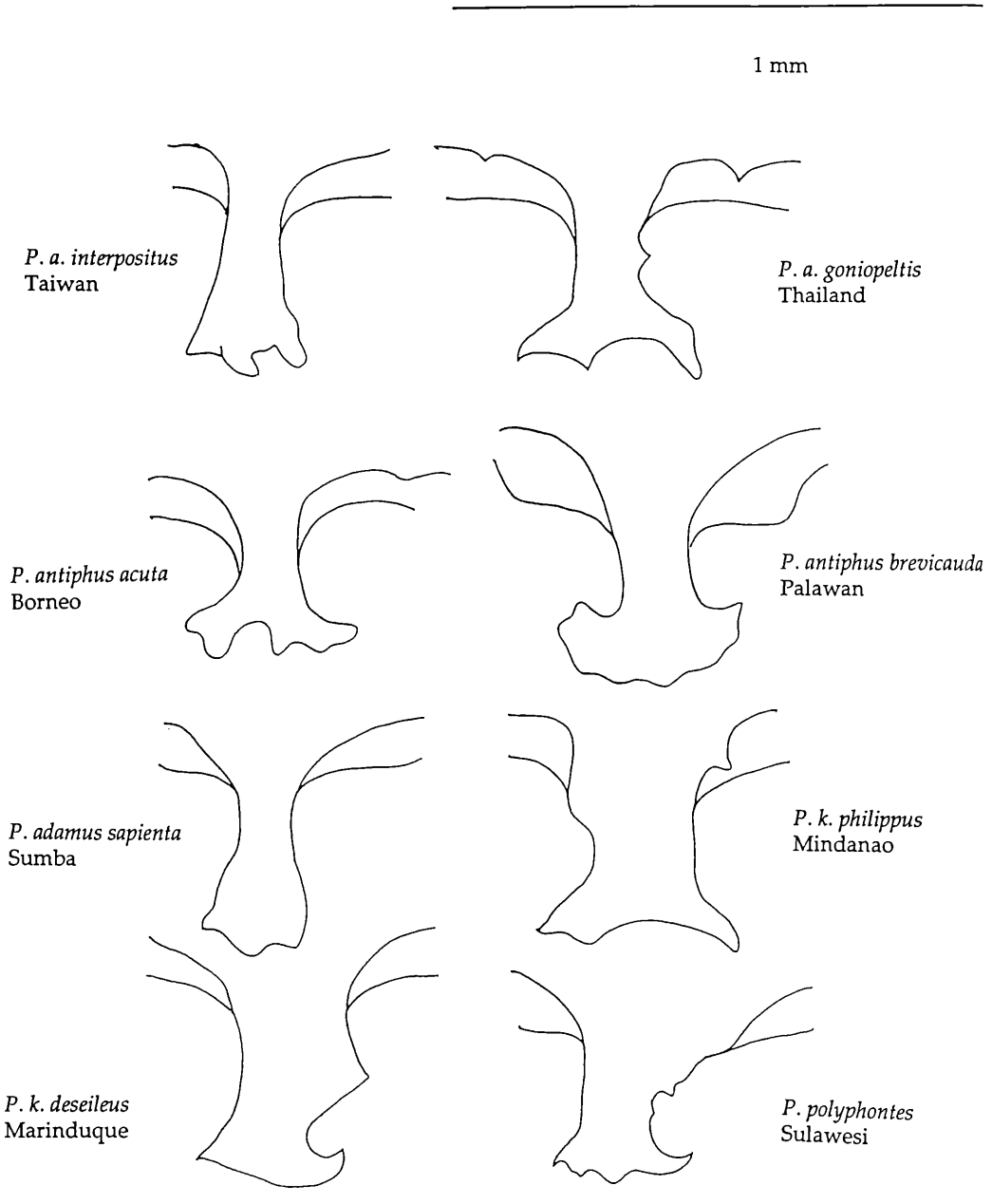

Fig. 2: Structure of the superuncus and clasper of *Pachliopta aristolochiae* and sibling species.

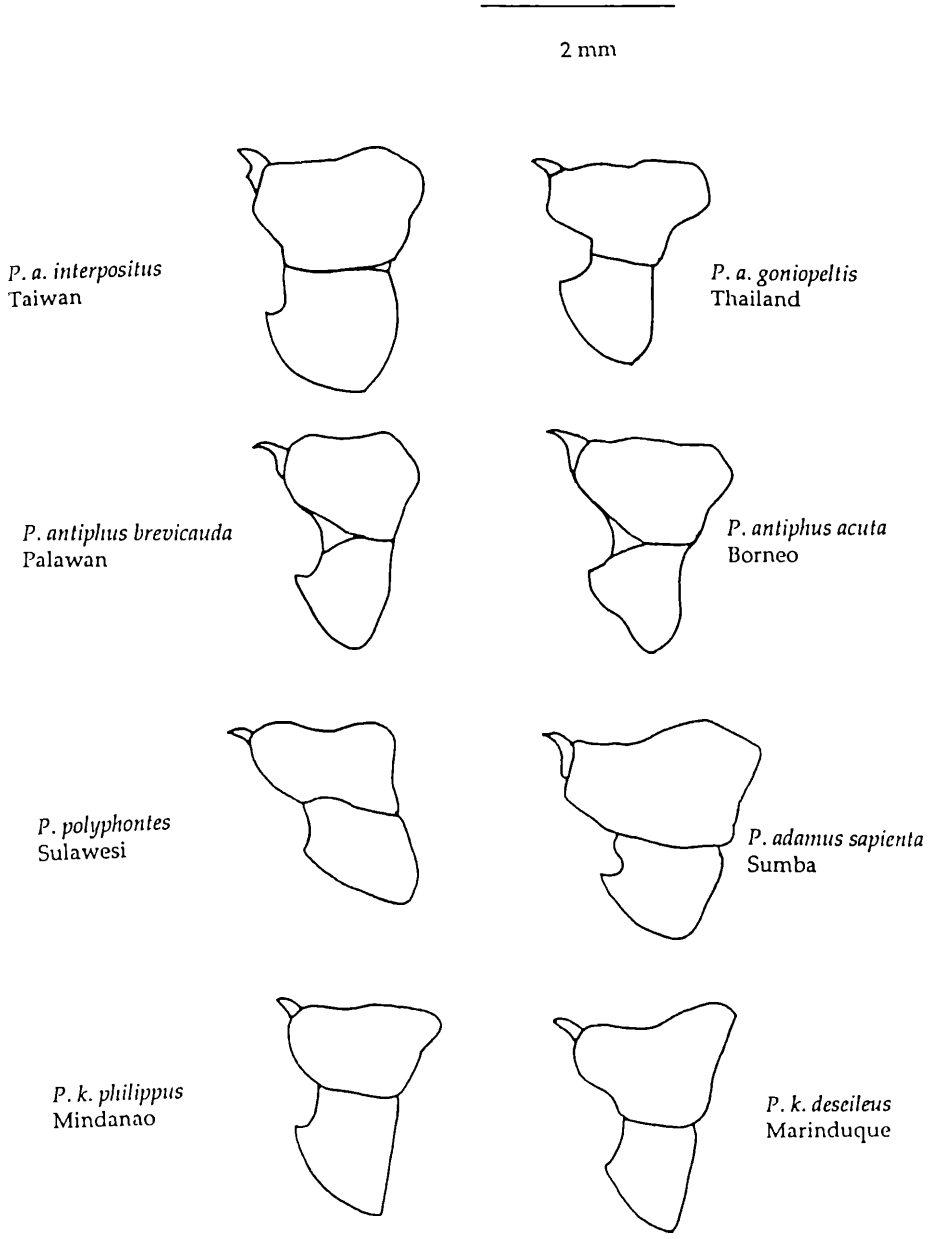

Fig. 2: Continued.

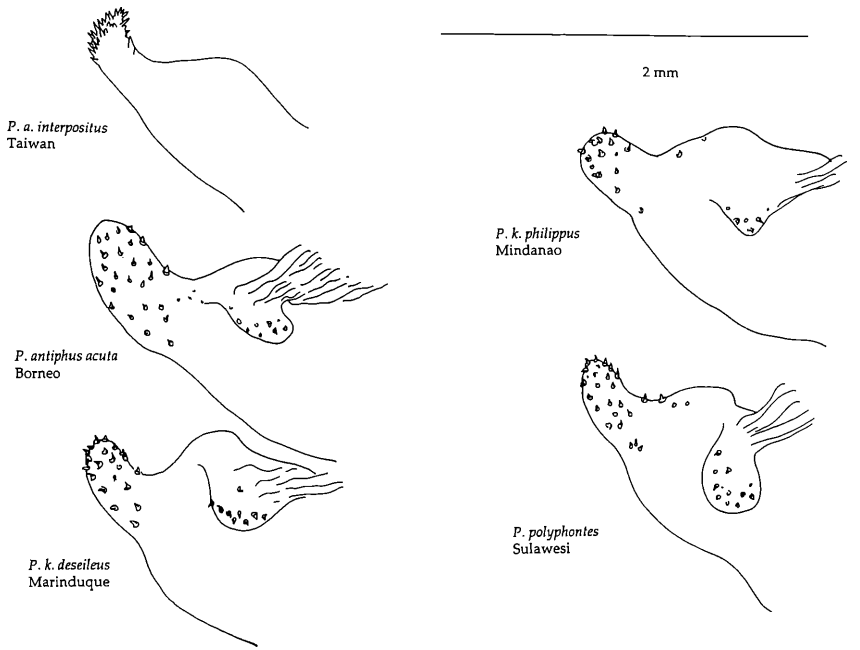

Fig. 3: Structure of the sacculus of the valve of *Pachliopta aristolochiae* and sibling species.

and the Sulu Archipelago, and those ascribed to *P. adamas* (ZINKEN, 1831) from Java, Lombok and Sumbawa, have lighter spurs that are practically naked. The populations ascribed to *P. kotzebuea* and *P. polyphontes* BOISDUVAL, 1836 have a very slender spur with no hair-like scales. The size of the spur varies with that of the individual and therefore it can be difficult to distinguish between *antiphus, adamas,* and *kotzebuea* on the basis of tibial spurs.

Wing scales

During this survey we have examined the scales forming the white rays of the forewing underside and the red spot of the anal tornus on the underside. It appears that each species of *Pachliopta* has its own characteristic types of scales, a discussion of which is outside the scope of this article. However, we observe that there are three groups of scale types. The continental races of *P. aristolochiae* have white rays that are formed from densely packed alternating rows of

(I) lanceolate, bifurcate brown scales and

(II) broad white scales that mostly have four points, rarely three or five.

Both sets of scales are bowed so that there is an interference pattern established. *P. antiphus* and *P. adamas* are similar to the continental specimens in having white rays formed from densely packed alternating rows of thin brown scales and broad white scales. The scales are strongly bowed so that a strong interference pattern can be observed. They both differ from the continental specimens in the same ways: the brown scales most commonly have three points and the white scales are broader with four or five points. The various forms of *P. kotzebuea* have a different

Table 1: Diagnosis of the male genitalia from sibling species in the group of *Pachliopta aristolochiae*. See Fig. 1 for an explanation of the terminology used. The localities given under the species-name indicate the origins of the specimens that have been examined.

Species	Superuncus	Socii	Lower clasper
P. aristolochiae (Thailand, N India, Taiwan, W Malaysia)	Large, with a slender stalk ending in three teeth. At the base, a number of small teeth.	Long, with an upturned head bearing numerous teeth. Inner surface smooth.	Outer part somewhat rectangular, the harpe showing with a conspicuous spur. The supporting lobe is large.
P. antiphus (Borneo, Palawan)	Large, with a ridged stalk ending in a polydentate head. At the base, some lighter supporting structure.	Long, narrow, with a rounded head bearing densely packed coarse teeth. Inner surface with a narrow, membraneous, setose projection.	Outer part triangular, tip of harpe and large spur conspicuous. Supporting lobe small.
P. adamas (Java, Lombok, Sumbawa)	Rather small, narrowly ending in a rounded head without conspicuous teeth.	Short and broad, ending in a projection without a conspicuous head. The teeth similar to those of *P. antiphus*. Inner surface with a setose projection like in *P. antiphus*.	Outer part rectangular, tip of Harpe and spur exposed. Supporting lobe small.
P. kotzebuea (Luzon, Marinduque, Leyte, Mindanao) and ***P. polyphontes*** (Sulawesi)	Short but broad. Ending, without a conspicuous head, in two or three hooks. The right side (seen from above) of the stalk has an additional hook or spur.	Short and broad, ending in a short projection, usually slightly upturned. Teeth small and sparsely distributed. Inner surface with a large setose projection.	Outer part rectangular. Only the tip of the spur of the harpe is apparent. Supporting lobe proportionately large.

P. a. interpositus
Taiwan

P. antiphus brevicauda
Palawan

P. adamus sapienta
Sumba

P. k. philippus
Leyte

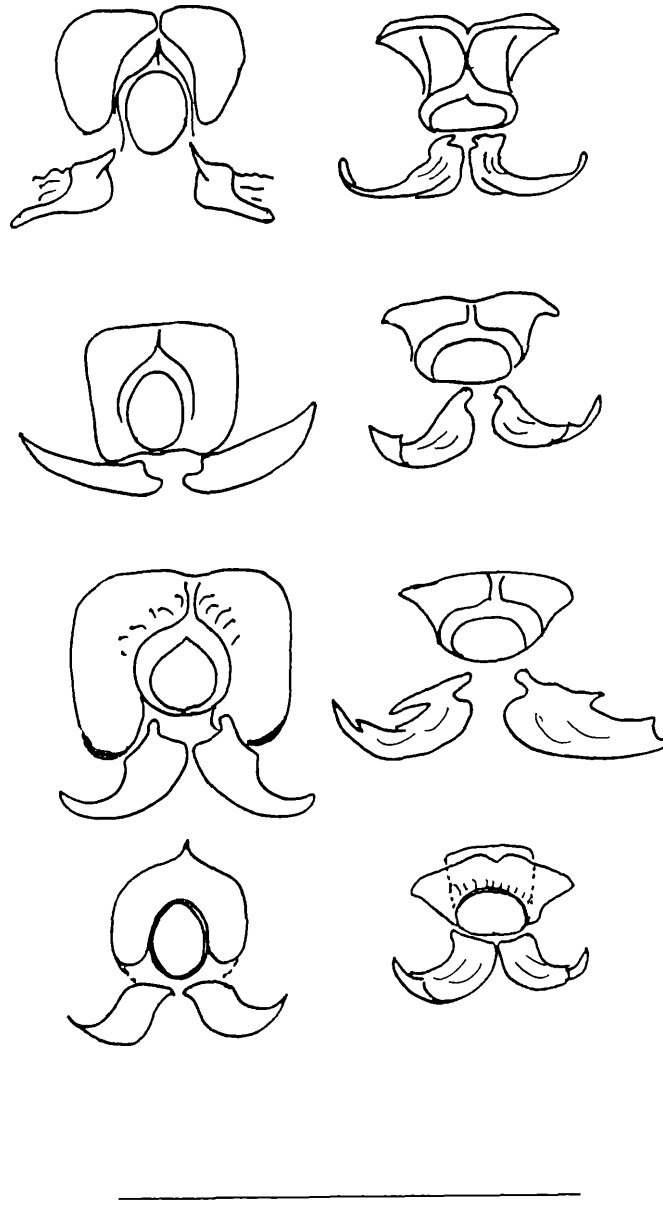

Fig. 4: Structure of the female genitalia of *Pachliopta aristolochiae* and sibling species.

Table 2: Diagnosis of the female genitalia of the sibling species in the group of *Pachliopta aristolochiae*. See Fig. 2 for an explanation of the terminology used. The localities given under the species-name indicate the origins of the specimens that have been examined.

Species	Operculum	Lamella postvaginalis	Lamella antevaginalis
P. aristolochiae (Thailand, N India, Taiwan, W Malaysia)	Heavily sclerotized, projecting well beyond the lamella postvaginalis, ending in a broad flange.	Rounded, rather weak, in two lobes with a central membraneous area that is raised in a strong ridge fusing with the flange of the operculum.	Heavily sclerotized on one edge only, long and strongly bowed.
P. antiphus (Borneo, Palawan)	Weakly sclerotized, projecting only slightly beyond lamella postvaginalis, ending in a narrow flange.	Square, strongly sclerotized, with a weak central ridge.	Heavily sclerotized, broad, short but strongly bowed.
P. adamas (Sumbawa)	Similar to *P. antiphus*.	Similar to *P. antiphus*.	Similar to *P. antiphus*.
P. kotzebuea (Luzon, Marinduque, Leyte, Mindanao) and ***P. polyphontes*** (Sulawesi)	Weakly sclerotized, flush with the lamella postvaginalis without a flange.	Shaped like an inverted heart, weakly sclerotized.	Broad, weakly sclerotized, not so strongly bowed as in the other species.

pattern. The scales are more widely spaced, the thin scales are much paler, even white, and both sets of scales are not so strongly bowed, giving a weaker interference pattern. A similar type of scaling is found in *P. polyphontes* while *P. polydorus* is more like *P. aristolochiae*.

The structure of the red scales repeats these divisions. The continental races have translucent red scales that have four or five points, rarely three. *P. antiphus* and *P. adamas* also have translucent red scales but they typically have fewer points (mostly three). *P. kotzebuea* has opaque red scales that have two points, occasionally with the suggestion of a third.

Part II: Morphometric analysis of the Philippine populations

The availability of reasonable numbers of specimens representing many localities in the Philippine Islands prompted us to undertake a morphometric analysis of the island populations of *P. kotzebuea* and use this as a basis for assessing their differences in an objective manner.

Populations represented by 5 or more specimens of a single sex were included in the analysis; the relative sample sizes are shown in Fig. 5. The characters we chose were as follows.

- Wing-shape, defined by vectors proceeding from the base of both forewing and hindwing to the point where the radial veins meet the edge of the wing (see PAGE 1987 for further discussion).
- Tail-shape, using the constructs shown in Fig. 6.
- Spot-size, defined as length and breadth of red spots in the sub-marginal and sub-costal bands of the hindwing underside. The latter measurements were made under microscopic examination (5 × magnification) using a calibrated graticule.

The data were interpreted using the CSS Statistica program. The results of the analysis largely confirm the conclusions one can draw from visual examination. Thus, there are very big differences between the white-spotted populations of Mindanao, Leyte and Samar and the melanic forms occupying the central Philippine islands. It is also clear that the brightly marked N.E. Luzon populations are distinct from those occurring in the South of Luzon and are more similar to those of Mindanao *et cetera*. The analysis also suggests differentiation between some of the melanic races. For example the populations on Bohol and Cebu tend to have a more complete sub-cellular band and larger sub-costal spots than the populations on neighbouring islands such as Panay and Negros (Fig. 6). A similar situation exists for the S. Luzon population, which has more extensive markings than the neighbouring island populations from Marinduque and Mindoro.

The relationship between the various populations sampled in our analysis is summarized in Fig. 7. This shows an unrooted tree where the distance between two points indicates the degree of difference between the scores obtained for the various morphological parameters.

Part III: Classification of *P. aristolochiae* and its relatives

These studies suggest the following division of the *aristolochiae*-group into six sibling species. The question of whether these groups are different species, or simply well-differentiated groups of subspecies cannot be easily answered. The morphological differences are rather slight, although consistent. There is little sympatry: the ranges of *P. polyphontes*

and *P. polydorus* overlap in the Moluccas and those of *P. antiphus* and *P. adamas* overlap on W. Java, but it is not known whether these populations occupy the same ecological niches.

(1) *Pachliopta aristolochiae* (FABRICIUS, 1775)

Type locality (TL): India.

In the restricted sense used here, this species now comprises only the Asiatic mainland subspecies normally ascribed to *P. aristolochiae*. No attempt has been made to revise the status of these. *P. a. interpositus* (FRUHSTORFER, 1904) occurs on Formosa, Ryukyu Island and, in the Philippines, on the Batanes Islands.

(2) *Pachliopta antiphus* (FABRICIUS, 1793) stat. nov.

TL: W. Java.

Range: Java, Sabang, Sumatra, Borneo, Palawan, Calamian Is., Cuyo Is., Tawitawi Is, Sanga Sanga Is., Sibutu Is., Bazilan, Siasi, Jolo.

Now comprises the following subspecies:

(2.a) *Pachliopta antiphus aphrodite* (KALIS, 1933)

TL: Sabang. Range Sabang, Pulau We (N of Sumatra).

(2.b) *Pachliopta antiphus antiphus* (FABRICIUS, 1793)

TL: W. Java, Mt. Gedeh. Range: Java, Sumatra, Nias
(syn.: *kameiros* FRUHSTORFER, 1911).

(2.c) *Pachliopta antiphus acuta* (DRUCE 1873)

TL: Borneo. Range: Borneo, Tawitawi Islands (Tawitawi, Sanga Sanga, Sibutu), Bazilan (*poseidippus* FRUHSTORFER, 1911, syn. nov.).

These three subspecies are very close to one another and it might be better to include them all under *P. antiphus*. DRUCE distinguishes the Borneo form from that occurring on Java and Sumatra by its narrower forewings and more slender tails on the hindwing. Since this difference is perceptible in the series available to us (37 specimens from Sumatra, 45 specimens from Borneo), and is confirmed by a difference in the scores obtained by morphometric analysis, we will maintain the separation until a more extensive selection of material can be examined. We have examined 3 ♂♂ and 2 ♀♀ from Bazilan and are unable to find any character that separates them from N. Borneo specimens.

On Bazilan, the butterflies have been observed flying on wasteland and pasture with small shrubs and a few young trees. During the morning they seem to fly within a fixed area with a fast and erratic flight 1.5 to 3 m above the ground. During the afternoon the butterflies had a slow fluttering flight between 0.5 and 1.5 m above ground. All specimens observed were at altitudes less than 200 m.

On Tawitawi Island, the butterflies are found in lowland primary forest flying at 0.5 to 2 m above ground with a slow ambling flight, crossing forest trails. Never seen outside forest.

On Sanga Sanga, the butterflies were observed either in wasteland with small shrubs, grass and weeds or in coconut groves with flowering undergrowth. Flight fairly fast and directional, but erratic at 1 to 3 m above ground.

On Sibutu, the butterflies were seen only in late afternoon, being quite numerous. They had a slow, ambling flight 0.5–1.5 m above the ground over *Lantana* wasteland adjoining lowland primary forest.

(2.d) *Pachliopta antiphus brevicauda* (STAUDINGER, 1889)

(*yoshikoae* OKANO 1988 (TL: Cuyo), syn. nov.)

TL: Palawan.

Range: Palawan, Calamian, and Cuyo islands.

We have examined 1 ♂ and 4 ♀♀ from Cuyo and cannot find any characters to distinguish them from Palawan specimens (74 ♂♂, 26 ♀♀).

On Palawan and the Calamian group the butterflies occur singly in primary or secondary forest, as well as in open farm areas and on wasteland. Occasionally they can be seen on garden flowers in small villages. The usual mode of flight is unhurried and directional at 1–3 m above the ground.

(2.e) *Pachliopta antiphus antiphulus* (FRUHSTORFER, 1902)

TL: Jolo. Range Jolo.

We have only been able to examine two pairs, one located in the collection of The Natural History Museum, London (formerly British Museum (Natural History), BMNH), and the other pair in the Senckenberg-Museum, Frankfurt/Main. The specimens differ from *acuta* in having more rounded forewings and more extensive red markings on the hindwing upperside.

(2.f) *Pachliopta antiphus elioti* **subsp. nov.** (Figs. 8–11)

TL: Siasi. Range Siasi.

Male holotype (in TREADAWAY collection which will be included in Senckenberg-Museum, Frankfurt am Main): 900 m, Bud Siasi, Siasi Is., 26 March 1991.

Female allotype (in TREADAWAY collection): 900 m, Bud Siasi, Siasi Is., 27 March 1991).

Paratypes: 7 ♂♂, Bud Siasi, caught between 25 and 29 March 1991, and 6 ♀♀, Bud Siasi, caught between 26 and 29 March 1991, in TREADAWAY collection • 1 ♂, Bud Siasi, 28 March 1991, and 1 ♀, Bud Siasi, 28 March 1991, in PAGE collection.

Holotype ♂: Forewings (length 46 mm) rounded with convex margin. Dark, with the rays of the forewing obscured by black scaling. Hindwing elongated with broad, spatulate tails. The red spots of the underside show through clearly, the 7th and 8th being only lightly with black suffusion. The 8th spot is large and triangular. On the underside, the 7th and 8th spots are large, while the 6th is actually rather small compared to *acuta*.

♀: Forewings (length 44 mm) more rounded than those of *acuta* ♀♀. The rays of the forewing are less conspicuous, while the red spots of the hindwing, particularly the 7th and 8th are brighter. Tails spatulate.

The paratypes agree well with the holotype. Worn specimens are paler but the lack of suffusion and the larger size of the red spots are still distinctive. The most similar subspecies is *antiphulus* from the neighbouring island of Jolo. The somewhat larger size, more rounded wings and brighter spots of the Siasi specimens are sufficient to distinguish them from the Jolo material.

We name this subspecies after Lt. Col. John ELIOT, who has made considerable contributions to the study of butterflies of S.E. Asia and has always been most generous in providing assistance.

All specimens were seen flying around the top of a small mountain at an altitude of 900–950 m. The peak of the mountain was covered with advanced secondary forest. However, no butterflies were observed within the forest. All were flying just outside the forest at about 0.5–1 m above the ground. They did not seem to keep to any given area, but flew more or less in a straight line with an unhurried flight. Outside the forest were fields of rough grass with patches of weeds and small bushes on the slopes of the mountain.

(3) *Pachliopta adamas* (ZINKEN, 1831), stat. nov.

TL: E. Java.

Range: Java, Enggano, Bawean, Bali, Lombok, Kongean, Flores, Sumba, Tanajampea.

Subspecies:

(3.a) *Pachliopta adamas adamas* (ZINKEN, 1831)

Range: Java, Enggano.

There is an overlap with *P. antiphus* in W. Java with no intergradation of the structural characteristics (particularly wing shape and male genitalia) that separate these two species. Some of the specimens of *P. adamas* we have seen from Java show a tendency towards melanism, with pattern approaching that of *balinus* (FRUHSTORFER, 1908) in some instances. However, as melanism recurs in several of the other subspecies, it can be taken as characteristic of this species rather as evidence for interbreeding of *adamas* and *antiphus*.

(3.b) *Pachliopta adamas probus* (FRUHSTORFER, 1911)

TL: Bawean.

(3.c) *Pachliopta adamas balinus* (FRUHSTORFER, 1908)

TL: Bali.

(3.d) *Pachliopta adamas lombockensis* (ROTHSCHILD, 1896)

TL: Lombok.

(3.e) *Pachliopta adamas antissa* (JORDAN, 1908)

TL: Kangean.

(3.f) *Pachliopta adamas floresianus* (ROTHSCHILD, 1908)

TL: Flores.

(3.g) *Pachliopta adamas sapienta* TSUKADA & NISHIYAMA, 1980

TL: Sumba.

(3.h) *Pachliopta adamas agricola* TSUKADA & NISHIYAMA, 1980

TL: Tanajampea (island S of Sulawesi).

(4) *Pachliopta polydorus* (LINNAEUS, 1763)

TL: "India".

Range: Moluccas, to Solomon Islands and N. Australia.

In structure this species is more similar to *P. aristolochiae* than it is to either of its current immediate neighbours, *P. adamas* or *P polyphontes*.

We have made no attempt to investigate the systematics of this species and its thirty or more described subspecies.

(5) *Pachliopta kotzebuea* (Eschscholtz, 1821)

TL: "Manilla"

Range: Philippines.

The melanic forms of this species (Central & Southern Luzon to Cebu) can be found in primary and secondary forest as well as in pasture land with shrubs and coconut groves with flowering undergrowth. The butterflies were observed flying close to the ground and rather slowly. Females prefer thicker growth or forest, where they fly low and slow. The males, when not feeding, have an aimless sort of flight. They can be quite common in certain areas, with several specimens flying together.

The form from the southern Philippines (Samar, Leyte, and Mindanao) is quite often seen flying 5 m and more above the ground, usually singly with a directional flight. Seems to be very much attracted to a particular flowering tree of unknown species. The butterflies have been observed to remain in and around this sort of tree, flying at 5-15 m, for extended periods (Overnighting). They have also been observed flying at 2-5 m above the ground in coconut groves. The normal flight is quite fast. Specimens have been encountered up to 1000 m above sea-level.

We consider that the species now comprises the following subspecies:

(5.a) *Pachliopta kotzebuea kotzebuea* (Eschscholtz, 1821) (Figs. 16, 17)

(*asina* Tsukada & Nishiyama, 1980, **syn. nov.**)

TL: "Manilla"

Range: Central and W. Luzon.

The original description suggests grey rays on the forewing and a suffused row of red spots on the hindwing (Eschscholtz 1821). This is certainly the phenotype of the specimens known to Reakirt (1867) and Fruhstorfer (1911) from "Manilla" and "Luzon". This is also the phenotype described by Tsukada & Nishiyama for the holotype of *asina* from Asin in central western Luzon. We therefore place *asina* as a new synonym of *kotzebuea*.

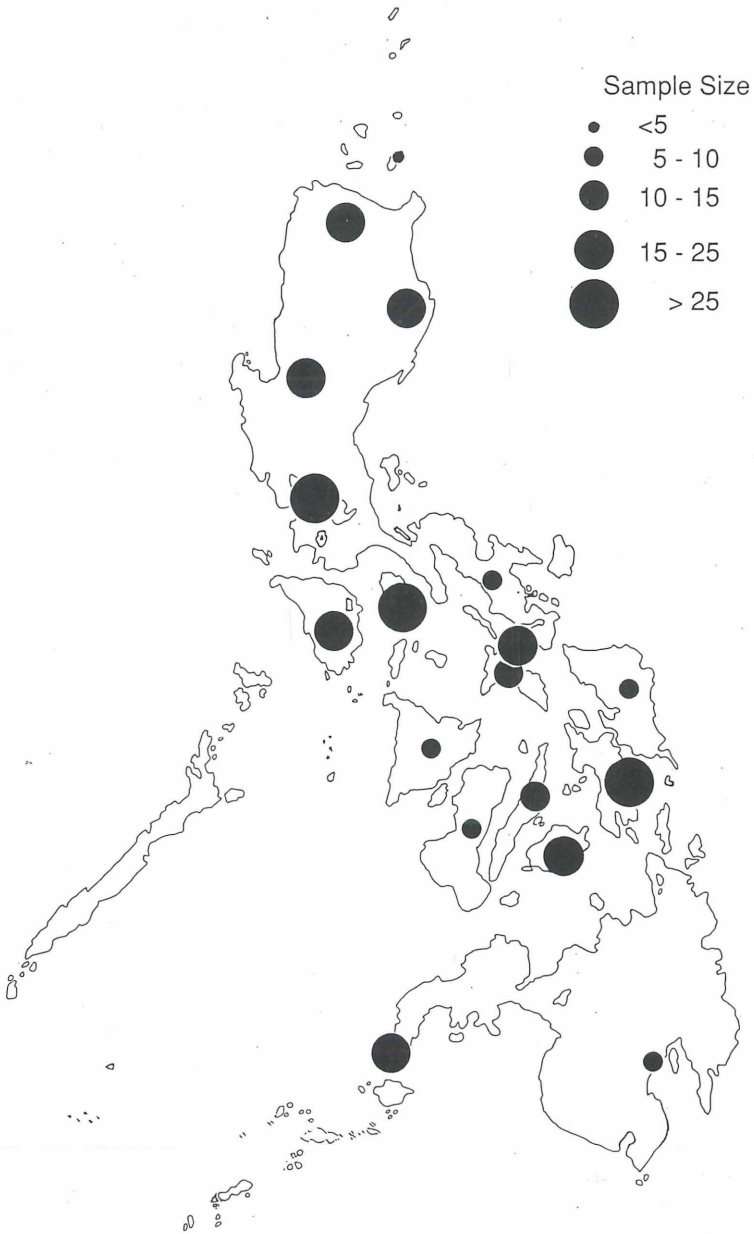

Fig. 5: Map of the Philippines showing the sample stations and relative sample sizes used for morphometric analysis of *Pachliopta kotzebuea*.

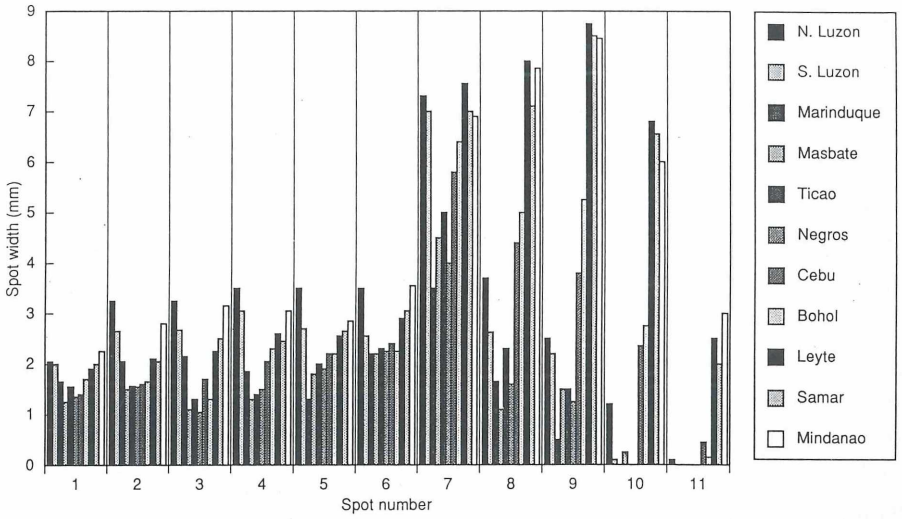

Fig. 6: Variation in size of the red spots on the hindwing underside in *Pachliopta kotzebuea* populations.

Tsukada & Nishiyama (1980) stated that *asina* has more extensive forewing rays and red hindwing spots than the form occurring in southern Luzon and on the central Philippine islands, which they regarded as nominate *P. kotzebuea*. This was incorrect, nominate *kotzebuea* is the lighter form from central Luzon and the dark form corresponds to *deseileus* Fruhstorfer, 1911 from Mindoro (see below).

(5.b) *Pachliopta kotzebuea tindongani* **subsp. nov.** (Figs. 12, 13)

TL: Sulong River, Sierra Madre, N.E. Luzon.

Range: northern Luzon, Babuyanes.

Male holotype (in Treadaway collection): Sulong River, Sierra Madre, N.E. Luzon, April 1986.

Female allotype (in Treadaway collection): Guttaran, Isabela, June 1960.

Paratypes: 1 ♂, 1 ♀ Guttaran, Isabela, June 1960; 1 ♂ Isabela, NE. Luzon, 30 December 1969; 2 ♂♂ Mt. Santo Tomas, N. Luzon, 20 and 24 May 1984; 3 ♂♂ Sierra Madre, NE. Luzon, 14, 15 and 15 May 1988; 1 ♂ Banaue, N. Luzon, July 1988; 5 ♂♂ NE. Luzon, Quirino Province, Sierra Madre, 3 May, 5 May, May 1989, and 3 and 4 May 1990; 1 ♀, same locality, May 1989; 1 ♂ NE. Luzon, Quirino Province, Asaclat, 20 April 1991; 1 ♂, 1 ♀ NE. Luzon, Quirino Province, Nansepuran, 28 April 1991; 1 ♂ NE Luzon, Sierra Madre, 25 November 1991; 1 ♂ Babuyanes, Camiguin Island, March 1991; 1 ♀ N. Luzon, Camiguin Island, 2 May 1990; in total 17 ♂♂, 4 ♀♀ in coll. Treadaway. • 2 ♂♂, 1 ♀ Mt. Santo Tomas, 1987, in coll. Page.

Holotype ♂: Forewings (length 47 mm) acute with convex margin. Very light appearance, light brown ground colour with the rays of the forewing filled with white scaling. Hindwing elongated with broad, spatulate tails. The red spots of the upperside are bright pink with little suffusion of black. The 7th and 8th spots are large and rectangular.

♀: Forewing length 48 mm. The rays of the forewing are less conspicuous than those of the ♂, the wings having a pale brown suffusion. The pink spots of the hindwing are large and free of black suffusion. Tails spatulate.

Separable from *kotzebuea* ESCH. by the paler ground colour of both forewings and hindwings, by the very extensive white rays on the forewing, by the larger size of the bright pink sub-costal and subcellular bands on both surfaces of the hindwing.

There seems to be a certain amount of intergradation in central Luzon, where *tindongani* meets the nominate form. There is a marked tendency towards development of white scaling in the sub-cellular band of both surfaces of the hindwing. The most extreme form that we have encountered is a ♀ from Babuyanes, which has a pure white sub-cellular band, as in *aristolochiae*.

We name this subspecies after Mamerto TINDONGAN, who has not only acted as a guide on several expeditions into this region but also has been very active in studying the life-histories of N. Luzon butterflies.

(5.c) *Pachliopta kotzebuea mataconga* **subsp. nov.** (Figs. 14, 15)

TL: Matacong, S. Luzon.

Range S. Luzon.

Male holotype (in Treadaway collection): San Pablo, S. Luzon, November 1954.

Paratypes: 1 ♂ 2000 ft., Mt Banabao, Dolores, 23 May 1990, in the Treadaway collection. There are no suffused rays on the forewing upperside and only two to four on the underside. • 5 ♂♂ Camarines Norte, S. Luzon, 1974-1976, in Page collection.

Holotype ♂: Forewing length 41 mm. Upper surface of both wings dark glossy black. The spots of the subcostal band on the hindwing underside are represented on the upperside: the 6th, 7th and 8th are evident as red spots. On the underside only the first two rays are represented by white scaling, all the others are heavily suffused. The subcostal red spots of the hindwing are large (almost as large as the northern Luzon specimens).

Separable from *P. k. kotzebuea* by the much darker ground colour of both forewings and hindwings. Distinguished from *P. k. deseileus* by the larger size of the red markings on the hindwing underside and by longer, more spatulate tails. And is very obviously separable from *P. k. tindongani* for which the rays of the forewing are filled with white scaling while the red spots of the hindwing upperside are bright pink with little suffusion of black; the 7th and 8th spots being much larger.

One very dark specimen (Matacong, Camarines Norte, S. Luzon, Oct. 1973, TREADAWAY collection) resembles *P. k. deseileus* from Mindoro on the upperside and has no red spots at all on the underside.

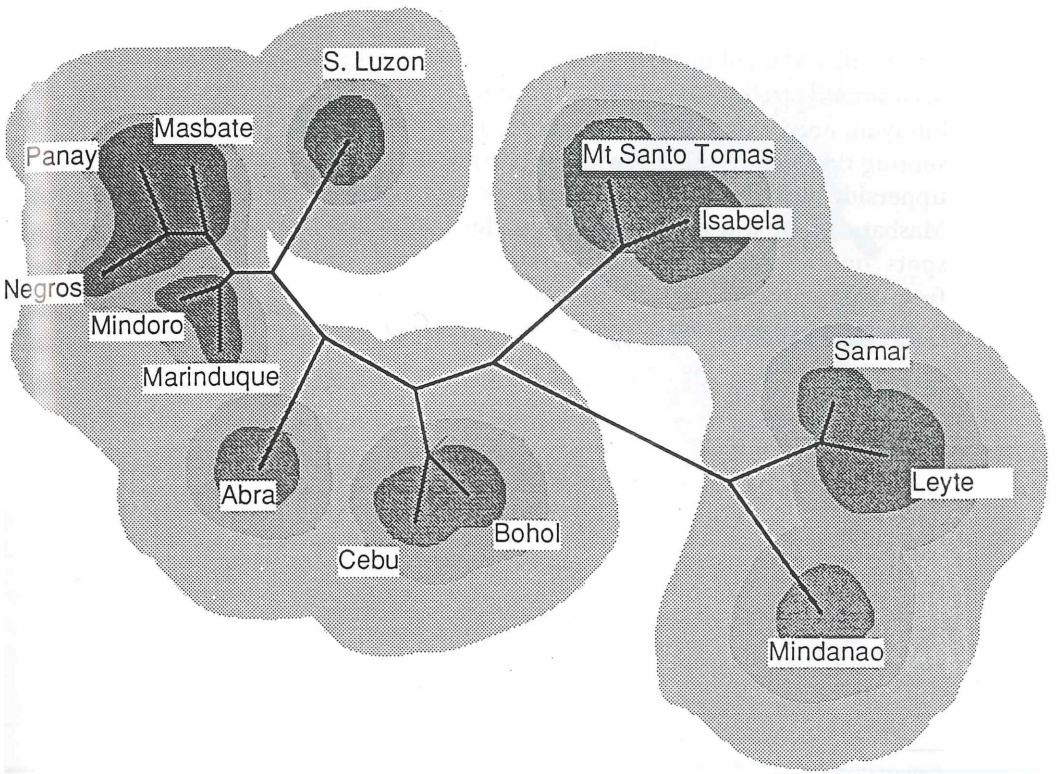

Fig. 7: Unrooted tree showing the average differences between the populations of *Pachliopta kotzebuea*. The three levels of shading reflect the level of similarity. Thus within the darkest areas the individuals are related with a score of 0.90 or more (a score of 1.00 would indicate that the specimens are identical). Within the intermediate areas the individuals are related with scores 0.80 or more and within the areas of lightest shading, the individuals are related by a score of 0.60 or more.

(5.d) *Pachliopta kotzebuea deseileus* (FRUHSTORFER 1911) (Figs. 18, 19)

TL: Mindoro.

Range: Mindoro, Marinduque, Masbate, Ticao, Panay, Negros and Sibuyan.

The original description separates *deseileus* from *kotzebuea* on the basis of the absence of transcellular grey stripes and that the red spots of the hindwing underside are much smaller. This phenotype is found, with minor variations, on most of the central Philippine islands. The populations on Mindoro and Marinduque generally yield the darkest individuals, which often have no rays at all on the forewing upperside and a intensely black background with a greenish or purplish sheen. The red spots of the hindwing upperside are generally represented only at the anal tornus (spot number 6), which is very heavily suffused with black scaling. On Marinduque, individuals with the red replaced by yellow are occasionally encountered. The specimens from Masbate, Ticao, Panay, Sibuyan, and Negros are lighter, with three or four greyish streaks representing the rays on the forewing upperside. The red spots of the hindwing upperside are represented by one or two spots. One specimen from Masbate has a scattering of white scales in the sub-cellular band of red spots on the hindwing underside. This is an approach to the more frequent expression of white in the sub-cellular band seen in specimens coming from Bohol and Cebu.

(5.e) *Pachliopta kotzebuea* ***bilara*** **subsp. nov.** (Figs. 20–23)

TL: Bilar, Bohol.

Range: Bohol, Cebu.

Male holotype (in Treadaway collection): Bilar, Bohol, 26 June 1976.

Female allotype (in Treadaway collection): Buhisan, Cebu, 300 ft., 5 November 1977.

Paratypes: 1 ♂ Bohol, December, in coll. Senckenberg-Museum • 1 ♂, 1 ♀ Bohol, Bilar, 26 February 1985; 7 ♂♂ Bilar, Bohol, February 1992 (2 ×), 21 August 1992, 8, 11, 19 and 29 September 1992; 4 ♀♀ same locality, February 1992 (3 ×), 19 October 1992 • 2 ♂♂ Buhisan Dam, Cebu, 28 March 1956, 20 May 1981; 1 ♂ Consolacion, Cebu, 19 June 1956; 3 ♂♂ Tuburan, Cebu, 4 May 1963, 30 November 1977 (2 ×); 2 ♂♂, 2 ♀♀ Lahug, Cebu, 3 May 1976 (3 ×),

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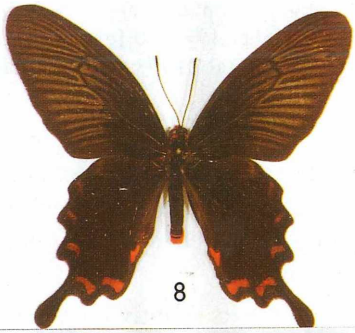
Colour Plate:

Fig. 8: *Pachliopta antiphus elioti*, ♂, holotype, upperside. **Fig. 9:** *Pachliopta antiphus elioti*, ♂, holotype, underside. **Fig. 10:** *Pachliopta antiphus elioti*, ♀, allotype, upperside. **Fig. 11:** *Pachliopta antiphus elioti*, ♀, allotype, underside. **Fig. 12:** *Pachliopta kotzebuea tindongani*, ♂, holotype, upperside. **Fig. 13:** *Pachliopta kotzebuea tindongani*, ♂, holotype, underside. **Fig. 14:** *Pachliopta kotzebuea mataconga*, ♂, holotype, upperside. **Fig. 15:** *Pachliopta kotzebuea mataconga*, ♂, holotype, underside.



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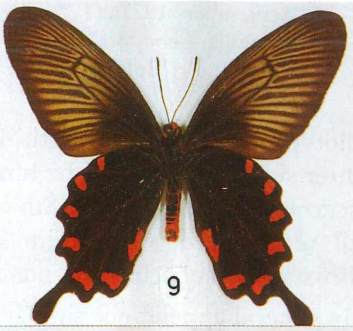

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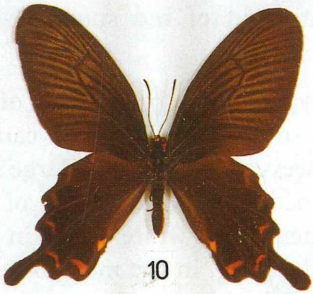

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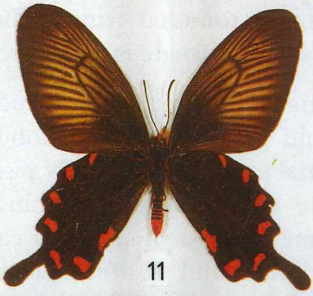

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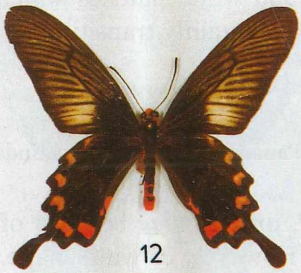

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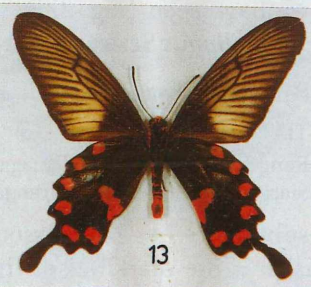

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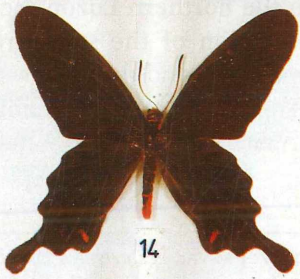

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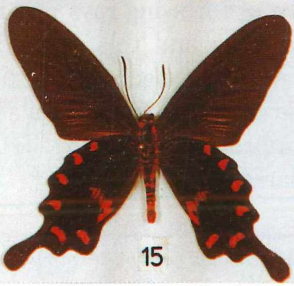

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5 September 1977 (1 ♂); 2 ♂♂ Catmon, Cebu, 3 September 1977; 5 ♂♂ Minglanilla, Cebu, 3 November 1977 (2 ×), 6 November 1977, 20 July 1979, 22 May 1991; 1 ♂ Bulacao, Cebu, 7 November 1977; in total 24 ♂♂, 7 ♀♀ in coll. Treadaway.

Holotype ♂: Forewing length 46 mm. Ground colour dark brown with lighter suffused rays. On the hindwing upperside, all the red spots can be discerned with the 7th and 8th quite large. On the underside, the rays are well represented, with white scaling in most. The red spots of both subcostal and subcellular bands are well represented.

♀: In general appearance similar to the ♂, except for its slightly larger size and more rounded wings. The subcellular band of red spots on the hindwing underside is well developed.

Additional material (not included as paratypes) are a bred series of 11 ♂♂ and 10 ♀♀ from Bilar, Bohol. These are smaller than the wild caught material and more intensely pigmented. However, the relatively large size of the red spots on the hindwing underside is characteristic of all specimens. Most of the wild caught specimens have white scales in the subcellular band on at least one surface of the wing. In the most extreme case we have seen (Fig. 22, 23) there are solid white patches similar to those of *philippus* SEMPER to which this form is certainly transitional.

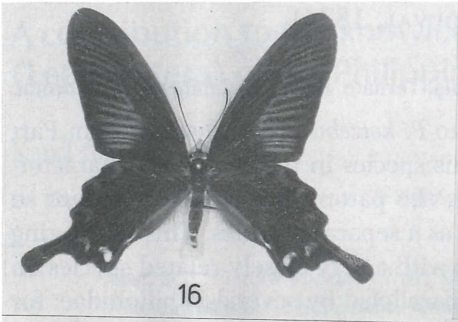
(5.f) *Pachliopta kotzebuea philippus* (SEMPER, 1891)

TL: East Mindanao.

Range: Samar, Leyte, Dinagat, Mindanao, Panaon, Camiguin de Mindanao, Siargao, Homohon and Sarangani.

This subspecies has been associated with *P. aristolochiae* because of the extensive white markings of the hindwing. However, in wing shape, the pattern of forewing rays it is more similar to the northern Luzon race of *P. kotzebuea* and this is confirmed by examination of the structure of male and female genitalia, the tibial spur of male legs and the wing scales. We have this butterfly from several localities on Samar and are unable to support the assertion by TSUKADA & NISHIYAMA (1980) that Samar is populated by ssp. *deseileus*.

Fig. 16: *Pachliopta kotzebuea kotzebuea*, ♂, upperside. **Fig. 17:** *Pachliopta kotzebuea kotzebuea*, ♂, underside. **Fig. 18:** *Pachliopta kotzebuea deseileus*, ♂, upperside. **Fig. 19:** *Pachliopta kotzebuea deseileus*, ♂, underside. **Fig. 20:** Pachliopta kotzebuea bilara, ♂, holotype, upperside. **Fig. 21:** *Pachliopta kotzebuea bilara*, ♂, holotype, underside. **Fig. 22:** *Pachliopta kotzebuea bilara*, ♂, paratype, upperside. **Fig. 23:** *Pachliopta kotzebuea bilara*, ♂, paratype, underside.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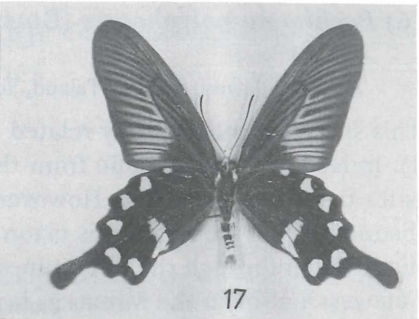
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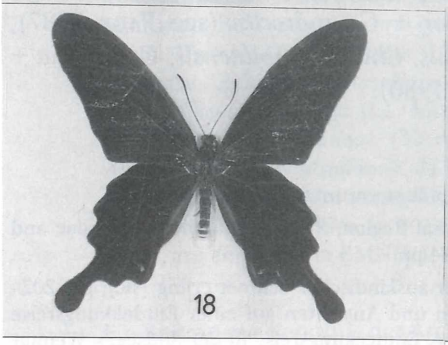
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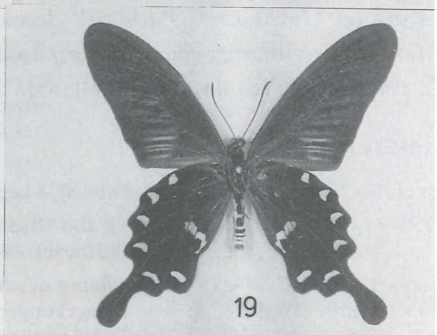
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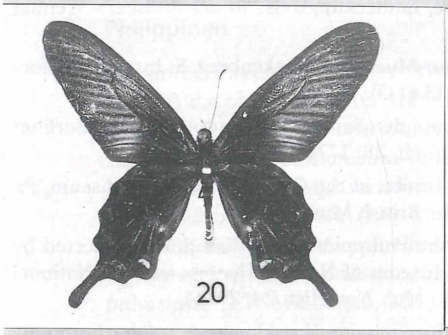
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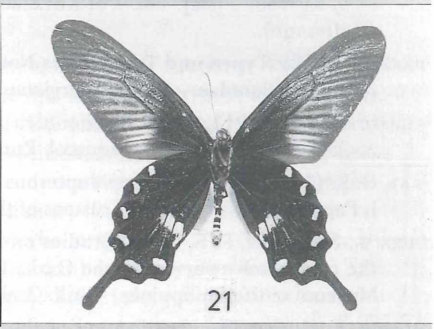
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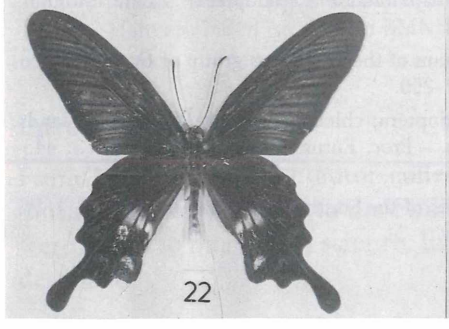
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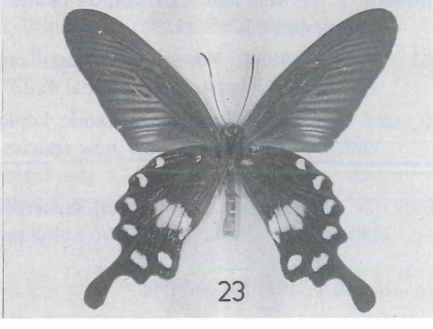
23

(6) *Pachliopta polyphontes* (Boisduval, 1836)

TL: Sulawesi.

Range: Sulawesi, Salayer, Talaud, Sula, Ternate, Bacan, Halmahera and Morotai.

This species is most closely related to *P. kotzebuea* (see discussion in Part 1). Indeed, it is inseparable from this species in the structural characteristics described in part 1. However, the pattern and wing shape are so distinctive that we retain this taxon as a separate species. This interesting distribution through the Philippines with a very closely related species on Sulawesi and/or in the Moluccas is paralleled by several Papilionidae: for example: *Graphium (Pathysa) decolor* + *G. androcles* (see Page 1987), *Menelaides rumanzovia* + *M. deiphobus, Chilasa carolinensis, C. osmana* + *C. veiovis* (see Tsukada & Nishiyama 1980).

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A contribution to the knowledge of the Arctiidae (Lepidoptera) of the Philippines

Karel Černý

Dr. Karel Černý, Sportplatzweg 45/1, A-6170 Zirl, Austria

Abstract: 11 new species of the family Arctiidae are described, 10 of them new Lithosiinae: *Miltochrista* ***lenticulata*** (locus typicus [type locality, LT]: Mindanao, Bukidnon), *M.* ***crucipuncta*** (LT: Luzon, Mt. Prov.), *M.* ***orbis*** (LT: Luzon, Ifugao), *M.* ***carbonisata*** (LT: Mindanao, Bukidnon), *Asura* ***lignea*** (LT: Mindanao, Bukidnon), *Garudinia* ***coniuncta*** (LT: Luzon, Mountain [Mt.] Province), *Eilema* ***vestigiata*** (LT: Mindanao, Bukidnon), *Monosyntaxis* ***radiifera*** (LT: Mindanao, Bukidnon), *Chrysaeglia* ***perpendicularis*** (LT: Leyte, Hilusig), *Agylla* ***sericea*** (LT: Mindanao, Bukidnon), and one Arctiinae species: *Spilosoma* ***baltazarae*** (LT: Mindanao, Mt. Apo). All holotypes (males) except that of *C. perpendicularis,* which is in Senckenberg-Museum, Frankfurt/Main, Germany, are deposited in BMNH, London, England.

Ein Beitrag zur Kenntnis der Arctiidae (Lepidoptera) von den Philippinen

Zusammenfassung: 11 neue Arten der Familie Arctiidae werden beschrieben, 10 davon Lithosiinae: *Miltochrista* ***lenticulata*** (locus typicus [LT]: Mindanao, Bukidnon), *M.* ***crucipuncta*** (LT: Luzon, Mt. Prov.), *M.* ***orbis*** (LT: Luzon, Ifugao), *M.* ***carbonisata*** (LT: Mindanao, Bukidnon), *Asura* ***lignea*** (LT: Mindanao, Bukidnon), *Garudinia* ***coniuncta*** (LT: Luzon, Mountain [Mt.] Provinz), *Eilema* ***vestigiata*** (LT: Mindanao, Bukidnon), *Monosyntaxis* ***radiifera*** (LT: Mindanao, Bukidnon), *Chrysaeglia* ***perpendicularis*** (LT: Leyte, Hilusig), *Agylla* ***sericea*** (LT: Mindanao, Bukidnon) und eine Arctiinae-Art: *Spilosoma* ***baltazarae*** (LT: Mindanao, Mt. Apo). Alle Holotypen (Männchen) mit Ausnahme von *C. perpendicularis,* der im Senckenberg-Museum in Frankfurt/Main zu finden ist, sind im BMNH, London, England, hinterlegt.

Introduction

From 1988 to 1992 the autor collected an extensive Arctiidae material during three expeditions to the Philippines. Many of the collected species were found to be new for science. In the present paper eleven of them are described.

List of localities on the Philippines mentioned in this paper

Abbreviations used (deposition of material listed, if not stated otherwise):

BMNH The Natural History Museum (formerly British Museum (Natural History)), London, U. K.

CAH collection Armin HAUENSTEIN, Untermünkheim, Germany

CKC collection Karel ČERNÝ, Zirl, Austria

CWT collection Werner THOMAS, now in collection Thomas WITT, München, Germany

CWM collection Thomas WITT, München, Germany

1* N. Luzon, Benguet, 15 km S Baguio, 16° 22′ N; 120° 36′ E; Sekundärbusch, Flußtal, 1000 m, 12. x. 1988, leg. ČERNÝ & SCHINTLMEISTER, CKC.

2* N. Luzon, Mt. Prov., Chatol, 1600 m, 15 km SE Bontoc, 17° 02′ N, 121° 03′ E, Nebelurwald, 24. IX., 14. x. 1988, leg. ČERNÝ & SCHINTLMEISTER, CKC.

3* N. Luzon, Ifugao, Banawe, 20 km N Lagawe, 16° 54′ N; 121° 05′ E; sek. Veg., 1200 m[1], 8. II.–12. II. 1988, leg. ČERNÝ & SCHINTLMEISTER, CKC.

4* N. Luzon, Ifugao, Banawe, 20 km N Lagawe, 16° 54′ N; 121° 05′ E; sek. Veg., 1200 m[1], 22. IX.–16. x. 1988, leg. ČERNÝ & SCHINTLMEISTER, CKC.

5* N. Luzon, Ifugao, Banawe, 20 km N Lagawe, 16° 54′ N; 121° 05′ E; sek. Veg., 1200 m[1], 17. x. 1988–31. XII. 1988, leg. VERMOLEN, CKC.

6* N. Luzon, Ifugao, Mt. Polis, 16 km SSE Bontoc, 17° 02′ N; 121° 01′ E; primär. Nebelurwald, 1900 m[1], 9. II.–13. II. 1988, leg. ČERNÝ & SCHINTLMEISTER, CKC.

Central Banaue is located at an elevation of approximately 1050 m above sea level, according to detailed maps of Ifugao Province published by H. CONKLIN (1980: Ethnographic atlas of Ifugao. New Haven [USA], Yale Univ. Pr.). Roughly at this elevation (with some modifying effects of the hilly landscape), and not at 1200 m, all Banawe (Banaue) specimens mentioned in this publication as well as in the papers by K. ČERNÝ (1993: Nachr. entomol. Ver. Apollo, **Suppl. 12:** 31-97) and A. SCHINTLMEISTER (1993: Nachr. entomol. Ver. Apollo, **Suppl. 12:** 99-174) have been collected. – The CONKLIN maps also clearly indicate the elevation of Mt. Polis pass (sometimes also written as Mt. Pulis), where all the "Mt. Polis specimens" have been collected. It is approximately 1900 m as written here and in ČERNÝ (1993). An elevation of 1700 m as measured by SCHINTLMEISTER (1993: 101) for this locality has to be regarded as incorrect. This is also supported by American World War II maps of the area. – J. SETTELE.

7* N. Luzon, Ifugao, Mt. Polis, 16 km SSE Bontoc, 17° 02′ N; 121° 01′ E; primär. Nebelurwald, 1900 m[1], 23. IX. 1988, leg. ČERNÝ & SCHINTLMEISTER, CKC.

8* Luzon, Nueva Vizcaya, Dalton Pass, Santa Fe, 800 m, 16° 07′ N, 120° 36′ E; sek. Veg., 21. IX.–17. X. 1988, leg. ČERNÝ & SCHINTLMEISTER, CKC.

9* Leyte, Hilusig, Mahaplag, 600 m, 23. IX. 1987, leg. TREADAWAY, CKC.

10* Leyte, Hilusig, Mahaplag, 600 m, 9. IX. 1986, leg. TREADAWAY, CKC.

11* Leyte, Hilusig, Mahaplag, 600 m, 26. II. 1987, leg. TREADAWAY, CKC.

12* Mindanao, Mt. Kitanglat, S-Seite 1650 m, Primärurwald, Sintavas, 5. VIII. 1993, 8° 07′ N. Breite, 124° 55′ E Länge, leg. A. SCHINTLMEISTER & V. SINIAEV, CKC.

13* Mindanao, Bukidnon, 45 km NW Maramag, Mt. Binansilang, 1200 m, 7° 55′ N; 124° 40′ E; Bergurwald, 2. X. 1988, leg. ČERNÝ & SCHINTLMEISTER, CKC.

14* Mindanao, Bukidnon, 40 km NW Maramag, Dalongdong, 800 m, Talakag, 7° 53′ N; 123° 54′ E; Waldrand, 1. X.–3. X. 1988, leg. ČERNÝ & SCHINTLMEISTER, CKC.

15* Mindanao, Bukidnon, 40 km NW Maramag, Dalongdong, 800 m, Talakag, 7° 53′ N; 123° 54′ E; Waldrand, 31. XII. 1991–2. I. 1992, leg. ČERNÝ, CKC.

16* Mindanao, Bukidnon, 15 km NW Maramag, Mt. Malambu, Mt. Bagong Silang, 29. XII. 1991, 1250 m, sec. forest, leg. ČERNÝ, CKC.

17* Mindanao, Bukidnon, 15 km NW Maramag, Mt. Malambu, Mt. Bagong Silang, 30. XII. 1991, 1450 m, prim. forest, leg. ČERNÝ, CKC.

18* Mindanao, Mt. Apo, W-Flanke 1200 m, Sekundärwald, 28.–30. VII. 1993, 6° 57′ N. Breite, 125° 16′ E Länge, leg. A. SCHINTLMEISTER & V SINIAEV, CKC.

Systematic section

Miltochrista lenticulata sp. n.

Holotype (Fig. 1): ♂, Philippinen, Mindanao, Bukidnon, 40 km NW Maramag, Dalongdong, 800 m, Talakag, 7° 53′ N; 123° 54′ E; Waldrand, 31. XII. 1991-2. I. 1992, leg. ČERNÝ, BMNH.

Paratypes: 5 ♀♀, 2 ♂♂ 14*; 1 ♀ 14* CWM; 1 ♀ 14* CAH; 13 ♀♀, 2 ♂♂ 15*; 8 ♀♀, 6 ♂♂ 17*; 1 ♀ 18*.

Description

Male: Head golden ochreous with a black spot on the top; palpi brown with golden ochreous terminal part; patagia golden ochreous with a black spot; antennae golden ochreous; tegulae golden ochreous with two black spots; thorax golden ochreous with four black spots; sternum and legs golden ochreous; sternal and terminal part of abdomen golden ochreous, dorsal part grey.

Forewing length 13 mm; the ground colour of the forewing brown with a yellow basal part; a circular white spot in the cell; one rounded yellow spot in the medial part of costa and a small one in the medial part of the inner margin; ciliae brown. The hindwing grey, in the basal part dusted with yellow. The underside of the forewing similar to the upperside but less expressive. The underside of the hindwing with a oblong yellow area in front.

Male genitalia (Fig. 21 and 22): Aedeagus with a hyaline vesica carrying five strongly sclerotised thorns.

Female (Fig. 2): Female larger than male; circular spot in the cell yellow.

Female genitalia (Fig. 29): Ductus bursae strongly sclerotised; bursa copulatrix with a projection near basis; on rounded terminal part two round stigmata consisting of small sclerotised pins.

Colour plate 1:

Fig. 1: ♂, *Miltochrista lenticulata* sp. n., holotype, Mindanao. **Fig. 2:** ♀, *Miltochrista lenticulata* sp. n., paratype, Mindanao. **Fig. 3:** ♂, *Miltochrista crucipuncta* sp. n., holotype, Luzon. **Fig. 4:** ♀, *Miltochrista crucipuncta* sp. n., paratype, Luzon. **Fig. 5:** ♂, *Miltochrista orbis* sp. n., holotype, Luzon. **Fig. 6:** ♀, *Miltochrista orbis* sp. n., paratype, Luzon. **Fig. 7:** ♂, *Asura lignea* sp. n., holotype, Mindanao. **Fig. 8:** ♀, *Asura lignea* sp. n., paratype, Mindanao. **Fig. 9:** ♂, *Garudinia coniuncta* sp. n., holotype, Luzon. **Fig. 10:** ♀, *Garudinia coniuncta* sp. n., paratype, Luzon.


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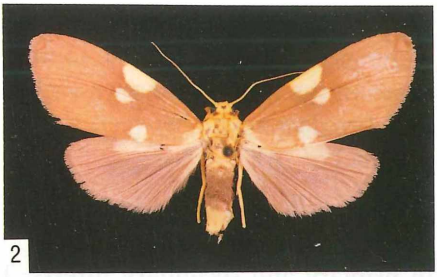
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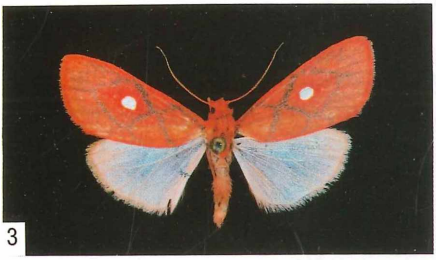
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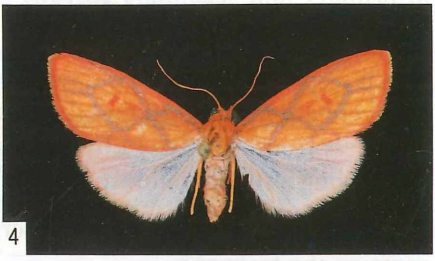
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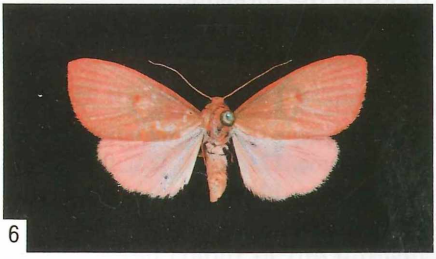
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Variability: The forewing length varies in males between 12 and 14 mm, in females between 13 and 15 mm. The position and form of the light spots on the forewing show a slight variability. (One female with an additional yellow point between the spot in cell and the one on the inner margin.)

Distribution and bionomics: Currently this species is known only from the mountain regions of Mindanao. The imagines were attracted by light in primary and secondary forests. The female was much more common than the male at the light trap.

Similar species: *Miltochrista obscura* SEMPER 1899 (type examined, in Senckenberg-Museum, Frankfurt/Main, Germany). *Miltochrista lenticulata* differs from *M. obscura* by having no traces of scarlet on the forewing and having a round yellow patch on the costa.

Derivatio nominis: The name describes the lenticular form of the bright spots on the forewing.

*Miltochrista **crucipuncta*** sp. n.

Holotype (Fig. 3): ♂, Philippinen, N. Luzon, Mt. Prov., Chatol, 1600 m, 15 km SE Bontoc, 17° 02′ N, 121° 03′ E, Nebelurwald, 14. x. 1988, leg. ČERNÝ & SCHINTLMEISTER, BMNH.

Paratypes: 1 ♀, 1 ♂ 2* CAH; 2 ♀♀ 2* CWT; 2 ♀♀ 2* CWM; 1 ♀, 4 ♂♂ 2*; 4 ♀♀, 1 ♂ 6*.

Description

Male: Head, palpi, patagia, antennae, tegulae, thorax, legs and abdomen carmine without markings.

Forewing length 12 mm; the ground colour of the forewing carmine; costa brown from the basis to the subbasal band; a brown subbasal band running oblique from costa to media and inwards from media to inner margin; a brown antemedian band running oblique inwards from costa to media, outwards from media to cubitus and again inwards from cubitus to inner margin; the antemedian band is on media joined with the subbasal band constituating with it a cross-like pattern; a brown postmedian band running oblique outwards from costa to media, inwards from media to cubitus and again outwards from cubitus to inner margin which is on costa and cubitus joined with the antemedian band; a circular

white patch in cell; the veins outwards of the postmedian band are brown; cilia carmine.

The hindwing pink, the underside of the forewing carmine with a white patch in cell and an inexpressive brown marking, the underside of the hindwing pink.

Male genitalia (Fig. 23 and 24): Aedeagus narrow and slightly bent, vesica with five terminally directed big thorns and a field of small thorns and sclerotised plates; sacculus and uncus very slender.

Female (Fig. 4): Female usually larger than male; bright patch in the cell reduced to some dark scales on its circumference; the area of this spot is carmine and does not differ from the ground colour of the wing.

Female genitalia (Fig. 30): Ductus bursae long, strongly sclerotised; the basal part of bursa copulatrix strongly sclerotised, with a globular projection near the mouth.

Variability: The forewing length varies in males between 11 and 13 mm, in females between 13 and 14 mm; variability of wing pattern small.

Distribution and bionomics: Currently this species is known only from the mountain regions of northern Luzon. The imagines were attracted by light in primary and secondary forests.

Similar species: *Miltochrista orbis* n. sp. from the submontane region of Luzon can be distinguished by having the ground colour of the forewing suffused with saddle-brown; without expressive brown markings.

Derivatio nominis: The name describes the pattern on the forewing with a brown cross (= *crux*) and a white spot (= *punctum*).

Miltochrista orbis sp. n.

Holotype (Fig. 5): ♂, Philippinen, N. Luzon, Ifugao, Banawe, 20 km N Lagawe, 16° 54' N; 121° 05' E; sek. Veg., 1200 m, 22. IX.-16. X. 1988, leg. ČERNÝ & SCHINTLMEISTER, BMNH.

Paratypes: 3 ♀♀ 1*; 1 ♀, 2 ♂♂ 3*; 1 ♀, 1 ♂ 3* CWM; 3 ♀♀, 4 ♂♂ 4*; 1 ♀, 1 ♂ 4* CAH; 1 ♂, 1 ♀ 4* CWT; 1 ♀ 5*; 1 ♀ 8*

Description

Male: Head, palpi, patagia, antennae, tegulae, thorax, legs and abdomen coral red with inexpressive saddle-brown shadows on vertex, patagia,

tegulae and thorax. Forewing length 11 mm; an expressive white spot in the cell; the carmine ground colour of the forewing is fully developed only in two fields in the middle of the inner margine, around the white spot in the cell, on the basal part of costa and on the fringles. The rest of the wing is suffused with saddle-brown. The underside is pink with the expressive round white spot in the cell. The hindwing is pink.

Male genitalia (Fig. 25 and 26): Aedeagus slightly bent, vesica with four strongly sclerotised regressively bent thorns, two of them running out of a field of sclerotised granula.

Female (Fig. 6): Female usually larger than male; a carmine spot in cell instead of the white one in males.

Female genitalia (Fig. 31): Ductus bursae short and hyaline; bursa copulatrix with a primary and a secundary lobe near of base and a globular terminal part. The basal part expressively sclerotised and dotted with plenty of small sclerotised pins. The terminal part hyaline with a small round signum consisting of sclerotised pins.

Variability: The forewing length varies between 10 and 12 mm in males and between 12 and 13 mm in females.

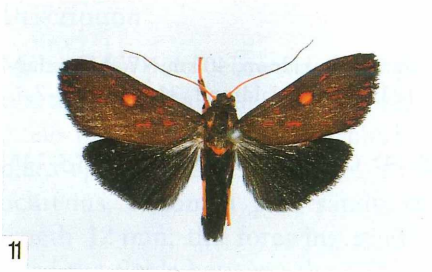
Distribution and bionomics: Currently this species is known only from the submountain regions of northern Luzon. The imagines were attracted by light in the secondary habitats of Banawe (Banaue).

Similar species: *Miltochrista crucipuncta* sp. n. from the mountains of northern Luzon which has a carmine ground colour of the forewing with expressive brown markings.

Derivatio nominis: The name describes the round white spot on the forewing (*orbis* = circle).

Colour plate 2:

Fig. 11: ♂, *Miltochrista carbonisata* sp. n., holotype, Mindanao. **Fig. 12:** ♂, *Eilema vestigiata* sp. n., holotype, Mindanao. **Fig. 13:** ♂, *Monosyntaxis radiifera* sp. n., holotype, Mindanao. **Fig. 14:** ♀, *Monosyntaxis radiifera* sp. n., paratype, Mindanao. **Fig. 15:** ♂, *Chrysaeglia perpendicularis* sp. n., holotype, Leyte. **Fig. 16:** ♀, *Chrysaeglia perpendicularis* sp. n., paratype, Leyte. **Fig. 17:** ♂, *Agylla sericea* sp. n., holotype, Mindanao. **Fig. 18:** ♀, *Agylla sericea* sp. n., paratype, Mindanao. **Fig. 19:** ♂, *Spilosoma baltazarae* sp. n., holotype, Mindanao. **Fig. 20:** ♀, *Spilosoma* sp., probably *baltazarae* sp. n., Mindanao.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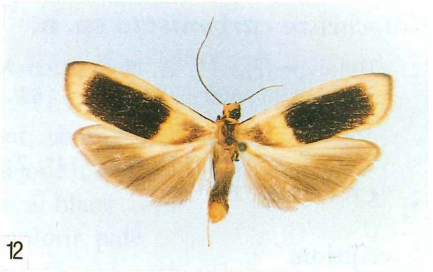
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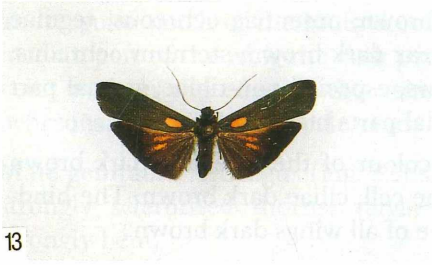
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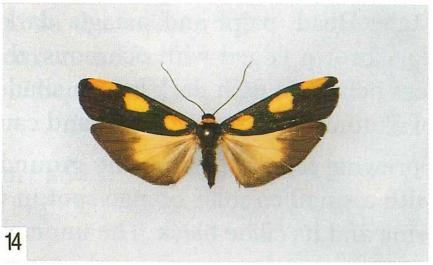
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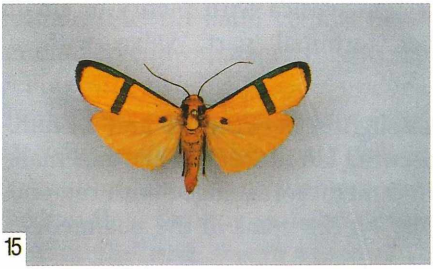
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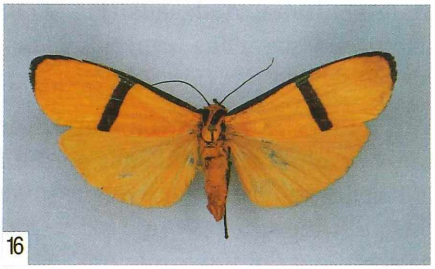
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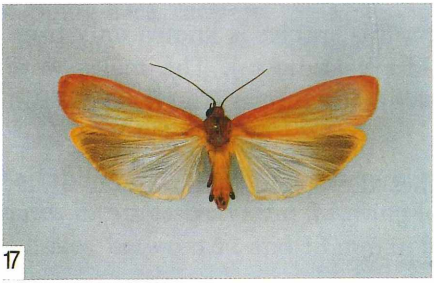
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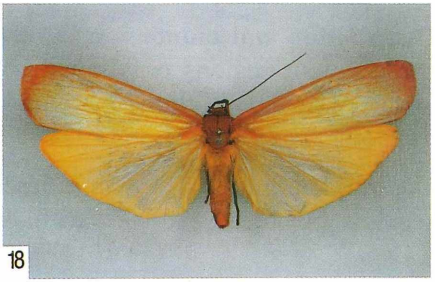
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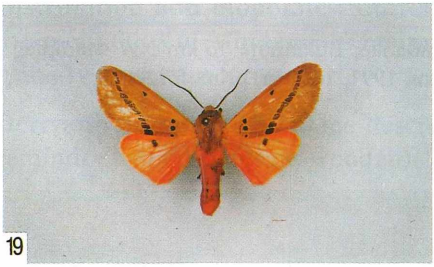
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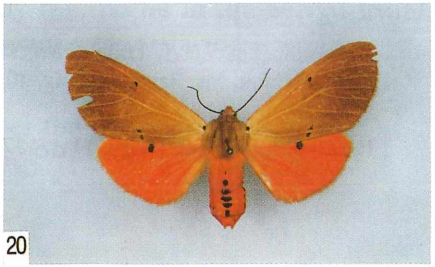
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Miltochrista carbonisata sp. n.

Holotype (Fig. 11): ♂, Philippinen, Mindanao, Bukidnon, 40 km NW Maramag, Dalongdong, 800 m, Talakag, 7° 53' N; 123° 54' E; Waldrand, 31. XII. 1991-2. I. 1992, leg. ČERNÝ, BMNH.

Paratypes: 4 ♂♂ 13*; 5 ♂♂ 14*; 2 ♂♂ 14* CAH; 2 ♂♂ 14* CWM; 2 ♂♂ 14* CWT; 11 ♂♂ 15*

Description

Male: Head, palpi and patagia dark brown; antennae ochreous; tegulae dark brown edged with ochreous; thorax dark brown; sternum ochreous; legs ochreous with dark brown shadows, especially on tibiae; sternal part of abdomen ochreous, dorsal and caudal parts black.

Forewing length 13 mm; the ground colour of the forewing dark brown with a small circular orange spot in the cell; ciliae dark brown. The hindwing and its ciliae black. The underside of all wings dark brown.

Male genitalia: Aedeagus (Fig. 27) straight, vesica with plenty of small sclerotised lamellas especially in her terminal part; valva with a sclerotised clasper (Fig. 28).

Variability: The forewing length varies slightly between 12 and 14 mm. In two males the round spot on the forewing is reduced, in another male it is yellow. Some males have tegulae and metathorax edged with red and the forewings dusted with red, especially on the veins in the postmedian part and near of inner margin.

Distribution and bionomics: Currently this species is known only from the montain regions of Mindanao (Mt. Kalatungan). The males were attracted by light in the primary and secondary forests. The female is still unknown.

Derivatio nominis: The name describes the colour of the moth which seems to be burnt (= *carbonisatus*).

Asura lignea sp. n.

Holotype (Fig. 7): ♂, Philippines, Mindanao, Bukidnon, 15 km NW Maramag, Mt. Malambu, Mt. Bagong Silang, 30. XII. 1991, 1450 m, prim. forest, leg. ČERNÝ, BMNH.

Paratypes: 5 ♂♂ 12*; 7 ♀♀, 11 ♂♂ 17*.

Description

Male: Palpi pale ochreous, head pale ochreous with a black spot on vertex; antennae pale sandy with long grey combs, patagia pale ochreous; tegulae pale ochreous with a black spot; thorax pale ochreous with two black spots under tegulae and a third one on the metathorax; legs pale ochreous; abdomen pale sandy with a black terminal part. Forewing length 12 mm; the forewing ground colour pale ochreous; in the basal third the fields between the veins are suffused with grey scales; there is an irregular patch of the ground colour in the median field; in the postmedian part of the wing the dark pattern on the fields peters out between veins and on the edge of the veins it becomes dark; the fringles pale ochreous. The hindwings pale sandy.

Male genitalia: Aedeagus (Fig. 32) short and straigt, vesica with four flat strongly sclerotised thorns; valvae (Fig. 33) square; uncus long and strongly bent.

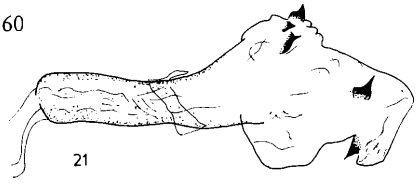
Female (Fig. 8): Palpi yellow, head yellow with a black spot on vertex; antennae yellow, patagia yellow; tegulae yellow with a black spot; thorax yellow with two black spots under tegulae and a third one on the metathorax; legs pale sandy; abdomen pale sandy. Forewing length 13 mm; the forewing ground colour pale yellow; near basis a small black spot; in the basal third some grey shadows on the fields between the veins; in the median field there is an irregular patch in the ground colour with a grey spot in the cell; the postmedian band running out on the veins and stepping back between the veins; in the edge veins marked with oblong grey spots; the fringles pale yellow. The hindwings pale sandy.

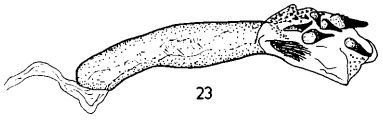
Female genitalia (Fig. 34): Bursa copulatrix slightly sclerotised in its basal part with some dispersed pins.

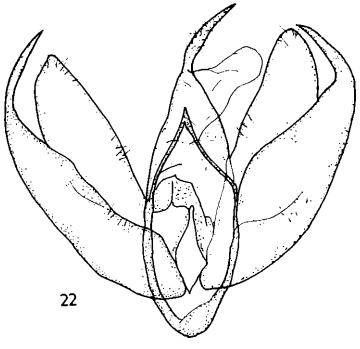
Variability: The material examined is very constant. The wing pattern varies inexpressively, the forewing length varies between 11 and 12 mm in males, between 12 and 13 mm in females.

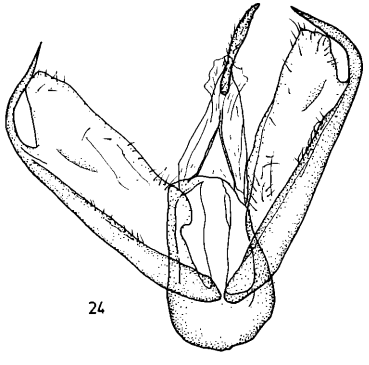
Distribution and bionomics: Currently the species is known only from the mountains of Mindanao. The imagines were attracted by light in the primary mountain forests.

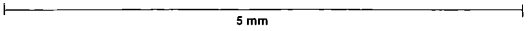
Derivatio nominis: The name describes the pattern on the wings which reminds of wood (*lignea* = wooden).

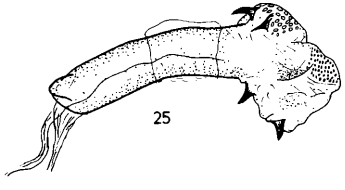


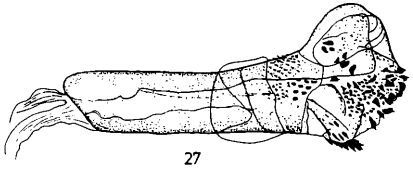


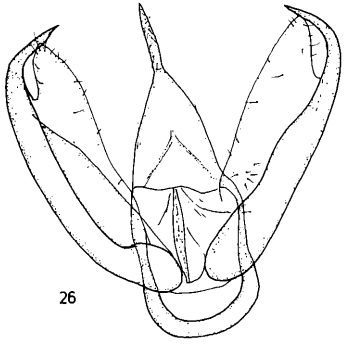


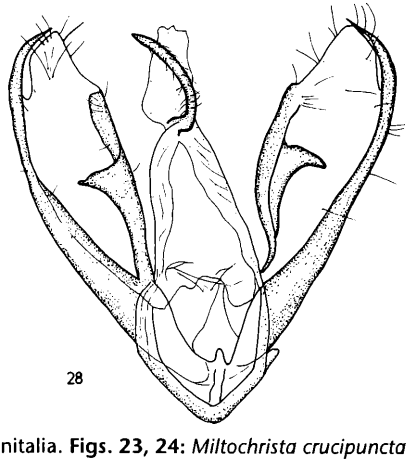












Figs. 21, 22: *Miltochrista lenticulata* sp. n., male genitalia. **Figs. 23, 24:** *Miltochrista crucipuncta* sp. n., male genitalia. **Figs. 25, 26:** *Miltochrista orbis* sp. n., male genitalia. **Figs. 27, 28:** *Miltochrista carbonisata* sp. n., male genitalia.

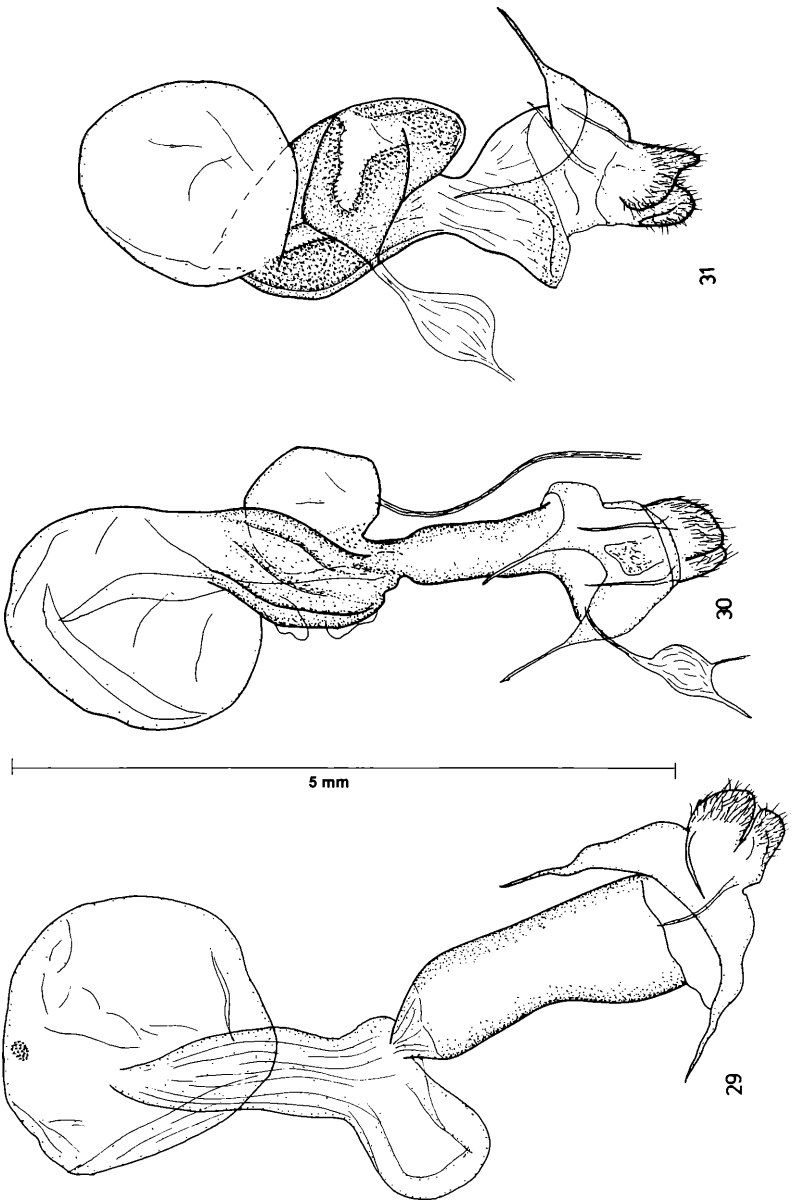
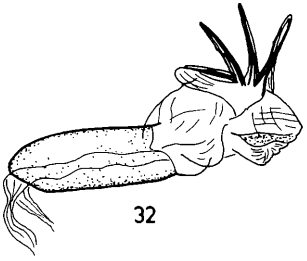
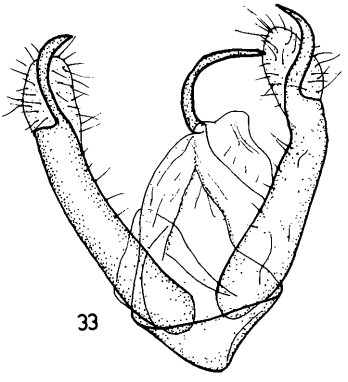
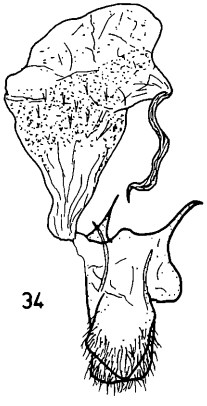
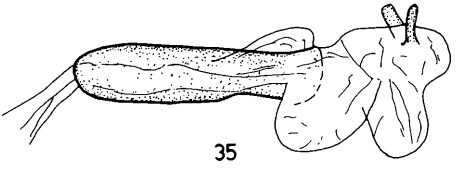


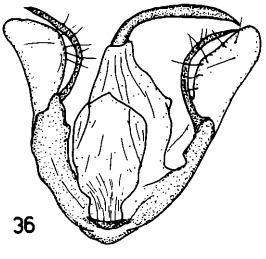
Fig. 29: *Miltochrista lenticulata* sp. n., female genitalia. **Fig. 30:** *Miltochrista crucipuncta* sp. n., female genitalia. **Fig. 31:** *Miltochrista orbis* sp. n., female genitalia.

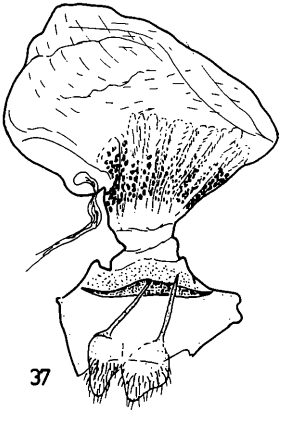


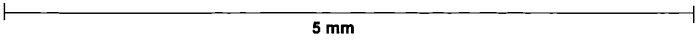












Figs. 32, 33: *Asura lignea* sp. n., male genitalia. **Fig. 34:** *Asura lignea* sp. n., female genitalia. **Figs. 35, 36:** *Garudinia coniuncta* sp. n., male genitalia. **Fig. 37:** *Garudinia coniuncta* sp. n., female genitalia.

Garudinia coniuncta sp. n.

Holotype (Fig. 9): ♂, Philippinen, N. Luzon, Mountain Prov., Chatol, 1600 m, 15 km SE Bontoc, 17° 02′ N, 121° 03′ E, Nebelurwald, 24. IX., 14. X. 1988, leg. ČERNÝ & SCHINTLMEISTER, BMNH.

Paratypes: 10 ♀♀, 8 ♂♂ 6*; 1 ♀ 6* CWT; 3 ♀♀, 3 ♂♂ 6* CAH; 1 ♀♀ 6* CWM; 5 ♀♀, 11 ♂♂ 7*; 5 ♀♀, 5 ♂♂ 2*; 5 ♂♂ 2* CWT; 1 ♂ 4*

Description

Male: Head, patagia, tegulae and thorax white; palpi, antennae, sternum, legs and abdomen dark brown.

Forewing length 10 mm; the ground colour of the forewing snow-white with two black spots, the first one near the base and the second one in the postmedian part of the wing. The spots are connected with a black streak on radius showing the arabic figure 2 on the right wing; ciliae snow-white. The underside grey with a narrow white streak on the proximal part of costa and on the edge. The hindwing white with a broad grey edge tapering in the rear; ciliae grey. The basal part of the underside white, the costal and outer part grey.

Male genitalia (Fig. 35 and 36): Valvae with very long, curved and sclerotised projections, uncus very long and narrow, curved, vesica without specific structures.

Variability: The forewing length varies slightly between 9 and 10 mm in the males and between 10 and 11 mm in the females. The wing pattern seems to be constant.

Female (Fig. 10): Head, patagia, tegulae and thorax white; palpi, antennae, sternum, legs and abdomen dark brown.

Forewing length 10–11 mm; the ground colour of the forewing snow-white with two black spots; the first one near the base, extended along the inner margine and not reaching the costa, the second one in the post-median part of the wing extended outwarts in the hind part of the wing. The underside grey with a narrow white streak on the proximal part of costa and on the edge.

The hindwing white with a broad grey edge tapering in the rear; ciliae grey. The basal part of the underside white, the costal and outer part grey.

Female genitalia (Fig. 37): Ductus bursae very short; bursa copulatrix near basis with many strips of sclerotised granulae.

Distribution and bionomics: Currently this species is known from the montain regions of northern Luzon and Mindanao (Mt. Apo). The imagines were attracted by light in primary and secondary forests.

Derivatio nominis: *G. coniuncta* sp. n. is the only known species of the genus *Garudinia* in which the black spots on the forewing of the male are connected (= *coniunctus*).

Eilema vestigiata sp. n.

Holotype (Fig. 12): ♂, Philippinen, Mindanao, Bukidnon, 45 km NW Maramag, Mt. Binansilang, 1200 m, 7° 55' N; 124° 40' E; Bergurwald, 2. x. 1988, leg. ČERNÝ & SCHINTLMEISTER, BMNH.

Paratypes: 1 ♀, 8 ♂♂ 13*; 2 ♂♂ 13* CWM; 2 ♂♂ 14* CWT; 9 ♂♂ 14*; 2 ♂♂ 14* CAH; 6 ♂♂ 15*; 1 ♂ 17*; 2 ♂♂ 18*.

Description

Male: Palpi light sandy coloured; head light sandy with a grey spot on vertex; patagia and tegulae light sandy edged with grey; thorax and abdomen grey suffused with light sandy colour; the top of abdomen light sandy; legs grey on the outer side and light sandy on the inner side.

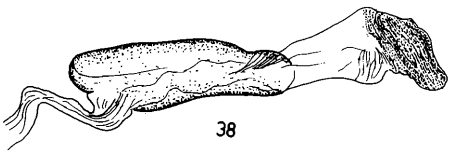
Forewing length 15 mm; the ground colour of the forewing light sandy with a triangular grey spot near to the basis and a big oblong patch in the medial part of the wing; the apex and the outer edge with a fine grey fascia; the fringles grey on the basis and light sandy on the top.

The hindwing grey, finely edged with a light sandy fascia; the fringles grey on the basis and light sandy on the top.

The underside light sandy with grey shadows corresponding to the pattern on the upperside.

Male genitalia: Aedeagus (Fig. 38) in terminal part contracted (becoming narrow), the hyaline vesica in its fibrate. Valvae (Fig. 39) strongly sclerotised with many needles on the top of sacculus and on a projection of sacculus.

The **female** is not known.



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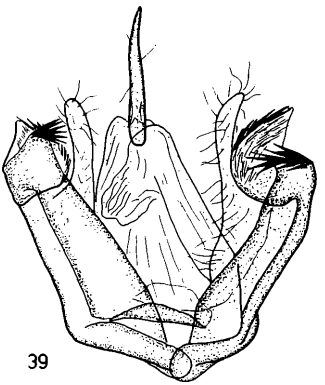

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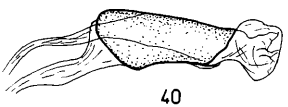

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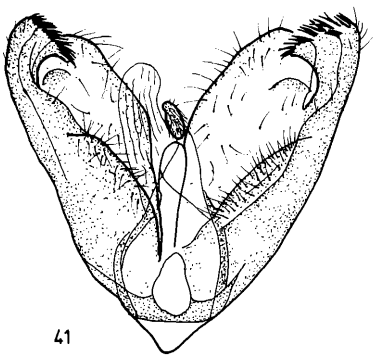

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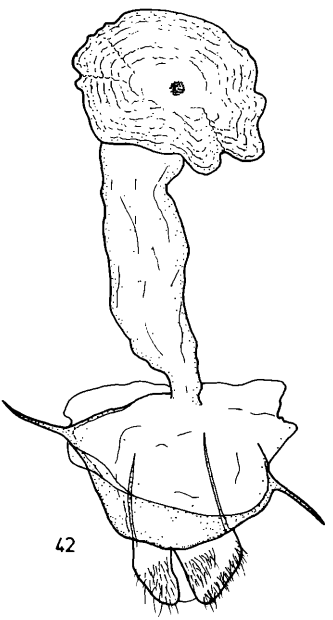

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Figs. 38, 39: *Eilema vestigiata* sp. n., male genitalia. **Figs. 40, 41:** *Monosyntaxis radiifera* sp. n., male genitalia. **Fig. 42:** *Monosyntaxis radiifera* sp. n., female genitalia.

Variability: The variability is limited to the difference in size. The forewing length varies in males between 14 and 15 mm (average 15 mm).

Distribution and bionomics: Currently the species is known from the mountain regions of Mindanao. The males were attracted by light.

Similar species: Species of the group of *Eilema (Thysanopteryx) tetragona* WALKER 1854 from India to Indonesia. The species of this group have an additional black spot on the costa near the apex and the ground colour of the wings is usually yellow-golden, whereas in *E. vestigiata* sp. n. it is pale sandy on the forewing and grey on the hindwing.

Derivatio nominis: The name is derived from the form of the pattern on the forewing which reminds of the print of a human foot (*vestigium* = vestige).

Note: The classification of this species to the genus *Eilema* HÜBNER 1827 is provisional because of the specific structure of the genitalia. Also the external similarity to the group of *Eilema (Thysanopteryx) tetragona* is deceptive.

Monosyntaxis radiifera sp. n.

Holotype (Fig. 13): ♂, Philippinen, Mindanao, Bukidnon, 40 km NW Maramag, Dalongdong, 800 m, Talakag, 7° 53' N; 123° 54' E; Waldrand, 1. x.–3. x. 1988, leg. ČERNÝ & SCHINTLMEISTER, BMNH.

Paratypes: 1 ♀, 1 ♂ 13*; 4 ♀♀, 2 ♂♂ 14*; 11 ♀♀, 3 ♂♂ 15*.

Description

Male: Head, palpi, patagia, tegulae, thorax and abdomen on dorsum black; antennae black, bipectinate; sternum and sternal part of abdomen chrome-yellow; legs black on the outer side and chrome-yellow on the inner side.

Forewing length 16 mm; the forewing black with an elliptical chrome-yellow spot near base. The hindwing black with two chrome-yellow rays near to the base. The underside of the forewing chrome-yellow in the basal part and dark brown on the outer half; the yellow spot from the upperside apparently visible on the underside; the hindwing light sandy wide edged with dark brown.

Male genitalia: Aedeagus (Fig. 40) triangular with a hyaline vesica, valvae (Fig. 41) with a series of needles on the top of the sacculus.

Female (Fig. 14): Head, palpi, antennae, thorax and abdomen on dorsum black; patagia light ochreous; tegulae black with light ochreous basal part; sternum and sternal part of abdomen chrome-yellow; leggs black on the outer side and chrome-yellow on the inner side.

Forewing length 19 mm; the forewing black with three round light ochreous spots in the costal part; the first one near basis, the second one in the medial part and the third one in the apex. The hindwing light sandy and the edge widely suffused with black. The underside of the forewing light sandy in the basal part and dark brown on the outer half; the yellow spots from the upperside apparently visible on the underside; the hindwing chrome-yellow and broadly edged with dark brown.

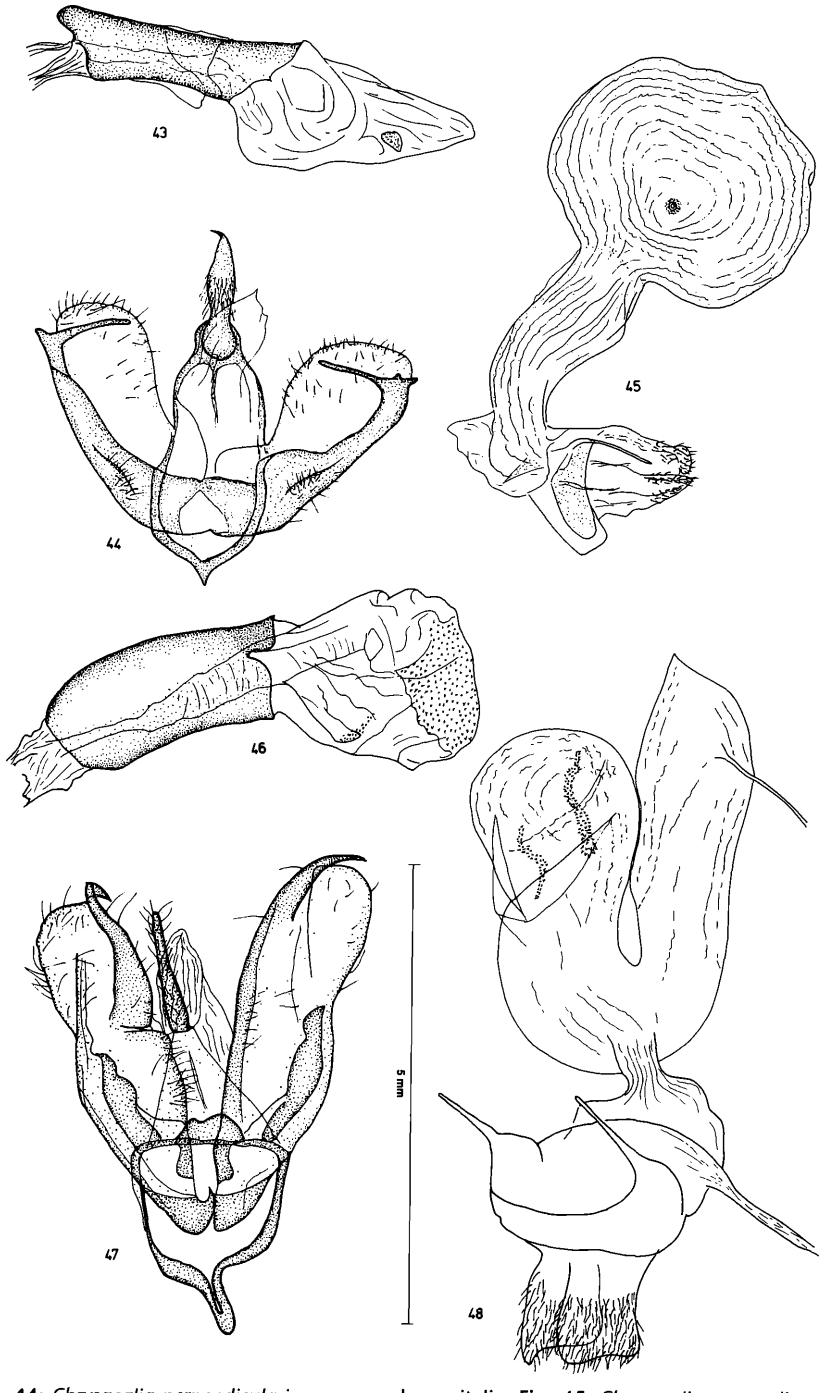
Female genitalia (Fig. 42): Ductus bursae long and hyaline, bursa copulatrix globular with a small round signum consisting of small sclerotised pins.

Variability: The forewing length varies in males between 15 and 16 mm and in females between 16 and 18 mm. In males the extension of the yellow markings varies especially on the hindwing.

Distribution and bionomics: Currently this species is known only from the mountains of central Mindanao. The imagines were attracted by light in the primary and secondary forests.

Similar species: The male is similar to the male of *Monosyntaxis montanus* SCHULTZE 1910 from Luzon and Mindanao which has an orange triangular spot near the base of the forewing and no yellow rays on the hindwing. The female differs only slightly from *M. holmanhunti* HAMPSON 1914 (emendation of *"holman-hunti"*) from Malaysia and "Indonesia" (i.e., probably Sundaland?) having the spots on the forewing usually more round and the dark edge on the hindwing more expressive. The difference in genitalia between *Monosyntaxis holmanhunti* and *M. radiifera* sp. n. in males is imperceptible, based on the shape of the aedeagus. In females the form of the bursa copulatrix is significantly different being rather sack-like in *M. holmanhunti*, whereas rounded in *M. radiifera* sp. n.

Derivatio nominis: The name relates to the yellow rays on the hindwings of the male (*radii* = rays).



Figs. 43, 44: *Chrysaeglia perpendicularis* sp. n., male genitalia. **Fig. 45:** *Chrysaeglia perpendicularis* sp. n., female genitalia. **Figs. 46, 47:** *Agylla sericea* sp. n., male genitalia. **Fig. 48:** *Agylla sericea* sp. n., female genitalia.

Chrysaeglia perpendicularis sp. n.

Holotype (Fig. 15): ♂, Philippines, Leyte, Hilusig, Mahaplag, 600 m, 9. IX. 1986, leg. TREADAWAY, in coll. Senckenberg-Museum, Frankfurt/Main.

Paratypes: 1 ♂ 2*; 1 ♂ 9*; 1 ♂ 10*; 1 ♀ 11*; 2 ♂♂ 14*; 1 ♂ 16*

Description

Male: Head, patagia, thorax and abdomen golden yellow; palpi and antennae black; tegulae black edged with golden yelow; legs golden yellow on coxa and femur; tibia and tarsus black with blue sheen.

Forewing length 20 mm; the ground colour of the forewing golden-yellow; the wing edged with black on costa and in the terminal part; a small lenticular black spot on the inner margin near the basis; a narrow straight black band vertical to costa crossing the wing in its medial part; the fringles black; the underside golden yellow, finely edged with black on the costa and in the terminal part.

Hindwing golden yellow.

Male genitalia: Aedeagus (Fig. 43) stright with a sclerotised field on vesica. Valvae (Fig. 44) with a branched sacculus.

Female (Fig. 16): The only known female differs from the male by being considerably bigger (forewing length 27 mm).

Female genitalia (Fig. 45): Ductus bursae hyaline, bursa copulatrix globular with a small sclerotised signum.

Variability: The variability is limited to the differences in size. The forewing length varies in males between 17 and 20 mm (on average 19 mm).

Distribution and bionomics: Currently the species is known from Luzon, Leyte and Mindanao. The imagines were attracted by light.

Similar species: *Chrysaeglia magnifica* WALKER 1862 (especially the form from Borneo) which has a more extensive wing pattern and black band in the median part of the forewing, near to the inner margin, which is extended on its inner side. On the vesica of *Ch. magnifica* there is a big, sclerotised cornutus which, however, is missing in *Ch. perpendicularis* sp. n. The sacculus in *Ch. magnifica* is not branched. A confusion with the

species *Lithosia entella* CRAMER 1779 (known from India, Malaya, Indonesia, the Philippines, New Guinea and Australia), commonly found on the Philippines, is not likely, since this species has pale yellow ground colour and an additional black band near the apex.

Derivatio nominis: The name describes the characteristic form of the pattern on the forewing (*perpendicularis* = vertical).

Agylla sericea sp. n.

Holotype (Fig. 17): ♂, Philippines, Mindanao, Bukidnon, 15 km NW Maramag, Mt. Malambu, Mt. Bagong Silang, 30. XII. 1991, 1450 m, prim. forest, leg. ČERNÝ, BMNH.

Paratypes: 1 ♂ 12*; 2 ♂♂ 13*; 3 ♀♀, 14 ♂♂ 17*; 13 ♂♂ 18*

Description

Male: Head, patagia and tegulae rusty with purple sheen; palpi on the upperside black; antennae bipectinate, brown; thorax on dorsum purple and on sternum straw yellow; coxa and femur rusty with purple sheen, tibia and tarsus metallic black; abdomen dorsally straw yellow and ventrally rusty with purple sheen.

Forewing length 25 mm; the ground colour of the forewing rusty with purple sheen, without pattern; the underside grey, edged on costa, on inner margin and in the terminal part suffused with rusty colour. The inner part of the hindwings hyaline, the terminal part grey edged with straw-yellow; fringes straw-yellow.

Male genitalia: The bulky aedeagus (Fig. 46) strongly sclerotised, especially in its terminal part, vesica with a field of slightly sclerotised granula in her terminal part; sacculus (Fig. 47) strongly bent and sclerotised.

The female (Fig. 18) is very similar, but bigger, without grey shadows on the hindwing and on the underside and with a less apparent purple sheen.

Female genitalia (Fig. 48): Ductus bursae short, the hyaline bursa copulatrix U-like with two strips of sclerotised lamellae.

Variability: The variability is limited to the difference in size. The forewing length varies in males between 21 and 25 mm (average 24 mm) and in females between 29 and 30 mm.

Distribution and bionomics: Currently this species is known only from the mountain regions of Mindanao. The imagines were attracted by light in the primary forests.

Similar species: *A. sericea* sp. n. belongs to the genus *Agylla* sensu DRAUDT (in SEITZ 1914) which is a polyphyletic assembly and needs a comprehensive revision. Because of its specific colouration a wrong determination is not likely.

Derivatio nominis: The name is derived from the characteristic sheen of the wings (*sericeus* = silky).

Spilosoma ***baltazarae*** **sp. n.**

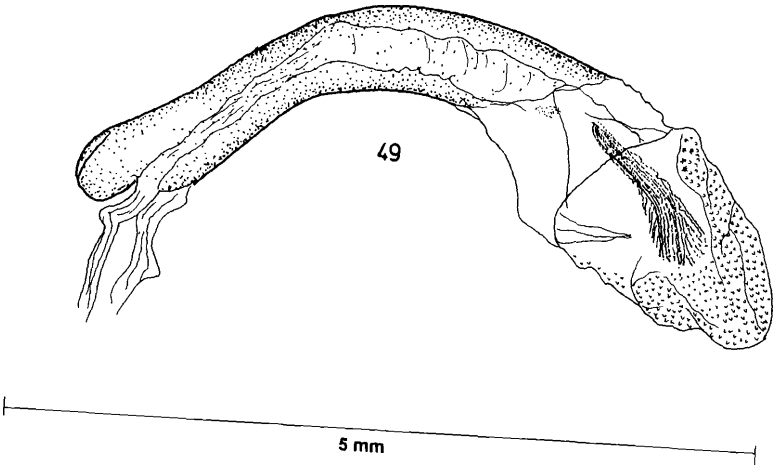
Holotype (Fig. 19): ♂, Philippinen, Mindanao, Mt. Apo, W-Flanke, 1200 m, Sekundärwald, 28.-30. VII. 1993, 6°57' N. Breite, 125°16' E Länge, leg. A. SCHINTLMEISTER & V. SINIAEV, BMNH.

Paratypes: 1 ♂ 12*; 1 ♂ 15*; 1 ♂ 17*; 15 ♂♂ 18*

Additional material (no paratype): 1 ♀ 18*.

Description

Male: Head coffee-brown; palpi red; antennae black; patagia, tegulae and thorax coffee-brown; legs brick-red with brown tarsi; abdomen brick-red with an inconspicuous series of black spots on dorsum and two expressive laterally series. The forewing length is 17 mm. The ground colour is coffee-brown with one subbasal band consisting of three black spots among the veins; one black spot in medial field near the costa; one oblique slightly sinuous postmedian band consisting of black spots among the veins. All black spots on the forewing are finely edged with beige colour. Cilia coffee-brown. Underside brick-red with a black spot in median field near the costa. The hindwing is brick-red with a black spot in the cell; cilia brick-red; underside brick-red with a black spot in the cell.



Figs. 49, 50: *Spilosoma baltazarae* sp. n., male genitalia.

Male genitalia (Fig. 49 and 50): Aedeagus bent, the terminal part of the hyaline vesica dense covered with small sclerotised pins.

Variability: The forewing length varies in males from Mt. Apo between 17 and 19 mm, in males from Mt. Kalatungan it is around 16 mm. The expressivity of the forewing pattern varies considerably. The subbasal band consists of one to four black spots. In one male the postmedian band is manifested like a shadow. Sometimes the ground colour of the forewing is lighter.

Female: The only female (Fig. 20) which probably belongs to this species was found by SCHINTLMEISTER & SINIAEV on Mt. Apo (Mindanao). The conspecifity is, however, not sure. Head and palpi coffee-brown; antennae dark brown; patagia, tegulae and thorax coffee-brown; legs brick-red with brown tarsi; abdomen brick-red with an inconspicuous series of black spots dorsally and two expressive lateral series. The forewing length is 23 mm. The ground colour is coffee-brown with one black point on basis, one spot in medial field near the costa and two black spots on inner margin. Underside brick-red with a black spot in median field near the costa. The hindwing is brick-red with a black spot in the cell; cilia brick-red; underside brick-red with a black spot in the cell.

Distribution: Currently the species is known only from the mountain regions of Mindanao.

Derivatio nominis: This species is dedicated to Mrs. Prof. Clare R. BALTAZAR, a prominent entomologist working at the University of the Philippines in Los Baños.

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On the biology and ecology of *Chedra fimbristyli* MEY & CENIZA, 1993 (Lepidoptera: Batrachedridae), a stemborer in cultivated *Fimbristylis* (Cyperales: Cyperaceae) in the Philippines

Maria Juliet C. CENIZA and Josef SETTELE

Dr. Maria Juliet C. CENIZA, Visayas State College of Agriculture (ViSCA), Department of Plant Protection, Baybay, Leyte, 6521-A, Philippines

Dr. Josef SETTELE, UFZ Umweltforschungszentrum Leipzig-Halle (Centre for Environmental Research Leipzig-Halle), Projektbereich Naturnahe Landschaften, Permoserstrasse 15, D-04318 Leipzig, Germany

Abstract: This study was conducted to investigate the biology, ecology and control of the stem borer, *Chedra fimbristyli*, a major pest attacking tikog (cultivated *Fimbristylis*) in Leyte, Philippines. Life cycle studies have been conducted in the laboratory. There were five larval instars observed and the total larval period lasted for 35–40 days. The larvae underwent a prepupation period of 3 days. Pupation took place on the basal portion of the infested tikog stem. The pupal period lasted for 10 days for both males and females. The adults are small (length of forewings: 4–5 mm), silvery white and live for an average of 5 days. Densities of the stem borer larvae fluctuated throughout the sampling period. Generally, high larval densities occurred when rainfall was low. Pupal counts remained low and stable during the study period. Five plant species (*Fimbristylis dichotoma* [Cyperaceae], *Monochoria vaginalis* [Pontederiaceae], *Rottboellia cochinchinensis* and the two crops *Zea mays* and *Oryza sativa* [all Poaceae]) have been identified as hosts of the stem borer in laboratory conditions. A parasitic nematode was the only natural enemy discovered so far. For possible control of the stemborer with botanicals only extracts of three plant species showed slight promise, roots of *Derris elleptica* (Fabaceae) and *Tinosphora rumphii* and seeds of *Anamirta cocculus* (both Mesispermaceae). However, the effect was not comparable to the chemical Azodrin.

Zur Biologie und Ökologie von *Chedra fimbristyli* MEY & CENIZA 1993 (Lepidoptera: Batrachedridae), ein Stengelbohrer auf *Fimbristylis* (Cyperales: Cyperaceae) auf den Philippinen

Zusammenfassung: Diese Studie wurde durchgeführt, um Grunddaten zu Biologie, Ökologie und eventuellen Bekämpfungsmöglichkeiten des Stengelbohrers *Chedra fimbristyli*, einer auf angebautem *Fimbristylis* auf der Insel Leyte (Philippinen) mitunter schädlich werdenden Batrachedridae, zu erlangen. Der Lebenszyklus wurde im Labor erforscht. Die Art durchlebt fünf Larvalstadien, die Larvalentwicklung dauert insgesamt 35–40 Tage, die Vorver-

puppungsperiode der Raupen 3 Tage. Die Verpuppung erfolgte an der Stengelbasis der Fraßpflanze. Die Puppenruhe erstreckte sich bei beiden Geschlechtern über 10 Tage. Die Adulten sind klein (Vfl-Länge: 4-5 mm) und silbrig-weiß. Sie leben durchschnittlich etwa 5 Tage. Die Dichte der Larven schwankte während der Erfassungsperiode. Generell waren hohe Larvaldichten in Phasen geringeren Niederschlages festzustellen. Die Puppendichte hingegen blieb konstant niedrig. Fünf Pflanzenarten (*Fimbristylis dichotoma* [Cyperaceae], *Monochoria vaginalis* [Pontederiaceae], *Rottboellia cochinchinensis* und die Kulturpflanzen Mais [*Zea mays*] und Reis [*Oryza sativa*, alles Poaceae]) konnten als Wirtspflanzen unter Laborbedingungen ermittelt werden. Ein parasitischer Nematode war der einzige bislang festgestellte natürliche Feind der Art. Für eine potentielle Bekämpfung des Stengelbohrers mit Pflanzenextrakten zeigten nur die der Wurzeln von *Derris elleptica* (Fabaceae) und *Tinosphora rumphii* sowie der Samen von *Anamirta cocculus* (beides Menispermaceae) eine gewisse Eignung. Die Effizienz des Spritzmittels Azodrin war wesentlich größer.

1. Introduction

Chedra fimbrystyli is a micro-moth feeding on cultivated sedges of the genus *Fimbristylis* in some areas of the Philippines. *Fimbristylis* spp., which are locally called "tikog" (in the Visayas, i.e. the Central Philippine Islands), "anahiwan" (in Agusan and Surigao; Southern Philippines) or "sudsud" (Bukidnon), are economically relevant especially in handicrafts. As the studies presented here have been conducted in the Visayas, the local term "tikog" will be used for the following text, as no detailed informations on the exact species cultivated are available so far.

The inflorescence stalk of tikog provides the material for weaving of mats, handbags, wall covers and other handicraft products such as place mats, rags, slippers, wall decors, belts, cushions, letter holders and cigarette cases. Good quality products of this kind satisfy the requirements for local and even export markets. Larger areas in Region VIII are now being planted to tikog.

The increasing demand on local markets, also influenced tikog growers to become more conscious on the herbivores living on these plants (so-called pests). The first recent insect pest infestation of tikog planted areas in some parts of Leyte created growing concern of the farmers on this crop plant. This study was therefore conducted to gather basic data on the life history and ecology of the pest species and study for possible control measures.

2. The tikog stemborer *Chedra fimbristyli*

The species *Chedra fimbristyli* was discovered and described as a result of this research (CENIZA 1991, MEY & CENIZA 1993). Family and genus proved to be new for the Philippines (compare DIAKONOFF 1967). Until then the genus *Chedra* HODGES, 1966 only has been known from the Neotropical Region (HODGES 1966) and from Hawaii (ZIMMERMAN 1978). The respective species there are also feeding on Cyperaceae.

As the main morphological aspects, including that of the early stages, have been published with the species' description, we will focus on biology and ecology here.

3. Materials and Methods

3.1. Biology

Collection of specimens in the field. All data presented are based on specimens collected in tikog plantations within the vicinity of the Visayas State College of Agriculture (ViSCA), in Baybay, Central Western Leyte, Philippines. Light trapping served for obtaining the adult stemborers; collection of infested plant parts for the larvae.

Monthly collection was done by taking 30 stem samples from each of 20 hills per area or a total of 600 tikog stems. Three areas were sampled during each month or sampling time. The stems have been dissected to look for the presence of borers.

To relate seasonal abundance to climatic factors, meteorological data (temperature, rainfall and relative humidity) were obtained and compiled from records of the ViSCA Agrometeorological Station. Figure 1 shows the climatic conditions in the area.

Rearing methods in the laboratory. Due to the absence of established rearing techniques for this borer, several laboratory rearing methods have been tried. However, these had to be based on field collected material, as adults in captivity never laid fertile eggs (neither collected nor bred ones). As a result of different trials, the best rearing technique for *Chedra fimbristyli* turned out to be based on tikog stems of a length of about 60–70 cm. These were individually inserted in plastic drinking straws cut longer than the stem. The diameter is relatively larger than the tikog stem. A cavity was made at the core of the stem where the larva was

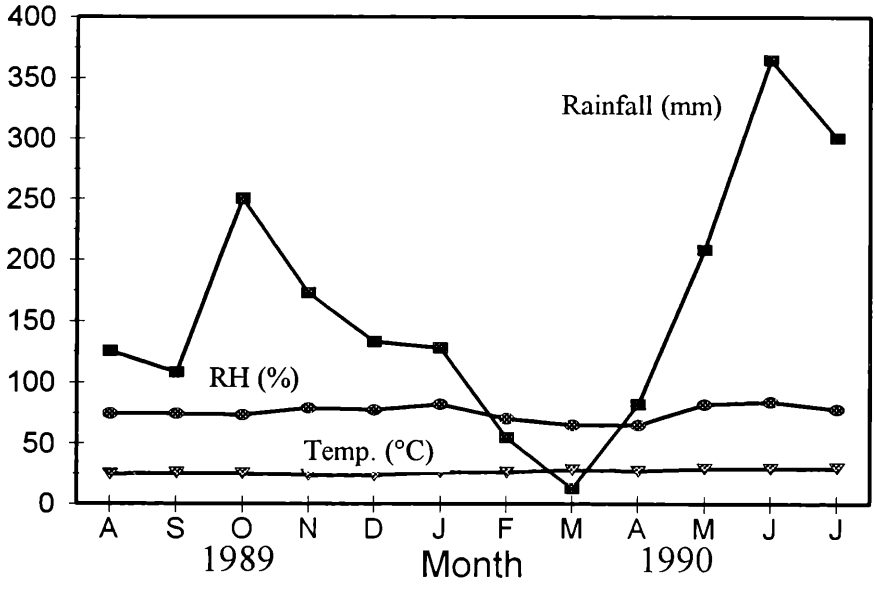

Fig. 1: Climatic conditions in the study site during the sampling period.

introduced. The plastic straws were plugged with moistened cotton to keep the stem inside fresh for longer time. This method obtained relatively low mortality and escape of larvae from the stems was not frequently observed, probably because of the close confinement inside the plastic straw.

The cultures were examined daily. Larval moltings and other behavioural observations were recorded. Observations were sustained until the insect reached pupal stage. The pupae were then collected and placed in another petri dish lined with moist tissue paper. These were kept until adult emergence.

3.2. Ecology

Host range (alternate host) studies. Plants that were found growing in association with tikog in the field were tested in the laboratory as possible alternate hosts of the borer. The potential host plants were given to the larvae and those plants that were not fed upon within 24 hours were regarded as non-host and were not studied further. Feeding was gauged

on the presence of frass as well as chewed parts and tunnels on the stem. Field collected larvae were used in the test.

Studies on natural enemies. Field collected larvae, pupae and adults reared out in the laboratory were observed and monitored for emergence of natural enemies. Field observations were also made to record potential natural enemy species associated. Infected borer larvae and adults were incubated in the laboratory for isolation and determination of the pathogen and for further studies.

3.3. Control

Source plants. The use of plant extracts as botanical insecticide was evaluated for the control of the pest. Extracts from plants with reported pesticidal potential, as listed in Table 2, were used. Azodrin 202 R (205 grams Monocrotophos per liter) was used as the chemical check.

Extraction. The leaves, roots, stems, seeds and tubers (as indicated for each plant in Table 2) were thoroughly washed, weighed, chopped into smaller pieces and then macerated using mortar and pestle. The macerated parts were squeezed using nylon tulle to extract the liquid seperately from the solid parts which were disposed. For *Anamirta cocculus,* seeds were previously roasted and then pound, using mortar and pestle. Enough amount of water was added to predetermined weight of the *A. cocculus* seed powder to obtain a suspension. This suspension was then squeezed and filtered to get the extracts. Only the crude extracts and 50 % concentration were used in the experiment to determine the toxic effects of the plant extracts to the insect pest. Control treatment using water was added.

Treatment of larvae. As a result of the preliminary bioassay, stem dipping was found to be the practical and convenient method to use. The procedure involved the use of cut stems of tikog (60-70 cm long), which were soaked overnight in the plant extracts (crude and 50 % of the crude concentration). Treated stems were air dried for 6 hours and then one larva was introduced in each treated stem by making a slit at the center of the stem for confinement of the larva. Field collected larvae were used in the toxicity studies because of the difficulty to mass rear the insect in the laboratory. Prior to the treatment of the extracts, the test insects were starved for 12 hours before introducing them to the treated stems. The treated stems were kept in petri dishes lined with moist filter paper disc.

Five treated stems were accommodated per dish. Treatments were separately placed in respective petri dishes. Mortality data were gathered after 24 hrs and 48 hrs of exposure to extracts. Data were analyzed following a Completely Randomized Design (CRD). The experiment was conducted with two trials and three replications. Because of the effect of the mechanical handling and losses of larvae during the first trial, the method used in the second trial involved shorter stems dipped in the extracts (see last column in Table 2). The stems were placed in plastic rearing blocks. This confined the larvae inside the cavity and mechanical handling as well as losses of test larvae were minimized.

4. Results

4.1. Biology (life cycle studies)

Despite the different techniques employed, the adult moths failed to lay fertile eggs in captivity. The life cycle studies are mainly based on field collected early larval instars. The total larval development lasted for 35 to 40 days in the laboratory. Five larval instars were observed before they underwent pupation. The full grown larvae underwent a prepupal stage lasting an average of 3 days. The pupal period lasted for 10 days for both male and female. The male and female adults lived 5 days on average.

Egg. These are whitish, ovoid and flattened, about 5 mm wide and laid singly in the florescence of tikog. Several eggs are laid at a time.

Larvae. The newly emerged larva is tiny (1,5 to 2,0 mm in length), with light brown head and milky white body almost unnoticeable from the white background of the pith of the tikog stems. Early larval instars are gregarious feeders. Two to several larvae were found in one site and feeding on the upper portion of the stem. The late larval instars become dirty white with darker brown coloration of the head capsule. A fully grown larva measures 10 to 12 mm. The older larva is a solitary feeder. One larva is found on a single stem of the tikog plant. The larva moves and eats its way down towards the basal portion of the stem near the water level.

Prepupae. Prior to pupation, the larva becomes sluggish, short and robust and ceases feeding for three days. It makes an exit hole at the base which is covered with a thin layer of silk webbings for adult emergence. In addition, the cavity on which the larva is staying is lined with silky

secretions. The prepupal larva molts to a pupa.

Pupae. The pupa stays at the basal portion of the stem. It has free appendages, measuring 8 to 10 mm in length. The newly formed pupa is pale and gradually turning darker as it is nearing emergence. The pupal stage lasts for an average of 10 days.

Adults. Newly emerged adults make an exit through the hole made by the larvae during the prepupation period. The thin silky cover of the hole is pushed open as the adults emerged from the pupal case. The sexes are very similar externally and can be separated with certainty only through dissection of their genitalia. Adults are tiny and measure from 9 to 12 mm in length from the tip of the head to the abdomen. They are dull silvery white in color with sparse brownish markings on the forewings. The wings are held roof-like over the body of the insect and maxillary palps protrude into a snout. The forewings are long, slender and the apex are tapered which are fringed with long hairs. The hindwings are much more narrow than forewings with reduced wing venations. The adults lived for an average of 5 days.

4.2. Ecology

Range of host plants. Fourteen species of related plants and those regularly growing in association with tikog in the field were tested in the laboratory for the host range studies. Of these only 5 species were found to be potential alternate hosts of the stemborer (Table 1). These plants were observed to be fed upon by the insect within 24 hours of exposure and the host sustained the larvae to pupation and emergence. The larval feeding was evidenced by the presence of frass and tunnels inside the stem. The hosts sustained the larvae up to pupation period but duration varies among the different host plants as reflected in Table 1.

Abundance of larvae and pupae in the field. The seasonal abundance monitoring was done for a period of 12 months, from August 1989 to July 1990. The total monthly counts of larvae and pupae are graphically presented in Fig. 2. An irregular fluctuation and certain peaks of abundance were recorded. With the available data gathered there is rather an influence of rainfall visible than of temperature or humidity. It was observed that generally higher population densities occurred when rainfall was less. On the other hand, generally low but stable pupal counts were obtained in every sampling period throughout the year.

Table 1: Plant species associated with tikog, *Fimbristylis* sp., tested as hosts of *Chedra fimbristyli*. Reaction: NH = Non-host; H = Host.

Plant species	Reaction	Pupal period [days]
Monocotyledones		
Fimbristylis dichotoma (L.) VAHL (Cyperaceae)	H	10
Fimbristylis miliacea (L.) VAHL (Cyperaceae)	NH	–
Eleusine indica (L.) GAERTN. (Poaceae)	NH	–
Oryza sativa L. (Poaceae)	H	11
Rottboellia cochinchinensis (LOUR.) W. D. CLAYTON (Poaceae)	H	15
Zea mays L. (Poaceae)	H	12
Monochoria vaginalis (BURM. f.) PRESL. (Pontederiaceae)	H	13
Dicotyledones		
Ageratum conyzoides L. (Asteraceae)	NH	–
Colopogonium muconoides DESV. (Fabaceae)	NH	–
Commelina benghalensis L. (Commelinaceae)	NH	–
Commelina diffusa BURM. f. (Commelinaceae)	NH	–
Ludwigia octovalvis (JACQ.) RAVEN (Onagraceae)	NH	
Phyllianthus amarus SCHUM. & THON. (Euphorbiaceae)	NH	
Stachytarpeta jamaisensis (L.) VAHL (Verbenaceae)	NH	–

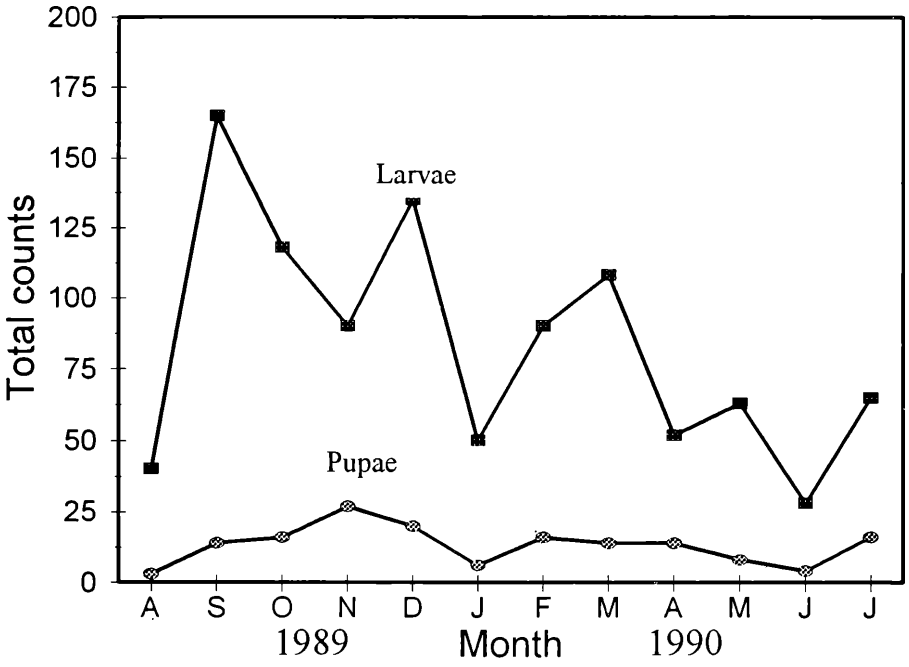

Fig. 2: Monthly abundance of tikog stem borer, *Chedra fimbristyli,* collected in ViSCA.

Natural enemies. A parasitic nematode (not yet identified) was observed to emerge from the larva. It protruded from the posterior end of the abdomen of the larva ripping off the body wall. No parasites and predators have been observed attacking the different developmental stages of the moth.

4.3. Control

Petrochemical control may not be profitable to use considering high cost of inputs and the rather low economic value of tikog. Thus, plants with reportedly pesticidal properties were evaluated for possible control of the stemborer by the use of crude extracts. Table 2 shows the different plant species used. There was no significant difference in between the different trials (including the Azodrin check), although the petrochemical product resulted in the highest mortality.

The infestation of stem borers in tikog appeared to be also influenced by field management. Surveys made on a well maintained tikog area in Sta. Rita, Samar, Philippines, did not succumb to the effect or damage of the pest. The field was well drained and weed-free compared to the infested ones, which have been water-logged and weedy. However, further studies have to be done to assess the extent of damage in properly and improperly managed tikog areas.

5. Discussion

5.1. Biology

Within the present study the family Batrachedridae was discovered in the Philippines for the first time (MEY & CENIZA 1993; compare DIAKONOFF 1967), the genus for the first time for the whole of Asia (MEY & CENIZA 1993; compare COMMON 1990). Thus for the first time detailed data on the biology of a species of this family and genus, like length of life cycle and behaviour of different developmental stages, are presented for the Philippines. Even for other regions, like e.g. Hawaii (ZIMMERMAN 1978), only scarce information is presented on the biology of the genus. Only morphological data are commonly available.

Since this has been the first record of pest infestation in tikog plantations, a thorough life history study is a necessary basis towards the development of control measure recommendations. Therefore the problem of failure of adults to lay fertile eggs in the laboratory has to be solved within further studies.

5.2. Ecology

Results of the study showed that this stem borer fed on a variety of host plants within the monocotyledones, at least under laboratory conditions. Now field observations are needed to proof the broadness of the spectrum of foodplants. Data on other species of *Chedra* from Hawaii (ZIMMERMAN 1978) only mention two species of *Cyperus* respectively *Scirpus* (all Cyperaceae) for *Chedra microstigma* (WALSINGHAM) and the genus *Eragrostis* (Poaceae) for *Chedra mimica* ZIMMERMAN. As revealed by this study, the degree of polyphagy of the genus might be much higher than suggested by the occasional informations usually gathered.

Table 2: Mortality (in %) of tikog stemborers exposed to crude extract of different plants, based on 3 replications; 30 field collected test insects per treatment. Data taken after 24 hours of exposure. Second column of mortality rates: second trial.

Plant species (exclusively Dicotyledones)	Plant part used	Mortality [%]	
Tinosphora rumphii BOERL. ("Panyawan") (Menispermaceae)	roots	6.0	6.6
	stems/vines	3.0	
Anamirta cocculus (L.) W. & A. ("Lagtang") (Menispermaceae)	seeds	10.0	10.0
Euphorbia neriifolia L. ("Soro-soro") (Euphorbiaceae)	stems	3.0	
Dioscorea hispida DENNST. ("Kurot") (Dioscoreaceae)	tuber	0.0	
Gliricidia sepium (JACQ.) STEUD. ("Kakawate") (Fabaceae)	leaves	0.0	
Derris elleptica (ROXB.) BENTH. ("Tubli") (Fabaceae)	roots	10.0	
Azodrin (chemical check)	–	26.0	36.6

The survival of the species on a series of hosts might be a very efficient strategy during scarcity of the supposed main host plant (*Fimbristylis* spp.). This has to be taken into consideration for the development of control measures. The suitability of corn and rice as host plants indicated that the species can be a potential pest of these plants and should be thoroughly studied in this respect also in the future.

Seasonal abundance of the tikog stemborer larvae coincides with that of several other moth species of the Philippines inhabiting the same kind of wetland biotope, namely the rice stemborers, as reported by CENDAÑA & MORALLO (1962) or KÜMHOF (1986). There are two peak periods of occurrence in these species (August to December and March to May). It was observed that generally high counts occurred when rainfall was less. This possibly can be attributed to adult activity, which is lower during heavy rainfall (as with most moths: see ACHILLES 1993, BANERJEE & PRAMANIK 1967, or BANERJEE & MONDAL 1983 for examples).

However, in the recent study there was a decline in population during the months of October to November 1990 which might be attributed to the application of insecticides. The seemingly high abundance of the borer and the fear of the farmers for the loss of their crop seemed to necessitate the use of chemical control.

The generally low but constant pupal counts however might be due to the confinement of the pupae within a well protected cavity inside the stem of infested plants. Therefore, they are not directly affected by whatever detrimental factors are present.

Only one unidentified parasitic nematode and no parasitic insect species have been recorded and collected as natural enemies. One reason might be their life in a very confined and secluded habitat which is not very accessible to parasitic attack. Also laboratory rearing shortened the time of exposure to natural conditions. It seems possible that the egg stage (which could not thoroughly be examined for parasites) is very vulnerable to parasites as they are laid exposed in the inflorescence of the plant.

However, more intensive sampling of old-stage-larvae in the field might reveal different results, as e.g. for *Chedra microstigma* in Hawaii, where ZIMMERMAN (1978) lists one species each of the hymenopteran genera *Bracon, Chelonus* (Braconidae) and *Trathala* (Ichneumonidae) as parasitoids.

5.3. Control

The general trend reflects that the larvae are not very vulnerable to the potentially toxic effects of the pesticides as they are inside the tikog stems. The method used in the test which was stem dipping, may also have affected the results because of the physical feature of the stem of tikog which appears to be hydrophobic with waxy nature. However, if the pesticides are systemically absorbed by the plant it may affect mortality of the larvae.

Based on observations and results obtained, early instar larvae are feeding on the upper portion and particularly on the outer core of the tikog stem. Timing of application, in terms of pesticidal control have also to be considered and studied in this respect.

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