NOCTUIDAE SIBIRICAE 2

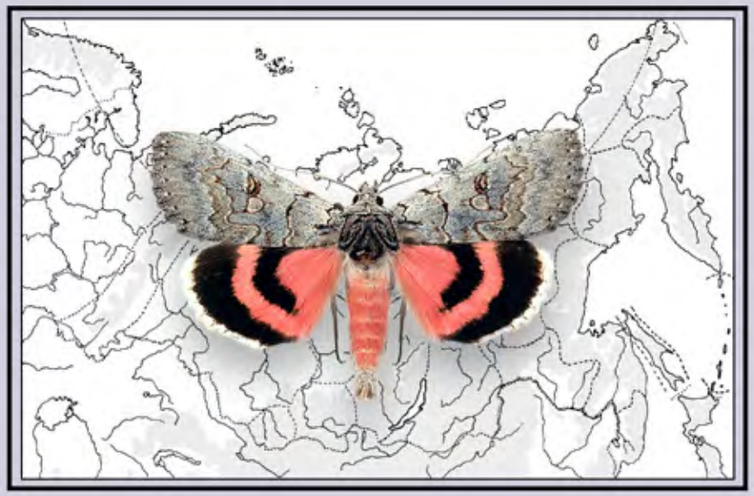
MICRONOCTUIDAE
NOCTUIDAE:
RIVILINAE - AGARISTINAE

NOCTUIDAE SIBIRICAE

VOLUME 2

MICRONOCTUIDAE, NOCTUIDAE: RIVULINAE - AGARISTINAE

VLADIMIR S. KONONENKO



ENTOMOLOGICAL PRESS

In Carnegie Museum. Pittsburg, USA. March 2003.

V. Kononenko and M. Fibiger. Sorø, Denmark. May 2010

In the field work. Lijiang, Yunnan, China. July 2009.

Dr. VLADIMIR KONONENKO (born in 1950) is professional entomologist, leading researcher fellow of the laboratory entomology at the Institute of Biology and Soil science Far Eastern Branch of Russian Academy of Science (Vladivostok, Russia). Over 30 years he study systematic, taxonomy and biogeography of the noctuid moths (Lepidoptera, Noctuidae). He is author of over 140 scientific publications, among them are *Illustrated catalogue of the Noctuidae in Korea* (1998), *Key for insects of the Far East of Russia* (2003), *Moths of Thailand* vol. 3 (2004), *Noctuidae Sibiricae* Vol. 1 (2005), *Atlas genitalia of Noctuidae in Korea* (2007), *Norges sommerfugler* (2009). Vladimir is excellent photographer, designer and scientific illustrator, he illustrated and designed his publication himself; he is well known as an illustrator of the issues *Noctuidae Europaea* (vols 9, 10, 11 and 12), *Arthropods fauna* of the UAE (vols 2 and 3) and *Danmark sommerfugle*. He is a member of many international lepidopterological projects.

NOCTUIDAE SIBIRICAE

VOLUME 2

MICRONOCTUIDAE, NOCTUIDAE: RIVULINAE - AGARISTINAE

NOCTUIDAE SIBIRICAE

VOLUME 2

MICRONOCTUIDAE, NOCTUIDAE: RIVULINAE - AGARISTINAE (LEPIDOPTERA)

VLADIMIR S. KONONENKO

ENTOMOLOGICAL PRESS
SORØ 2010

Editor in a Chief: M. Fibiger

Text composition, *colour and b/w plates*, *maps and book design*: Vladimir S. Kononenko

Frontpage drawing: *Sarbanissa venusta* (Leech, 1889) by Vladimir S. Kononenko

Printed by: Svendborg Tryk, DK – 5700 Svendborg, Denmark

Sold and distributed by: Apollo Books, Kirkeby Sand 19, DK-5771 Stenstrup, Denmark

This publication should be cited as:
V. S. Kononenko. Micronoctuidae, Noctuidae: Rivulinae – Agaristinae (Lepidoptera). – *Noctuidae Sibiricae*. Vol. 2. Entomological Press, Sorø, 2010. 475 pp.

Author's address:
Institute of Biology and Soil Science, Far Eastern Branch of Russian Academy of Sciences, Vladivostok 22, Russia 690022, *e-mail*: kononenko@ibss.dvo.ru

Abstract

V. S. Kononenko. Micronoctuidae, Noctuidae: Rivulinae – Agaristinae (Lepidoptera). – *Noctuidae Sibiricae*. Vol. 2. Entomological Press, Sorø, 2010. 475 pp. – ISBN 978-87-89430-15-7

The second volume of the *Noctuidae Sibiricae* includes family Micronoctuidae and first 28 subfamilies and 25 tribes of the Noctuidae from Rivulinae to Agaristinae. Totally 180 genera and 531 species known from the Ural, Siberia and the Russian Far East and adjacent territories are considered in the volume. Diagnoses for the families, subfamilies, tribes, genera and selected diagnoses for species are given. Distribution and bionomics: habitat preference, period of flight of imagoes, host plants of larvae for each species are reported. Imagines of all species are illustrated in colour, male and female genitalia in halftone photos; distribution maps for all species are provided. Bibl. 250, ill. 24 colour plates, 9 text plates +165 halftone plates, 531 maps in 30 plates.

ISBN 978-87-89430-15-7

CONTENTS

EDITORIAL FOREWORD 7
ACKNOWLEGEMENTS 8
INTRODUCTION 9
SYSTEMATIC PART 35
Family MICRONOCTUIDAE 36
Family NOCTUIDAE 36
1. Subfamily RIVULINAE 38
2. Subfamily BOLETOBIINAE 38
3. Subfamily HYPENODINAE 39
4. Subfamily ARAEOPTERONINAE 41
5. Subfamily EUBLEMMINAE 42
6. Subfamily AVENTIINAE 46
7. Subfamily PANGRAPTINAE 53
8. Subfamily PHYTOMETRINAE 55
9. Subfamily HERMINIINAE 56
10. Subfamily HYPENINAE 67
11. Subfamily EREBINAE 75
Tribe Erebini 75
Tribe Hypopyrini 76
12. Subfamily CALPINAE 76
Tribe Scoliopterigini 77
Tribe Calpini 79
13. Subfamily CATOCALINAE 81
Tribe Toxocampini 82
Tribe Acantholipini 87
Tribe Arytrurini 88
Tribe Melipotini 88
Tribe Euclidini 90
Tribe Catephiini 93
Tribe Pericymini 94
Tribe Ophiusini 94
Tribe Catocalini 100
Tribe Sypnini 107
Tribe Hypocalini 109
14. Subfamily EUTELIINAE 110
15. Subfamily PLUSIINAE 111
Tribe Abrostolini 112

Tribe Argyrogrammatini 113
Tribe Plusiini 116
Subtribe Autoplusiina 116
Subtribe Euchalciina 120
Subtribe Plusiina 126
16. Subfamily EUSTROTIINAE 132
17. Subfamily ACONTIINAE 139
Tribe Acontiini 140
18. Subfamily AEDIINAE 142
19. Subfamily NOLINAE 142
Tribe Nolini 143
Tribe Chloephorini 155
Subtribe Chloephorina 155
Subtribe Camptolomina 158
Subtribe Careina 159
Subtribe Ariolicina 159
Tribe Sarrothripini 160
Subtribe Eariadina 161
Subtribe Sarrothripina 162
Tribe Collomenini 163
Tribe Eligmini 164
20. Subfamily BAGISARINAE 165
21. Subfamily METOPONIINAE 167
22. Subfamily SINOCHARINAE 169
23. Subfamily BALSINAE 170
24. Subfamily THIACIDINAE 170
25. Subfamily PANTHEINAE 171
Tribe Pantheini 172
Tribe Arcteini 175
26. Subfamily DILOBINAE 176
27. Subfamily ACRONICTINAE 177
28. Subfamily AGARISTINAE 192
LEGENDS FOR COLOUR PLATES 194
ADDENDUM 204
PLATES 205
DISTRIBUTION MAPS 395
CHECKLIST 426
REFERENCE 448
INDEX 455

EDITORIAL FOREWORD

With this second volume of the book-series, “Noctuidae Sibiricae”, dealing with the fauna of the old sense Noctuidae (sensu lato) (though not including Lymantriinae and Arctiinae) of the Asian part of Russia (often called “Siberia”), we proudly present the start of the systematic treatment of all noctuid species recorded here. This series continues and extends the issue for Noctuidae Europaea from the Ural Mountains (the geographical limits for Noctuidae Europaeae) to the Pacific coast of Russia, and together with the irregularly published issues of the MONA fascicles from the Nearctic region, Moths of Japan and Moths of Korea they build a full Holarctic view of the species and genera of the polar, temperate, and some parts of the subtropical zones. This cooperation has already resulted in a much better understanding of the generic relationships, which have led to many necessary synonyms and new generic combinations. The fully illustrated guide book with colour imagines and genitalia is first and foremost produced for Russia. Undoubtedly, this book is very important not only for Russia, but it also has international value.

Almost five years have elapsed since the first volume was published. That volume was intended to analyse and state the actual finds Noctuidae published in Siberia (including the Urals). During this five-year period numerous pleasant meetings in Sorø and e-mails have been exchanged between the author and many colleagues in order to compile the vast amount of information about all the Siberian noctuid species, their taxonomy, and distribution.

For the processing of plates Vladimir has studied macro and micro photography and designed application of the computer graphics for scientific illustrations with excellent, professional results.

Since 2005 a decision was made to split the work, Noctuidae Sibiricae, into four volumes in total: the first goal being:

– To update a complete list of all Noctuidae (sensu lato) taxa that have been reported from Siberia (Kononenko 2005);
– To describe new species and write taxonomic and faunistic results;
– To integrate the most recent classification of the Noctuidae (s. l.);
– To photograph all Siberian noctuidae in colour and insert the species images on plates;
– To compile all male and female genitalia of all the Siberian species, partly through friends and colleagues, and partly by making new preparations;
– To make distribution maps for all treated species;
– To make lay-out for all genitalia plates and finally
– To perform all technical work in order to produce a final print-ready version of the book.

The text has been discussed in length between the author and editor, and the text has been carefully edited by Leif Aarvik, Oslo, and the final linguistic comments and corrections have been made by Barry Goater, England.

The classification and systematic sequence of subfamilies follow Fibiger and Lafontaine (2005), Lafontaine & Fibiger (2006), and the sequence of genera and species are updated from the ‘European List of Noctuoidea’ (Fibiger & Hacker 2005).

The two subsequent volumes of Noctuidae Sibiricae, vol. 3 and 4 will, similarly with the present volume 2, contain text for each taxa, covering short differential diagnoses, distribution data and maps, larval food plants, flying period of the imagines, and larval periods.

Many lepidopterists and other entomologists have supported this study and have as usual been extremely helpful during this long and exhaustive work. They have been properly acknowledged in the author’s foreword. It is our hope that all friends of lepidopterology will appreciate this volume that presents much new and necessary information for professional and private biologists both inside and outside Russia.

Sorø, 14th July 2010
Michael Fibiger, Editor in Chief

ACKNOWLEDGEMENTS

The preparation and publication of this book would be impossible without the encouragement and friendly help of many Lepidopterist colleagues.

First of all I want to express my deep cordial thanks to editor in a chief of the present series Michael Fibiger (Sorø, Denmark), who inspired me to start the "Noctuidae Sibiricae" project in 1999, encouraged me during many years and made generous efforts for publication of the Noctuidae Sibiricae series.

I am very grateful to my colleague Dr. A. Matov (ZISP, St. Petersburg) for his kind and great help and information and photographs of the type specimens, new faunistic data and many photographs of the specimens and genitalia slides from the collections under his curation.

My great thanks to Kari Nupponen (Finland, Espoo), who presented me his wonderful collection of the Ural Noctuidae for examination and photography.

My great thanks to Dr. Han Hui Lin for his kind help in the study of the noctuid fauna of neighbouring regions of China and making many genitalia slides and photographs used in this book.

My special thanks expressed to the late Prof. Clas Naumann (†) and Dr. Dieter Stüning (ZFMK, Germany, Bonn) for their kind support of museum work in preparation of this book, as well as other projects on Palaearctic Noctuidae during many years.

My great thanks to Dr. L. Ronkay and Mr. G. Ronkay (Budapest, Hungary) for fruitful discussion of many critical taxa, valuable information and their kind help given me in course of my work.

I am deeply grateful to Mrs. Mariann Fibiger (Sorø, Denmark), Leif Aarvik (ZM Oslo University) and Barry Goater (England) for the linguistic correction of the English.

Last, but not least, I express my deep thanks to Prof. Dr. K. Mikkola, initiator and organiser of numerous expeditions to Siberia and the excange programme between Finnish and Russian academies for comparative study of the insect fauna of Northern Europe and Siberia in the nineties of the last century for his encouragement of this work, discussions and valuable critical comments. We have spend much nice time in join expeditions to remote corners of Siberia.

Many persons have assisted me through consultation, valuable information, by making comments, by permission to work with their collections, by providing of research facilities in the museums, literature, loaning of material, genitalia slides, photographing of type–specimens and other materials from the collections under their curation. I express my cordial thanks to the following:

Matti Ahola, Resjärvi, Finland
Gottfried Behounek, Germany Grafing b. Münich
Behnaz van Bekkum-Anzari RNH, Leiden, Netherlands
Vladimir Dubatolov, SZM, Novosibirsk, Russia
Grigory Grigoryev, St. Peterburg, Russia
Vladimir Gusarov, NHM UiO, Oslo, Norway
Hermann-Heinrich Hacker, Germany, Staffelstein
Jeremy Holloway, BMNH, London, England
Martin Honey, BMNH, London, England
Marton Hreblay, Erd, Hungary (†)
Donald J. Lafontaine CNC, Ottava, Canada
Gert Jeppesen, Denmark
Zoya Fedorovna Kljutshko, Kiev, Ukraine
Jakko Kullberg, ZMHU, Helsinki, Finland
Alex Madsen, Denmark
Wolfram Mey, MNHU, Germany, Berlin
Andrei Vladimirovich Nekrasov, Moscow, Russia (†)
Bert Gustafsson, NHRS, Sweden, Stockholm
Rienk de Jong, RNH, Leiden, Netherlands
Erik Nieukerken, RNH, Leiden, Netherlands
Danny Nilssen, Denmark
Mamoru Owada, NSM, Tokyo, Japan
Kyu-Tek Park, Seoul, Republic of Korea
Niels Peder Kristensen, Copenhagen, Denmark
John Rawlins CNHM, Pittsburgh, USA
Hans Janovich Remm, Tartu, Estonia (†)
Teet Ruben, Tallinn, Estonia
Nikolai Savenkov, Riga, Latvia
Wolfgang Speidel, TWM, Münich, Germany
Shigero and Misa Sugi, Tokyo, Japan
Andrei Sviridov, ZM MU, Moskow, Russia
Morten Top-Jensen, Denmark
Jaan Viidalepp, IZB, Tartu, Estonia
Anton Volynkin, Barnaul, Russia
Shin-Ichi Yoshimatsu, NIAST, Tsukuba, Japan
Alberto Zilli, Rome, Italy,
and many other colleagues and friends.

The museum work for Noctuidae Sibiricae project has been supported in part by grants from the Finnish Academy (in the year 2003, and in the year 2007) and the Finnish Natural History Museum in the year 2007, the Deutsche Forschungsgemeinschaft (DFG) in the years 2001, 2004 and 2008 and by Ernst Mayer Travelling grant in the year 2004.

I hope that this book will be helpful to noctuid researchers, both professional and amateur lepidopterists, as guide to the noctuid fauna of the Urals, Siberia and the Russian Far East, as well as a stimulus for further research into insect diversity in these regions.

Vladimir Kononenko,
Vladivostok, July 16 2010

INTRODUCTION

I am pleased to present to lepidopterists colleagues and other interested readers the second part of the planned four – volume series "Noctuidae Sibiricae". This and oncoming volumes contain colour illustrations of imagines and halftone illustration of male and female genitalia for easy identification of taxa, short diagnoses for selected taxa and data for bionomics and distribution noctuids of Asian Russia.

The series "Noctuidae Sibiricae" is in some way a succession and continuation of the twelve–volume "Noctuidae Europaea" (1990–2010). It covers the territory of the northern Palaearctic in limits of Asian part of Russia from the Ural region in the West (western slope of Urals mountains is included) throughout Siberia eastward to the Pacific coast and islands and from the Arctic Ocean in the North to Kazakhstan, Mongolia, north China and North Korea in the South. The main objectives of the series "Noctuidae Sibiricae" are completing the faunal list of the Noctuidae of Asian Russia based on modern classification and providing a series of illustrated monographs which could serve as the accurate identification of species and provide the data on their bionomic and distribution. The first volume of Noctuidae Sibiricae contained a brief review of the region of study, history of Noctuidae inventory in Ural, Siberia and Russian Far East, a complete regional and general bibliography, a distributional list based on modern classification of Noctuoidea (Fibiger & Lafontaine 2005), and taxonomic and faunistic comments to species. The volumes two – four of Noctuidae Sibiricae were planned as fully illustrated guide books on Noctuidae, first presented for Russia.

The publication of the Checklist of the Noctuidae of the Asian part of Russia (Noctuidae Sibiricae vol. 1) (Kononenko 2005) and the Catalogue of the Lepidoptera of Russia (Noctuidae: Matov *et al.* 2008) inspired further study of biodiversity, intensive faunistic inventory inventory, especially in some poorly explored areas of Russia and Siberia and taxonomic study of some neglected or little known groups of the Noctuidae.

During the subsequent five years after publication of the Noctuidae Sibiricae vol. 1, the family Micronoctuidae was revised with a description of a new species (Fibiger & Kononenko 2008a); the subfamily Araeopteroninae of Russian fauna was revised with description of three new species and two records new for Russia (Fibiger & Kononenko 2008b); new Eublemminae, Hypeninae, Aventiinae, Catocalinae, Acronictinae and Plusiinae have been described from Russian Far East (Fibiger *et al.* 2008; Kononenko & Matov 2009; Kononenko & Behounek 2009; Kononenko & Han 2008; Kononenko *et al.*, in print; Ronkay *et al.*, 2008); two new species have been described from the Ural (Nupponen & Fibiger 2006). Twenty two species new for Russia have been collected in Ural (Nupponen & Fibiger 2006), Altai (Volynkin & Nakonechny 2010) and the Russian Far East (Matov *et al* 2008; Kononenko & Behounek 2009; Dubatolov & Dolgih 2009). More than ten species supposedly new for Russia from Altai and new additional data on Ural Noctuidae are in the process of identification or publication (Volynkin, pers. comm; Nupponen, pers. comm.). The occurrence of some species reported in Noctuidae Sibiricae vol. 1 from adjacent territories of Kazakhstan or Mongolia was confirmed for Russia. On the basis of museum study, newly collected material and data, received from local collectors, several dozens of species were added to the regional checklists for Ural (Nupponen & Fibiger 2006), Altai (Volynkin 2007a, 2007b, 2008; Volynkin & Perunov 2007; Volynkin & Nakonechny 2010), south of Khabarovsk territory (Dubatolov & Dolgih 2009), Lower Amur (Dubatolov & Matov 2009), Primorye (Kononenko 2009) and for other regions. At the same time the synonymy, identification and systematic position of some purely known taxa were clarified. As a result, the number of Noctuidae species of the Asian part of Russia increased from 1412 (Kononenko 2005) to 1446 and predictable it will increase more in the course of further intensive investigations of biodiversity. The full updated distributional list of Noctuidae of the Asian part of Russia is planned for publication by the end of the series.

In the synopsis below the additions to faunal list of Siberian Noctuidae and nomenclatorial and taxonomic changes are presented (additions to local faunas and unpublished data not included).

Additions and changes to the Checklist of the Noctuidae of Asian part of Russia in period 2005–2010

Newly described species:

Micronoctua occi Fibiger & Kononenko, 2008a (Primorye)
Araeopteron ussirica Fibiger & Kononenko, 2008 (Primorye) (Fibiger & Kononenko 2008b)
Araeopteron makikoae Fibiger & Kononenko, 2008 (Primorye) (Fibiger & Kononenko 2008b)
Araeopteron patella Fibiger & Kononenko, 2008 (Primorye) (Fibiger & Kononenko 2008b)
Metachrostis sinevi Kononenko & Matov, 2009 (Primorye) (Kononenko & Matov 2009)
Lophomilia nekrasovi Kononenko & Behounek, 2009 (Primorye) (Kononenko & Behounek 2009)
Paragabara curvicornuta Kononenko, Han & Matov, 2010 (Primorye) (Kononenko *et. al*. 2010
Paragona nemorata Kononenko, Han & Matov, 2010 (Primorye) (Kononenko *et. al.* 2010
Remmigabara Kononenko, Han & Matov, 2010 (Kononenko *et. al.* 2010, submitted)
Lygephila dubatolovi Fibiger, Kononenko & Nilsen, 2008 (Primorye) (Fibiger *et. al*. 2008)
Acronicta dahurica Kononenko & Han, 2008 (Transbaikalia, Primorye) (Kononenko & Han 2008)
Diachrysia witti L. & G. Ronkay, & Behounek, 2008 (Primorye) (Ronkay *et al*. 2008)
Dasypolia timoi Nupponen & Fibiger, 2006 (S Ural) (Nupponen & Fibiger 2006)
Agrotis frater Nupponen & Fibiger, 2006 (S Ural) (Nupponen & Fibiger 2006)

Species, newly reported for Russia:

Nola ebatoi (Inoue, 1970) (Dubatolov & Dolgih 2009: Khabarovsk)
Araepteron fragmenta Inoue, 1965 (Fibiger & Kononenko 2008b: Primorye)
Araeopteron nebulosa Inoue, 1965 (Fibiger & Kononenko 2008b: Primorye)
Hypena semialbata Sugi 1982 (Matov *et al*. 2008: Kurile Isl.)
Lophomilia polybapta (Butler, 1879) (Kononenko & Behounek 2009: Primorye)
Ischyja manlia (Cramer, 1776) (reported here: Primorye)
Autophila asiatica (Staudinger, 1888) (Volynkin & Nakonecny 2009: Altai)
Autophila rasilis (Püngeler, 1900) (reported here: Altai)
Catocala musmi (Hampson, 1913) (Matov *et al.* 2008: Primorye)
Catocala duplicata Butler, 1885 (reported here: Primorye)
Hypocala violacea Butler, 1879 (Matov *et al.* 2008)
Blasticorhinus unduligera (Butler, 1878) (Kononenko & Han 2007: Primorye, Khabarovsk, Amur)
Koyaga magninumisma Ahn 1998 (Dubatolov & Dolgih 2009: Khabarovsk)
Cymatophoropsis unca (Houlbert, 1921) (Matov *et al.* 2008: Primorye)
Cucullia umbristriga (Ronkay, Ronkay, 2009; Volynkin, Nakonecny 2010: Altai)
Chitonyx subalbonotata Sugi, 1959 (Matov *et al.* 2008: Primorye)
Condica fuliginosa (Leech, 1900) (Bidzilya & Klyuchko 1994: Primorye)
Auchmis detersina (Staudinger, 1897) (Volynkin, Nakonecny 2010: Altai)
Coenobia orientalis Sugi, 1982 (Matov *et al.* 2008: Primorye)
Xylena formosa (Butler, 1878) (Dubatolov & Dolgih 2009: Khabarovsk)
Polymixis atossa (Wiltshire, 1941) (Nupponen & Fibiger 2006: S Ural)
Polymixis rosinae (Bohatsch, 1908) (Nupponen & Fibiger 2006: S Ural)
Egyra anatolica (M.Hering, 1933) (Nupponen & Fibiger 2006: S Ural)
Hadena syriaca (Osthelder, 1933) (Nupponen & Fibiger 2006: S Ural)
Isochlora herbacea Alpheraky, 1895) (Matov *et al.* 2008; Volynkin, Nakonecny 2010: Tuva, Altai)

Nomenclatory and taxonomic changes

Nolidae downgraded to the subfamily of Noctuidae (Lafontaine & Fibiger 2006)
Erebidae downgraded to the subfamily of Noctuidae (Lafontaine & Fibiger 2006)
Thiacidinae Hacker & Zill, 2007, new subfamily introduced (Hacker & Zill, 2007)
Raphiinae Beck, 1996 synonynised with Dilobinae Aurivillius, 1889 (Fibiger *et al.* 2010)

Synonymy

Lophomilia Warren, 1913 = *Atuntsea* Berio, 1977 (Kononenko & Han 2007)
Euclidia Ochsenheimer, 1816 = *Leucomelas* Hampson, 1913 (Kononenko & Han 2007)
Dysgonia coreana (Bremer & Grey, 1853) = *obscura* Leech, 1889 (Kononenko & Han 2007)
Lygephila procax (Hübner, 1813) = *nigricostata* Graeser, 1890 (Fibiger *et al*. 2008)
Resapamea hedeni (Graeser, 1889 = *vulpecula* Eversamnn, 1852 (Zilli *et al*., 2005)

Abrostola korbi Dufay, 1958 = *pacifica* Dufay, 1960 (Behounek *et al.* 2010)
Diachrysia pales (Mell, 1939) = *coreae* Bryk, 1949 (Ronkay *et al.* 2008)
Diachrysia witti L. & G. Ronkay & Behounek, 2008 = *bieti* auct. (misidentification) (Ronkay *et al.* 2008)
Autographa mandarina (Freyer, 1846) = *lehri* Klyuchko, 1984 (Ronkay *et al.* 2008)
Autographa buraetica (Staudinger, 1892) = *ternei* Klyuchko, 1984 (Ronkay *et al.* 2008)
Autographa camptosema (Hampson, 1913) = *nekrasovi* Klyuchko, 1985 (Ronkay *et al.* 2008)
Syngrapha i. transbaikalensis (Staudinger, 1892) = *Syngrapha gilarovi* Klyuchko, 1984 (Ronkay *et al.* 2008)
Meganola Dyar, 1898 = *Rhynchopalpus* auct. (Holloway 1998; Fibiger *et al.* 2009)
Manoba Walker, [1863] = *Rhynchopalpus* Hampson, 1893; *Meganola* auct. (Holloway 1998)
Nycteola eremostola Dufay, 1961 = *siculana* auct., misidentification (Fibiger *et al*., 2009)
Gelastocera eminentissima Bryk, 1948 = *sutshana* Obraztsov, 1950, **syn**. **n**.
Chorsia Walker, [1863] 1864 = *Neustrotia* Sugi 1982; *Bryophilina* Staudinger, 1892, **syn. n.**
Trachea Ochsenheimer, 1816 = *Heraema* Staudinger, 1892 (Kononenko & Han 2007)
Thiacidas Walker, 1855 = *Panthauma* Staudinger, 1892 (Hacker & Zill, 2007)

Revalidated taxa

Polypogon tarsicrinata Bryk, 1948 bona species = *gryphalis* auct., misidentification (Owada 2006)
Blasticorhinus unduligera (Butler, 1878), bona species (Kononenko & Han 2007)
Nola minutalis Leech, 1888, bona species (Inoue 2001)
Euchalcia mongolica (Staudinger, 1901) bona species (Ronkay *et al.* 2008)
Cucullia pustulata Eversmann, 1842, bona species (Ronkay & Ronkay 2009)
Symira saepestriata (Alphéraky, 1895), bona species = *albovenosa* auct.
Cucullia infuscata Tschetverikov, 1925, bona species (Ronkay & Ronkay 2009)
Cucullia pustulata fraterna (Butler, 1878), subspecies (Ronkay & Ronkay 2009)

New combinations

Chorsia costimacula (Oberthür, 1880) (*Neustrotia*) **comb. n.**
Chorsia noloides (Butler, 1879) (*Neustrotia*) **comb. n.**
Chorsia mollicula (Graeser, 1888 [1889]) (*Bryophilina*), **comb. n.**
Acontia (sedis incertae) *martjanovi* Tschetverikov, 1904 (*Lithacodia*), **comb. n.**
Casminola pulchella (Leech, 1889) (Laszlo *et al.* 2010)
Thiacidas egregia (Staudinger, 1892) (*Pantahuma*) (Hacker & Zill, 2007)
Trachea mandschurica (Graeser, 1889) (Kononenko & Han 2007)

Excluded from the checklist:

Nola cristatula auct., nec Hübner, 1793, misidentification of *Nola minutalis* Leech, 1888.
Nola chlamitulalis auct., nec, Hübner, [1813], misidentification of *Nola minutalis* Leech, 1888.
Meganola gigantula auct., nec Staudinger, 1878, misidentification of *Meganola subgigas* Inoue, 1982.
Diachrysia bieti auct., nec Oberthür, 1884, misidentification of *Diachrysia witti* L. & G. Ronkay & Behounek, 2008.
Nycteola siculana auct., nec Fuchs, 1899, misidentification of *Nycteola eremostola* Dufay, 1961.

This volume contains a review of a small Noctuoidea family Micronoctuidae and the first 28 of 38 subfamilies and 25 tribes of the Noctuidae, from Rivulinae to Agaristinae are know from the region. In total 180 genera and 531 species distributed in the Ural, the Asian part of Russia and adjacent territories are considered in the volume.

Each family, subfamily, tribe and genus is supplied with brief morphological characteristics; main taxonomic bibliography is provided for families, most subfamilies and some large and revised genera. For each genus the reference the original description, data on type–species and synonymy are provided. The general distribution of the genus, the number of species in the genus, centers of diversity of the genus and the number of species in the Asian Russia are indicated.

The following information is given for species: scientific name, reference to original description and type–locality, chronological synonymy, bionomics: habitat preference, period of flight of imagoes, host plants of larvae and distribution with sketch map. The information on host plants of most species combined from several well known literary sources (Spuler 1908; Kozhanchikov 1955; Merzheevskaya 1967, 1971; Pospelov 1969; Seppanen 1970; Klyuchko 1978; Mutuura *et al.* 1979; Sugi 1982a; Miyata 1983; Owada 1987a, 1987b; Yamamoto & Sugi 1987; Robinson *et al.* 2001; Ahola & Silvonen 2005, 2008; Park *et al.* 2006; Poltavsky *et al.* 2009a, 2009b), and many small articles, applied literature and partly observations by the present author. In the case, if the data on the hostplant are published in inaccessible articles, or are special and little known, the reference of publication is given.

Because illustrations of imagines and the genitalia of both sexes have been provided, the diagnoses are given only for some selected species belonging to taxonomically difficult and often confused groups of species. In the section “distribution” the general type of species area and its distribution in the Asian part of Russia or in Russia are described, then after dot and dash the distribution outside Russia is given. Twenty four colour plates contain photographs of 969 specimens, most of them are illustrated in natural size otherwise the magnification is indicated on the pate. Each species is illustrated with male and female genitalia on 165 halftone plates. The distribution of species is shown on 531 maps in 30 plates. The synonymic checklist for the taxa considered in the volume is presented after plates.

Most photographs of imagoes and genitalia have been made by the author, some photos were presented by A. Matov, A. Volynkin, L. Ronkay, M. Fibiger and others. About one third of the colour photographs of imagines have been made on the basis of the collection of the Institute of Biology and Soil Sciences, Vladivostok. Many photos of imagoes and genitalia were made in collections of the museums and private collector listed below. In the legends to colour plates the acronym of the museum or private collector follows after species name and the country. The captions for the genitalia figures are inserted to plates. They contain the species name, country and region for Russia, genitalia slide number, acronyms of museum and abbreviated name of slide preparator.

In the course of the present work about 80% of types for taxa described from Asian Russia and adjacent territories from the museums and collections listed below have been examined. Type specimens or type genitalia slides are indicated as follows: HT – holotype, PT – paratype, ST – syntype, LT – lectotype, PLT – paralectotype.

I am deeply grateful to all persons and museum staff presened their materials for photographing.

Acronyms of museums and private collectors:

Museums:

BMNH – The Natural History Museum, London, Great Britain
CIS – Center for Insects Systematics, Chuncheon
CNHM – Carnegie Nature History Museum, Pittsburg
EIHU – Entomological Institute Hokkaido University, Sapporo, Japan
HNHM – Hungarian Natural History Museum, Budapest, Hungary
IZB – Institute of Zoology and Botany Estonian Academy of Sciences, Tartu, Estonia
KNA – Korean National Arboretum
MNHU – Museum für Naturkunde Humboldt Universitet] Berlin, Gernany
MNL – Museum Naturalis, Leiden, Netherlands
NEFU – Northeast Forestry Ubiversity, Harbin, China
NHM – Naturhistorisk museum Universitetet i Oslo, Norway
NHRM – Swedish Natural History Museum [Naturhistoriska Riksmuseet], Stockholm, Sweden
NIAES – National Institute of Agro–Enviromental Science, Tsukuba, Japan
NIAST – National Institute of Agriculture Science and Technology Suvon, Korea
NSMT – National Science Museum, Tokyo, Japan
SZM – Siberian Zoological Museum of Institute of Animal Systematics and Ecology, Siberian Branch of Russian Academy of Sciences, Novosibirsk, Russia
TWM – Tomas Witt Museum, Munich
ZFMK – Zoologisches Forschungsinstitut und Museum Alexander König, Bonn, Germany
ZIK – Zoological Institute Ukrainian Academy of Sciences, Kiev, Ukraine
ZISP – Zoological Institute of Russian Academy of Sciences, St. Petersburg, Russia
ZMHU – Zoological Museum Helsinki University, Helsinki, Finland
ZMKU – Zoological Museum Kiev State University, Kiev, Ukraine
ZMMU – Zoological Museum Moscow State University, Moscow, Russia
ZMTU – Zoological Museum Tartu University, Tartu, Estonia
ZMUC – Zoological Museum University Copenhagen

Private collectors:

AN – Andrei Vladimirovich Nekrasov, Moscow
AP – Amnuay Pinratana, Bangkok, Thailand
AV – Anton Volynkin, Barnaul, Russia
DN – Danny Nilsen, Denmark
GB – Gottfried Behounek, Germany
GG – Grigory Grigoryev, St. Peterburg, Russia
KE – Ketaro Eda, Japan
KN – Kari Nupponen, Finland
MF – Michael Fibiger, Sorø, Denmark
WS – Wolfgang Speidel, Germany

Genitalia slides preparatories:

AM – Alexei Matov
AV – Anton Volynkin
AV – Anton Volynkin, Barnaul
BG – Barry Goater
CB – Charl Boursin
CY – Min Yong Chae
ER – Eric Rukborn
GB – Gottfried Behounek
HL – Han Hui Lin
JK – Jakko Kullberg
JN – Janus Nowacky

KE – Ketaro Eda, Japan
KM – Kauri Mikkola
LR – Laszlo Ronkay
MF – Michael Fibiger
MH – Marton Hreblay
NC – Nguen Nhu Cuong
OH – S.–H. Oh
SBA – Sun Bok Ahn
SJC – Jae–Cheong Sohn
SS – Shigero Sugi
VK – Valdimir Kononenko
YC – Yury Chistyakov

CLASSIFICATION

In this chapter the main changed introduced to the classification of higher taxa of the Noctuidae in most recent publications are briefly outlined. The argumentation of the classifications and a complete review of the problem are published in the corresponding literature. As a nomenclatory basis for this book I have used catalogues by Nye (1975), Poole (1989) with subsequent additions and corrections, and publication by Speidel & Naumann (2005).

The classification of higher taxa, the Noctuoidea and Noctuidae particularly, have been undergoing revisions and modifications during the last five years, however it still seems to be far from stable.

For the checklist of the Noctuidae of Asian part of Russia presented in Noctuidae Sibiricae vol. 2 I have accepted the classification proposed by Fibiger and Lafontaine (2005), where the Noctuidae in traditional concept were split into four families: Nolidae, Erebidae, Micronoctuidae and Noctuidae.

According to the authors, the Arctiid group of families (Nolidae, Strepsimanidae, Arctiidae, and Lymantriidae) was placed in front of the upgraded family Erebidae; most quadrifid subfamilies of traditional Noctuidae (except Plusinae) were treated as subfamilies of Erebidae. The subfamilies Rivulinae, Boletobinae, Phytometrinae, Scoleocampinae, Erebinae, and Hypenodinae were reinstated, the new family Micronoctuidae was proposed. The generic and tribal composition of many subfamilies was revised and arranged. The Araeopteroninae was proposed as a new subfamily in Erebidae, the tribe Eublemmiini was removed from Eustrotiinae and raised to a subfamily of Erebidae. The Noctuidae (sensu Fibiger & Lafontaine 2005) included all traditional trifid subfamilies and Plusiinae; the Pantheinae were recognized as a subfamily of the Noctuidae. Most genera of Amphipyrinae (sensu auctorum) or many genera of Hadeninae (sensu Kitching and Rawlins, 1999) were placed to the subfamily Xyleninae and divided into tribes and subtribes.

The next step of the developing of the Noctuidae classification was the publication by Lafontaine and Fibiger (2006) dealing with further revision of higher classification of Noctuoidea. The formerly proposed classification (Fibiger and Lafontaine, 2005) has been modified in the following ways:

Micronoctuidae retained as a family of uncertain affinity in the Noctuoidea. Noctuidae treated as a family with 49 subfamilies, including Erebinae as a subfamily; Arctiidae and Lymantridae were proposed to be treated as subfamilies of the sister group of erebine–calpine–cocytine lineage. The tribal subdivision of Catocalinae was extended with an addition of 11 tribal names from Holloway (2005) revision of Bornean Catocalinae. Aganainae treated a sister group of Arctiinae. Nolidae was placed among quadrifid Noctuidae and treated as a subfamily, with 8 tribes, including Nolini (s. str.). Stictopterinae and Euteliinae were treated as a sister group of Erebinae – Lymantriinae lineage. The tribe Cosmiini (sensu Fibiger and Lafontaine, 2005) treated as a subtribe Cosmiina in the Xylenini. The tribe Balsini moved from Xylenini, treated as a subfamily and placed between Raphiinae and Acronictinae.

At same time Holloway (2005, 2008, 2009) in the series “Moths of Borneo” introduced many taxonomic changes for quadrifid subfamilies and proposed a new tribal division Catocalinae (in broad concept, including Calpinae) and the concepts of subfamilies Pantheinae, Bagisarinae, Acontiinae, Eustrotiinae, Aventiinae and Eublemminae based on taxa of tropical fauna. The new subfamily Aedinae was introduced. Because the fauna of the Far East, Japan, Korea and China includes many genera of Oriental origin, the revision of diverse tropical Bornean fauna by Holloway is extremely important for the understanding of their classification.

Many changes in classification, position and status of certain groups of Noctuidae have been published since 2005 in the series Noctuidae Europaea (Fibiger *et al.* 2009; 2010). Nolinae were recognized as a subfamily of the Noctuidae and placed among the trifid complex of subfamilies.

The most recent changes in classification of the Noctuoidea and Noctuidae were proposed by Lafontaine & Schmidt (2010) for the Nearctic fauna based on molecular study and analysis of imago and immature morphology (Zahiri *et al.* 2010, submitted). According to the authors, the Noctuidae (sensu Lafontaine & Fibiger 2006) divided into four families: Erebidae, Eutelidae, Nolidae and Noctuidae. The family Erebidae, beside traditional noctuid subfamilies contains Lymantriinae and Arctiinae as subfamilies; Calpinae divided into subfamilies Scoliopteriginae and Calpinae, the subfamily Hypocalinae is reinstalled. Nolidae is placed in front of Noctuidae, as a family, the tribes Nolinae, Chloephorinae, Sarrothripini, Risobinae, Collomeninae and Afridinae are upgraded to subfamilies. The family Noctuinae includes Plusiinae and Pantheinae and

Classifications of the Noctuoidea and Noctuidae (1996 – 2010)

(Family, subfamily and tribal names are listed; families shown by bold capital, subfamilies by bold small capitals, tribes by italic small capital font)

Speidel *et al.* 1996 (Palaearctic and World)	**Kitching & Rawlins 1999** (World)	**Fibiger & Lafontaine 2005** (Holarctic and World)	**Lafontaine & Fibiger 2006** (Holarctic and World)	**Lafontaine & Schmidt 2010** (Nearctic)
			OENOSANDRIDAE	
LYMANTRIIDAE	**OENOSANDRIDAE**	**OENOSANDRIDAE**	**DOIDAE**	
AGANAIDAE	**DOIDAE**	**DOIDAE**	**NOTODONTIDAE**	**DOIDAE**
ARCTIIDAE	**NOTODONTIDAE**	**NOTODONTIDAE**	**MICRONOCTUIDAE**	**NOTODONTIDAE**
NOCTUIDAE	**NOCTUIDAE**	**NOLIDAE**	**NOCTUIDAE**	**EREBIDAE**
Herminiinae	**Acronictinae**	**Nolinae**	**Rivulinae**	**Lymantriinae**
Rivulinae	**Bryophilinae**	**Chloephorinae**	**Boletobiinae**	*Lymantriini*
Hypenodinae	**Raphiinae**	*Chloephorini*	**Hypenodinae**	*Orgyiini*
Hypeninae	**Herminiinae**	*Sarrothripini*	**Araeopteroninae**	*Leucomini*
Euteliinae	**Strepsimaninae**	*Camptolomini*	**Eublemminae**	**Arctiinae**
Stictopterinae	**Catocalinae**	*Careini*	*Eublemmini*	*Lithosiini*
Catocalinae	**Calpinae**	*Ariolicini*	*Pangraptinae*	*Arctiini*
Pantheinae	*Calpini*	**Westermanniinae**	**Herminiinae**	**Herminiinae**
Camptolominae	*Gonopterini*	**Eariadinae**	**Scolecocampinae**	**Pangraptinae**
Chloephorinae	*Anomini*	**Bleninae**	**Hypeninae**	**Hypeninae**
Sarrothripinae	**Aganainae**	**Risobinae**	**Phytometrinae**	**Rivulinae**
Nolinae	**Hypeninae**	**Collomeninae**	**Aventiinae**	**Scoliopteryginae**
Eustrotiinae	**Stictopterinae**	**Afridinae**	**Scolecocampinae**	*Scoliopterygini*
Bagisarinae	**Euteliinae**	**Eligminae**	**Erebinae**	*Anomini*
Plusiinae	**Plusiinae**	**STREPSIMANIDAE**	**Calpinae**	**Calpinae**
Acontiinae	*Abrostolini*	**ARCTIIDAE**	*Anomini*	*Calpini*
Tytinae	*Argyrogrammatini*	**Lithosiinae**	*Calpini*	*Ophiderini*
Aedinae	*Plusiini*	*Phryganopterygini*	*Phyllodini*	**Hypocalinae**
Stiriinae	*Omorphinini*	*Acsalini*	*Scoliopterygini*	**Scolecocampinae**
Acronictinae	**Agaristinae**	*Eudesmiini*	**Catocalinae**	**Hypenodinae**
Bryophilinae	**Eucocytiinae**	*Cisthenini*	*Toxocampini*	**Boletobiinae**
Sinocharinae	**Acontiinae**	*Nudariini*	*Acantholipini*	**Aventiinae**
Lophonyctinae	**Eustrotiinae**	*Endrosini*	*Arythrurini*	**Eublemminae**
Pseudeustrotinae	**Bagisarinae**	*Lithosiini*	*Melipotini*	**Phytometrinae**
Agaristinae	**Cuculliinae**	**Syntominae**	*Euclidini*	**Anobinae**
Heliothinae	**Amphipyrinae**	*Syntomini*	*Panopodini*	**Erebinae**
Noctuinae	**Psaphidinae**	*Thyretini*	*Ophiusini*	*Toxocampini*
Cuculliinae	**Dilobinae**	**Arctiinae**	*Catocalini*	*Thermesiini*
Hadeninae	**Condicinae**	*Arctiini*	*Anobini*	*Catocalini*
Amphipyrinae	**Stiriinae**	*Callimorphini*	*Sypnini*	*Melipotini*
	Heliothinae	*Phaegopterini*	*Hypopyrini*	*Euclidiini*
	Glottulinae	*Pericopini*	*Tinolini*	*Poaphilini*
	Hadeninae	*Ctenuchini*	*Hulodini*	*Ophiusini*
	Ufeinae	*Euchromiini*	*Ommatophorini*	**Eulepidotinae**
	Noctuinae	**LYMANTRIIDAE**	*Pericimini*	*Eulepidotini*
	PANTHEIDAE	*Lymantriinae*	*Pandesmini*	*Panopodini*
	LYMANTRIIDAE	*Lymantriini*	*Catephini*	**EUTELIIDAE**
	NOLIDAE	*Orgyiini*	*Ercheini*	**Euteliinae**
	Nolinae	*Arctornithini*	**Cocytiinae**	**NOLIDAE**
	Chloephorinae	*Leucomini*	**Stictopterinae**	**Nolinae**
	Eariadinae	*Nygmiini*	**Euteliinae**	**Chloephorinae**
	Westermaniinae	**EREBIDAE**	**Nolinae**	**Sarrothripini**
	Eariadinae	**Rivulinae**	*Nolini*	**Risobinae**
	Bleninae	**Boletobiinae**	*Chloephorini*	**Collomeninae**

Speidel *et al.* 1996 (Palaearctic and World)	**Kitching & Rawlins 1999** (World)	**Fibiger & Lafontaine 2005** (Holarctic and World)	**Lafontaine & Fibiger 2006** (Holarctic and World)	**Lafontaine & Schmidt 2010** (Nearctic)
	Risobinae	**Hypenodinae**	*Westermanniini*	**Afridinae**
	Collomelinae	**Araeopteroninae**	*Eariadini*	**NOCTUIDAE**
	Afridinae	**Eublemminae**	*Blenini*	**Plusiinae**
	Eligminae	*Eublemmini*	*Risobini*	*Abrostolini*
	ARCTIIDAE	*Pangraptini*	*Collomelini*	*Argyrogrammatini*
		Herminiinae	*Afridini*	*Plusiini*
		Scolecocampinae	*Eligmini*	**Bagisarinae**
		Hypeninae	**Aganainae**	**Cydosiinae**
		Phytometrinae	**Arctiinae**	**Eustrotiinae**
		Aventiinae	*Lithosiini*	**Acontiinae**
		Erebinae	*Syntomini*	*Acontiini*
		Erebini	*Arctiini*	**Pantheinae**
		Arcteini	**Lymantriinae**	**Diphtherinae**
		Calpinae	*Lymantriini*	**Dilobinae**
		Anomini	*Orgiini*	**Balsinae**
		Calpini	*Arctornithini*	**Acronictinae**
		Scoliopterygini	*Leucomini*	**Metoponiinae**
		Anobini	*Nygmiini*	**Cuculliinae**
		Catocalinae	**Strepsimaninae**	**Amphipyrinae**
		Toxocampini	**Plusiinae**	*Amphipyrini*
		Acantholipini	*Abrostolini*	*Psaphidini*
		Arytrurini	*Argyrogrammatini*	*Stiriini*
		Hypocalini	*Plusiini*	**Oncocnemidinae**
		Melipotini	**Eustrotiinae**	**Agaristinae**
		Euclidiini	**Bagisarinae**	**Condicinae**
		Panopodini	*Bagisarini*	*Condicini*
		Ophiusini	*Cydosiini*	*Leuconyctini*
		Catocalini	**Acontiinae**	**Heliothinae**
		Aganainae	*Hypercalymniini*	**Eriopinae**
		Cocytiinae	*Acontiini*	**Bryophilinae**
		Stictopterinae	*Armadini*	**Noctuinae**
		Euteliinae	*Aediini*	*Pseudeustrotiini*
		MICRONOCTUIDAE	**Pantheinae**	*Phosphilini*
		NOCTUIDAE	**Diphtherinae**	*Prodeniini*
		Plusiinae	**Dilobinae**	*Elaphriini*
		Autoplusiini	**Raphiinae**	*Caradrinini*
		Euchalciini	**Balsinae**	*Dypterygiini*
		Plusiini	**Acronictinae**	*Actinotiini*
		Eustrotiinae	**Metoponiinae**	*Phlogophorini*
		Bagisarinae	**Sinocharinae**	*Apameini*
		Bagisarini	**Lophonyctinae**	*Arzamini*
		Cydosiini	**Agaristinae**	*Xylenini*
		Acontiinae	**Eucocytiinae**	*Orthosiini*
		Hypercalymniini	**Cuculliinae**	*Tholerini*
		Acontiini	**Oncocnemidinae**	*Hadenini*
		Armadini	**Amphipyrinae**	*Leucaniini*
		Aediini	**Psaphidinae**	*Eriopygini*
		Pantheinae	*Psaphidini*	*Glottulini*
		Diphtherinae	*Feraliini*	*Noctuini*
		Dilobinae	*Nocloini*	
		Acronictinae	*Trichocnemidini*	
		Raphiinae	**Stiriinae**	
		Metoponiinae	*Stiriini*	

Speidel *et al.* 1996 (Palaearctic and World)	Kitching & Rawlins 1999 (World)	Fibiger & Lafontaine 2005 (Holarctic and World)	Lafontaine & Fibiger 2006 (Holarctic and World)	Lafontaine & Schmidt 2010 (Nearctic)
		Sinocharinae	*Grotellini*	
		Lophonyctinae	*Azenini*	
		Agaristinae	**Heliothinae**	
		Cuculliinae	**Condicinae**	
		Oncocnemidinae	*Condicini*	
		Amphipyrinae	*Leuconyctini*	
		Psaphidinae	**Eriopinae**	
		Psaphidini	**Bryophilinae**	
		Feralini	**Xyleninae**	
		Nocloini	*Pseudeustrotiini*	
		Phosphilini	*Phosphilini*	
		Triocnemidini	*Prodenini*	
		Stiriinae	*Elaphriini*	
		Stiriini	*Caradrinini*	
		Grotellini	*Dypterygiini*	
		Azenini	*Actinotiini*	
		Heliothinae	*Phlogophorini*	
		Condicinae	*Apameini*	
		Condicini	*Arzamini*	
		Leuconyctini	*Episemini*	
		Eriopinae	*Xylenini*	
		Bryophilinae	**Hadeninae**	
		Xyleninae	*Orthosiini*	
		Balsini	*Tholeini*	
		Pseudeustrotiini	*Hadenini*	
		Prodeniini	*Leucaniini*	
		Elaphriini	*Eriopygini*	
		Caradrinini	*Glottulini*	
		Cosmiini	**Noctuinae**	
		Dypterygiini	*Agrotini*	
		Actinotiini	*Noctuini*	
		Phlogophorini		
		Apameini		
		Episemini		
		Xylenini		
		Ufeinae		
		Hadeninae		
		Orthosiini		
		Tholerini		
		Hadenini		
		Leucaniini		
		Eriopygini		
		Glottulini		
		Noctuinae		
		Agrotini		
		Noctuini		

rest of trifid subfamilies, among them Psaphidini which has been downgraded to tribe of Amphipyrinae and Xyleninae, Hadeninae and Noctuinae downgraded to tribes of Noctuinae in a wide sense.

In present and subsequent parts of the Noctuidae Sibiricae I have accepted the classification proposed by Lafontaine & Fibiger (2006) with some subsequent modifications and changes introduced in recent literature (Fibiger *et al.* 2009, 2010; Holloway 2005, 2009; Lafontaine & Schmidt 2010). The subfamilies Lymantriidae and Arctiidae are not included to the present study, however we are considering the possibility of reviewing them in the supplementary volume.

COMMENTS TO THE SUBFAMILIES

Family Micronoctuidae. The Micronoctuidae in Russia are known only from the south of the Far East by two genera, *Mimachrostia* and *Micronoctua*, with one species in each (Fibiger & Kononenko 2008). The family is under revision now by Fibiger (2006, 2008), further publications are pending in a short time.

Family Noctuidae. Classification adapted from Fibiger and Lafontaine (2005) and Lafontaine & Fibiger (2006) with an account of subsequent contributions to European (Fibiger *et al.* 2009, 2010) and tropical faunas (Holloway 2005, 2008, 2009).

Subfamily Rivulinae. Small, unrevised subfamily with some tropical species and genera of uncertain position. Classification follows to Fibiger and Lafontaine (2005) and Lafontaine & Fibiger (2006).

Subfamily Boletobiinae. Classification follows to Fibiger and Lafontaine (2005) and Lafontaine & Fibiger (2006). Holloway (2005) referred the genera *Hypostrotia*, *Anathata* and *Diomea* to the tribe Boletobiini of Catocalinae (sensu Holloway 2005). However, here they are considered here in Aventiinae because they correspond better with the morphological concept of that subfamily.

Subfamily Hypenodinae. Classification follows to Fibiger & Lafontaine (2005), Lafontaine & Fibiger (2006) and Fibiger *et al.* 2010. Except from the genera *Hypenodes* and *Schrankia* Kononenko & Han (2007) placed genera *Micreremites* and *Anachrostis* in Hypenodinae.

Subfamily Araeopteroninae. Classification follows to Fibiger & Lafontaine (2005) and Lafontaine & Fibiger (2006). The Araeopteroninae in Russia are known only from the south of the Far East by the genus Araeopteron revised by Fibiger & Kononenko (2008). Holloway (2009) placed genera *Acidaliodes*, *Hyriodes*, *Sigela* and *Niaccaba* in Araeopteroninae.

Subfamily Eublemminae. The subfamily was segregated by Fibiger & Lafontaine (2005) from artificial assemblage Erastrianae (*sensu* Hampson, 1910) [Jaspidiinae (*sensu* auctorum) or Acontiinae (*sensu* auctorum) in most recent literature] and partly Catocalinae (*sensu* auctorum) (*Pangrapta*). Holloway (2009) referred *Pangrapta* as a tribe of Catocalini; Lafontaine & Schmidt (2010) raised it to subfamily level. The subfamily has been divided by Fibiger & Lafontaine (2005) into two tribes Eublemmini and Pangraptini, however the former is morphologically and biologically very distinct from Eublemminae and is here considered here as a distinct subfamily. The subfamily Eublemminae and allied groups require global revision with an account of taxa of very diverse tropical fauna. European fauna of Eublemminae was revised by Fibiger *et al.* (2010); the Bornean fauna has been revised by Holloway (2009). He placed *Eublamma*, *Mescosopis* and *Mataeomaera* to Eublemminae. Some East Asian genera listed in Noctuidae Sibiricae vol. 1 in Eublemminae are presently placed in Aventiinae (*Enispa*, *Corgatha*, *Oruza*, *Paragona*, *Anatatha*, *Diomea, Paragabara*, *Hypostrotia* and *Holocryptis*) or to Hypeninae (*Lophomilia*, *Hepatica* and *Gonepatica*).

Subfamily Aventiinae. The expanded concept of the subfamily Aventiinae was proposed by Holloway (2009) in connection with synonymisation of Trisatelini. The name Trisatelini was synonymised by Fibiger & Lafontaine (2005) with Herminiinae, however the genus *Trisateles* was erroneously placed by Hacker & Fibiger (2005) in Phytometrinae, while Sugi (1982a, 1987) placed it in Acontiinae (sensu auctorum) in the group of genera *Enispa*, *Corgatha* and *Oruza*. The Aventiinae were treated as a monotypic subtribe Aventiina of the subfamily Catocalinae by Goater *et al.* (2003) including the genus *Laspeyria*, then removed from Catocalinae and raised to the subfamily rank by Fibiger & Lafontaine (2005). The monotypic concept of Aventiinae (sensu authors) was extended by Holloway (2009) by synonymization of Trisatelini with Aventiinae placing many tropical genera to Aventiinae. The genera *Enispa*, *Corgatha*, *Oruza*, *Sophta*, *Trisateles*, *Aventiola*, *Naragna* and *Holocryptis* treated in Noctuidae Sibiricae vol. 1 in Eublemminae now placed to Aventiinae. The genera *Holocryptis*, *Diomea*, *Polysciera*, *Naganoella*, *Paragona*, *Remmigabara* and *Hypostrotia* treated as "unassociated" Eublemminae are also placed here in Aventiinae. In my opinion the position of *Diomea*, *Hypostrotia* and *Anatatha* in Boletobiinae (Holloway, 2005) does not correspond with morphological characters, especially of female genitalia, of *Parascotia*, the type genus of Boletobiinae. The Aventiinae are extremely diverse in East Asia, especially in Indochina and south China and require ground revision.

Subfamily Pangraptinae. Earlier authors placed the genus *Pangrapta* in Catocalinae (sensu auctorum) (Sugi 1982a). The Pangraptinae were considered as a tribe of the Eublemminae by Fibiger and Lafontaine (2005) or Catocalinae by Holloway (2005). In Noctuidae Sibiricae vol. 1 it was treated as a tribe of Eublemminae. Morphologically and biologically the Pangraptinae are rather removed from Eublemminae. The rank of the taxon is raised to subfamily level by Lafontaine and Schmidt (2010). The subfamily includes sole genus *Pangrapta*, distributed in the Old and New Worlds, especially diverse in East Asia.

Subfamily Phytometrinae. This small subfamily contains in Asian Russia the genera *Phytometra* and *Colobochyla*, *Rhesala* and *Raparna* in Korea (Kononenko & Han 2007) and *Daona* in South East Asia (Holloway 2008). By opinion of Lafontaine & Schmidt (2010) the *Colobochyla* do not fit well with Phytometrinae and placed near Hypeninae in the American Checklist.

Subfamily Herminiinae. In the treatment of the subfamily and sequence of genera I follow to the revisions of the Herminiinae by Owada (1987a, 1992, and 2006) as most the comprehensive publications on Herminiinae of Far East Asian fauna. The order of the genera is different from those accepted for the European Checklist of Noctuoidea (Fibiger and Hacker, 2005). The genus *Gynaephila* is here considered a member of Herminiinae following Lödl (1998). Holloway (2008), following Poole (1989) treated the genus *Polypogon* in a broad concept including *Herminia*, *Macrochilo*, *Pechipogo* and *Zanclognatha* as synonyms because their distinction is not well understood and because the Bornean species of this complex show a great range of variability both in external and genitalia characters without clear indications for generic grouping. However, here these taxa are treated here as distinct genera, following Owada (1987a).

Subfamily Hypeninae. It is one of the most difficult subfamilies among quadrifid Noctuidae. Most genera and species of East Asian fauna are still unrevised. For the order of genera and species I follow to Sugi (1982a). The genus *Zekelita* has been revised by Lödl & Mayerl (1998) and Mayerl & Lödl (1999). The genus *Stengbergmania* is transferred from Catocalinae to Hypeninae following Poole (1989). The generic *Hepatica*, *Gonepatica* and *Lophomilia* are placed in Hypeninae by Kononenko & Behounek (2009), the genus *Paragabara* – by Kononenko *et al.* 2010. This complex of genera together with East Asian allied *Coarica* and *Perciana* require ground revision.

Subfamily Erebinae. It was treated as a distinct family with subfamilies Rivulinae, Boletobinae, Araepteroninae, Hypenodinae, Eublemminae, Herminiinae, Hypeninae, Phytometrinae, Aventiinae, Erebinae, Calpinae and Catocalinae by Fibiger and Lafontaine (2005) and in subsequent faunal publications (Hacker & Fibiger, 2005; Kononenko, 2005). According to Lafontaine & Fibiger (2006) its status is downgraded to the subfamily level, then raised again to the family by Lafontaine & Schmidt (2010) and is expanded including above listed subfamilies and Lymantriinae, Arctiinae, Pangraptinae, Scoliopteryginae, Hypocalinae, Scolecocampinae, Anobinae and Eulepidotinae. Here it is treated as a subfamily (sensu Lafontaine & Fibiger 2006) with tribes Erebini and Hypopyrini in the regional fauna. The tribe Arcteini transferred by Holloway (2009) to Pantheinae.

Subfamily Calpinae. Goater *at al.* (2003) listed many genera in Calpinae (sensu authors), but most of them were later moved to other subfamilies and tribes (Holloway, 2005; Fibiger & Lafontaine 2005; Lafontaine & Fibiger 2006). The exact number of genera and limits of Calpinae are still disputed. Fibiger & Lafontaine (2005) and Lafontaine & Fibiger (2006) treated Calpinae with three tribes: Anomini, Calpini and Scoliopterigini. The tribal name Gonopterinae was used by Kitching & Rawlins (1999) and Goater *et al.* (2003) instead of Scoliopterigyni, however the last name is valid (Fibiger & Lafontaine 2005). According to Fibiger & Lafontaine (2005) the tribe Scoliopterigini includes two genera, the Holarctic *Scoliopteryx* and the Nearctic *Litoprosopus* Grote. The genus *Anomis* is placed by them in its own tribe, Anomini (Lafontaine & Fibiger 2006). However, Holloway (2005) joined *Scoliopteryx*, *Anomis* and allied genera in tribe Scolioptergyni. Here I follow to the former treatment and division of the subfamily. Lafontaine & Schmidt (2010) separated Calpinae (sensu Lafontaine & Fibiger 2006) into two subfamilies of Erebidae: Scoliopteriginae with tribes Scoliopterigini and Anomini and Calpinae with tribes Calpini and Ophiderini. The generic worldwide checklist of tribe Calpini was published by Zaspel & Branham (2008).

Subfamily Catocalinae. According to Fibiger and Lafontaine (2005, 2006) and Holloway (2005) the subfamily includes in Siberian fauna the tribes Toxocampini, Acantholipini, Arytrurini, Melipotini, Euclidini, Catephiini, Pericymini, Ophiusini, Catocalini, Sypnini and Hypocalini. The later was raised to the family level by Lafontaine & Schmidt (2010). The East Asian tribe Sypnini (with genera *Hypersypnoides*, *Sypnoides* and *Daddala* in the regional fauna) was not listed by Fibiger and Lafontaine (2005), its description and validation of "Phillum *Sypna*" sensu Berio for this generic group was made by Holloway (2005). The genus *Blasticorhinus* of tropical origin is listed here as unassociated. The generic name *Bastilla* instead of *Parallelia* (sensu auctorum) and *Dysgonia* (part) (tribe Ophiusini) was introduced according to revision by Holloway & Miller (2003).

Subfamily Euteliinae. I treat the Euteliinae as a subfamily of Noctuidae, while Lafontaine & Schmidt (2010) raised its status to the family level based on molecular study.

Subfamily Plusiinae. The Palaearctic and Nearctic fauna of the subfamily were revised by Kostrowicky (1961), Ichinose (1973), Eischling & Cunningham (1978); Kitching (1987) and Lafontaine & Poole (1991), the European fauna revised by .L. Ronkay (in Goater *et al*, 2003). It contains well recognized tribes Abrostolini, Argyrogrammatini and Plusiini. In the treatment of the subfamily, its tribal division and sequence of genera I follow to the last revision of Palaearctic Plusiinae by Ronkay *et al.* (2008, 2010).

Subfamily Eustrotiinae. Speidel *et al.* (1996a) segregated the subfamilies Acontiinae, Pseudeustrotiinae, Eustrotiinae, Tytinae and Sinocharinae from Acontiinae (*sensu* auctorum). Kitching & Rawlins, (1999) divided Acontiinae (*sensu* auctorum) into Acontiinae and Eustrotiinae. Later Fibiger & Lafontaine (2005) confirmed the status of Eustrotiinae as separate subfamily. The concept of the subfamily is weakly developed. The classification of the *Deltote* generic group, the core of Eustrotiinae, is accepted here according to the revision

by Ueda (1984, 1986). The genus *Naranga* is placed in Eustrotiinae following to Kononenko & Han (2007) and Holloway (2009). The genus *Anterastria* is transferred from Eustrotiinae to tribe Pseudeustrotiinae, subfamily Xyleninae (Kononenko & Han 2007). The genus *Amyna* was transferred in Bagisarinae by Holloway (2009). The genus *Neustrotia was* synonimised with *Chorisa* by Holloway (2005, in Catocalinae); here I have synonymised *Bryophilina* with *Chorsia* by their congenerity. The "*Hyperstrotia*" *flavipuncta* shows the affinity with *Elaphria venustula* and will be transferred in Xyleninae, tribe Elaphriini. The subfamily requires ground revision and a clear concept.

Subfamily Acontiinae. The concept of the subfamily is accepted according to the revision by Hacker *et al.* (2008) except the tribe Aediini transferred from Catocalinae to Acontiinae by Fibiger and Lafontaine (2005) is considered as a subfamily following to Holloway (2010). *Lithacodia martjanovi* is tentatively placed in Acontiinae.

Subfamily **Aediinae.** Holloway (2009) raised the rank of Aediini and defined them as a subfamily distinct from Acontiinae. Most species of the subfamily Aediinae have "*Aedia–Catephia*" appearance: forewing ground colour and body colour black or brown–black, hindwing with pure white basal area and wide, black terminal band. In male genitalia, the tribe is distinguished from the Acontiinae by the absence of two brushes of hair–like tufts on scaphium, the presence of corona and well developed coremata with dense brush on outer surface of valva. According to Holloway (2010), there are three genera, *Aedia*, *Mosara* Walker, 1855 and *Ecpatia* Turner, 1902 in the subfamily, distributed in the Old World in various biogeographical regions, mainly in the tropics and subtropics.

Subfamily Nolinae. The status and placement of Nolinae (in modern sense) has been debated for a long time and is still disputed. It was considered by early authors as a distinct family of the Noctuoidea or as family Nolidae (sensu stricto) and subfamilies Sarrothripinae, and Chloephorinae of the Noctuidae. The Sarrothripinae, Chloephorinae and Nolinae were recognized and joined as members of family Nolidae by Holloway (1998, 2003). Kitching & Rawlins (1999) and Fibiger & Lafontaine (2005) treated Nolidae as a distinct family. Later Lafontaine & Fibiger (2006) treated Nolinae as a subfamily of the Noctuidae. This concept was accepted in the Noctuidae Sibiricae vol. 1. and retained here. Recently Nolidae was raised to family level again (Lafontaine & Schmidt 2010). The European fauna of Nolinae has been revised by Fibiger *et al.* (2009); the rank of Earidinae was downgrade to a subtribe of Sarrotripini. The tropical fauna of Nolidae as family revised by Holloway (2003). The subfamily contains in Asian Russia (mainly in the Far East) the tribes Nolini, Chloephorini, Sarrothipini, Collomenini and Eligmini.

Subfamily Bagisarinae. The concept of the subfamily is accepted according Fibiger *et al.* (2009) and Holloway (2009). This small, recently recognized subfamily includes the genera *Xanthodes, Brevipecten* and *Chasminia* in the Oriental region. The genus *Imosca* was provisionally placed in Bagisarinae by Holloway (1989) and confirmed by Sugi & Sasaki (2001). The genus *Sphragifera* is considered here as a member of Bagisarinae. The Bagisarinae has a trifid type of venation and semilooper larvae, adults are characterized by a specialized structure of male eight tergite and sternite (Sugi & Sasaki 2001; S. Sugi, pers. comm.). The genus *Amyna* was transferred from the Eustrotiinae to the Bagisarinae by Holloway (2009) mainly on the basis of larval characters.

Subfamily **Metoponiinae.** Metoponiinae genera were segregated from Acontiinae and associated with New World subfamily Stirinae by Matthews (1991), and then Poole (1996) with doubt included Old World genera in Stiriinae. Fibiger & Lafontaine (2005) re-established the subfamily Metoponiinae with ten European genera. In the treatment of the subfamily I follow to Fibiger *et al.* (2009).

Subfamily Sinocharinae. In spite of the similarities of the genital characters of *Sinocharis* with Bagisarinae, Fibiger & Lafontaine (2005) followed Speidel *et al.* (1996a) and placed Sinocharinae among the higher noctuids and not with the Bagisarinae, on the basis of the presence of basal abdominal coremata and structure of tympanal organ in *Sinocharis*. The subfamily contains the monotypic genus *Sinocharis*, distributed in Manchurian subregion of Palaearctic.

Subfamily Balsinae. Balsinae was separated from Xyleninae by Fibiger & Lafontaine (2005), first as a tribe of Xyleninae, subsequently raised to rank of subfamily (Lafontaine & Fibiger 2006). The reason for this is uncertain affinities of *Balsa* within the Xyleninae, particularly because of the simple valva structure and the reduction of the first pair of prolegs in the mature larva, the latter a character more typical of the Eustrotiinae than of Xyleninae. The subfamily includes only the genus *Balsa*. Here it is treated as a subfamily.

Subfamily **Thiacidinae.** The subfamily has recently been described by Hacker & Zilli (2007), it includes one Old World genus, *Thiacidas*, with 33 described species and several undescribed ones. Following further study, additional genera, at present of uncertain systematic position will probably be placed in Thiacidinae. Most species are known from the Old World, mainly from the Ethiopian region; the type–species of the genus, *Thiacidas postica*, is known from the Oriental region and South Palaearctic. The Far Eastern species *Pantauma egregia* was transferred in Thiacidinae by Hacker & Zilli (2007).

Subfamily Pantheinae. Despite the opinion of Kitching and Rawlins (1999), following Speidel *et al.* (1996a) and Fibiger & Lafontaine (2005, 2006) the taxon is given in subfamily rank. Recently Holloway (2009) presented an expanded concept of Pantheinae based on Bornean fauna and transferred genera *Cyclodes* and *Arcte* (tribe Arcteini) formely placed in Erebinae or Catocalinae to the subfamily Pantheinae. This concept of Pantheinae is accepted here.

Subfamily Dilobinae. Fibiger *et al.* (2009) synonymised Raphiinae with Dilobinae, this concept of the subfamily is accepted here.

Subfamily **Acronictinae.** The order of genera is arranged according to Kozhantschikov (1950) and Sugi (1979, 1982a) with some modifications. The position and composition of the genus *Belciana* is provisional. Two regional species of this genus are not congenerous with tropical *Belciana biformis*, the type species of the genus.

Subfamily Agaristinae. Despite to the opinion of earlier authors who considered the taxon to have family rank, Agaristinae is well recognized as a subfamily of Noctuidae. In the treatment and sequence of genera of the subfamily I follow to the revision of Palaearctic and Oriental faunas of Agaristidae by Kiriakoff (1977).

The other subfamilies are accepted following Lafontaine & Fibiger 2006. The changes introduced to the subfamilies will be discussed in the subsequent volumes of the Noctuidae Sibiricae.

A REVIEW OF NOCTUIDAE MORPHOLOGY

The morphology of Noctuidae as a whole family or some subfamilies or genera have been described in many guide books, revision publication, and articles (Kozhanchikov 1937, 1950; Börner 1939; Ryabov 1973, Klyuchko 1978; Forster & Wohlfahrt 1971; Kitching 1984; Speidel *et al.* 1996a, 1996b; Kononenko *et al.* 2003; Kitching & Rawlins 1999) and other. The last extensive review of principal morphological characters of Noctuoidea and Noctuidae (sensu lato) and their significance and application for phylogeny study was presented by Fibiger & Lafontaine (2005). The main morphological characters and terminology used in the present book are briefly described and illustrated here. In the review below I use terms "quadrifid" subfamilies applicable to the lower Noctuidae (Rivilinae – Euteliinae) joined in the family Erebidae by Fibiger & Lafontaine (2005) or to Erebidae and Euteliidae (Lafontaine & Schmidt 2010); the term "trifid" subfamilies applicable to true Noctuidae (Plusiinae – Noctuinae) according to the same authors. Lymantriinae and Arctiinae are not considered here.

Head (Figs. 1, *1–16*). The head of Noctuidae rounded, in most species with smooth frons, however in some genera of different subfamilies it might be roundly convex or with sclerotised extension (Fig. 1, *12–14*). This feature is most characteristic for the taxa inhabiting arid zones and probably serves to adult for digging their underground pupa cell. In quadrifid subfamilies Erebinae, Catocalinae and Calpinae in contrast to trifid, frons has a naked patch, not covered with scales (Fig. 1, *3*). Antennae (Fig. 1, *23–30*) in most cases simple, ciliate or fasciculate, sometimes, especially in species having flight period in early spring or late summer – bipectinate; in some genera (*Allophies*) lamellate; usually differing between male and female. In many Herminiinae and some other groups antennae of male with knot formed by enlarged and denser segments (Fig. 1, *31*).

Compound eyes rounded, or ovoid large, glabrous, in some groups covered by short hairs (Fig. 1, *15*); this character is most typical for the subfamily Hadeninae, however it is aslo distributed also in other subfamilies: *Pantheinae* and some species of *Xestia*. The scarce microscopic hairs occur in many groups of Noctuidae, they are visible by high magnification. In some groups (Cucullia, many Xyleninae, Hypeninae, some Plusiinae) eyes surrounded with "lashes" formed by hair–like scales of head vesture (Fig. 1, *16*). Ocelli – the small eye above compound eyes on vertex, behind antennae (Fig. 1, *1*, *3*) – present in most subfamilies, but not found in Hypenodinae and Rivulinae. However, Fibiger & Lafontaine (2005) noted that in some genera from which ocelli had been thought absent – they are in fact present, but very small, rudimental. Some species from different subfamilies, inhabiting high latitudes or high mountains and having day flying activity, have reduced ellipsoid, or reniform shaped eyes.

Labial palps formed by three segments, in most cases they are well developed, variable in shape, in the quadrifid subfamilies most often long or crescent–shaped in trifid subfamilies often short and compressed (Fig. 1, *1–10*). The length of third segment of palpi relative to the second ones could be characteristic for the genera.

Proboscis (Fig. 1, *18–20*) usually well developed, spirally rolled, in some groups heavily sclerotised. In some genera and species which are not fed in the imago stage, proboscis might be reduced or completely lost. The surface of distal part of proboscis bearing so–called "flavor cones" (Fig. 1, *18*, *19*), their shape, structure and position might be use for higher classification (Riabov 1973; Speidel *et al.* 1996b). Some predominantly tropical species of Ophiderini and Calpini (so–called fruit piercing moths) have strongly sclerotised proboscis, adopted for piercing of tropical fruits. Imagines of some tropical *Calyptra* (Calpinae) are unusual for Lepidoptera feeding by mammal's blood (Banziger 1975, 1979, 1980). Eight species of tropical *Calyptra* and

temperate *C. thalictri* known as "vampire moths" have strong proboscis (Fig. 1, *20*) adopted for piercing of mammals or human skin and sucking blood (Banziger 1980; Zaspel *et. al.* 2006). Head, thorax and abdomen covered by scales, hair–like scales and hairs. The species inhabiting the Arctic, high mountain or flying early spring or late autumn usually have hairy head and thorax. The vesture of thorax and abdomen often form thoracic and abdominal crests (Fig. 1, *32*), which are variably developed.

Thorax. Thorax well developed, rather stout, in some groups slender. Dorsally the prothorax bears patagia – flexible paired appendage fixed laterally and covering space between head and thorax. Mesothorax bears tegulae – flexible paired bulged plate–like sclerites in the base of wings (tegulae), fixed laterally. Patagia and tegulae have same vesture and colour as thorax, often bordered with paler or darker scales (Fig. 1, *32*). In some genera (*Abrostola*, *Cucullia*, *Stenoloba*) erected scales on patagia form a rather high prominent hood.

The shape of forewing in the Noctuidae variable (Fig. 2, *1–9*): basically triangular, broad or relatively narrow often long and narrow with almost parallel dorsal and ventral margins, more rarely rounded–triangular. Forewings have basal part, dorsal or costal margin (costa), ventral margin and outer margin and basal, apical and tornal angles (Fig. 2, *1*). Costal margin is usually stronger by dense position of veins. Some species, predominantly from quadrifid subfamilies have dentate outer margin or a more or less deep cut in apical part and rounded extension from mid to tornal angle. Hindwing smaller than forewing, with rounded apical and tornal angles. Narrow forewings with almost parallel margins are more characteristic for some subfamilies and many genera of trifid Noctuidae (i.e. Cuculliinae, some Xylenini, many Noctuinae) are adopted for fast and long flight; broad triangular are wings more typical for inhabitants of forested biotopes (*Catocala*, ets.). In some northern and high mountain species females have short, sometimes strongly reduced rudimental wings; in some genera of the subfamily Limantriinae (not considered here) wings of females are completely reduced

Fore and hindwings connected in basal part from dorsal side of wings by hook apparatus, which is represented by frenulum – one strong seta in males or three weaker setae in females fixed on costal margin of hindwing, and retinaculum – hook covered with strong short hairs under subcostal vein of forewing and comb of strong hairs – cteniolum. In the Sarrothripini retinaculum has a hook–like shape; in the tropical subfamilies Euteliinae and Stictiopterinae female retinaculim is formed by one strong and two weak setae. The characters of hook apparatus are convenient for determining the sex of moths.

Wing venation is generally rather uniform in the Noctuidae (Fig. 2, *10–12*). Costal (C) vein follows along costal margin of wing; subcostal vein (Sc) follows parallel to costal; radial trunk (R) follows almost parallel to Sc to mid of wing, forming upper limit of discoidal (R–Cu) cell, upper and lower angles of which are connected by discoidal vein; first radial vein (R1) continues to apical area, R2 connected with R3 forming additional R–cell (areole), often it is not expressed; R4 arising from mid of R3; R5 and M1 arising from upper angle of radial cell or have joined trunk. Medial trunk not or weakly developed; cubital trunk forming lower limit of discoidal cell; M2 and M3 close to vein Cu1; Cu 2 and Cu3 arising from lower angle of discoidal cell and from upper third of M–trunk; A1 connected or fused with A2.

On the hindwing, Sc and R veins anastomosing at base, the character sometimes considered to be characteristic of the family; M1 arising from upper angle of cell; M3 and Cu1 arising from the lower angle of the cell close to each other; M2, if normally developed in the quadrifid subfamilies, strong and parallel to M3, arising from lower angle of cell; or it is weak and vestigial, arising from the middle of discoidal cell or absent in trifid subfamilies. Cu2 arising from the mid of cubital trunk; A2 and A3 arising from the base of wing.

The presence of a strong Cu2 and its arising from lower angle of cell close to Cu3 or its absence (reduction) used by authors for separation the Noctuidae (sensu lato) for quadrifid and trifid groups of subfamilies (Fig. 2, *10–12*). Fibiger and Lafontaine (2005) clearly show the relative value of this character. According to them Cu2 is present in most cases, rarely completely reduced, however in higher Noctuidae it is weak or vestigial, while in some genera well expressed. Sometimes both types of venation occur in limits of the same subfamily or even in the same genus. The author examined specimen of arctic species *Parabarrovia keelei* (Noctuinae) which has trifid venation on the left side and clearly quadrifid venation of the right side.

Wing pattern and colouration has great significance for visual identification of species. Peculiarities of wing colouration and pattern are very useful for specific diagnostic. Colouration of body and wings in Noctuidae is more often dark greyish, brownish, greenish or yellowish tones; in some genera pale yellowish or reddish, in some case with shining tint. Hindwings usually lighter than forewings, darker along outer margin, in some groups coloured in bright yellow, red, orange, yellowish white or blue colour. In some groups species are not coloured, they are completely white, sometimes with silvery shining. In most cases forewing pattern of the Noctuidae has characteristic noctuoid ground plan (Fig. 3, *1*) composed by the system of transverse crosslines, fields and spots. Forewing crossed by four main crosslines (bands): basal, antemedial (inner), postmedial (outer), and subterminal (submarginal) which restrict basal, subbasal medial and subterminal field; in the mid of wing between antemedial and postmedial lines often lies diffused medial shadow (sometimes called

medial line or band). Crosslines usually represented by rather wide, curved, or dentate or straight lines. They inner part usually somewhat paler than ground colour, inside and outside they are bordered with thinner and darker borderlines. The former usually stronger in the costal area (costal field) and expressed by dark oblique streaks; the inner paler part of crosslines could be expressed by contrast pale or whitish streaks or spots in the costal area. Costal area might be lighter or darker than background. The part of the wing from base to basal crossline is basal field; the area between basal and antemedial (subbasal) line is subbasal or inner field; basal and subbasal fields often bearing longitudinal basal streak. The area between antemedial and postmedial crosslines is the medial field, which is often crossed by dark diffused medial shadow. The subterminal field lies between the postmedial crossline and subterminal line and terminal field – between subterminal line and outer margin of the wing. The system of spots includes three main spots: orbicular, reniform and claviform. In the subfamily Plusiinae additional silver gamma–like spot is presented (Fig. 3, *6*); Catocalini has additional spot formed by loop of antemedial crossline (Fig. 3, *3*, *4*). Reniform lies in the basal part of R–Cu (discoidal) cell, more often it is round, but could also have variable irregular shape, sometimes narrow and elongate, sometimes it is connected with reniform spot. Reniform is deposited on discal vein, usually bean–shaped with deep invagination from outer side, sometimes it angled or pressed from sides of 8–shaped, or strongly modified. Colouration of orbicular and reniform could be uniform, sometimes paler than the background, often spots has darker or paler nucleus and thin bordering line. The cell between spots in some species, especially in Noctuinae – dark or black. Claviform spot lies in the medial field between Cu–trunk and A vein. Usually it has elongate V–shape, sometimes like narrow longitudinal streak. Claviform may be connected with basal streak and with tornal streak, if the later is present. Subterminal line, divided subterminal and terminal fields, it is usually light, thin, dentate, often with W–shaped extensions; terminal line follows along outer margin of the wing, and it is often divided for column of semilunar streaks or dots. Outer margin of wings bordered with cilia, sometimes it is separated by thin light line, sometimes cilia of two colours, pale or white between veins and dark or black opposite veins. Sometimes dark or light veins cross over ground pattern (Fig. 3, *7*). Hindwing often has discal spot on discal vein and terminal band along terminal margin of wing. In some genera of Catocalinae and Calpinae and hindwings of some other groups might be coloured in bright yellow, red, blue, white colour with black contrast terminal band and often with medial fascia or contrast discal spot. In most cases forewing pattern is hidden when the moth is sitting I resting position. In some quadrifid subfamilies (Eublemminae, Araeopteroninae, Aventiinae, some Catocalinae, ets.) main elements of forewing pattern continue to hindwing, they have usually have day activity and resting position with open hindwing. In many taxa of Noctuidae wing pattern has deviation from general scheme by reduction of hypertrophy of some elements of pattern; many tropical species has wing pattern weakly corresponding to noctuoid scheme.

Legs (Fig. 4, *1–16*) formed by coxa, femur, tibia and tarsus fixed of pro–, meso– and meta thorax. In some Xylenini the femur is extended, has a groove for tibia; foretibia bearing epiphyse – leaf–shaped appendage sclerite. Tarsus formed with five segments, armed with spines arranged in 2–4 regular or more irregular rows. Fifth segment of tarsus has small simple or forked claw. Mid legs usually with one pair of tibial spurs apically, foreleg with two pairs of tibial spurs medially and apically. In some quadrifid and trifid subfamilies (many Catocalinae, some Plusiinae, Heliothinae and Noctuinae) lateral surface of tibia bearing setae, most expressed in Noctuinae and Heliothinae, part of Catocalinae, but also irregurlarly distributed in other subfamilies (Fig. 4, *1 – 7*). The top of tibia in different subfamilies, mainly in trifid may have "tibial claw" formed by spine or derived from enlarged apical seta (Fibiger & Lafontaine 2005) (Fig. 4, *8, 9*). In Herminiinae forelegs highly specialized with the apex of foretibia enormously enlarged and forming a hood over reduced tarsal segments (Fig. 4, *15*, *16*). They have a scent organ formed with a special brush of scales (Fig. 4, *17*). Usually they are formed by long pale yellowish hairs, which are hidden in longitudinal gutter on foretibia. Such brushes of scales connected with gland could also be found on fore and hind coxa, on femur, foretibia and thorax.

Tympanal organs situated laterally on posterior part of metathorax, their structure presently used for the classification of higher taxa. There are two tympanal bullae or air– sacs in the dorso–anterior part of abdomen. In quadrifid subfamilies they are mainly small and separated from each other, in most trifid subfamilies they are partially or fully fused. The tympanal hood on the first abdominal segment may be in front of spiracle (prespiraculae position) or behind the spiracle (postspiracular position). The structures of tympanal organs and their significance and application for classification and phylogeny of high taxa completely describes and discussed in several publications (Eggers 1911, 1919, 1928; Richards 1933; Börner 1939; Speidel *et al.* 1996a, Kitching & Rawlins 1999, Fibiger & Lafontaine 2005; Fibiger *et al.* 2009)

Abdomen. Abdomen formed by ten weakly scerotised flexible segments. 10th segment rudimental, it fused with 9th segment and transformed to a part of copulative organ. The structure of 1st –7th segments of abdomen simple. In females between 7th and 8th sternites lies copulative opening (ostium) surrounded with pre–ostial

structures. The 9th segment in females forms paired papillae anales; anal opening lies between them with ovipositing opening under. In males sclerites of 9th –10th segments are transformed to copulative organ.

Males of many species of trifid subfamilies often have abdominal coremata (Fig. 5, *1–4*) formed by paired hair brushes fixed on special "lever" (*coremata*) connected with scent Strobe glands and pockets ventrally on the base of abdomen; some group of *Mythimna* have unpaired scent organ laterally on ventral side in 3rd–4th segments of abdomen in a special fold. Some species have unpaired brush of hairs on gland surface on 7th–8th sternites (Fig. 5, *5*, *6*), sometimes it is huge (*Athetis albisignata*), in some species of Nolinae (Chloephorini) and Bagisarinae the coremata has brush of special hairs disposed on outer surface of valve (Fig. 5, *7, 8*) Some species of *Mythimna* have a combination of paired and unpaired scent organs. The paired androconial brushes most typical for subfamilies Cuculliinae, Xyleninae and Hadeninae, lost in Noctuinae (except *Peridroma* and Axylini) (Birch 1972, 1988; Speidel *et al.* 1996a, Fibiger & Lafontaine 2005). In the genus *Craniophora* and also some tropical Acronictinae androconial apparatus lies on outer surface of valva as a dense brush of special hairs and gland. In the quadrifid subfamilies the androconial apparatus could be found on the legs of males or on outer surface of valve or on the base of valva (Fig. 5, *9*); in some genera it is large membranous structures covered by hairs brush and fixed on outer part of the base of valve.

Male genitalia. It is well known, that the genital structures play a very important role in the taxonomy and systematics of Lepidoptera. Many publications have been devoted to the morphology and anatomy of Lepidoptera genitalia and Noctuidae particularly, some of them are cited above. For the students I recommend comprehensive taxonomist's glossary of genitalia in insects, edited by Tuxen (1970).

Male genitalia of the Noctuidae (Fig. 6, *1–4*) are mainly symmetrical, rarely asymmetrical. The sclerites of 9th segment of abdomen together with a part derived from 10th segment form a transversal sclerotised ring, which serves for attaching of the other parts of genitalia. Its dorsal part derived from 9th tergite called *tegumen* and its ventral part, derived from 9th sternite is *vinculum*. In its apex tegumen is joined with *uncus* – unpaired end–appendage of the 10th segment. In most case, it has a simple shape, however it could be modified: widened, flattened, bifurcate or bearing additional extensions. In some groups of the Noctuidae uncus partially or completely reduced (*Stenoloba*, *Athetis*, *and Nola*). Ventrally from top of the tegument, below uncus runs the anal tube. Sclerotised dorsal surface of the anal tube is formed as gutter–like sclerit, bifid on the base – *scaphium*. It could be heavily or less strongly sclerotized, and in some groups the scaphium bears less sclerotised or membranous patch accepted uncus in resting position (Fibiger 2003; Fibiger & Lafontaine 2005). It is developed in many groups of the quadrifid Noctuidae, mainly in Erebinae, Catocalinae and Calpinae, the scaphium is also sometimes strongly expressed in some trifid genera (*Craniophora*, *Cranionycta*, Acronictinae, *Sineugraphe*, Noctuinae and in Amphipirynae, and Agaristinae). In some, mainly quadrifid genera, the anal tube is also more or less heavily sclerotised on the ventral surface, forming sclerit called *subscaphuim.*

Tegumen and vinculum connected to each other by a *pleural sclerite* or *pleurite* which has the shape of a narrow, curved or retorted sclerotised band or flat plate. . In the quadrifid subfamilies tegumen and vinculum joined directly, pleural sclerites are reduced and fused with tegumen. In trifid Noctuidae, especially Xyleninae, in many groups tegumen with large lateral lobes – *peniculus*, covered with hairs or hair–like scales, this structure is not presented in quadrifid subfamilies. Vinculum is fork–shaped; on its base sometimes it has well expressed *saccus* – proximally directed extension.

Penis or *aedeagus* fixed by membranes between tegument and vinculum. It represents sclerotised tube, which anteriorly continues by membranous inner tube (*endophallus*, or *vesica*) invaginated and packed inside the aedeagus. Anterior part of the tube of aedeagus often more heavily sclerotized, bears short spines or tooths, sometimes they continue to vesica as one or two sclerotised bands called *carina*. Size and degree of curving of the aedeagus is variable; its proximal part, behind ductus ejaculatorius is called *coecum*. The shape of vesica is variable, it is more often bulbous in quadrifid or tubular and coiled in among trifid; often vesica has one or more additional diverticula in trifid or multiple diverticula in quadrifid. The surface of vesica is often armed by *cornuti* – spines or patch of spines (cornutifield) of variable shape and size, sometimes like a large spine or minute spines, called *spinules*. During copulation the vesica is invaginated in to ductus bursa of the female. The shape and size of vesica and its arming have great significance for the separation of difficult taxonomic complexes of the Noctuidae.

The tube of aedeagus is supported by diaphragm which is formed by inter–segmental membrane of 9th and 10th segments of abdomen. The diaphragm, except the membrane includes *fultura superior* from dorsal side and *fultura interior* or *juxta* from ventral side. Sclerites of fultura superior continued to the *costa* of valve called *transtilla*. In some cases they form compact channel, sometimes they have small spines. The fultura interior or juxta represented by a sclerotised plate of different shape and sclerotisation, is most often it clypeate or cordate or shield–shaped; sometimes it is bearing extensions.

The pairs of *valva* fixed on both sides of vinculum. They are represent by plate or lobe–like sclerites, flexible joined with vinculum on the base, having dorsal (or costal) margin, ventral margin and apex. The skeletal basis of valva is *costa* – sclerotised swelling of dorsal margin of valva, usually more heavily sclerotised then other part of valva, sometimes represented as a long sclerotised tube. In some cases costa is separated from the membrane of valva in distal part, often it has ventral extension, called *digitus*, the former especially expressed among Xylenini. Ventrally from costa in its basal part lies *editum* – soft, usually triangular appendage covered by hairs. On its base valva has usually large, sack–like *sacculus* – sclerotised introversion of ventral margin of valve helds by large intervalvae muscle. The proximal end of sacculus often has *clavus* – sclerotised finger–like extension covered by rare fine hairs. In some genera the upper part of sacculus has ventral sclerotised extension directed ventro–distally. The central part of valva has plate or arch–like or oblique central sclerit – *clasper*, which is the place of fixation of intervalvae muscle (Forbes 1939; Tikhomirov 1979a). In many cases, especially typical for trifid Noctuidae, the clasper is positioned in the apical part more or less curved strong sclerotised distal extension, called *harpe* or *ampulla*. The degree of its developing and modification is very variable from complete reduction to hypertrophy. The ventral margin of clasper is in some genera extended to or behind the ventral margin of valva forming ventral extension or *pollex*. The apex of valva of more or less separated shape called *cucullus*. Usually its surface has weaker sclerotisation and is covered with hairs or bristles, in many trifid genera and subfamilies in distal part armed with spines called *corona*. In some cases the surface of cucullus covered with spines or spine–like bristles. In many groups cucullus well separated from other part of valva by more or less narrow, sometimes long neck, in some groups the neck is not expressed, in some genera cucullus vestigial or completely reduced. The shape of cucullus is variable from complete reduction to various modifications. The presence of well separated and modified cucullus is typical for trifid Noctuidae, in quadrifid subfamilies separated cucullus and corona are as a rule not expressed.

Musculature of male genitalia (Fig. 7, *1*, *2*) of the Noctuidae is generally is more or less uniform and could be characterized by the presence of muscles m_2 and fixation of muscles m_4 to vinculum, sometimes they moved to the base of tegument. Muscles m_1, as a rule directed to the base of uncus (Tikhomirov 1979a, 1979b).

Female genitalia (Fig. 8, *1–6*). The terminal 8th –10th segments of female abdomen form ovipositor. In most Noctuidae species 8th sternite is narrow, membranous, and 8th tergite more developed and envelop most part of the segment, especially in species with long telescopic ovipositor. The ovipositor is usually represented by soft hairy, but sometimes strongly sclerotised and flattened or modified *papillae analis*. Two pairs of sclerotised bands – *apophyses anterior* and *apophyses posterior* are connected with papillae analis and with 8th tergite respectively. The apophyses are placed as fixation of apophyses muscles ensuring movement of ovipositor. Papillae anales in different groups have various sizes, shapes and sclerotisation. Their structure often has adaptive dependence on the character of ovipositing. The females of species, which lay eggs freely on leaves or disperse them during flight usually have weakly developed ovipositor with short and soft apophyses posterior (Fig. 9, *1*, *2*); the species which lie eggs into holds of trunks or branches, under bud scales, or in corolla of flowers have long, telescopic ovipositor with extended intersegmental membrane and very long apophyses posterior (2–3 times longer than apophyses anterior) (Fig. 9, *3–6*). In some specialized groups laying eggs to in leaf axils of poaceous plants (*Mythimna*, ets.), female have sclerotized, laterally flattened ovipositor (Fig. 9, *9*, *10*). The species, laying eggs inside plants steams, have modified very dorso–ventrally flattened, sclerotised papillae anales adopted for breaking of strong steam tissues (some Apameini) (Fig. 9, *11–13*).

The female genitalia open by copulative opening or *ostium*. The shape and position of ostium are variable depositing in the limits of 7th –8th sternites. Its opening lies on the surface of sternite or immerged into *vaginal sinus*. Postvaginal plate lies behind of ostium and antevaginal plate lies in front of it. Ostium opens to *antrum* – sclerotised part of ductus of copulative bursa. In some cases antrum is weakly sclerotized, not expressed or has ribbed structure. Antrum is transformed to ductus bursa, which often could be sclerotized, sometimes has ribbed structure or sclerotised bands inside. Copulative bursa (*corpus bursae* or *bursae copulatrix*) generally looks as a sack, often its surface is armed with *signum* – sclerotised bands or plaques. Often bursa has sclerotisation in the caudal part, often bursa extended, or has appendix (lodix) which could be sclerotised and sometimes significantly larger than corpus bursa. Ductus seminalis falls into bursa copulatrix or in appendix bursa.

Technique of genitalia preparation. The method of study of delicate morphological structures, i.e. everting of vesica in males and inflating of bursa copulatrix in females is presently widely used by researchers of the Noctuidae. This approach permits the morphological separation and identification of species in difficult taxonomic complexes. The function of these characters, their significance for taxonomic research, and methodology of preparation are described in many publications (Hardwick, 1950; McCabe, 1980; Lafontaine, 1981; Lafontaine, Mikkola, 1987; Fibiger, 1997). Here we briefly outline the main points of method of preparation of genitalia slides.

1. Remove the abdomen gently from the body and place it in a tube containing 10% KOH and then leave it for 12–24 hours at room temperature or for 4–5 hours in drying shell with temperature 50–60°C, or the tube could be heated to nearly boiling point in a water bath for 10–15 minutes.

2. After maceration or boiling in KOH wash the softened abdomen in distilled water, gently cleaning from scales and hairs by fine brush or needles and placing to preparation glass with water or weak solution (10%) of alcohol. The genital capsule of male or bursae copulatrix of female should be removed from the abdomen with the help of preparation needles and fine forceps and cleaned from hairs and rest of muscles and fat.

3. Then, with the help of fine watch forceps the aedeagus should be gently removed from the genital armature, its ductus ejaculatorius should be cut off 1–2 mm before the aedeagus wall. The armature of the genitalia should be transferred to the solution of higher concentration alcohol (30–40%, then 75% and 96%) or, if it not strong enough, to pure isopropanol.

4. The vesica should be everted in pure isopropanol with a few drops of weak solution of black chlorosol (1–2 drops of water solution of chlorosol for 50 ml of isopropanol), or by a strong (75%) solution of alcohol with a few drops of chlorozol. In this case the membrane of the vesica will be gently stained.

5. Inject the isopropanol or strong alcohol with a few drops of chlorosol into the tube of aedeagus with the help of a syringe and fine hypodermic needle. The tip of the needle is gently injected into the remaining part of the ductus ejaculatorius. The diameter of the needle should correspond to the diameter of the aedeagus. If the vesica is concentrated in caudal part of the aedeagus, it is possible to move it gently forward by hard bristle. Then the aedeagus is fixed by watch forceps (for large species it is possible to fix it by fingers) and one must gently but constantly push the syringe. In most cases the vesica everts easily. After this action the aedeagus with the everted vesica is deposited in pure isopropanol, or if the eversion is made with alcohol, into a strong solution of alcohol (75%) and after 10–15 minutes of exposition to 96 or absolute alcohol where it should stay for a minimum as 20–30 minutes for hardening and dehydratation. Similarly, after cleaning remove the female genitalia from the abdomen. Then, gently inject the needle of the syringe into antrum or to ductus bursae and fill the bursa with alcohol. Everted vesicae or expanded bursa copulatrix should not be placed in water or in a weaker solution of alcohol. After exposition of the aedeagus or bursa copulatrix in 96% of alcohol they are transferred into isopropanol or into absolute alcohol (at least for 5–10 minutes for dehydratation and hardening sufficiently for mounting. The preparation is mounted with euparal or Canada balsam. If they are mounted with Canada balsam, after exposion in alcohol they should be placed 3–5 minutes in xylene.

Because the vesica or bursa copulatrix often has volumetric shape, the small pieces of plastic are placed under the cover glass. Ready preparation should be labeled and dried in a drying shell during several days and they should be kept horizontally for at least one month. It is not recommended to keep preparation with everted vesica as a temporary preparation in alcohol or glycerin solution in open tubes, because the vesica will lose its shape very easily and such preparation could easily be damaged or become dirty, or lost. The permanent preparations are very convenient for study, transportation, and sorting, photographing, making drawings from, and so on. However, it is not always necessary to make permanent genitalia slides. Very often, in large species it is possible to examine genitalia by gently brushing the tip of abdomen by brush, needle, and fine forceps. It is also possible to advance the male genitalia in fresh specimens for further examination by pressing the 8th segment of abdomen by forceps.

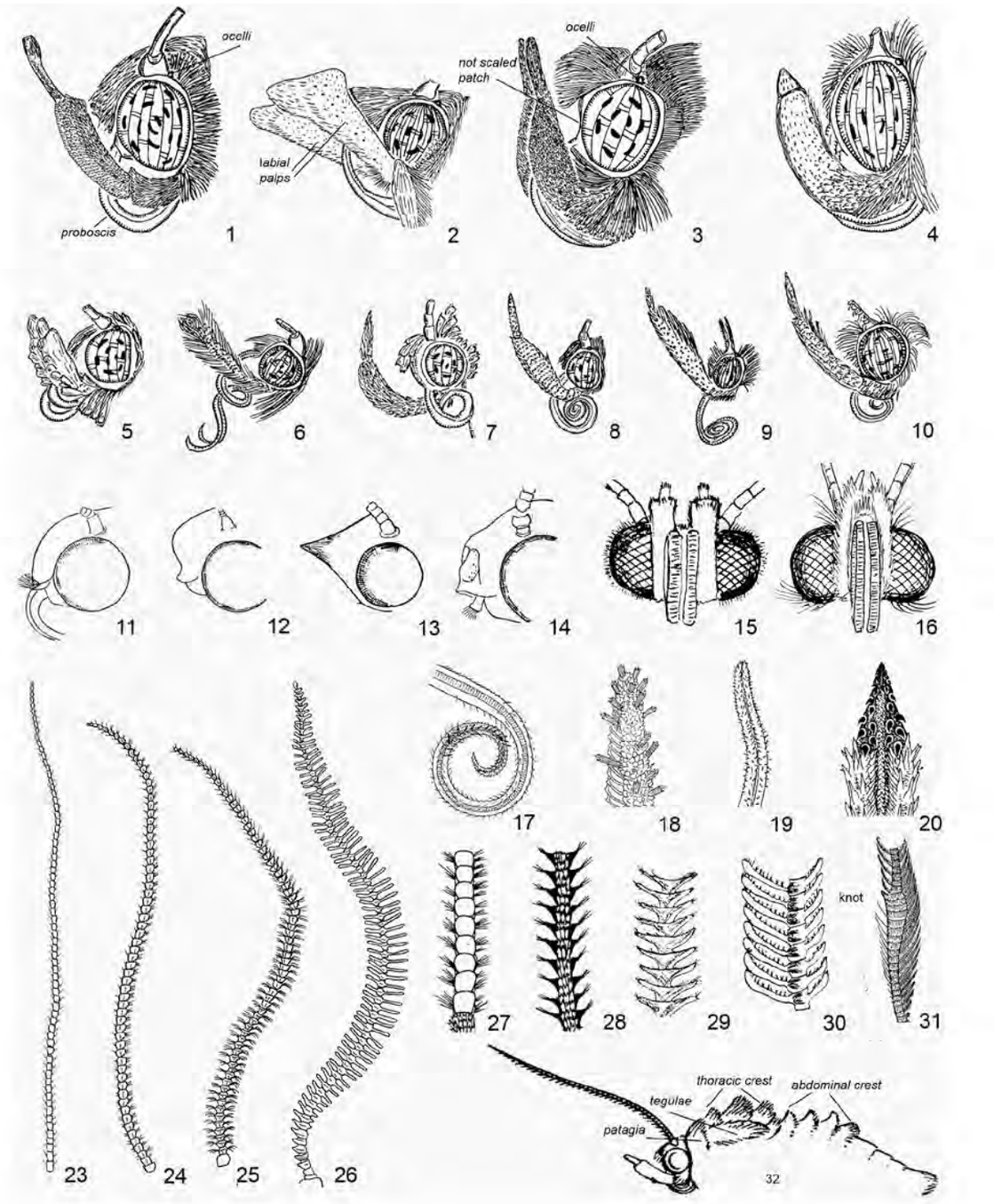


Fig. 1. Details of imago structure. Head, eyes, proboscis, antennae, profile of body. (After Ryabov 1973; Banziger 1980; Forster & Wolfhart 1971 and original.

1–16 – Head. *1–Eudocyma falonia* (Calpinae); *2 – Hypocala subsaturata* (Catocalinae); *3 – Thyas juno* (Catocalinae); *4 – Arcte coerula* (Pantheinae); *5 – Mimachrostia fasciata* (Micronoctuidae); *6 – Ruvula unctalis* (Rivilinae); *7 – Hypenodes rectifascia* (Hypenodinae); *8 – Pangrapta vasava* (Pangraptinae); *9 – Lophomilia flaviplaga* (Hypeninae); *10 – Pechipogo strigilata*. *11–14* – shape of head capsula: *11* – flat; *12–14* – with extension; *15* – hairy eyes (Hadeninae); *16* – eye with lashes (Xyleninae); *17* – proboscis; *18*, 19 – tip proboscis with flavor cones; *20* – tip of proboscis of *Calyptra eustrigata* adopted for piercing of mammals skin; *23–31* – antennae and detais of antennae structure; *32* – profile of Noctuidae body.

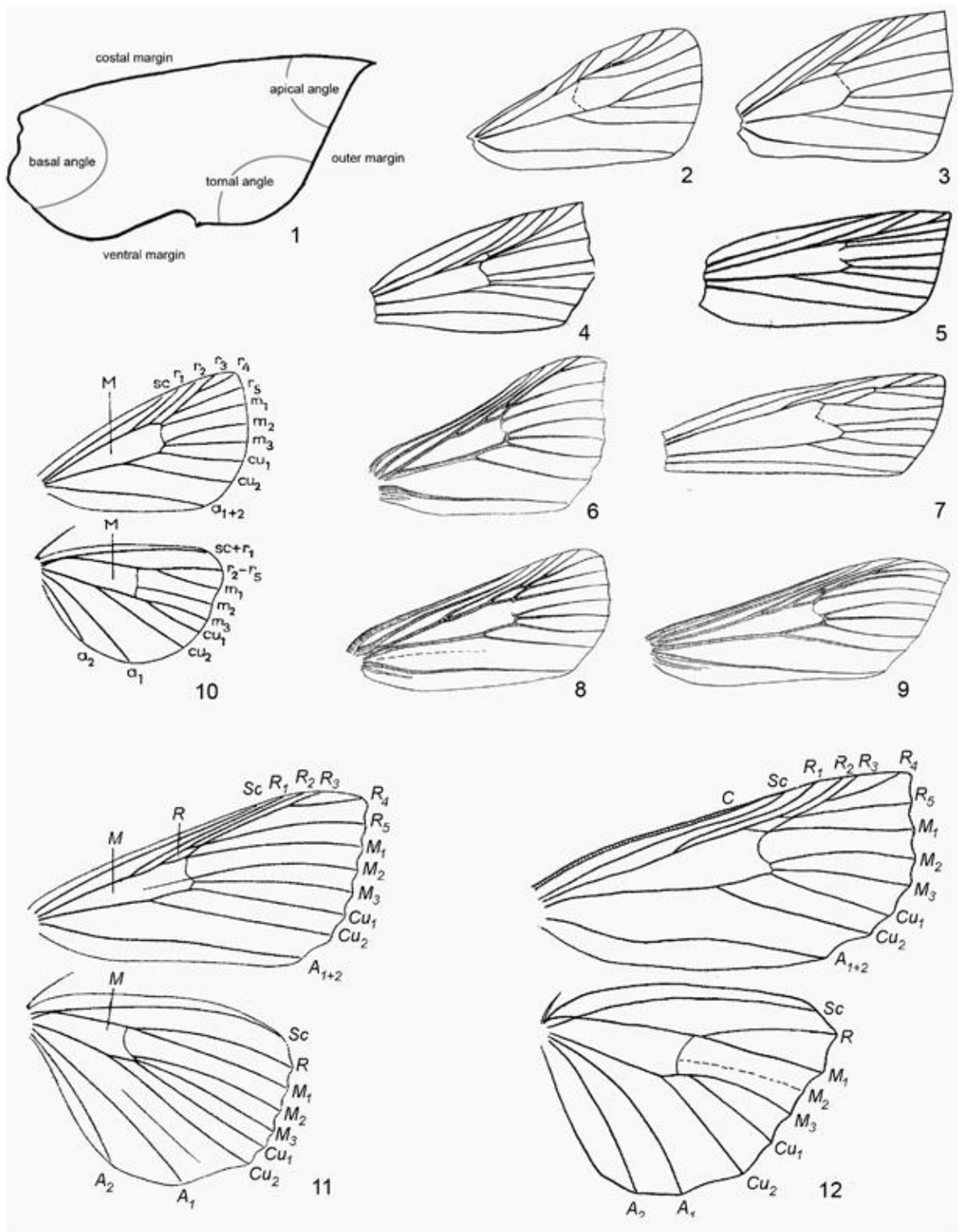


Fig. 2. Wings shape and venation. (After Merzheevskaya 1971; Klychko 1968; Buszko 1983 and original).

1–10 – shape of forewing: *1 – Eudocima tyranus* (Calpinae); *2 – Hydrillodes funeralis* (Herminiinae); *3 – Pangrapta vasava* (Pangraptinae); *6 – Autographa gamma* (Plusiinae); *7 – Kerala decipiens* (Nolinae); *8 – Agrotis clavis* (Noctuinae); *9 – Cucullia* (Cuculliinae). *10 – 12* – wings venarion: *10 – Rivula sericealis* (Rivulinae); *11 – Catocala fraxini* (Catocalinae); *12 – Conistra grisescens* (Xyleninae).

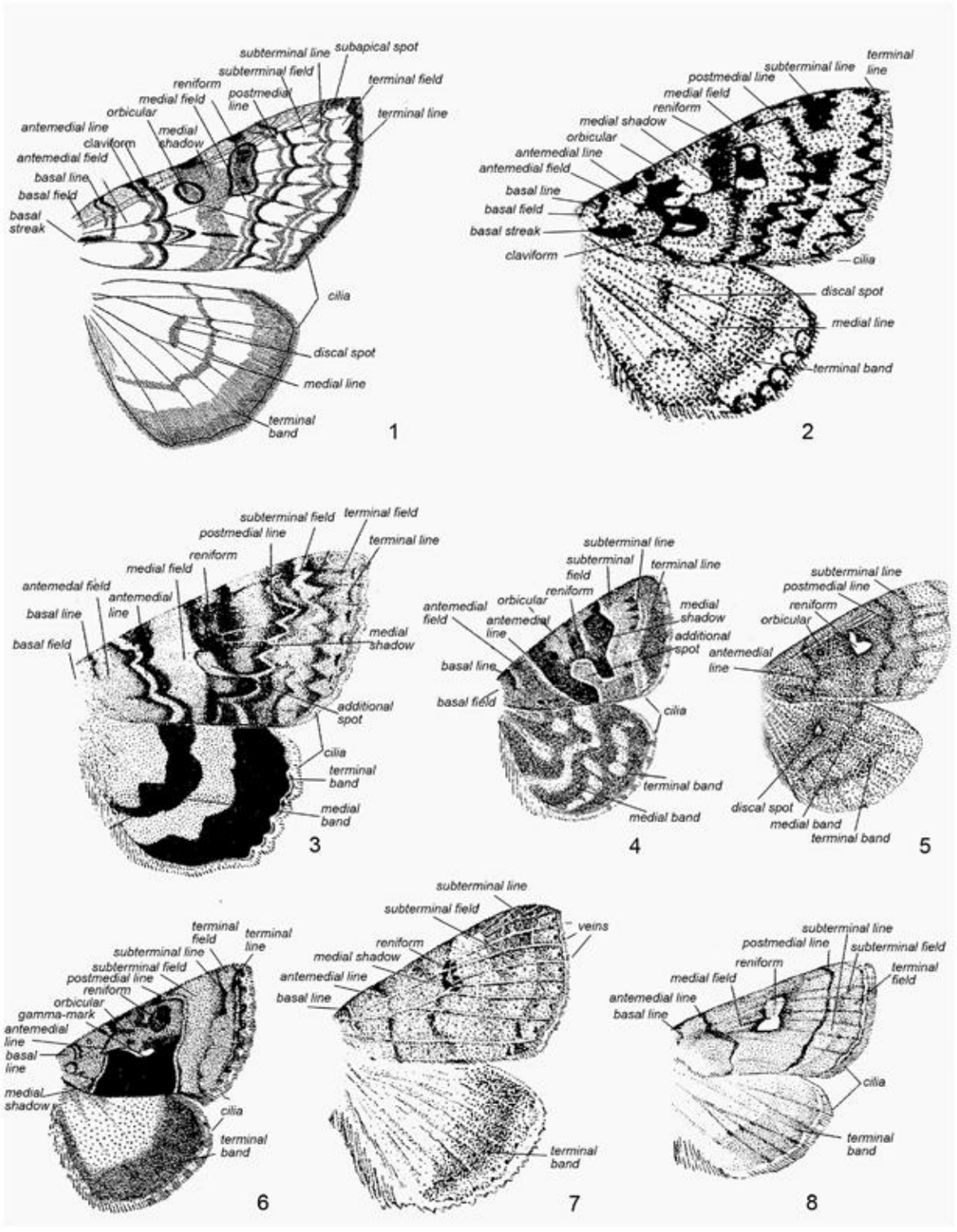


Fig. 3. General plan and modifications of wing pattern in Noctuidae (After Buszko 1983; Nowacky 1996 and original).
1 – General plan of wing pattern; *2* – *Xestia albonigra* (Noctuinae); *3* – *Catocala adultera* (Catocalinae); *4* – *Callistege mi* (Catocalinae); *5* – *Edessena hamada* (Herminiinae); *6* – *Syngrapha microgamma* (Plusiinae); *7* – *Lygephila maxima* (Catocalinae); *8* – *Mythimna conigera* (Hadeninae).

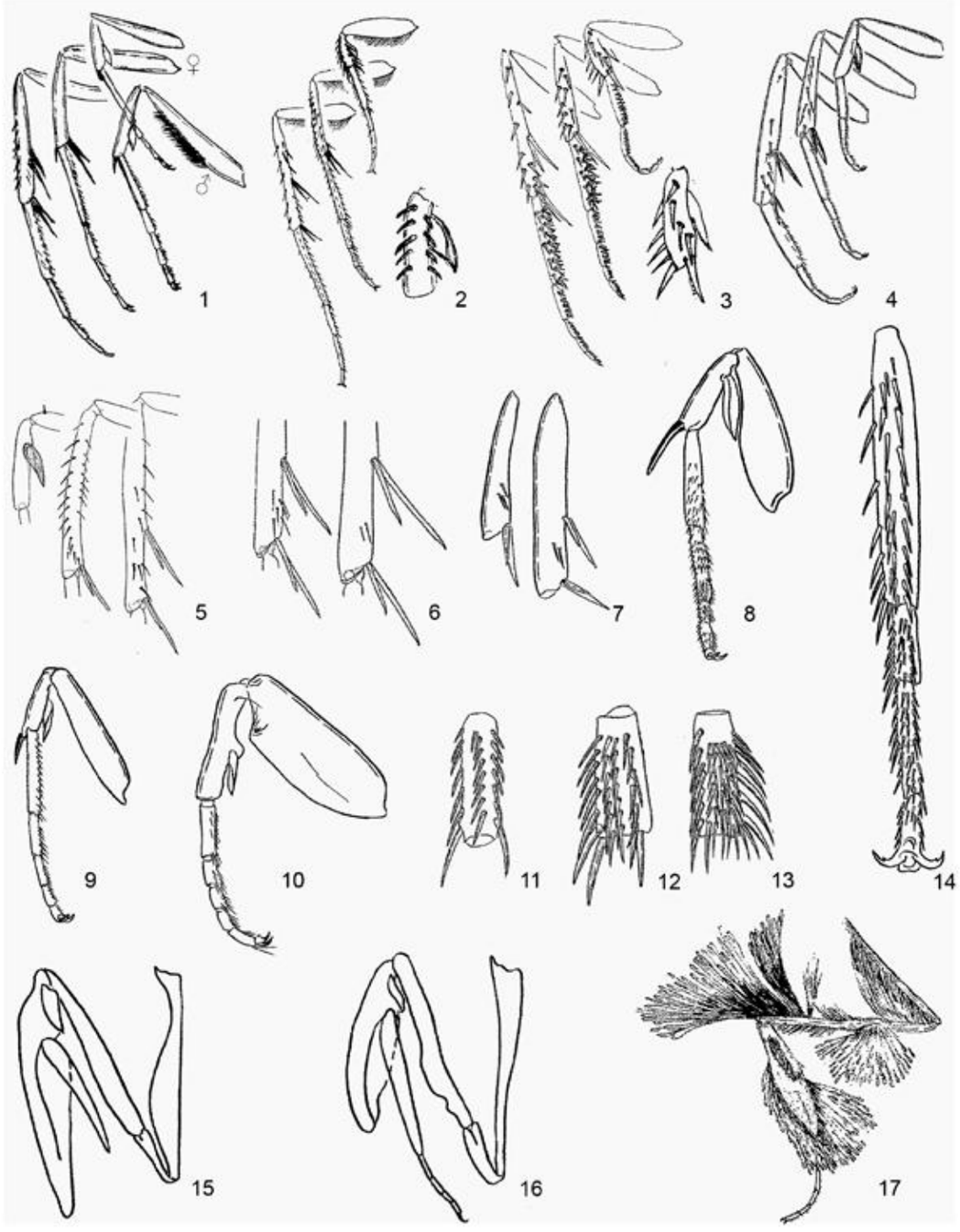


Fig. 4. Details of legs structure and arming. (After Kuznetsov 1915; Merzheevskaya 1971; Lafontaine 1973; Buszko 1983; Owada 1987 and original)

1–7 – arming of fore, mid and hind legs. *1* – *Heliotis armigera* (Heliothinae); *2* – *Agrotis* (Noctuinae); *3* – *Euxoa* (Noctuinae); *4* – *Xestia penthima* (Noctuinae); *5* - *Catocala fraxini* (Catocalinae); *6* – *Syngrapha ain* (Plusiinae) *7* – *Blepharita amica* (Xyleninae); *8* – sclerotized clav on foretibia of *Brachiobycha nubeculosa* (Psaphidinae); *9* – strong setae on foretibia of *Oncocnemis senica* (Oncocnemidinae); *10* – extended femur in *Dryobotodes pryeri*; *11–13* – setae on 2nd segment of tarsus in Cuculliinae (*11*) and Xyleninae (*12*, *13*); *14* – structure of tarsus of *Cucullia kurilullia*; *15*, *16* – modified legs of Herminiinae: *Sinarella aegrota* (*15*) and *Zanclognatha lunalis* (*16*); *17* – scent brushes on the leg of male *Zanclognatha lunalis*.

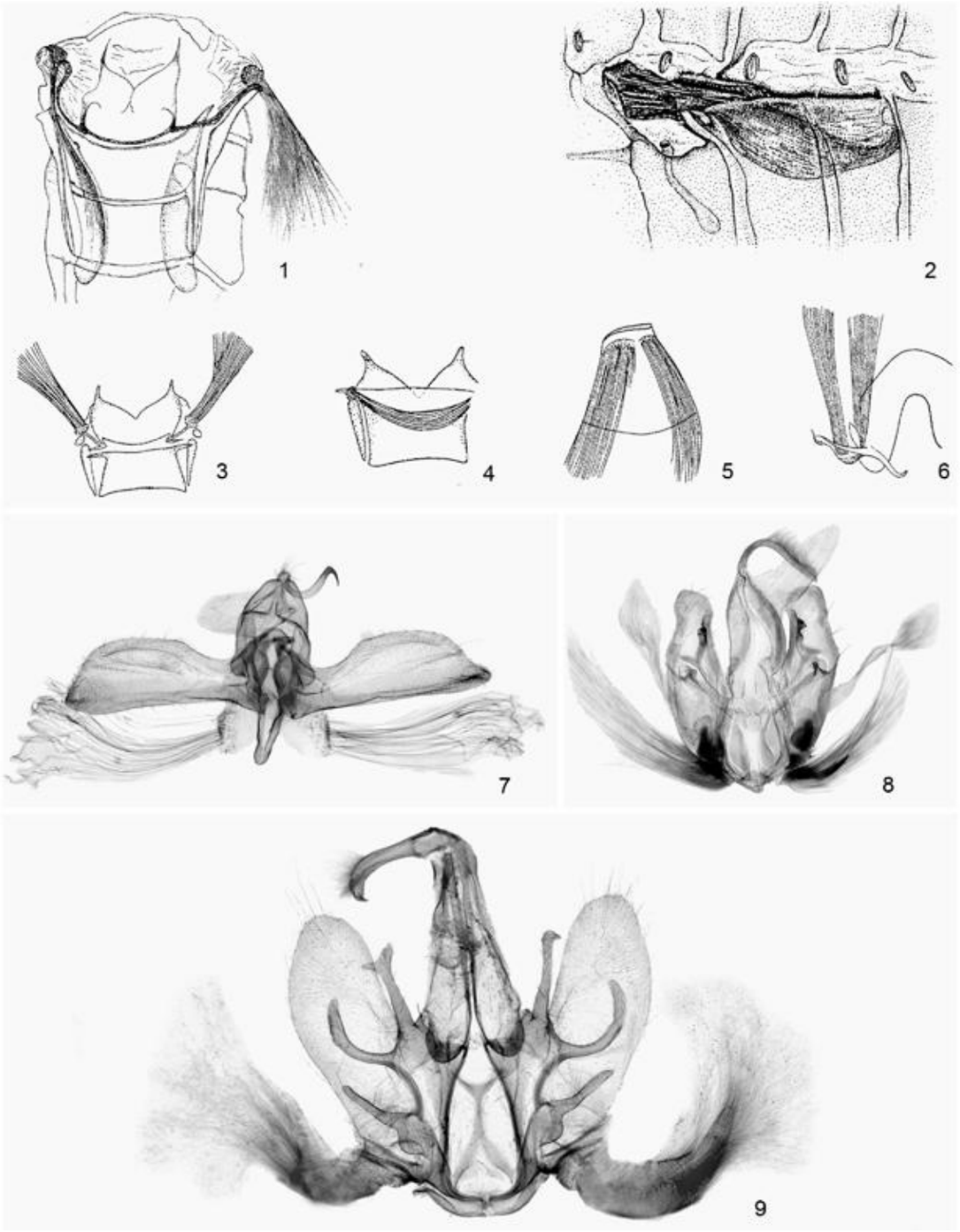


Fig. 5. Scent organs of Noctuidae. (After Ryabov 1973, Kitching & Rawlins 1979 and original).
1 –6 – Abdominal coremata in trifid subfamiles. *7, 8* – coremata on outer surface of valva in Nolinae (*7 – Gelastocera exusta*) and Bagisarinae (*8 – Sphragiphera sigillata*); 9 – coremata on base of valva *Bastilla stuposa* (Catocalinae, Ophiusini).

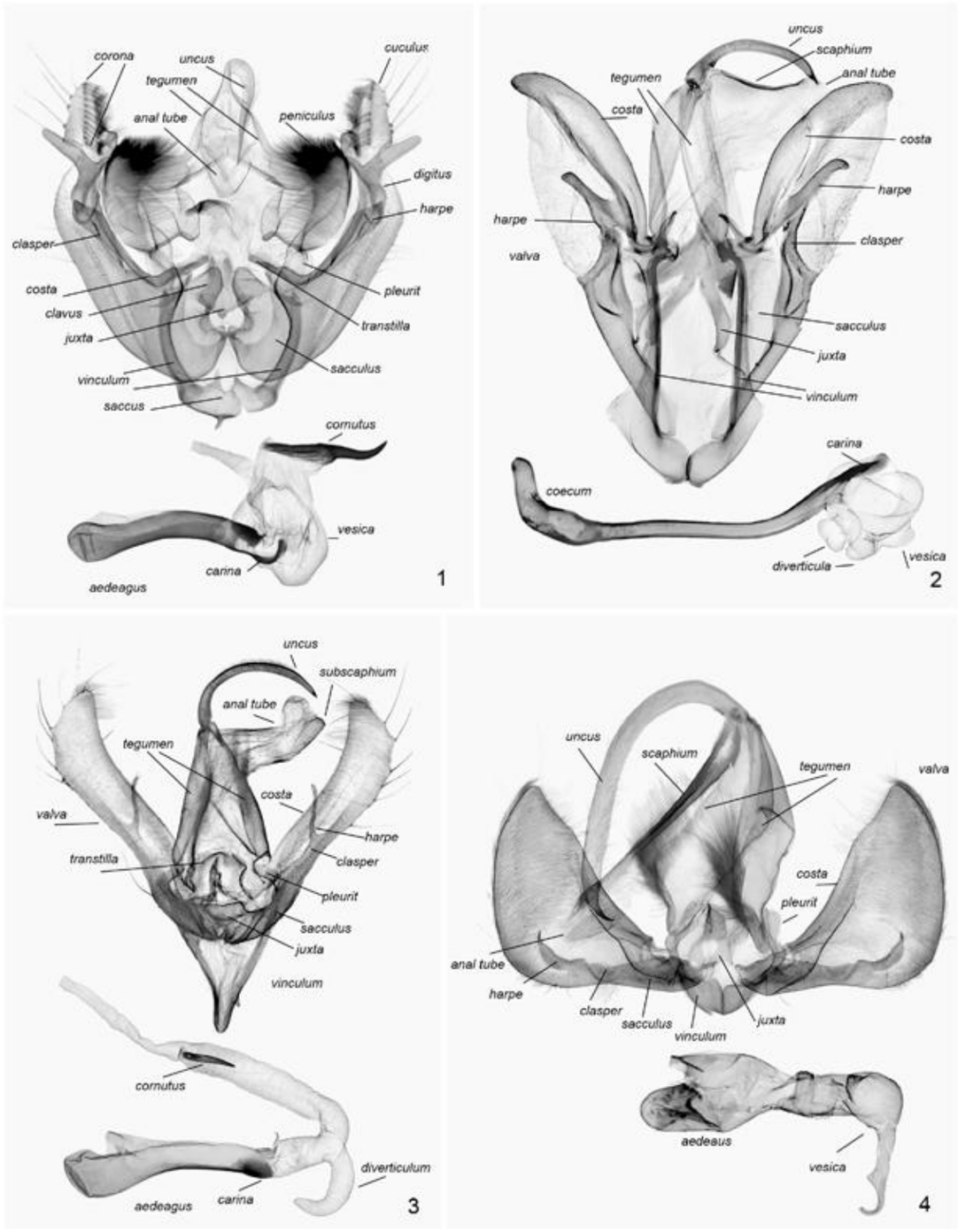


Fig. 6. Structure of male genitalia. (Original).
1 – Apamea brunescens (Xyleninae, Apameini); *2 – Catocala deducta* (Catocalinae); *3 – Autographa amurica* (Plusiinae); *4 – Mimeusemia persimilis* (Agaristinae).

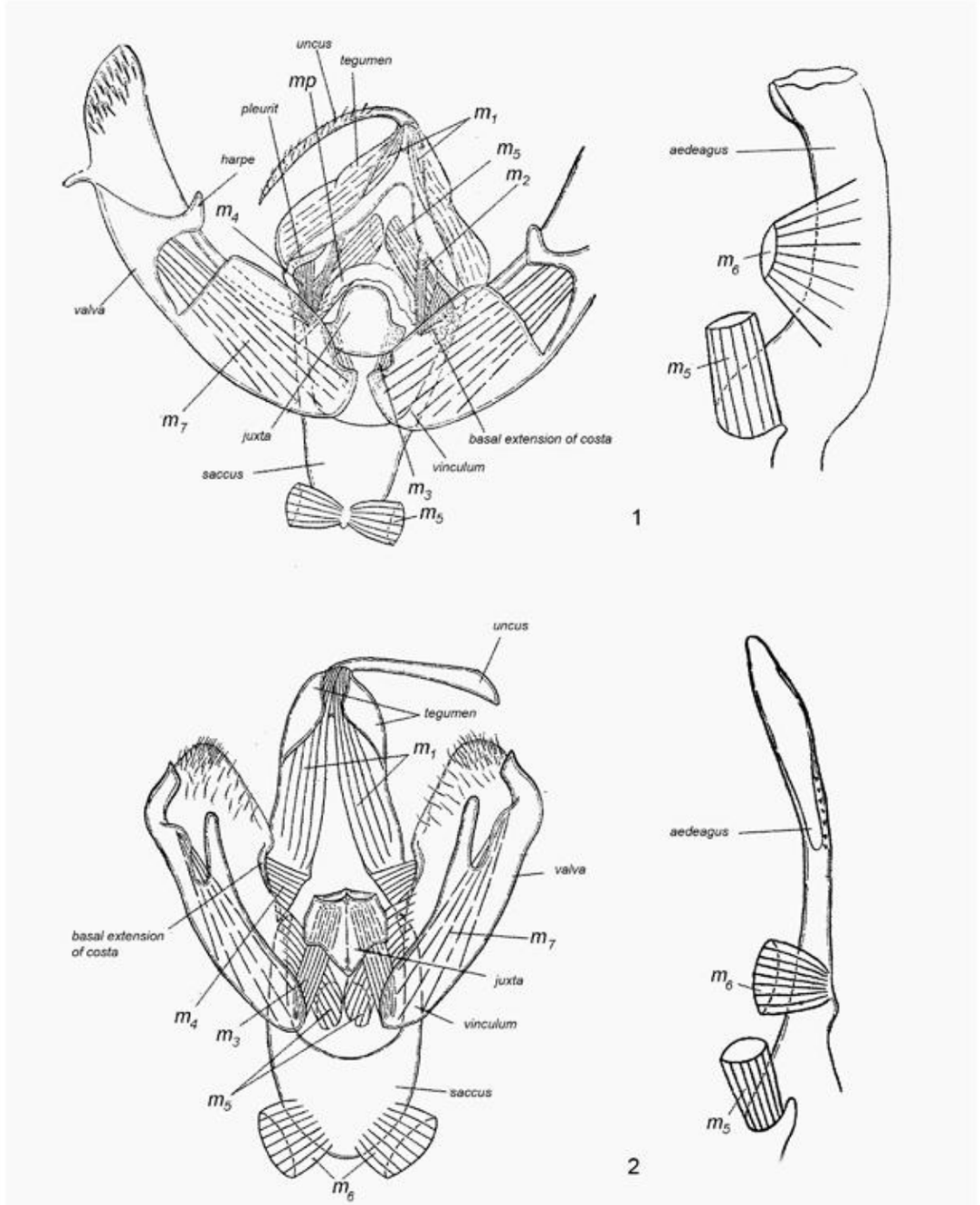


Fig. 7. Musculature of Noctuidae genitalia (After Tichomirov 1979a)

1 – Xestia c-nigrum; *2 – Calyptra thalictri*. m_1 – m_7 – muscles: m_1 – depressor of uncus; m_2 – extensor of tegumen; m_3 – extensor of valva; m_4 – flexor of valva (m_{4a}, m_{4b}); m_5 – protractor of aedeagus; m_6 – retractor of aedeagus; (m_{6a}, m_{6b}); m_7 – intervalvar muscle. Terminology by Tikhomirov 1979a.

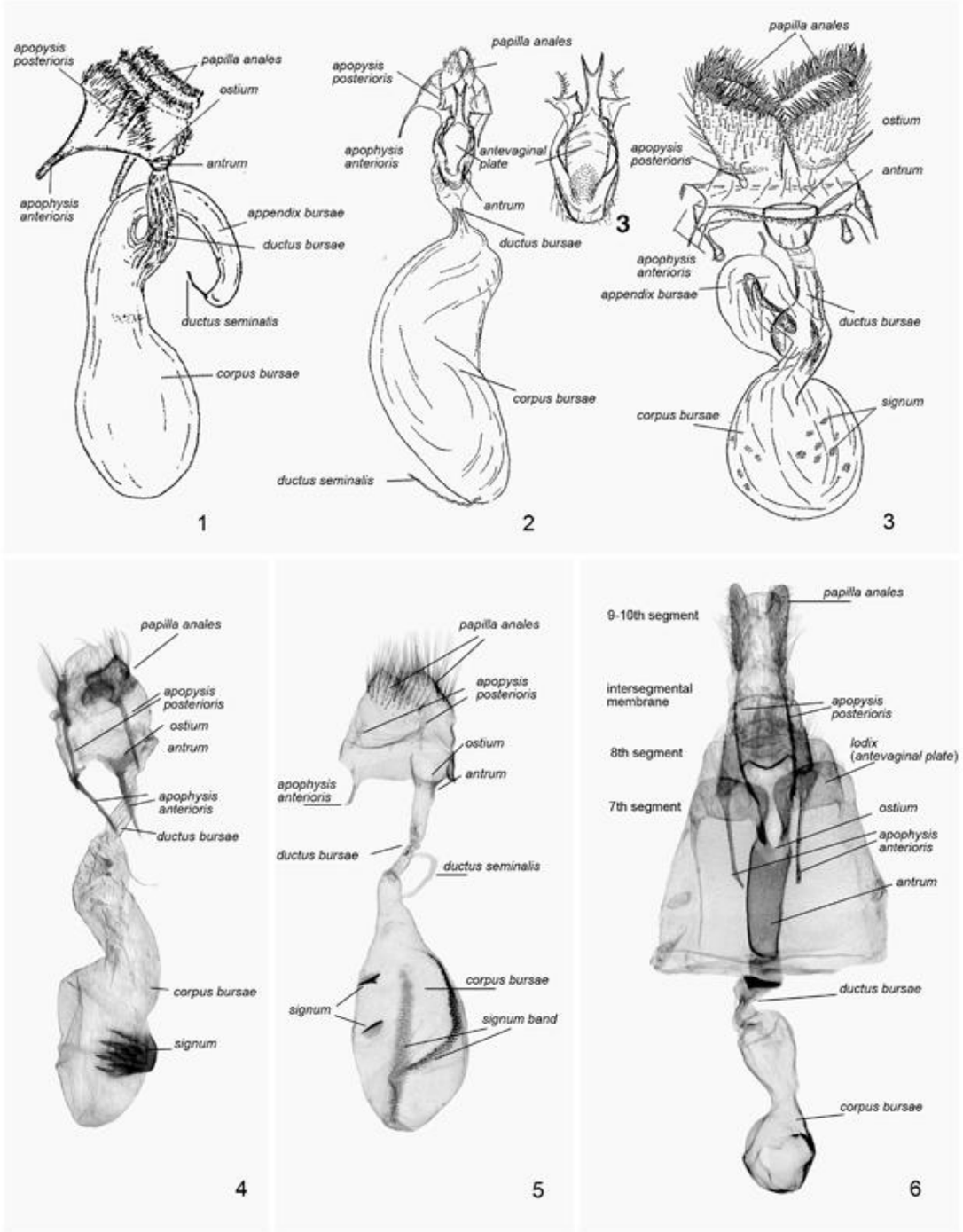


Fig. 8. Structure of female genitalia. (Original).

1 – Pangrapta perturbans; *2 – Belciades niveola*; *3 – Xanthia icteritia*; *4 – Araeopteron nebulosa*; *5 – Meganola bryophilalis*; *6 – Catocala adultera*.

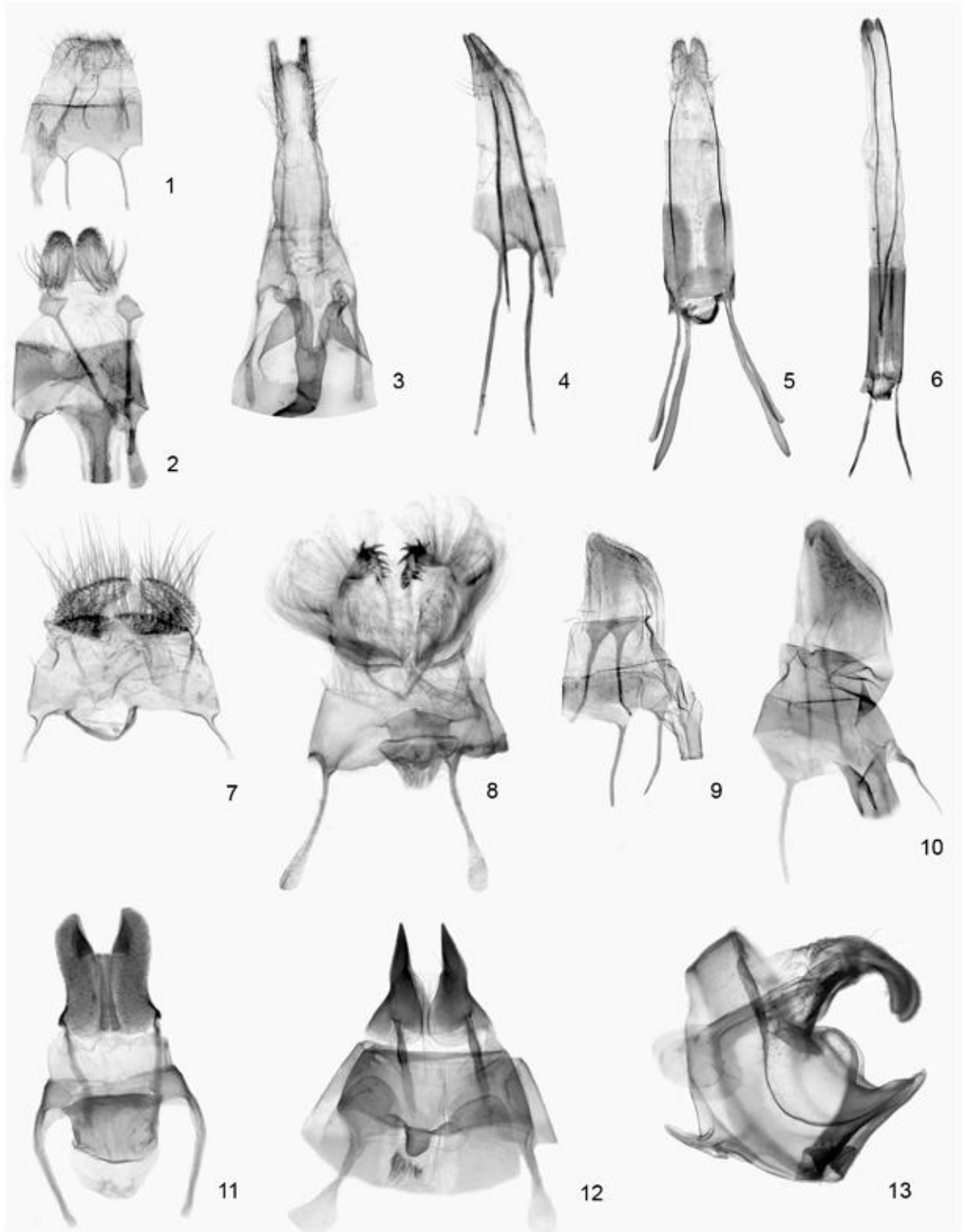


Fig. 9. Structure of female ovipositoe. (Original).

1 – Hypena obesalis 2 – Euxoa centralis; *3 – Catocala helena*; *4 – Eublemma parva*; *5 – Parastichtis suspecta*; *6 – Hadena capsincola*; *7 – Gelastocera exusta*; *8 – Cosmia trapezina*; *9 – Paraphyllophila confusa*; *10 – Mythimna pudorina*; *11 – Hydraecia petasitis*; *12 – Nonagria puengeleri*; *13 – Capsula aerata.*

SYSTEMATIC PART

Family **MICRONOCTUIDAE** Fibiger, 2005

Micronoctuidae Fibiger, 2005. *Esperiana* 11: 33. Type genus *Micronoctua* Fibiger, 1997.

Small and very small moths, wingspan 6-13 mm. Vein M3+Cu1 in hindwing stalked with C2; the hindwing becomes two-branched (bifid), one of the autapomorphies of the family, not found elsewhere in the superfamily Noctuoidea. Clypeofrons fully and smoothly scaled. Ground colour of the body and wings grey, brown-grey or brown; wing pattern uniform in most species. The reniform stigma pure yellow or whitish-yellow, outlined in black or brown, orbicular stigma absent. Male and female genitalia asymmetrical in most species. In male genitalia, uncus lost; the fultura superior has been transformed into complex configurations in the majority of species; clasper bar at a right angle to the valve margins; ampulla plate-like; juxta-anellus structures fused. In female genitalia, posterior apophyses stick-like, signum single, crossbar-shaped. Larvae semiloopers in known 1st-3rd instars. Seta D1 absent on mesothorax; L2 seta on meso- and metathorax strongly reduced. The known larvae feed on fungi.

Over 300 species are known in the World fauna and many species, mainly tropical, are still undescribed. Most species are concentrated in tropical and subtropical areas of the Oriental and Ethiopian zoogeographic regions. In the Palaearctic, one species is known from the Mediterranean region and about 10-15 species from the Sino-Pacific subregions. The family is currently under revision (Fibiger 2006, 2008, 2010).

The family is represented in the Far East and neighbouring countries by two genera and two species. The northernmost limits of distribution of the Micronoctuidae are the lower Amur River in Russia and Hokkaido Isl. in Japan.

References: Fibiger 1997; Fibiger & Lafontaine 2005; Fibiger 2006, 2008; Fibiger & Kononenko 2008.

Genus ***Mimachrostia*** Sugi 1982

Mimachrostia Sugi 1982, *Moths of Japan* **1**: 893. Type-species: *Mimachrostia fasciata* Sugi 1982 [Japan: Honshu].

Small moths, wingspan 12-15 mm, dark brown in colour. Labial palps upturned; reniform stigma on forewing prominent, yellowish-grey; all crosslines present. In male genitalia, 8th sternite with a deep crest, with posterior processes; 8th tergite plate-like, with four narrow processes anteriorly; juxta-anellus plate fused, broadest ventrally, with a narrow string-like ring dorsally, and with a hole for aedeagus; valva moderate, broadest medially; clasper positioned across, ampulla, asymmetrical, with a smaller dorsal arm; digitus short, finger-like. Aedeagus heavily curved, slightly tapered. In female genitalia, posterior apophyses are half the length of fused 7th-8th abdominal segment, anterior apophyses reduced, 8th abdominal segment totally fused to 7th, laterally, ventrally and dorsally gradually heavily constricted, ostium bursae positioned on dorso-lateral side at the end of the cone-like entrance, antrum narrow, long, heavily sclerotised, ductus bursae membranous, narrow, long; corpus bursae elongated with cross-shaped signum. The structures of 8th tergite and sternite of *Mimachrostia fasciata* are unique, and similar shapes have not been found in other groups of Micronoctuidae.

The genus includes 3 species distributed in East Asia. – 1 species.

Mimachrostia fasciata Sugi 1982

(Pl. 1: 1-3; ♂ genit. Pl. 25: 1; ♀ genit. Pl. 121: 1)

Mimachrostia fasciata Sugi 1982, *Moths of Japan* **1**: 892, **2**: 402, 465, pl. 219: 42-44 (Type-locality: Japan: Honshu, Gumma Pref.).

Diagnosis. *M. fasciata* differs from the next species by 1.5 larger wingspan, brown-grey wing colour and distinct yellowish orbicular stigma.

Bionomics. Mesophilous, rather rare species, inhabits rich broad-leaved and mixed forests on elevations between 200 and 400 m. The moth in flies from mid VII to early VIII. The larva and its foodplants are unknown.

Distribution (Map 1). Manchurian, nemoral. Far East: Primorye and Khabarovsk terr., north to low reach of the Amur River (vicinity of Komsomolsk). – S Korea, Japan.

Genus ***Micronoctua*** Fibiger 1997

Micronoctua Fibiger 1997, *Nota lepid*., 20(1/2): 23. Type-species: *Micronoctua karsholti* Fibiger 1997 [Turkey].

Small moths, wingspan 6-11 mm. Antennae of both sexes ciliate; labial palps slightly upturned, 2nd segment twice as long as 3rd; hindwing with bifid venation; ground colour of forewing dark greyish-brown or yellowish; all crosslines present; reniform stigma yellow; fringes grey. In male genitalia, 8th tergite and sternite membranous; the ventral and dorsal margins of the valva more heavily sclerotised than that of the mid valva; cucullus large, triangular; ampulla flat, broad, or long, curved on 90°; the juxta-anellus plate-like, wide, heavily sclerotised. Aedeagus almost straight or curved, relatively short. In female genitalia, the ovipositor quadrangular, both apophyses as long as the height of ovipositor, 8th abdominal segment equally long on dorsal and lateral sides, position of ostium bursae medially on the ventral side of the 8th abdominal segment, ductus bursae very long, ductus seminalis arising from the caudal third on ductus bursae, corpus bursae globular with cross-shaped signum.

The genus includes 2 species; distributed in the Mediterranean and in the Far East.

Micronoctua occi Fibiger & Kononenko, 2008

(Pl. 1: 4-6; ♂ genit. Pl. 25: 2; ♀ genit. Pl. 121: 2)

Micronoctua occi Fibiger & Kononenko, 2008, *Zootaxa* 1890: 52, figs 1, 2, 7, 10 (Type-locality: Russia, Primorye terr., Gornotaezhnoe).

Diagnosis. *M. occi* is the smallest species of Noctuoidea in the Far East. It differs from *M. fasciata* by smaller size, pale yellowish-grey forewing colour with contrasting dark-brown subterminal area and narrow rectangular spot in basal and central parts of the costal area.

Bionomics. Mesophilous species; it has been collected in mid VII and early VIII in rich broad-leaved and mixed forests in elevation between 200 and 400 m. Rather rare. The larva and its foodplants are unknown.

Distribution (Map 2). Manchurian, nemoral. Far East (Primorye). – S Korea, China, Japan (Tsushima I., Honshu [Jinbo, pers. comm.]).

Note. The paratypes of *Mimachrostia occi* are illustrated on Pl. 1: 4-6.

Family **NOCTUIDAE** Latreille, 1809

Noctuidae Latreille, 1809, *Genera Crustaceorum Insectorum* 4: 191, 224 (as Noctuaelites), incorrect original spelling which had to be emended to Noctuidae; official list of family-group names, opinion 450. Type genus: *Noctua* Linnaeus, 1758.

Synonymy: Noctuida Leach, [1815] 1830; Noctuides Leach, [1815] 1830; Noctuelidi Boisduval, [1828] 1829; Noctuelidae Duponchel, [1845] 1844; Noctuelites Guenée, 1852; Noctues Swinhoe, 1890; Noctuo-Bombycites Latreille, 1809.

The majority of noctuids are medium sized moths with wingspan on average 25-45 mm, but in some subfamilies small-sized or large-sized species predominate, with robust body and inconspicuous colour and mainly nocturnal activity. The largest species of the regional fauna have wingspan 100-130 mm (*Catocala fraxini*, *Eudocima tyrranus*), and the smallest ones 14-15 mm (*Hypenodes turfosalis*, *Araeopteron* spp.).

Head rounded, frons in most species smooth, in some genera roundly convex or with sclerotised extension. Antennae usually simple, ciliate, fasciculate or bipectinate, often differing between male and female. Eyes rounded, large, glabrous, lashed or hairy; ocelli in most cases present, in some genera absent; chaetosema absent; labial palps well developed, variable in shape, in most cases short, compressed, in some subfamilies long or crescent-shaped; proboscis usually well developed, however in some groups reduced or absent. Head, thorax and abdomen covered by scales, hairs and hair-like scales. Thoracic and abdominal crests variably developed. Tympanal organs situated laterally on posterior part of metathorax, their structure used for the classification of higher taxa. There are two tympanal bullae or air- sacs in the dorso-anterior part of abdomen. In quadrifine subfamilies they are mainly small and separated from each other, in most trifinae subfamilies they are partially or fully fused.

Tibia with one pair of spurs apically, foreleg with two pairs of spurs medially and apically. In some subfamilies and genera tibiae armed with spines, most expressed in Noctuinae and Heliothinae.

Wing shape variable: forewing triangular, often long and narrow, rarely rounded-triangular. In some northern and high mountain species females have short, sometimes completely reduced wings. Wing venation generally rather uniform. On hindwing, Sc and R veins anastomosing at base, a character considered to be characteristic of the family; M3 and Cu1 arising from the base of the cell close each other; M2 normally developed, strong and parallel to M3 in the quadrifine group of subfamilies, or weak and obsolescent and arising from the middle of discoidal cell or absent in trifine subfamilies. Frenulum always present, consisting of a single strong spine in male and several bristles in female. This character is convenient for determination of the sex in set specimens.

Forewings with a characteristic pattern composed of transverse subbasal, antemedial, postmedial, subterminal and terminal lines (or fasciae), medial shade and the reniform, orbicular and claviform stigmata. This

ground scheme is most characteristic of the trifine subfamilies; in many, especially tropical genera of the quadrifinae subfamilies, the wing pattern is often modified and differs from the ground scheme. Hindwings usually dull brown–greyish or whitish-grey coloured, with traceable discal spot, medial line and sometimes terminal band, while in the subfamilies Catocalinae, Calpinae, some Plusiinae, Pantheinae and Agaristinae, especially in tropical origin groups, they are brightly coloured in yellow, orange or red. In some subfamilies (Eublemminae, Araeopteroninae, Pangraptinae, Aventiinae, some Hypeninae and Catocalinae) the hindwing pattern is a continuation of the forewing pattern.

In the highest noctuid subfamilies males often have scent organs (coremata) present in form of paired brushes and lateral pockets on 1st -2nd segments on the base of abdomen, or single brush on 1st-2nd or on 7th-8th abdominal sternite. This organ is most characteristic of trifinae subfamilies, Xyleninae, Hadeninae and Cuculliinae. In quadrifinae subfamilies the scent organ lies on outer surface of valva or on forelegs of male (Herminiinae).

In male genitalia, the tegumen and vinculum are connected by paratergal sclerite or pleurite which has complex structure in trifine subfamilies or represented by narrow, often indistinct plate, fused with vinculum, in quadrifinae subfamilies; scaphium sclerotised mainly in quadrifinae subfamilies, in most cases membranous in trifinae subfamilies; valva usually with strong dorsal margin or costa and central sclerite or clasper; often valva armed with processes: process of clasper or harpe; costal process or digitus and apical process of sacculus; the distal part of valva or cucullus often separated from valva by neck. In female genitalia, ovipositor often specialised and modified for laying eggs in various substrates and equipped for probing, piercing, cutting or slitting.

The characteristic distinctive details of the external morphology and the genitalia are described for each subfamily, tribe and genus below.

Noctuids inhabit various kinds of biotopes and all habital zones, except Antarctica. They are most diverse in tropical and subtropical forest and savannas, in temperate zone they are most diverse in broad-leaved forest and forest steppe regions. Highly specialised forms inhabit deserts, high mountains and the Arctic. Some species are able to make long migrations. Larvae feed on wide spectrum of arboraceous and herbaceous vascular plants; in some groups they feed on ferns, lichens, mosses, fungi, decaying plants. The majority of species are polyphagous or widely oligophagous. Some species have great economic significance by causing injury to agricultural plants. Life cycles are very variable; most species in temperate zone are univoltine, a smaller number of species are bivoltine; in tropics bivoltinism and multivoltinism predominate. Some species inhabiting extremely arid, montane or arctic habitats have life cycles lasting for two or several years. In the temperate zone the flight of moths is phenologically connected with certain seasons of the year.

The Noctuidae is the largest family in Lepidoptera. The number of described species estimated by different sources is from 35000 to 40000 species worldwide. The majority of species are found from the tropics northwards, very few species extend to the polar deserts on the coast and islands of the Arctic Ocean. The number of Palaearctic species is estimated to about 10000. Nearly 1500 species and 417 genera of 38 subfamilies are known from the Asian part of Russia; 27 subfamilies, 26 tribes, 178 genera and 530 species are treated in the present volume.

References: Eversmann 1855–1857; Butler 1878–1889; Staudinger & Rebel, 1901; Hampson 1903-1913, 1914, 1920; Seitz, [1907]–1914; 1938; Spuler 1908; Nye 1975; Klyuchko 1978, 2003; Chen, 1982, 1999; Sugi 1982a; Sugi & Jinbo 2004; Sugi (ed.), 1987; Holloway 1988, 1989, 1998, 2005, 2008, 2009; Poole 1989; Fibiger 1990, 1993, 1997; Fibiger *et al.* 2009; Fibiger & Hacker 2007; Hacker 1990; Hacker *et al.* 2005; Kononenko *et al.* 1998; Kitching & Rawlins 1999; Kononenko 2003, 2005; Kononenko & Han 2007; Beck 1999a-2000b; Speidel *et al.* 1996; Speidel & Naumann 2005; Sviridov 2003; Fibiger & Hacker 2005; Fibiger & Lafontaine 2005; Lafontaine & Fibiger 2006; Ronkay & Ronkay 1994, 1995; Ronkay *et al.* 2001; Goater *et al.* 2003; Ahola & Silvonen 2005, 2008.

1. Subfamily **Rivulinae** Grote, 1895

Rivulini Grote, 1895, *Proc. Am. phil. Soc.* 34: 419. Type genus: *Rivula* Guenée, [1845].

Synonymy: Rivulinae Beck, 1960.

Small moths. Ocelli absent. Antenna simple. Proboscis with unique microstructure unknown elsewhere in the Noctuidae (Speidel *et al.*1996a, 1996b). Frons fully scaled. Palps directed forward, somewhat extended. Tympanal organ of postspiracular type. Veins M2 and M3 on forewing parallel, not closed, separate basally. Vein M2 in hindwing well developed. Forewing pale yellow or brown-yellow with or without reniform stigma. Male genitalia simple, valva lobe-like. Vesica with fine granulation. Muscle m2 in male genitalia fixed on paratergal sclerite, m7 reduced and functionally substituted by m5 (Tikhomorov 1979). In female genitalia, ovipositor quadrangular, apophyses equal in length, ductus bursae membranous, corpus bursae elongated, extended proximally, bearing two large sclerotised signa.

The larva with five pairs of prolegs. It is characterised by the long barbed setae (like in arctiines and

acronictines); the dorsolateral movement of the SV3 seta on A1 and A2 to share a common pinaculum with L3 (giving the SV-group a bisetose appearance); the unreduced prolegs on abdominal segments 3 to 6. The larva of *Rivula* lacks the ventral prothoracic adenosma (?), as do those of the Arctiinae and Lymantriinae, the character known elsewhere only in *Hypena rostralis* (Speidel *et al*. 1996a) and in some genera of Pantheinae (Kitching & Rawlins, 1998). The known larvae feed on monocotyledonous plants.

The genera of Rivulinae were included in the Hypeninae by Kitching & Rawlins (1998) but they share no derived character states with the Hypeninae, so Rivulinae was recognised as a separate subfamily (Fibiger & Lafontaine 2005, Lafontaine & Fibiger 2006) based on several apomorphic character states. Nowacky & Fibiger (1998) included the genera *Phytometra*, *Parascotia* and *Colobochyla* in Rivulinae; later they were placed in other subfamilies (Fibiger & Lafontaine 2005, Fibiger & Hacker 2005).

The subfamily contains about 10-12 unrevised genera in the Old and New Worlds mainly in subtropical and tropical areas. One genus with 10 species is known from the Palaearctic, two species are known from Siberia.

References: Kitching 1984; Speidel *et al*. 1996; Kitching & Rawlins 1999; Fibiger & Lafontaine 2006; Lafontaine, Fibiger 2006; Holloway 2008.

Genus ***Rivula*** Guenée, [1845] 1844

Rivula Guenée, [1845] 1844, *in* Duponchel, *Cat. meth. Lepid. Eur.* (2): 206. Type-species: *Phalaena sericialis* Scopoli, 1763 [Europe: Slovenia].

Synonymy: *Motina* Walker, 1863; *Ploteia* Walker 1863, praeocc. (Walker, [1858] 1857, Lepidoptera); *Cholimma* Walker, 1864; *Rhazunda* Walker, 1866; *Pasira* Moore, 1882 preocc. (Stall, 1859, Hemiptera); *Rivulana* Bethune-Baker, 1911; *Alikangiana* Strand, 1920; *Paurosceles* Turner, 1945; *Thopelia* Nye, 1975, replacement name

.Wingspan 18-21 mm. Antennae filiform, ciliate; labial palps directed forward, somewhat extended; veins M2 and M3 on forewing parallel, basally separate; vein M2 in hindwing well developed; ground colour of forewing pale yellow or brown-yellow or brown, wing pattern often partly or completely reduced. Male genitalia simple: uncus sickle-like, valva lobe-like, sacculus narrow, harpe absent. Aedeagus short, vesica with fine granulation. In female genitalia, anterior and posterior apophyses equal in length, ductus bursae membranous, corpus bursae elongated, extended in proximal part, bearing two large sclerotised signa.

About 50 species are known in the world, mainly in subtropical and tropical areas. – 2 species.

Rivula sericealis (Scopoli, 1763)

(Pl. 1: 43, 44; ♂ genit. Pl. 25: 3; ♀ genit. Pl. 121: 3)

Phalaena sericealis Scopoli, 1763, *Ent. Carniolica*: 242 (Type-locality: Europe: Slovenia).

Synonymy: *munda* Hufnagel, 1766; *ochracea* Moore, 1882; *distincta* Rothschild, 1920; *dubitatrix* Bryk, 1948.

Bionomics. Hygrophilous common species, inhabits different kinds of humid biotopes, occurs in various damp forests, meadows, bogs, bushes along rivers. Univoltine in the north, bivoltine in the south, with two overlapping generations. The moth flies from early VI to IX. Larvae feed on grasses: *Calamagrostis*, *Poa*, *Brachypodium* (Poaceae), sedges (*Carex*, Cyperaceae) and *Urtica* (Urticaceae).

Distribution (Map 3). Trans-Palaearctic, temperate. Russia, through S Siberia to the Far East, Sakhalin and Kuriles. – From N Africa and Near East, Central Asia to Europe, to Korea, Japan, China, Vietnam and N India.

Rivula unctalis Staudinger, 1892

(Pl. 1: 45, 46; ♂ genit. Pl. 25: 4; ♀ genit. Pl. 121: 4)

Rivula unctalis Staudinger, 1892, in Romanoff, *Mém. Lépid.* **6**: 631 (Type-locality: Russia: "Ussuri" [Primorye terr.]).

Diagnosis. A little known species, which differs from *R. sericealis* in uniform pale greyish-yellow colour of forewing without wing pattern and brownish shadow along the outer margin.

Bionomics. Meso-hygrophilous species, occurs in wet deciduous forest, bushes along rivers. The moth flies in VII and VIII. The larva and its foodplants are unknown.

Distribution (Map 4). Manchurian, nemoral. Far East (S Khabarovsk terr., Primorye, S Kuriles: Kunashir Isl.). – Korea, Japan (Hokkaido).

Note. The holotype of *R. unctalis* is figured on Pl. 1: 45, Pl. 25: 4.

2. Subfamily **Boletobiinae** Guenée [1858] 1857

Boletobidae Guenée, [1858] 1857, in *Boisduval & Guenée*,*Hist. nat. Insectes* (Spec. gén. Lépid.) 9: 328. Type genus: *Boletobia* Boisduval, 1840 (=*Parascotia* Hübner, [1825]).

Synonymy: Boletobiini Grote, 1895.

Small, broad-winged, geometrid-like moths. The labial palps long, thin, roughly-scaled (unlike the blade-like palps of the herminiines and hypenines). The frons is fully scaled as in Rivulinae. Antenna of male bipectinate. Wings usually dark brown. In male genitalia uncus rather massive, relatively short, extended

apically; vinculum and tegumen broad, equal in length or tegumen higher than vinculum; juxta plate-like or with deep split distally; valva basally broad, apex tapered, with 2-3 extensions on the costal side; sacculus long and narrow; clasper in transverse position, harpe if present short. Aedeagus usually short, vesica short with large spine-like cornutus. In female genitalia, anterior apophyses reduced, very short, about ¼ length of posterior ones; papillae anales usually very broad; ductus bursae broad and short, slightly sclerotised, corpus bursae rather small, rounded, sclerotised in proximal part.

Larvae with reduced prolegs and three normally positioned SV setae on A1 and A2 (unlike the Rivulinae). The known larvae feed on fungi or decaying plant material.

Earlier authors included the genus *Parascotia* variously in subfamily Catocalinae, Hypeninae, Calpinae (in broad concept of Goater *et al*. 2003), or Rivulinae. Fibiger & Lafontaine (2005) restored the status of the subfamily. The subfamily includes 5 genera in the New and Old World. *Parascotia* with five species is the only genus known from the Palaearctic. Holloway (2005) referred the genera *Hypostrotia*, *Anathata* and *Diomea* to Boletobiinae. However, here they are considered to belong in Aventiinae because they correspond better with the morphological concept of that subfamily. Most species distributed in the Mediterranean subregion. *Parascotia fuliginaria* is Holarctic, introduced to N America by man.

References: Fibiger & Lafontaine 2006; Lafontaine, Fibiger 2006; Holloway 2008.

Genus ***Parascotia*** Hübner, [1825]1816

Parascotia Hübner, [1825] 1816, *Verz. bekannter Schmett.*: 314. Type-species: *Geometra carbonaria* [Denis & Schiffermüller], 1775 [Austria].

Synonymy: *Boletobia* Boisduval, 1840; *Bolitobia*: Agassiz, 1846, emend.; *Kara* Matsumura, 1925.

Wingspan 20-28 mm. Antennae of male bipectinate; labial palps long, thin, with short 3rd segment; forewings broad, dark brown, with pale yellowish-grey wing pattern. In male genitalia, uncus moderately massive, extended apically; valva basally broad, apex tapered, with three extensions on the costal side. Aedeagus with large spine-like cornutus. In female genitalia, anterior apophyses reduced, very short, about ¼ length of posterior ones; ductus bursae wide, slightly sclerotised, corpus bursae rather small, short, rounded. Larvae feed on bracket-fungi, lichens and algae.

Palaearctic genus with 5 species, four of which are known from western Palaearctic. – 1 species.

Parascotia fuliginaria (Linnaeus, 1761)

(Pl. 1: 47, 48; ♂ genit. Pl. 25: 5; ♀ genit. Pl. 121: 5)

Phalaena fuliginaria Linnaeus, 1761, *Fauna Suecia* (Edn 2): 327 (Type-locality: *Geometra carbonaria* [Denis & Schiffermüller], 1775 [Sweden]) (= *Phalaena fuliginaria* Linnaeus, 1761).

Synonymy: *carbonaria* [Denis & Schiffermüller], 1775; *lignaria* Fabricius, 1794; *lunulata* Fabricius, 1794; *sachalinensis* Matsumura, 1925; *mineta* Franclemont, 1985.

Bionomics. Meso-hygrophilous species, occurs in old deciduous, and mixed forests. Rather rare. One generation in a year. The flight period is from late VI to IX. Larvae feed on bracket-fungi (*Polystictus*, *Polyporus*, *Corticium*, *Stereum*, *Daldinia*, and Polyporaceae), lichens (*Cladonia*, *Parmelia* (Lichenophyta), moss *Tortula muralis* (Bryophyta) and algae (*Protococcus viridis*). Overwinters in larval stage.

Distribution (Map 5). Trans-Eurasian - introduced Holarctic, boreal. In Palaearctic, occurring in forest zone from Europe through Ural and S Siberia to Transbaikalia, Amur reg. and Sakhalin I. In N America introduced by man (Mikkola *et al*.1991).

3. Subfamily **Hypenodinae** Forbes, 1954

Hypenodinae Forbes, 1954, *Mem. Cornell Univ. agric. Exp.* Stn 329: 381. Type genus: *Hypenodes* Doubleday, 1850.

Small moths with narrow forewing, wingspan 14-18 mm. Labial palps straight or sickle-like, directed forward, larger than head. Antenna of male filiform. Veins R2-R4 on forewing on common trunk. Veins Cu1 and M1 in hindwing on short trunk. Ocelli in most genera absent, in some genera present. Frons is fully scaled. Beck (1999 – 2000) characterizes the subfamily based on two derived character states of larvae: the loss of one of the SV setae on A2 of the larvae giving the SV group a unique 3–2 count on the first two segments, and the first four abdominal segments are swollen, being 1-2 times as wide as the thoracic segments. The known larvae feed on low herbaceous plants and mosses, in late instars they feed on dry leaves or below ground on roots of plants (Yoshimatsu & Nishioka 1995).

Hypenodinae was originally based on genera that have lost the ocelli, but the group was expanded by Franclemont & Todd (1983) and Kitching & Rawlins (1998) to include several Nearctic groups in which the ocelli are present (Fibiger & Lafontaine 2005).

Kitching & Rawlins (1998) used the name Strepsimaninae for this group of genera, but Fibiger & Lafontaine (2005) excluded *Strepsimanes* from the Hypenodinae and considered Hypenodinae and Strepsimaniinae as two distinct subfamilies. The subfamily includes seven genera in the Old and New Worlds. Two genera, *Hypenodes* and *Schrankia* are present in the Palaearctic fauna; most species are known from the Pacific area.

References: Inoue 1979; Kitching 1984; Speidel *et al*. 1996; Kitching & Rawlins 1999; Fibiger & Lafontaine 2006; Lafontaine, Fibiger 2006; Holloway 2008.

Genus ***Hypenodes*** Doubleday, 1850

Hypenodes Doubleday, 1850, *Zoologist*, Appendix: cv. Type-species: *Hypenodes humidalis* Doubleday, 1850 (= *Hypenodes turfosalis* Wocke, 1850) [Ireland].

Synonymy: *Schrankia* Herrich-Schäffer, 1845, preocc. (Hübner, [1825], 1816 [Lepidoptera, Noctuidae]); *Tholomiges* Lederer, 1857; *Schranckia*: Walker, [1859] 1858, emend.; *Menopsimus* Dyar, 1907.

Small moths, wingspan 14-19 mm. Antenna filiform; labial palps long, sickle-like, directed forward, the 3rd segment thin, pointed. Forewing narrow, venation without additional cell. In male genitalia, uncus long, straight; valva narrow, with parallel costal and ventral margins; sacculus often with club-like extension. In female genitalia, ovipositor quadrangular, ductus bursae long, membranous, corpus bursae elongated.

The genus includes 18 species distributed in the Old and New Worlds. – 2 species.

Hypenodes humidalis Doubleday, 1850

(Pl. 1: 7, 8; ♂ genit. Pl. 25: 6; ♀ genit. Pl. 121: 6)

Hypenodes humidalis Doubleday, 1850, *Zoologist*, Appendix: cv (Type-locality: Ireland, Great Britain).

Synonymy: *turfosalis* Wocke, 1850.

Bionomics. Hygro-tyrphophilous, rather rare and local species, inhabits humid wooded biotopes, bogs, marshes, more frequent in waterside meadows, peat bogs. Two generations from late V to VII and from VIII to IX. Larvae feed on mosses and vascular plants: *Sphagnum* (Bryophyta); *Erica* (Ericaceae); *Comarum palustre*, *Potentilla* (Rosaceae); *Juncus*, *Luzula* (Juncaceae); *Carex*, *Eriophorum* (Cyperaceae).

Distribution (Map 6). Eurasian, boreal. Russia, in forest zone through S Siberia to Transbaikalia and Far East, to Sakhalin. – N and C Europe, Japan (Hokkaido) and Korea.

Hypenodes rectifascia Sugi 1982

(Pl. 1: 9-11; ♂ genit. Pl. 26: 1; ♀ genit. Pl. 121: 7)

Hypenodes rectifascia Sugi 1982, *Moths of Japan* **1**: 899, **2**: Pl. 220: 21 (Type-locality: Japan, Honshu, Saitama Pref., Iruma, Bushi).

Diagnosis. Differs from the related *H. humidalis* in presence of wide, contrasting dash bordered with narrow white line in the medial field, as well as in structures of male and female genitalia.

Bionomics. Mesophilous, little known species, collected in Primorye in broad-leaved forests in VII. The larva and its foodplants are unknown.

Distribution (Map 7). Manchurian, nemoral. Far East (S Primorye). – Korea, Japan (Honshu, Kyushu).

Note. The paratype of *H. rectifascia* is illustrated on Pl. 1: 9.

Genus ***Schrankia*** Hübner, [1825] 1816

Schrankia Hübner, [1825] 1816, *Verz. bekannter Schmett.*: 345. Type-species: *Pyralis taenialis* Hübner [1809] [Europe].

Synonymy: *Hypenodes* Guenée, 1854, preocc. (Doubleday, 1850 [Lepidoptera, Noctuidae]); *Costankia* Beck, 1996.

Small moths, wingspan 14-19 mm. Antenna of male filiform, ciliate; labial palps thin, long, twice as long as head, directed forward, 3rd segment thin, pointed. Head and 2nd segment of abdomen with tufts of scales. Legs long. Forewing narrow or moderately narrow. In male genitalia, uncus massive, sickle-like; costa often separated from membrane of valva; sacculus often with long extension, asymmetrical in some species; cucullus or apical part of costa in some species with tuft of scales. Aedeagus long, thin, rarely moderate. In female genitalia, ovipositor quadrangular, ductus bursae thin, very long, membranous, corpus bursae rounded, with or without small signa.

The genus includes 33 species distributed in the Old and New Worlds, mainly in tropical zone. – 4 species.

Schrankia costaestrigalis (Stephens, 1834)

(Pl. 1: 12-15; ♂ genit. Pl. 26: 2; ♀ genit. Pl. 121: 8)

Cledeobia costaestrigalis Stephens, 1834, *Ill. Brit. Ent.* (Haustellata) **4**: 20, 45 (Type-locality: Great Britain).

Synonymy: *costistrigalis* var. *lugubris* Dannehl, 1925.

Bionomics. Meso-hygrophilous species, occurs in various humid waterside meadows, bushes along rivers or lake shores. Rather rare. Bivoltine, with two overlapping generations from late V to IX. Larvae feed on *Clematis* (Ranunculaceae); *Calluna vulgaris* (Ericaceae), *Salix* (Salicaceae), *Rosa* (Rosaceae), *Galeopsis*, *Mentha*, *Origanum vulgare*, *Thymus serpyllum* (Lamiaceae), *Melampyrum* (Scrophulariaceae), Campanulaceae (*Campanula*), *Lactuca*, *Solidago* (Asteraceae). In Japan recorded as a pest of roots of broad bean (*Vicia faba*) below ground (Yoshimatsu & Nishioka 1995).

Distribution (Map 8). Palaeotropical, multiregional. Far East (S Khabarovsk and Primorye terr.). – Africa, Canary Isles, Madeira, Azores, Europe, Near East, Central Asia, Korean peninsula, Japan (except Hokkaido); Australia, New Zealand.

Note. Recorded in the south of Khabarovsk terr. by Dubatolov & Dolgih (2009).

Schrankia separatalis (Herz, 1904)

(Pl. 1: 16-18; ♂ genit. Pl. 26: 3; ♀ genit. Pl. 121: 9)

Hypenodes separatalis Herz, 1904, *Ann. Mus. Zool. Acad. imp. Sci. St.-Pétersb.* **9**: 331, pl. 1: 7 (Type-locality: N Korea: 38. 5 N, 128 E).

Synonymy: *squalida* Wileman & South, 1917.

Bionomics. Meso-hygrophilous species, inhabits humid broad-leaved forest, humid meadows along rivers or lake shores, bushes. Rather local and rare. The moth flies from mid VII to mid VIII. Early stages and foodplants unknown.

Distribution (Map 9). Manchurian, nemoral. Far East from S Khabarovsk and Primorye terr. to Sakhalin and S Kuriles (Kunashir and Shikotan Isl.). – Korea, N China, Japan.

Schrankia kogii Inoue, 1979

(Pl. 1: 19; ♂ genit. Pl. 26: 4; ♀ genit. Pl. 122: 1)

Schrankia kogii Inoue, 1979, *Tinea* **10**: 304: 5, 11 (Type-locality: Japan: Hokkaido).

Diagnosis. Differs from related *S. separatalis* in pale greyish forewing colour, oblique and dentate ante- and postmedial lines and prominent dark reniform stigma.

Bionomics. Meso-hygrophilous, rare and little known species, collected in Primorye on wet meadows in open broad-leaved forest. Flight period VII. The larva and its foodplants are unknown.

Distribution (Map 10). Manchurian, nemoral. Far East (S Primorye). – Korea, Japan (Hokkaido, Honshu).

Schrankia balneorum (Alphéraky, 1880)

(Pl. 1: 20, 21; ♂ genit. Pl. 26: 5; ♀ genit. Pl. 122: 2)

Hypenodes balneorum Alphéraky, 1880, *Horae Soc. ent. ross.* 15: 137 (Type-locality: Caucasus).

Bionomics. Meso-xerophilous species, occurring in S Ural in lowland steppe, rocky hills and wet meadow along the riversides. Local and rather rare. The moths have been collected in VII in wet meagow along river, surrounded by steppe slope (Nupponen & Fibiger 2002). The larva and its foodplants are unknown.

Distribution (Map 11). West-Asian, subboreal. SE Russia, S Ural. – Ukraine (Crimea), Near East, Caucasus, Central Asia (Turkmenia).

4. Subfamily **Araeopteroninae** Fibiger, 2005

Araeopteroninae Fibiger, 2005. *Esperiana* 11: 25. Type genus *Araeopteron* Hampson, 1893.

The subfamily comprises rather uniform and small or very small moths with quadrifinae venation. The most conspicuous autapomorphic character states defining the Araeopteroninae are: in external appearance small size and the shape of wings with long, narrow, pointed forewing, and short rounded hindwing, in the male genitalia the shape of the tegumen, the articulation of uncus, the structure of the valve, and in the females the patch between the ovipositor lobes on ventral side, and the shape of the signum in the corpus bursae (Fibiger & Hacker 2007, Fibiger and & Lafontaine 2005, Fibiger & Kononenko 2008).

The earlier authors placed the genus *Araeopteron* to the subfamily Erastrianae (*sensu* Hampson 1910) or in Acontiinae (*sensu* auctorum) (Inoue 1958, 1965; Sugi 1892; Kononenko 1990; Kononenko *et al.* 1998; Fibiger & Hacker 2001). At present, it includes only one Old World genus, *Araeopteron* with 40 described species and many undescribed ones. In addition to *Araeopteron*, the New World genus *Sigela* Hulst, 1896 may belong in the Araeopteroninae (Fibiger, Lafontaine, 2005).

References: Inoue, 1958, 1965; Fibiger & Hacker 2001; Fibiger & Lafontaine 2005; Fibiger & Kononenko 2008.

Genus ***Araeopteron*** Hampson, 1893

Araeopteron Hampson, 1893, *Illust. typical Specimens Lepid. Heterocera Colln Br. Mus.* **9**:33, 136. Type-species: *Araeopteron pictale* Hampson, 1893 [Sri Lanka].

Synonymy: *Araeopterum* Hampson, 1895, emendation; *Thelxinoa* Turner, 1902; *Essonistis* Meyrick, 1902; *Araeopterella* Fibiger & Hacker, 2001; *Araeoptera* Hampson, 1910, emendation.

Small and very small species, wingspan 9-18 mm. Forewing narrow, with oblique outer margin and long fringes; hindwing shorter than forewing, with shallow concavity under apex; wing colour grey or brown grey, reniform stigma black; frons scaled. In male genitalia, tegumen short, broad, twisted medially; vinculum short and broad; uncus with long coecum; costa and cucullus membranous; sacculus sclerotised, narrow; apex of sacculus spatulate or club shaped. In female genitalia, a small raised membranous or lightly sclerotised patch or low cone covered with long hair-like setae lies between posterior ends of anal papillae; signum cone-like or hat-like with a rounded top, fringed basally with spines; sometimes signum as relatively large, flat plate. Larva and food specialisation unknown.

The genus includes 40 described species and many undescribed ones distributed mainly in Oriental and Ethiopian regions and in the eastern Palaearctic. Four species are known in Korea and Japan. – 6 species.

Araeopteron amoena Inoue, 1958

(Pl. 1: 22-24; ♂ genit. Pl. 26: 6; ♀ genit. Pl. 122: 3)

Araeopteron amoena Inoue, 1958, *Tinea* **4**: 230: 2 (Type-locality: Japan: Kanagawa Pref., Chigasaki).

Diagnosis. Adult easily distinguishable from other East Asian species by the dark-grey colour of the forewing and broad reddish-brown basal area on the hindwing. The male genitalia differ from allied species by having large spine-like extensions of the harpe and armature of the vesica, with a patch of 10 – 15 small, thin spines. Females differ by the large, plate-like signum, with long, mostly anteriorly directed spines in the posterior part of the corpus bursae.

Bionomics. Mesophilous species, inhabits broad-leaved and mixed forests, bushes. The moth flies from early VII to mid VIII. Rather common. The larva and its foodplants are unknown.

Distribution (Map 12). Manchurian, nemoral. Far East (S Khabarovsk, Primorye terr., S Sakhalin, S Kuriles). – China, Korea, Japan.

Araeopteron fragmenta Inoue, 1965

(Pl. 1: 25-26; ♂ genit. Pl. 27: 1; ♀ genit. Pl. 122: 4)

Araeopteron fragmenta Inoue, 1965, *Tinea* **7**: 81, pl., 15: 5A, 5B (Type-locality: Japan, Kanagawa Pref., Fujisawa).

Diagnosis. Adult differs from other East Asian species by the presence of a broad oblique whitish band and prominent small black discal spots on forewing and hindwing. The male genitalia differ in having a short uncus, narrow membranous part of valva and absence of cornuti in vesica, and the carina of the aedeagus finely scobinate. The female differs by having a long and broad, slightly sclerotised ductus bursae and the shuttlecock-shaped signum.

Bionomics. Mesophilous species, occurs in broad-leaved forests. The moth in flight from early VII to mid VIII. Rather rare. The larva and its foodplants are unknown.

Distribution (Map 13). Manchurian, nemoral. Far East (S Khabarovsk, Primorye terr.). – Korea, Japan.

Note. The species was recently reported for south of Khabarovsk terr. by Dubatolov & Dolgih (2009).

Araeopteron nebulosa Inoue, 1965

(Pl. 1: 31-33; ♂ genit. Pl. 27: 2; ♀ genit. Pl. 122: 5)

Araeopteron nebulosa Inoue, 1965, *Tinea* 7: 82, pl. 15: 4A, 4B (Type-locality: Japan: Shizouka Pref., Odaru Spa.).

Diagnosis. *A. nebulosa* is distinguished from other East Asian *Araeopteron* species by the pale grey ground colour of wings, with well marked dark pattern and a prominent black discal spot. The male genitalia differ in having a relatively long, subapically bent uncus and presence of three small pointed, triangular ampullae; vesica with long, broad sclerotised patch of small, narrow spines. The female differs by having broad shuttlecock-shaped signum with moderately long spines.

Bionomics. Mesophilous species, inhabits broad-leaved woodlands. Rather rare. The moth flies from early VII to mid VIII. The larva and its foodplants are unknown.

Distribution (Map 14). Manchurian, nemoral. Far East (S Primorye terr.). – Korea, Japan (Honshu, Shikoku, Kyushu).

Araeopteron ussurica Fibiger & Kononenko, 2008

(Pl. 1: 27, 28; ♂ genit. Pl. 27: 3)

Araeopteron ussurica Fibiger & Kononenko, 2008, *Zootaxa* 1891: 50, figs 9, 10, 17 (Type-locality: Russia, Primorye terr., Gornotaezhnoe).

Diagnosis. *A. ussirica* is distinguishable from other East Asian *Araeopteron* species by its small size; the whitish patches on forewing; the shape of the apically club-like sacculus; the low, hill-like ampulla; the short, broad aedeagus; and the narrow patch on the vesica, with many small cornuti.

Bionomics. Mesophilous species, collected in late VII in rich mixed coniferous forests on elevation to 300-400 m and in lowland broad-leaved forest. The larva and its foodplants are unknown.

Distribution (Map 15). Manchurian–continental, nemoral. Far East (S Primorye terr.).

Araeopteron makikoae Fibiger & Kononenko, 2008

(Pl. 1: 29-30; ♂ genit. Pl. 27: 4; ♀ genit. Pl. 122: 6)

Araeopteron makikoae Fibiger & Kononenko, 2008, *Zootaxa* 1891: 49, figs 7, 8, 16, 24, 29 (Type-locality: Russia, Primorye terr., Gornotaezhnoe).

Diagnosis. *A. makikoae* differs from related species by the well marked and patterned, dark grey ground colour; the smoothly rounded dorsal part of valva; the almost equally wide and curving sacculus; lack of an ampulla; the spined, broad patch on the vesica; and the shape of the signum.

Bionomics. Mesophilous species, collected in Primorye in rich broad-leaved forests and mixed mountaine *Picea-Pine* forest. The moth flies from early VII to mid VIII. The larva and its foodplants are unknown.

Distribution (Map 16). Manchurian–continental, nemoral. Far East (S Primorye terr.).

Araeopteron patella Fibiger & Kononenko, 2008

(Pl. 1: 34; ♂; ♀ genit. Pl. 122: 7)

Araeopteron platena Fibiger & Kononenko, 2008, *Zootaxa* 1891: 51, figs 12, 22, 27 (Type-locality: Russia, Primorye terr., Krounovka).

Diagnosis. *A. patella* is distinguishable from allied species by the less oblique, less narrow forewing; the shape of the antrum; and the shape and armature of the broad, plate-like signum in the female genitalia.

Bionomics. Mesophilous species, collected in Primorye in rich broad-leaved forests. The moth flies from early VII to mid VIII. The larva and its foodplants are unknown.

Distribution (Map 17). Manchurian–continental, nemoral. Far East (S Primorye terr.). – S Korea.

5. Subfamily **Eublemminae** Forbes, 1954

Eublemmini Forbes, 1954, *Mem. Cornell Univ. agric. Exp.* Stn 329: 271. Type genus: *Eublemma* Hübner, [1821].

Synonymy: Anthophilidae Duponchel, [1845] 1844 unavailable (art. 39 ICZN); Micradi Stephens, 1850; Eublemmini Franclemont & Todd, 1983.

Small, rarely medium sized moths, Wingspan from 12-20 mm. Antenna simple. Proboscis developed, in some genera rudimental. Frons flat, the scales on the lower half of the clypeofrons are deciduous. In many genera the scales on vertex form characteristic “cap”. The palps relatively short, in many genera beak-like or

cutter-like. Forewing venation without cell. Vein M2 in hindwing well developed. Wings usually broad, triangular, in most species brightly coloured, the main line elements of forewing pattern recurrent to hindwing. In male genitalia, a free pleural sclerite is absent (fused to tegumen); valve broadest medially; cucullus membranous; clasper and digitus, if present, closely linked or mostly fused on the inner surface of the valve. The structure of juxta is characteristic of the subfamily; it is often balloon-like or hat-like, heavily fused to the saccular base of the valve. In female genitalia, antrum and the posterior part of the ductus bursae sclerotised, with a membranous band between them; basal part of corpus bursae and appendix bursae curling. The body of the larva is thickest near the middle (A5 and A6) and tapered to each end. The larva has three SV setae on A1.

The subfamily was segregated by Fibiger & Lafontaine (2005) from artificial assemblage Erastrianae (*sensu* Hampson, 1910) [Jaspidiinae (*sensu* auctorum) or Acontiinae (*sensu* auctorum) in most recent literature] and partly Catocalinae (*sensu* auctorum). The subfamily was divided by Fibiger & Lafontaine (2005) into two tribes Eublemmini and Pangraptini, however the last morphologically is very distinct from Eublemminae and considered here as a distinct subfamily. The subfamily Eublemminae and allied groups require generic revision with account of taxa of tropical fauna.

In many genera moths have diurnal activity, but many are nocturnal. Eublemminae are most diverse in the south of the temperate zone, in arid areas as well as in subtropical and tropical regions. Many taxa of Eublemminae are xerothermic, well adopted to arid climate and inhabit very hot, dry steppe, semi deserts and deserts. Most known larvae feed on flowers of herbaceous plants with preference for Asteraceae.

Worldwide distributed subfamily, most species are concentrated in subtropical and tropical regions, some groups are characteristic of arid steppe zone. Over 500 species in the world fauna. – 3 genera and 16 species in Asian part of Russia.

Genus ***Odice*** Hübner, [1823]

Odice Hübner, [1823] 1816, *Verz. bekannter Schmett.*: [258]. Type-species: *Noctua inamoena* Hübner, [1803] [Europe] (= *Phalaena arcuinna* (Hübner, 1790).

Synonymy: *Glossodice* Berio, 1991.

Wingspan 21-36 mm. Very close to the genus *Eublemma*. Frons smooth; antennae of male ciliate; proboscis reduced, especially in male; labial palps directed obliquely forward, 2nd segment large, covered by dense scales, 3rd small, pointed; forewing wide with convex outer margin. In male genitalia, uncus sickle-like; juxta balloon-like; valva with parallel margins, slightly constricted in middle, rounded on the apex; costa short; sacculus narrow, harpe reduced, as small sclerotised extension. Aedeagus smaller than valva, vesica simple, with two short diverticula, without cornuti. In female genitalia, papillae anales large, sclerotised; anterior apophyses twice as long as posterior apophyses; ductus bursae sclerotised, corpus bursae short; ductus seminalis falls into small bulla in caudal part of corpus bursae.

The genus includes 11 species distributed in south-west Palaearctic and in N Africa. – 1 species.

Odice arcuinna (Hübner, 1790)

(Pl. 1: 49-51; ♂ genit. Pl. 27: 5; ♀ genit. Pl. 122: 8)

Phalaena arcuinna Hübner, 1790, *Beitr. Gesch. Schmett.* **2** (4): 93, pl. 4: O (Type-locality: Germany: Augsburg).

Synonymy: *inamoena* Hübner, [1803]; *argillacea* Tauscher, 1809; *pergrata* Rambur, 1858.

Bionomics. Xerophilous species, occurs in edge of dry pine wood, steppe biotopes, open hillsides, dry meadows. Univoltine. Moth in flight in VI-VII. Larvae feed on *Onosma echioides* (Asteraceae) in VIII and IV. Overwinters as larva.

Distribution (Map 18). Amphi-Palaearctic, subboreal. S Russia, to S Ural and Altai. – C and S Europe, Turkey, Caucasus, Transcaucasia, Central Asia, Mongolia, N China, Korea.

Genus ***Eublemma*** Hübner, [1821] 1816

Eublemma Hübner, [1821] 1816, *Verz. bekannter Schmett.*: 256. Type-species: *Noctua amoena* Hübner, [1803] [Europe] (= *Phalaena respersa* Hübner, 1790).

Synonymy: *Anthophilae* Hübner, [1806], suppr.; *Anthophila* Ochsenheimer, 1816, preocc. (Haworth, 1822 [Lepidoptera, Glyphipterigidae]); *Porphyrinia* Hübner, [1821] 1816; *Eromene* Hübner, [1821] 1816; *Trothisa* Hübner, [1821] 1816; *Ecthetis* Hübner, [1821] 1816; *Odice* Hübner, [1821] 1816; *Anthophya*: Duponchel, 1929, misspell.; *Heliomanes* Sodoffsky, 1837, replacement name; *Microphisa* Boisduval, 1840; *Micra* Guenée, 1841; *Microphysa*: Guenée, 1841, emend., preocc. (Westwood, 1834 [Hemiptera}); *Microphysa*: Agassiz, 1846, emend.; preocc. (Westwood, 1834 [Hemiptera]); *Glaphyra* Guenée, 1841, preocc. (Newman, 1840 [Coleoptera]); *Thalpochares* Lederer, 1853, replacement name; *Mixocharis* Lederer, 1853; *Autoba* Walker, [1863] 1864; *Silda* Walker, 1863; *Vescisa* Walker, 1864; *Zalaca* Walker, [1866] 1865; *Mestleta* Walker, 1865; *Eumestleta* Butler, 1892; *Eublemmoides* Bethune-Baker, 1906; *Coccidiphaga* Spuler, 1907; *Thalomicra* Spuller, 1907; *Zonesthiousa* Thierry-Mieg, 1907; *Polyorycta* Warren, 1911; *Gyophora* Warren, 1913; *Smicroloba* Warren, 1913; *Eumicremma* Berio, 1954; *Eupsoropsis* Berio, 1969; *Honeyania* Berio, 1989; *Rhyplaga* Nye, 1975; *Roseoblemma* Beck, 1996; *Panoblemma* Beck, 1996; *Parvablemma* Beck, 1996.

Small moths, wingspan 13-27 mm. Very similar to the preceding genus. Proboscis developed, in some species reducesd; labial palps curved, directed obliquely forward and upwards; forewing wide, triangular, costal margin straight, apex often tapered; wing colour usually bright, wing pattern represented by transverse lines. In male genitalia, uncus thin, sickle-like; juxta balloon-like; valva broadest medially; apical half of valva membranous; clasper and digitus (if present) closely linked on inner surface of valva. Aedeagus with long coecum; vesica without or with small cornuti or scobination. In female geni-

talia, papillae anales often sclerotised and tapered; apophyses usually long and strong; anterior apophyses twice as long as posterior ones; antevaginal plate sclerotised, postvaginal plate membranous; ductus bursae weakly sclerotised or membranous, often coiled before joining with bursa; corpus bursae usually elongated.

The genus includes 370 species distributed in the Old and New Worlds, mainly in arid, subtropical and tropical regions, in the Palaearctic region approximately 50 species. – 14 species.

Eublemma minutata (Fabricius, 1794)

(Pl. 1: 37, 38; ♂ genit. Pl. 27: 6; ♀ genit. Pl. 122: 98)

Phalaena minutata Fabricius, 1794, *Entomol. Syst.* **3**(1): 205 (Type-locality: Germany, Halle).

Synonymy: *noctualis* Hübner, 1796; *paula* Hübner, [1809].

Diagnosis. Differs from related *E. pulchralis* by paler, less contrasting wing pattern and colour and less acute central extension of the postmedial line.

Bionomics. Xero-thermophilous species, occurs in hot sandy areas: meadows and fringes of dry pine forests, sandy dunes, dry steppe slopes. Bivoltine and diurnal, flies from V to mid VI, then from VII to IX. Larvae feed inside shoots and flowers of *Helichrysum arenarium* and *Antennaria*, *Filago*, *Gnaphalium* (Asteraceae). The pupa overwinters.

Distribution (Map 19). European-West Asian, subboreal. S Russia to S Ural. – Europe, Near East, Kazakhstan.

[***Eublemma pulchralis*** (Villers, 1789)]

(Pl. 1: 39, 40; ♂ genit. Pl. 28: 1; ♀ genit. Pl. 123: 1)

Pyralis pulchralis Villers, 1789 *Car. linn. Ent.*, Fauna Suecica, **2**: 452 (Type-locality: Europe).

Synonymy: *candidana* Fabricius, 1794; *minuta* Hübner, [1809]; *perlana* Hübner-Geyer, [1830]); *rectifascia* Joanis, 1909; *parva* Duponchel, nec Hübner, 1803.

Diagnosis. Similar to *E. minutata* but differs by more contrast wing pattern with distinct medial fascia and acute extension of the postmedial line.

Bionomics. Xero-thermophilous species, inhabits dry steppe biotopes: sandy dunes, steppe slopes, edges of pine forests. In Ural and Kazakhstan one generation, the moth flies in VII. Larvae feed on *Helichrysum*.

Distribution (Map 20). European-West Asian, subboreal. SE Russia. – W Kazakhstan (Uralsk) in vicinity of Russian S Ural, S Europe, Near East (Turkey).

Eublemma ostrina (Hufnagel, 1808)

(Pl. 1: 52, 53; ♂ genit. Pl. 28: 2; ♀ genit. Pl. 123: 2)

Noctua ostrina Hufnagel, 1808, *Samml. eur. Schmett. Noct.* 2, 3, pl. 85: 399 (Type-locality: Europe).

Synonymy: *numida* Lukas, 1849; *carthami* Herrich-Schäffer, 1851; *aestivalis* Guenèe, 1852; *pseudostrina* Rotschild, 1914; *thasia* Koutsaftikis, 1973.

Bionomics. Xero-thermophilous species, occurs on dry warm rocky slopes, hillsides, dry steppe biotopes. Bivoltine, flies from late V to mid VII and from VIII to mid IX. Larvae feed on *Carlina vulgaris*, *C. corymbosa*, *Echinops ritro*, *E. sphaerocephalus*, *Helichrysum*, *Cynara* and *Cirsium* (Asteraceae).

Distribution (Map 21). Western Palaearctic, subboreal. S Russia to S Ural, Altai. – N Africa, S Europe, Near East, Central Asia, Kazakhstan, Mongolia, NE China.

Eublemma porphyrina (Freyer, 1845)

(Pl. 1: 54; ♂ genit. Pl. 28: 3; ♀ genit. Pl. 123: 3)

Anthophila porphyrina Freyer, 1845, *Neue Beitr. Schmett. Kde.* **5**: 93, pl. 437:3 (Type-locality: Russia, Ural).

Bionomics. Xero-thermophilous species, occurs in dry steppe biotopes, open hillsides, forest steppe. Univoltine, the moth flies in VII, pupa overwinters. The larva and its foodplants are unknown.

Distribution (Map 22). Uralian-S Siberian, subboreal. S Ural, ?Altai.

Eublemma parva (Hübner, 1808)

(Pl. 1: 41, 42; ♂ genit. Pl. 28: 4; ♀ genit. Pl. 123: 4)

Noctua parva Hübner, 1808, *Samml. eur. Schmett. Noct.* **2**: pl. 77: 356 (Type-locality: Europe).

Synonymy: *rubefacta* Mabille, 1869; *chalybea* Swinhoe, 1884.

Bionomics. Xero-thermophilous species, associated with *Artemisia* steppe, sandy dunes, limestone slopes and stony semi-deserts. The moth flies by day as well as at night in VI and VII; in southern areas in 2-3 generations. Larvae feed on flowers and seeds of *Centaurea calcitrapa*, *Helichrysum arenarium* and *Gnaphalium* (Asteraceae), reported also from *Lantana camara* (Verbenaceae) *and Ziziphus jujuba* (Rhamnaceae). The pupa overwinters.

Distribution (Map 23). Western Palaearctic, subboreal. S Russia, S Ural. – N and E Africa, Near East, S and C Europe (north to Denmark), Central Asia.

Eublemma panonica (Freyer, 1840)

(Pl. 1: 55, 56; ♂ genit. Pl. 28: 5; ♀ genit. Pl. 123: 5)

Anthophila panonica Freyer, 1840, *Neue Beitr. Schmett. Kde.* **4**: 67, pl. 330: 3, 4 (Type-locality: not stated).

Synonymy: *kindermannii* Boisduval, 1840; *lenis* Eversmann, 1844; *pannonica* auct.

Bionomics. Xerophilous species, occurs in dry xerothermic biotopes: *Artemisia* steppe, hillsides, sandy dunesT he moth flies in one generation from late V to late VII. Larvae feed on *Helichrysum arenarium* and *Gnaphalium* (Asteraceae). Overwinters as egg.

Distribution (Map 24). Western Palaearctic, subboreal. S Ural, Altai. – N Africa, Near East, S and C Europe, Kazakhstan, Central Asia.

Eublemma amasina (Eversmann, 1842)

(Pl. 1: 57, 58; ♂ genit. Pl. 28: 6; ♀ genit. Pl. 123: 6)

Anthophila amasina Eversmann, 1842, *Bull. Soc. imp. Nat. Mosc.* **1842** (3): 555 (Type-locality: Russia: Orenburg).

Synonymy: *paradisea* Butler, 1878.

Bionomics. Meso-xerophilous species, occurs in various hot, open biotopes: forest-steppe, dry forest meadows, warm hillsides, *Artemisia* steppe, sandy dunes. The moth flies in VII-VIII. Larvae feed on *Artemisia*; in Japan on *Cirsium nipponicum* (Asteraceae) (Miyata 1983).

Distribution (Map 25). Eastern Palaearctic, subboreal. S Ural, Altai, Tuva, Transbaikalia, Far East from Amur reg. to Primorye. – Central Asia, N China, Korea, Japan (except Hokkaido).

Eublemma rosea (Hübner, [1790])

(Pl. 1: 59, 60; ♂ genit. Pl. 29: 1; ♀ genit. Pl. 123: 7)

Noctua rosea Hübner, [1790*]*, *Beitr. Gesch. Schmett.* **2**(2): 50, pl. 3: R, and 2(4): 124 (Type-locality: Germany, Augsburg).

Synonymy: *rosina* Hübner, [1800-1803]; *schernhammer*i Rühl, 1890; s*inuata* Schwingenschuss, 1938; *decolorata* Wagner, 1913.

Bionomics. Xero-thermophilous species, inhabits dry steppe, rocky and sandy habitats, stony semi-deserts. Univoltine. The moth flies from end V to VII. Larvae feed on *Jurinea mollis* (Asteraceae).

Distribution (Map 26). Euro-Central Asian, subboreal. S Russia, S Ural, W Siberia, Altai, Tuva and Transbaikalia. – S and C Europe, Near East, Caucasus and Transcaucasia, Kazakhstan, Central Asia, Mongolia.

Eublemma purpurina ([Denis & Schiffermüller], 1775)

(Pl. 1: 61, 62; ♂ genit. Pl. 29: 2; ♀ genit. Pl. 123: 8)

Noctua purpurina [Denis & Schiffermüller], 1775, *Ank. Syst. Werk Schmett. Wien.*: 88 (Type-locality: [Austria], Vienna district]).

Synonymy: *secunda* Staudinger, 1901.

Bionomics. Xero-thermophilous species, inhabits steppe, forest-steppe and south of forest zone. Eurytopic species, occurs in steppe, various dry meadows, hillsides. Bivoltine, two overlapping generations from mid V to VI and from VII to mid X. Larvae are polyphagous, recorded on plants of 13 botanical families, most often reported from *Cirsium*, *Echinops and Scabiosa* (Asteraceae) and *Dictamnus albus* (Rutaceae). The pupa overwinters.

Distribution (Map 27). Western Palaearctic, subboreal. S Ural, W Siberia, Altai, Transbaikalia. – N Africa, Near East, C and S Europe, Caucasus and Transcaucasia, Central Asia, Kazakhstan.

Eublemma amoena (Hübner, [1803])

(Pl. 1: 63, 64; ♂ genit. Pl. 29: 3; ♀ genit. Pl. 124: 1)

Noctua amoena Hübner, [1803], *Samml. Eur. Schmett.* **4**: pl. 61: 300 (Type-locality: Europe).

Synonymy: *respersa*; Hübner, 1790, nec Denis & Schiffermüller, 1775; *rata*: Treitschke, 1826, nec Guenèe, 1852; *bythynica* Bethune-Baker, 1888.

Bionomics. Xerophilous species, occurs in steppe biotopes, hillsides, dry agricultural fields. Bivoltine, the flight period is from mid V to mid VII and VIII-IX. Larva monophagous on *Onopordum acanthium* (Asteraceae). The pupa overwinters.

Distribution (Map 28). Euro-Central Asian, subboreal. S Russia to S Ural. – S Europe, Near East, Caucasus, Central Asia.

Eublemma pallidula (Herrich–Schäffer, 1856)

(Pl. 1: 65; ♂ genit. Pl. 29: 4; ♀ genit. Pl. 124: 2)

Micra pallidula Herrich–Schäffer, 1856, *Syst. Bearb. Schmett. Eur.* **6**: 178 (Type-locality: Turkey, Amasia).

Synonymy: *cypriaca* Staudinger, 1878; *mardina* Staudinger, 1901; *squalida* Staudinger, 1879.

Bionomics. Xerophilous species, occurs in steppe biotopes, grasslands near seashore, hillsides. Univoltine, the flight period is from late VI to mid VII. The larva and its foodplants are unknown.

Distribution (Map 29). Euro-Central Asian, subboreal. S Russia to S Ural. – S Europe (Cyprus), S Ukraine, Near East, Caucasus, Transcaucasia, Central Asia, Kazakhstan.

Eublemma parallela (Freyer, 1842)

(Pl. 1: 66; ♂ genit. Pl. 29: 5; ♀ genit. Pl. 124: 3)

Anthophila parallela Freyer, 1842, *Neue Beitr. Schmett. Kde.* **4**: 123, pl. 360: 2 (Type-locality: S Russia, Sarepta).

Synonymy: *concinnula*; Herrich–Schäffer, 1856, nec Boisduval, 1840; *densata* Warren, 1912.

Bionomics. Xerophilous species, inhabits steppe and dry steppe zone. The moth flies in V-VII. The larva and its foodplants are unknown.

Distribution (Map 30). Euro-Central Asian, subboreal. S Russia to S Ural. – SE Europe (S Ukraine). Kazakhstan (including S Altai), Near East, Caucasus, Transcaucasia, Central Asia.

Eublemma pusilla (Eversmann, 1834)

(Pl. 1: 67, 68; ♂ genit. Pl. 29: 6; ♀ genit. Pl. 124: 4)

Erastria pusilla Eversmann, 1834, *Bull. Soc. imp. Nat. Mosc.* 1837: 50 (Type-locality: Russia, Ural: Orenburg).

Synonymy: *concinnula*: Boisduval, 1840; *proxima* Fischer de Waldheim, 1840.

Diagnosis. Differs from related *E. parallela* in smaller size, more contrasting wing pattern with distinct fine lines bordering postmedial and subterminal fasciae.

Bionomics. Xerophilous species, occurs in various steppe biotopes. The flight period is VI-VII. The larva and its foodplants are unknown.

Distribution (Map 31). Euro-Central Asian, subboreal. SE Russia to S Ural and W Siberia. – Near East, Caucasus and Transcaucasia, S Ukraine, Kazakhstan (including S Altai), Mongolia.

Eublemma polygramma (Duponchel, 1842)

(Pl. 1: 69; ♂ genit. Pl. 30: 1; ♀ genit. Pl. 124: 5)

Anthophila polygramma Duponchel, 1842, *Hist. Nat. Lep. France* **3**: 519, pl. 44: 3 (Type-locality: South France).

Synonymy: *argillacea* Eversmann, 1844); *nuda* Christoph, 1862); *violetta* Staudinger, 1889.

Bionomics. Xero-thermophilous, rather rare

species, occurs in hot hill sides, *Artemisia* steppe biotopes, in calcareous rocky steppe. Bivoltine, generations overlapping in V and VI-VIII. The larva and its foodplants are unknown.

DISTRIBUTION (Map 32). Western Palaearctic, subboreal. S Russia to S Ural. – N Africa, Near East, Caucasus and Transcaucasia, C and S Europe, Kazakhstan, Central Asia.

Genus ***Metachrostis*** Hübner, [1820] 1816

Metachrostis Hübner, [1820] 1816, *Verz. bekannter Schmett.*: 204. Type-species: *Noctua velox* Hübner, [1813] [Europe].

SYNONYMY: *Leptosia* Guenée, 1841, preocc. (Hübner, 1818 [Lepidoptera, Pieridae]).

Small moths, wingspan 18-24 mm. Close to *Eublemma*. Frons smooth, labial palps curved, sickle-like; forewing rather wide, triangular, costal margin straight, outer margin convex, apex often rounded; wing colour usually pale brown or brown, wing pattern developed, formed by four transverse lines (basal, subbasal, medial and subterminal), usually with 3-4 dark triangular costal spots at the base of corresponding lines. In male genitalia, uncus thin, sickle-like; juxta balloon-like; valva simple, broadest basally and medially; apical half of valva rather sclerotised from costal side; sacculus broad, clasper like transverse bar; harpe absent; digitus not expressed. Aedeagus with long coecum; vesica without cornuti. In female genitalia, papillae anales small, elongated; anterior apophyses 1.5 times longer than anterior; antrum membranous; ductus bursae long, membranous, the "neck" of bursa often coiled before joining with ductus, corpus bursae usually elongated, with long neck, pear-shaped.

The genus includes 19-21 species distributed in south Palaearctic, Oriental and Ethiopian regions, in arid, subtropical and tropical regions. – 1 species.

REFERENCES: Kononenko & Matov 2009.

Metachrostis sinevi Kononenko & Matov, 2009

(Pl. 1: 70, 71; ♂ genit. Pl. 30: 2; ♀ genit. Pl. 124: 6)

Metachrostis sinevi Kononenko & Matov, 2009, *Zootaxa* 2026: 11, figs. 17, 18, 31, 34 (Type-locality: Russia, Primorye terr., near Gvozdevo; Khabarovsk, Khekhtsir nat. res.).

DIAGNOSIS. In external appearance, this species is very similar to the tropical *M. miasma* (Hampson, 1891) which occurs also in China and Japan, but differs in details of genitalia structure. Because of its small size and wing colour, *M. sinevi* could be confused with the East Asian *Mataeomera esbiahni* Sohn & Ronkay, 2001 or with other species of the genus, but differs clearly in male and female genitalia structure.

BIONOMICS. Meso-thermophilous, little known species, collected twice in VIII and early IX in dry meadow slope with scattered oak trees *Quercus dentata* and in broad leaved forest with *Q. mongolica*.

DISTRIBUTION (Map 33). Manchurian–continental, nemoral. Far East (S Khabarovsk and S Primorye terr.).

NOTE. Incorrectly reported as *Metachrostis obliquisigna* Hampson, 1894 by Matov *et al.* (2008). The types of *Metachrostis sinevi* are illustrated on Pl. 1: 70-71.

6. Subfamily **Aventiinae** Tutt, 1896

Aventiidae Tutt, 1896, *British Moths*: 226. Type genus: *Aventia* Duponchel, 1829 (=*Laspeyria* Germar, 1810)

SYNONYMY:Trisatelini Beck, 1999.

Small to medium sized moths, wingspan 16-32 mm. Labial palps moderate, upturned, second segment densely tufted, third segment short. Antennae of male shortly ciliate. Forewing of characteristic shape with falcate apex and concave excision on outer margin below apex. Hindwing pattern continues main elements of the forewing pattern. Uncus long, in *Laspeyria* as long as valva; tegumen broad, shorter or equal to vinculum; juxta usually plate-like, often with hat-like central extension or divided as inverted V; in *Laspeyria* juxta subdivided into a dorsal more heavily sclerotised part, resembling an inverted Y, and a ventral part, which is a less sclerotised, semi-lunar plate; valva tapered, widened basally or in middle and pointed at tip, in some genera split apically; sacculus long; costa sometimes with medial triangular process, in *L. subrosea* and *L. ruficeps* expanded as comb-like extension; clasper as long sclerotised fold, positioned costally, or short, positioned transversely in middle of valva; harpe usually short, finger-like or absent; juxta twice as wide as high. Aedeagus as long as valva, vesica short with small and moderate diverticula.

In female genitalia, anterior apophyses usually reduced or lost; ostium at the anterior of the eighth segment flanked by pouches between it and the apophyses; antevaginal plate, semicircular, often bifurcate, weakly sclerotised, clothed with spinules, arises ventrally from ostium bursae; antrum a little longer than wide; ductus bursae mostly membranous, posteriorly sclerotised, with a slight coil or curl at the base of the corpus bursae; corpus bursae elongated.

The larvae are semi-loopers with the prolegs of A3 and A4 significantly reduced or lost. Most known larvae feed on lichens, algae, fungi, ferns, dead and rarely on fresh leaves.

The name Trisatelini (type-species*Trisateles*) was synonymised by Fibiger & Lafontaine (2005) with Herminiinae, however the genus *Trisateles* was erroneously placed by Hacker & Fibiger (2005) in Phytometrinae, while Sugi (1982, 1987) placed it in Acontiinae (sensu auctorum) in the group of genera *Enispa*, *Corgatha* and *Oruza*. The subfamily Aventiinae was treated as monotypic subtribe Aventiina of the subfamily Catocalinae (Goater *et al*. 2003), then removed from Catocalinae and raised to the subfamily rank by Fibiger & Lafontaine (2005). The monotypic concept of Aventiinae (sensu Fibiger & Lafontaine 2005) was extended by Holloway (2009) by synonymization of Trisatelini with Aventiinae and placing many SE Asian genera in Aventiinae. The genera *Holocryptis*, *Diomea*, *Polysciera*, *Naganoella*, *Remmigabara* and *Hypostrotia* are tentatively placed here in Aventiinae. The position of *Diomea*, *Hypostrotia* and *Anatatha* in Boletobiinae (Holloway, 2005) in my opinion does not correspond with morphological characters, especially of female genitalia, of *Parascotia*, the type genus of Boletobiinae.

Predominantly tropical subfamily with many genera and species distributed in SE Asia. The subfamily comprises 14 genera and 22 species in the Asian part of Russia.

REFERENCES: Goater *et al*. 2003; Fibiger & Lafontaine 2005; Holloway 2005, 2009.

Genus ***Laspeyria*** Germar, 1810.

Laspeyria Germar, 1810, *Diss. sistems Bombycum Species*: 13. Type-species: *Bombyx flexula* [Denis & Schiffermüller], 1775 [Austria].

SYNONYMY: *Colposia* Hübner, 1816; *Laspeyresia*: Reichenbach, Leipzig, 1817, emendation; *Aventia* Duponchel, 1829; *Laspeyresia* Herrich-Schäffer, 1839 emendation; *Eutelles* Gistl, 1849, unnecessary replacement name; *Sophta* Walker, [1863] 1862; *Nacerasa* Walker, 1866; *Perynea* Hampson, 1910; *Trogatha* Hampson, 1910.

The external structural characters and male and female genitalia basically as described for the subfamily.

Holloway (2009) clarified the synonymy of *Laspeyria* with Indo-Australian genera *Sophta*, *Nacerasa*, *Perynea* and *Trogatha*. Two East Asian species *Sophta subrosea* and *S. ruficeps* (Walker, 1864) are congeneric with *Laspeyria flexula*, they are placed in the genus *Laspeyria*.

The genus includes 7 species, distributed in Palaearctic, Oriental, Australian and Ethiopian regions, of them *L. flexula* is widely distributed in the Palaearctic, *L. subrosea* known from the Manchurian subregion of the Palaearctic and *L. ruficeps* is widely distributed in Oriental region. – 2 species.

Laspeyria flexula ([Denis & Schiffermüller], 1775)

(Pl. 1: 72, 73; ♂ genit. Pl. 30: 3; ♀ genit. Pl. 124: 7)

Bombyx flexula [Denis & Schiffermüller], 1775, *Ank. Syst. Werk Schmett. Wien.*: 64 (Type-locality: [Austria], Vienna district]).

SYNONYMY: *sinuata* Fabricius, 1775; *flexularia*: Hübner, 1799, emendation.

BIONOMICS. Mesophilous species, rather common in rich, old mixed and coniferous forests. One generation, the flight period is from mid VI to IX. Larvae feed on lichens: *Physcia*, *Parmelia*, *Peltigera*, *Graphis* (Lichenophyta) and algae (*Desmococcus*, *Protococcus*) on trunks and branches of trees. The mid instar larva overwinters.

DISTRIBUTION (Map 34). Eurasian, boreal. Transcaucasia, Russia through Ural and S Siberia to the Far East to Sakhalin. – Europe, Near East, Caucasus, Kazakhstan, Korea, Japan (Hokkaido), China.

Laspeyria subrosea (Butler, 1881)

(Pl. 1: 74, 75; ♂ genit. Pl. 30: 4; ♀ genit. Pl. 124: 8)

Rivula subrosea Butler, 1881, *Trans. ent. Soc. Lond.* **1881**: 580 (Type-locality: Japan: Tokyo).

SYNONYMY: *nawai* Nagano, 1918; *gifuensis* Nagano, 1918.

BIONOMICS. Mesophilous species, occurs in deciduous forests on meadows, woodsides, clearings, among bushes. Two generations in VI-VII, and from mid VIII to early IX. The larva and its foodplants are unknown.

DISTRIBUTION (Map 35). Manchurian, nemoral. Far East (Primorye). – Korea, Japan, N China.

Genus ***Enispa*** Walker, [1866] 1865

Enispa Walker, [1866] 1865, *List Specimens lepid. Insects Colln Br. Mus.* **34**: 1275. Type-species: *Enispa Eosarialis* Walker, [1866] 1865 [Borneo, Sarawak].

SYNONYMY: *Micraeschus* Butler, 1878; *Chara* Staudinger, 1892; *Trogacontia* Hampson, 1892; *Penisa* Warren, 1911.

Wingspan 15-19 mm. Frons with plate formed by white scales; labial palps relatively short, directed forward, cutter-like; forewing triangular, acute or rounded on the tip, the costal margin straight; forewing venation without areole. In male genitalia, uncus sickle-like, in some species elongated; juxta balloon-like, valva simple, not split, lobe-like with membranous apical part; sacculus moderate; harpe wide, short, flattened. Aedeagus with short coecum; vesica simple, with one diverticulum, without cornuti. In female genitalia, papillae anales short, wide; anterior apophyses 1.5 times longer than posterior ones; ductus sclerotised, long, antrum in some species with shallow split; in some species ductus bursae coiled at junction with corpus bursae; corpus bursae elongated, narrower caudal part, without signum. The known larvae feed on lichens on bark of trees.

The genus includes approximately 60 species distributed in the Old World, mainly in Oriental and Ethiopian regions, 4 species are known from Manchurian subregion of the Palaearctic. – 3 species.

Enispa lutefascialis (Leech, 1889)

(Pl. 2: 1, 2; ♂ genit. Pl. 30: 5; ♀ genit. Pl. 124: 9)

Mestleta lutefascialis Leech, 1889, *Entomologist* **22**: 65, pl. 2: 15 (Type-locality: Japan: Satsuma).

SYNONYMY: *solitaria* Staudinger, 1892.

BIONOMICS. Mesophilous species, occurs in deciduous broad-leaved forests. Univoltine, the moth flies in VII to mid VIII. Larvae feed on lichens (Lichenophyta).

Distribution (Map 36). Manchurian, nemoral. Far East (Primorye, S Sakhalin and S Kuriles). – Korea, China, Japan.

Note. The holotype of *Aventiola solitaria* is illustrated on Pl. 2: 2.

Enispa albosignata (Staudinger, 1892)

(Pl. 2: 3, 4; ♂ genit. Pl. 30: 6; ♀ genit. Pl. 125: 1)

Chara albosignata Staudinger, 1892, in Romanoff, *Mém. Lépid.* **6**: 559, pl. 14: 2 (Type-locality: Russia: Primorye, Askold Isl.).

Diagnosis. *E. albosignata* and *E. bimaculata* are a closely related species pair. The former differs externally from *E. bimaculata* in presence of the prominent small silver-white spots on subbasal and antemedial lines; in *E. bimaculata* the prominent spots are expressed only in the costal fields, the lines are thin or hardly traceable.

Bionomics. Mesophilous species, associated mainly with maritime broad-leaved forests along seashore and with rich humid deciduous forests. Univoltine, the moth flies in VII - mid VIII. The larva and its foodplants are unknown.

Distribution (Map 37). Manchurian–continental, nemoral. Far East (S Primorye), Korea, N China.

Note. The holotype of *Enispa albosignata* is illustrated on Pl. 2: 3.

Enispa bimaculata (Staudinger, 1892)

(Pl. 2: 5, 6; ♂ genit. Pl. 31: 1; ♀ genit. Pl. 125: 2)

Chara bimaculata Staudinger, 1892, in Romanoff, *Mém. Lépid.* **6**: 561 (Type-locality: Russia: Primorye, Vladivostok).

Synonymy: *leucosticta* Hampson, 1910.

Bionomics. Mesophilous species, occurs in humid deciduous broad-leaved forests, most common in maritime forests along the seashore. Univoltine, the moth flies in VII - mid VIII. Larvae feed on lichens growing on trunks and branches of trees (Lichenophyta).

Distribution (Map 38). Manchurian, nemoral. Far East (Primorye and S Khabarovsk terr.). – Korea, Japan, N China.

Genus ***Corgatha*** Walker, [1859] 1858

Corgatha List Specimens lepid. Insects Colln Br. Mus. 16: 215. Type-species: *Corgatha zonalis* Walker, [1859] 1858 [Sri Lanka].

Synonymy: *Palura* Walker, 1861; *Guriauna* Walker, 1861; *Ausinza* Walker, 1864; *Zitna* Walker, [1866]; *Nacerasa* Walker, 1866; *Celeopsyche* Butler, 1879; *Pseudephyra* Butler, 1886; *Callipyris* Meyrick, 1891; *Aventina* Staudinger, 1892; *Penisa* Warren, 1911; *Trichogatha* Warren, 1913.

Wingspan 17-22 mm. Externally very like the preceding genus. Forewing triangular, acute, the costal margin straight; forewing venation without areole. In male genitalia, uncus long, sickle-like; juxta balloon-like, fused with sacculus, valva often split, costa in apical part separate from membranous apical part of valva; harpe wide, short, flattened, rounded. Aedeagus with short coecum; vesica simple, without cornuti. In female genitalia, papillae anales short, wide; anterior apophyses 1.5 times longer than posterior ones; ductus sclerotised, antrum bifurcate in some species; corpus bursae elongated, with narrow caudal part, without signum. The known larvae feed on lichens and algae on bark of trees.

The genus includes about 100 species distributed in the Old World, mainly in Oriental, Ethiopian and Australian regions. 14 species are known from Manchurian subregion of the Palaearctic. – 2 species.

Corgatha obsoleta Marumo, 1932

(Pl. 2: 7, 8; ♂ genit. Pl. 31: 2; ♀ genit. Pl. 125: 3)

Corgatha obsoleta Marumo, 1932, *Kontyû* **6**: 12: 3 (Type-locality: Japan).

Bionomics. Mesophilous species, occurs in deciduous broad-leaved forest in S Primorye. Univoltine, the moth flies in VII - mid VIII. Larvae feed on lichens growing on trunks and branches of trees (Lichenophyta).

Distribution (Map 39). Manchurian, nemoral. Far East (S Khabarovsk and Primorye terr.). – Korea, China, Japan.

Note. Reported from the south of Khabarovsk terr. by Dubatolov & Dolgih (2009).

Corgatha costimacula (Staudinger, 1892)

(Pl. 2: 9, 10; ♂ genit. Pl. 31: 3; ♀ genit. Pl. 125: 4)

Aventiola costimacula Staudinger, 1892, in Romanoff, *Mém. Lépid.* **6**: 604, pl. 14: 4 (Type-locality: Russia: Primorye, Baranovsky, Partizansk ["Sutschan"]).

Bionomics. Mesophilous species, inhabits deciduous broad-leaved and mixed forests with *Pinus koraiensis*. Univoltine, the moth flies in VII-VIII. Larvae feed on lichens growing on trunks and branches of trees.

Distribution (Map 40). Manchurian, nemoral. Far East (S Khabarovsk and Primorye terr.). – Korea, China, Japan.

Genus ***Oruza*** Walker, 1861

Oruza Walker, 1861, *List Specimens lepid. Insects Colln Br. Mus.* **23**: 947. Type-species: *Oruza costata* Walker, 1862 [India].

Synonymy: *Curvatula* Staudinger, 1892; *Vittappressa* Bethune-Baker, 1906; *Vittapressa* auct., misspelling.

Wingspan 17-25 mm. Externally close to two preceding genera; forewing triangular, the costal margin straight, outer margin convex, apex tapered; forewing venation with areole. In male genitalia, uncus broad or narrow; juxta balloon-like, fused with sacculus, valva deeply split, costa completely separate from membranous part of valva; harpe short, flattened, rounded. Aedeagus with prominent coecum; vesica with multiple diverticula, without cornuti. In female genitalia, papillae anales short, very wide; posterior apophyses half length of the anterior ones, or reduced; ductus sclerotised, antrum with shallow split in some species; corpus bursae elongated, with narrow caudal part, in some species with scobination in caudal part. The known larvae feed on lichens and dry leaves of deciduous trees.

The genus includes 48 species distributed in the Old World, mainly in Oriental, Ethiopian and Australian regions, 6 species are known from Manchurian subregion of the Palaearctic. – 2 species.

Oruza mira (Butler, 1879)

(Pl. 2: 11, 12; ♂ genit. Pl. 31: 4; ♀ genit. Pl. 125: 5)

Selenis mira Butler, 1879, *Illustr. typical Specimens Lepid. Heterocera Colln Br. Mus.* **3**: 29, pl. 47: 6 (Type-locality: Japan: Hakodate).

Synonymy: *pallicostata* Staudinger, 1892.

Bionomics. Mesophilous species, inhabits deciduous broad-leaved and mixed forests with *Pinus koraiensis*. Univoltine, the moth flies from mid VI to mid VIII. Larvae feed on dry leaves of deciduous trees (Mutuura *et al*. 1973), also reported from *Rhus javanica* (Miyata 1983).

Distribution (Map 41). Manchurian, nemoral. Far East (S Amur reg., S Khabarovsk and Primorye terr., S Kuriles, Kunashir Isl.). – Korea, China, Japan.

Oruza yoshinoensis (Wileman, 1911)

(Pl. 2: 13, 14; ♂ genit. Pl. 31: 5; ♀ genit. Pl. 125: 6)

Corgatha yoshinoensis Wileman, 1911, *Trans. ent. Soc. Lond.* **1911**: 228, pl. 31: 14 (Type-locality: Japan, Yamato, Yoshino).

Bionomics. Mesophilous species. Two specimens of *O. yoshinoensis* were collected in a valley with rich broad-leaved forest in late VI and VII in S Primorye. The larva and its foodplants are unknown.

Distribution (Map 42). Manchurian, nemoral. Far East (S Primorye). – Korea, China, Japan.

Genus ***Trisateles*** Tams, 1939

Trisateles Tams, 1939, *Entomologist* **72**: 141. Type-species: *Pyralis emortualis* [Denis & Schiffermuller], 1775, [Austria].

Synonymy: *Aethia* Hübner, 1816, preocc (Merren, 1788 [Aves]); *Sophronia* Duponchel, 1845, preocc. (Hübner, [1825] 1816 [Lepidoptera, Gelechiidae]); *Standfussia* Spuler, 1907, preocc. (Tutt, 1900 [Lepidoptera, Psychidae]).

Wingspan 22-27 mm. Frons with short tuft of scales directed forward; antennae of male ciliate, those of female filiform; labial palps sickle-like, curved, third segment thin; forewing triangular, with almost straight anal angle; outer margin convex; forewing venation without areole. In male genitalia, uncus relatively short, straight, juxta convex, fused with sacculus; valva with long sacculus; costa developed, in distal half thin, curved and tapered; clasper transversal, harpe relatively short, curved, tapered; digitus thin, almost equal to valva, curved, pointed on apex. Aedeagus shorter than valva, with short coecum; vesica simple, with one diverticulum, and with 2-3 small cornuti. In female genitalia, papillae anales small and short; anterior and posterior apophyses equal in length; ductus sclerotised, long, antrum with deep split, bifurcate; ductus bursae membranous, coiled or curved in proximal part; corpus bursae elongated, narrower in caudal part, without singum.

The genus was placed in Herminiinae by Hacker & Fibiger (2005), while its position in the Acontiinae (sensu auct.) group of genera close to *Oruza* was stated by Sugi (1982a). Holloway (2009) proved its placement in Aventiinae.

Monotypic Palaearctic genus.

Trisateles emortualis ([Denis & Schiffermüller], 1775)

(Pl. 2: 15, 16; ♂ genit. Pl. 31: 6; ♀ genit. Pl. 125: 7)

Pyralis emortualis [Denis & Schiffermüller], 1775, *Ank. Syst. Werk Schmett. Wien.*: 120 (Type-locality: [Austria], Vienna district]).

Synonymy: *emortuatus*: Haworth, 1809, emendation.

Bionomics. Meso-thermophilous species, occurs in woodsides, clearings and meadows in deciduous and mixed forests, rather local. Bivoltine, in the Far East in two overlapping generations from VI to late VIII. Larvae feed on fresh and dead leaves of deciduous trees (*Quercus*, *Fagus*, *Betula*, *Carpinus*, *Tilia*, *Acer* and *Salix*).

Distribution (Map 43). Eurasian, boreal. Russia to S Ural, S Siberia, Far East, to Sakhalin and Kuriles. – Europe, Near East (Turkey), Caucasus, Transcaucasia, Korea, N China, Japan.

Genus ***Aventiola*** Staudinger, 1892

Aventiola Staudinger, 1892, in Romanoff, *Mém. Lépid.* **6**: 602. Type-species: *Aventiola maculifera* Staudinger, 1892 (Russia, Primorye) (= *Egnasia pusilla* Butler. 1879).

Wingspan 17-18 mm. Palps cutter-like upcurved; forewing rather narrow, outer margin straight to middle of wing, then oblique to anal angle; hindwing with extension on veins M2-M3; areole absent; wing colour grey, wing pattern with prominent black spot in subterminal area and black reniform stigma. In male genitalia, uncus short, massive; tegumen broad; juxta balloon-like; valva short and broad, broadest basally, acute apically; sacculus broad and long; clasper not expressed and digitus not expressed. Aedeagus very broad, with short coecum; vesica bulbous, without cornuti. In female genitalia, papillae anales large, quadrangular; anterior apophyses short, wide, posterior apophyses 1.5 times longer than anterior ones; antrum sclerotised; ductus bursae moderate, slightly sclerotised, corpus bursae elongated, with short bulla in caudal part.

Monotypic Manchurian genus.

Aventiola pusilla (Butler, 1879)

(Pl. 2: 17-19; ♂ genit. Pl. 32: 1; ♀ genit. Pl. 125: 8)

Egnasia pusilla Butler, 1879, *Illustr. typical Specimens Lepid. Heterocera Colln Br. Mus.* **3**: 67, pl. 57: 9 (Type-locality: Japan: Yokohama).

Synonymy: *maculifera* Staudinger, 1892; *nigripalpis* Hirayama, 1937.

Bionomics. Mesophilous species, common in deciduous broad-leaved and mixed forests with *Pi-*

nus koraiensis. Univoltine, the flight period is from late VI to mid -VIII. Larvae feed on lichens on trees (Lichenophyta).

Distribution (Map 44). Manchurian, nemoral. SE Transbaikalia, Far East (from S Amur reg. to Primorye terr.). – Korea, Japan, N China.

Genus ***Anatatha*** Hampson, 1926

Anatatha Hampson, 1926, *Descr. new Genera Species Lepid. Phalaenae Subfamily Noctuinae Br. Mus*: 291. Type-species: *Catada nigrisigna* Hampson, 1895 [India].

Wingspan 18-26 mm. Antennae of male filiform, ciliate; proboscis developed; labial palps sickle-like, directed forward, third segment pointed; hindwing with developed wing pattern; M2 on hindwing developed. In male genitalia, uncus relatively large, straight or sickle-like; juxta convex, in some cases bifurcate; valva with short costa; harpe absent or present, large; distal part of valva membranous or reduced; sacculus narrow or wide, massive, with apical extension, sometimes very large; clasper, if expressed fused with costa and sacculus, sclerotised, dentate. Aedeagus moderate with short coecum; vesica rather short, bulbous, without cornuti. In female genitalia, papillae anales moderate, pointed; anterior apophyses reduced, posterior ones short; antrum with antevaginal plate; ductus bursae short, thin; corpus bursae with cervix, without signum.

The genus includes 7 species distributed in the Manchurian subregion of the Palaearctic and in the Oriental region. – 1 species.

Anatatha lignea (Butler, 1879)

(Pl. 2: 20, 21; ♂ genit. Pl. 32: 2; ♀ genit. Pl. 125: 9)

Bleptina lignea Butler, 1879, *Illustr. typical Specimens Lepid. Heterocera Colln Br. Mus*. **3**: 64, pl. 56: 14 (Type-locality: Japan).

Bionomics. Mesophilous, rather rare species, occurs in deciduous and humid maritime forests. Univoltine, the moth flies in VII - mid VIII. The larva and its foodplants are unknown.

Distribution (Map 45). Manchurian, nemoral. Far East (S Khabarovsk and Primorye terr.). – China, Korea, Japan.

Genus ***Paragona*** Staudinger, 1892

Paragona Staudinger, 1892, *in* Romanoff, *Mém. Lépid*. **6**: 557. Type-species: *Acidalia multisignata* Christoph, 1881 (Russia, Amur reg., Pompeevka).

Wingspan 17-22 mm. Antennae of male serrate; labial palps directed forward, covered by dense hairs; hindwing with developed wing pattern; M2 on hindwing developed. In male genitalia, uncus moderate or widened, relatively short, straight; juxta bifurcate; valva variable in shape, in some species with costa, separate from membranous valva; harpe present, short; distal part of valva membranous or sclerotised, pointed or with rounded extension. Aedeagus rather large, coecum expressed; vesica without or with 2 small cornuti. In female genitalia, papillae anales wide, quadrangular; anterior apophyses reduced; antrum often with antevaginal plate; ductus bursae rather short, wide; corpus bursae with incrustation of small spines.

The genus includes 4 species distributed in the Manchurian subregion of the Palaearctic and partly in the Oriental region. – 3 species.

Paragona multisignata (Christoph, 1881)

(Pl. 2: 22, 23; ♂ genit. Pl. 32: 3; ♀ genit. Pl. 125: 10)

Acidalia multisignata Christoph, 1881, *Bull. Soc. imp. Nat. Mosc.* **55** (3): 50 (Type-locality: Russia: Amur reg., Pompeevka).

Diagnosis. *P. multisignata* externally similar to *P. cognata*, differs in more greyish basal, subbasal and costal fields, less dentate black, thin crosslines and presence of metallic-shining scales on abdomen. In male genitalia, valva apically deeply split, with clearly separate costa and membrane of valva, harpe short and broad. In female genitalia, anterior apophyses very short, postvaginal plate not expressed, corpus bursae with small spine-like signa in medial part.

Bionomics. Meso-xerophilous species, inhabits dry woodsides, clearings and meadows in open deciduous forests. The flight period is VII-VIII. The larva and its foodplants are unknown.

Distribution (Map 46). Manchurian, nemoral. SE Transbaikalia, Far East (from S Amur to Primorye terr.). – N Mongolia, N China, Korea, Japan.

Note. The holotype of *Paragona multisignata* is illustrated on Pl. 2: 22.

Paragona cognata (Staudinger, 1892)

(Pl. 2: 24, 25; ♂ genit. Pl. 32: 4; ♀ genit. Pl. 126: 1)

Boletobia cognata Staudinger, 1892, *in* Romanoff, *Mém. Lépid*. **6**: 606, Type-locality: Russia Primorye: Askold I., Suifun [Razdolnaya] river.

Diagnosis. Superficially, *P. cognata* differs from *P. multisignata* in darker brown-grey wing colour, especially in medial field, more dentate crosslines and absence of metallic-shining scales on abdomen. In male genitalia, valva slightly split, tip of costa slightly short, curved on the apex; harpe thin and longer than in *P. multisignata*, In female genitalia, moderate short, postvaginal plate large, corpus bursae with small spine-like signa in the caudal part.

Bionomics. Meso-xerophilous species, occurs in dry, open biotopes, forest-steppe, woodsides, clearings, bushes and meadows. The flight period is from VII to IX. The larva and its foodplants are unknown.

Distribution (Map 47). Siberian-Manchurian, subboreal. S Siberia, Transbaikalia, Far East (from Amur reg. to Primorye). – Mongolia, Korea, N China.

Note. The syntype of *Paragona cognata* is illustrated on Pl. 2: 25.

Paragona nemorata Kononenko & Han, 2010

(Pl. 2: 26, 27; ♂ genit. Pl. 32: 5; ♀ genit. Pl. 126: 2)

Paragona nemorata Kononenko & Han, 2010, *Zootaxa*.

Diagnosis. *P. nemorata* is externally similar to *P. multisignata* and *P. cognata*, but differs in smaller size, absence of shining scales on abdomen, narrower and darker forewing colour and details of wing pattern. In the male genitalia, it differs from its congeners in shape of valva with parallel costal and ventral margins, acute apex and ventral extension of costa and central position of clasper and harpe. The female genitalia have very short anterior apophyses as in *P. multisignata*, sclerotised ductus bursae broader than in *P. multisigata*, but narrower than in *P. cognata*; corpus bursae with numerous small spine-like signa in bottom part of the corpus bursa unlike the related species, which have signa in mid part (*P. multisignata*) or in caudal part (*P. cognata*) of corpus bursae.

Bionomics. Mesophilous, very local. species. *P. nemorata* once was collected in S Primorye in VII in rich deciduous broad-leaved forest. In S Korea it inhabits deciduous mixed forests with *Pinus coreana*. The larva and its foodplants are unknown.

Distribution (Map 48). Manchurian–continental, nemoral. Far East (S Primorye). – S Korea.

Note. The paratypes of *P. nemorata* are illustrated on Pl. 2: 27.

Genus ***Holocryptis*** Lucas, 1892

Holocryptis Lucas, 1892, *Proc. Linn. Soc. N. S. W.* (2) **7**: 256. Type-species: *Holocryptis phasianura* Lucas, 1892 (Australia).

Wingspan 10-19 mm. Small, white or whitish-grey coloured moths, with narrow forewing and triangular hindwing; in forewing venation areole absent. In male genitalia, uncus modified; valva simple, short, apically split or extended, with thin long apex bearing extension; harpe absent. Aedeagus short, massive or long, thin with large or moderate cornuti. In female genitalia, papillae anales moderate, anterior and posterior apophyses short, equal in length, antrum with or without antevaginal plate; ductus bursae wide, sclerotised; corpus bursae variable in shape, bearing short or long spine-like signa.

The genus includes 13 species distributed in the Manchurian subregion of the Palaearctic, Oriental, Ethiopian and Australian regions. – 2 species.

Holocryptis nymphula (Rebel, 1909)

(Pl. 1: 35, 36; ♂ genit. Pl. 32: 6; ♀ genit. Pl. 126: 3)

Troctoptera nymphula Rebel, 1909, *Verh. zool. – bot. Ges. Wien*, **59**: 375 (Type-locality: Russia: Khabarovsk).

Diagnosis. Wingspan 10-12 mm. Very small species, resembling Pyralidae. Wing colour whitish with pale greyish –ochreous; antemedial line whitish, diffuse, medial shade slightly darker than background, diffuse; postmedial line whitish, bordered with black and with black or greyish streak directed basally; cilia with tornal and medial patch of black scales. Hindwing with discal spot and whitish medial and subterminal fasciae. In male genitalia, uncus short, medially extended, vinculum broad, higher than tegumen, valva short, rather wide, apically split, with costal and lateral extensions. Aedeagus short, vesica with sclerotised patch and several short and wide spine-like cornuti; female genitalia with wide and relatively long ductus, corpus bursae short, with 5-6 spine-like signa, appendix bursae spirally coiled.

Bionomics. Mesophilous species, inhabits humid broad-leaved and mixed forests. The moth flies from VII to early VIII. The larva and its foodplants are unknown.

Distribution (Map 49). Manchurian, nemoral. Far East (S Khabarovsk and Primorye terr., S Kuriles). – N China, Korea, Japan.

Holocryptis ussuriensis (Rebel, 1901)

(Pl. 2: 28, 29; ♂ genit. Pl. 33: 1; ♀ genit. Pl. 126: 4)

Troctoptera ussuriensis Rebel, 1901, in *Staudinger & Rebel, Cat. Lepid. palaearct. Faunengeb.* **2**: 231 (Type-locality: Russia: Vladivostok).

Diagnosis. Larger than *H. nymphula*, wingspan 18-19 mm. Ground colour of wing white or whitish, wing pattern pinky-brownish with brown patches; inner part of wing with pinky-brown suffusion, antemedial line white, thin, bordered with brown, in the cell and subtornal area with remarkable brown patches, outer part of wings white; hindwing pattern continuous with that of forewing, with prominent pinky patch and white patch bordered with dark-brown in the middle. In male genitalia, uncus knob-like, extended apically, vinculum higher than tegumen, valva with massive sacculus, strongly tapered and pointed apically, with short extension on mid of apical part. Aedeagus long, vesica bearing several moderate cornuti. In female genitalia, antrum with clearly formed antevaginal plate, ductus narrower than in *H. nymphula*, twisted, corpus bursae elongated, with a dozen of star-like signa in caudal part.

Bionomics. Mesophilous species, occurs in woodsides, clearings and meadows in humid broad-leaved and mixed forest. The moth flies from late VI to early VIII. The larva and its foodplants are unknown.

Distribution (Map 50). Manchurian, nemoral. Far East (S Khabarovsk and Primorye terr., S Sakhalin and S Kuriles). – N China, Korea, Japan.

Genus ***Diomea*** Walker, [1858] 1857

Diomea Walker, [1858] 1857, *List Specimens lepid. Insects Colln Br. Mus*. **13**: 1079, 1109. Type-species: *Diomea rotundata* Walker, [1858] 1857, [Sri Lanka].

Synonymy: *Corsa* Walker, 1862. *Zigera* Walker, 1862; *Heteroscotia* Bryk, 1948.

Wingspan 24-36 mm. Antennae of male filiform, ciliate; proboscis developed; labial palps relatively short, directed forward, 3rd segment curved, hind-

wing with developed wing pattern; M2 in hindwing developed. In male genitalia, uncus relatively large, straight or sickle-like; juxta convex, hat-like; valva rather narrow, rounded on the apex; harpe absent; distal part of valva slightly sclerotised; sacculus narrow, but massive, with large apical extension. Aedeagus rather large, vesica rather short, without or with 2 small cornuti. In female genitalia, papillae anales moderate, pointed; anterior apophyses short, posterior apophyses reduced; ductus bursae rather long, sclerotised, often coiled before joining with bursa; corpus bursae saccate or elongated, without signum.

The genus includes about 20 species distributed in Manchurian subregion of the Palaearctic, Oriental and Ethiopian regions. – 1 species.

Diomea cremata (Butler, 1878)

(Pl. 3: 30, 31; ♂ genit. Pl. 33: 2; ♀ genit. Pl. 126: 5)

Capnodes cremata Butler, 1878, *Ann. Mag. nat. Hist.* (5) **1**: 295 (Type-locality: Japan: Yokohama).

Synonymy: *stygia* Bryk, 1948.

Bionomics. Mesophilous species, occurs in deciduous broad-leaved and mixed forests, rarely in dark coniferous taiga. The moth flies from end VI to mid VIII. Larvae feed on fungi on trees: *Polystictus* (Polyporaceae); *Lentinula edodes* (Agaricaceae). Reported also from *Trametes cinnabaria*. In Japan recorded as a pest of shiitake mushroom (*Lentinula edodes*) (Yoshimatsu & Nakata 2003).

Distribution (Map 51). East Asian, nemoral. Far East (from S Khabarovsk to Primorye and S Sakhalin). – China, Korea, Japan, N India.

Diomea jankowskii (Oberthür, 1880)

(Pl. 2: 32; ♂ genit. Pl. 33: 3; ♀ genit. Pl. 126: 6)

Capnodes jankowskii Oberthür, 1880, *Étud. Ent.* **5**: 87, pl. 9: 1 (Type-locality: Russia: Primorye, Askold I).

Bionomics. Mesophilous species, inhabits oak, deciduous and mixed forests. The imago flies in mid VI-VIII. The larva and its foodplants are unknown.

Distribution (Map 52). East-Asian, nemoral. Far East (from S Khabarovsk to Primorye terr. and S Kuriles). – China, Korea, Japan, Taiwan, Thailand.

Genus ***Polysciera*** Hampson, 1926

Polysciera Hampson, 1926, Descr. *new Genera Species Lepid. Phalaenae Subfamily Noctuinae Br. Mus.*: 588. Type-species: *Egnasia manleyi* Leech, 1900 [Japan].

Wingspan 25-32 mm. Antennae of male serrate; antennae long, straight, the 3rd segment shorter than diameter of eye; forewing wide, areole present, R1 starts from areole In male genitalia, uncus straight, tegumen broad; juxta plate-like, slightly sclerotised; valva simple, lobe-like, extended and rounded apically; saccus very small, harpe rudimental. Aedeagus shorter than valva, wide; vesica bulbous, without cornuti. In female genitalia, papillae anales rather short, quadrangular; anterior and posterior apophyses equal in length; antrum membranous; ductus bursae rather short, wide; corpus bursae very long, without signum.

Monotypic Manchurian-Japanese genus.

Polysciera manleyi (Leech, 1900)

(Pl. 2: 33, 34; ♂ genit. Pl. 33: 4; ♀ genit. Pl. 126: 7)

Egnasia manleyi Leech, 1900, *Trans, ent. Soc. Lond.* **1900**: 609 (Type-locality: Japan: Yokohama).

Bionomics. Mesophilous species, known in Russia only from South Kuriles. Moths were collected in edge of mixed deciduous-coniferous forest in VII. Larvae feed on *Fraxinus mandschurica*, *Syringa reticulata* (Oleaceae).

Distribution (Map 53). Japanese, nemoral. Islands of Russian Far East (S Kuriles, Kunashir Is.). – Japan.

Genus ***Naganoella*** Sugi 1982

Naganoella Sugi 1982, *Moths of Japan*: **1**: 886; **2**: 400. Type-species: *Dierna timandra* Alphéraky, 1897 [Korea].

Synonymy: *Dierna* auct.

Wingspan 27-30 mm. Antennae of male filiform, ciliate; labial palps rather long, straight, directed forward, 3rd segment twice as long as 2nd; apex of forewing sickle-like tapered; thorax and wings pinkish-red; wing pattern white bordered with prominent olive medial line and oblique diagonal line continued on hindwing; M2 on hindwing developed. In male genitalia, uncus moderate, curved in apical part; juxta hat-like; valva relatively narrow, sacculus apically fused with costa; apex of valva extended as rounded plate; harpe absent; valvula present. Aedeagus moderate, vesica, bulbous, with multiple diverticula and 1 small cornutus. In female genitalia, papillae anales moderate, anterior apophyses moderate, 4 times longer than posterior ones, which are reduced; antrum cup-like, with deep split; ductus bursae short, weakly sclerotised, corpus bursae elongated, without signum.

Monotypic genus, distributed in Manchurian subregion of the Palaearctic, partly in Oriental region.

Naganoella timandra (Alphéraky, 1897)

(Pl. 2: 35; ♂ genit. Pl. 33: 5; ♀ genit. Pl. 126: 8)

Dierna timandra Alphéraky, 1897, in Romanoff, *Mém. Lépid.* **9**: 179, pl. 11: 7 (Type-locality: Korea).

Synonymy: *pvilcherina* [sic] Nagano, 1918.

Bionomics. Mesophilous species, occurs in oak, broad-leaved and mixed lowland forests. The imago flies from end VI to end VIII. Larvae feed on *Quercus acutissima* in Japan and probably on *Q. mongolica* in Russia.

Distribution (Map 54). East Asian, nemoral. Far East (S Khabarovsk and Primorye terr.). – China, Korea, Japan, N Thailand.

Genus ***Remmigabara*** Kononenko & Matov 2010

Kononenko, Matov & Han, 2010, *Zootaxa* (submitted). Type species: *Paragabara secunda* Remm, 1983 [Russia, Primorye terr.].

Wingspan 26-28 mm. Antennae of male filiform; labial palps directed obliquely upward, 3rd segment short; palps, head and collar covered by yellow-orange scales; M2 on hindwing developed; forewing characteristically concave from apex to mid part; wing ground colour magenta-brown, pattern formed by oblique pale lines shadowed with dark; hindwing uniform magenta-grey. In male genitalia, uncus straight, tegumen half the length of vinculum; scaphium sclerotised, transtilla long, juxta band-like; valva narrow with distinct elongated cucullus; costa with acute extension in the middle, sacculus elongated, tapered, wall of sacculus with asymmetrical extensions. Aedeagus curved, vesica relatively short, with two short diverticula, without cornuti. In female genitalia, papillae anales short, anterior and posterior apophyses equal in length, antrum broad, cup-like, ductus bursae short, corpus bursae elongated, proximally extended. The association of the genus is not clear.

Monotypis genus, distributed in Manchurian subregion of the Palaearctic.

Remmigabara secunda (Remm, 1983)

(Pl. 2: 36, 37; ♂ genit. Pl. 33: 6; ♀ genit. Pl. 126: 9)

Paragabara secunda Remm, 1983, *Ent. Obozr.* **62** (3): 596: 7, 8 (Type-locality: Russia: Primorye terr., Tigrovoi).

Diagnosis. Externally, *R. secunda* resembles the Japanese species *Britha inambitiosa* (Leech, 1900). However, it differs in orange-yellow head, magenta-brown ground colour and wing pattern. Labial palps, frons and vertex covered by yellow-orange scales. Forewing with pointed tip, Outer margin of forewing from apex to mid part with smooth cut, from the mid part to tornal angle oblique. Ground colour of forewing magenta-brown, darker in costal and subapical parts, wing pattern formed by oblique pale magenta-greyish crosslines shadowed by darker magenta-brown; hindwing unicoloured magenta-greyish, with traceable diffuse subterminal line.

Bionomics. Mesophilous species, inhabits meadows in rich mixed forest with *Pinus koraiensis* at elevation 300-400 m and broad-leaved deciduous forest. The moth flies from VI to VII. The larva and its foodplants are unknown.

Distribution (Map 55). Manchurian–continental, nemoral. Far East (S Khabarovsk and Primorye terr.). – Korea, N China.

Genus ***Hypostrotia*** Hampson, 1926

Hypostrotia Hampson, 1926, *Descr. new Genera Species Lepid. Phalaenae Subfamily Noctuinae Br. Mus.*: 293. Type-species: *Capnodes cinerea* Butler, 1878 [Japan].

Synonymy: *Capnodes* auct.

Wingspan 24-29 mm. Antennae of male fasciculate; labial palps directed obliquely-upwards, 3rd segment very short; M2 in hindwing developed; ground colour of wing brown-grey with bluish-grey tint; hindwing with pattern reflecting that of forewing. In male genitalia, uncus straight; tegumen half the length of vinculum; valva large, pointed, with enormous sacculus bearing short basal extension and thin, pointed apical extension; juxta horseshoe-shaped. Aedeagus large, with sclerotised carina; vesica bulbous, bearing patch of small cornuti. In female genitalia, papillae anales massive; anterior apophyses ones long, 3 times longer posterior apophyses, which are reduced; antrum wide, cup-like, ductus bursae short, sclerotised, flattened; corpus bursae saccate, without signum.

Monotypis genus, distributed in Manchurian subregion of the Palaearctic.

Hypostrotia cinerea (Butler, 1878)

(Pl. 2: 38, 39; ♂ genit. Pl. 34: 1; ♀ genit. Pl. 127: 1)

Capnodes cinerea Butler, 1878, *Ann. Mag. nat. Hist.* (5) **1**: 294 (Type-locality: Japan: Yokohama).

Bionomics. Mesophilous species, occurs in broad-leaved forests. The moth flies from end VI to end VIII. e feed on fungi on trees: *Polystictus* (Polyporaceae).

Distribution (Map 56). Manchurian, nemoral. E Transbaikalia, Far East (from S Amur reg. to Primorye). – China, Korea, Japan.

7. Subfamily **Pangraptinae** Grote, 1882

Pangraptinae Grote, 1882, *New checklist North Am. Moths*: 42. Type genus: *Pangrapta* Hübner, 1818.

Small to medium sized moths. Wings usually broad, forewing triangular with acute apex and prominent extension in middle of outer margin; in most species wings are colourful, the main line elements of forewing pattern recurrent on hindwing. Labial palps long, straight, 3rd segment long, pointed, almost equal to the 2nd. In male genitalia, uncus medially globular; the valva tapered with long and narrow sacculus; harpe absent; costa and in some case sacculus bearing long pointed extensions; juxta a convex plate or balloon-like. Aedeagus broadest caudally, vesica bulbous, in some species with long diverticula, with or without small or strong cornuti. In female genitalia, papillae anales wide, short, quadrangular, hairy; anterior apophyses moderate, massive or basally wide, posterior ones thin, rather short; antrum and ductus bursae rather short, often sclerotised; corpus bursae often with sclerotised patches in caudal part.

The taxon has been traditionally placed in Catocalinae (sensu auctorum); recently it was recognised as a tribe of Eublemminae (Fibiger & Lafontaine 2005) or Catocalinae (Holloway 2005). The rank of the taxon

raised to the subfamily level by Lafontaine and Schmidt (2010). The core of the subfamily is the genus *Pangrapta* with 84 described species. The exact number of genera and species of Pangraptinae is unknown, the subfamily urgently requires revision. Some East Asian genera could belong to Pangraptinae. The subfamily is most diverse in the Oriental region and Sino-Manchurian subregions of the Palaearctic. The known larvae feed on leaves of arboraceous plants.

One genus and 9 species are represented in Manchuran subregion of the Asian part of Russia.

Genus ***Pangrapta*** Hübner, 1818

Pangrapta Hübner, 1818, *Zuträge Samml. exot. Schmett.* **1**: 18. Type-species: *Pangrapta decoralis* Hübner, 1818 [USA].

Synonymy: *Marmorinia* Guenée, 1852; *Saraca* Walker, [1866] 1865; *Stenozethes* Hampson, 1926; *Zethes* auct.

Wingspan 24-36 mm. Antennae of male fasciculate or ciliate; labial palps long, slender, directed forward, 3rd segment long; forewing outer margin usually angled in middle; wing colour brown, with darker fasciae, often tinged with magenta, violet or green; pattern often with darker triangle in costal area between postmedial and submarginal; hindwing with continuous pattern of forewing; M2 on hindwing developed. In male genitalia, uncus generally slender, apically tapering; juxta broad, convex, sometimes leaf-like; valva long, narrow, apically rounded; distally with spine-like, sometimes bifurcate central process, arising from costa-clasper complex; sacculus narrow; distal part of valva weakly sclerotised. Aedeagus rather large, thin or thick; vesica bulbous or with 1-2 long diverticula, with or without 1-2 large or more small cornuti. In female genitalia, 7th segment may have a pair of pouches near anterior edge; papillae anales wide, densely hairy; anterior apophyses thin and short, posterior apophyses often strong, broad based; ductus bursae moderate, folded; corpus bursae basally with conspicuous area of sclerotization or scobination, round or elongated; appendix bursae long or very short.

The genus includes about 84 species distributed mainly in tropic and subtropic of the Old and New Worlds, most diverse in Oriental area. – 9 species.

Pangrapta costaemacula Staudinger, 1888

(Pl. 2: 40, 41; ♂ genit. Pl. 34: 2; ♀ genit. Pl. 127: 2)

Pangrapta costaemacula Staudinger, 1888, *Stett. ent. Ztg* **49**: 282 (Type-locality: Russia: Primorye, Vladivostok, Bikin).

Synonymy: *trimantesalis* auct.

Diagnosis. Externally, *P. costaemacula* is undistinguishable from the East Asian *P. perturbans* (Walker, 1858) (= *trimantesalis* Walker, [1859]; *duplex* Sugi & Kononenko, 1996) but differs in structure of male genitalia, particularly in presence of prominent erected finger-like costal extension, which is wide, transverse, plate-like in *P. perturbans*.

Bionomics. Mesophilous, rather local species, occurs in woodsides and closed meadows in oak and rich deciduous broad-leaved and mixed manchurian forests. The moth flies from mid VI to late VIII. Larvae feed on *Euonymus japonica* (Celastraceae), *Ligustrum ibota* and *L. obtusifolium* (Oleaceae).

Distribution (Map 57). Manchurian–continental, nemoral. Far East (S Khabarovsk and Primorye terr.). – N Korea, N China.

Note. The syntype of *P. costaemacula* is illustrated on Pl. 2: 40.

Pangrapta suaveola Staudinger, 1888

(Pl. 2: 42, 43; ♂ genit. Pl. 34: 3; ♀ genit. Pl. 127: 3)

Pangrapta suaveola Staudinger, 1888, *Stettin. ent. Ztg* **49**: 281 (Type-locality: Russia: Primorye, Vladivostok, Baranovsky, Sutschan [Partizansk], Bikin.

Bionomics. Mesophilous species, inhabits broad-leaved and mixed forests. The moth flies in late VI-VIII. The larva and its foodplans are unknown.

Distribution (Map 58). Manchurian, nemoral. Far East (S Khabarovsk and Primorye terr.). – China, Korea, Japan (Honshu).

Pangrapta vasava (Butler, 1881)

(Pl. 2: 44, 45; ♂ genit. Pl. 34: 4; ♀ genit. Pl. 127: 4)

Egnasia vasava Butler, 1881, *Trans. ent. Soc. Lond.* **1881**: 582 (Type-locality: Japan: Yokohana).

Synonymy: *incisa* Staudinger, 1888.

Bionomics. Mesophilous species, occurs in deciduous broad-leaved and mixed forests. The flight period is VI-VIII. Larvae feed on on young shoot of *Ulmus laciniata* and *U. japonica* (Ulmaceae).

Distribution (Map 59). Manchurian, nemoral. Far East (S Khabarovsk, Primorye terr. and S Kuriles). – China, Korea, Japan.

Pangrapta flavomacula Staudinger, 1888

(Pl. 2: 46, 47; ♂ genit. Pl. 34: 5; ♀ genit. Pl. 127: 5)

Pangrapta flavomacula Staudinger, 1888, *Stettin. ent. Ztg* **49**: 279 (Type-locality: Russia: Primorye, Vladivostok, Askold I., Baranovsky, "Sutschan" [Partizansk], "Suifun" [Razdolnaya river].

Synonymy: *robiginosa* Kardakoff, 1928 (form); *albata* Kardakoff, 1928 (form); *turbata* Kardakoff, 1928 (form).

Bionomics. Mesophilous species, inhabits deciduous broad-leaved and mixed forests. The moth flies from end VI-VIII. The larva and its foodplans are unknown.

Distribution (Map 60). Manchurian, nemoral. Far East (S Khabarovsk and Primorye terr.). – China, Korea, Japan.

Pangrapta lunulata (Sterz, 1915)

(Pl. 2: 48, 49; ♂ genit. Pl. 34: 6; ♀ genit. Pl. 127: 6)

Pangrapta lunulata Sterz, 1915, *Dt. ent. Z. Iris* **29**: 131, pl. 3: 6 (Type-locality: "Amur").

Synonymy: *pseudalbistigma* Yoshimoto, 1993; *albistigma* auct.

Diagnosis. Externally, *P. lunulata* indistinguishable from the East Asian *P. albistigma* (Hampson, 1898), but differs in structure of genitalia (Sugi & Kononenko 1996).

Bionomics. Mesophilous species, common in broad-leaved and lowland mixed forests. The moth flies from mid VI to early IX. Larvae feed on *Fraxinus japonica* and *F. rhynchphila* (Oleaceae).

Distribution (Map 61). Manchurian, nemoral. Far East (S Khabarovsk and Primorye terr.). – China, Korea, Japan, Taiwan.

Pangrapta marmorata Staudinger, 1888

(Pl. 2: 50, 51; ♂ genit. Pl. 35: 1; ♀ genit. Pl. 127: 7)

Pangrapta marmorata Staudinger, 1888, *Stettin. ent. Ztg* **49**: 277 (Type-locality: Russia: "Raddefka" [Khabarovsk ter. Judish autonomy. Radde]; Vladivostok Vladivostok, Askold I., "Sutschan" [Partizansk], Bikin.

Bionomics. Mesophilous, most comon species of *Pangrapta*. Occurs in oak, broad-leaved and mixed forests. The imago flies in mid VI-VIII. The larva and its foodplants are unknown.

Distribution (Map 62). Manchurian–continental, nemoral. Far East (S Khabarovsk and Primorye terr.). – Korea, N China.

Pangrapta obscurata (Butler, 1879)

(Pl. 2: 52; 53; ♂ genit. Pl. 35: 2; ♀ genit. Pl. 127: 8)

Marmorinia obscurata Butler, 1879, *Illustr. typical Specimens Lepid. Heterocera Colln Br. Mus.* **3**: 68, pl. 57: 11 (Type-locality: Japan: Hakodate).

Bionomics. Mesophilous species, occurs in broad-leaved and mixed forests. The moth flies from mid VI to early IX. Larvae feed on *Malus*, *Sorbus* and *Prunus* (Rosaceae).

Distribution (Map 63). Manchurian, nemoral. Far East (S Khabarovsk terr., Primorye). – China, Korea, Japan, Taiwan.

Pangrapta griseola Staudinger, 1892

(Pl. 2: 54, 55; ♂ genit. Pl. 35: 3; ♀ genit. Pl. 128: 1)

Pangrapta griseola Staudinger, 1892, in Romanoff, *Mém. Lépid.* **6**: 620, pl. 14: 11 (Type-locality: Russia: "Ussuri". [Primorye terr.]).

Bionomics. Mesophilous, rather rare species, occurs in broad-leaved and mixed forests. Flight period VII-VIII. The larva and its foodplants are unknown.

Distribution (Map 64). Manchurian–continental, nemoral. Far East (S Khabarovsk and Primorye terr.), Korea, N China.

Pangrapta umbrosa (Leech, 1900)

(Pl. 2: 56, 57; ♂ genit. Pl. 35: 4; ♀ genit. Pl. 128: 2)

Zethes umbrosa Leech, 1900, *Trans ent. Soc. Lond.* **1900**: 601 (Type-locality: China, Kiushiu; Chang-yang; Chia-kou-lo).

Bionomics. Mesophilous species, known in Russia only from south Kuriles. Moths were collected in edge of mixed deciduous-coniferous forest in VII. In Japan, larvae feed on *Viburnum dilatatum* (Viburnaceae).

Distribution (Map 65). Manchurian, nemoral. Islands of Russian Far East (S Kuriles, Kunashir Isl.). – Japan, China.

8. Subfamily **Phytometrinae** Hampson, 1913

Phytometrinae Hampson, 1913, *Cat. Lepid. Phalaenae Br. Mus.* 12: 401. Type genus: *Phytometra* Haworth, 1809, type-speciesof *Phytometra* Haworth, 1809 incorrectly identified as *Phalaena festucae* Linnaeus, 1758, now in *Plusia* Ochsenheimer, 1816.

Synonymy: Phytometrini Wiltshire, 1990.

Wingspan 10-25 mm. Labial palps moderate, beak-like, directed obliquely forward, in some species long, similar to those of Hypeninae. Wings usually bright coloured, yellow, orange or magenta; forewing pattern often with oblique transverse line. Vein M2 in the hindwing is about 1/3 of the way up the cell. In male genitalia, valva broadest submedially, pleurite absent; sacculus small; clasper positioned at ventral edge of valve; harpe prominent, bent, most often upturned; juxta large, plate-like, latero-dorsal margins heavily sclerotised, converging dorsally, like an inverted V. In female genitalia, there are two circular invaginations adjacent to ostium bursae; ductus bursae heavily sclerotised; corpus bursae membranous, constricted medially where a band of small spines encircles middle of corpus bursae. Larvae on living vascular plant foliage.

The name Phytometrinae was originally proposed by Hampson for the subfamily now known as the Plusiinae because of an incorrect type-species designation for *Phytometra*. Richards (1933) treated Phytometrinae in the present sense as "Hypeninae Group 3". It was recognised as a distinct subfamily by Fibiger & Lafontaine (2005).

They (Fibiger & Lafontaine 2005) listed 14 genera in the subfamily distributed mainly in the Old and New Worlds, predominantly in tropical and subtropical zones with a total of 196 species in the World fauna. Two genera, *Colobochyla* and *Phytometra* occur in Siberia.

References: Fibiger & Lafontaine 2005, Lafontaine & Fibiger 2006; Holloway 2008.

Phytometra viridaria (Clerck, 1759)

(Pl. 2: 58-61; ♂ genit. Pl. 35: 5; ♀ genit. Pl. 128: 3)

Phalaena viridaria Clerck, 1759, *Icones Insect. rariorum* **1**: Pl. 9: 12 (Type-locality: Sweden).

Synonymy: *aenea* Denis & Schiffermüller, 1777; *purpurata* Linnaeus, 1761; *lanceata* Scopoli, 1763; *latruncula* Esper, 1791; *olivacea* Vieweg, 1790; *hoffmanni* Stauder, 1915; *lutalgira* Schawerda, 1924.

Bionomics. Meso-hygrophilous species, inhabits humid meadows, peat bogs, grasslands, steppe, forest edges, and hillsides. Two overlapping generations from V to IX. Larvae feed on *Polygala vulgaris*, *P. comosa*, *P. armata* (Polygalaceae) and *Pedicularis sylvatica* (Scrophulariaceae). Pupa overwinters.

Distribution (Map 66). Trans-Palaearctic, boreal. Russia to Ural, S and central Siberia (Yakutia), Far East (Primorye). – N Africa, Europe, Near East, Transcaucasia, Central Asia, Kazakhstan, Mongolia.

Phytometra amata (Butler, 1879)

(Pl. 2: 62-64; ♂ genit. Pl. 35: 6; ♀ genit. Pl. 128: 4)

Rhodaria amata Butler, 1879, *Illustr. typical Specimens Lepid. Heterocera Colln Br. Mus.* **3**: 72, pl. 57: 11 (Type-locality: Japan: Yokohama).

Synonymy: *inamoena* Filipjev, 1925.

Bionomics. Mesophilous species, occurs in woodsides, humid meadows, bogs, grasslands, open hillsides. The moth flies by day and is also attracted by light. The flight period is from VI to IX. The larva and its foodplants are unknown.

Distribution (Map 67). Siberian-Manchurian, subboreal. S Siberia (Minusinsk), Far East (Primorye). – Central Europe (Slovenia), China, Korea, Japan.

Note. Polymorphic species represented by yellow-pinky regular form and dark brown-greyish melanic form.

Note. The holotype of *Pyralidestes inamoena* is illustrated on Pl. 2: 62.

Genus ***Colobochyla*** [1825] 1816

Colobochyla Hübner, [1825] 1816, *Verz. bekannter Schmett.*: 344. Type-species: *Pyralis salicalis* [Denis & Schiffermüller], 1775 [Austria].

Synonymy: *Salia* Hübner, 1806, rejected name; *Cholobochyla*: Hübner, 1816, misspelling; *Madopa* Stephens, 1829; *Colobochila* Agassiz, 1846, emendation; *Calobochila*: Walker, [1859] 1858, misspelling.

Wingspan 23-28 mm. Antenna of male ciliate; labial palps straight, directed obliquely forward, the 3rd segment 3 times shorter than 2nd, elongated, pointed; forewing with convex outer margin. In male genitalia, uncus, sickle-like, valva with parallel margins, apically rounded; clasper small; harpe absent; costa basally wide, expanded to the middle of valva, with apical extension; juxta wide, plate-like, V-shaped. Aedeagus shorter than valva, vesica bulbous with multiple diverticula, scobinated, without cornuti. In female genitalia, papillae anales broad; anterior apophyses longer than posterior ones; ductus bursae short, membranous; corpus bursae elongated, 3 times longer than ductus, with short oblique, sclerotised bend in the middle; ductus seminalis basally coiled.

The genus includes 9 species distributed in the Old and New Worlds, mainly in tropics and subtropics, in Palaearctic 2 species, *C salicalis* and *C. similis* Warren, 1915 (China). – 1 species.

Colobochyla salicalis ([Denis & Schiffermüller], 1775)

(Pl. 2: 65, 66; ♂ genit. Pl. 36: 1; ♀ genit. Pl. 128: 5)

Pyralis salicalis [Denis & Schiffermüller], 1775, *Ank. Syst. Werk Schmett. Wien.*: 122 (Type-locality: [Austria], Vienna district]).

Synonymy: *obliquata* Fabricius, 1794; *cinerea* Butler, 1879; *salicatus*: Haworth, 1809, emendation; *salicatus var. laetalis* Staudinger; 1892.

Bionomics. Meso-hygrophilous species, occurs in humid coniferous, mixed and deciduous forests in woodsides, meadows and clearings. Two overlapping generations from late V to VIII. Larvae feed on various speces of *Salix* and *Populus* (Salicaceae). The pupa overwinters.

Distribution (Map 68). Eurasian, boreal. Russia to Ural, through S Siberia to the Far East, Sakhalin and Kuriles. – Europe, Near East, Caucasus, Transcaucasia, Kazakhstan, China, Korea, Japan.

Note. The type of *Madopa salicatuss var. laetalis* is illustrated on Pl. 2: 65.

9. Subfamily **Herminiinae** Leach, [1815]

Herminida Leach, [1815] 1830, in *Brewster,Edinburgh Encycl.* 9: 134. Type genus: *Herminia* Latreille, 1802.

Synonymy: Herminidae Herrich-Schäffer, [1851] 1845; Herminites Duponchel, [1845] 1844; Polypogoninae Hampson, 1918; Polypogoninae Lhomme, 1923.

Small and medium sized moths, some species rather large. Antenna of male often with knot-like thickening or swelling around middle of shaft. Labial palps long, extended, usually sickle-like, upcurved along frons, extended over vertex; or extended obliquely forward, blade-shaped. Male secondary sexual organs occur in antennal knots, labial palps, forewing, foreleg and vinculum (Owada 1987a). Legs very slender and long. In males of many species legs highly specialised, tibia forming a sheet covering first segment of tarsus; the tarsus reduced to 3 or 1 segments. Almost all herminiine genera have hair tufts on the foretibia in the male. Wing rather broad, coloured from pale grey to brownish grey, wing pattern usually weakly developed, reniform stigma often reduced. Hindwing usually without pattern, lines and spots. In some genera the male wing with costal fold on the upperside or underside. Vein M2 in hindwing developed; bases of M2 and M3 separate.

Body slender. Counter-tympanal organ of prespiracular type. In male genitalia, muscle m2 lost, muscle m4 split, the two parts (m4a and m4b) originate from the apex and margin of the pleurite respectively (Tikhomorov 1979).

Larvae with fully developed 5 pairs of prolegs. The known larvae of most herminiines feed on dry or dead leaves, on fungi in dead leaves and decaying plant material, in rare cases they feed on living plants, moss (*Sinarella*) or on vascular plants.

Some authors have excluded Herminiinae from the Noctuidae and raised it to family rank (Kiriakoff, 1963; Kitching, 1984, Common 1990; Edwards 1996) on the basis of the prespiracular type of tympanal organ which is unique for the group. In recent revisions, Herminiinae was recognised as a subfamily of the Noctuidae (Owada 1987a; Kitching, and Rawlins 1998; Fibiger & Lafontaine 2005; Lafontaine & Fibiger 2006).

Poole (1989), then Holloway (2008) treated the genus *Polypogon* in a broad concept including *Herminia*, *Macrochilo*, *Pechipogo* and *Zanclognatha*, etc. as synonyms because their distinction is not well understood and because the Bornean species of this complex show great range of variability both in external and genitalia characters without clear indications for generic grouping. However, here these genera are treated as distinct, following Owada (1987a).

The subfamily includes about 1000 species in the World fauna. It is most diverse in subtropical and tropical areas and is associated mainly with forest habitats, in Palaearctic it is most diverse in Manchurian and Sino-Himalayan subregions with about 250 species. – 12 genera and 43 species occur in Asian part of Russia.

References: Remm & Martin 1979; Owada 1979, 1982, 1987, 1988, 1992, 1994; Holloway 2008.

Genus ***Edessena*** Walker, [1859] 1858

Edessena Walker, [1859] 1858, *List Specimens lepid. Insects Colln Br. Mus.* **16**: 162. Type-species: *Edessena gentiusalis* Walker, [1859] 1858 (N China).

Wingspan 42-50 mm. The genus is characterised by unique shape of wings and legs in the male. Antennae in male ciliate, on each segment with a pair of long bristles and additional short bristle, arising adjacent to inner bristle; labial palps sickle-like, 2nd segment broad, 3rd segment slender; forelegs with coxa, femur and tibia elongated, covered with long hairs; hindtibia with masses of long hairs on femur and tibia; forewing in male narrow with oblique outer margin, in female normal in shape; areole present; ground colour of forewing chocolate-brown, reniform stigma a white spot. In male genitalia, uncus long, simple; valva lobe-like; costa almost straight, sacculus well developed, narrow, with large pointed process, extending before distal end of valva; juxta diamond-shaped. Aedeagus large, dorsally membranous, ventrally sclerotised; vesica without cornuti. In female genitalia, papillae anales quadrangular, anterior and posterior apophyses moderate, equal in length; antrum sclerotised, ductus bursae short; bursa saccate, corpus bursae large, scattered with microspines.

The genus includes 2 species, Manchurian *E. hamada* and Oriental *E. gentuisalis*. – 1 species.

Edessena hamada (Felder & Rogenhofer, 1874)

(Pl. 3: 1, 2; ♂ genit. Pl. 36: 2; ♀ genit. Pl. 128: 6)

Renodes hamada Felder & Rogenhofer, 1874, *Reise öst. Fregatte Novara* (*Zool.*) **2** (Abt. 2): pl. 119: 23 (Type-locality: Japan).

Bionomics. Mesophilous species collected twice in Primorye in humid broad-leaved forests with *Quercus dentata* and *Q. mongolica*. In cold areas including Japan one generation, and two generations in warmer areas. The flight period is from early VI to mid VIII. Larvae feed on fresh leaves of *Quercus acutissima* (Fagaceae); in final instar they prefer dead leaves (Ebato 1971). Overwinters as pupa.

Distribution (Map 69). Manchurian, nemoral. Far East (S Primorye). – China, Korea, Japan.

Note. The only two specimens collected in late VII in Primorye are known from the Far East.

Genus ***Hadennia*** Moore, 1887

Hadennia Moore, [1885] 1887, *Lepid. Ceylon.* **3**: 236. Type-species: *Bocana hypenalis* Walker, [1859] 1858 (Sri Lanka) (= *Bocana jutalis* Walker, [1859] 1858).

Synonymy: *Wilkara* Swinhoe, 1918; *Walkara*: Swinhoe, 1918, emendation.; *Bertula* auct.

Wingspan 24-36 mm. Antennae in male ciliate, usually with a knot in middle shaft; labial palps in male modified: 1st segment short, 2nd segment long, upcurved along frons and vertex, 3rd segment about ½ length of 2nd, ovate, with tufts of ochreous long hairs, arising from the base; labial palps of female sickle-like; legs normal; ground colour of forewing dark violet-brown. In male genitalia, uncus slender, simple; valva lobe-like, weakly sclerotised, rounded distally; sacculus well developed, with large stout process; juxta diamond-shaped. Aedeagus large, as long as valva; vesica well scobinate. In female genitalia, papillae anales quadrangular, anterior and posterior apophyses moderate, equal in length; ductus bursae sclerotised, corpus bursae saccate, long, scattered with microspines and with single signum.

The genus includes 15 species, distributed mainly in Oriental region – 1 species.

Hadennia incongruens (Butler, 1879)

(Pl. 3: 3, 4; ♂ genit. Pl. 36: 3; ♀ genit. Pl. 128: 7)

Bocana incongruens Butler, 1879, *Ann. Mag. nat. Hist.* (5) **4**: 448 (Type-locality: Japan: Yokohama).

Synonymy: *amurensis* Staudinger, 1888; *jutalis* auct.

Bionomics. Mesophilous species, occurs in rich and dump deciduous forests. One generation, the flight period from late VI to early IX. The larval foodplants unknown.

Distribution (Map 70). Manchurian, nemoral. Far East (S Khabarovsk and Primorye terr., S Kuriles). – China, Korea, Japan.

Genus ***Paracolax*** Hübner, [1825] 1816

Paracolax Hübner, [1825] 1816, *Verz. bekannter Schmett.*: 344. Type-species: *Pyralis derivalis* Hübner, 1796 [Europe].

Synonymy: *Capnistis* Warren, 1913; *Paraherminia* Richards, 1932; *Crinisinus* Bryk, 1948.

Wingspan 18-30 mm. Antennae in male ciliate or short bipectinate; labial palps sickle-like or blade-like, variable in shape; legs normal; ground colour of forewing brown, yellow brown, grey-brown. In male genitalia, uncus long, slender, valva weakly sclerotised, simple; costa weakly sclerotised; sacculus well developed, with a large variable process; juxta triangular. Aedeagus shorter, as length of valva; vesica scobinate, without cornuti. In female genitalia, ductus bursae with a pair of fused sclerotised sclerites, corpus bursae saccate, about twice as long as ductus bursae, corpus bursae in posterior part with numerous spines and micro-spines, with or without signum.

The genus includes 18 species, distributed mainly in Oriental region and Manchurian subregion of the Palaearctic. – 5 species.

Paracolax tristalis (Fabricius, 1794)

(Pl. 3: 5, 6; ♂ genit. Pl. 36: 4; ♀ genit. Pl. 128: 8)

Phalaena tristalis Fabricius, 1794, *Ent. Syst.* **3** (2): 224 (Type-locality: Italy).

Synonymy: *glaucinatus* Fabricius, 1794; *derivalis* Hübner, 1796; *tristis* Fabricius, 1798; *derivatus* Haworth, 1809; *glaucinalis* auct.

Bionomics. Meso-xerophilous species, inhabits dry woodland, occurs in meadows, bushes, parks. In some years appears in masses. The flight period is from late VI to early IX. Larvae feed on dead and dry leaves of *Quercus* (Fagaceae) *Salix* (Salicaceae) *Crataegus* and *Rubus* (Rosaceae) among litter. The mid instar larva overwinters.

Distribution (Map 71). Eurasian, boreal European part of Russia, through S Siberia to the Far East, Sakhalin and Kuriles. – From Europe and Near East to China, Korea, Japan.

Paracolax trilinealis (Bremer, 1864)

(Pl. 3: 7, 8; ♂ genit. Pl. 36: 5; ♀ genit. Pl. 128: 9)

Herminia trilinealis Bremer, 1864, *Mém. Acad. imp. Sci. St.–Pétersb.* (7)8 **1**: 64, pl. 5: 23 (Type-locality: Russia: "Ussuri" [Primorye]).

Synonymy: *turbo* Bryk, 1948.

Bionomics. Mesophilous species, occurs in deciduous and mixed forest, meadows, bushes. The flight period is from mid VI to mid VIII. Larvae feed on dead and dry leaves of dicotyledonous plants.

Distribution (Map 72). Manchurian, nemoral. Far East, to Sakhalin and Kuriles. – China, Korea, Japan.

Paracolax fascialis (Leech, 1889)

(Pl. 3: 9, 10; ♂ genit. Pl. 37: 1; ♀ genit. Pl. 129: 1)

Herminia fascialis Leech, 1889, *Entomologist* **22**: 64, pl. 2: 3 (Type-locality: Japan: Hakodate).

Synonymy: *helialis* Staudinger, 1892.

Bionomics. Mesophilous species, inhabits deciduous and mixed coniferous forests. The moth in flight from early VII to early IX. In Japan, larvae were found on dry leaves of coniferous trees (*Thujopsis dolabrata* and *Cryptomeria japonica*).

Distribution (Map 73). Manchurian, nemoral. Far East (S Khabarovsk, Primorye terr, S Kuriles). – China, Korea, Japan.

Paracolax fentoni (Butler, 1879)

(Pl. 3: 11, 12; ♂ genit. Pl. 37: 2; ♀ genit. Pl. 129: 2)

Herminia fentoni Butler, 1879, *Illustr. typical Specimens Lepid. Heterocera Colln Br. Mus.* **3**: 63, pl. 56: 12 (Type-locality: Japan).

Synonymy: *Zanclognatha leechi*: Remm & Martin, 1979, nec South, 1905, misidentification.

Bionomics. Mesophilous species, occurs in deciduous forests on meadows and bushes. One generation, the flight period is from mid VI to mid VIII. The larva and its foodplants are unknown.

Distribution (Map 74). Manchurian, nemoral. Far East (S Khabarovsk, Primorye terr, S Kuriles). – China, Korea, Japan, Taiwan.

Paracolax albinotata (Butler, 1879)

(Pl. 3: 13, 14; ♂ genit. Pl. 37: 3; ♀ genit. Pl. 129: 3)

Amblygoes albinotata Butler, 1879, *Ann. Mag. nat. Hist.* (5)**4**: 499 (Type-locality: Japan, Yokohama).

Bionomics. Mesophilous species, in Russia known only from S Kuriles (Kunashir Isl.). Inhabits humid deciduous and mixed forests, bushes. The moth flies from V to mid VIII. Larvae feed on dry leaves of various plants.

Distribution (Map 75). Japanese, nemoral. Islands of Russian Far East (S Kuriles, Kunashir Isl.). – Japan.

Genus ***Idia*** Hübner, [1813]

Idia Hübner, [1813], *Samml. exot. Schmett.* **I**: pl. [212]. Type-species: *Idia aemula* Hübner, [1813] (N America).

Synonymy: *Epizeuxis* Hübner, 1818; *Camptylochila* Stephens, 1834; *Helia* Duponchel, 1844; *Campylochila*: Agassiz, 1847, misspelling; *Helia* Guenée, 1854; preocc. (Hübner, 1818 [Lepidoptera, Noctuidae]); *Pseudaglossa* Grote, 1874; *Zenomia* Dognin, 1914.

Wingspan 22-32 mm. Antennae in male ciliate or shortly bipectinate; labial palps sickle-like upturned over vertex; forewing relatively narrow; ground colour of forewing grey-brown, with violet tint, reniform stigma orange or yellow; legs normal.

In male genitalia, uncus rather stout; valva narrow, with process of sacculus extending beyond middle of valva, rounded or acute distally, in some species covered by dense short hairs; juxta broad. Aedeagus as long as valva, thick; vesica with scobination, without cornuti. In female genitalia, ductus bursae long, straight, with a pair of fused broad lateral sclerites, corpus bursae oval or pear-shaped, scattered finely with microspines, with or without small signum.

The genus includes 40 species, distributed Palaearctic, Oriental, Ethiopian, Nearctic and Neotropical regions, of them in Palaearctic 6 species. – 2 species.

Idia quadra (Graeser, [1889] 1888)

(Pl. 3: 17, 18; ♂ genit. Pl. 37: 4; ♀ genit. Pl. 129: 4)

Helia quadra Graeser, 1888 [1889], *Berl. ent. Z.* **32**, II: 378 (Type-locality: Russia: "Raddefka" [Khabarovsk terr., Judish autonomy, Radde], Khabarovsk, Primorye, "Suifun" [Razdolnaya river]).

Synonymy: *Epizeuxis curvipalps s*: Herz, 1904, nec Butler, 1879, misidentification.

Bionomics. Meso-hygrophilous species, occurs in deciduous and mixed forests, prefers open biotopes: wet meadows, clearings, woodsides. The flight period is from early VII to late VIII, sometimes to late IX. The larva and its foodplants are unknown.

Distribution (Map 76). Manchurian, nemoral. SE Transbaikalia, Far East (from S Amur reg. to Primorye terr.). – China, Korea, Japan.

Idia curvipalpis (Butler, 1879)

(Pl. 3: 19, 20; ♂ genit. Pl. 37: 5; ♀ genit. Pl. 129: 5)

Capnodes curvipalpis Butler, 1879, *Ann. Mag. nat. Hist.* (5) **4**: 369 (Type-locality: Japan: Yokohama).

Synonymy: *lunulata* Herz, 1904.

Diagnosis. *I. curvipalpis* is closely related to *I. quadra*, externally it differs in somewhat smaller size, less contrast and less expressed wing pattern and much smaller yellow orbicular, which is rather large and prominent in *I. quadra*.

Bionomics. Meso-hygrophilous not frequent species, occurs sympatricly with preceding species; inhabits deciduous and mixed forests. The flight period is from early VII to late VIII, sometimes to late IX. Larvae feed on dead leaves of dicotyledonous plants.

Distribution (Map 77). Manchurian, nemoral. Far East (S Khabarovsk and Primorye terr., S Kuriles). – China, Korea, Japan.

Genus ***Gynaephila*** Staudinger, 1892

Gynaephila Staudinger, 1892, in Romanoff, *Mém. Lépid.* **6**: 629. Type-species: *Gynaephila maculifera* Staudinger, 1892 (Russia, Primorye, N China).

Wingspan 18-22 mm. Antennae in male ciliate; labial palps long, sickle-like, upturned; proboscis weakly developed, forewing broad, relativaly short; ground colour of forewing brown, with reddish-violet tint, orbicular and reniform stigmata small, orange; legs normal. In male genitalia, uncus rather short, massive, falciform; valva rather narrow, with strongly sclerotised costa and short process of sacculus extending beyond 2/3 of valva; juxta broad. Aedeagus as long as 2/3 of valva, massive; vesica with scobination, without cornuti. In female genitalia, papillae anales broad, quadrangular, anterior and posterior apophyses almost equal in length, antrum wide, sclerotised, ribbed, ductus bursae very short, corpus bursae short, saccate, scattered finely with scobination.

The genus includes 9 species, distributed in Manchurian subregion (2) of the Palaearctic, Oriental region (4) Ethiopian region (3). – 1 species.

Gynaephila maculifera Staudinger, 1892

(Pl. 3: 15, 16; ♂ genit. Pl. 37: 6; ♀ genit. Pl. 129: 6)

Gynaephila maculifera Staudinger, 1892, in Romanoff, *Mém. Lépid.* **6**: 629, pl. 14: 13 (Type-locality: Russia: Vladivostok; Askold I, "Sutschan" [Partizansk], N China).

Bionomics. Mesophilous, not frequent species, occurs in deciduous lowland forests in woodsides, meadows, clearings. The moth flies from mid VII to late VIII. The larva and its foodplants are unknown.

Distribution (Map 78). Manchurian, nemoral. Far East (S Khabarovsk and Primorye terr.). – China, Korea, Japan (Hokkaido, Honshu).

Genus ***Hydrillodes*** Guenée, 1854

Hydrillodes Guenée, 1854, *in* Boisduval & Guenée, *Hist. nat. Insectes* (Lèpid.) **8**: 65. Type-species: *Hydrillodes lentalis* Guenée, 1854 [Central India].

Synonymy: *Echana* Walker, [1859] 1858; *Olybama* Walker, [1859] 1858; *Bibacta* Moore, 1882; *Ragana* Swinhoe, 1900; *Cellacrinata* Bethune-Baker, 1908.

Wingspan 20-35 mm. Body slender; antennae in male ciliate; labial palps sickle-like, in male well upturned over vertex; legs normal, in some species foretibia of male covered densely with long hairs; forewing rather narrow; wing venation without areole, R1 reduced in male, present in female; costal fold present on the upperside of male in many species; ground colour of forewing grey, brown or grey-brown. In male genitalia, uncus short and stout, hooked on the apex; valva bifurcate, dorsal process longer than ventral one; juxta triangular or rectangular. Aedeagus as long as valva; vesica scobinate, with variable cornuti. In female genitalia, papillae anales long, weak, anterior apophyses about two times shorter than posterior ones; antevaginal plate sclerotised, with variable projections; ductus bursae well sclerotised with longitudinal furrow; corpus bursae saccate, scattered with microspines, with pair of reniform signa; ductus seminalis long and usually coiled.

The genus includes 61 species, distributed mainly in Oriental, Ethiopian, Australian regions and in Manchurian subregion of the Palaearctic. – 1 species.

Hydrillodes morosa (Butler, 1879)

(Pl. 3: 21, 22; ♂ genit. Pl. 38: 1; ♀ genit. Pl. 129: 7)

Bleptina morosa Butler, 1879, *Illustr. typical Specimens Lepid. Heterocera Colln Br. Mus.* **3**: 64, pl. 56: 15 (Type-locality: Japan).

Synonymy: *funeralis* Warren, 1913; *obscurans* Bryk, 1948; *lentalis* auct.

Bionomics. Mesophilous species, rather common in mixed and deciduous broad-leaved forests. Occurs in woodsidess, meadows, bushes. Two generations from V to late VIII. In some years appears in masses. Larvae feed on dead and fresh leaves of dicotyledonous plants.

Distribution (Map 79). Manchurian, nemoral. Far East, to Sakhalin and Kuriles. – China, Korea, Japan (Hokkaido, Honshu).

Genus ***Bertula*** Walker, 1858

Bertula Walker, [1859] 1858, *List Specimens lepid. Insects Colln Br. Mus.* **16**: 162. Type-species: *Bertula abjudicalis* Walker, [1859] 1858 [Sri Lanka].

Synonymy: *Elyra* Walker, [1859] 1858; *Neviasca* Walker, 1858, preocc. (Walker, [1859] 1858 [Lepidoptera, Noctuidae]); *Eordaea* Walker, [1859]; *Cardalena* Walker, 1859 unnecessary replacement name; *Gabrisa* Walker, 1865 unnecessary replacement name.

Wingspan 25-30 mm. Body slender; antennae in male ciliate or bipectinate; labial palps sickle-like upturned over vertex, with a tufts of scales; forelegs of male modified, with short sheet on distal part of tibia and prominent distal projection on the 1st segment of tarsus, ground colour of forewing usually dark-brown, wing pattern as pale inner and outer lines. In male genitalia, uncus stout, variable; valva well sclerotised, variable in shape, sometimes asymmetrical; usually bilobate, in some cases the costa is separate from valva; juxta triangular, transtilla narrow. Aedeagus shorter than valva; vesica well scobinate, without cornuti. In female genitalia, ductus bursae long, variable in shape, corpus bursae saccate, about 2 times longer than ductus bursae, corpus bursae scattered with micro-spines, with or without signum; ductus seminalis broad and coiled in basal portion.

The genus includes 49 species, distributed mainly in Oriental region and Manchurian subregion of the Palaearctic. – 1 species.

Bertula bistrigata (Staudinger, 1888)

(Pl. 3: 23-25; ♂ genit. Pl. 38: 2; ♀ genit. Pl. 129: 8)

Zanclognatha bistrigata Staudinger, 1888, *Stettin. ent. Ztg* **49**: 236 (Type-locality: Russia: Vladivostok, "Sutschan-Gebiet" [Partizansk]).

Synonymy: *spacoalis chosenana* Bryk, 1948.

Bionomics. Mesophilous, rather rare species, occurs in rich deciduous, mixed and coniferous forests. The flight period is from mid VI to mid VIII. Larvae feed on fern, *Dennstaedtia scabra* (Dennstaedtiaceae) (Owada 1987a, 1987b).

Distribution (Map 80). Manchurian, nemoral. Far East (S Khabarovsk and Primorye terr.). – China, Korea, Japan.

Genus ***Simplicia*** Guenée, 1854

Simplicia Guenée, 1854, in Boisduval & Guenée, *Hist. nat. Insectes* (Lèpid.) **8**: 15. Type-species: *Herminia rectalis* Eversmann, 1842 (Russia, Orenburg, Kasan).

Synonymy: *Libisosa* Walker, [1859] 1858; *Culicula* Walker, 1864; *Aginna* Walker, 1865; *Nabartha* Moore, 1887.

Wingspan 27-45 mm. Antennae in male ciliate, in some species with sinuate knot formed by 7-9 segments of shaft; labial palps sickle-like upturned over the vertex; forelegs of male modified, with moderate or large sheet on distal part of tibia, covering 1 segment of tarsus; forewing narrow; ground colour of forewing yellowish-grey. In male genitalia, uncus stout, rather short; tegumen half the length of vinculum; valva heavily sclerotised in *S. rectalis*, in other species weakly sclerotised; costa wide; sacculus narrow; juxta broad, triangular. Aedeagus stout, longer than valva; vesica scobinate, without cornuti. In female genitalia, papillae anales and apophyses moderate; ductus bursae long and slender, with a pair of fused sclerotised bands, corpus bursae saccate, equal or longer than ductus bursa, scattered with numerous spines and micro-spines in caudal part, without signum; ductus seminalis coiled in basal part.

The genus includes 43 species, distributed mainly in Oriental region and Manchurian subregion of the Palaearctic. – 5 species.

Simplicia rectalis (Eversmann, 1842)

(Pl. 3: 26, 27; ♂ genit. Pl. 38: 3; ♀ genit. Pl. 129: 9)

Herminia rectalis Eversmann, 1842, *Bull. Soc. imp. Nat. Mosc.* **15** (3): 558 (Type-locality: SE Russia, Orenburg, Kasan).

Synonymy: *sicca* Butler, 1879; *minoralis* Warren, 1913.

Bionomics. Meso-xerophilous species, occurs in open oak and deciduous forests, bushes, meadows, forest-steppe. Bivoltine with two overlapping generations from late V to IX. Larvae feed on fallen leaves of *Quercus*, (Fagaceae) and *Elymus* (Poaceae).

Distribution (Map 81). Eurasian, subboreal. South Russia to Ural, through S Siberia to the Far East to Primorye. – C and S Europe, Near Earst, Turkey, Transcaucasia, China, Korea, Japan.

Genus ***Zanclognatha*** Lederer, 1857

Zanclognatha Lederer, 1857, *Noctuinen Eur.*: 45. Type-species: *Pyralis tarsiplumalis* Hübner, 1796 [Europe] (= *Phalaena lunalis* Scopoli, 1763).

Synonymy: *Erpyzon* Hübner, 1808, rejected name; *Cleptomita* Grote, 1873; *Megachyta* Grote, 1873; *Pityolita* Grote, 1873; *Mesoplectra* Butler, 1879; *Adrapsoides* Matsumura, 1925; *Adrapsoides* Matsumura, 1925; *Treitschkendia* Berio, 1989; *Zellerminia* Beck, 1966.

Wingspan 24-36 mm. Antennae in male ciliate or bipectinate, with a knot. Labial palps moderate, sickle-like; forelegs of male modified, variable in shape, with moderate or large sheet on distal part of tibia, with tufts of hairs, arising from coxa, femur, tibia or 1st segment of tarsus; forewing broad, outer margin rounded; venation with areole; ground colour of forewing grey, brown, rarely yellowish-grey. In male genitalia, uncus stout, variable in shape; tegumen broad; valva varible in shape, often separated into 2-3 lobes, sacculus often with apical process; juxta broad, transtilla developed. Aedeagus broad, as long as valva; vesica with multiple diverticula, well scobinate, with or without cornuti. In female genitalia, papillae anales weakly sclerotised, anterior and posterior apophyses moderate, usually equal in length; ductus bursae usually long, narrow and sclerotised, bursa variable in shape, equal or longer than ductus bursa, corpus bursae, especially in caudal part scattered with numerous spines and micro-spines, ductus seminalis arising from cervix bursa, coiled in basal part.

The genus includes 58-60 species, distributed in Palaearctic, Oriental, Nearctic and Ethiopian regions. – 15 species.

Zanclognatha griselda (Butler, 1879)

(Pl. 3: 28, 29; ♂ genit. Pl. 38: 4; ♀ genit. Pl. 130: 1)

Herminia griselda Butler, 1879, *Illustr. typical Specimens Lepid. Heterocera Colln Br. Mus.* **3**: 63, pl. 56: 9 (Type-locality: Japan: Yokohama).

Diagnosis. *Z. griselda* differs from its allies in having prominent dark-brown subterminal line; antemedial line straight, postmedial line angled, but not waved.

Bionomics. Mesophilous species, inhabits rich mixed and dark coniferous montane forests. The moth flies from early VII to late VIII. Larvae feed on fresh leaves of coniferous trees: *Pinus*, *Abies*, *Cryptomeria*, *Tsuga* (Owada 1987a, 1987b).

Distribution (Map 82). Manchurian, nemoral. Far East, to Sakhalin and S Kuriles. – China, Korea, Japan.

Zanclognatha lilacina Butler, 1879)

(Pl. 3: 31-32; ♂ genit. Pl. 37: 5; ♀ genit. Pl. 130: 2)

Mesoplectra lilacina Butler, 1879, *Illustr. typical Specimens Lepid. Heterocera Colln Br. Mus.* **3**: 65, pl. 57: 3 (Type-locality: Japan: Yokohama).

Synonymy: *celatrix* Filipjev, 1927.

Diagnosis. Antemedial, postmedial and subterminal lines waved, somewhat diffuse; in male medial field with dark suffusion. Judging from male genitalia, closely related to *Z. grizelda*, but differs well by long, finger-like extension of sacculus.

Bionomics. Mesophilous species, rather rare in Primorye, occurs in rich mixed and coniferous forests. The moth flies from mid VI to VIII. Larvae feed on fresh leaves of conifers, *Abies firma* (Pinaceae) (Sugi 1969).

Distribution (Map 83). Manchurian, nemoral. Far East (Primorye). – China, Korea, Japan.

Zanclognatha lunalis (Scopoli, 1763)

(Pl. 3: 33, 34; ♂ genit. Pl. 38: 6; ♀ genit. Pl. 130: 3)

Phalaena lunalis Scopoli, 1763, *Ent. Carniolica*: 241: 612 (Type-locality: Europe: Slovenia).

Synonymy: *tarsiplumalis* Hübner, 1796; *tarsiplumalis chosensis* Bryk, 1948.

Diagnosis. *Z. lunalis* could be confused with *Z. lui* Han & Park, 2005, known from N China and Korea, however in male genitalia, it is clearly different in shorter saccular and longer costal extensions, structure of juxta and armature of vesica.

Bionomics. Meso-thermophilous species. Most widespread and common *Zanclognatha* species, occurs in eadges of various woodlands, bushes, meadows. The flight period is from early VI to late VIII. Larvae feed on dry leaves of deciduous trees, shrubs and low plants, including *Fagus*, *Quercus*, *Carpinus, Vaccinium*, *Prunus*, *Polygonum*, *Lactuca*, *Taraxacum.*

Distribution (Map 84). Eurasian, nemoral. European Russia, through S Siberia to the Far East, Sakhalin and Kuriles. – Europe, Caucasus, Transcaucasia, Central Asia, China, Korea, Japan.

Zanclognatha fumosa (Butler, 1879)

(Pl. 3: 35-37; ♂ genit. Pl. 39: 1; ♀ genit. Pl. 130: 4)

Herminia fumosa Butler, 1879, *Illustr. typical Specimens Lepid. Heterocera Colln Br. Mus.* **3**: 62, pl. 56: 8 (Type-locality: Japan).

Synonymy: *assimilis* Staudinger, 1888.

Diagnosis. Clearly different from allied species in dark grey-brownish wing colour and distinct thin antemedial, postmedial and subterminal lines.

Bionomics. Mesophilous species, inhabits various wet deciduous and mixed forests. Occurs on woodsides, clearings, forests edges, bushes. The moth flies from late VI to late VIII. Larvae feed on *Festuca arundinacea* (Poaceae) and *Carex incisa* (Cyperaceae) (Kogi 1985).

Distribution (Map 85). Manchurian, nemoral. Far East (from S Khabarovsk and Primorye terr., to S Kuriles (Kunashir and Shikotan Is.). – China, Korea, Japan.

Note. The syntypes of *Zanclognatha assimilis* is illustrated on Pl. 3: 35.

Zanclognatha obliqua Staudinger, 1892

(Pl. 3: 38-40; ♂ genit. Pl. 39: 2; ♀ genit. Pl. 130: 5)

Zanclognatha obliqua Staudinger, 1892 in Romanoff, *Mém. Lépid.* **6**: 616, pl. 14: 10 (Type-locality: Russia, Primorye, Askold I.).

Diagnosis. Differs from its congeners in pale grey-brownish wing colour and thin subterminal line shadowed from inner side by prominent broad brown suffusion. Ante- and postmedial lines thin, hardly traceable; reniform stigma a distinct blackish comma-like spot.

Bionomics. Meso-hygrophilous species, inhabits humid meadows, bushes along wet river valleys, marshy places with grasses Poaceae. Moth flies from late VI to late VIII. Larvae feed on fresh leaves of

Carex incisa (Cyperaceae) and *Festuca arundinacea* (Poaceae) (Kogii 1985).

Distribution (Map 86). Manchurian, nemoral. Far East (S Amur reg., S Khabarovsk and Primorye terr., S Kuriles: Kunashir Is.). – China, Korea, Japan.

Zanclognatha tarsipennalis (Treitschke, 1835)

(Pl. 3: 41, 42; ♂ genit. Pl. 39: 3; ♀ genit. Pl. 130: 6)

Herminia tarsipennalis Treitschke, 1835, *Schmett. Eur.* **10** (3): 5 (Type-locality: Germany: Brandenburg).

Synonymy: *denticornalis* Wocke, 1850.

Diagnosis. Externally the species could be confused with *Herminia tarsicrinalis* (Knoch, 1782), but is clearly different from the latter in structure of genitalia.

Bionomics. Meso-hygrophilous species, occurs in woodlans on meadows, clearings, bushes, gardens, parks. The species probably have two overlapping generations from late VI to late VIII. Larvae feed on dry leaves of trees and shrubs such as *Quercus*, *Rubus*, *Salix* and low plants, including *Polygonum*, *Rhus*, *Plantago*, *Taraxacum*.

Distribution (Map 87). Trans-Palaearctic, subboreal. Russia, through S Siberia to the Far East (to Sakhalin and Kuriles). – N Africa, Near East, Europe, Caucasus, Central Asia, China, Korea, Japan.

Zanclognatha subgriselda Sugi, 1959

(Pl. 3: 43, 44; ♂ genit. Pl. 39: 4; ♀ genit. Pl. 130: 7)

Zanclognatha subgriselda Sugi, 1959, *Tinea* **5**: 284, pl. 38: 18 (Type-locality: Japan, Tokyo, Takao-san).

Diagnosis. Exterally resembling *Z. griselda*, but differs in somewhat smaller size, less expressed wing pattern and structure of genitalia.

Bionomics. Mesophilous species, known from Russia from a few specimens collected in the S Kuriles (Kunashir Is.). Inhabits humid mixed and coniferous forests, occurs on forest meadows, clearings, bushes. The moth flies from late VI to late VIII. Larvae feed on dead leaves.

Distribution (Map 88). Japanese, nemoral. Islands of Russian Far East (Kuriles, Kunashir Is). – Japan.

Zanclognatha triplex (Leech, 1900)

(Pl. 3: 45, 46; ♂ genit. Pl. 39: 5; ♀ genit. Pl. 130: 8)

Nodaria triplex Leech, 1900, *Trans. ent. Soc. Lond.* **1900**: 634 (Type-locality: China).

Synonymy: *sugii* Owada, 1980.

Diagnosis. *Z. triplex* is externally similar to *Z. tarsipennalis* and *Z. subgriselda*, but differs in somewhat darker brownish wing colour and more expressed wing pattern. Male differs in the unmodified forelegs.

Bionomics. Mesophilous species, occurs in meadows, woodsides and clearings in deciduous and coniferous forests. The moth flies from late VI to late VIII. The larva and its foodplants are unknown.

Distribution (Map 89). Manchurian, nemoral. SE Transbaikalia, Far East (Amur, S Khabarovsk, Primorye terr., S Kuriles). – China, Korea, Japan.

Zanclognatha helva (Butler, 1879)

(Pl. 3: 47, 48; ♂ genit. Pl. 39: 6; ♀ genit. Pl. 131: 1)

Herminia helva Butler, 1879, *Ann. Mag. nat. Hist.* (5) **4**: 477 (Type-locality: Japan: Yokohama).

Diagnosis. *Z. helva* differs externally from its allies in yellowish-grey wing colour, reduced ante- and post medial lines and prominent brown post-medial line.

Bionomics. Mesophilous species, occurs in rich mixed and dark coniferous montane forests. The moth flies from late VI to late VIII. The larva and its foodplants are unknown.

Distribution (Map 90). Manchurian, nemoral. Far East (Primorye and S Kuriles). – China, Korea, Japan, Taiwan.

Zanclognatha reticulatis (Leech, 1900)

(Pl. 4: 1, 2; ♂ genit. Pl. 40: 1; ♀ genit. Pl. 131: 2)

Adrapsa *reticulatis* Leech, 1900, *Trans. ent. Soc. Lond.* **1900**: 616 (Type-locality: China, Chang-yang).

Synonymy: *Zanclognatha reticulatis ruptistigma* (Holloway, 1976) (subsp.).

Bionomics. Mesophilous species, occurs in rich mixed broadleaved-coniferous and dark coniferous montane forests. The flight period is VII and VIII. The larva and its foodplants are unknown.

Distribution (Map 91). Oriental-Manchurian, nemoral. Far East (S Khabarovsk terr., Primorye, Sakhalin and S Kuriles). – China Japan, Taiwan, Vietnam, Thailand, Malaysia, Indonesia.

Zanclognatha umbrosalis Staudinger, 1892

(Pl. 4: 3, 4; ♂ genit. Pl. 40: 2; ♀ genit. Pl. 131: 3)

Zanclognatha umbrosalis Staudinger, 1892, in Romanoff, *Mém. Lépid.* **6**: 613, pl. 14: 8 (Type-locality: Russia: "Suifun" [Primorye terr., Razdolnaya river], "Sutschan-Gebiet" [Partizansk]).

Synonymy: *leechi* South, 1905.

Diagnosis. *Z. umbrosalis* differs from the next species in somewhat smaller size, darker and less contrasted wing colour and pattern and structures of male genitalia: valva narrower, with pointed apex. Aedeagus with large cornuti at the base of vesica.

Bionomics. Mesophilous species, occurs in various deciduous and mixed forests, meadows, along rivers, in bushes. The flight period is from late VI to IX. The larva and its foodplants are unknown.

Distribution (Map 92). Manchurian, nemoral. Far East (Amur, S Khabarovsk and Primorye terr.). – Korea, China, Japan (except Hokkaido).

Note. The lectotype of *Zanclognatha umbrosalis* is illustrated on Pl. 4: 4.

Zanclognatha perfractalis Bryk, 1948

(Pl. 4: 5, 6; ♂ genit. Pl. 40: 3; ♀ genit. Pl. 131: 4)

Zanclognatha perfractalis Bryk, 1948, *Ark. Zool.* **41** (A) 1: 147, pl. 6: 7 (Type-locality: N Korea: Hamgyeong bugdo [Shuotsu]).

Synonymy: *Zanclognatha sviridovi* Owada, 1992.

Diagnosis. Differs from *Z. umbrosalis* in more contrasting wing pattern; in the male genitalia, in shorter, wider and apically rounded valva. Aedeagus with plate-like cornutus at the base of vesica.

Bionomics. Mesophilous species, occurs sympatrically with preceding species in various deciduous and mixed forests in meadows and among bushes. More common in S Primorye. The flight period is from late VII to VIII. The larva and its foodplants are unknown.

Distribution (Map 93). Manchurian, nemoral. Far East (S Khabarovsk and Primorye terr.). – Korea, China.

Note. After examination of the holotype of *Z. perfractalis*, Owada (2006) stated that the species is not conspecific with *Z. southi* Owada, 1982, but with *Z. sviridovi* Owada, 1992. Therefore *Zanclognatha southi* in fact is a distinct species, known for the present only from Japan.

Zanclognatha tristriga W. Kozhantshikov, 1929

(Pl. 4: 7-9; ♂ genit. Pl. 40: 4; ♀ genit. Pl. 131: 5)

Zanclognatha tristriga W. Kozhantshikov, 1929, *Jahr. Martj. Staatsnus. Minussinsk* **6**: 79.

Diagnosis. *Z. tristriga* is closely related to *Z. tenuialis*; externally it differs in finer and more distinct wing pattern. In male genitalia, it differs from its allies in relatively shorter and wider valva, curved aedeagus and presence of one long, thin cornutus, and one wide, dentate one in the base of vesica.

Bionomics. Meso-xerophilous species, inhabits deciduous and mixed forests biotopes, occurs in meadows, woodsides, forest-steppe, bushes. The flight period is from late VII to VIII. The larva and its foodplants are unknown.

Distribution (Map 94). Siberian-Manchutian, subboreal. From W Siberia to S Transbaikalia and Far East (S Amur reg., S Khabarovsk and Primorye terr.). – Korea, China.

Note. The holotype of *Zanclognatha tristriga* is illustrated on Pl. 4: 7.

Zanclognatha tenuialis Rebel, 1899

(Pl. 4: 10-12; ♂ genit. Pl. 40: 5; ♀ genit. Pl. 131: 6)

Zanclognatha tenuialis Rebel, 1899, *Verh. zool. – bot. Ges. Wien*, **49**: 169 (Type-locality: Italiy).

Synonymy: *triplex koreognatha* Bryk, 1948.

Diagnosis. Differs from *Z. tristriga* in less contrasting wing pattern, shorter and apically pointed valva, shorter uncus and presence of one short and thin cornutus and one long not dentate one in the base of vesica

Bionomics. Meso-thermophilous species, occurs in open deciduous forest biotopes, forest-steppe, warm and humid meadows, among bushes. The moth flies in VII-VIII. Larvae feed on *Polygonum aviculare* (Polygonaceae); *Taraxacum* (Asteraceae) and species of Poaceae.

Distribution (Map 95). Eurasian, nemoral. S Russia, S Siberia to the Far East (Amur reg., S Khabarovsk and Primorye terr.). – C and S Europe, Caucasus, Korea.

Note. Kononenko (1996) incorrectly synonymised *Zanclognatha triplex koreognatha* with *Zanclognatha umbrosalis*. Owada (2006) re-examined the holotype of *Zanclignatha triplex koreognatha*, revealed incorrect synonymy and synonymised the taxon with *Zanclognatha tenuialis*.

Zanclognatha violacealis Staudinger, 1892

(Pl. 4: 13, 14; ♂ genit. Pl. 40: 6; ♀ genit. Pl. 131: 7)

Zanclognatha violacealis Staudinger, 1892, in Romanoff, *Mém. Lépid.* **6**: 612, pl. 14: 6. (Type-locality: Russia: "Ussuri" [Primorye] Askold I.).

Synonymy: *stramentacealis* auct.

Diagnosis. *Z. violacealis* differs from two preceding species in somewhat darker ash-grey wing colour and structure of male genitalia: uncus broad mesially, valva broader, aedeagus with two short plate-like cornuti in vesica.

Bionomics. Mesophilous species, inhabits deciduous and mixed wooded biotopes, meadows, woodsides, bushes, forest-steppe. The flight period is from late VII to mid IX. The larva and its foodplants are unknown.

Distribution (Map 96). Manchurian, nemoral. Far East to Sakhalin. – China, Korea, Japan.

Note. The holotype of *Zanclognatha violacealis* is illustrated on Pl. 4: 14.

Genus ***Pechipogo*** Hübner, 1825] 1816

Pechipogo Hübner, [1825] 1816, *Verz. bekannter Schmett.*: 345. Type-species: *Pyralis pectitalis* Hübner, 1796 [Europe] = *Phalaena Geometra strigilata* Linnaeus, 1758.

Synonymy: *Erpyzon* Hübner, 1806, rejected name; *Pechipogon*: Stephens, 1834, misspelling; *Pechypogon* Agassiz, 1846, emendation; *Herminia* auct.

Wingspan 22-30 mm. Antennae in male bipectinate, without knot. Labial palps very long, blade-like, directed obliquely upward; forelegs in male modified, with large tibial sheet and very long 1st segment of tarsus, ground colour of forewing grey. In male genitalia, uncus stout, simple; valva rather broad, costa wide and separate from valva in the apex; cucullus membranous; sacculus with process longer than or equal with costa; juxta triangular; transtilla narrow. Aedeagus broad, equal to valva in length; vesica distinctly scobinate, without cornuti. In female genitalia, papillae anales and 8th segment of abdomen elongated; ductus bursae straight, longer than corpus bursae, corpus bursae slender, slightly sclerotised in caudal part, scattered with microspines and short spines in caudal part, without signum.

The genus includes 2 species, distributed in West

Palaearctic and Manchurian subregion of the Palaearctic. – 1 species.

Pechipogo strigilata (Linnaeus, 1758)

(Pl. 4: 15, 16; ♂ genit. Pl. 41: 1; ♀ genit. Pl. 131: 8)

Phalaena Geometra strigilata Linnaeus, 1758, *Syst. Nat.* (Edn 10) **1**: 528 (Type-locality: Europe).

Synonymy: *barbalis* Clerk, 1759; *palpalis* Fabricius, 1775; *pectitalis* Hübner, 1796; *palpatus* Haworth, 1809; *barbata* Haworth, 1809.

Bionomics. Mesophilous species, inhabits in various woodlands on meadows, clearings, forests edges. Moth flies from late VI to late VIII. Larvae feed on dry and fresh leaves of *Quercus*, *Alnus*, *Betula*, *Corylus* and other plants.

Distribution (Map 97). Eurasian, boreal. Russia, through Ural and Siberia to the Far East (north to Kamchatka and Magadan reg.). – Europe, Transcaucasia, Kazakhstan, Mongolia, NE China, Korea, Japan (Hokkaido, Honshu).

Genus ***Polypogon*** Schrank, 1802

Popypogon Schrank, 1802, *Fauna Boica* **1** (2): 161. Type-species: *Phalaena tentacularia* Linnaeus, 1758 [Europe].

Synonymy: *Popypogon*: Doubleday, 1850 misspelling; *Herminia* auct.; *Macrochilo* auct.

Wingspan 22-30 mm. Antennae in male bipectinate, with a knot. Labial palps very long, longer than in *Pechipogo*, blade-like, shorter in female, directed obliquely upward; forelegs in male modified, with moderate tibial sheet and long 1st segment of tarsus; forewing broad, ground colour of forewing grey or yellowish-grey. In male genitalia, uncus broad, valva relatively narrow, bifurcate, costa slightly curved, in some species wirh minute projection at apex; sacculus with long process reaching 2/3 of valva; juxta triangular, high, extended; transtilla expressed. Aedeagus broad, equal to valva in length; vesica bulbous, distinctly scobinate, without cornuti. In female genitalia, papillae anales quadrangular; ductus bursae long, straight, with two long lateral band-like sclerites; corpus bursae broad, equal or half the length of ductus bursa, corpus bursae scattered with microspines and short spines in mid part, without signum.

The genus includes 7 species, distributed in West Palaearctic and in Manchurian subregion of the Palaearctic. – 3 species.

Polypogon tentacularia (Linnaeus, 1758

(Pl. 4: 17, 18; ♂ genit. Pl. 41: 2; ♀ genit. Pl. 132: 1)

Phalaena Geometra tentacularia Linnaeus, 1758, *Syst. Nat.* (Edn 10) **1**: 522 (Type-locality: Europe).

Synonymy: *tentaculalis* [Denis & Schiffermüller], 1775; *tentacularia* var. *carpathica* Hormuzaki, 1894.

Diagnosis. *P. tentacularia* could be confused with *P. strigilata*, but is distinctive in very long labial palps, bipectinate antennae of male, and in structure of the genitalia.

Bionomics. Meso-hygrophilous, most widespread and most northerly distributed herminiine species. It inhabits different nature zones, from forest-steppe to forest-tundra. Occurs in various open forest and biotopes with bushes. In S Siberia it occurs in mountains at altitudes up to 1500-1800 m. The flight period is from late VI to VIII. Larvae feed on fresh and dead leaves of various plants, including *Pteridium aquilinum*, *Chenopodium*, *Betula*, *Salix*, *Rubus*, *Chamaerion*, *Solidago*, *Taraxacum*, *Poa*.

Distribution (Map 98). Eurasian, boreal. Russia, through Siberia to the Far East (north to Kamchatka, Magadan reg. and Chukotka). – Europe, Caucasus and Transcaucasia, Kazakhstan, Mongolia, NE China, Korea, Japan (Hokkaido, Honshu).

Polypogon gryphalis (Herrich–Schäffer, 1851)

(Pl. 4: 19, 20; ♂ genit. Pl. 41: 3; ♀ genit. Pl. 132: 2)

Herminia gryphalis Herrich-Schäffer, 1851, *Syst. Bearb. Schmett. Eur.* **2**: 385: 601, 602 (Type-locality: Europe: "Syrmien").

Synonymy: *parallela* Wileman, 1911; *gryphalis* f. *romana* Draudt, 1936; *tarsicrinata* auct.

Bionomics. Meso-thermophilous species, occurs in various kind of forests and open biotopes in warm and humid habitats, often in secondary deciduous forests, in bushes, meadows, clearings. Probably two overlapping generations from mid VI to mid VIII. Larvae feed on dry leaves, in captivity on *Taraxacum*.

Distribution (Map 99). Euro-Siberian, boreal. S Russia, ?Ural, S Siberia. – C and S Europe, Caucasus, Transcaucasia.

Note. *P. gryphalis* has been misidentified and mixed with the next species. Its distribution in the Ural and S Siberia requires revision.

Polypogon tarsicrinata (Bryk, 1948)

(Pl. 4: 21, 22; ♂ genit. Pl. 41: 4; ♀ genit. Pl. 132: 3)

Zanclognatha tarsicrinata (Bryk, 1948), *Ark. Zool.* **41**(A)1: 146, pl. 5: 5 (Type-locality: Korea, Shuotsu).

Poole, 1989: 831 (*Polypogon tarsicrinata*); Sviridov, 1990: 99; 2003 (*Polypogon gryphalis*, incorrect synonymy, misidentification); Kononenko *et al*. 1989; 2005 (*Polypogon gryphalis*, misidentification); Owada, 2006 (*Polypogon tarsicrinata*, correction).

Diagnosis. *P. tarsicrinata* externally very close to *P. gryphalis*, but this pair of species are allopatric. *P. tarsicrinata* is clearly different from allied *P. gryphalis* in structure of the male genitalia: valva more slender and narrow, juxta longer, narrower and tapered.

Bionomics. Mesophilous species, inhabits deciduous and broad-leaved forests, bushes, meadows, woodsides, clearings. The moth flies from mid VI to mid IX. Larvae feed on dry leaves.

Distribution (Map 100). Manchurian, nemoral. Far East (S Amur reg., S Khabarovsk and Primorye terr., S Kuriles). – China, Korea, Japan (Hokkaido, Honshu).

Note. Sviridov (1990) incorrectly synonymised this taxon with *Polypogon gryphalis*. However, Owada (2006) restored the name which is applicable to the distinct species *P. tarsicrinata* and described the morphological differences between the two taxa.

Genus ***Macrochilo*** Hübner, [1825] 1816

Macrochilo Hübner, [1825] 1816, *Vern. bekannter Schmett.*: 345. Type-species: *Pyralis cribralis* Hübner, 1796 [Europe].

Wingspan 22-30 mm. Antennae in male bipectinate, with small knot. Labial palps long, blade -like, shorter in female, directed obliquely upward; forelegs in male modified, with very long femur and tibia, moderate tibial sheet and shortened tarsus bearing a tuft of hairs; forewing broad, with tapered apex, ground colour of forewing pale yellow-grey. In male genitalia, uncus broad in mid part; valva narrow, costa straight, pointed at apex; sacculus very narrow with short process reaching middle of valva; juxta triangular, high, extended; transtilla not expressed. Aedeagus narrow, curved, equal to valva in length; vesica scobinate, without cornuti. In female genitalia, papillae anales quadrangular; ductus bursae very long, straight, with two long lateral band-like sclerites; corpus bursae small, half the size of ductus bursa, rounded, corpus bursae with scattered microspines in mid part, without signum.

West Palaearctic monotypic genus.

Macrochilo cribrumalis (Hübner, 1793)

(Pl. 4: 23, 24; ♂ genit. Pl. 41: 5; ♀ genit. Pl. 132: 4)

Phalaena, *Pyralis cribrumalis* Hübner, 1793, *Samml. auserlesener Vögel*, *Schmett.*: 7, pl. 15 (Type-locality: Europe).

Synonymy: *cribralis* Hübner, 1796; *modestalis* Boldt, 1928.

Bionomics. Hygrophilous species, inhabits bushes, waterside meadows, marshy places with grasses Poaceae in abundance. The moth flies from late VI to late VIII. Larvae feed on fresh leaves of *Salix* (Salicaceae), *Taraxacum* (Asteraceae), *Carex* (Cyperaceae), *Juncus*, *Luzula* (Juncaceae), *Phragmites* (Poaceae).

Distribution (Map 101). Euro-Siberian, nemoral. S Russia to S Ural and W Siberia. – C and S Europe, Kazakhstan.

Genus ***Herminia*** Latreille, 1802

Herminia Latreille, 1802, *in* Sonnini's Buffon, *Hist. nat. gener ale particuliere Crustaces Insectes* **3**: 413. Type-species: *Phalaena ventilabris* Fabricius, 1787 [Europe] (= *Phalaena tarsicrinalis* Knoch, 1782).

Synonymy: *Herminea* Sodoffsky, 1837, misspell.; *Pogonitis* Sodoffsky, 1837, unnecessary replacement name; *Quaramia* Berio, 1989; *Zanclognatha* auct.

Wingspan 22-30 mm. Antennae in male ciliate or shortly bipectinate, without knot as in *Zanclognatha*. Labial palps moderate, sickle-like, well upturned over the vertex; forelegs of male modified, variable in shape, with large sheet on distal part of tibia as in *Pechipogo*, *Polypogon* and *Zanclognatha*, but the tarsus strongly reduced to one (first) segment, bearing hair-like claw, with tufts of hairs arising from coxa, femur, tibia or tarsus, those of female normal; forewing shape and venation similar to *Zanclognatha*; ground colour of forewing grey, brown, or yellowish-grey. In male genitalia, uncus stout, variable in shape; tegumen broad, simple; valva simple, with sclerotised costa; sacculus usually not developed, narrow, without process; juxta broad, transtilla developed. Aedeagus broad, variable in size; vesica with multiple diverticula, well scobinate, with or without cornuti. In female genitalia, papillae anales weakly sclerotised, anterior and posterior apophyses usually equal in length; ductus bursae usually long, narrow and sclerotised, corpus bursae oval or rounded, constricted in the middle, equal or longer than ductus bursa, in caudal and mid parts scattered with numerous long spines and micro-spines, ductus seminalis arising from cervix bursae, coiled in basal part.

The genus includes 15-18 species, distributed in Palaearctic, Oriental, and Ethiopian regions. – 6 species.

Herminia grisealis ([Denis & Schiffermüller], 1775)

(Pl. 4: 25, 26; ♂ genit. Pl. 41: 6; ♀ genit. Pl. 132: 5)

Pyralis grisealis [Denis & Schiffermüller], 1775, *Ank. Syst. Werk Schmett. Wien.*: 120 (Type-locality: [Austria], Vienna district]).

Synonymy: *nemoralis* Fabricius, 1775; *nemorum* Fabricius, 1794, emendation; *nemoratus* Haworth, 1809, emendation.

Bionomics. Mesophilous species, occurs in deciduous and mixed forests, among bushes, in meadows and waterside groves. Two overlapping generations from late V to VII, and in VIII- IX. Larvae feed on dry leaves of various plants, including *Quercus*, *Carpinus*, *Betula*, *Crataegus*, *Viburnum*, *Rubus*, *Urtica* and *Stachys*.

Distribution (Map 102). Eurasian, boreal. Russia, throuth S Siberia to the Far East, Sakhalin and Kuriles. – Europe, Near East, Kazakhstan, China, Korea, Japan, Taiwan

Herminia robiginosa (Staudinger, 1888)

(Pl. 4: 27, 28; ♂ genit. Pl. 42: 1; ♀ genit. Pl. 132: 6)

Zanclognatha robiginosa Staudinger, 1888, *Stettin. ent. Ztg* **49**: 275 (Type-locality: Russia: Khavbarovsk terr., Judish autonomy, Radde; Primorye: Vladivostok, Askold Is, "Sutschan-Gebiet" [Partizansk], "Suifun" [Razdolnaya river].

Synonymy: *assimilata* Wileman, 1911.

Bionomics. Mesophilous, rather rare species, occurring in meadows and clearings in deciduous forests. The moth flies from late V to mid VII. The larva and its foodplants are unknown.

Distribution (Map 103). Manchurian, nemoral. Far East (S Khabrovsk and Primorye terr., S Kuriles). – Korea, Japan (Hokkaido, Honshu).

Note. The holotype of *herminia robiginosa* is illustrated on Pl. 4: 27.

Herminia tarsicrinalis (Knoch, 1782)

(Pl. 4: 29, 30; ♂ genit. Pl. 42: 2; ♀ genit. Pl. 132: 7)

Phalaena tarsicrinalis Knoch, 1782, *Beitr. Insekt.* **2**: 75, pl. 4: 1-12 (Type-locality: Germany: Leipzig).

Synonymy: *ventilabris* Fabricius, 1787; *tarsicrinatus* Haworth, 1809; *biumbralis* Turati & Verity, 1911; *balatonalis* Osthelder, 1935.

Diagnosis. This and the four next species represent a species group which can be readily identified by examination of the genitalia. *H. tarsicrinalis* differs from its allies in more greyish wing colour; in male genitalia, it differs in longer lobes of valva, stronger comb of uncus and in shape of basal bifurcate cornutus in vesica.

Bionomics. Mesophilous species, occurs in various woodland biotopes in meadows, clearings, among bushes. Two overlapping generations from mid VI to late VIII. Larvae feed on fresh and dead leaves of dicotyledonous plants, including *Rubus*, *Rumex*, *Urtica dioica*, *Epilobium*, *Lamium*, *Lactuca* and *Clematis*.

Distribution (Map 104). Eurasian, nemoral. European Russia to Ural, S Siberia to Altai and Tuva, Far East, to Sakhalin and Kuriles. – Europe, Near East (Turkey), Caucasus, Kazakhstan, China, Korea, Japan.

Herminia arenosa Butler, 1878

(Pl. 4: 31, 32; ♂ genit. Pl. 42: 3; ♀ genit. Pl. 132: 8)

Herminia arenosa Butler, 1878, *Illustr. typical Specimens Lepid. Heterocera Colln Br. Mus.* **3**: 56, pl. 38: 8 (Type-locality: Japan: Yokohama).

Synonymy: *heureka* Bryk, 1942.

Diagnosis. *H. arenosa* differs from *H. tarsicrinalis* in more yellowish wing colour, shorter valva, more smooth comparing with *H. tarsicrinalis* shape of uncus and in shape of basal bifurcate cornutus in vesica having one longer and one short extension.

Bionomics. Mesophilous species, inhabits broad-leaved forest zone. It is rather rare in Primorye and Kuriles, but very common in Korea and Japan. Occurs in various kinds of deciduous forests, inhabits bushes, meadows, roadsides. Two overlapping generations from mid V to late IX. Larvae feed on dead and fresh leaves.

Distribution (Map 105). Manchurian, nemoral. Far East (S Primorye and S Kuriles). – China, Korea, Japan.

Herminia stramentacealis Bremer, 1864

(Pl. 4: 33, 34; ♂ genit. Pl. 42: 4; ♀ genit. Pl. 133: 1)

Herminia stramentacealis Bremer, 1864, *Mém. Acad. imp. Sci. St. – Pétersb.* (7) 8, **1**: 64, pl. 5: 22 (Type-locality: Russia: "Kengka-See" [Primorye terr., Khanka lake].

Synonymy: *violacealis*: Remm and Martin, 1979, misidentification; *satakei* Owada 1982.

Diagnosis. *H. stramentacealis* differs from the two preceding species in yellowish-brown wing colour, more contrasting wing pattern and in much shorter valva, more smooth comb of uncus, and longer uncus and in shape of basal bifurcate cornutus in vesica with almost equal extensions.

Bionomics. Mesophilous species, inhabits bushes, open forests, meadows, forest-steppe, roadsides, agricultural fields. The moth flies from late VI to late VIII. Larvae feed on fresh and dry leaves of soya bean (*Glycine soja* and *G. max*) and other herbaceous plants.

Distribution (Map 106). Siberian-Manchurian, nemoral. W Siberia, Far East to Sakhalin. – China, Korea, Japan.

Herminia dolosa Butler, 1879

(Pl. 4: 35, 36; ♂ genit. Pl. 42: 5; ♀ genit. Pl. 133: 2)

Herminia dolosa Butler, 1879, *Ann. Mag. nat. Hist.* (5) **4**: 447 (Type-locality: Japan: Yokohama).

Synonymy: *tomarinia* Bryk, 1942.

Diagnosis. Differs from the related species in brownish-grey wing colour with well expressed medial shadow and in structure of male genitalia.

Bionomics. Mesophilous species, known in Russia only from S Kuriles. It occurs in humid deciduous and mixed forests in meadows, among bushes. The flight period is from mid VI to mid VIII. Larvae feed on dead and dry leaves of dicotyledonous plants.

Distribution (Map 107). Manchurian, nemoral. Islands of Russian Far East (S Kuriles: Kunashir). – China, Korea, Japan.

Genus ***Sinarella*** Bryk, 1948

Sinarella Bryk, 1949, *Ark. Zool.* **41** (A) 1: 144, pl. 6: 2. Type-species: *Sinarella stigmatophora* Bryk, 1948 [Korea].

Wingspan 18-24 mm. Close to *Herminia* in structure of antennae, palps, legs and venation. In male genitalia, uncus usually stout, variable in shape; tegumen broad, simple; valva well sclerotised, without membranous parts; sacculus developed, without distal process; juxta weak, sheet-like, transtilla developed. Aedeagus broad, usually equal to valva in length, vesica with multiple diverticula, scobinate, with or without cornuti. In female genitalia, papillae anales weakly sclerotised, small and slender; anterior and posterior apophyses equal in length; ductus bursae usually long, wide and sclerotised, corpus bursae oval or rounded, not constricted in middle, equal to or shorter than ductus bursa, in caudal and mid parts covered with numerous long spines or micro-spines, ductus seminalis arising from cervix bursae, coiled in basal part. Larvae feed on mosses (Bryophyta).

The genus includes 10 species, distributed in Manchurian subregion of Palaearctic and Oriental region. – 5 species.

Sinarella aegrota (Butler, 1879)

(Pl. 4: 37, 38; ♂ genit. Pl. 42: 6; ♀ genit. Pl. 133: 3)

Bleptina aegrota Butler, 1879, *Illustr. typical Specimens Lepid. Heterocera Colln Br. Mus.* **3**: 65, pl. 57: 1.

Synonymy: *incultalis* Leech, 1889; *stigmatophora* Bryk, 1948.

Bionomics. Mesophilous species, inhabits deciduous and valley mixed forests, woodsides, meadows, bushes. The moth flies from late VI to early IX. Probably two generations. Larvae feed on mosses (Bryophyta) on stones and trees trunks.

Distribution (Map 108). Manchurian, nemoral. Far East (S Khabarovsk and Primorye terr.). – China, Korea, Japan.

Sinarella cristulalis Staudinger, 1892

(Pl. 4: 39-41; ♂ genit. Pl. 43: 1; ♀ genit. Pl. 133: 4)

Zanclognatha cristulalis Staudinger, 1892, in Romanoff, *Mém. Lépid.* **6**: 610, pl. 14: 7 (Type-locality: Russia: Primorye, Vladivostok "Sutschan" [Partizansk]).

Bionomics. Mesophilous species, inhabits rich deciduous forests, occurs in meadows, among bushes. The moth in flight from early VI to mid VIII.

Distribution (Map 109). Manchurian–continental, nemoral. Far East (S Khabarovsk and Primorye terr.), China, Korea.

Note. The holotype of *Sinarella cristulalis* is illustrated on Pl. 4: 30.

Sinarella nigrisigna (Leech, 1900)

(Pl. 4: 42; ♂ genit. Pl. 43: 2; ♀ genit. Pl. 133: 5)

Nodaria nigrisigna Leech, 1900, *Trans. ent. Soc. Lond.* **1900**: 640 (Type-locality: China [BMNH, London]).

Synonymy: *microlepidopteronis* Strand, 1920; *sichotensis* Kurentzov, 1950.

Bionomics. Mesophilous, rather rare species, collected in Primorye in rich deciduous forest. The moth flies in mid VII - early VIII. The larva and its foodplants are unknown.

Distribution (Map 110). Manchurian, nemoral. Far East (Primorye). – China, Korea, Japan (Tsushima I), Taiwan.

Sinarella punctalis (Herz, 1904)

(Pl. 4: 43, 44; ♂ genit. Pl. 43: 3; ♀ genit. Pl. 133: 6)

Zanclognatha punctalis Herz, 1904, *Ann. Mus. Zool. Acad. imp. Sci. St. – Pétersb.* **9**: 324, pl. 1: 9 (Type-locality: N Korea: 38. 5 N, 128 E [Pun-tung village]).

Synonymy: *nigrobasalis* Yamamoto & Sugi, 1955.

Bionomics. Mesophilous species, occurs in rich deciduous and mixed forests with *Pinus koraiensis* (Pinaceae). The moth flies from mid VI to VIII. Larvae feed on mosses (Bryophyta) on stones and tree trunks.

Distribution (Map 111). Manchurian, nemoral. Far East (S Khabarovsk and Primorye terr.). – China, Korea, Japan.

Sinarella japonica (Butler, 1881)

(Pl. 4: 45; ♂ genit. Pl. 43: 4; ♀ genit. Pl. 133: 7)

Olybama japonica Butler, 1881, *Trans. ent. Soc. Lond.* **1881**: 583 (Type-locality: [BMNH, London]).

Bionomics. Mesophilous species, occurs in deciduous and mixed forests with *Pinus koraiensis*. The moth flies from VI to early IX, probably in two generations. Larvae feed on mosses (Bryophyta) on stones and trees trunks.

Distribution (Map 112). Manchurian, nemoral. Far East (Amur, S Khabarovsk and Primorye terr.). – China, Korea, Japan.

10. Subfamily **Hypeninae** Herrich-Schäffer, [1851]

Hypenidae Herrich-Schäffer, [1851] 1845, *Syst. Bearbeitung Schmett. Eur.* 2: 424. Type genus: *Hypena* Schrank, 1802.

Small and medium sized moths. Eyes with lashes; labial palps long, extended, directed forward. Forewing usually wide, triangular; wing colour pale brown, grey or dark brown, rarely bright, orange or orange-brown; veins M2 and M3 not fused, parallel. Legs long, thin, slender. Body slender. Male genitalia simple in most genera. Valva lobe-like, harpe reduced or absent. Aedeagus short, often curved, in some species with lobe-like appendage. Muscles m2 reduced, muscles m4 fixed on paratergal sclerites.

The larvae with four pairs of prolegs. Beck (1999 – 2000) described a unique set of larval characteristics, especially the lateral movement of SV3 on A1 and A2 so that the seta is as close to L3 as to SV1, or closer (i.e. the SV group of setae appears to have two rather than three setae). Larvae feed mainly on herbaceous plants.

The subfamily Hypeninae is restricted to a group of genera closely related to *Hypena*, the systematic position of some other genera included in Hypeninae requires clarification.

Worldwide, the subfamily includes about 500 species, distributed mainly in Oriental and Ethiopian regions; about 150 species are known from the Palaearctic, mainly from Sino-Himalayan subregion. Four genera and 22 species known from Asian part of Russia, most of them occur in the south of the Far East.

References: Remm & Martin 1979; Sugi, 1982; Lödl 1993; Lödl & Mayerl 1997, 1998; Holloway 2008.

Genus ***Zekelita*** Walker, 1863

Zekelita Walker, 1863, *List Specimens lepid. Insects Colln Br. Mus.* **27**: 188. Type-species: *Zekelita equalisella* Walker, 1863 [South Africa].

Synonymy: *Rhychodontodes* auct.

Wingspan 22-30 mm. Frons smooth; antenna of male ciliate; labial palps very long, flattened dorso-ventrally, longer than head and thorax, directed forward, the 2nd segment very large, the 3rd segment very short and pointed; 1st segment of abdomen with tuft of scales; forewing narrow; inner margin of forewing near anal angle with triangular tufts of scales.

In male genitalia, uncus sickle-like; tegumen rather broad; valva narrow, weakly sclerotised, covered with strong hairs; saccus narrow; harpe absent; costa short, often separate from lobe of valva. Aedeagus variable in shape, in some species with very long, thin dentate extension. In female genitalia, papillae anales wide, weakly sclerotised; anterior apophyses reduced, posterior ones developed, thin; antrum wide, ribbed; ductus bursae short, wide; corpus bursae rounded, with or without signum.

The genus is subdivided into four subgenera: *Zekelita* Walker, 1863, *Tinctalita* Lödl & Mayerl, 1998 *Pervilgarita* Lödl & Mayerl, 1998 and *Ravalita* Lödl & Mayerl, 1997 (Lödl & Mayerl, 1997; 1998). It includes 42 species, distributed in Ethiopian, Australian and Oriental regions and in the Western Palaearctic. – 1 species.

Zekelita* (*Ravalita*) *ravulalis (Staudinger, 1879)

(Pl. 4: 46-48; ♂ genit. Pl. 43: 5; ♀ genit. Pl. 133: 8)

Hypena ravulalis Staudinger, 1879, *Horae Soc. ent. ross.* **14**: 430 (Type-locality: S Russia].

Diagnosis. Externally, *Z. ravulalis* could be confused with Central Asian *Z. ravalis* Herrich-Schäffer, 1851, but it differs in structure of costal extension in male genitalia, which is club-shaped in *Z. ravulalis* but bifid in *Z. ravalis*.

Bionomics. Xerophilous species, collected in S Ural in lowland *Artemisia* steppe with wet meadows and wetlands and in limestone hills surrounding the flat steppe valley. The moth flies from early VI to late VII. (Nupponen & Fibiger 2002). The larva and its foodplants are unknown.

Distribution (Map 113). West Asian, subboreal. S Russia, S Ural, SW Siberia (Omsk reg.). – Kazakhstan, Central Asia, Near East.

Note. *Z. ravulalis* was recently found in the south of Omsk region of the West Siberia.

Genus ***Hypena*** Schrank, 1802

Hypena Schrank, 1802, *Fauna Boica* **2** (2): 163. Type-species: *Phalaena proboscidalis* Linnaeus, 1758 [Europe].

Synonymy: *Bomolocha* Hübner, [1825] 1816 (subgen.); *Badausa* Walker, [1863] 1864; *Euhypena* Grote, 1873; *Macrhypena* Grote, 1873; *Meghypena* Grote, 1873; *Erichila* Billberg, 1820; *Herpyzon* Hübner, 1822; *Ophiuche* Hübner, [1825] 1816; *Dichromia* Grote, 1854; *Peliala* Walker, 1865; *Platthypena* Grote, 1873; *Apanda* Moore, 1882; *Mathura* Moore, 1882; *Nesamiptis* Meyrick, 1899; *Anepischetos* Smith, 1900; *Placerobela* Turner, 1903; *Erchila*: Poole, 1989, misspell.; *Rosthypena* Beck, 1996; *Obeshypena* Beck, 1996.

Wingspan 18-42 mm. Antenna of male ciliate, eyes with or without lashes, palps very long, longer than head and thorax, flattened, blade like, directed forward; legs long; forewing elongated, wide or narrow, with acute apical angle; 1st segment of abdomen with tuft of scales. In male genitalia, uncus short, stout, usually sickle-like, with pointed apex; juxta plate-like, often rhomboidal; transtilla developed; valva lobe-like, wide, rounded; harpe not developed. Aedeagus short, curves; vesica bulbous, cornuti, if present, small. In female genitalia, papillae anales weak; anterior and posterior apophyses equal in length; antrum weakly sclerotised or membranous; ductus bursae thin, membranous; corpus bursae saccate or pear-shaped, membranous, usually equal to ductus in length; ductus seminalis falls to caudal part of corpus bursae.

The genus is subdivided into the following subgenera: *Bomolocha* Hübner, [1825] 1816; *Hypena* Schrank, 1802; *Ophiuche* Hübner, 1816; *Tetetrastycpena* Lödl, 1994; *Plathypena* Grote, 1873; *Jussalypena* Lödl, 1994; *Trichypena* Joannis, 1915; *Extremypena* Lödl, 1994; *Biangulypena* Lödl, 1994; *Pseudodichromia* Lödl, 1994. Only two of them, *Bomolocha* and *Hypena*, are known from the temperate zone. The genus includes over 470 species distributed in the Old and New Worlds, mainly in the tropics and subtropics. – 19 species.

Subgenus ***Bomolocha*** Hübner, [1825] 1816

Bomolocha Hübner, [1825] 1816, *Verz. bekannter Schmett.*: 343. Type-species: *Phalaena crassalis* Fabricius, 1787 [Europe].

Synonymy: *Badausa* Walker, [1863] 1864; *Euhypena* Grote, 1873; *Macrhypena* Grote, 1873; *Meghypena* Grote, 1873.

Hypena* (*Bomolocha*) *stygiana Butler, 1878

(Pl. 4: 49, 50; ♂ genit. Pl. 43: 6; ♀ genit. Pl. 134: 1)

Hypena stygiana Butler, 1878, *Illustr. typical Specimens Lepid. Heterocera Colln Br. Mus.* **3**: 55, pl. 56: 2 (Type-locality: Japan: Yokohama).

Diagnosis. *H. stygiana* is externally similar to *H. zilla*, but differs in somewhat larger size, darker and brownish subterminal field and more acute extension of the antemedial line. In male genitalia, costa more expressed, sacculus with one obtuse basal extension.

Bionomics. Mesophilous species, occurs in deciduous and mixed forests biotopes on meadows, clearings, among bushes. Probably bivoltine with two overlapping generations from late VI to mid VIII. Larvae feed on *Deutzia* (Hydrangeaceae) and *Rubia cordifolia* (Rubiaceae).

Distribution (Map 114). Manchurian, nemoral. Far East (Amur, S Khabarovsk and Primorye terr.). – Korea, Japan, China to Tibet.

Hypena* (*Bomolocha*) *zilla Butler, 1879

(Pl. 4: 51-53; ♂ genit. Pl. 44: 1; ♀ genit. Pl. 134: 2)

Hypena zilla Butler, 1879, *Illustr. typical Specimens Lepid. Heterocera Colln Br. Mus.* **3**: 60, pl. 56: 1 (Type-locality: Japan: Hakodate).

Synonymy: *nikkensis* Wileman & West, 1930.

Diagnosis. Differs from *H. stygiana* in paler subbasal field, less expressed extension of antemedial line; in male genitalia, sacculus with two obtuse subbasal exensions.

Bionomics. Mesophilous species, inhabits various deciduous and mixed forests. Occurs in forest meadows, clearings, forest edges, among bushes. Probably bivoltine. The moth flies from late VI to VIII. Larvae feed on *Prunus maximowiczii* (Rosaceae).

Distribution (Map 115). Manchurian, nemoral. Far East (Amur, S Khabarosvk and Primorye terr., S Kuriles). – China, Korea, Japan.

Hypena* (*Bomolocha*) *crassalis (Fabricius, 1787)

(Pl. 4: 54-56; ♂ genit. Pl. 44: 2; ♀ genit. Pl. 134: 3)

Phalaena crassalis Fabricius, 1787, *Mant. Ins.* **2**: 217 (Type-locality: Austria).

Synonymy: *achatalis* Hübner, 1796; *fontis* Thunberg, 1788; *crassatus* Haworth, 1809, emend.; *achatatus* Haworth, 1809, emend.

Diagnosis. Similar to *H. zilla* and *H. squalida*, differs in darker and more contrasting wing pattern with whitish subterminal and ventral areas. In male genitalia, valva more rounded than in related species, clasper with two subbasal extensions.

Bionomics. Mesophilous species, occurs in meadows in coniferous and mixed forests, in peat bogs. Univoltine, the moth flies from late V to mid VIII. Larvae feed on *Vaccinium myrtillus*, *V. uliginosum*, *Calluna vulgaris* (Ericaceae), *Urtica* (Urticaceae) and *Solidago* (Asteraceae). The pupa overwinters.

Distribution (Map 116). Euro-Siberian, boreal. S Russia, Ural, W Siberia, Baikal area. – Europe, Caucasus, Kazakhstan.

Hypena* (*Bomolocha*) *squalida Butler, 1878

(Pl. 4: 57, 58; ♂ genit. Pl. 44: 3 ♀ genit. Pl. 134: 4)

Hypena squalida Butler, 1878, *Illustr. typical Specimens Lepid. Heterocera Colln Br. Mus.* **3**: 60, pl. 56: 2 (Type-locality: Japan: Yokohama).

Diagnosis. Externally similar to *H. crassalis*, differs from related species in less contrasting wing pattern and clearly double antemedial line. In male genitalia, clasper with one relatively large, obtuse subbasal extension.

Bionomics. Mesophilous species, occurs in open deciduous and mixed forests, prefers open biotopes: meadows, clearings, woodsides. The flight period is from early VII to early VIII, sometimes moths appear in IX. Larvae feed on *Rhododendron* (Ericaceae), *Prunus*, *Malus* (Rosaceae).

Distribution (Map 117). Manchurian, nemoral. Far East (S Khabarovsk and Primorye terr., S Kuriles). – China, Korea, Japan.

Hypena* (*Bomolocha*) *bicoloralis Graeser, [1889] 1888

(Pl. 5: 1, 2; ♂ genit. Pl. 44: 4; ♀ genit. Pl. 134: 5)

Hypena bicoloralis Graeser, 1888 [1889], *Berl. ent. Z.* **32**, II: 381 (Type-locality: Russia: Khabarovsk.

Synonymy: *rhombalis* auct.; *fontis* auct.

Diagnosis. Differs from allied species in external appearance with dark-brown medial part of wing and brownish-white terminal and ventral areas. In male genitalia, clasper with one obtuse extension, aedeagus more strongly curved compared with related species.

Bionomics. Mesophilous species, rather common in deciduous and mixed forest, occurs in forest meadows, woodsides, among bushes. The moth flies from early VI to late VIII, probably in two generations. In Japan, larvae feed on *Ulmus* and *Zelkova* (Ulmaceae).

Distribution (Map 118). Manchurian, nemoral. Far East to S Kuriles. – China, Korea, Japan.

Note. The species often referred by early authors for the Far East as *H. fontis* Thunberg, 1788 (syn. of *H. crassalis* Fabricius, 1787) or as *H. rhombalis* Guenée, 1854.

Note. The holotype of *Hypena bicoloralis* is illustrated on Pl. 5: 2.

Hypena* (*Bomolocha*) *nigrobasalis (Herz, 1904)

(Pl. 5: 3-5; ♂ genit. Pl. 44: 5; ♀ genit. Pl. 134: 6)

Bomolocha nigrobasalis Herz, 1904, *Ann. Mus. Zool. Acad. imp. Sci. St. – Pétersb.* **9**: 329, pl. 1: 13 (Type-locality: Korea: 38. 5 N, 128 E [Pun-tung village].

Diagnosis. *H. nigrobasalis* differs from its congeners in larger size, more dull and darker wing colour and pattern with dark-brown inner part and greyish-brown outer part; extension of antemedial line acute, subapical dash present.

Bionomics. Mesophilous species, inhabits rich deciduous and mixed coniferous forests. The moth flies from early VI to VIII. In Japan, larvae feed on *Rhododendron* (Ericaceae).

Distribution (Map 119). Manchurian, nemoral. Far East to S Kuriles. – Korea, Japan.

Hypena* (*Bomolocha*) *bipartita Staudinger, 1892

(Pl. 5: 6-8; ♂ genit. Pl. 44: 6; ♀ genit. Pl. 134: 7)

Hypena bipartita Staudinger, 1892, in Romanoff, *Mém. Lépid.* **6**: 625, pl. 14: 12 (Type-locality: Russia: Khabarovsk terr., Judish autonomy, Radde).

Diagnosis. *H. bicoloralis* is closely related to the next species, differs externally in pale grey outer part of forewing with terminal dash not expressed, and reddish-brown inner part of the wing with obtuse extension; in male genitalia, clasper with one obtuse extension.

Bionomics. Mesophilous species, occurs in deciduous and mixed forests on meadows, among bushes. The flight period is from late VI to early VIII. The larva and its foodplants are unknown.

Distribution (Map 120). Manchurian, nemoral. Far East, to Sakhalin and S Kuriles. – Japan.

Note. The holotype of *Hypena bipartita* is illustrated on Pl. 5: 8.

Hypena* (*Bomolocha*) *semialbata Sugi 1982

(Pl. 5: 9, 10; ♂ genit. Pl. 45: 1; ♀ genit. Pl. 134: 8)

Hypena semialbata Sugi 1982, *Moths of Japan* **1**: 911, **2**: Pl. 223: 18-20 (Type-locality: Japan, Honshu, Gumma Pref.).

Diagnosis. Similar to *B. bipartita*, but is distinctive in somewhat larger size, more acute forewing apex, darker basal area with prominent teeth-like extension outward, clearly white or whitish outer area and prominent black subapical streak. In male genitalia, clasper with two obtuse extensions.

Bionomics. Mesophilous species, in Russia known only from S Kuriles (Kunashir Is.). Collected in humid mixed forest. The moth in flies VII and VIII. The larva and its foodplants are unknown.

Distribution (Map 121). Japanese, nemoral. Islands of Russian Far East (S Kuriles, Kunashir Is.). – Japan (Honshu).

Note. The species was omitted in the Checklist of the Noctuidae of Asian part of Russia (Kononenko 2005). It is s reported here as a new for Russia.

Subgenus ***Hypena*** Schrank, 1802

Hypena* (*Hypena*) *proboscidalis (Linnaeus, 1758)

(Pl. 5: 11-13; ♂ genit. Pl. 45: 2; ♀ genit. Pl. 135: 1)

Phalaena Pyralis proboscidalis Linnaeus, 1758, *Syst. Nat.* (Edn 10) **1**: 533 (Type-locality: Europe [LS, London]).

Synonymy: *ensalis* Fabricius, 1794; *proboscidatus* Haworth, 1809; *proboscidalis* var. *deleta* Staudinger, 1892; *proboscidalis* subsp. *flexilinea* Warren, 1913.

Bionomics. Meso-hygrophilous species, inhabits various kinds of open forests and parks, occurs in forest edges, meadows, clearings, among bushes, in bogs. In southern area bivoltine. The moth flies from V to end VII, then from VIII to mid IX. Larvae feed on *Urtica*, *Girardinia*, *Humulus lupulus*, *Lamium*, *Stachys sylvatica*, *Plantago* and grasses. The pupa overwinters.

Distribution (Map 122). Eurasian, subboreal - boreal. Russia to Ural, through Siberia to the Far East (northward to Kamchatka). – Europe, Near East, Caucasus, Transcaucasia, C Asia, Kazakhstan, China, Korea, Japan, Taiwan, N India.

Note. Externally very variable species, Far Eastern populations are usually much paler than European ones.

Hypena* (*Hypena*) *rostralis (Linnaeus, 1758)

(Pl. 5: 14-17; ♂ genit. Pl. 45: 3; ♀ genit. Pl. 135: 2)

Phalaena rostralis Linnaeus, 1758, *Syst. Nat.* (Edn 10) **1**: 533 (Type-locality: Europe).

Synonymy: *radiatalis* Hübner, 1796; *rostratus* Haworth, 1809; *vittatus* Haworth, 1809.

Bionomics. Mesophilous species, occurs in forest meadows, woodsides, clearings, in bushes. Bivoltine, the moth flies from of VI to VII and from VIII to late autum, then after hibernation to VI. Larvae feed on *Urtica dioica*, *Humulus lupulus*, *Rubus idaeus* and *R. caesius*, *Stachus sylvatica*. Imago overwinters.

Distribution (Map 123). Euro-Siberian, boreal. Russia to Ural, Siberia to Baikal area. – Europe, Near East, Transcaucasia, Central Asia, Kazakhstan,

Hypena* (*Hypena*) *obesalis Treitschke, 1828

(Pl. 5: 18-20; ♂ genit. Pl. 45: 4; ♀ genit. Pl. 135: 3)

Hypena obesalis Treitschke, 1828, *Schmett. Eur.* **7**: 27 (Type-locality: Augsburg, Germany).

Synonymy: *crassalis* Hübner, 1796, nec Fabricius, 1787.

Bionomics. Meso-hygrophilous species, occurs in woodsides, meadows, clearings, among bushes. Univoltine, the moth flies from VI to XI, after hibernating from mid V to VI. Larvae feed on *Urtica dioica*, *Rubus idaeus*, *Lamium*, *Stachys*. Imago overwinters.

Distribution (Map 124). Euro-Siberian, boreal. Russia to Ural, throughout S Siberia the Far East (Amur reg.). – Europe, Near East, Transcaucasia, Central Asia, Kazakhstan.

Hypena* (*Hypena*) *tristalis Lederer, 1853

(Pl. 5: 21, 22; ♂ genit. Pl. 45: 5; ♀ genit. Pl. 135: 4)

Hypena tristalis Lederer, 1853, *Verh. zool. – bot. Ver. Wien*. **3**: 376, pl. 5: 4 (Type-locality: Russia: S Siberia, Altai).

Synonymy: *tripunctalis* Bremer, 1864.

Bionomics. Mesophilous species, occurs in open forests, woodsides, meadows, clearings, among bushes, in open steppe slopes, common in fields of soya been. Bivoltine, the moth flies from V to end VII, then from VIII to mid X. Larvae are polyphagous, feed on Urticaceae, Ulmaceae, Moraceae, Fabaceae. In the Far East the species damage soya bean (*Glycine max*). Overwinters as imago in caves and ancient buildings.

Distribution (Map 125). Siberian-Manchurian, boreal. S Siberia, Far East, to Sakhalin and Kuriles. – China, Korea, Japan.

Hypena* (*Hypena*) *narratalis Walker, [1859] 1858

(Pl. 5: 23, 24; ♂ genit. Pl. 45: 6; ♀ genit. Pl. 135: 5)

Hypena narratalis Walker, [1859] 1858, *List Specimens lepid. Insects Colln. Br. Mus.* **16**: 57 (Type-locality: N India).

Synonymy: *urticicola* Butler, 1889.

Diagnosis. Similar to *H. tristalis*, but differs in narrower forewing; male differs in darker violet tint of forewing colour, pattern with clear dark-ochreous subapical dash outlined by black streaks; female differs in narrower dark costal area and longer and narrower subapical streak.

Bionomics. Mesophilous species, inhabits montane mixed forests, rarely occurs in deciduous forests. Probably bivoltine, the moth flies from V to late VI, then in VIII – IX. The larva and its foodplants are unknown. Overwinters as imago in caves, cellars, ancient buildings.

Distribution (Map 126). Manchurian, nemoral. Far East (Primorye). – China, Japan, N India.

Hypena* (*Hypena*) *kengkalis Bremer, 1864

(Pl. 5: 25; ♂ genit. Pl. 46: 1; ♀ genit. Pl. 135: 6)

Hypena kengkalis Bremer, 1864, *Mém. Acad. imp. Sci. St. – Pétersb.* (7) 8, **1**: 63, pl. 5: 21 (Type-locality: Russia, "Kengka Zee" [Primorye, Khanka lake]).

Synonymy: *kengkalis warreni* Bryk, 1948.

Bionomics. Mesophilous species, inhabits various kinds of open deciduous forests, meadows, bushes, parks. Bivoltine. The flight period is from early V to X. In Japan larvae feed on *Lespedeza* (Fabaceae) (Sugi 1982a; Miyata 1983). Overwinters as imago.

Distribution (Map 127). Manchurian, nemoral. Far East (Amur, S Khabarovsk and Primorye terr.). – China, Korea, Japan.

Hypena* (*Hypena*) *conspersalis Staudinger, 1888

(Pl. 5: 26, 27; ♂ genit. Pl. 46: 2; ♀ genit. Pl. 135: 7)

Hypena conspersalis Staudinger, 1888, *Stettin. ent. Ztg* **49**: 282 (Type-locality: Russia: Khabarovsk terr., Judish autonomy, Radde, "Ussuri" [Primorye], Vladivostok, "Suifun" [Razdolnaya river], Bikin).

Synonymy: *passerinalis* Graeser, 1888; *chosenula* Bryk, 1948; *conspersalis koreana* Bryk.

Diagnosis. *H. conspersalis* could be confused with *H. tamsi*, but differs in more brownish wing colour and pattern with pale greyish outer part of the wing.

Bionomics. Mesophilous species, inhabits deciduous forests on meadows and among bushes. One generation in a year, the flight period is from mid VI to mid VIII. The larva and its foodplants are unknown.

Distribution (Map 128). Manchurian, nemoral. Far East (S Khabarovsk and Primorye terr.). – Korea, N China.

Note. The holotype of *Hypena conspersalis* is illustrated on Pl. 5: 26.

Hypena* (*Hypena*) *claripennis (Butler, 1878)

(Pl. 5: 28; ♂ genit. Pl. 46: 3; ♀ genit. Pl. 135: 8)

Dichromia claripennis Butler, 1878, *Illustr. typical Specimens Lepid. Heterocera Colln Br. Mus.* **2**: 54, pl. 38: 2 (Type-locality: Japan: Yokohama).

Diagnosis. Differs from related *H. amica* in more brownish forewing colour and oblique antemedial line; hindwing with very narrow blackish terminal band.

Bionomics. Mesophilous species, rare in deciduous forests, inhabits meadows and places with bushes. Probably two generations from late V to VII and in IX. Larvae feed on *Urtica* and *Boehmeria spicata* (Urticaceae).

Distribution (Map 129). Manchurian, nemoral. Far East (Primorye). – China, Korea, Japan.

Hypena* (*Hypena*) *amica (Butler, 1878)

(Pl. 5: 29; ♂ genit. Pl. 46: 4; ♀ genit. Pl. 136: 1)

Dichromia amica Butler, 1878, *Illustr. typical Specimens Lepid. Heterocera Colln Br. Mus.* **2**: 55, pl. 33: 3 (Type-locality: Japan: Hakodate, Yokohama).

Diagnosis. Similar to *H. claripennis*, differs in darker wing colour with somewhat violet tint and pattern with straight antemedial line; hindwing with rather wide, blackish terminal band.

Bionomics. Mesophilous, rather rare species, occurs in deciduous and mixed forests on meadows, among bushes. The moth has been collected from late V to X, probably two generations. In Japan, larvae feed on *Boehmeria spicata* and *B. nipononivea* (Urticaceae).

Distribution (Map 130). Manchurian-Oriental, nemoral. Far East (Khabarovsk terr., Primorye, S Sakhalin). – China, Korea, Japan, Taiwan, N India.

Hypena* (*Hypena*) *tatorhina Butler, 1879

(Pl. 5: 30, 31; ♂ genit. Pl. 46: 5; ♀ genit. Pl. 136: 2)

Dichromia amica Butler, 1878, *Illustr. typical Specimens Lepid. Heterocera Colln Br. Mus.* **3**: 60, pl. 55: 13 (Type-locality: Japan: Hakodate, Yokohama).

Diagnosis. Shape of wing and size similar to *H. proboscidalis*, differs in dark grey colour and wide, somewhat diffuse transverse lines.

Bionomics. Mesophilous species, rare in open deciduous forests, on meadows and among bushes. One generation from late VI to early VIII, sometimes to IX. The larva and its foodplants are unknown.

Distribution (Map 131). Manchurian, nemoral. Far East (Primorye, S Sakhalin, S Kuriles: Kunashir and Shikotan Is). – Japan.

Hypena* (*Hypena*) *tamsi Filipjev, 1927

(Pl. 5: 32-34; ♂ genit. Pl. 46: 6; ♀ genit. Pl. 136: 3)

Hypena tamsi Filipjev, 1927, *Ann. Mus. Zool. Acad. Sci. d'l'URSS* 28: 258: 16 (Type-locality: Russia, Primorye, Sutschan [Partizansk]).

Diagnosis. Little known species, similar to *H. conspersalis*. Wing colour pale brownish with somewhat reddish tint, subbasal and antemedial lines thin, brownish, outer area somewhat paler than inner area of wing. In male genitalia, extension of vinculum rounded, vesica with patch of tiny spine-like cornuti.

Bionomics. Mesophilous species, inhabits glades, clearings and meadows in deciduous forests. One generation, the flight period is from mid VI to mid VIII. The larva and its foodplants are unknown.

Distribution (Map 132). Manchurian, nemoral. Far East (Primorye). – Japan (Kyushu).

Note. The holotype of *Hypena tamsi* is illustrated on Pl. 5: 34.

Genus ***Protoschrankia*** Sugi, 1979

Protoschrankia Sugi, 1979, *Tinea* **10**: 279. Type-species: *Protoschrankia ijimai* Sugi, 1979 [Japan: Hokkaido].

Wingspan 21-22 mm. Frons smooth; labial palps long, straight, directed forwards, the 2nd segment long, 1.5 times longer than diameter of eye; in forewing R2-R4 on stalked, in hindwing Cu3 and M3 on short branch. In male genitalia, uncus relatively

massive, tegumen wide, valva simple, expanded in the middle, narrowed, rounded and sclerotised apically; sacculus narrow, costa wide. Aedeagus short, wide, apically narrowed. In female genitalia, papillae anales small; anterior apophyses half length of posterior ones; antevaginal plate diamond-shaped; antrum sclerotised, ductus bursae long; corpus bursae elongated, with signum.

The genus includes 2 species, both distributed in Japan. – 1 species.

Protoschrankia ijimai Sugi, 1979

(Pl. 5: 35, 36; ♂ genit. Pl. 47: 1; ♀ genit. Pl. 136: 4)

Protoschrankia ijimai Sugi, 1979, *Tinea* **10**: 279: 1-3 (Type-locality: Japan, Hokkaido, Shibecha).

Bionomics. Mesophilous species, collected in humid mixed forest. The moth flies from late VI to early IX. In Japan, larvae and cocoons of *P. ijimai* were discovered on the roots of trees underground in tunnels and caves (Yoshimatsu & Nishioka 1995).

Distribution (Map 133). Japanese, nemoral. Islands of Russian Far East (Kuriles, Kunashir Is.). – Japan (Hokkaido, Honshu).

Note. The paratype of *Protoschrankia ijumai* is illustrated on Pl. 5: 35.

Genus ***Gonepatica*** Sugi 1982.

Gonepatica Sugi 1982, *Moths of Japan* **1**: 881. Type-species: *Egnasia opalina* Butler, 1879 [Japan: Honshu].

Synonymy: *Ectogonia* auct.

Moths of small size (wingspan 25-26 mm) with slender body, and quadrifid hindwing venation. Antennae of male ciliate; labial palps very long, straight, thin, directed forward, the 2nd segment long, 3rd segment long, thin, 1.5 times shorter than 2nd; abdomen with small crests on 1st to 3rd segments; forewings with incision on outer margin before apex; wing colour pale yellowish-brown, pattern formed by two brown transverse lines. In male genitalia, uncus short, somewhat extended on the tip; tegumen as high as vinculum; juxta shield-shaped; clasper very wide, basally fused with costa; clasper-harpe complex directed longitudinally, sacculus moderate, with moderate sclerotised extension. Aedeagus long, apically curved, vesica short, bulbous, with long apical diverticula, without cornuti. In the female genitalia, ovipositor short, papillae anales broad, quadrangular, anterior apophyses 3 times longer than posterior ones, which are short on a wide base; antrum wide, funnel-shaped, antevaginal plate with sclerotised bifurcate extension; ductus bursae very short, sclerotised, corpus bursae ellipsoid; ductus seminalis arising from caudal part of corpus bursae.

Monotypic genus, distributed in Manchurian subregion of the Palaearctic.

Gonepatica opalina (Butler, 1879)

(Pl. 5: 37, 38; ♂ genit. Pl. 47: 2; ♀ genit. Pl. 136: 5)

Egnasia opalina Butler, 1879, *Ann. Mag. nat. Hist.* (5) **4**: 451 (Type-locality: Japan: Yokohama).

Bionomics. Meso-xerophilous, nemoral. Occurs in dry oak and broad-leaved forests with *Quercus mongolica*. The moth flies from early VII to mid VIII. In Japan, larvae feed on *Quercus acutissima* and *Q. serrata* (Fagaceae).

Distribution (Map 134). Manchurian, nemoral. Far East (S Khabarovsk and Primorye terr.). – China, Korea, Japan.

Genus ***Hepatica*** Staudinger, 1892

Hepatica Staudinger, 1892, in Romanoff, *Mém. Lépid.* **6**: 634. Type-species: *Hepatica anceps* Staudinger, 1892 (Russia: "Sutschan" [Primorye, Partizansk]).

Very close to *Lophomilia* and in further revision could be joined with the latter. Moths of medium size (wingspan 26-32 mm) with slender body, and quadrifid hindwing venation. Proboscis weakly developed; antennae of male ciliate; labial palps long, straight, thin, directed forward, 2nd segment long, 3rd segment rather long, thin, 1.5 times shorter than 2nd; abdomen with crests on 1st to 3rd segments; forewing with incision of outer margin before apex; wing colour and pattern dull, in some species brown-grey. In male genitalia, uncus short, pointed and hooked on the tip; tegumen 1.5 to 2 times higher than vinculum; juxta leaf-shaped or shield-shaped; valva rather narrow; clasper-harpe complex directed longitudinally, basally fused with costa; sacculus very small, with or without moderately sclerotised extension. Aedeagus relatively short, vesica bulbous, without cornuti. In the female genitalia, ovipositor short, papillae anales broad, mainly quadrangular; anterior apophyses 3 times longer than posterior ones, which are short on a wide base; antrum funnel-shaped, ductus bursae very short, flattened, sclerotised, corpus bursae ellipsoid, sclerotised in caudal part; ductus seminalis arising from caudal part of corpus bursae.

The genus *Hepatica* and its allies *Gonepatica*, *Lophomilia*, *Stenbergmannia* and *Paragabara* together with the East Asian genera *Coarica* Moore, 1882, *Mecistoptera* Hampson, 1893 and *Perciana* Walker, 1865 are a group of closely related genera, the *Mecistoptera*-group of genera (Holloway 2008) which requires revision and clarification of their placement in the subfamily Hypeninae.

The genus includes 13 species, distributed predominantly in the Oriental region and Manchurian and Sino-Himalayan subregions of the Palaearctic. – 1 species.

Hepatica anceps Staudinger, 1892

(Pl. 5: 39, 40; ♂ genit. Pl. 47: 3; ♀ genit. Pl. 136: 6)

Hepatica anceps Staudinger, 1892, in Romanoff, *Mém. Lépid.* **6**: 634, pl. 12: 11 (Type-locality: Russia: "Sutschan-Gebiet" [Primorye, Partizansk].

Bionomics. Mesophilous species, occurs in rich broad-leaved and oak forests with *Quercus mongolica*. The moth flies from early VII end VIII. The larva and its foodplants are unknown.

Distribution (Map 135). Manchurian, nemoral. Far East (S Khabarovsk and Primorye terr.). – China, Korea, Japan.

Note. The holotype of *Hepatica anceps* is illustrated on Pl. 5: 39.

Genus ***Lophomilia*** Warren, 1913

Lophomilia Warren, 1913, in *Seitz*, *Gross-Schmett. Erde* **3**: 411. Type-species: *Egnasia polybapta* Butler, 1879, [Japan].

Synonymy: *Atuntsea* Berio, 1977; *Bryograpta* Sugi, 1977.

Moths of medium size (wingspan 26-32 mm.) with slender body, quadrifid hindwing venation and relatively narrow forewing. Antennae of male serrate, ciliate; labial palps long, straight, thin, flattened laterally, directed forward, the 2nd segment long, 3rd segment rather long, thin, 1.5-3 times shorter than 2nd; abdomen with crests on 1st to 3rd segments; forewings relatively narrow with oblique outer margin, apically pointed, or with incision of outer margin before apex; wing colour and pattern bright, in some species-groups grey. In male genitalia, uncus relatively short, often sickle-like, tip pointed; tegumen narrow, 1.5 to 2 times higher than vinculum; juxta leaf-shaped, trilobed; valva narrow, in some species with costa apically separated from membranous valva; clasper-harpe complex directed longitudinally, basally or medially fused with costa; sacculus with long or short sclerotised extension. Aedeagus relatively short, vesica bulbous, with or without cornuti. In the female genitalia, ovipositor short, papillae anales broad, mainly quadrangular, apophyses weak; antrum funnel- or cup-shaped, ductus bursae very short, flattened, usually sclerotised, corpus bursae ellipsoid or rounded; ductus seminalis arising from caudal part of corpus bursae.

The genus includes 13 species, distributed predominantly in Manchurian and Sino-Himalayan subregions of the Palaearctic and in the Oriental region. The known larvae feed on woody plants, particularly on oaks *Quercus* and chestnut *Castanea* (Fagaceae). – 4 species.

References: Kononenko & Behounek 2009.

Lophomilia polybapta (Butler, 1879)

(Pl. 5: 41, 42; ♂ genit. Pl. 47: 4; ♀ genit. Pl. 136: 7)

Egnasia polybapta Butler, 1879. *Illustr. typical Specimens Lepid. Heterocera Colln Br. Mus.* **3**: 66, pl. 57: 7 (Type-locality: Japan, Yokohama).

Bionomics. Mesophilous species, occurs in meadows and among bushes in broad-leaved forests. Moths fly from end VI to mid VIII. The larval foodplants unknown.

Distribution (Map 136). Manchurian, nemoral. Far East (Primorye terr.). – N China, Korea, Japan.

Note. First reported for Russia by Kononenko & Behounek (2009).

Lophomilia flaviplaga (Warren, 1912)

(Pl. 5: 43, 44; ♂ genit. Pl. 47: 5; ♀ genit. Pl. 136: 8)

Micardia flaviplaga Warren, 1912, *Novit. zool.* **19**: 38 (Type-locality: Japan).

Bionomics. Mesophilous species, inhabits humid oak, broad-leaved, and mixed lowland forests. The moths often fly by day and are also attracted to light. The flight period from end V to mid VIII. Larvae feed on oak *Quercus mongolica*.

Distribution (Map 137). Manchurian, nemoral. Far East (S Khabarovsk, Primorye and S Kuriles), S Kuriles (Kunashir Is). – China, Korea, Japan (Hokkaido, Honshu).

Lophomilia nekrasovi Kononenko & Behounek, 2009

(Pl. 5: 45, 46; ♂ genit. Pl. 47: 6; ♀ genit. Pl. 137: 1)

Lophomilia nekrasovi Kononenko & Behounek, 2009, *Zootaxa* 1989: 10, figs. 9, 10, 29, 44.

Diagnosis. Differs from its allies *L. polybapta* and *L. flaviplaga* in bright purplish red-brown ground colour of forewing and characteristic white, distinct antemedian and postmedial lines in dorsal part of wing and bright orange-reddish patch between them. Male genitalia differ in long clasper-harpe complex, which is equal in length to costa. In female genitalia, the species differs in having a wide, funnel-shaped antrum.

Bionomics. Mesophilous species, occurs in hillsides and lowlands with open deciduous forest with scattered trees of oak *Quercus dentata*. The flight period is mid VII - mid VIII. The larva and its foodplants are unknown.

Distribution (Map 138). Manchurian, nemoral. Far East (S Primorye). – China, Korea.

Note. The paratype and holotype of *Lophomilia nekrasovi* are illustrated on Pl. 5: 45, 46.

Lophomilia kogii (Sugi, 1977)

(Pl. 5: 47; ♂ genit. Pl. 48: 1; ♀ genit. Pl. 137: 2)

Bryograpta kogii Sugi, 1977, *Tyô to Ga* **28**: 39: 1, 2 (Type-locality: Japan: Hokkaido, Kuttari, Tokachi).

Bionomics. Mesophilous species, occurs in broad-leaved forests on meadows and among bushes. One generation in a year, the flight period is from end VI to mid VIII. The larval foodplants unknown.

Distribution (Map 139). Manchurian, nemoral. Far East (Primorye terr.). – China, Korea, Japan.

Genus ***Stenbergmania*** Bryk, 1948

Stenbergmania Bryk, 1949, *Ark. Zool.* **41** (A) 1: 142. Type-species: *Herminia albomaculalis* Bremer, 1864.

Wingspan 19-20 mm. Antenna of male serrate; labial palps very long, as in *Hypena*; frons with tuft of scales; foretibia with brush of hairs, abdomen with tufts on 3rd and 4th segments; forewing with extension in area R5-M3. In male genitalia, uncus short, sickle-like; costa apically separated from membrane of valva; sacculus small, with sclerotised curved pro-

cess. Aedeagus with curved coecum, vesica bulbous, granulated. In female genitalia, papillae anales wide, quadrangular; anterior and posterior apophyses equal in length; antrum sclerotised; ductus bursae wide, corpus bursae round; ductus seminalis joins caudal part of ductus bursae.

Manchurian monotypic genus.

Stenbergmania albomaculalis (Bremer, 1864)

(Pl. 5: 48; ♂ genit. Pl. 48: 2; ♀ genit. Pl. 137: 3)

Herminia albomaculalis Bremer, 1864, *Mém. Acad. Sci. St. – Pétersb.* (7) 8, **1**: 65, pl. 5: 24 (Type-locality: Russia: "Ussuri [Primorye]").

Bionomics. Mesophilous species, occurs open oak and decidouous forests, among bushes, in forest edges and forest-steppe. Univoltine, the moth flies from mid VI to mid VII. Larvae feed on oak *Quercus mongolica*, and *Q. dentata*.

Distribution (Map 140). Manchurian, nemoral. S Transbaikalia, Far East (Amur, S Khabarovsk and Primorye terr.). – China, Korea, Japan.

Genus ***Paragabara*** Hampson, 1926

Paragabara Hampson, 1926, *Descr. new Genera Species Lepid. Phalaenae Subfamily Noctuinae Br. Mus.*: 260. Type-species: *Madopa flavomacula* Oberthür, 1880 (Russia: Primorye terr., Askold I.).

Moths of small size (wingspan 25-26 mm) with slender body, and quadrifid hindwing venation. Antennae of male finely ciliate; labial palps long, straight, directed forward, 2nd segment long, 3rd segment long, thin, 1.5 times shorter than 2nd; abdomen with small crests on 1st segment; forewing without incision of outer margin; wing colour pale yellowish-brown, pattern formed by transverse lines. In male genitalia, uncus short, somewhat extended subapically; juxta shield-shaped or heart-shaped; clasper wide, fused with costa, directed longitudinally; costa strong, apically thin, free; transtilla well expressed; sacculus small, with large sclerotised extension. Aedeagus short and wide, vesica rather large, with 2-3 diverticula, armed with 2 long spines and patch of small cornuti. In the female genitalia, ovipositor short, papillae anales broad, quadrangular; anterior apophyses 3-4 times longer than posterior apophyses, which are very short; antrum wide, funnel-shaped, antevaginal plate complex with pair of lateral pockets; ductus bursae short or long, wide, sclerotised, corpus bursae rounded, covered inside with numerous spinula; ductus seminalis arising from caudal part of corpus bursae.

The genus includes 6 species, distributed in Manchurian subregion of the Palaeartctic and partly in the Oriental region. – 3 species.

Paragabara flavomacula (Oberthür, 1880)

(Pl. 5: 49, 50; ♂ genit. Pl. 48: 3; ♀ genit. Pl. 137: 5, 6)

Madopa favomacula Oberthür, 1880, *Étud. Ent.* **5**: 87, pl. 4: 5 (Russia, Primorye terr., Askold I.).

Diagnosis. *P. flavomacula* and the two following species represent a complex of closely related taxa, which can be reliably identified by genital structure. *P. flavomacula* differs from its allies in short, finger-like apical extension of costa and in the shape and armature of vesica with three diverticula armed with patches of moderate, straight cornuti. Female differs in shape of wide, sclerotised ductus bursae.

Bionomics. Mesophilous species, occurs in meadows, woodsides, among bushes, in plantations of soya bean *Glycine*. Two generations from mid VI to late VIII. Larvae feed on *Pueraria*, *Amphicarpa* (Fabaceae) and on fresh and semi-dry leaves of soya bean (*Glycine max*).

Distribution (Map 141). Manchurian, nemoral. Far East (Amur, S Khabarovsk and Primorye terr.). – China, Korea, Japan.

Paragabara curvicornuta Kononenko & Matov, 2010

(Pl. 5: 51, 52; ♂ genit. Pl. 48: 4, 5; ♀ genit. Pl. 137: 4)

Paragabara curvicornuta Kononenko & Matov, 2010, Zootaxa.

Diagnosis. Similar to *P. flavomacula* and *P. ochreipannis*, but differs in somewhat more invaginated postmedial line in in midpart of in forewing. In the male genitalia, *P. bicornuta* differs in much longer apical extension of costa and by presence of two prominent cornuti in vesica, one of which is angled. In female genitalia, ductus bursae, sclerotised, narrower than in *P. flavomacula*.

Bionomics. Mesophilous species, occurs sympatrically with preceding species in meadows, woodsides, among bushes. The moth flies from mid VI to end VII. The larva and its foodplants are unknown.

Distribution (Map 142). Manchurian, nemoral. Far East (Amur reg., S Khabarovsk and Primorye terr.). – China, Korea, Japan.

Note. The holotype and paratype of *Paragabara curvicornuta* are illustrated on Pl. 5: 50, 51.

Paragabara ochreipennis Sugi, 1962

(Pl. 5: 53; ♂ genit. Pl. 48: 6; ♀ genit. Pl. 137: 7, 8)

Paragabara ochreipennis Sugi, 1962, *Akitu* 10: 39: 3, 4. (Type-locality: Japan: Kyushu, Fukuoka Pref., Yoshii).

Diagnosis. Close to *P. flavomacula*, differs externally in tint of yellow in wing colour and waved subbasal line; in male genitalia, costal and saccular extensions more massive than in the two preceding species, saccular extension shorter than length of valva (*in P. flavomaculata* and *P. bicornuta* it is narrower and equal to the length of valva. In female genitalia, ductus bursae broad, sclerotised only in mid part.

Bionomics. Mesophilous species, occurs sympatrically with preceding species in similar biotopes. The moth flies from mid VI and to end VII. The larva and its foodplants are unknown.

Distribution (Map 143). Manchurian, nemoral. Far East (Amur, S Khabarovsk and Primorye terr.). – China, Korea, Japan.

11. Subfamily **Erebinae** Leach, [1815]

Erebida Leach, [1815] 1830, in *Brewster,Edinburgh Encycl.* 9: 134. Type genus: *Erebus* Latreille, 1810.

Synonymy: Erebidae Guenée, 1852; Erebinae Forbes, 1954; Erebini Forbes, 1954; Thysaniini Grote, 1895.

Very large to medium sized moths; the largest Noctuidae species, the Neotropical-Nearctic *Thysania agrippina* (Cramer, 1776) with wingspan 27-30 cm belongs to this subfamily. The subfamily is characterised mainly by plesiomorphic characters (Fibiger & Lafontaine 2005). Vein M2 in the hindwing located near the bottom of the cell adjacent to veins M3, Cu1, and Cu2. In male genitalia, scaphium more or less sclerotised, subscaphium more lightly sclerotised; tegumen longer than vinculum; juxta occurring in many shapes, but never like an inverted Y, as in the Catocalinae, not fused with a heavily sclerotised anellus; in many genera juxta is more or less fused to the inner saccular fold. In female genitalia, antevaginal plate inconspicuous; postvaginal plate membranous or lightly sclerotised; unlike in Catocalinae, ostium positioned in the sclerotised 8th abdominal segment, close to the membrane of the 7th segment; antrum with sclerites, but not a heavily sclerotised cylinder, nor two plates, as in the Catocalinae; ductus bursae rarely sclerotised.

Large subfamily, including over 1000 mainly poorly known species, distributed in tropics of the Oriental, Australian, Ethiopian and Neotropical regions. Most species present in the south of Russian Far East are irregular or occasional tropical migrants. The association of the genus *Arcte* and tribe Arcteini with Erebinae is wrong; Holloway (2009) transferred the genus to the subfamily Pantheinae.

The subfamily Erebinae was re-established by Lafontaine & Fibiger (2006) and recognised as para- or polyphyletic subfamily that is in need of revision.

References: Fibiger & Lafontaine 2005; Lafontaine & Fibiger 2009; Holloway 2009.

Tribe **Erebini** Leach, [1815]

Erebida Leach, [1815] 1830, in *Brewster,Edinburgh Encycl.* 9: 134. Type genus: *Erebus* Latreille, 1810.

Synonymy: Erebidae Guenée, 1852; Erebinae Forbes, 1954; Erebini Forbes, 1954; Thysaniini Grote, 1895.

Very large and large moths with triangular forewing, colour usually brown or dark-brown; in some genera with conspicuous ocellate mark in forewing; palps long, 3rd segment as long as 2nd; in some genera, tibia of all legs with spines, vein M2 strong, arising near bottom of cell. In male genitalia, tegumen usually longer than vinculum; uncus rather short, subscaphium strongly sclerotised, with subbasal position; juxta variable in shape, but not like inverted Y, not fused with anellus; valva broad, lobe-like, in some species with large coremata on outer side. In female genitalia, antevaginal plate inconspicuous; postvaginal plate membranous; ostium positioned in the sclerotised 8th abdominal segment, close to the membrane of the 7th segment; antrum with sclerites; ductus bursae membranous or sclerotised. The members of the tribe have predominantly tropical distribution in the Old and New Worlds, some species appear in the temperate zone of the Eastern Palaearctic as irregular immigrants.

Genus ***Erebus*** Latreille, 1810

Erebus Latreille, 1810, *Considerations generates sm l'Ordre naturel des Animaux*: 365. Type-species: *Phalaena crepuscularis* Linnaeus, 1758 ["East Indies"].

Synonymy: *Byas* Billberg, 1820; *Nyctipao* Hübner, [1823] 1816; *Patula* Guenée, 1852; *Bocana* Walker, [1865]; *Argiva* Hübner, [1823] 1816; *Coria* Walker, 1866; *Eupatula* Ragonot, 1894; *Crishna* Kirby, 1897, unnecessary replacement name; *Cariona* Swinhoe, 1918; *Nyctipaon* auct.

Wingspan 130-140 mm. Large moths, with large ocellate mark in the forewing discal area. Many species with pronounced sexual dimorphism, in some species the male has a reduced hindwing bearing pouched androconia on costa. Labial palps directed upward, 3rd segment thin, stick-like; tibia of all legs with spines; wings large, triangular. In male genitalia, uncus rather short; scaphium heavily sclerotised; valva large, triangular, bearing large coremata on inner surface; costal part of valva weakly sclerotised; juxta broad, inverted V-shaped. Aedeagus relatively short and broad, vesica with two or more long diverticula armed with short spines. Female genitalia, vary in length of ductus, sclerotisation and corrugation of the corpus bursae.

The genus includes about 40 species, most diverse in the Oriental region through to the Indo-Australian tropics, and there are few species in Ethiopian region. – 1 species.

Erebus macrops (Linnaeus, 1768)

(Pl. 6: 1; ♂ genit. Pl. 49: 1; ♀ genit. Pl. 138: 1)

Attacus macrops Linnaeus, 1768, *Syst. Nat.* (Edn 12), 3: 225 (Type-locality: "India Oriental".

Synonymy: *bubo* Fabricius, 1775; *boopis* Guenée, 1852.

Bionomics. Meso-thermophilous species, in Japan and Korea inhabits rich mountain broad-leaved forest. The moth flies in VII-VIII. Larvae feed on lian *Entada* (Fabaceae). The adult is known as a fruit piercer in Thailand (Kuroko & Lewvanich 1993).

Distribution (Map 144). Palaeotropic-subtemperate. Far East (Primorye). – Korea, Japan, China, Taiwan, SE Asia, Central Africa.

Note. A tropical migratory species once collected in Primorye in the beginning of the last century (Moltrecht 1929, Kononenko 1990; 2005).

Genus ***Metopta*** Swinhoe, 1900

Metopta Swinhoe, 1900, *Cat. east. and Austr. Lepid. Heterocera* **2**: 170. Type-species: *Spirama rectifasciata* Ménétriés, 1863.

Synonymy: *Gialca* Walker, 1855.

Wingspan 50-65 mm. Large, dark coloured moths, with large ocellate marks in the discal area of forewing and wide white band in fore and hindwing. Antennae of male bipectinate; labial palps directed upward, 3rd segment thin, stick-like; tibia of mid- and hindlegs with spines. In male genitalia, scaphium sclerotised; valva large, triangular with wide sclerotised costal area and narrow extended sacculus; clasper transverse, with short harpe; juxta broad, deeply split apically. Aedeagus long and broad, vesica bulbous, with one large and four small diverticula, the large one with chain of spine-like cornuti. In female genitalia, anterior and posterior apophyses equal in length; antrum wide, cup-like; ductus bursae short, sclerotised; corpus bursae elongated, sclerotised in caudal part.

Monotypic genus distributed mainly in Manchurian subregion of the Palaearctic and partly in Oriental region.

Metopta rectifasciata (Ménétriés, 1863)

(Pl. 6: 2; ♂ genit. Pl. 49: 2; ♀ genit. Pl. 138: 2)

Spirama rectifasciata Ménétriés, 1863, *Enumeratio Corporum Anim Mus. imp. Sci. Petropolitanae* (Lèpid.), pl. 17: 6 (Type-locality: not stated [?Japan]).

Synonymy: *japonica* Walker, 1865; *interlineata* Butler, 1871.

Bionomics. Meso-thermophilous species, in Japan and Korea in broad-leaved forest. The moth flies in V-VII. Larvae feed on *Smilax* (Smilacaceae).

Distribution (Map 145). Manchurian, nemoral. Far East (Primorye, probably migrant). – China, Korea, Japan, Taiwan.

Note. One dead specimen of this species was collected in Khasan railway station in the vicinity of the Russian - N Korean border (Kononenko 1990). It is not clear whether the specimen was an active migrant or if it was transported by train from Korea.

Tribe **Hypopyrini** Guenée, 1852

Hypopyridae Guenée, 1852, *in* Boisduval & Guenée, Hist. nat. Insectes (Spec. gén. Lépid.) 7: 192. Type genus: *Hypopyra* Guenée, 1852.

Judging from morphology of imago and genitalia as well as characters of the larva, the tribe Hypopyrini is closely related to Erebini. Main distinguishing features of Hypopyrini are in the male genitalia: short tegumen (shorter than vinculum), long, narrow aedeagus and short vesica without cornuti. The genus *Spirama* occurs in the Far East as a migrant, and is close to or even congeneric with the type-genus of the tribe Hypopyrini. Fibiger (in Goater *et al*. 2003) and Holloway (2005) placed *Hypopyra* in Catocalinae. Here, the tribe Hypopyrini and the genus *Spirama* are transferred to the subfamily Erebinae. The relation between Erebini and Hypopyrini requires further investigation.

Genus ***Spirama*** Guenée, 1852

Spirama Guenée, 1852, *in* Boisduval & Guenée, *Hist. nat. Insectes* (Lépid.) **7**: 194. Type-species: *Phalaena retorta* Clerck, 1764.

Synonymy: *Spiramia* Walker, 1858, emendation.

Large moths, wingspan 65-85 mm, with large ocellate marks in the discal area of forewing; antenna of male weakly serrate, ciliate; labial palps directed upward, 3rd segment thin, stick-like; tibia of all legs with spines; wings triangular. In male genitalia, vinculum 1.5-2 times longer than tegumen; uncus short, sickle-like, scaphium sclerotised; valvae wide, large, lobe-like, simple, with narrow sacculus and transverse bar-like clasper; harpe absent; dorsal part of juxta very large, plate-like. Aedeagus as long as valva, thin, apically curved, vesica very short, bulbous, with single diverticulum; In female genitalia, papillae anales small; anterior and posterior apophyses thin, of equal length; antrum wide, funnel-like; ductus bursae thin and long, apically coiled; corpus bursae elongated.

The genus includes 19 species distributed mainly in the Old World tropics and subtropics; 2 species are known from the Manchurian subregion of the Palaearctic. – 1 species.

Spirama helicina (Hübner, [1831] 1825)

(Pl. 6: 3; ♂ genit. Pl. 49: 3; ♀ genit. Pl. 138: 3)

Speiredonia helicina Hübner, 1831, *Zutr. Samml. exot. Schmett.* 3: 14 [1824], l. c.: pl. 76: 437, 438 (Type-locality: “Berbice”, ?Japan).

Synonymy: *japonica* Guenée, 1852; *aegrota* Butler, 1881.

Bionomics. Meso-thermophilous species, in Japan and Korea occurring in broad-leaved forest. Two generations in V-VII, VIII-IX. Larvae feed on the tree *Albizia julibrissin* (Fabaceae).

Distribution (Map 146). Oriental, Manchurian-subtemperate. Far East (Primorye, one record documented). – China, Korea, Japan, Taiwan, SE Asia.

12. Subfamily **Calpinae** Boisduval, 1840

Calpides Boisduval, 1840,*Genera Index meth. Eur. Lepid.*: 156. Type genus: *Calpe* Treitscke, 1825 (=*Calyptra* Ochsenheimer, 1816).

Synonymy: Calpidi Guenée, 1841; Calpides Herrich-Schäffer, [1851] 1845; Ophideridae Guenée, 1852; Othreinae Berio, 1955.

Large and medium sized moths, most of them with forewing of characteristic shape, with pointed apex, prominent rounded lobe at subbasal half of inner margin; tornus marked by rounded extension, ending in sharp hook. Many species are brightly coloured, some are red or reddish. The subfamily is defined by the autapomorphic highly specialised structure of the proboscis which is adopted for piercing fruits. Adults pierce the skin of tropical fruits and suck the juices. The subfamily includes approximately 200 species world wide and is most diverse in the tropics and subtropics, mainly in areas of forest. It includes in the regional fauna two tribes: Anomini and Calpini. The exact number of genera and limits of Calpinae is still disputed. Goater at al. (2003) listed many genera in Calpinae (sensu lato), but most of them were later moved to other subfamilies and tribes (Holloway, 2005; Fibiger & Lafontaine 2005; Lafontaine & Fibiger 2006). The subfamily is represented in the Asian part of Russia (mainly in the Far East) by 2 tribes and 6 genera.

References: Banziger 1989; Fibiger, Lafontaine 2005; Lafontaine Fibiger 2009; Holloway 2005; Zaspel & Branham 2008.

Tribe **Scoliopterygini** Herrich-Schäffer, [1852]

Scoliopteryges Herrich- Schäffer, [1852] 1843–56 (1850), *Syst. Bearbeitung Schmett. Eur.* 6 (Systema Lepidopterorum Europae): 21. Type genus: *Scoliopteryx* Germar, 1810.

Synonymy: Gonopteridae Herrich-Schäffer, [1850] 1845; Gonopteridae Guenée, 1852; Anomiinae Grote, 1882; Anomiini Grote, 1890; Anomiini Wiltshire, 1990; Anomini Berio, 1992; Scoliopteryginae Spuler, 1907; Scoliopteryginae Börner, 1932; Scoliopterygini Beck, 1960; Scoliopterygini Forbes, 1954.

Externally the tribe is characterised by the shape of the forewing with apex acute and somewhat hooked, termen angled medially, and concave to apex. As in other members of Calpinae, the proboscis strong, specialised for piercing fruit. The main tribal apomorphy in female genitalia is the origin of the ductus semimalis from the caudal part of the bursae copulatrix near ostium or antrum, a character not found in other genera within the subfamily. In male genitalia, the valvae are split or weakly sclerotised, with large basal coremata, the structure of aedeagus and vesica is similar in *Anomis* and *Scoliopteryx*.

The tribal name Gonopterinae was used by Kitching & Rawlins (1999) and Goater *et al*. (2003) instead of Scoliopterigyni; the last is the valid name (Fibiger & Lafontaine 2005). According to Fibiger & Lafontaine (2005) the tribe includes 2 genera, the Holarctic *Scoliopteryx* and the Nearctic *Litoprosopus* Grote. The genus *Anomis* was placed by them in its own tribe, Anomini (Lafontaine & Fibiger 2006). However, Holloway (2005) included *Scoliopteryx*, *Anomis* and allied genera in Scoliopterigyni. This treatment of Scoliopterigyni is supported by molecular study (Holloway, pers. comm.), a view accepted here.

Genus ***Anomis*** Hübner, [1821]1816 (sensu lato)

Anomis Hübner, [1821] 1816, *Verz. bekannter Schmett.*: 249. Type-species: *Anomis exacta* Hübner, [1822] [Mexico, Peru].

Synonymy: *Cosmophila* Boisduval, 1833; *Gonitis* Guenée, 1852; *Anomus*: Agassiz, 1846, emendation; *Rusicada* Walker, [1858] 1857; *Scoedisa* Walker, [1858] 1857; *Tiridata* Walker, 1865; *Amarna* Walker, 1856 [1857]; *Ristra* Walker, 1858; *Deremma* Walker, 1865; *Capitaria* Walker, 1869; *Gonotis*: Moore, 1882, misspelling; *Deinopalps* Holland, 1894; *Alabama* Grote, 1895; *Eualabama* Grote, 1896, unnecess. repl. name; *Molopa* Swinhoe, 1902; *Gonopteronia* Bethune-Baker, 1906.

Medium to relatively large moths; forewing usually with red, orange or yellow colour, with acute apex of, outer margin angled medially on M3, concave to apex and to dorsum. Palps sickle-like with short 3rd segment or with long straight 3rd segment; antennae of male serrate, ciliate. In male genitalia, uncus rather short; scaphium heavily sclerotised, displaced up to uncus; tegumen and vinculum narrow; valva weakly sclerotised, lobe-like, hairy, with large basal coremata covered by short, soft hairs. Aedeagus straight, rather long, often with sclerotised finely dentate carinae; vesica rather long, projecting dorsally as in *Scoliopteryx*, with subbasal diverticulum and cornutus. In female genitalia, ovipositor quadrangular; rather short; antrum sclerotised; ductus bursae long or moderate, ductus seminalis arising from caudal part of ductus bursae near antrum; corpus bursae elongated or rounded, without signum. Holloway (2005) considered *Anomis* as complex of several genera (*Anomis*, *Rusicada*, *Cosmophila*, and *Gonitis*), here it is treated in a broad sense of the traditional concept (*sensu lato*). Following Holloway (2005), far-eastern species associated with three genera: *Cosmophila flava*, *Gonitis mesogona*, *G. involuta*, *Rusiada privata* and *R. leucolopha*. The genus in wide sense comprises 135 species distributed mainly in tropical and subtropical areas of the Old and New Worlds. Some species appear in the southern part of the temperate zone as irregular migrants or introduced by man. – 5 species, all are irregular migrants in the south of Russian Far East.

Anomis flava (Fabricius, 1775)

(Pl. 7: 1, 2; ♂ genit. Pl. 50: 2; ♀ genit. Pl. 138: 5)

Noctua flava Fabricius, 1775, *Syst. ent.*: 601 (Type-locality: “India Oriental”).

Synonymy: *stigmatizans* Fabricius, 1775; *fimbriago* Stephens, 1829; *xanthindyma* Boisduval, 1833; *auragoides* Guenée, 1852; *indica* Guenée, 1852; *variolosa* Walker, 1857; *edentata* Walker, 1857; *aurantiaca* Prittwitz, 1867; *serrata* Barnes & McDunnough, 1913.

Bionomics. Eurytopic migrant species appearing in Primorye in late VIII-X. The moth occurs in various wooded and open habitats. Larvae feed on *Hibiscus*, *Gossypium*, *Althaea rosea*, *Malachra*, *Sida* (Malvaceae) and other plants: *Corchorus capsularis* (Tiliaceae), *Vigna umbellata* (Fabaceae), *Lycopersicum esculentum* (Solanaceae), *Ipomoea* (Convolvulaceae). The adult is known as a fruit piercer in Thailand (Kuroko & Lewvanich 1993).

Distribution (Map 148). Palaeotropic-subtemperate. S Transbaikalia, Far East (Amur, S Khabarovsk and Primorye terr., irregular migrant). – China, Korea, Japan, Taiwan, Oceania, SE Asia, India, New Zealand, Africa, Madagascar, Mauritius, Hawaii, N America (introduced by man).

Anomis mesogona (Walker, 1858)

(Pl. 7: 3; ♂ genit. Pl. 50: 3; ♀ genit. Pl. 138: 6)

Gonitis mesogona Walker, 1858, *List Specimens lepid. Insects Colln. Br. Mus.* **13**: 1002 (Type-locality: Sri Lanka).

Bionomics. Eurytopic species, occasional migrant in S Primorye, a few records have been made in late VI, mid VII and early X. The moth has been collected in various types of woodland. Larvae are polyphagous: in Japan and Korea, they feed on *Hibiscus syriacus* (Malvaceae) and *Rubus hirsutus* (Rosaceae). The moth flies in two generations in VI-VII, VIII-X.

Distribution (Map 149). Oriental-subtemperate, migrant. Far East (S Primorye, migrant). – China, Korea, Japan, Taiwan, SE Asia, Sri Lanka, India, Nepal, Pakistan.

Anomis involuta (Walker, [1858] 1857)

(Pl. 7: 4, 5; ♂ genit. Pl. 50: 4; ♀ genit. Pl. 138: 7)

Gonitis involuta Walker, [1858] 1857, *List Specimens lepid. Insects Colln. Br. Mus.* **13**: 1003 (Type-locality: Sri Lanka).

Synonymy: *basalis* Walker, [1858] 1857; *colligata* Walker, 1865; *vitiensis* Butler, 1886; *dona* Swinhoe, 1919; *brima* Swinhoe, 1920.

Bionomics. Mesophilous, irregularly migrant species. It occurs as an immigrant in Primorye in the zone of deciduous forest. In Japan and Korea, the moth flies in VIII-IX. Larvae are polyphagous, in Oriental region feed on Malvaceae, Fabaceae, Stercullaceae, Tiliaceae (Robinson *et al.* 2001), in Japan noted on *Rubus* (Rosaceae) (Miyata 1983).

Distribution (Map 150). Oriental-subtemperate, migrant. Far East (S Primorye, migrant). – China, Korea, Japan, Taiwan, SE Asia, India, Nepal, Pakistan, Afghanistan, Oceania, New Zealand, Australia.

Anomis privata (Walker, 1865)

(Pl. 7: 6, 7; ♂ genit. Pl. 50: 5; ♀ genit. Pl. 139: 1)

Gonitis privata Walker, 1865, *List Specimens lepid. Insects Colln Br. Mus.* **33**: 863 (Type-locality: China: Shanghai).

Synonymy: *commoda* Butler, 1878; *subfulvida* Warren, 1913; *griseolineata* Warren, 1913; *fulvida* auct.

Bionomics. Mesophilous migrant species known from Primorye in few specimens collected in open deciduous forests in VII and VIII. In Japan and Korea, the moth flies in VII-IX. Larvae feed on *Hibiscus* (Malvaceae).

Distribution (Map 151). Palaeotropic-subtemperate, migrant. Far East (S Primorye, migrant). – China, Korea, Japan, Taiwan, SE Asia, Sri Lanka, India, Australia, N America (introduced).

Anomis leucolopha Prout, 1928

(Pl. 7: 8, 9; ♂ genit. Pl. 50: 6; ♀ genit. Pl. 139: 2)

Anomis metaxantha leucolopha Prout, 1928, *Bull. Hill. Mus.* **2**: 266 (Type-locality: Indonesia, Sumatra).

Synonymy: *maxima* Berio, 1956; *longipennis* Sugi 1982.

Bionomics. Meso-thermophilous species, occasional migrant known from the extreme south of Primorye in few records made in late VII-VIII (Kononenko 2005). The moth flies in various types of open deciduous forest, mainly with oak. In Japan and Korea, the moth flies in VI-VII and VIII-X. Hostplant records from Japan are *Hibiscus* (Malvaceae) and *Tilia* (Tiliaceae) (Sugi 1982a, Mori 1996).

Distribution (Map 152). Oriental-subtemperate, migrant. Far East (S Primorye, irregular migrant). – China, Korea, Japan, Taiwan, SE Asia, N America.

Genus ***Scoliopteryx*** Germar, 1810

Scoliopteryx Germar, 1810, *Diss. sistems Bombycium Species*: 14. Type-species: *Phalaena libatrix* Linnaeus, 1758 [Europe].

Synonymy: *Pterodonta* Reichenbach, Leipzig, 1817; *Euphemias* Hübner, [1821] 1816; *Euphais* Hübner, [1822]; *Gonoptera* Berthold, 1827.

Wingspan 40-45 mm. Head rough-haired; frons with hair-scaled conical projection; labial palps elongated and upturned, 2nd and 3rd joints slender and acute; antennae of male bipectinate, those of female serrate; forewing with apex acute and somewhat hooked, termen angled medially, concave to apex, crenate to dorsum; abdomen flattened and truncate. In male genitalia, uncus angled medially, scaphium heavily sclerotised; tegumen broad, longer than vinculum; valve split, consisting of heavily sclerotised valva and apically free sacculus, with broad triangular dorsal process; juxta heart-shaped. Aedeagus as long as valva, apically with dorsal and ventral scerotised plates; vesica projecting dorsally, short, with small subbasal diverticulum and cornutus. In female genitalia, ovipositor quadrangular; antrum slightly sclerotised; ductus bursae very long, ductus seminalis arising from caudal part of antrum, near ostium; corpus bursae globular, with 3 prominent signa.

The genus includes two species, one of which is widespread in the Holarctic, the other one is Central Asian. – 1 species.

Scoliopteryx libatrix (Linnaeus, 1758)

(Pl. 7: 10; ♂ genit. Pl. 51: 1; ♀ genit. Pl. 140: 3)

Phalaena libatrix Linnaeus, 1758, *Syst. Nat.* (Edn 10) **1**: 507 (Type-locality: Europe).

Synonymy: *libatricus*: Haworth, 1809, emendation.

Bionomics. Meso-hygrophilous species, occurs in various humid woodland and forest-steppe biotopes where willows, poplar and aspen are common. Univoltine in the north, bivoltine in southern areas, flying in two overlapping generations. In the Far East the moth flies in V, VI, the next generation in VII and from VII to X. Overwinters as imago in caves, cellars, ancient buildings. Larvae occur between V and IX, feed on willows *Salix*, poplars *Populus nigra*, *P. maxomowitzi*, aspen *Populus tremula* and *P. davidiana* (Salicaceae).

Distribution (Map 153). Holarctic temperate, boreal. Russia, across Siberia to the Far East (northwards to Magadan and Chukotka to Sakhalin and S Kuriles). – Throughout Europe extending to N Africa, across Asia, and N America from Alaska, to New Mexico.

Tribe **Calpini** Boisduval, 1840

Calpides Boisduval, 1840, *Genera Index meth. Eur. Lepid.*: 156. Type genus: *Calpe* Treitscke, 1825 (=*Calyptra* Ochsenheimer, 1816).

Synonymy: Calpidi Guenée, 1841; Calpides Herrich-Schäffer, [1851] 1845.

The tribe includes large and medium sized moths characterised by most expressed calpine characters: strong, highly specialised proboscis adopted for piercing of fruit and skin of mammals to suck blood; shape of forewing, structure of palps, and bright colour and pattern of hindwing (in the genus *Eudocima*). Some large species of Calpinae can cause serious damage to fruit plantations in SE Asia. The type genus of the subfamily, Calyptra, contains eight species, including the widespread *Calyptra thalictri*, which have blood-sucking habit, from mammals including humans: the so-called vampire-moths (Banziger 1979, 1983; Zaspel *et al.* 2007). Larvae feed on herbaceous plants, mainly on Ranunculaceae and Menispermaceae. A generic worldwide checklist of tribe Calpini was published by Zaspel & Branham (2008). They listed 9 genera confirmed as a members of Calpini (*Africalpe* Krüger, 1939; *Calyptra* Ochsenheimer, 1816; *Eudocima* Billberg, 1820; *Ferenta* Walker, [1858] 1857; *Gonodonta* Hübner, 1818; *Graphiphora* Walker, [1858] 1857; *Oraesia* Guenée, 1852; *Plusiodonta* Guenée 1852; *Tetripsia* Walker, 1867). Four genera are represented in the Far East of Russia.

Genus ***Calyptra*** Ochsenheimer, 1816

Calyptra Ochsenheimer, 1816, *Schmett. Eur.* **4**: 78. Type-species: *Phalaena thalictri* Borkhausen, 1790 [Europe].

Synonymy: *Calpe* Treitschke, 1825, unnecessary replacement name; *Culasta* Moore, 1881; *Hypocalpe* Butler, 1883; *Percalpe* Berio, 1956.

Medium and large sized moths. Wingspan 40-70 mm. Antennae of male bipectinate, in some species serrate, those of female serrate; frons with hood-like projecting tuft of hair-like scales; labial palps elongated forwardly, beak-like, densely clothed in long scales, 3rd segment cutter-like extended; 2nd segment hidden in hairs; proboscis strong, heavily sclerotised on tip; forewing with prominent rounded lobe at subbasal half of inner margin; tornus marked by rounded extension, ending in sharp hook; outer margin roundly extended, apically tapered; well marked diagonal line running from elongated, pointed apex to middle of inner margin. In male genitalia, uncus prominent; apically hooked; scaphium heavily selerotised; tegumen longer than vinculum; saccus large, broad; juxta selerotised, beak hemispherical with irregular edges; valvae symmetrical, widened towards apex; cucullus with 2 strong sclerotised ridges; sacculus with prominent dorsal and ventral processes. Aedeagus longer than valvae, with dorsolateral row of carinal spines; vesica projects laterally to right, short, cylindrical, with small cornuti. In female genitalia, ovipositor short, broad, apically rounded; lodix bursae and antrum heavily sclerotised; anterior part of ductus bursae membranous, posterior part heavily sclerotised; corpus bursae anteriorly slightly sclerotised; posterior part globular, membranous, without signum

The genus includes 19 species, distributed mainly in Eastern Palaearctic and Oriental regions, one species is known from N America. – 3 species.

References: Bänziger 1975, 1979, 1983, 1989, Zaspel *et al* 2007.

Calyptra thalictri (Borkhausen, 1790

(Pl. 7: 11; ♂ genit. Pl. 51: 2; ♀ genit. Pl. 139: 4)

Phalaena thalictri Borkhausen, 1790, *Naturgesch. eur. Schmett.* **3**: 425 (Type-locality: not stated).

Synonymy: *capucina* Esper, 1789; *sodalis* Butler, 1878; *capucina* var. *centralitalica* Dannehl, 1925; *thalictri pallida* Schwingenschuss, 1938.

Bionomics. Meso-thermophilous species, inhabits open valleys, deciduous woodland with wet meadows, open forest and forest edges. Univoltine, imago flies between late VI and VIII. The adult is known as fruit piercer. Males are able to pierce skin, and are facultative blood suckers which occasionally attack people (Zaspel *et al.* 2007). Larvae feed on *Aquilegia*, *Thalictrum* (Ranunculaceae).

Distribution (Map 154). Eurasian, subboreal-boreal. European Russia to Ural, through S Siberia to the Far East, Sakhalin and Kuriles. – Europe, Near East, Central Asia, Kazakhstan, Mongolia, China, Korea, Japan.

Calyptra hokkaida (Wileman, 1922)

(Pl. 7: 12; ♂ genit. Pl. 51: 3; ♀ genit. Pl. 139: 5)

Calpe hokkaida Wileman, 1922, *Entomologist* **55**: 198 (Type-locality: Japan: Hokkaido).

Synonymy: *hoenei* Berio, 1956.

Diagnosis. Differs from *C. thalictri* in somewhat more greyish tint of forewing and greenish-grey transverse shadow-like fasciae in medial field of forewing.

Bionomics. Mesophilous species, occurs in open deciduous and mixed forest and dark coniferous taiga. More common in cold biotopes. Univoltine, the flight period is early VII – end VIII. Larvae feed on *Menispemum dahuricum* (Menispermaceae) and *Corydalis* (Fumariaceae).

Distribution (Map 155). Manchurian, nemoral. Far East (from Amur region eastwards to Sakhalin). – China, Korea, Japan.

Calyptra lata (Butler, 1881)

(Pl. 7: 13; ♂ genit. Pl. 51: 4; ♀ genit. Pl. 139: 6)

Calpe lata Butler, 1881, *Trans. ent. Soc. Lond.* **1881**: 21 (Type-locality: Japan: Tokyo).

Synonymy: *aureola* Graeser, 1889 [1890].

Diagnosis. *C. lata* differs from the two preceding species in larger size and orange-yellowish tint of forewing.

Bionomics. Meso-thermophilous species, inhabits open lowland deciduous forests, occurs also in forest-steppe. More common than other *Calyptra* species. Univoltine, the flight period is from mid VII to late VIII. Larvae feed on *Menispermum dahuricum* and *Cocculus orbiculatum* (Menispermaceae)

Distribution (Map 156). Manchurian, nemoral. Far East (S Amur reg., Khabarovsk and Primorye terr.) – China, Korea, Japan.

Genus ***Oraesia*** Guenée, 1852.

Oraesia Guenée, 1852, in Boisduval & Guenée, *Hist. nat. Insectes* (Lépid.) **6**: 362. Type-species: *Noctua emarginata* Fabricius, 1794 [India].

Medium sized moths, wingspan 30-50 mm. Externally very similar to *Calyptra* but on average smaller. Antennae and labial palps as in *Calyptra*; proboscis strong, heavily sclerotised on tip; forewing much narrower than in *Calyptra*, the outer margin angled centrally, subbasal lobe on inner margin more angular; wing pattern more irregular, often shows sexual dimorphism. In male genitalia, all structures more slender than in *Calyptra*; valva simple, lobe-like in type species, more often with process of sacculus which can be long, slender, digitate or robust; scaphium sclerotised; juxta broad. Aedeagus large, vesica bulbous, finely scobinate, often with diverticula bearing strong cornuti. Female genitalia with long, sclerotised, ribbon-like ductus bursae; corpus bursae ovoid, caudally sclerotised, proximally densely scobinate.

The genus includes 17 species distributed in tropical regions of the Old World, most diverse in the Neotropics. – 2 species.

Oraesia emarginata (Fabricius, 1794)

(Pl. 7: 14, 15; ♂ genit. Pl. 52: 1; ♀ genit. Pl. 139: 7)

Noctua emarginata Fabricius, 1794, *Ent. Syst.* **3** (2): 82 (Type-locality: India: Transquebariae]).

Synonymy: *metallescens* Guenée, 1852; *tetans* Walker, [1858] 1857; *allicias* Walker, [1858] 1857.

Bionomics. Mesophilous species, occurs in various lowland forest habitats. Occasional migrant in S Primorye. Several records have been made in VII-VIII, in open deciduous forest. In Japan and Korea, the moth flies from VI to X. Food plant records from Japan are *Cocculus*, *Cissampeles parena* (Menispermaceae) and *Ipomoea* (Convolvulaceae). The adult is known as a fruit piercer in Thailand (Kuroko & Lewvanich 1993).

Distribution (Map 157). Oriental-Palaeotropical, migrant. Far East (S Primorye, migrant). – China, Korea, Japan, Taiwan, SE Asia, India, Nepal, Pakistan, Oman, East Africa.

Oraesia excavata (Butler, 1878)

(Pl. 7: 16, 17; ♂ genit. Pl. 52: 2; ♀ genit. Pl. 139: 8)

Calpe excavata Butler, 1878, *Ann. Mag. nat. Hist.* (5) **1**: 202 (Type-locality: Japan: Yokohama).

Bionomics. Mesophilous, migrant species known from in Primorye from single record (Kononenko 2005). In Japan and Korea the moth flies from VI to VIII. Larvae feed on *Cocculus* (Menispermaceae). The adult is known as a fruit piercer which damages apple, plum, peach and grape in Korea and Japan.

Distribution (Map 158). Manchurian-Oriental, migrant. Far East (S Primorye, migrant). – China, Korea, Japan, Taiwan, Philippines.

Genus ***Plusiodonta*** Guenée, 1852.

Plusiodonta Guenée, 1852, *in* Boisduval & Guenée, *Hist. nat. Insectes* (Lépid.) **6**: 359. Type-species: *Plusiodonta chalsytoides* Guenée, 1852 [Indonesia, Java].

Synonymy: *Deva* Walker, [1858] 1857; *Gadera* Walker, [1858] 1857; *Tafalla* Walker, 1869; *Odontina* Guenée, 1862]), preocc. (Zborzhewski, 1834 [Mollusca]); *Tinnodoa* Nye, 1975 unnecessary replacement name.

Wingspan 30-40 mm. Antenna of male smooth or sparcely ciliate; labial palps bent upwards, 3rd segment narrow, sharply directed from 2nd segment by obtuse angle; forewing shape more as in *Calyptra* and *Oraesia*; wing pattern with golden or silvery areas on dark background; oblique fasciation on forewing is more obscure and more oblique than in *Calyptra* or *Oraesia*. In male genitalia, uncus, scaphium and juxta similar to those in *Oraesia*; scaphium sclerotised; valva very broad distally, costal margin sometimes angular; sacculus with process from inner margin. Aedeagus variable in length, vesica somewhat tubular, simple, sometimes with patch of small cornuti. In female genitalia, anterior apophyses longer than posterior ones; ductus bursae elongated, sclerotised; corpus bursae elongated or oval, in some species scobinate or slightly sclerotised in caudal part.

The genus includes 37 species distributed in tropical areas over the World. – 1 species.

Plusiodonta casta (Butler, 1878

(Pl. 7: 17, 18; ♂ genit. Pl. 53: 1; ♀ genit. Pl. 140: 1)

Platydia casta Butler, 1878, *Illustr. typical Specimens Lepid. Heterocera Colln Br. Mus.* **2**: 54, pl. 38: 1 (Type-locality: Japan: Yokohama).

Bionomics. Meso-hygrophilous species, occurs in sparse oak and valley deciduous forest on meadows, forest edges, clearings. The moth flies from late V to mid VIII. Probably two generations. Larvae feed in VI on leaves of *Menispermum dahuricum* and *Cocculus orbiculatus* (Menispermaceae).

Distribution (Map 159). Manchurian, nemoral. Far East (Amur, S Khabarovsk and Primorye terr.). – Korea, Japan, China, Taiwan.

Genus ***Eudocima*** Billberg, 1820.

Eudocima Billberg, 1820, *Enumeratio Insect. Mus. G. J. Billberg*: 85. Type-species: *Phalaena salaminia* Cramer, 1777 [‘Surinam”].

Synonymy: *Othreis* Hübner, [1823], 1816; *Corycia* Hübner, [1823] 1816; *Elygea* Billberg, 1820; *Leptophara* Billberg, 1820; *Acacallis* Hübner [1823]; *Ophideres* Boisduval, 1832; *Acacalis* Agassiz, 1846, emendation; *Ophioderes*: Agassiz, 1846, emendation; *Othryis*: Agassiz, 1846, emendation; *Acacallis* Hübner [1823]; *Rhytia* Hübner [1823]; *Trissophaes* Hübner [1823]; *Maenas* Hübner [1823]; *Moenas*: Walker, [1858], misspelling; *Argadesa* Moore, 1881; *Khadira* Moore, 1881; *Purbia* Moore, 1881; *Vandana* Moore, 1881; *Adris* Moore, 1888; *Halastus* Butler, 1892; *Eumaenas* Hampson, 1924.

Large moths with leaf-mimicking forewings and flash coloured hindwings. Wingspan more than 85 mm. Antenna of male filiform; labial palps large, directed forward with 3rd segment spatulate or cutter-like, apically extended; proboscis strong, heavily sclerotised on tip; forewing with falcate tornus and slightly sinuous dorsum, with subbasal expansion, typical of subfamily; hindwing flash, yellow or orange-yellowish. In male genitalia, uncus short, robust with slightly sclerotised scaphium; tegumen higher than vinculum; valva robust, variable in shape, usually without extensions; juxta sometimes huge, deeply or slightly divided centrally. Aedeagus broad, vesica generally short and broad with variable number of cornuti. In female genitalia, ostium with broad sterigma; posterior apophyses usually very short; ductus broad, ribbon-like, sclerotised or short; corpus bursae usually elongated, rather irregular in shape.

The genus includes 45 species distributed in tropical areas over the World. – 2 species.

References: Zilli & Hogenes 2002.

Eudocima tyrannus (Guenée, 1852)

(Pl. 6: 5; ♂ genit. Pl. 52: 3; ♀ genit. Pl. 140: 2)

Ophideres tyrannus Guenée, 1852, in Boisduval & Guenée, *Hist. nat. Insectes* (Lépid.) **7**: 110 (Type-locality: C India).

Synonymy: *tyrannus* var. *amurensis* Staudinger, 1892.

Bionomics. Mesophilous species, inhabits the Manchurian broad-leaved and mixed forests. Univoltine, from late VIII to X. The autumn flying moths hibernate as imagines, or migrate in early summer from the south and appear again in V-VI. In the Far East, larvae feed in VII and early VIII on *Menispermum dahuricum* and (Menispermaceae) in Japan they are also recorded on *Cocculus orbiculatus* (Menispermaceae), *Akebia quinata*, *Stauntonia hexaphylla* (Lardizabalaceae), *Osmanthus heterophyllus* (Oleaceae), *Nandina domestica*, *Berberis thunbergi*, *Mahonia japonica* (Berberidaceae). Probably hibernating partly as egg and partly as imago.

Distribution (Map 160). Oriental-Manchurian, nemoral. Far East (Amur reg., S Khabarovsk and Primorye terr., Sakhalin; recorded in S Kamchatka in one specimen, as occasional migrant probably transported from south by air current during summer cyclone (Sviridov *et al*. 2006). – China, Korea, Japan, Taiwan, SE Asia, N India, Nepal.

Eudocima falonia (Linnaeus, 1763)

(Pl. 6: 6, 7; ♂ genit. Pl. 52: 4; ♀ genit. Pl. 140: 3)

Phalaena N[*octua*] *falonia* Linnaeus, 1763, *Centuria Insect. rariorum*: 28.

Synonymy: *fullonia* Clerk, 1764; *pomona* Cramer, 1775; *dioscoriae* Fabricius, 1781; *princeps* Boisduval, 1832; *obliterans* Walker, [1858] 1857; *fullionica*; Pinhey, 1975 misspelling.

Diagnosis. Differs from *E. tyrranus* in forewing pattern and shape of broader terminal band on hindwing, which reaches the margin of wing.

Bionomics. Mesophilous species, occasional migrant in S Primorye. In Primorye moths have been collected in VIII in open oak woodland. Some records were made during or after strong typhoons. In Japan and Korea, flying in IX-X. Larvae feed mainly on *Cocculus orbiculatus*, *Arcangelisia*, *Cissampelos*, *Dioscoreophyllum*, *Menispermum* (Menispermaceae) and also on *Berberis* and *Mahonia* (Berberidaceae). The adult is known as a fruit piercer in Thailand (Kuroko & Lewvanich 1993).

Distribution (Map 161). Palaeotropical-Manchurian, migrant. Far East (S Primorye). – Korea, Japan China, Taiwan, SE Asia, India, Nepal, New Zealand, Australia, Central Africa.

13. Subfamily **Catocalinae** Boisduval, [1828]

Catocalidi Boisduval, [1828] 1829, *Eur. Lepid. Index meth.*: 97, incorrect original spelling. Type genus: *Catocala* Schrank, 1802.

Synonymy: Catocalides Boisduval, 1840; Audeini Wiltshire, 1990; Exophylini Beck, 1996.

Large to medium sized and small moths. Eyes globular, without lashes. Labial palps from moderate to very long. Vein M2 on forewing well developed, it arises from angle of cell. Forewing pattern generally corresponding to ground plan pattern of Noctuidae, but often modified or reduced. Hindwing often brightly coloured. In some groups mid and hind tibia with spines. Muscle m2 in male genitalia reduced, m4 fixed on tegumen (Tikhomirov 1979). Larvae with reduced 1-2 pairs of prolegs. The species of the subfamily Catocalinae are extremely diverse in habitus, size, and internal structures. They can be separated from species of all other subfamilies by only two synapomorphic character states: the juxta of the male genitalia is in the shape of an inverted Y, and in the female genitalia, the vertical position of the ostium bursae is inside the 7th abdominal segment, - although ostium bursae as a structure is a part of the 8th segment; in Catocalinae the 8th segment is strongly fused to and extended high up into the 7th segment (Fibiger, *in* Goater *et al*. 2003).

The subfamily contains approximately 7000-10000 species worldwide, mostly in the tropics and subtropics. It is very rich and dominant in SE Asia (Holloway 2005). Some temperate groups are diverse in arid and semi-arid regions; although most catocalines inhabit the broad-leaved forest zone, few species occurs in the south of the boreal forest zone, none are known from montane, subarctic or arctic tundra. Larvae of many species feed on arboraceous plants, while some groups are associated with herbaceous plant taxa.

The European and north Palaearctic fauna of Catocalinae has been divided into 12 tribes (Minet in Leraut 1997, Goater et al 2003). At present 7 tribes are recognised within the European fauna (Lafontaine & Fibiger, 2005, Fibiger & Lafontaine 2006), and more tribes from tropical fauna were recognised by Holloway (2005). Eleven tribes and 29 genera are known in Asian part of Russia.

References. Hampson 1913; Berio & Fletcher 1958; Kljuchko 1978; Martin 1980; Sviridov 2003; Goater *et al.*, 2003; Holloway 2005.

Tribe **Toxocampini** Guenée, 1852

Toxocampidae Guenée, 1852, in Boisduval & Guenée,*Hist. nat. Insectes* (Spec. gén. Lépid.) 6: 419. Type genus: *Toxocampa* Guenée, 1841.

Synonymy: Anumetini Wiltshire, 1976; Apopestini Beck, 1996; Lygephilini Wiltshire, 1976; Lygephilini Berio, 1992.

This tribe consists of medium sized, usually dull coloured moths, except for *Chrysorithrum*, with very constant forewing pattern within genera. It can be characterised by several autapomorphies: in male genitalia, vinculum longer than tegumen; vesica with or without sclerotised small plate-like cornuti; in female genitalia, antrum sclerotised; ductus bursae sclerotised, in some cases not separate from antrum, membranous in anterior part at junction with corpus bursae; postvaginal plate divided or half way split medially. Toxocampini are most diverse in the south of the temperate zone. Most species occur in steppe, forest-steppe or open woodland habitats. Larvae feed mainly on Fabaceae. The imago of some species overwinters. The tribe includes 5 genera in the Asian part of Russia.

Genus ***Chrysorithrum*** Butler, 1878

Chrysorithrum Butler, 1878, *Ann. Mag. nat. Hist.* (5) **1**: 292. Type-species: *Catocala amata* Bremer & Grey, 1853 [China].

Synonymy: *Pseudophia* auct.

Wingspan 45-65 mm. Frons rather rounded, smooth, with a short, dense tuft of hair-scales; labial palps stout, upcurved, second segment about twice the length of third; antennae in male lamellate, finely ciliate; metathorax with short double crest; hindwing elongated, triangular, with “catocaline” pattern: yellow with black terminal band. In male genitalia, uncus beak-shaped, broadest subapically; subscaphium weakly sclerotised; tegumen longer than vinculum; valva apically pointed, with heavily sclerotised costa and narrow sacculus bearing flat, spinose harpe; juxta fused with anellus. Aedeagus without coecum; vesica short or long with 2-3 diverticula. In female genitalia, ovipositor small; anterior and posterior apophyses equal in length; antrum sclerotised, funnel-shaped, short or long; ductus bursae short, folded, sclerotised or membranous; corpus bursae elongated, without signum. Larvae feed on Fabaceae.

The genus includes 2 species with east Palaearctic and Manchurian distribution.

Chrysorithrum amata (Bremer & Grey, 1853)

(Pl. 7: 20, 21; ♂ genit. Pl. 53: 2; ♀ genit. Pl. 140: 4)

Catocala amata Bremer & Grey, 1853, in Motschulsky, *Études ent.* **1**: 66 (Type-locality: N China: Pekin).

Synonymy: *fuscum* Butler, 1881; *rufescens* Butler, 1881; *amata steni* Bryk, 1942; *amatum amorina* Bryk, 1948; *amatum amorina* f. *separatum* Bryk, 1948.

Bionomics. Mesophilous species, inhabits deciduous and mixed forests, occurs in meadows, forest edges, open slopes with bushes and in other open biotopes. Common, some years appears in abundance. The moth flies from late V to late VIII. Larvae feed on *Lespedeza bicolor*. The pupa overwinters.

Distribution (Map 162). Manchurian, nemoral. Far East, to Sakhalin and S Kuriles. – China, Korea, Japan.

Chrysorithrum flavomaculata (Bremer, 1861)

(Pl. 7: 22; ♂ genit. Pl. 53: 3; ♀ genit. Pl. 140: 6)

Bolina flavomaculata Bremer, 1861, *Bull. Acad. imp. Sci. St. – Pétersb.* **3**: 492 (Type-locality: Russia: [Khabarovsk terr.], Kuznetzovka).

Synonymy: *maximoviczi* Bremer, 1864; *sericeum* Butler, 1878.

Bionomics. Mesophilous species, occurs in open deciduous forests, in meadows, forest edges, among bushes and on steppe slopes surrounded by forest or wetland. In the Far East common; the moth flies from V to late VIII. Larvae feed on *Trifolium*, *Vicia*, *Lespedeza bicolor* (Fabaceae). The pupa overwinters.

Distribution (Map 163). Eastern Palaearctic, subboreal - nemoral. From S Russia and S Ural, through S Siberia to the Far East, Sakhalin and S Kuriles. – Mongolia, China, Korea, Japan.

Note. Recently reported for South Russia from Stavropol reg. by Poltavsky *et al*. (2009).

Genus ***Anumeta*** Walker, 1858

Anumeta Walker, 1858, *List Specimens lepid. Insects Colln Br. Mus.* 15: 1769. Type-species: *Anumeta atrosignata* Walker, 1858 [India].

Synonymy: *Palpangula* Staudinger, 1877; *Eremonoma* Warreen, 1913.

Wingspan 40-45 mm. Frons smooth, flat; labial palps obliquely porrect, 3rd segment slender; antennae of male ciliate; fore tibia with spines, clawed at tip; mid and hind tibia with tufts of long hair scales; hindwing with conspicuous black spot near termen.

In male genitalia, uncus short and wide with beak-shaped apical hook; scaphium heavily sclerotised; tegumen broad, much longer than vinculum; valvae cylindrical, broadest at base; clasper as short bar, harpe absent. Vesica globular with few diverticula and sclerotised plate. In female genitalia, papillae anales elongated, triangular; anterior and posterior apophyses very long; antevaginal plate lightly sclerotised, with medial concavity; antrum with narrow sclerotised ventral band or membranous; ductus bursae short, with sclerotised ventral plate; corpus bursae elongated, pear-shaped.

Eremic West Palaearctic genus with about 25 species. – 2 species occur in steppe and semidesert regions of S Ural.

Anumeta cestis (Ménétriés, 1847)

(Pl. 7: 23; ♂ genit. Pl. 53: 4; ♀ genit. Pl. 140: 6)

Catephia cestis Ménétriés, 1847, *Mém. Acad. Imp. St. – Petersb.* **6**: 74, 290, pl. 6: 10 (Type-locality: “Bachkirie” [Bashkiria]).

Synonymy: *punctata* Ménétriés, 1847; *celtis* Ménétriés, 1849, emend.

Bionomics. Xero-thermophilous species, occurs in deserts and semi-desert steppe. In west Kazakhstan moths have been collected in VII (Anikin *et al*. 2000) and in Kazakhstan in mid IX (Hacker & Miatlevsky 2001), while in Turkmenia they fly in III and IV. Larvae feed on *Callipodium eryopodum* and *C. leucocladum* (Polygonaceae) (Durmont 1920, Falkovich 1969).

Distribution (Map 164). Western Palaearctic, subtemperate- eremic. SE Russia (Ural, Bashkiria). – N Africa, Near East, Central Asia, Kazakhstan, Mongolia, China.

Anumeta fractistrigata (Alphéraky, 1882)

(Pl. 7: 24; ♂ genit. Pl. 53: 5; ♀ genit. Pl. 140: 7)

Palpangula fractistrigata Alphéraky, 1882, *Horae Soc. ent. ross.* **17**: 96 (Type-locality: China, Xinjiang, Kuldja, Khorgoose).

Bionomics. Xero-thermophilous species, inhabits semi-desert and steppe areas. In S Ural and west Kazakhstan moths were collected in late VI, while in Turkmenia specimens were taken in III-V. Larvae feed on *Calligonum eryopodum* and *C. leucocladum* (Polygonaceae) (Falkovich 1969).

Distribution (Map 165). Western Palaearctic, subboreal – eremic. S Russia (Astrachan), S Ural. – Near East, Transcaspian (Turkmenia), Uzbekistan, Kazakhstan, Mongolia, W China.

Genus ***Lygephila*** Billberg, 1820

Lygephila Billberg, 1820, *Enumeratio Insect. Mus. G. J. Billberg.*: 85. Type-species: *Phalaena lusoria* Linnaeus, 1758 [Germany].

Synonymy: *Asticta* Hübner, 1816; *Toxocampa* Guenée, 1841; *Eccrita* Lederer, 1857; *Craccaphila* Berio, 1996; *Tathorhynhus* Hampson, 1894 (subgen.); *Sinocampa* Kononenko & Fibiger, 2008, preocc. (Chou & Chen, 1981[Diplura]); *Katyusha* Kemal & Koçak, 2009 (subgenus), replacement name. for *Sinocampa*.

Wingspan 30-65 mm. Antennae of male ciliate; frons flat with short hair tuft; labial palps upturned, with thickly scaled 2nd segment, 3rd segment short and flat-scaled; tibia without spines; forewing wide, grey or greyish brown finely irrorated darker; reniform stigma a black dot or triangle; all species with forehead and patagia dark-brown or black. Male genitalia of different species very similar: tegumen much longer than vinculum; uncus long, narrow, subapically highest, hooked at apex; scaphium in some species sclerotised, often membranous; transtilla heavily sclerotised, tapering at diaphragm; valva lobe-like, sometimes slightly asymmetrical; cucullus rounded; clasper extremely long, harpe small, finger-like, arises subapically, parallel with valva margins. Aedeagus long, narrow; vesica globular, with multiple diverticula. In female genitalia, ovipositor short, weakly sclerotised posteriorly; lodix plate wide, with shallow lateral hair-pockets, and broad medial concavity; apophyses short and filiform; antrum large, funnel-shaped, sclerotised; corpus bursae ovoid. Larva with all prolegs fully developed, feed mainly on Fabaceae. The genus is subdivided into three subgenera *Lygephila*, *Sinocampa* and *Tathorhynchus*.

The genus includes 35 species distributed mainly in the Palaearctic region, one species known from the Nearctic. – 15 species.

Lygephila lusoria (Linnaeus, 1758)

(Pl. 7: 25; ♂ genit. Pl. 54: 1; ♀ genit. Pl. 141: 1)

Phalaena lusoria Linnaeus, 1758, *Syst. Nat.* (Edn 10) **1**: 506 (Type-locality: Europe, Germany).

Synonymy: *orobi* Duponchel, 1842.

Bionomics. Thermophilous species, occurs in woodsides, meadows, glades, open hillsides. In Siberia one generation, while in S Europe bivoltine. The moth flies in VI and VII. Larvae feed on *Vicia* and *Astragalus* (Fabaceae). They live in colonies on the foodplants. The larva overwinters.

Distribution (Map 166). Eurasian, subboreal. S Russia, Ural, S Siberia (data require confirmation), Far East (Khabarovsk terr. and Sakhalin). – S and SE Europe, Near East, Transcausasia, Central Asia, Kazakhstan.

Lygephila lubrica (Freyer, 1846)

(Pl. 7: 26-28; ♂ genit. Pl. 54: 2; ♀ genit. Pl. 141: 2)

Ophiusa lubrica Freyer, 1846, *Neue Beitr. Schmett. Kde.* **6**: 7, pl. 483: 4 (Type-locality: not stated).

Synonymy: *sublubrica* Staudinger, 1897; *lubrosa* Staudinger, 1901.

Bionomics. Meso-thermophilous species, associated with warm steppe slopes, often occurs in rocky or stony habitats. The moth flies from mid VI to VIII. Larvae feed on *Vicia cracca* (Fabaceae) (Poltavsky & Liman 2002).

Distribution (Map 167). Siberian, subboreal.

SE Russia, S Ural, S Siberia, Far East (Primorye). – SE Ukraine, Kazakhstan, Kyrgyzstan, Mongolia.

Lygephila ludicra (Hübner, 1790)

(Pl. 7: 30, 31; ♂ genit. Pl. 54: 3; ♀ genit. Pl. 141: 3)

Phalaena Noctua ludicra Hübner, 1790, *Beitr. Gesch. Schmett.* **2** (4): 95, 128, pl. (4), 3: r (Type-locality: Germany: Sachsen; Austria).

Synonymy: *ludicra* var. *gracilis* Staudinger, 1879; *ichinosawana* Matsumura, 1925; *ludicra* f. *major* Draudt, 1950.

Bionomics. Xero-themophilous species, distributed mainly in steppe zone, occurs in hot, dry habitats. One generation in VI-VIII. Larvae feed on *Onobrychis viciifolia*, *Lathyrus* and *Vicia* (Fabaceae). Overwinters as egg.

Distribution (Map 168). Eurasian, subboreal. S Russia, Ural, S Siberia, Far East, to Sakhalin and Kuriles. – C and S Europe, Near East (Turkey), Transcaspian, Central Asia, Kazakhstan, Mongolia, N China.

Lygephila maxima (Bremer, 1861)

(Pl. 8: 1; ♂ genit. Pl. 54: 4; ♀ genit. Pl. 141: 4)

Toxocampa maxima Bremer, 1861, *Bull. Acad. imp. Sci. St.-Pétersb.* **3**: 491 (Type-locality: Russia: Amur reg: Blagoveschensk, "Ussuri" [Primorye terr:], "Kengka See" [Khanka lake]).

Synonymy: *enormis* Butler, 1878.

Bionomics. Meso-hygrophilous species, inhabits wet woodsides, meadows, glades, rivers and lakes shores where sedges abound. Univoltine, the moth flies from early VII to IX. Unlike other species of *Lygephila*, larvae feed on monocotyledonous plants: *Carex* (Cyperaceae) and *Dactylis* (Poaceae) (Kogi 1982).

Distribution (Map 169). Manchurian, nemoral. Far East, to Sakhalin and Kuriles. – China, Korea, Japan.

Lygephila emaculata (Graeser, 1892)

(Pl. 8: 2, 3; ♂ genit. Pl. 54: 5; ♀ genit. Pl. 141: 5)

Toxocampa emaculata Graeser, 1892, *Berlin. ent. Z.* **37**: 231 (Type-locality: Russia, Ussuri).

Diagnosis. *L. emaculata* differs from its congeners in the shape of the reniform stigma which is concave basally from inner side. In male genitalia, the clasper is very long, harpe positioned in apical fourth of valva, reaching its apical margin. Aedeagus unlike other species, with a flat short cornutus in vesica.

Bionomics. Mesophilous species, occurs in woodsides, glades, wet meadows. Univoltine, the moth flies in VII- VIII. The larva and its foodplants are unknown.

Distribution (Map 170). Manchurian, nemoral. Far East (S Khabarovsk and Primorye terr.).

Note. The holotype of *Lygephila emaculata* is illustrated on Pl. 8: 2.

Lygephila dubatolovi Fibiger, Kononenko & Nilsson, 2008.

(Pl. 8: 4, 5; ♂ genit. Pl. 54: 6; ♀ genit. Pl. 141: 6)

Lygephila dubatolovi Fibiger, Kononenko & Nillsen, 2008, *Zootaxa* 1922: 62, figs. 1, 2, 4, 12, 17.

Diagnosis. *L. dubatolovi* is intermediate in size between the similar *L. maxima* and *L. ludicra*, the latter much the larger; the two bands of medial shade are not parallel and the postmedial line is blurred; on the hindwing, a medial line is present which is lacking in the other two species. In the male genitalia, *L. dubatolovi* differs in the much longer and narrower uncus and the much narrower valva. In the female genitalia, it differs in wider ostium bursae, shorter antrum compared with that of *L. maxima* but longer than in *L. ludicra*; and in the pear-shaped corpus bursae.

Bionomics. Mesophilous species. Moths were taken in VII in meadows in deciduous forest. The larva and its foodplants are unknown.

Distribution (Map 171). Manchurian, nemoral. Far East (Primorye), N China (Prov. Liaoning).

Note. The holotype and paratype of *Lygephila dubatolovi* are illustrated on Pl. 8: 4, 5.

Lygephila vulcanea (Butler, 1881

(Pl. 8: 6; ♂ genit. Pl. 55: 1; ♀ genit. Pl. 142: 1)

Toxocampa vulcanea Butler, 1881, *Trans. ent. Soc. Lond.* **1881**: 192 (Type-locality: Japan: Tokyo).

Bionomics. Mesophilous species, inhabits open oak and deciduous forests, occurs in meadows, woodsides and glades. Univoltine, the moth flies from early VII to early IX. The early stages described by Nishio (1987), larvae feed on Fabaceae.

Distribution (Map 172). Manchurian, nemoral. Far East (Primorye). – China, Korea, Japan.

Lygephila mirabilis (Bryk, 1948)

(Pl. 8: 7; ♂ genit. Pl. 55: 2; ♀ genit. Pl. 142: 2)

Eccrita mirabilis Bryk, 1948, *Ark. Zool.* **41** (A) 1: 119 (Type-locality: N Korea: Hamgyeong bugdo [Shuotsu]).

Diagnosis. Externally, *L. mirabilis* differs from the allied *L. vulcanea* in bluish-violet tint of the forewing, diffuse subterminal line and less prominent reniform stigma. Male genitalia very similar to those of *L. vulcanea*, but differ in somewhat longer harpe extending to costal margin of valva in apical part. In female genitalia, *L. mirabilis* differs in deeper split of antrum, longer ductus bursae and smaller bursae.

Bionomics. Mesophilous species, occurs sympatrically with preceding species in humid open deciduous and oak forests in meadows and glades. Univoltine, the moth flies from early VII to mid VIII. The early stages are unknown.

Distribution (Map 173). Manchurian, nemoral. Far East (Primorye). – Korea.

Lygephila craccae ([Denis & Schiffermüller], 1775)

(Pl. 8: 8-10; ♂ genit. Pl. 55: 3; ♀ genit. Pl. 142: 3)

Noctua craccae [Denis & Schiffermüller], 1775, *Ank. Syst. Werk Schmett. Wien.*: 94 (Type-locality: [Austria], Vienna district]).

Synonymy: *nigricollis* deVillers, 1789; *laevigata* Warren, 1913; *lutosa* Warren, 1913; *caliginosa* Schawerda, 1931; *grisea* Warren, 1913; *centralasiae* Sheljuzko, 1955; *riata* Rungs, 1951.

Bionomics. Meso-thermophilous species, occurs in various grassy biotopes, woodsides, meadows, open deciduous forest, among bushes, on hillsides. Bivoltine in the southern part of its range, in overlapping generations. The moth flies from VI to late VII, the second generation occurs in VIII-IX. Larvae feed on *Vicia cracca*, *V. sativa*, *V. sylvatica*, *Astragalus glycyphyllos*, *Coronilla varia*, *Lathyrus vernus*, *Colutea canescens* (Fabaceae).

Distribution (Map 174). Trans-Palaearctic, subboreal. European Russia, Ural, S Siberia, Far East to Kuriles. – N Africa, Europe, Caucasus and Transcaucasia, Near East, Central Asia, Kazakhstan, Mongolia, Korea, Japan (Hokkaido), China.

Lygephila viciae (Hübner, [1822])

(Pl. 8: 11-13; ♂ genit. Pl. 55: 4; ♀ genit. Pl. 142: 4)

Noctua viciae Hübner, [1822], *Samml. Eur. Schmett.* **4**: pl. 146: 671-673 (Type-locality: Europe).

Synonymy: *coronillae* Herrich-Schäffer, 1855; *stigmata* Wileman, 1911; *viciae* subsp. *violaceogrisea* (Draudt, 1950).

Bionomics. Meso-thermophilous species, inhabits woodsides, clearings, open deciduous forest, open hillsides, meadows. Bivoltine. In the Far East the moth flies from late V to end IX. Larvae feed on *Vicia dumetorum*, *V. cracca*, *V. sylvatica*, *Astragalus glycyphyllos*, *Coronilla varia*, *Lathyrus tuberosus* (Fabaceae) Imago overwinters.

Distribution (Map 175). Eurasian, subboreal. Europe, Caucasus and Transcaucasia, Ural, S Siberia, Kazakhstan, Far East, to Sakhalin and S Kuriles. – N Korea, Japan (Hokkaido, Honshu), China.

Lygephila pastinum (Treitschke, 1826)

(Pl. 8: 14, 15; ♂ genit. Pl. 55: 5; ♀ genit. Pl. 142: 5)

Ophiusa pastinum Treitschke, 1826, *Schmett. Eur.* **5** (3): 297 (Type-locality: [Austria], Vienna district]).

Synonymy: *astragali* Herrich-Schäffer, [1851]; *pastinum* var. *dilutior* Staudinger, 1892; *graciocissima* Bryk, 1948.

Bionomics. Meso-thermophilous species, occurs in woodsides, meadows, clearings, in open deciduous forest. Bivoltine in the southern part of its range. The moth flies from late V to end VII, the second generation in VIII, early IX. Larvae feed on *Vicia cracca*, *V. sylvatica*, *Astragalus glycyphyllos*, *Coronilla varia*, *Lathyrus palustris* (Fabaceae). Imago overwinters.

Distribution (Map 176). Eurasian, subboreal. Russia to Ural, S Siberia, Far East, to Sakhalin and Kuriles. – Europe, Caucasus and Transcaucasia, Kazakhstan, China, N Korea, Japan (Hokkaido).

Lygephila procax (Hübner, 1813)

(Pl. 8: 16, 17; ♂ genit. Pl. 55: 6; ♀ genit. Pl. 142: 6)

Noctua procax Hübner, 1813, *Samml. Eur. Schmett.* **4**: Pl. 109: 510 (Type-locality: Europe).

Synonymy: *proclivis* Hübner, [1823]; *limosa* Treitschke, 1826; *nigricostata* Graeser, 1890.

Bionomics. Meso-thermophilous species, occurs in steppe and meadows, among bushes, on hillsides. Bivoltine in the southern part of its range, in S Europe three broods. The moth flies in late IV-V, and again in VI-VIII. Larvae feed on *Vicia*, *Coronilla*, *Colutea*, *Lathyrus* (Fabaceae). Imago overwinters.

Distribution (Map 177). Eurasian, subboreal. S Russia, Ural, Transbaikalia, Far East (Amur, S Khabarovsk and Primorye terr.). – SE Europe, Near East (Turkey), Caucasus, Kazakhstan, Middle Asia, China, Korea, Japan, N India, Pakistan, Indochina (North Vietnam).

Note. The species referred by early authors for the Far East as *L. nigricostata* Graeser, 1890. For the synonymy of *L. procax* and *L. nigricostata* see Fibiger *et al.* (2008).

Lygephila recta (Bremer, 1864)

(Pl. 8: 18, 19; ♂ genit. Pl. 56: 1; ♀ genit. Pl. 143: 1)

Toxocampa recta Bremer, 1864, *Mém. Acad. imp. Sci. St.-Pétersb.* (7) 8 **1**: 98, pl. 8: 9 (Type-locality: Russia: Primorye, Port May [Ternei]).

Diagnosis. The species can be confused with *L. subrecta* Sugi, 1982, distributed in Japan, Korea and China. However, in male genitalia, valva narrow and strongly tapered; harpe short positioned medially; uncus rather massive in *L. recta*, while in *L. subrecta*, valva wider and gradually tapered, harpe thin, finger-like, positioned apically, uncus rather slender.

Bionomics. Meso-xerophilous species, occurs in deciduous and oak forests, bushes, open hillsides, in woodsides, forest meadows and clearings. Bivoltine, the moth flies from late IV to VII, and again from VIII to end X. Larvae feed on *Lespedeza bicolor* and *Amphicarpaea edgeworthii* (Fabaceae) (Kogi 1982). Imago overwinters.

Distribution (Map 178). Manchurian, nemoral. Far East, to Sakhalin and Kuriles. – N China, Korea, Japan.

[***Lygephila lupina*** (Graeser, 1890)]

Toxocampa lupina Graeser, 1890, *Berlin. ent. Z.* **35**: 79 (Type-locality: Russia: Amur, Radde [Khabarovsk terr., Judish Autonomy]).

Distribution (Map 179). Far East (Amur reg.).

Note. The status of this taxon is unclear. Poole (1989) referred it as a distinct species, while judging from the original description the taxon seems to be a synonym of *L. ludicra*. The holotype of *L. lupina* has not been found (probably missing) in the collection of ZISP.

Genus ***Autophila*** Hübner, [1823] 1816

Autophila Hübner, [1823] 1816, *Vers. bekannter Schmett.*: 274. Type-species: *Noctua dilucida* Hübner, [1808] [Europe].

Synonymy: *Cheirophanes* Boursin, 1955 (Subgen.).

Wingspan 35-40 mm. Frons slightly bulged, with a tuft of hair-scales; labial palps upcurved, 2nd seg-

ment covered in loose hair-scales, 3rd segment moderate, erect; antennae in male fasciculate, ciliate. In male genitalia, uncus basally bent, ventro-medially spatulate, apically hooked; in some species scaphium sclerotised; tegumen longer than vinculum; valvae slightly asymmetrical; sacculus long, harpe short or moderate, different in shape, positioned in apical third of valva. Aedeagus as long as half of valva, carinae often scobinate, vesica short or of medium length, with multiple diverticula, sometimes with spinules at apex; apical diverticulum with cluster of small spines. In female genitalia, papillae anales quadrangular, densely hairy; apophyses very short and slender; lodix plate with medial concavity; antrum short; ductus bursae short and wide, membranous; corpus bursae membranous with one long band-like signum.

The genus includes 51 species, distributed exclusively in south Palaearctic and partly in Oriental region. – 5 species.

References: Boursin 1940, 1955; Ronkay 1986, 1989.

Autophila glebicolor (Erschoff, 1874)

(Pl. 8: 20, 21; ♂ genit. Pl. 56: 2; ♀ genit. Pl. 143: 2)

Spintherops glebicolor Erschoff, 1874, in Fedchenko, *Reise Turkestan*: **58**, pl. 4: 59 (Type-locality: Uzbekistan, Cocand reg. Djiptik).

Bionomics. Xero-thermophilous species, occurs in dry montane stony steppe. The moth flies in VII and VIII. The larva and its foodplants are unknown.

Distribution (Map 180). Central-Asian, xeromontane. S Siberia (Altai: Ongudai, Kurai Steppe). – Mongolia, Central Asia and Kazakhstan.

Autophila rasilis (Püngeler, 1900)

(Pl. 8: 22; ♂ genit. Pl. 56: 3; ♀ genit. Pl. 188: 7)

Spintherops rasilis Püngeler, 1900, *Dt. ent. Z. Iris* 13: 120, pl. 4: 7 (Type-locality: "Alexandergebirge" [Kyrgyzstan, Alexander Mts.]).

Bionomics. Xero-thermophilous species, occurs in S Altai in xerothermic montane steppe. The moth flies from late VII to IX. The larva and its foodplants are unknown.

Distribution (Map 181). Central-Asian, xeromontane. Russia: S Altai. – S Kazakhstan, Tajikistan, Kyrgyzstan, W Mongolia, W China.

Note. The species was not included in the Checklist of the Noctuidae of the Asian part of Russia (Kononenko 2005). Recorded in Russia in SE Altai, Kuraisky Range (A.Volynkin, pers. comm.).

Autophila asiatica (Staudinger, 1888)

(Pl. 8: 23; ♂ genit. Pl. 56: 4; ♀ genit. Pl. 188: 8)

Spintherops dilucida var. asiatica Staudinger, 1888,*Stettin. ent. Ztg* **49**: 52: 63 (Type-locality: Turkey, N Iran; Usbekistan, S Kazakhstan, Saisan).

Bionomics. Xero-thermophilous species, occurs in S Altai in xerothermic montane steppe and rocky habitats. The moth flies from late VII to IX. The larva and its foodplants are unknown.

Distribution (Map 182). Euro-Central Asian, xeromontane. S Russia, S Altai. – S Europe, Near East, Asia Minor, Kazakhstan, Central Asia, Central China.

Note. The species was not included to the Checklist in the Noctuidae of the Asian part of Russia (Kononenko 2005). Recorded in Russia in SE Altai (A.Volynkin, pers. comm.).

Autophila chamaephanes Boursin, 1940

(Pl. 8: 24, 25; ♂ genit. Pl. 56: 5; ♀ genit. Pl. 143: 3)

Autophila chamaephanes Boursin, 1940, *Mitt. Münch. ent. Ges.* **30**: 528, pl. 11: 86 (Type-locality: [Georgia] Transcaucasia, Elisabethpol).

Diagnosis. The nominate subspecies of *A. chamaephanes* has yellowish-grey wing colour (Pl. 8: 24), typical of the most species of the genus, while a whitish pale grey form (Pl. 8: 25) occurs in the chalk hill mountains in S Ural (Nupponen, Fibiger 2002).

Bionomics. Xero-thermophilous species, occurs in S Ural in xerothermic chalk hills. The moth flies from late VII into IX, and after hibernation to mid VI. The larva and its foodplants are unknown.

Distribution (Map 183). Euro-Central Asian, xeromontane. SE Russia (Volga reg.), S Ural (Orenburg reg.). – Caucasus, Turkey, Kazakhstan, Central Asia. The species occurs also in south Siberia: one old specimen labelled as "Sibiria" (without exact locality and data) found in the collection of ZMHU.

Note. *A. chamaephanes* is represented by two allopatric subspecies, the nominate one which ranges from Transcaucasia to south Russia and in the southern part of W Siberia and Kazakhstan, and subsp. *macrophanes* Boursin, 1955 which occurs in Central Asia.

Autophila inconspicua (Butler, 1881)

(Pl. 8: 26; ♂ genit. Pl. 56: 6; ♀ genit. Pl. 143: 4)

Apopestes inconspicua Butler, 1881, *Trans. ent. Soc. Lond.* **1881**: 191 (Type-locality: Japan: Tokyo, Yokohama).

Synonymy: *cataphanes* var. *praeligaminosa* Staudinger, 1888; *inconspicua* subsp. *cataphanoides* Boursin, 1955; *inconspicua* subsp. *altaica* Ronkay, 1989.

Diagnosis. *A. inconspicua* is externally similar to the preceding species, differs in more expressed yellowish-grey suffusion on forewing colour and less contrasting wing pattern.

Bionomics. Meso-xerophilous species, inhabits dry open forests, bushes, meadows, foothills in areas with cliffs. Univoltine. Fresh imagines fly from late VII into IX, and worn specimens appear after hibernation from late V to mid VI. The larva and its foodplants are unknown. In late autumn and winter imagines are to be found inside caves, disused buildings, forts and cellars.

Distribution (Map 184). Siberian-Manchurian, nemoral. Far East (Amur reg. and Primorye terr). – Kazakhstan (W Altai), Mongolia, Korea, Japan (Honshu), China.

Note. The species is represented by three subspecies: nominate one in the Far East, subsp. *cataphanoides* Boursin, 1955 distributed in Central China and subsp. *altaica* Ronkay, 1989 which occurs in Kazakhstan Altai.

Genus ***Apopestes*** Hübner, [1823] 1816

Apopestes Hübner, [1823] 1816, *Verz. bekannter Schmett.*: 275. Type-species: *Noctua spectrum* Esper, 1787 [south Italy].

Synonymy: *Spintherops* Boisduval, 1840.

Wingspan 50-80 mm. Frons slightly bulged, with a tuft of hair-scales; labial palps upcurved, 2nd segment covered in dense hair-scales, 3rd segment long, erect, acute, slightly curved apically; antennae in male fasciculate and ciliate; forewing with costal and dorsal margins almost equal in length, apex blunt, termen rounded. In male genitalia, uncus relatively short, laterally flattened, apically hooked; scaphium membranous; valvae slightly asymmetrical; sacculus very long, harpe short or thin, moderate. Aedeagus large and thin, vesica with multiple diverticula and small sclerotised patches and a dense cluster of spicules. In female genitalia, papillae anales triangular, acute; anterior and posterior apophyses almost equal in length; lodix and ventral part of antrum V-shaped; antrum funnel-like; ductus bursae short, membranous; corpus bursae short, with sclerotised caudal part and short band of small round signa.

The genus includes four species, distributed in south Palaearctic and partly in the Oriental region. – 2 species.

Apopestes phantasma (Eversmann, 1843)

(Pl. 8: 27; ♂ genit. Pl. 57: 1; ♀ genit. Pl. 143: 5)

Amphipyra phantasma Eversmann, 1843, *Bull. Soc. imp. Nat. Mosc.* **16**: [19] (Type-locality: "Altai").

Synonymy: *centralasiae* Warren, 1913.

Bionomics. Xero-thermophilous species, associated with xerothermic rocky montane localities and stony semi-deserts. The moth flies in VII-VIII. The larva and its foodplants are unknown.

Distribution (Map 185). Central-Asian, xeromontane. S Siberia (Minusinsk), Altai. – Kazakhstan Altai, Mongolia, Central Asia, Near East (Syria, East Turkey), Afghanistan.

Note. The species was reported from SE Siberia from Minusinsk by Kozhanchikov (1925) and was recently found in E Kazakhstan (one female labelled "Noor Saisan" and one male labelled "Altai, Saisan" in ZISP collection (A. Matov, Volynkin, pers. comm.).

Apopestes indica Moore, 1883

(Pl. 8: 28; ♂ genit. Pl. 57: 2; ♀ genit. Pl. 143: 6)

Apopestes indica Moore, 1883, *Proc. zool. Soc. Lond.* **1883**: 22 (Type-locality: India: Madhya Pradesh, Manpuri).

Synonymy: *spectrum* var. *koreana* Herz, 1904.

Bionomics. Meso-xerophilous species, occurs in warm open woodlands, among bushes, meadows, foothills; more frequent in areas with cliffs. Univoltine. Fresh imagines appear from late VII to IX, worn individuals fly after hibernation from late V to mid VI. Larvae feed on *Astragalus* (Fabaceae). Overwinters as imago. In late autum and winter imagines may be found in numbers inside caves, old neglected buildings, and forts along with *Autophila inconspicua* and *Scoliopterix libatrix*, *Hypena tristalis* and *H. narratalis*.

Distribution (Map 186). East Asian - Manchurian, nemoral. Far East (Primorye). – Korea, China, N India, Nepal.

Tribe **Acantholipini** Fibiger & Lafontaine, 2005

Acantholipini Fibiger & Lafontaine, 2005, *Esperiana* 11:31. Type genus Acantholipes Lederer, 1857.

Synonymy: Acantholipini Wiltshire, 1990 nomen nudum, not available (art. 13. 1 ICZN); Acantholipini Goater, Ronkay & Fibiger, 2003, not available (art. 16.1 ICZN).

The tribe is defined by several synapomorphies: tegumen with large half-moon-shaped peniculi; costa of valva extremely long, apically with 10 small, narrow spines; clasper extremely long, formed like a sclerotised flat fold; and 7th segment of the female very large, ventrally with huge lodix, with a deep medial cleft (Goater *et al*. 2003).

Genus ***Acantholipes*** Lederer, 1857

Acantholipes Lederer, 1857, *Noctuinen Eur.*: 44, 198. Type-species: *Noctua regularis* Hübner, [1813] [Europe].

Wngspan 25-30 mm. Labial palps laterally flattened, upcurved, 2nd segment thickly scaled, 3rd short, porrect; frons smooth, with tuft of hair-like scales; antennae of male finely ciliate; tibiae without spines; termen of forewing curved. In male genitalia, uncus thin, long, pointed apically, not hooked; tegumen wide, much longer than vinculum, with large peniculi; saccus very short; valva bilobed, very narrow; costa extremely long; cucullus pointed apically, setose; clasper an extremely long sclerotised flat fold, reaching almost to the corona-like small spines; harpe absent. Aedeagus long, narrow, vesica long, with plate-shaped cornutus. In female genitalia, ovipositor and both apophyses are extremely long; 8th segment very short; 7th segment very large, ventrally with a huge lodix, with a deep medial cleft; ostium bursae with large pockets adjacent to it; antrum and ductus bursae heavily sclerotised; corpus bursae basally with sclerites.

The genus includes 18 species, distributed mainly in Old World tropics. – 1 species occurs in S Ural.

Acantholipes regularis (Hübner, [1813])

(Pl. 9: 4; ♂ genit. Pl. 57: 3; ♀ genit. Pl. 144: 1)

Noctua regularis Hübner, [1813, *Samml. eur. Schmett. Noct.* **2**: Pl. 128: 588 (Type-locality: Europe).

Bionomics. Xerophilous species, local, but sometimes common in dry meadows, xerothermic slopes and semi-deserts. The moth flies from V to IX in two generations. Larvae feed on *Glycyrrhiza glabra* and *G. grandulifera* (Fabaceae).

Distribution (Map 187). Euro-Central Asian, subboreal-eremic. SE Russia, S Ural. – Near East, S Europe (SE islands of Greece), Central Asia, Pakistan, Nepal.

Tribe **Arytrurini** Fibiger & Lafontaine, 2005

Fibiger & Lafontaine, 2005, Esperiana 11: 31. Type genus *Aryrtrura* John, 1912.

Synonymy: Arytrurini Goater, Ronkay & Fibiger, 2003, not available (art. 16.1 ICZN).

The main autapomorphies of the tribe are the unusual wing shape and pattern; male genitalia with medially constricted, apically clubbed valva, X-shaped sclerotised transtilla; presence of 4-5 small setose diverticula in vesica; in female genitalia, corpus bursae anteriorly with patch of tiny narrow spines. The tribe includes only one genus with two species, both occurring in the Far East; some related genera probably can be found in the fauna of East Asia.

Genus ***Arytrura*** John, 1912

Arytrura John, 1912, *Revue russe Ent.* **12**: 133. Type-species: *Zethes musculus* Ménétriés, 1859 [Russia, Amur; Japan].

Synonymy: *Megazethes* Warren, 1913; *Diapolia* Hampson, 1926.

Large size, dark-grey coloured moths. Wingspan 40-55 mm. Frons flat, shortly tufted; labial palps upturned, 2nd segment thickly scaled, 3rd short and pointed; antennae of male ciliate; thorax and abdomen without crest; hind tibia with two pairs of spurs of unequal length. Forewing of characteristic shape with pointed apex and extension in mid part; outer margin of both pair of wings waved. In male genitalia, uncus slender; scaphium sclerotised; tegumen shorter than vinculum; valva constricted medially, narrow at base, with club-like apex; clasper as long flat fold, prominent subapically, without harpe; juxta fused with anellus; transtilla sclerotised, X-shaped. Aedeagus very long and narrow; vesica with multiple diverticula with apical spines. In female genitalia, ovipositor and apophyses relatively long; lodix with medial concavity; antrum cylindrical; ductus bursae folded, weakly sclerotised: corpus bursae anteriorly clothed with small spines, extending to the middle and laterally with a row of signa spots.

The genus includes amphi-Palaearctic species *A. musculus* and Manchurian *A. subfalcata*.

Arytrura musculus (Ménétriés, 1859)

(Pl. 9: 1; ♂ genit. Pl. 57: 4; ♀ genit. Pl. 144: 2)

Zethes musculus Ménétriés, 1859, *Bull. Acad. Sci. St. – Pétersb.* **17**: 220 (Type-locality: [Russia: Primorye] "l'Oussuri"; [Khabarovsk reg.] "l'Amour"]; Japan).

Bionomics. Thermo-hygrophilous species, associated with warm wet meadows, swampy areas, river valleys, open marshy forests. The moth flies in VII and VIII. Larvae feed from VII to IX on willows *Salix* and aspen *Populus tremula* (Salicaceae). Overwinters as pupa in a weak cocoon between leaves.

Distribution (Map 188). Amphi-Palaearctic, subboreal, nemoral. S Ural, Far East (Amur, S Khabarovsk and Primorye terr.). – Locally in Europe (Italy, Hungary, Romania, Ukraine, S Russia), China, Korea, Japan.

Arytrura subfalcata (Ménétriés, 1859)

(Pl. 9: 2, 3; ♂ genit. Pl. 57: 5; ♀ genit. Pl. 144: 3)

Zethes subfalcata Ménétriés, 1859, *Bull. Acad. Sci. St. – Pétersb.* **17**: 220 (Type-locality: Russia: "Amur").

Synonymy: *Zethes limbalis* Swinhoe, 1917.

Bionomics. Thermo-hygrophilous species, occurs together with preceding species in wet rivers valleys, woodsides, meadows and open wet forest. Life cycle similar to that of *A. musculus*.

Distribution (Map 189). Manchurian, nemoral. Far East (Amur, S Khabarovsk and Primorye terr.). – China, Korea.

Tribe **Melipotini** Grote, 1895

Melipotini Grote, 1895, *Proc. Am. phil. Soc.* 34: 421. Type genus: *Melipotis* Hübner, 1818.

Synonymy: Synedini Forbes, 1954; Drasteriini Wiltshire, 1976.

The characters that define the tribe as monophyletic are the tympanal organ structure with C-shaped nodular sclerite in imago, and short labial palps in larvae, which are only half of the length of those in the other tribes of Catocalinae. The structures of the male and female genitalia contain many more autapomorphic characters (Goater *et al*. 2003). The tribe includes a few genera with approximately 60 species in the World, which are found in arid and semiarid areas of the northern hemisphere.

Genus ***Drasteria*** Hübner, 1818

Drasteria Hübner, 1818, *Zutrage Samml. exot. Schmett.* **1**: 8. Type-species: *Drasteria graphica* Hübner, 1818 [Turkey].

Synonymy: *Syneda* Guenée, 1852; *Leucanitis* Guenée, 1852; *Bolina* Duponchel, 1845, preocc.; *Drastoria*: Walker, 1858, emend.; *Palpangula* Staudinger, 1877; *Aleucanitis* Warren, 1913; *Protomelipotis* Berio, 2002.

Wingspan 27–50 mm. Labial palps upturned, 2nd segment thickly scaled, 3rd segment short and slender; antenna of male ciliate; abdomen smooth-scaled; metathorax crested; wing pattern characteristic of the genus. In male genitalia, uncus long, slender; scaphium bifurcate, sclerotised; valvae asymmetrical, bilobed; costa short, rod-shaped; the lower lobe prominent, broader, and rounded at apex; editum flat, heavly sclerotised, fused to ventral part of sacculus, setose; saccular extension heavily sclerotised, apically free; digitus present, small; harpe parallel with margin of valva; coremata always present at the top of sacculus; vesica with large or small multiple diverticula. In female genitalia, ovipositor very elongated; posterior apophyses rod-shaped; lodix with only slight concavity: postvaginal plate wide; antrum and ductus bursae short, the latter usually heavily sclerotised; corpus bursae short, ovoid.

The genus includes about 60 species, distributed in arid and semiarid areas all over the World. – 9 species.

Drasteria pulverosa Wiltshire, 1969

(Pl. 9: 5; ♂ genit. Pl. 58: 1; ♀ genit. Pl. 144: 4)

Drasteria pulverosa Wiltshire, 1969, *Reichenbachia*, **12**: 138, pl. 2: 10 (Type-locality: Mongolia, Gobi Altaj Aimak).

Diagnosis. *D. pulverosa* differs from the sympatric *D. mongoliensis* in less contrasting forewing maculation, subtornal spot in hindwing connected with terminal band; male genitalia with characteristic long asymmetrical extension of sacculus on left valva.

Bionomics. Xero-thermophilous species, inhabits steppe and semi-desert. Moths occur in dry steppe, warm montane stony steppe, sandy dunes to altitude of 1200 m. In Tuva moths were collected in early VI and mid VII. Life cycle is not clear, number of generations unknown. The larva and its foodplants are unknown.

Distribution (Map 190). Mongolian, subboreal – eremic. S Siberia (Tuva). – Mongolia.

Drasteria mongoliensis Wiltshire, 1969

(Pl. 9: 6; ♂ genit. Pl. 58: 2; ♀ genit. Pl. 144: 5)

Drasteria pulverosa Wiltshire, 1969, *Reichenbachia*, **12**: 133, pl. 2: 8, 9 (Type-locality: Mongolia, Gobi Altaj Aimak).

Diagnosis. Differs from the previous species in rather more contrasting forewing maculation, subtornal spot on hindwing separate from terminal band; male genitalia with symmetrical extension of sacculus.

Bionomics. Xero-thermophilous species, occurs sympatrically with the preceding species, inhabiting dry steppe, warm montane stony steppe, sandy dunes. The flight period is early VI and mid VII. The larva and its foodplants are unknown.

Distribution (Map 191). Mongolian, subboreal – eremic. S Siberia (Tuva). – Mongolia.

Drasteria caucasica (Kolenati, 1864)

(Pl. 9: 7; ♂ genit. Pl. 58: 3; ♀ genit. Pl. 144: 6)

Euclidia caucasica Kolenati, 1864, *Meletemata Ent. Petropolit.* **5**: 104, pl. 18: 4, (Type-locality: Caucaso Lhegico et Iberia).

Synonymy: *astrida* Eversmann, 1857; *aksuensis* Fuchs, 1903.

Bionomics. Xero-thermophilous species, widely distributed in the steppe zone. It occurs in warm, sandy or rocky localities, on steppe hillsides. Bivoltine, with two overlapping generations from mid V to early VII, then from late VII to beginning of IX. The second generation is more abundant. Larvae feed on *Elaeagnus*, *Hippophae*, (Eleagnaceae) and *Paliurus* (Rhamnaceae) (Klyuchko 1978). Overwinters as pupa.

Distribution (Map 192). Euro-Central Asian, subboreal – eremic. SE Russia, Ural. – Near East, Caucasus and Tsanscaucasia, SE Europe, Central Asia, Kazakhstan, Mongolia.

Drasteria picta (Christoph, 1877)

(Pl. 9: 8; ♂ genit. Pl. 58: 4; ♀ genit. Pl. 144: 7)

Leucanitis picta Christoph, 1877. *Horae Soc. ent. ross.* **12**: 257, pl. 7: 28 (Type-locality: Turkmenia, Krasnovodsk).

Synonymy: *radapicta* Staudinger, 1901.

Bionomics. Xero-thermophilous, species, rather local in steppe zone. The moth flies from VII to mid VIII. In Kazakhstan they were taken in V and IX (Hacker 2001). Larvae feed on *Calligonum griseum*, *C. junceum*, *C. leucocladum*, *C. microcarpum* (Polygonaceae) and *Zygophyllum turcomanicum* (Zygophyllaceae) (Daricheva 1965; Falkovich 1969).

Distribution (Map 193). Euro-Central Asian subboreal – eremic. SE Russia (Volga area), S Ural. – Near East, Central Asia, Kazakhstan, Mongolia, W China.

Drasteria cailino (Lefebvre, 1827)

(Pl. 9: 9; ♂ genit. Pl. 58: 5; ♀ genit. Pl. 144: 8)

Heliotis cailino Lefebvre, 1827, *Mém. Soc. Linn. Paris* **6**: 94, pl. 5: 1 (Type-locality: Italy, Sicily).

Bionomics. Xero-thermophilous species, inhabits warm river valleys, eremic downland, hilly slopes, edges of steppe patch forests. Bivoltine. Imago from mid V to late VI, and again from VII to late VIII. Larvae feed on willows, *Salix viminalis*, *S. australior*, *S. tenuicanica*, *S. oxycarpa* (Salicaceae) and on *Rosa canina*, *R. kokandica*, *R. corymbifera* (Rosaceae). Overwinters as pupa.

Distribution (Map 194). Euro-Central Asian, subboreal – eremic. SE Russia, S Ural, S Siberia. – S Europe, Near East, Caucasus, Transcaucasia, Kazakhstan, Central Asia.

Drasteria rada (Boisduval, 1848)

(Pl. 9: 10; ♂ genit. Pl. 58: 6; ♀ genit. Pl. 145: 1)

Microphysa rada Boisduval, 1848, *Bull. Soc. ent. Fr.* (2)**6**: 30 (Type-locality: [Ukraine], Odessa).

Synonymy: *roda* Herrich-Schaffer, 1851; *schlumbergeri* Fuchs, 1903; *beta* Kuznetsov, 1908; *sibirica* Kozhanchikov, 1925.

Bionomics. Xero-thermophilous species, associated with eremic habitats, occurring mainly in sandy and gypsum deserts and semi-deserts, xerothermic hilly slopes. In Ural common on calcareous slopes. Two generations from VI to late VII and again in IX. The larva and foodplant unknown.

Distribution (Map 195). South European - Central Asian, subboreal – eremic. SE Russia, S Ural,

S Siberia. – Near East, Caucasus, Transcaucasia, Ukraine (Crimea), Mongolia, Central Asia, W China.

[***Drasteria saisani*** (Staudinger, 1882)]

(Pl. 9: 11; ♂ genit. Pl. 59: 1; ♀ genit. Pl. 145: 2)

Leucanitis saisani Staudinger, 1882, *Stettin. ent. Ztg* **43**: 53 (Type-locality: [Kazakhstan] Saisan).

Synonymy: *clara* Staudinger, 1884.

Bionomics. Xero-thermophilous species, occurs on calcareous slopes, montane stony steppes and in deserts. Probably two generations, from V to mid VI and from late VII to early IX. Larvae feed on *Atraphanax spinosa* (Polygonaceae).

Distribution (Map 196). South Euro-Central Asian, subboreal – eremic. S Russia, ?S Ural. – Caucasus, Transcaucasia, Near East, S Ukraine (Crimea), Kazakhstan, Central Asia.

[***Drasteria scolopax*** (Alphéraky, 1892)]

(Pl. 9: 12; ♂ genit. Pl. 59: 2; ♀ genit. Pl. 145: 3)

Leucanitis scolopax Alphéraky, 1892, *Horae Soc. ent. ross.* **26**: 454 (Type-locality: [W China] Njan-shan and Sinin Mts.].

Bionomics. Xero-thermophilous species, occurs in steppe zone and semi-deserts. Collected once in south Transbaikalia (Kanter 1977). The larva and its foodplants are unknown.

Distribution (Map 197). Central Asian, eremic. ?S Siberia (Transbaikalia). – W China, Tibet.

Note. The occurrence of the species in south Transbaikalia requires confirmation.

Drasteria catocalis (Staudinger, 1882)

(Pl. 9: 13, 14; ♂ genit. Pl. 59: 3; ♀ genit. Pl. 145: 4)

Euclidia catocalis Staudinger, 1882, *Stettin. ent. Ztg* **43**: 52 (Type-locality: Lepsa, Saisan).

Synonymy: *grumi* Alphéraky, 1889; *reducta* Fernandez, 1932.

Bionomics. Xero-thermophilous. Inhabits dry lowland and montane steppe, stony semi-desert. Moth flies in mid VI and VII. The larva and its foodplants are unknown.

Distribution (Map 198). Central Asian, subboreal – eremic. S Siberia (Altai, Kansk depression). – Kazakhstan, Central Asia, W China.

Note. Central Asian populations of this specis are very variable both externally and in structure of the genitalia. The population of *D. catocalis* from Russian Altai is presently under revision (A. Matov, A. Volynkin, pers. comm.).

Tribe **Euclidini** Guenée, 1852

Euclididae Guenée, 1852, *in* Boisduval & Guenée, *Hist. nat. Insectes* (Spec. gén. Lépid.) 7: 280. Type genus: *Euclidia* Ochsenheimer, 1816.

Synonymy: Mocisini Berio, 1992; Remigiidae Guenée, 1852; Ectypina, Goater, Fibiger, Ronkay, 2005, unavailable.

The tribe includes small to medium sized brightly coloured moths with conspicuous wing pattern and predominantly diurnal activity. In male genitalia, uncus is often specialised; costa heavily sclerotised; editum moved to ventral part of valva; juxta fused with heavily sclerotised anellus plate. In female genitalia, the autapomorphic characters are follows: ostium bursae slightly moved to left; inner wall of anterior part of the corpus bursae clothed with multiple narrow and pointed diminutive spines, the other corpus bursae with spinules. In Asian part of Russia the tribe includes 7 genera.

Genus ***Euclidia*** Ochsenheimer, 1816

Euclidia Ochsenheimer, 1816, *Schmett. Eur.* **4**: 96. Type-species: *Phalaena glyphica* Linnaeus, 1758 [Europe].

Synonymy: *Euclidia* Hübner, [1806], rejected name; *Gonospileia* Hübner, 1816 [1823]; *Ectypa* Billberg, 1820; *Leucomelas* Hampson, 1913; *Euclidina* McDunnough, 1937.

Wingspan 30-35 mm. Eyes small; labial palps obliquely upturned, 3rd segment slender and very short; antennae in male ciliate. Foretibia without spines, hindtibia with spines. In male genitalia, uncus apically spatulate and quadrangular or normal; scaphium sclerotised; valvae asymmetrical, the right one with an enormous or large harpe and large pollex, fused to the valva. Aedeagus more than half the length of valva, vesica short, with multiple diverticula. In female genitalia, antevaginal plate heavily sclerotised, triangular, laterally with two prominent, asymmetrical, apically rounded flaps; antrum long, thin, same length as ductus bursae; corpus bursae anteriorly with diminutive spines, the globular part of corpus bursae with spinules and a weakly sclerotised broad signa-belt.

The genus includes 9 species widely distributed in the Palaearctic, Nearctic, Oriental and Neotropical regions. – 3 species.

Euclidia glyphica (Linnaeus, 1758)

(Pl. 9: 15; ♂ genit. Pl. 59: 4; ♀ genit. Pl. 145: 5)

Phalaena glyphica Linnaeus, 1758, *Syst. Nat.* (Edn 10) **1**: 510 (Type-locality: Europe).

Bionomics. Meso-thermophilous species, occurs in rough grassland, sandy dunes, meadows, woodsides, fields of clover. Bivoltine in southern areas. Moths are diurnal. The flight period is in V-VII and again in VIII-IX. Larvae feed mainly on *Trifolium pratense*, *T. repens*, *Medicago sativa*, *M. falcata*, *Pisum*, *Lathyrus pratensis*, *Hippocrepis comosa*, *Vicia*, *Lotus corniculatus*, *Ononis*, *Melilotus albus* (Fabaceae) and also Polygonaceae, Myricaceae, Violaceae, Scrophulariaceae, Asteraceae and Poaceae. Overwinters as pupa.

Distribution (Map 199). Trans-Palaearctic, subboreal. European Russia, Ural, S Siberia, Transbaikalia, Far East (Amur reg. and Sakhalin). – N Africa, Near East, Caucasus, Europe, Kazakhstan, Mongolia, China.

Euclidia dentata Staudinger, 1871

(Pl. 9: 16, 17; ♂ genit. Pl. 59: 5; ♀ genit. Pl. 145: 6)

Euclidia glyphica var. *dentata* Staudinger, 1871, in Staudinger & Wocke, *Cat. Lepid. europ. Faunengeb.*: 135 (Type-locality: Russia: "Ussuri" [Primorye], Vladivostok, Suifun [Razdolnaya river], Askold, Is, "Sutschan-Gebiete" [Partizansk]).

Synonymy: *consors* Butler, 1878; *glyphica* auct.

Diagnosis. Externally similar to *E. glyphica*, but differs in somewhat larger size and more contrasting wing colour and pattern, with prominent dentate extension in medial field outside reniform stigma.

Bionomics. Meso-thermophilous species, inhabits open biotopes: woodsides, dry meadows, warm steppe slopes, edges of fields and roadsides. Bivoltine. The moths are diurnal, and also come to light. The flight period is in V-VI and again in VIII. Larvae feed on *Trifolium*, *Vicia*, *Glycine soja*, *G. max* (Fabaceae) (Kogi 1990a). Overwinters as pupa.

Distribution (Map 200). Manchurian-Siberian, subboreal. W Siberia, Altai, Baikal area, Transbaikalia, Far East, to Sakhalin and Kuriles. – China, Korea, Japan.

Note. Distributed partially sympatrically with the preceding species. The holotype of *Euclidia dentata IS* illustrated on Pl. 8: 16.

Euclidia juvenilis (Bremer, 1861)

(Pl. 9: 18; ♂ genit. Pl. 59: 6; ♀ genit. Pl. 145: 7)

Agnonomia juvenilis Bremer, 1861, *Bull. Acad. imp. Sci. St. – Pétersb.* **3**: 495 (Type-locality: Russia: Amur reg., "Bureja-Gebirge" [Bureja Range], "Ussuri" [Primorye]).

Bionomics. Meso-thermophilous species, associated with open woodlands: warm woodsides, glades, forest meadows, open forests, bushes. Univoltine. Moths are diurnal, flying from end of V to early VII. The larva and its foodplants are unknown.

Distribution (Map 201). Manchurian, nemoral. Transbaikalia, Far East to Sakhalin. – Korea, China.

Genus ***Callistege*** Hübner, [1823]1816

Callistege Hübner, [1823] 1816, *Verz. bekannter Schmett.*: 281. Type-species: *Phalaena mi* Clerck, 1759 [Europe].

Synonymy: *Euclidimera* Hampson, 1913; *Euclidia* auct.; *Gonospileia* auct.

Wingspan 34-38 mm. Eyes smaller than in *Euclidia* and *Gonospilea*; labial palps obliquely upturned, 2nd segment with loose, coarse hair-scales, 3rd slender and very short; tibia and tarsi of all legs with spines. In male genitalia, uncus slender, beak-shaped, apex rounded, but with a small overhanging spine-like tip; scaphium sclerotised; tegumen shorter than vinculum; valvae slightly asymmetrical, with heavily sclerotised costa, membranous cucullus; sacculus with long, round saccular extension, free from valva; harpe absent. Aedeagus as long as valva; vesica short, with multiple small, tapering diverticula. In female genitalia, antrum extremely long, ductus bursae very short, both heavily scelerotised, separated by a narrow membranous band; inner wall of corpus bursae clothed anteriorly with diminutive spines.

The genus includes 10 species distributed in Holarctic. – 2 species.

Callistege mi (Clerck, 1759)

(Pl. 9: 19, 20; ♂ genit. Pl. 60: 1; ♀ genit. Pl. 145: 8)

Phalaena mi Clerck, 1759, *Icones Insect. rariorum* **1**: pl. 9: 5 (Type-locality: not stated).

Synonymy: *literata* Cyrillo, 1787; *futilis* Staudinger, 1897; *mi* var. *extrema* Bang-Haas, 1912; *elzei* de Freina, 1976.

Bionomics. Meso-thermophilous species, inhabits various grassland, open biotopes: dry and wet meadows, steppe and steppe-forest, glades, fields of clover. Bivoltine in southern part of its area. Moths diurnal, flying from end of V to VII and again in VIII to IX. Larvae are polyphagous, mainly on *Trifolium pratense*, *T. repens*, *Medicago falcata*, *Ononis*, *Vicia*, *Genista tinctoria*, *Melilotus officinalis* (Fabaceae) and also on Polygonaceae, Myricaceae, Ericaceae, Clusiaceae, Rubiaceae, Lamiaceae, Cyperaceae and Poaceae. Overwinters as pupa.

Distribution (Map 202). Eurasian, temperate. European Russia, Ural, S Siberia, Far East (north to Magadan reg.). – Europe, Near East, Caucasus, Transcaucasia, Korea, China.

Callistege fortalitium (Tauscher, 1806)

(Pl. 9: 21; ♂ genit. Pl. 60: 2; ♀ genit. Pl. 146: 1)

Noctua fortalitium Tauscher, 1806, *Mém. Soc. Nat. Mosc.* **2**: 232 (Type-locality: Tatarensteppe [?S Russia]).

Synonymy: *flexuosa* Eversmann, 1832.

Bionomics. Xero-thermophilous, rather local species distributed in the steppe zone. Occurs in hot steppe slopes, more common on chalky hills and in calcareous localities. The moth flies in July. Larvae feed on *Onobrychis*, *Medicago*, *Lupinus*, *Vicia faba*, *Pisum sativum* (Fabaceae), *Artemisia* (Asteraceae) and Poaceae (Bubnova 1980; Aibasov 1974).

Distribution (Map 203). Euro - Central Asian, subboreal - eremic. SE Russia (Volga region), Ural, S Siberia to Transbaikalia. – Kazakhstan, Central Asia, Mongolia, N China.

Genus ***Gonospileia*** Hübner, [1823] 1816

Gonospileia Hübner, [1823] 1816, *Verz. bekannter Schmett.*: 281. Type-species: *Noctua munita* Hübner, [1813] [Europe].

Wingspan 28-30 mm. Eyes rather large and bulging; labial palps obliquely upturned, 3rd segment slender and short; tibia and tarsi of all legs with spines. In male genitalia, uncus prominent, apically spatulate and quadrangular; valva with heavily sclerotised costa fused with prominent, ventrally curved digitus; small, thumb-like harpe present only on right valva; transtilla considerably enlarged, sclerotised; juxta fused with anellus; fultura superior sclerotised. Aedeagus with multiple large diverticula. In female genitalia, papillae anales quadrangular; an-

terior and posterior apophyses equal in length; lodix medially concave; antrum as wide as long; ductus bursae membranous with few sclerites; corpus bursae with diminutive spines.

The genus includes 2 species distributed in steppe zone of Palaearctic. – 2 species.

Gonospileia triquetra
([Denis & Schiffermüller, 1775])

(Pl. 9: 22; ♂ genit. Pl. 60: 3; ♀ genit. Pl. 146: 2)

Noctua triquetra([Denis & Schiffermüller, 1775], *Ank. Syst. Werk Schmett. Wien*.: 94 (Austria: Vienna).

Synonymy: *fortificata* Fabricius, 1787; *fascialis* deVillers, 1789.

Bionomics. Xero-thermophilous species, inhabits dry localities in steppe and forest-steppe zone, local in calcareous and saline steppe (Anikin *et al*. 2000). The moths are mainly diurnal. Two generations from mid IV to VI and in late VII and VIII. Larvae feed on *Astragalus*, *Onobrychis*, *Trifolium* (Fabaceae) in V-VI and between VII and IX. The pupa overwinters.

Distribution (Map 204). Euro-Central Asian, subboreal. SE Russia, Ural, W Siberia and Altai. – Locally in S Europe, Near East (Turkey), Kazakhstan.

Gonospileia munita (Hübner, [1813])

(Pl. 9: 23-25; ♂ genit. Pl. 60: 4; ♀ genit. Pl. 146: 3)

Noctua munita Hübner, [1813], *Samml. eur. Schmett*. Noct. **3**: Pl. 129: 593 (Type-locality: Europe).

Synonymy: *angulosa* Eversmann, 1832; *immunita* Millière, 1868.

Bionomics. Xero-thermophilous species, inhabits the steppe zone, occurs locally in dry steppe, saline and calcareous steppe habitats. Two generations from mid V to late VI and again from mid VII to mid VIII. Larvae feed on *Glycyrrhiza*, *G. glabra*, *Trifolium* (Fabaceae) in VI, VII and in the autumn.

Distribution (Map 205). Euro-Central Asian, subboreal – eremic. SE Russia (Volga region), Ural. – Kazakhstan, Central Asia, Mongolia.

Genus ***Melapia*** Sugi, 1968

Melapia Sugi, 1968, *Kontyû* 36: 164. Type-species: *Pelamia japonica* Ogata, 1961 [Japan].

Synonymy: *Pelamia* auct.

Wingspan 28-35 mm. Eyes normal; antennae of male bipectinate; labial palps obliquely upturned, directed forward, 3rd segment slender, acute and short; tibia of all legs with spines; forewing with oblique outer margin; body slender. In male genitalia, uncus prominent, apically quadrangular; scaphium sclerotised; tegumen shorter than vinculum; valva deeply split apically, with heavily sclerotised costa, apically separate from valva and rather thin membranous cucullus; sacculus long, with long, round saccular extension, free from valva; harpe absent. Aedeagus as long as valva; vesica short, with small multiple diverticula. In female genitalia, anterior and posterior apophyses moderate, equal in length; ostium very wide, rounded; antrum extremely long, ductus bursae very short, both heavily sclerotised, separated by narrow membranous band; inner wall of corpus bursae clothed with diminutive spines.

The genus includes 5 species distributed mainly in Oriental region. – 1 species.

Melapia electaria (Bremer, 1864)

(Pl. 9: 26; ♂ genit. Pl. 60: 5; ♀ genit. Pl. 146: 4)

Doryodes electaria Bremer, 1864, *Mém. Acad. imp. Sci. St. – Pétersb*. (7) 8, **1**: 84, pl. 7: 12 (Type-locality: Russia: "Ema-Mündung" [Primorye, ?Iman, the tributary of Ussuri river]).

Synonymy: *macroelectaria* Ogata, 1961.

Bionomics. Meso-thermophilous species, occurs in open biotopes, inhabits dry meadows, steppe slopes, woodsides, glades, fields of soya bean. Bivoltine, the moths are diurnal, also attracted to light. The flight period is from end V to VII and again from mid VIII to IX. Larvae feed on soya been (*Glycine soja*, *G. max* Fabaceae) and also known from Cyperaceae (*Carex*) and Poaceae (*Dactylis*). Overwinters as pupa.

Distribution (Map 206). Manchurian, nemoral. Far East to Sakhalin. – China, Korea, Japan.

Genus ***Remigia*** Guenée, 1852

Remigia Guenée, 1852, *in* Boisduval & Guenée, *Hist. nat. Insectes* (Lépid.) **7**: 312. Type-species: *Remigia latipes* Guenée, 1852, ["West Indies"].

Medium sized moths, wingspan 35-40 mm. Antenna of male shortly ciliate; labial palps upturned, 2nd segment densely covered with scales, 3rd segment thin, stick-like; mid and hind tibia with spines. In male genitalia, tegumen somewhat shorter than vinculum; uncus relatively short, curved; sacculus narrow, with short apical extensions and crest of hairs; scaphium sclerotised; harpe large, with 2 extensions; juxta with large sclerotised apical extension and round central fold. Aedeagus with hook-like extension on coecum, curved apically; vesica short, bulbous, with small spine-like cornuti. In female genitalia, ovipositor relatively small; anterior and posterior apophyses thin, equal in length; lodix with deep split; antevaginal plate large; antrum funnel-like ductus bursae bent 90°; corpus bursae pear-shaped, with sclerotised patch in caudal part.

The genus includes 5-7 species distributed in Old and New Worlds tropics. – 1 species.

Remigia frugalis (Fabricius, 1775)

(Pl. 9: 27; ♂ genit. Pl. 60: 6; ♀ genit. Pl. 146: 5)

Noctua frugalis Fabricius, 1775, *Syst. ent*. **1**: 601 (Type-locality: India).

Synonymy: *translata* Walker, 1865; *lycopodia* Geyer, 1837.

Bionomics. Tropical migratory species, known

from Russia from single specimen collected in VIII in S Primorye. In Japan and Korea, the moth flies in VII-VIII. In Oriental regions, larvae feed mainly on monocotyledons (Poaceae, Araceae, Cyperaceae, Zingiberaceae). However, some Fabaceae (*Glycine*, *Medicago*, *Vigna*) are also recorded as foodplants (Robinson *et al*. 2001). The adult is known as a fruit piercer in Thailand (Kuroko & Lewvanich 1993).

Distribution (Map 207). Palaeotropic. Far East (S Primorye, migrant). – China, Japan, Taiwan, Philippines, SE Asia, India, Sri Lanka, Oceania, Micronesia, Australia.

Genus ***Mocis*** Hübner, [1823] 1816

Mocis Hübner, [1823] 1816, *Verz. bekannter Schmett*.: 267. Type-species: *Phalaena virbia* Cramer, 1780 [India].

Synonymy: *Pelamia* Guenée, 1852; *Baratha* Walker, 1865; *Cauninda* Moore, 1887; *Pelomia*: Warren, 1913, misspelling.

Medium sized moths, wingspan 35-40 mm. Antenna of male shortly ciliate; labial palps upturned, 3rd segment thin, stick-like; mid and hind tibia with spines. In male genitalia, tegumen slightly shorter than vinculum; uncus rather long, slightly curved; scaphium sclerotised; valva different in shape, in some species asymmetrical; sacculus narrow, with or without apical extensions; harpe in some species reduced, or developed, in some species with 2 extensions; juxta inverted V-shaped with wide plate-like apical part. Aedeagus straight, coecum normal; vesica variable in shape, with multiple diverticula, with or without spine-like cornuti. In female genitalia, ovipositor relatively small; anterior and posterior apophyses thin, equal in length; lodix with deep split; ostium positioned in deep vaginal sinus; antevaginal plate in some species large; antrum short or funnel-like; ductus bursae short; corpus bursae pear-shaped, with sclerotised patch in caudal part or rounded; corpus bursae with diminutive spines.

The genus includes 35 species distributed in the Old and New Worlds tropics. – 3 species.

Mocis undata (Fabricius, 1775)

(Pl. 9: 28; ♂ genit. Pl. 61: 1; ♀ genit. Pl. 146: 6)

Noctua undata Fabricius, 1775, *Syst. ent*. **1**: 600 (Type-locality: East India).

Synonymy: *archesia* Cramer, 1780; *virbia* Cramer, 1780; *velata* Walker, [1863] 1864; *bifasciata* Walker, 1865; *undata gregalis* Guenée, 1852.

Bionomics. Mesophilous species, irregularly occurence in the south of the Far East, probably as a migrant. Moths were collected in meadows, woodsides and among bushes in VII and VIII. In Japan two generations; the moth flies in V-VI and in VIII-IX. Larvae feed on *Wisteria floribunda*, *Cytisus scoparius*, *Pueraria*, *Glycine* and *Lespedeza bicolor* (Fabaceae) and *Sterculia urens* (Sterculiaceae). Overwinters as pupa. The imago is known as a fruit piercer in Thailand (Kuroko & Lewvanich 1993).

Distribution (Map 208). Oriental, Manchurian-subtemperate. Far East (Primorye). – China, Korea, Japan, Taiwan, Philippines, Indonesia, Indochina, Sri Lanka, India, Nepal.

Mocis annetta (Butler, 1878

(Pl. 9: 29; ♂ genit. Pl. 61: 2; ♀ genit. Pl. 147: 1)

Remigia annetta Butler, 1878, *Ann. Mag. nat. Hist*. (5) **1**: 193 (Type-locality: Japan: Yokohama, Hakodate).

Synonymy: *annetta f. arabesca* Bryk, 1948.

Bionomics. Mesophilous species, occurs in open oak and deciduous forest in wooodsides, glades, meadows, common in fields of soy bean. One generation from mid VI to VIII. Larvae feed on *Wisteria floribunda*, *Glycine max*, *G. soja*; *Lespedeza bicolor*, *Robinia*, *Amphicarpaea*, *Desmodium*, *Glycine*, *Dumasia*, *Vicia*, *Robinia* (Fabaceae). Overwinters as pupa.

Distribution (Map 209). Manchurian, nemoral. Far East (Amur, S Khabarovsk and Primorye terr.). – China, Korea, Japan, Taiwan.

Mocis ancilla (Warren, 1913)

(Pl. 9: 30; ♂ genit. Pl. 61: 3; ♀ genit. Pl. 147: 2)

Cauninda ancilla Warren, 1913, *in* Seitz, *Gross-Schmett. Erde* **3**: 334, pl. 61: g (Type-locality: Russian Far East, China., Korea, Japan).

Diagnosis. *M. ancilla* is externally very similar to *M. anneta*, and differs only in smaller size. It can be reliably identified on structure of the genitalia: in *M. ancilla*, valvae are rounded, costa expressed only in basal part, harpe present, while in *M. annetta*, valvae have strong costa, are tapered apically, harpe absent.

Bionomics. Mesophilous species, occurs sympatrically with preceding species, but less frequent. One generation from mid VI to VII. Larvae feed on *Glycine max*, *G. soja*; *Lespedeza bicolor*, *Desmodium oxyphyllum* (Fabaceae). Overwinters as pupa.

Distribution (Map 210). Manchurian, nemoral. Far East (Primorye). – China, Korea, Japan, Taiwan.

Tribe **Catephiini** Guenée, 1852

Catephidae Guenée, 1852, in Boisduval & Guenée, *Hist. nat. Insectes* (Spec. gén. Lépid.) 7: 40. Type genus: *Catephia* Ochsenheimer, 1816.

Externally similar to the subfamily Aediinae. Medium sized to rather large moths with dark, brown to blackish cryptic pattern of forewing and; hindwing with prominent white area in basal part or with white antemedial band. Main features of the male and female genitalia as described for the genus. Goater *et al*. (2003) and Fibiger & Hacker (2005) placed the genus *Catephia* in the subtribe Ophiusini. Later Holloway (2005) and Fibiger & Lafontaine (2006) recognised Catephiini as a distinct tribe of the subfamily Catocalinae. The tribe includes two genera, *Catephia* and *Paranagia*. The tribe Catephiini is widespread and most diverse in Old World tropics.

Genus ***Catephia*** Ochsenheimer, 1816

Catephia Ochsenheimer, 1816, *Schmett. Eur.* **4**: 94. Type-species: *Noctua alchymista* [Denis & Schiffermüller], 1775 [Austria].

Synonymy: *Indicara* Walker, 1862; *Anophia* Guenée, 1841; *Catophia*: Walker, 1864; *Zarima* Moore, 1882; *Mageutica* Hampson, 1926; *Nagia* Walker, 1858.

Wingspan 30-42 mm. Frons flat; antennae in male with tufts of bristles; metathorax with tuft of scales and hairs; all legs without spines, foretibia with tuft of hairs. In male genitalia, uncus and scaphium heavily sclerotised; uncus short, straight; tegumen slightly shorter than vinculum, with two rod-like processes; valvae asymmetrical, costa with prominent process, cucullus short, membranous, without corona; fultura superior sclerotised, with asymmetrical pointed edges. Aedeagus about half the length of valva, vesica short, globular. In female genitalia, lodix with median arch with pointed edges and deep cleft; ovipositor lobes weakly sclerotised, with narrow sclerotised crest; apophyses rather long, posterior ones oar-shaped; ductus bursae long, with sclerites; corpus bursae rounded.

The nearly 60 species listed by Poole (1989) are the result of confusion between members of the genera *Aedia* Hübner [1823] and *Catephia* and its allies. – 1 species.

Catephia alchymista ([Denis & Schiffermüller] 1775)

(Pl. 10: 14; ♂ genit. Pl. 62: 1; ♀ genit. Pl. 147: 3)

Noctua alchymista ([Denis & Schiffermüller] 1775, *Ank. Syst. Werk Schmett. Wien.*: 89 (Type-locality: [Austria], Vienna district]).

Bionomics. Thermophilous species, occurs in woodlands, in steppe oak forest patches, in parks and gardens. Usually univoltine, but in some years it produces three generations. The moth flies from V to VII. Larvae feed between VII and IX on oak *Quercus robur* and *Ulmus*. Overwinters as pupa.

Distribution (Map 211). Western Palaearctic, subboreal. SE Russia, S Ural. – N Africa, Near East, Caucasus, Transcaucasia, C and S Europe.

Tribe **Pericymini** Wiltshire, 1976

Pericymatini Wiltshire, 1976, *J. Bombay nat. Hist. Soc.* 73: 160. Type genus: *Pericyma* Herrich-Schäffer, [1851].

Labial palps upturned; antenna of male densely fasciculate and ciliate; frons smooth; mid tibia with spines. In male genitalia, uncus short, broad based, apically pointed; scaphium strongly sclerotised, resembling gnathos, positioned close to the base of uncus; tegumen much shorter than vinculum; valvae short, robust, variably complex apically; sacculus with large basal-medial process; juxta variable in shape, not of the inverted Y-shape. Aedeagus short, fused ventrally to a small, rod-like sclerite; vesica simple, without cornuti. In female genitalia, ostium is anterior within segment 7, by short antevaginal plate; ductus bursae very short; corpus bursae large, ovoid, scobinate, with short appendix bursae.

Goater *et al*. (2003) and Fibiger & Hacker (2005) placed *Pericyma* in the subtribe Ophiusini. Later Holloway (2005) and Fibiger & Lafontaine (2006) recognised Perycimini as a distinct tribe of the subfamily Catocalinae. The tribe has its highest specific diversity in the Ethiopian and Oriental regions.

Genus ***Pericyma*** Herrich–Schäffer, 1845

Pericyma Herrich-Schaffer, [1851] 1845, *Syst. Bearb. Schmett. Eur.* **2**: 429. Type-species: *Acidalia albidentaria* Freyer, 1842 [“Russia steppe”].

Synonymy: *Alamis* Guenée, 1852; *Dugaria* Walker, [1858] 1857; *Moepa* Walker, 1865.

Wingspan 30-40 mm. Labial palps upturned, 2nd segment thick, 3rd segment slender; antennae in male fasciculate-ciliate; frons smooth; mid tibia with spines. In male genitalia, uncus short, apically with pointed tip; scaphium heavily sclerotised, pointed, positioned high up near base of uncus; tegumen much shorter than vinculum; valvae short, and slightly asymmetrical; sacculus with large basal-medial process; juxta divided into two parts, membranous in between. Aedeagus short, bent, with processes anteriorly and posteriorly, coecum short, like a narrow tapered stick. In female genitalia, papillae anales quadrangular; anterior apophyses twice as long as posterior ones; lodix arched, wide, shield-like; postvaginal plate large, broad; both antrum and sclerotised ductus bursae short.

The genus includes 24 species, distributed mainly in semi-arid and arid subtropical to tropical regions of the Old World. – 1 species.

Pericyma albidentaria (Freyer, 1842)

(Pl. 10: 15-17; ♂ genit. Pl. 62: 2; ♀ genit. Pl. 147: 4)

Acidalia albidentaria Freyer, 1842, *Neue Beitr. Schmett. Kde.* 4: 115, pl. 354: 1 (Type-locality: S Russia).

Bionomics. Xerophilous species, occurs in steppe and semi-deserts. Imago flies in mid VII. In Asia Minor bivoltine. The flight period is V-VII and VIII-IX. Larvae feed on *Ilex* (Aquifoliaceae), *Genista*, *Alhagi camelorum* (Fabaceae).

Distribution (Map 212). Euro-Central Asian, subboreal - eremic. S Russia (Volga reg.), S Ural. – S Europe, Kazakhstan, Near East, Central Asia, Pakistan.

Tribe **Ophiusini** Guenée, 1837

Ophiusidi Guenée, 1837, *Annls Soc. ent. Fr.* 6: 321, ibidem 10: 71 (1841). Type genus: *Ophiusa* Ochsenheimer, 1816.

Synonymy: Ophiusidae Herrich-Schäffer, [1851] 1845; Ophiusidae Guenée, 1852; Ophiusini;Wiltshire, 1990; Omopterini-Boisduval, 1833, suppressed senior synonym.

Medium sized to large moths with robust body and wide, triangular, apically pointed forewings. Wing colour usually brown or dark brown, rarely greenish; wing pattern often of “geometroid” type, with wide fine lines or wide dark fields and pale or white fascia; hindwing often flash colour, with white or whitish

fascia; in some species hindwing bright pink, with blue and black bands. In male genitalia, uncus variably complex; scaphium strongly sclerotised; tegumen often with lateral processes; valva tongue-like or rounded distally, sometimes asymmetrical, often with processes of costa separate from valva; juxta typical of Catocalinae. Aedeagus often with coecum and apex strongly curved, vesica tubular, often with multiple long diverticula. In female genitalia, ostium bursae more or less hidden behind arched lodix, with large, deep, densely scaled pockets; ostium bursae often lateral to arched lodix; antrum angled upwards 60-90° to abdomen; ductus bursae variable in length, sometimes long, sclerotised, and folded; corpus bursae angled back, parallel with abdomen.

The tribe is very widespread in the subtropics and tropics of the Old and New Worlds. Many species are strongly migratory and appear in the southern part of the temperate zone as irregular migrants. – 9 genera and 13 species.

Genus ***Serrodes*** Guenée, 1852

Serrodes Guenée, 1852, *in* Boisduval & Guenée, *Hist. nat. Insectes* (Lépid.) **7**: 251. Type-species: *Phalaena inara* Cramer, 1779 [India].

Large moths. Wingspan 70-80 mm. Antennae of both sexes filiform; labial palps upcurved, 2nd segment thick, 3rd segment thin, long, directed forward; tibia densely covered with hairs. In male genitalia, uncus short, somewhat extended, apically hooked, with dorsal extension; scaphium sclerotised; tegumen higher than vinculum, with subapical triangular extensions; juxta with very large dorsal part and small, inverted V-shaped basal part; valva large, with narrow cucullus, widely extended costa and tongue-shaped apical third; harpe absent. Aedeagus as large as valva, vesica with multiple diverticula. In female genitalia,ovipositor rather small; anterior and posterior apophyses thin, equal in length; antrum very large; ductus bursae short, sclerotised; corpus bursae saccate, with sclerotised patch in caudal part; inner wall of corpus bursae clothed with diminutive spines.

The genus includes 12 species, distributed in Oriental, Ethiopian and Australian regions. – 1 species.

Serrodes campana Guenée, 1852

(Pl. 9: 36; ♂ genit. Pl. 61: 4; ♀ genit. Pl. 147: 5)

Serrodes campana Guenée, in Boisduval & Guenée, *Hist. nat. Insectes* (Lépid.) **7**: 252, pl. 21: 6 (Type-locality: Bangladesh: Shilhet).

Synonymy: *nigha* Guenée, 1852; *callipepla* A. E. Prout, 1929.

Bionomics. Mesophilous, tropical migratory species which has been collected once in VII in S Primorye in deciduous forest (Lisetsky 1970). In Japan, the moth flies from VI to VIII, larvae feed on *Sapindus mukurossi* (Sapindaceae) and *Acer oblongum* (Aceraceae) (Hayashy 2003). Robinson *et al*. 2001 also reported Sapindaceae as a foodplant of the species. The adult is known as a fruit piercer in Thailand (Kuroko & Lewvanich 1993).

Distribution (Map 213). Oriental, Manchurian-subtemperate, tropical migrant. Far East (Primorye). – China, Korea, Japan, Taiwan, Philippines, Indonesia, Indochina, N India, Nepal.

Genus ***Artena*** (Fabricius, 1794)

Artena Walker, 1858, *List Specimens lepid. Insects Colln Br. Mus.* **14**: 1343, 1388. Type-species: *Artena submira* Walker, 1858 [India].

Large moths, wingspan 65-70 mm. Antennae of male ciliate; labial palps upcurved, 2nd segment thick, 3rd very short; mid and fore tibia with spines. In male genitalia, uncus moderate, pointed, associated with scaphium, often with short, subbasal spurs dorsally; scaphium sclerotised; tegumen somewhat shorter than vinculum; juxta with plate-like dorsal part and small, inverted V-shaped basal part; valva large, with enormous sacculus, with large horn-like process and strong transtilla; distal part of valva reduced, tongue-shaped; harpe absent. Aedeagus shorter than valva, curved, with extended coecum; vesica with long diverticula. In female genitalia, ovipositor moderate; anterior and posterior apophyses thin, almost equal in length; ostium positioned in complex ring-like sterigma; ductus bursae short; corpus bursae elongated, saccate, very finely scobinate throughout.

The genus includes 12 species, distributed mainly in the Oriental region. – 1 species.

Artena dotata (Fabricius, 1794)

(Pl. 9: 37; ♂ genit. Pl. 61: 5; ♀ genit. Pl. 147: 6)

Noctua dotata Fabricius, 1794, *Ent. Syst.* **3** (2): 55 (Type-locality: E India).

Bionomics. species, Mesophilous tropical migratory species, irregurlary appearing in south Primorye. In Japan, larvae feed on *Quercus glauca* (Hayashi 2004b), in tropical zone on *Combretum*, *Getonia*, *Quisqualis* and *Terminalia* (Combretaceae) (Robinson *et al*. 2001). In Japan, the moth flies in VII-VIII. The imagines are known as fruit piercers in Thailand (Kuroko & Lewvanich 1993).

Distribution (Map 214). Oriental, Manchurian-subtemperate. Far East (Primorye, migrant). – China, Korea, Japan, Taiwan, Philippines, Indonesia, Malaysia, Indochina, N India, Nepal.

Note. Migrant species, appearing irregularly in S Primorye. After first report (Lisetsky 1970) the author collected two further specimens (Kedrovaya Pad Nature reserve, 26. VII 1998) in rich deciduous forest.

Genus ***Thyas*** Hübner, 1824

Thyas Hübner, [1824], *Samml. exot. Schmett.* **2**: pl. [203]. Type-species: *Thyas honesta* Hübner, [1824] [East India].

Synonymy: *Lagoptera* Guenée, 1852; *Dermaleipa* Saalmüller, 1891.

Large moths, wingspan 70-90 mm. Antennae of male sparsely ciliate; labial palps upcurved, 2nd seg-

ment densely covered with hair scales, 3rd short, directed forward; mid and fore tibia with spines; foretibia densely hairy; male with brush of hairs on tornal margin of hindwing. In male genitalia, uncus relatively short, angled 90° at base, apex pointed; scaphium sclerotised; tegumen somewhat shorter than vinculum, wide, in some species with large "shoulders"; juxta thin, inverted Y-shaped; valva large, with narrow sacculus, with large horn-like process; distal part of valva tongue-shaped, membranous; harpe developed according to species, or absent. Aedeagus shorter than valva, straight, with extended coecum; vesica bulbous, short or long with long diverticula, with group of spines or scobinate. In female genitalia, ovipositor large; anterior and posterior apophyses massive, almost equal in length; ostium covered by large antevaginal plate; ductus bursae short; corpus bursae elongated; saccate, constricted medially.

The genus includes 15 species, distributed mainly in the tropics of the Old World. – 1 species.

Thyas juno (Dalman, 1823)

(Pl. 10: 1; ♂ genit. Pl. 62: 3; ♀ genit. Pl. 147: 7)

Noctua juno Dalman, 1823, *Analecta Ent.*: 52, (Type-locality: not stated).

Synonymy: *elegans* Heven, 1840; *multicolor* Guenée, 1852; *bella* Bremer & Grey, 1853; *juno* f. *renalis* Bryk, 1948.

Bionomics. Mesophilous species, inhabitant of Manchurian rich deciduous and mixed forests. One generation from late VIII to end IX. Part of the population hibernates as imago and appears again in V-VII, and worn overwintered specimens sometimes come to light in spring and early summer. Larvae feed on broad-leaved trees including *Betula daurica*, *Juglans mandschurica*, *Quercus mongolica*, *Q. serrata*, *Q acutissima*, *Q. glandulifera*, *Castanea crenata*, *Pterocarya*, *Prunus*. Overwinters probably as egg and partly as imago. The adult is known as a fruit piercer in Thailand (Kuroko & Lewvanich 1993).

Distribution (Map 215). Oriental-Manchurian, nemoral. Far East (Amur reg., Khabarovsk, Primotye terr., Sakhalin). – China, Korea, Japan, Taiwan, Philippines, Indonesia, Malaysia, Indochina, Thailand, India, Nepal.

Genus ***Ophiusa*** Ochsenheimer, 1816

Ophiusa Ochsenheimer, 1816, *Schmett. Eur.* **4**: 93. Type-species: *Phalaena tirhaca* Cramer, 1777 [South Africa].

Synonymy: *Ophiogenes* Reichenbach, Leipzig, 1817; *Ophiussa*: Hübner, [1823] 1816; *Meropis* Hübner, [1822]; *Hemachra* Sodoffsky, 1837; *Anua* Walker, 1858; *Stenopis* Mabille, 1880; *Stenopsis*: Hampson, 1913, misspelling; *Subanua* Berio, 1959; *Peranua* Berio, 1959; *Perophiusa* Berio, 1959.

Large moths, wingspan 45-70 mm. Frons flat with a pointed tuft of hair-scales; labial palps upturned, 2nd segment scaled, 3rd segment directed forward; antennae of male ciliate; mid and hindtibia with spines; 1st abdominal tergite with tuft of scales. In male genitalia, uncus with extremely strongly sclerotised "superuncus"; armature asymmetrical; tegumen very wide, shorter than vinculum, often with asymmetrical process; scaphium subapically constricted, sclerotised; valva bilobed; costa like large spine; the cucullus circular; sacculus as long as vinculum: clasper small; harpe absent. Aedeagus longer than valva, proximally and distally curved; vesica with multiple diverticula. In female genitalia, ovipositor short; lodix arched, with adjacent hair pocket; ostium bursae to the left of arch; antrum short, as long as ductus bursae; corpus bursae globular, with coiled appendix.

The genus includes about 70 species distributed mainly in the tropics and subtropics of the Old World. – 1 species.

Ophiusa tirhaca (Cramer, 1777)

(Pl. 10: 2; ♂ genit. Pl. 62: 4; ♀ genit. Pl. 148: 1)

Phalaena tirhaca Cramer, 1777, *Uitlandsche Kapellen* **2**: 116, pl. 172: E (Type-locality: S Africa: Cap Prov.).

Synonymy: *tirrhaea* Fabricius, 1781; *vesta* Esper, 1789; *olivacea* deVillers, 1789; *auricularis* Hübner [1803]; *tirrhaca*: Treitschke, 1826, misspelling; *hottentota* Guenée, 1852; *separans* Walker, 1858; *tirhaca* subsp. *obscura* Pinker & Bacallado, 1979.

Bionomics. Migrant species, collected in various forested and open habitats. In Japan, the moth flies in VII-VIII, and in S Europe it is on the wing from III to X in at least in two generations. Larvae are polyphagous, feeding mainly on shrub plants of Ericaceae, Puniaceae, Anacardiaceae, Thymeleaceae, Rosaceae, Combretaceae, Myrtaceae, Geranicaeae, Cistaceae, Caprifoliaceae and Santalaceae. In Japan, larvae feed on *Rhus javanica* and *Psidium quajava* (Hayashi 2004c). The adult is known as a fruit piercer in Thailand (Kuroko & Lewvanich 1993).

Distribution (Map 216). Palaeotropical, migrant. Far East (Primorye, migrant). – Africa, Madagascar, Seychelles, S and C Europe, Near East, China, Korea, Japan, Taiwan, SE Asia, India, Australia.

Note. Migrating species, once reported from S Primorye (Moltrecht 1926). Eighty years after the first report, one fresh specimen was collected in S Primorye in rich deciduous forest (Gusevsky Rudnik, 5 km N Zanadvorovka, 18. IX 2005, Grigoryev leg.).

Genus ***Minucia*** Moore, 1885

Minucia Moore, [1885] 1887, *Lepid. Ceylon* **3**: 159. Type-species: *Noctua lunaris* [Denis & Schiffermüller], 1775 [Austria].

Synonymy: *Ascalapha* Hübner, [1806], suppr.; *Ophiodes* Guenée, 1841, preocc. (Wagnler, 1830 [Reptilia]); *Nantesia* Kirby, 1897.

Large moths, wingspan 50-60 mm. Frons smooth, with tuft ot hair-scales; labial palps long, 2nd segment thickened; 3rd segment very short, porrect; mid and hind tibia with spurs. In male genitalia, uncus long, narrow, subapically spatulate; scaphium sclerotised; valvae asymmetrical, narrow, with rounded membranous cucullus; costa very short; harpe asymmetrical, extremely long, curved, setose; juxta huge. Aedeagus curved 90°, much longer than valva; vesica short with small multiple diverticula. In female genitalia, lodix shield-shaped, with two hair pockets and strongly sclerotised plate beneath, ovipositor lobes short; postvaginal plate anteriorly with large, narrow, tapered cone heavily sclerotised apically; antrum wide anteriorly; oblique; antrum and ductus bursae both short, the latter flattened and sclerotised dorsally; corpus bursae pear-shapped, appendix bursae coiled.

The genus includes 9 species distributed in Africa and Near East. – 1 species.

Minucia lunaris ([Denis & Schiffermüller], 1775)

(Pl. 10: 3; ♂ genit. Pl. 62: 5; ♀ genit. Pl. 148: 2)

Noctua lunaris [Denis & Schiffermüller], 1775, *Ank. Syst. Werk Schmett. Wien.*: 94 (Type-locality: [Austria], Vienna district]).

Synonymy: *inconspicua* Warren, 1913.

Bionomics. Meso-xerophilous species, occurs in open oak woodlands in clearings, woodsides, meadows and glades. Common in dry and warm patches of oak forest in steppe areas. One generation in V and VI. Larvae feed from VII to VII on oak *Quercus ilex* and *Q. robur*, sometimes damage young trees. Overwinters as pupa.

Distribution (Map 217). Western Palaearctic, subboreal. S Russia to Volga region, Ural and W Siberia. – N Africa, C and S Europe, Near East, Caucasus, Transcaucasia, Kazakhstan.

Genus ***Clytie*** Hübner, 1823

Clytie Hübner, [1823] 1816, *Verz. bekannter Schmett.*: 267. Type-species: *Noctua illunaris* Hübner, [1813] [Europe].

Synonymy: *Pseudophia* Guenée, 1852.

Wingspan 35-45 mm. Frons smooth with tuft of hair-scales; labial palps upturned, 3rd segment directed forwards; antennae in male ciliate; mid and hindtibia with spurs. In male genitalia, uncus crested and biramous; tegumen shorter than vinculum; scaphium heavily sclerotised; valvae oval; sacculus narrow, distally widened; costa very short; harpe short, thumb-like; juxta huge, asymmetrical. Aedeagus upturned at both ends; coecum with two small tips; vesica short, with one central large diverticulum and many small ones basally. In female genitalia, lodix with median arch, with two hair-pockets; ovipositor short, with long setae; ostium bursae wide-mouthed; antrum and ductus bursae sclerotised; corpus bursae angled 90° with ductus bursae; appendix bursae coiled; corpus bursae pear-shaped.

The genus includes 20 species distributed in arid and semiarid regions of Africa and West Asia. – 1 species.

Clytie gracilis (O. Bang – Haas, 1907)

(Pl. 10: 18, 19; ♂ genit. Pl. 63: 1; ♀ genit. Pl. 148: 3)

Pseudophia gracilis O. Bang – Haas, 1907, *Dt. ent. Z. Iris* **20**: 74, pl. 3: 10 (Type-locality: SE Transkaspian).

Diagnosis. Very variable in wing pattern. As in other species in the genus, reliable identification is possible only by checking the male genitalia.

Bionomics. Xero-thermophilous species, occurs in hot, dry steppe and semi-desert localities, sandy dunes, hillsides. Probably bivoltine. In Kazakhstan, moth flies in V, VI, VII and IX. Larvae feed on *Tamarix gallica*, *T. gracilis*, *T. ramosissima* (Tamaricaceae).

Distribution (Map 218). Central Asian, subboreal- eremic. West Kazakhstan, in vicinity of S Ural, Asia Minor (Turkey), Transcaucasia.

Note. The species could occur in dry steppe and semidesert in the south Ural.

Genus ***Bastilla*** Swinhoe, 1918

Bastilla Swinhoe, 1918, *Ann. Mag. nat. Hist.* (9)**2**: 78. Type-species: *Ophiusa reducnca* Swinhoe, 1900 [Australia].

Synonymy: *Naxia* Guenée, 1852; *Xiana* Nye, 1975; *Ophiusa* auct.; *Parallelia* auct.; *Dysgonia* auct.

Wingspan 40-60 mm. Frons smooth, with tuft of hair-scales; labial palps ascending, thick, smooth-scaled with 3rd segment short; antennae in male ciliate; mid-tihia with spurs, in male clothed with long hair-scales. In male genitalia, uncus usually simple, though with superuncus in some groups; scaphium sclerotised; valvae bilobed, symmetrical, with double or triple coremata on outer surface; costal and saccular processes well separated; costal process ususlly long; juxta often short; broad. Aedeagus curved, vesica variable in shape, with multiple diverticula, some species with cornuti in the form of robust spines. In female genitalia, antevaginal plate always well developed.

The genus includes about 7-10 species, distributed in tropical and subtropical parts of the World. – 3 species.

Bastilla arctotaenia (Guenée, 1852)

(Pl. 10: 4; ♂ genit. Pl. 63: 2; ♀ genit. Pl. 148: 4)

Ophiusa arctotaenia Guenée, 1852, in Boisduval & Guenée, *Hist. nat. Insectes* (Lépid.) **7**: 272 (Type-locality: Bangladesh, Silhet).

Bionomics. Meso-thermophilous tropical migratory species first recorded in S Primorye (Lisetsky 1977). Collected in rich deciduous forest. In Japan, bivoltine. The moth flies in VI-VII, and from late VIII to X. Larvae feed on *Ricinus communis* (Euphorbiaceae), *Rosa* (Rosaceae), *Quercus phillyraeoides* (Fagaceae), *Salix* (Salicaceae).

Distribution (Map 219). Oriental, Manchurian-subtemperate. Far East (S Primorye, migrant). – China, Korea, Japan, Taiwan, Philippines, Indonesia, Malaysia, Indochina, Nepal, India, Bangladesh, Sri Lanka, Oceania, Australia.

Bastilla maturata (Walker, 1858)

(Pl. 10: 5; ♂ genit. Pl. 63: 3; ♀ genit. Pl. 148: 5)

Ophiusa maturata Walker, 1858, *List Specimens lepid. Insects*

Colln. Br. Mus. **14**: 1382 (Type-locality: Malaysia, Penang).

Synonymy: *falcata* Moore, 1882.

Bionomics. Meso-thermophilous tropical species, occurs irregularly in S Primorye and S Sakhalin as an immigrant. Moths appear from VI to XI. Collected in open woodlands. Holloway & Miller (2003) reported *Vitis* (Vitaceae) as food plant of the larva. The adult is known as a fruit piercer in Thailand (Kuroko & Lewvanich 1993).

Distribution (Map 220). Oriental, Manchurian-subtemperate. Far East (S Primorye, S Sakhalin, migrant). – China, Korea, Japan, Taiwan, Philippines, Indonesia, Malaysia, Indochina, Thailand, India, Nepal.

Bastilla stuposa (Fabricius, 1794)

(Pl. 10: 6; ♂ genit. Pl. 63: 4; ♀ genit. Pl. 148: 6)

Noctua stuposa Fabricius, 1794, *Ent. Syst.* **3** (2): 42 (Type-locality: "India oriental").

Synonymy: *festinata* Walker, 1858; *algira japonibia* Bryk, 1948; *algira sinica* Bryk, 1948; *algira* auct.; *analis*: Herz, 1904, nec Guenée, 1852.

Bionomics. Meso-thermophilous species, appears irregularly in S Primorye as an immigrant. In Japan, the moth flies from VI to XIII. Larvae feed on *Punica granatum* (Punicaceae).

Distribution (Map 221). Oriental, Manchurian-subtemperate. Far East (Primorye terr., migrant). – China, Korea, Japan, Taiwan, Philippines, Indonesia, Malaysia, Indochina, Thailand, India, Nepal.

Genus ***Dysgonia*** Hübner, [1823] 1816

Dysgonia Hübner, [1823] 1816, *Verz. bekannter Schmett.*: 269. Type-species: *Phalaena algira* Linnaeus, 1767 [Algeria].

Synonymy: *Naxia* Guenée, 1852; *Pasipeda* Moore, 1882, preocc., (Walker, 1858 [Lepidoptera, Noctuidae]); *Macaldenia* Moore, [1885], replacement name; *Caranilla* Moore, [1887] 1885; *Ophiusa* auct.; *Parallelia* auct.

Medium sized to large moths. Frons smooth, with tuft of hair-scales; labial palps ascending, thick, smooth-scaled, 3rd segment short in male, longer in female; antennae in male ciliate; mid-tibia with spurs, in male clothed with long hair-scales. In male genitalia, uncus stout, with dorsal crest or "superuncus" and two-pointed tip; scaphium sclerotised; tegumen and vinculum strongly built, valvae bilobed, asymmetrical; costa rod-like, the right one with a medial process; clasper and harpe strongly developed, with dorsal and ventral branches; sacculus with broad-based process and large subbasal coremata. Aedeagus short with small lateral triangular apical spine; vesica with multiple small diverticula. In female genitalia, lodix arched with wide, emarginate median lobe; ovipositor short, postvaginal plate anteriorly with a heavily sclerotised lip-like fold; ostium wide; antrum and ductus bursae both short, weakly sclerotised, folded on one another; corpus bursae with curved, horn-shaped appendix, with ductus seminalis arising apically.

The genus includes about 130 species, distributed in tropical and subtropical areas of the Old and New Worlds. – 3 species.

Dysgonia mandschuriana (Staudinger, 1892)

(Pl. 10: 7, 8; ♂ genit. Pl. 63: 5; ♀ genit. Pl. 149: 1)

Grammodes algira var. *mandschuriana* Staudinger, 1892, in Romanoff, *Mém. Lépid.* **6**: 578 (Type-locality: Russia: Primorye, "Sutschan-Gebiet" [Partizansk]).

Synonymy: *mimula* Warren, 1913; *mimula postfusca* Bryk, 1948; *algira* auct.; *mandschurica* auct., misspelling.

Diagnosis. The species can be confused with the West Palaearctic *D. algira* (Linnaeus, 1767); reliable identification only by check of genitalia, although the species are allopatric, which should allow safe separation in the field.

Bionomics. Meso-thermophilous species, occurs in open deciduous forests, in woodsides, glades, clearings, among bushes and on dry slopes. Two generations from V to VII, then in VIII-IX. Larvae feed on *Securinega suffruticosa* (Euphorbiaceae) (Sugi 1968). The pupa overwinters.

Distribution (Map 222). Manchurian, nemoral. Far East (S Khabarovsk and Primorye terr.). – Korea, Japan (Honshu, Kyushu), China.

Note. The species was referred to for the Far East by earlier authors as *D. algira*.

Dysgonia dulcis (Butler, 1878)

(Pl. 10: 9; ♂ genit. Pl. 64: 1; ♀ genit. Pl. 149: 2)

Ophiusa dulcis Butler, 1878, *Ann. Mag. nat. Hist.* (5) **1**: 293 (Type-locality: Japan: Yokohama).

Bionomics. Xero-thermophilous species, inhabits dry stony slopes, warm woodsides, glades, bushes. Two generations from VI to VIII. The pupa overwinters. The larva and its foodplants are unknown.

Distribution (Map 223). Manchurian, nemoral. Far East (S Khabarovsk and Primorye terr.). – Korea, Japan (except Hokkaido), China, Taiwan.

Note. Recorded from the vicinity of Khabarovsk by Dubatolov & Dolgikh (2009).

Dysgonia obscura (Bremer & Grey, 1853)

(Pl. 10: 10-12; ♂ genit. Pl. 64: 2; ♀ genit. Pl. 149: 3)

Ophiusa obscura Bremer & Grey, 1853, in Motschulsky, *Études. ent.* **1**: 66 (Type-locality: China: Beijing).

Synonymy: *hedemanni* Staudinger, 1888; *coreana* Leech, 1889.

Bionomics. Xero-thermophilous species, occurs in open deciduous forests in warm glades, clearings, margins, in dry steppe slopes. Two generations in VI-VIII. The pupa overwinters. The larva and its foodplants are unknown.

Distribution (Map 224). Manchurian continental, nemoral. Far East (Amur, S Khabarovsk and Primorye terr.). – Korea, N China.

Note. *D. coreana* synonymised with *D. obscura* by Kononenko & Han (2006). The name *obscura* was associated with the contrasting form and *coreana* with the uncontrasting form of the same species. No differences in the structure of male and female genitalia have been found.

Genus ***Grammodes*** Guenée, 1852

Grammodes Guenée, 1852, *in* Boisduval & Guenée, *Hist. nat. Insectes* (Lépid.) **7**: 275. Type-species: *Noctua geometrica* Fabricius, 1775 [India].

Synonymy: *Prodotis* John, 1910.

Medium sized moths. Frons flat, roughly hair-scaled; labial palps upturned, 3rd segment short, directed forward; antennae in male simple; thorax and abdomen slender; mid tibia with spines; in male, all tibiae clothed with long hair-scales. In male genitalia, uncus with large, rounded basal plate; scaphium X-shaped, split at both ends, sclerotised; tegumen on right side with rod-like process; valvae asymmetrical, bilobed; costa strongly fused with ampulla, which has finger-like projections; cucullus membranous dorsally, sclerotised ventrally; sacculus with triangular extension, and ventro-basally with extremely long coremata with very long narrow hair-like setae. Aedeagus short, with expanded coecum; vesica short, bulbous, with small multiple diverticula, apically with long lined sclerotised patch. In female genitalia, lodix arch trapezoid; postvaginal plate posteriorly with a strongly sclerotised, rounded crest; antrum and ductus bursae short, strongly sclerotised; basal part of corpus bursae and appendix bursae also strongly sclerotised, posterior part membranous.

The genus includes 24 species distributed mainly in the tropics ans subtropics of the Old World. – 1 species.

Grammodes stolida (Fabricius, 1775)

(Pl. 10: 13; ♂ genit. Pl. 64: 3; ♀ genit. Pl. 149: 4)

Noctua stolida Fabricius, 1775, *Syst. ent.*: 599 (Type-locality: "India oriental").

Synonymy: *cingularis* Hübner, 1808; *stupida* (Herrich-Schäffer, 1851; *curvilinea* Walker, 1869.

Bionomics. Meso-xerophilous species, occurs in forest-steppe and in forest clearings, in meadows, among bushes, on hot hillsides. Bivoltine. The moth flies from V to VII, and from VII to X. Larvae are polyphagous on *Paliurus aculeatus*, *Rubus idaeus*, *R. caesius*, *Quercus*, *Coriaria myrtifolia*, *Brassica oleracea*. Overwinters as pupa.

Distribution (Map 225). Palaeotropical, subtemperate, migrant. SE Russia, S Ural. – From Africa through tropical and subtropical Asia to China, India, SE Asia and Australia, extending northwards to S and SE Europe.

Catocalinae (incertae sedis)

Genus ***Blasticorhinus*** Butler, 1893

Blasticorhinus Butler, 1893, *Ann. Mag. nat. Hist.* (6)**12**: 46. Type-species: *Thermesia rivulosa* Walker, 1865 [India].

Synonymy: *Carsina* Hampson, 1924.

Medium sized moth, wingspan 32-40 mm. Frons scaled; antenna of male filiform, finely ciliate; labial palps short, directed obliquely upwards, 3rd segment shorter than 2nd; forewing with acute, pointed apex; hindwings with continuous pattern; tibia without spines. In male genitalia, tegumen shorter than vinculum; scaphium membranous; uncus thin, long, curved; transtilla fused with juxta, huge, plate-like; valva long, apically extended or pointed; sacculus narrow; harpe basally fused with costa, large or short. Aedeagus moderate, with multiple cornuti. In female genitalia, ovipositor small; anterior and posterior apophyses equal in length; antevaginal plate roughly split; antrum weakly sclerotised; ductus bursae short; corpus bursae elongated, constricted, with round bottom part.

The genus includes 17 species, distributed in the Ethiopian and Oriental regions and in the Manchurian subregion of the Palaearctic. – 2 species.

Blasticorhinus ussuriensis (Bremer, 1861)

(Pl. 9: 31-33; ♂ genit. Pl. 64: 4; ♀ genit. Pl. 149: 5)

Remigia ussuriensis Bremer, 1861, *Bull. Acad. Sci. St. – Pétersb.* **3**: 496 (Type-locality: Russia: "Am Ussuri, oberhalb der Emma-Mündung" [Primorye]).

Diagnosis. Differs from related *B. unduligera* in narrow, pointed tip of valva and wider costal extension. Externally, it differs slightly in pale, more yellowish-grey tint of wing colour.

Bionomics. Meso-thermophilous species, occurs in open deciduous and mixed forests in clearings, woodsides and glades, also in open forest, and bushes. One generation from end VI to VIII-IX. Larvae feed on *Lespedeza bicolor* (Fabaceae). Overwinters as pupa.

Distribution (Map 226). Manchurian–continental, nemoral. Far East (Amur, S Khabarovsk, and Primorye terr.). – N China, Korea.

Note. The holotype of *Blasticorhinus ussuriensis IS* illustrated on Pl. 8: 31.

Blasticorhinus unduligera (Butler, 1878)

(Pl. 9: 34, 35; ♂ genit. Pl. 64: 5; ♀ genit. Pl. 149: 6)

Azazia unduligera Butler, 1878, *Ann. Mag. nat. Hist.* (5) **1**: 293 (Type-locality: Japan: Yokohama).

Diagnosis. Externally hardly separable from *B. ussuriensis*. Fresh specimens have light olive tint. In male genitalia, *B. unduligera* differs from *B. ussuriensis* in the shape of the valva, which is extended on the tip and has much narrower costal extension. These characters are visible after brushing the tip of abdomen.

Bionomics. Meso-thermophilous species, occurs partly sympatrically with preceding species, prefers drier and warmer biotopes. Moth flies from VII to IX. In Japan, larvae feed on shrubby Fabaceae: *Lespedeza*, *Robinia*, *Wisteria*, *Milletia* (Mitaya 1983)

and *Rumex acetosa* (Polygonaceae) (Hayashi 2004d) (these data were referred to *B. ussuriensis*; however, only *B. unduligera* is known from Japan). Overwinters as pupa.

Distribution (Map 227). Manchurian, nemoral. Far East (Amur, S Khabarovsk, and Primorye terr.). – N China, Korea, Japan.

Tribe **Catocalini** Boisduval, [1828]

Catocalidi Boisduval, [1828] 1829, *Eur. Lepid. Index meth.*: 97, incorrect original spelling. Type genus: *Catocala* Schrank, 1802.

Synonymy: Catocalides Boisduval, 1840; Audeini Wiltshire, 1990.

Large tribe of worldwide distribution which can be characterised by two autapomorphies: juxta of characteristic Y-shape; ostium bursae is a part of the 8th abdominal sclerite and is located on the ventral side. The tribe comprises 6 genera distributed in the Old and New Worlds. The core of the tribe is the huge Holarctic genus *Catocala* and the closely related Ethiopian genera *Tachosa* Walker, 1869, *Crypsotidia* Rotschild, 1901, *Hypotacha* Hampson, 1913; *Audea* Walker [1858] and the Paleotropical *Ulotrichopus* Wallengren, 1860. The members of all genera are very constant in external appearance as well as in male and female genitalia.

Genus ***Catocala*** Schrank, 1802

Catocala Schrank, 1802, *Fauna Boica* **2** (2): 158. Type-species: *Phalaena nupta* Linnaeus, 1767 [Germany].

Synonymy: *Blepharum* Hübner, [1806], rejected name; *Blepharum* Hübner, 1808, rejected name; *Hemigeometra* Haworth, 1809; *Catocola*: Oken, 1815, misspelling; *Blephara* Ochsenheimer, 1816, unavailable name; *Ephesia* Hübner, 1818; *Blepharidia* Hübner, 1828, unavailable name; *Lamprosia* Hübner, [1821] 1806; *Blepharidia* Hübner, [1822]; *Catocalla*: Hübner, [1823], misspelling; *Astiotes* Hübner, [1823] 1816; *Corsice* Hübner, [1823]; *Eucora* Hübner, [1823] 1816; *Eunetis* Hübner, 1821; *Mormonia* Hübner, [1823]; *Mormosia* Walker, [1858] 1857; *Blepharonia* Hübner, [1823], unavailable name; *Blepharonia* Hübner, [1825]; *Corisee* Walker, [1858], misspelling; *Andrewsia* Grote, 1882; *Alura* Möschler, 1884; *Catabapta* Hulst, 1884; *KoraÏa* Herz, 1904, incorrect original spelling; *Koraia*: Nye, 1975, emendation; *Andreusia*: Hampson, 1913, emendation; *Ulotrichopus* Wallengren, 1860 (subgen.); *Simplicala* Beck, 1966; *Convercala* Beck, 1966; *Eucala* Beck, 1966; *Divercala* Beck, 1966; *Puercala* Beck, 1966; *Reticcala* Beck, 1966; *Optocala* Beck, 1966; *Metacala* Beck, 1966; *Promonia* Beck, 1966; *Bihemena* Beck, 1966.

Medium sized to large moths with wingspan 35-100 mm with grey or grey-brown cryptic coloured forewing, and hindwing bright yellow, red, blue or white with black transverse band and black termen. In some species, the hindwing is not brightly coloured. Antennae filiform, in male ciliate; labial palps upturned, with short and apically obtuse 3rd segment; metathorax and 1st abdominal segment with small crest; mid and hind tibia with spines. In male genitalia, uncus long, slender, bent, pointed apically; scaphium heavily sclerotised; valvae more or less asymmetrical, broadest medially; costa heavily sclerotised; ventral margin and distal part of valva membranous; sacculus narrow, with short extension; clasper and harpe prominent, triangular, parallel to margin of valva; juxta and anellus sclerotised, fused; transtilla thick, sclerotised, short, rod-shaped. Aedeagus as long as or longer than valva, very narrow, bent; vesica short, with several more or less small diverticula. In female genitalia, ovipositor long, telescopic; lodix strongly bilobed, with deep sinus between lobes; postvaginal plate heavily sclerotised, fused with to 8th segment; antrum heavily sclerotised, cylindrical, longer than flattened ductus bursae; corpus bursae elongated, divided into anterior and more or less spherical posterior section; signa absent.

Moths fly in mid-late summer. They are good flyers, and many species are strongly migratory. Larvae feed on woody broad-leaved trees and shrubs, often on *Quercus*, *Ulmus*, *Salix* and *Populus*. Overwinter as egg.

The genus includes more than 240 species distributed in the cool temperate zone of the Holarctic, with almost equal number of species in the Palaearctic (130) and Nearctic (113). In the Palaearctic, the genus is most diverse in the broad-leaved and mixed forest zone in Central and West China and in the Manchurian subregion. – 45 species.

References: Martin 1980; Goater *et al*. 2003; Park *et al*. 2005.

Catocala fulminea (Scopoli, 1763)

(Pl. 10: 20, 21; ♂ genit. Pl. 65: 1; ♀ genit. Pl. 150: 1)

Phalaena fulminea Scopoli, 1763, *Ent. Carniolica*: 206 (Type-locality: [Austria], Vienna district]).

Synonymy: *maturna* Hufnagel, 1766; *paranympha* Linnaeus, 1767; *protonympha* Boisduval, 1840; *xarippe* Butler, 1877 (subsp.); *chekiangensis* Mell (subsp.).

Bionomics. Meso-thermophilous species, occurs in woodlands and forest-steppe zone. Inhabits various types of deciduous forests. The moth flies from late VI to IX. Common. Larvae feed from IV to VI mainly on *Prunus*, *Pyrus*, *Crataegus*, *Padus*, *Cerasus*, *Malus* (Rosaceae) and oak *Quercus*.

Distribution (Map 228). Eurasian, boreal-subboreal. Russia, to Ural, across Siberia to the Far East, Sakhalin and Kuriles. – From Europe and Near East to Korea, Japan and China.

Note. The Japanese and Far Eastern populations are separated as a subspecies *C. fulminea xarippe* Butler, 1877.

Catocala neonympha (Esper, 1805)

(Pl. 11: 1; ♂ genit. Pl. 65: 2; ♀ genit. Pl. 150: 2)

Phalaena, *Noctua neonympha* Esper, 1805, *Die Schmett. Abb. Nat.* **4**(2/2): 75, pl. 198, Noct. 119: 1, 2 (Type-locality: Russia, Sarepta [Krasnoarmeisk]).

Bionomics. Meso-thermophilous species, occurs in forest-steppe and steppe zone, in patchy forest, in foothills in montane region. Moth flies from mid VII to early IX. Larvae feed on *Quercus* (Fagaceae) *Salix* (Salicaceae) and *Glycyrrhiza* (Fabaceae).

Distribution (Map 229). Euro-Central Asian, subboreal. S Russia to S Urals, W Siberia, Altai. – SE Europe, Near East, Kazakhstan, Central Asia.

Catocala conversa (Esper, 1787)

(Pl. 10: 22; ♂ genit. Pl. 65: 3; ♀ genit. Pl. 150: 3)

Phalaena Noctua conversa (Esper, 1787), *Die Schmett. Abb. Nat.* **4**(2/1): 368, pl. 105, Noct. 26B, 1-3 (Type-locality: Italy, Florence).

Synonymy: *pasythea* Hübner, [1809]; *agamos* Hübner, [1813; *carbonaria* Staudinger, 1871.

Bionomics. Meso-thermophilous species inhabiting patches of oak forest in southern forest-steppe and steppe zones. The moth flies between VI and VIII. Larvae feed in V on *Quercus ilex* and *Q. petraea*, and *Prunus spinosa* (Klyuchko 1978).

Distribution (Map 230). Western Palaearctic, subboreal. S Russia to S Ural. – N Africa, Near East, central, S and SE Europe.

Catocala obscena Alphéraky, 1879

(Pl. 10: 23; ♂ genit. Pl. 65: 4; ♀ genit. Pl. 150: 4)

Catocala obscena Alphéraky, 1879, *Dt. ent. Z. Iris* **8**: 196 (Type-locality: Korea).

Synonymy: *obscena baihi* Ishiizuka, 2003 (subsp.).

Bionomics. Mesophilous species, occasionaly found in south of Primorye territory (Partizansk, Gornotaezhnoe near Ussuriisk, Khasansky district). Single specimens have been collected several times in late VII and VIII in rich deciduous forests. The larva and its foodplants are unknown.

Distribution (Map 231). Manchurian, nemoral. Far East (S Primorye). – Korea, Japan, N China.

Catocala abamita Bremer & Grey, 1853

(Pl. 11: 4; ♂ genit. Pl. 65: 5; ♀ genit. Pl. 150: 5)

Catocala abamita Bremer & Grey, 1853, *Beitr. Schmett. Fauna N China*: **19** (Type-locality: N China: Beijing).

Synonymy: *scortum* Christoph, 1893.

Bionomics. Mesophilous species, in S Korea occurs in VII-VIII in rich deciduous and mixed forests. The larva and its foodplants are unknown.

Distribution (Map 232). Manchurian–continental, nemoral. Far East (S Primorye). – Korea, N China.

Note. The taxon *Catocala scortum* Christoph, 1893 (a synonym of *C. abamita*) has been described from the south of Primorye; however, no further or recent records known from Russia.

Catocala musmi (Hampson, 1913)

(Pl. 11: 9; ♂ genit. Pl. 000: 0; ♀ genit. Pl. 000: 0)

Ephesia musmi Hampson, 1913, *Cat. Lepid. Phalaenae Br. Mus.* **12**: 201: 10 (Type-locality: N Korea: Wonsan [Gensan]).

Bionomics. Mesophilous species, occurs in rich deciduous forests. Moth flies in VII. The larva and its foodplants are unknown.

Distribution (Map 233). Manchurian–continental, nemoral. Far East (S Primorye). – China, N Korea.

Note. First record for Russia: 1 male, Primorye, vicinity of Arsenjev, 20 VII. 1987 (Grigoryev). This is the only specimen reported since its description from N Korea.

Catocala doerriesi Staudinger, 1888

(Pl. 10: 24; ♂ genit. Pl. 66: 1; ♀ genit. Pl. 150: 6)

Catocala doerriesi Staudinger, 1888, *Stettin. ent. Ztg* **49**: 271 (Type-locality: Russia: "Radeffka", [Khabarovsk reg., Judish Autonomy, Radde]; "Ussuri" [Primorye]).

Synonymy: *honrathi* Graeser, 1888 [1889]; *hampsoni* Leech, 1900.

Bionomics. Mesophilous species, one of the most widespread and common species in the Far East. It is abundant, in some years appearing in masses. It inhabits rich deciduous and mixed forests, occurs as a migrant in dark coniferous taiga. The flight period is from mid VII to mid IX. The larva and its foodplants are unknown.

Distribution (Map 234). Manchurian–continental, nemoral. E Transbaikalia, Far East (Amur, S Khabarovsk, Primorye terr.). – China, Korea.

Catocala eminens Staudinger, 1892

(Pl. 11: 5; ♂ genit. Pl. 66: 3; ♀ genit. Pl. 150: 7)

Catocala eminens Staudinger, 1892, in Romanoff, *Mém. Lépid.* **6**: 584, pl. 12: 5 (Type-locality: "Amur" [most probably S Primorye].

Bionomics. Mesophilous species, rather common in extreme S Primorye on deciduous and oak forests with *Quercus dentata*. The flight period is from mid VII to early IX. The larva and its foodplants are unknown.

Distribution (Map 235). Manchurian–continental, nemoral. Far East (S Khabarovsk, S Primorye). – China, Korea.

Catocala separans Leech, 1889

(Pl. 11: 6, 7; ♂ genit. Pl. 66: 4; ♀ genit. Pl. 150: 8)

Catocala separans Leech, 1889, *Proc. zool. Soc. Lond.* **1889**: 552, pl. 53: 6 (Type-locality: Japan: Nagahama, Fushiki).

Synonymy: *hetaera* Staudinger, 1892.

Bionomics. Mesophilous species, common in rich deciduous and mixed forests. Larvae feed on Mongolian oak (*Quercus mongolica*), in Japan, on *Q. acutissima* and *Q. variabilis* (Ito 1984). The flight period is from early VII-VIII.

Distribution (Map 236). Manchurian, nemoral. Far East (Primorye). – Korea, Japan (except Hokkaido), China.

Catocala duplicata Butler, 1885

(Pl. 11: 8; ♂ genit. Pl. 66: 5; ♀ genit. Pl. 151: 1)

Catocala duplicata Butler, 1885, *Cistula ent.* **3**: 135, (Type-locality: Japan).

Synonymy: *suzukii* Matsumura, 1911.

Bionomics. Mesophilous species, inhabits broad-leaved deciduous forests. The moth flies in VII - VIII. The larva and its foodplants are unknown.

Distribution (Map 237). Manchurian, nemoral. Far East (Primorye terr.). – China, Korea, Japan.

Note. First record for Russia: 1 male, Primorye terr., Lazovsky Nature reserve, Kievka (Lastukhin).

Catocala helena Eversmann, 1856

(Pl. 11: 15; ♂ genit. Pl. 66: 2; ♀ genit. Pl. 151: 2)

Catocala helena Eversmann, 1856, *Bull. Soc. Nat. imp. Moscou* **30** (4): 378, pl. 1: 8 (Type-locality: SE Siberia: Transbaikalia, Kiachta).

Synonymy: *helena kurenzovi* Moltrecht, 1927; *helena beicki* Mell, 1936.

Bionomics. Mesophilous species, inhabits deciduous forests and forest-steppe, more common in dry forest-steppe habitats. The flight period is from early VII to IX. The larva and its foodplants are unknown.

Distribution (Map 238). Manchurian, nemoral-subboreal. Transbaikalia, Far East Amur, S Khabarovsk and Primorye terr.). – Mongolia, Korea, China.

Catocala nymphaeoides Herrich-Schäffer, 1845

(Pl. 11: 10, 11; ♂ genit. Pl. 67: 1; ♀ genit. Pl. 151: 3)

Catocala nymphaeoides Herrich–Schäffer, 1845, *Syst. Bearb. Schmett. Eur.* **6**: 90: 599, 600 (Type-locality: Russia [most probably S Transbaikalia]).

Synonymy: *nymphula* Staudinger, 1892.

Bionomics. Meso-xerophilous species, inhabits deciduous forests and forest-steppe, prefers dry biotopes where it is rather common. The flight period is from beginning of VII to late VIII. The larva and its foodplants are unknown.

Distribution (Map 239). Manchurian–continental, nemoral-subboreal. Transbaikalia, Far East (Amur, S Khavbarovsk and Primorye terr.). – Mongolia, NE China.

Catocala ella Butler, 1877

(Pl. 11: 14; ♂ genit. Pl. 67: 2; ♀ genit. Pl. 151: 4)

Catocala ella Butler, 1877, *Cistula ent.* **2**: 242 (Type-locality: Japan: Yokohama).

Synonymy: *nutrix* Graeser, 1888 [1899].

Bionomics. Mesophilous, more or less local, but rather common species. It occurs in humid lowland deciduous forests. The flight period from the late VI to IX. Larvae feed on *Alnus japonica* (Betulaceae).

Distribution (Map 240). Manchurian, nemoral. Far East (Primorye and S Khabarovsk terr.). – China, Korea, Japan, Taiwan.

Catocala deuteronympha Staudinger, 1861

(Pl. 11: 12, 13; ♂ genit. Pl. 67: 3; ♀ genit. Pl. 151: 5)

Catocala deuteronympha Staudinger, 1861, *Stettin. ent. Ztg* **22**: 290 (Type-locality: E Siberia: Transbaikalia, Kiachta).

Synonymy: *omphale* Butler, 1881; *greyi* Staudinger, 1888; *thomsoni* Prout, 1924; *davidi* Obertür, 1881; *deuteronympha tschiliensis* Bang-Haas, 1927; *dahurica* Klyuchko 1992.

Bionomics. Mesophilous species, one of the most widespread and common Manchurian *Catocala*. It occurs in rich deciduous forests, forest-steppe and the steppe zone. The flight period is from early VII to IX. Larvae feed on *Ulmus japonica* and other species of *Ulmus* (Ulmaceae).

Distribution (Map 241). Manchurian, nemoral. S Transbaikalia, Far East (Amur, S Khabarovsk and Primorye terr.). – Mongolia, Korea, Japan (Hokkaido, Honshu), N China.

Note. *C. deuteronympha* is a polymorphic species. The easternmost populations, which inhabit humid areas, differ in darker wing colour with strongly developed black bands on the hindwings; the continental populations have lighter coloured forewings, more contrasting wing pattern and narrower black bands on the hindwings.

Catocala praegnax Walker, 1858

(Pl. 11: 3; ♂ genit. Pl. 67: 4; ♀ genit. Pl. 151: 6)

Catocala praegnax Walker, 1858, *List Specimens lepid. Insects Colln. Br. Mus.* **13**: 1213.

Synonymy: *obliterata* Ménétriés, 1863; *esther* Butler, 1877; *praegnax* subsp. *sakaii* Kishida, 1981.

Bionomics. Mesophilous species, inhabits rich deciduous and oak forests with *Quercus mongolica*. It is rather common, especially in S Primorye. The moth flies from mid VII to IX, and is migratory. Larvae feed from IV to VI on *Quercus mongolica*, in Japan also on *Q. acutissima*, *Q. aliena* and also on *Wisteria* and *Lespedeza* (Fabaceae) (Miyata 1983).

Distribution (Map 242). Manchurian, nemoral. Far East (Amur, S Khabarovsk and Primorye terr.). – China, Korea, Japan, Taiwan.

Catocala agitatrix Graeser, [1889] 1888

(Pl. 11: 16, 17; ♂ genit. Pl. 68: 1; ♀ genit. Pl. 151: 7)

Catocala agitatrix Graeser 1888 [1889], *Berl. ent. Z.* **32**, II: 272 (Type-locality: Russia: [Khabarovsk]).

Synonymy: *mabella* Holland, 1889.

Diagnosis. The species could be confused with *C. bella*, but differs in more slender habitus, more uniform grey colour of forewing and shape of bands on hindwings.

Bionomics. Mesophilous species, widespread in the Far East. It is common in deciduous and mixed forests and forest-steppe. The flight period is from early VII to IX. Migratory. Larvae feed on *Malus mandshurica*, *M. sieboldii*, *Padus asiatica* and *Pyrus* (Rosaceae).

Distribution (Map 243). Manchurian, nemoral. E Transbaikalia, Far East (Amur, S Khabarovsk and Primorye terr.). – Korea, Japan (Hokkaido, Honshu), China.

Catocala bella Butler, 1877

(Pl. 11: 18; ♂ genit. Pl. 68: 2; ♀ genit. Pl. 151: 8)

Catocala bella Butler, 1877, *Cistula ent.* **2**: 242 (Type-locality: Japan: Yokohama).

Synonymy: *serenides* Staudinger, 1888.

Bionomics. Mesophilous species, occurs in various types of deciduous and mixed forests and forest-steppe, rather common. The flight period is from mid VII to IX. Migratory. Larvae feed on *Malus mandshurica*, *Malus sieboldii* and *Pyrus* (Rosaceae) (Sugi 1982c).

Distribution (Map 244). Manchurian, nemoral. E Transbaikalia, Far East (Amur, S Khabarovsk and Primorye terr., Sakhalin). – N Mongolia, Korea, Japan (Hokkaido, Honshu), N China.

Catocala columbina Leech, 1900

(Pl. 11: 19; ♂ genit. Pl. 68: 4; ♀ genit. Pl. 152: 1)

Catocala columbina Leech, 1900, *Trans. ent. Soc. Lond.* **1900**: 535 (Type-locality: W China, Sichuan).

Synonymy: *splendens* Mell, 1933; *enigma* Sheljuzhko, 1943; *okurai* Sugi, 1965 (subsp.).

Bionomics. Mesophilous species, in Japan the moth flies in VIII, larvae feed on *Spiraea blumei*, *S. nipponica*, *S. nervosa*, *S. chamaedryfolia*, *S. thunbergi* (Rosaceae) (Masui 1982).

Distribution (Map 245). Manchurian, nemoral. Far East (?Primorye). – China, Japan (Honshu, Shikoku, Kyushu).

Note. From Primorye, the species is known only from the type specimen of *aenigma* Sheluzhko 1943 (synonym of *C. columbina*), which could have been imported to Vladivostok or from another country.

Catocala nubila Butler, 1881

(Pl. 11: 20; ♂ genit. Pl. 68: 5; ♀ genit. Pl. 152: 2)

Catocala nubila Butler, 1881, *Trans. ent. Soc. Lond.* **1881**: 196 (Type-locality: Japan: Tokyo).

Bionomics. Mesophilous species, in Far East known from S Primorye and S Sakhalin from single records of migrant specimens. The moth flies in VIII-IX. In Japan, larvae feed on *Fagus crenata* and *F. japonica* (Fagaceae).

Distribution (Map 246). Manchurian, nemoral. Far East (Primorye, Sakhalin, migrant). – China, Korea, Japan (in Hokkaido as migrant).

Catocala koreana Staudinger, 1892

(Pl. 12: 1, 2; ♂ genit. Pl. 68: 3; ♀ genit. Pl. 152: 3)

Catocala koreana Staudinger, 1892, in Romanoff, *Mém. Lépid.* **6**: 587 (Type-locality: Korea).

Synonymy: *hymenaea ussurica* Sheljuzhko, 1943; *azumiensis* Sugi, 1965; *hymenaea* auct.

Bionomics. Mesophilous species, occurs in rich valley deciduous forests, more common in rocky habitats. The moth flies from late VII to mid VIII. Rather rare species, compared with other *Catocala*. Larvae feed on *Spiraea nipponica* (Rosaceae) (Sugi 1982b).

Distribution (Map 247). Manchurian, nemoral. Far East (S Khabarovsk and Primorye terr.). – China, Korea, Japan (Honshu).

Catocala proxeneta Alphéraky, 1895

(Pl. 11: 5, 6; ♂ genit. Pl. 69: 1; ♀ genit. Pl. 152: 4)

Catocala proxeneta Alphéraky, 1895, *Dt. ent. Z. Iris* **8**: 197 (Type-locality: Mongolia: Ulaan-Baator [Urga]).

Synonymy: *proxeneta sutshana* Sheljuzhko, 1943.

Bionomics. Meso-xerophilous species, occurs in dry deciduous forests and forest-steppe biotopes, more common in dry biotopes. It is a long-range migrant. The flight period is from mid VII to IX. Early stages and larval foodplants unknown.

Distribution (Map 248). Manchurian, nemoral-subboreal. Transbaikalia, Far East (Amur, S Khabarovsk and Primorye terr.). – NE Mongolia, N China, Korea.

Catocala streckeri Staudinger, 1888

(Pl. 11: 2; ♂ genit. Pl. 69: 5; ♀ genit. Pl. 152: 5)

Catocala streckeri Staudinger, 1888, *Stettin. ent. Ztg* **49**: 272 (Type-locality: Primorye, Askold Is, Partizansk ["Sutschan-Gebiet"], Bikin).

Synonymy: *strecceri*: Hampson, 1913, emendation.

Bionomics. Mesophilous, one of the most widespread and common species in the Far East. It inhabits rich deciduous forests, open secondary oak forests and forest-steppe. Early flyer, the flight period from early - mid VI to IX. Larvae feed on oaks *Quercus mongolica* and *Q. dentata* (Fagaceae).

Distribution (Map 249). Manchurian, nemoral. E Transbaikalia, Far East, to Sakhalin and Kuriles. – China, Korea, Japan.

Catocala danilovi (O. Bang-Haas, 1927)

(Pl. 12: 7, 8; ♂ genit. Pl. 69: 2; ♀ genit. Pl. 152: 6)

Ephesia danilovi Bang-Haas, 1927, *Horae Macrolepid. Reg. palaearct.* **1**: 117 (Type-locality: Primorye, Partizansk ["Sutschan"]).

Bionomics. Mesophilous, rare and local species, occurring in deciduous forests, mainly in stony foothills with cliffs. Flight period VII-VIII. Early stages and foodplants unknown.

Distribution (Map 250). Manchurian–continental, nemoral. Far East (S Primorye). – N China, N Korea.

Note. The holotype of *Catocala danilovi* is illustrated on Pl. 12: 8.

Catocala moltrechti O. Bang-Haas, 1927

(Pl. 12: 3, 4; ♂ genit. Pl. 69: 3; ♀ genit. Pl. 152: 7)

Catocala moltrechti Bang-Haas, 1927, *Horae Macrolepid. Reg. palaearct.* **1**: 89, pl. 11:6 (Type-locality: Primorye, Partizansk ["Sutschan"]).

Bionomics. Mesophilous, rather rare and local species, occurring in deciduous forests in southern part of Primorye. Flight period mid VII-VIII. Early

stages and foodplants unknown.

Distribution (Map 251). Manchurian–continental, nemoral. Far East (S Primorye). – N China.

Note. The holotype of *Catocala moltrechti* is illustrated on Pl. 12: 3.

Catocala dissimilis Bremer, 1861

(Pl. 12: 9; ♂ genit. Pl. 69: 4; ♀ genit. Pl. 152: 8)

Catocala dissimilis Bremer, 1861, *Bull. Acad. imp. Sci. St. – Pétersb.* **3**: 494 (Type-locality: Russia: "Bureja-Gebirge" [Amur reg., Bureinsky Range]).

Synonymy: *dissimilis griseata* Bryk, 1948; *dissimilis nigricans* Mell, 1939; *dissimilis melli Ishizuka*, 2001.

Bionomics. Mesophilous, the most common species of *Catocala* in the Far East. It inhabits various kinds of deciduous and mixed forests with Mongolian oak, and also in scarce secondary oak forests and forest-steppe. Migratory. The flight period is from late VI to late IX. Larvae feed on *Quercus mongolica* and *Q. dentata*.

Distribution (Map 252). Manchurian, nemoral. E Transbaikalia, Far East to Sakhalin. – China, Korea, Japan.

Catocala nagioides Wileman, 1924

(Pl. 12: 10; ♂ genit. Pl. 70: 1; ♀ genit. Pl. 153: 1)

Catocala nagioides Wileman, 1924, *Entomologist* **57**: 287 (Type-locality: Japan: Honshu [Yesso]), replacement name.

Synonymy: *sancta* Butler, 1885, nec Hulst, 1884.

Diagnosis. This and the following species are a closely related species pair. *C. nagioides* differs from *C. actaea* in sharper forewing pattern, less expressed white area and reduced subtornal white spot on hindwing.

Bionomics. Mesophilous species, occurring in S Primorye locally, mainly along coast in open oak forests and in deciduous forests with *Quercus dentata*. In some years it appears in abundance. The flight period is from late VII to late IX. The larval foodplant is *Quercus dentata*.

Distribution (Map 253). Manchurian, nemoral. Far East (S Primorye). – China, Korea, Japan.

Catocala actaea Felder & Rogenhofer, 1874

(Pl. 11; ♂ genit. Pl. 70: 2; ♀ genit. Pl. 153: 2)

Catocala actaea Felder & Rogenhofer, 1874, *Reise öst. Fregatte Novara* (Zool.) **2** (Abt. 2): pl. 112: 22 (Type-locality: Japan).

Synonymy: *actaea* subsp. *nigricans* Mell, 1939.

Diagnosis. Differs from *C. nagioides* in less sharp and more wavy forewing pattern, more expressed white area and 1-2 white subtornal spots on hindwing.

Bionomics. Mesophilous species, occurs mainly in central part of Primorye. It inhabits rich deciduous forests with oak, *Quercus mongolica*. The flight period is from mid VII to late IX. The foodplant is *Quercus mongolica*, in Japan also *Quercus acutissima* and *Q. variabilis* (Fagaceae).

Distribution (Map 254). Manchurian, nemoral. Far East (S Khabarovsk and Primorye terr.). – China, Korea, Japan (except Hokkaido).

Catocala pirata (Herz, 1904)

(Pl. 12: 12, 13; ♂ genit. Pl. 70: 3; ♀ genit. Pl. 153: 3)

Koraïa pirata Herz, 1904, *Ann. Mus. Zool. Acad. imp. Sci. St. – Pétersb.* **9**: 314, pl. 1: 18 (Type-locality: Korea ?Pungtung willage).

Bionomics. Mesophilous species, found in rich and secondary deciduous forests. In western part of Primorye it is rather common. The flight period is from early VII to late VIII. The larval foodplants are unknown.

Distribution (Map 255). Manchurian–continental, nemoral. Far East (S Khabarovsk and Primorye terr.). – NE China, Korea.

Catocala bokhaica (Kononenko, 1979)

(Pl. 12: 14, 15; ♂ genit. Pl. 70: 4; ♀ genit. Pl. 153: 4)

Koraia bokhaica Kononenko, 1979, *Trudy. vses. entomol. Obshch.* **61**: 125: 1, 2 (Type-locality: Russia: Primorye, Benevskoe).

Diagnosis. Externally, differs from allied *C. pirata* in absence of dark costal area and presence of thin black oblique subbasal line.

Bionomics. Mesophilous species, occurs sympatrically with preceding species. It inhabits rich and secondary valley deciduous forests with oak *Quercus mongolica*. In some years it is rather common, locally abundant. The flight period is from early VII to late VIII. The larval foodplants are unknown.

Distribution (Map 256). Manchurian–continental, nemoral. Far East (S Khabarovsk and Primorye terr.). – NE China Korea.

Catocala fraxini (Linnaeus, 1758)

(Pl. 13: 1, 2; ♂ genit. Pl. 71: 1; ♀ genit. Pl. 153: 5)

Phalaena fraxini Linnaeus, 1758, *Syst. Nat.* (Edn 10) **1**: 512 (Type-locality: Europe).

Synonymy: *fraxini* subsp. *legionensis* Gomez-Bustillo & Vega, 1975; *fraxini* var. *latefasciata* Warnecke, 1919; *jezoensis* Matsumura, 1931; *fraxini* subsp. *yuennanensis* Mell, 1936; *fraxini* var. *gaudens* Staudinger, 1901.

Bionomics. Mesophilous species, associated with woodlands where poplar is in abundance, in the Far East more common in cold habitats on northern slopes. The flight period is from late VII to beginning of X. Migratory. Larvae feed on foliage of many woody plants, preferring *Populus* and *Salix* (Salicaceae).

Distribution (Map 257). Eurasian, temperate. Russia to Ural, across S Siberia to the Far East to Sakhalin, recorded in S Kamchatka from one specimen (Sviridov *et al*. 2006). – Europe, Near East, Kazakhstan, China, Korea, Japan.

Catocala lara Bremer, 1861

(Pl. 13: 3, 4; ♂ genit. Pl. 71: 2; ♀ genit. Pl. 153: 6)

Catocala lara Bremer, 1861, *Bull. Acad. imp. Sci. St. – Pétersb.* **3**: 493 (Type-locality: Russia: "Bureja-Gebirge" [Amur reg., Bureinsky Range]).

Synonymy: *lara* subsp. *pallidamajor* Mell, 1939.

Bionomics. Mesophilous species, inhabits rich deciduous forests where lime trees are common. Common species, in some years appears in abundance. Migratory. The flight period is from mid VII to IX. Larvae feed on limes *Tilia amurensis*, *T. mandshurica*, *T. japonica* (Tiliaceae).

Distribution (Map 258). Manchurian, nemoral. Far East to Sakhalin. – China, Korea, Japan.

Catocala nivea Butler, 1877

(Pl. 13: 5; ♂ genit. Pl. 71: 3; ♀ genit. Pl. 153: 7)

Catocala nivea Butler, 1877, *Cistula ent.* **2**: 241 (Type-locality: Japan: Yokohama).

Synonymy: *nivea* subsp. *kurosawai* Owada, 1986 (subsp.) [N India, Nepal]; *nivea* subsp. *asahinorum* Owada, 1986 [Taiwan].

Bionomics. Mesophilous, rather rare and local species, occurs in southern and central parts of Primorye. It is found in rich, wet deciduous forests. The flight period is from mid VIII to mid IX. In Japan, larvae feed on *Prunus greyana*, *P. buerberiana*, *P. spinosula* (Rosaceae) (Miyata 1983).

Distribution (Map 259). Himalayan-Manchurian, nemoral. Far East (Primorye). – China, Korea, Japan, Taiwan, N India (Sikkim), Nepal.

Catocala nupta (Linnaeus, 1767)

(Pl. 13: 6; ♂ genit. Pl. 72: 1; ♀ genit. Pl. 154: 1)

Phalaena Noctua nupta Linnaeus, 1767, *Syst. Nat.* (Edn 12) **1**: 84 (Type-locality: Germany).

Synonymy: *nupta* var. *obscurata* Oberthür, 1880; *concubia* Walker, [1858] 1857; *unicuba* Walker, [1858] 1857; *nupta* var. *nuptialis* Staudinger, 1901; *nupta* subsp. *centralasiae* Kuznezov, 1903; *nozawae* Matsumura, 1911; *nupta* subsp. *kansuensis* Bang-Haas, 1927; *nupta* subsp. *clara* Osthelder, 1933; *nupta japonica* Mell, 1936; *nupta* subsp. *likiangensis* Mell, 1936; *nupta* subsp. *alticola* Mell, 1942.

Bionomics. Mesophilous common species, associated with various woodland biotopes. The moth flies from VII to IX, and is capable of long migrations. Larvae feed in V and IV on various willows *Salix* and poplars *Populus* (Salicaceae).

Distribution (Map 260). Eurasian, temperate. Russia to Ural, across Siberia to the Far East and Sakhalin. – From Europe through the Palaearctic region to China, Korea, Japan, N India.

Catocala adultera Ménétriés, 1856

(Pl. 13: 7; ♂ genit. Pl. 71: 4; ♀ genit. Pl. 154: 2)

Catocala adultera Ménétriés, 1856, *Études ent.* **5**: 47 (Type-locality: Russia: St. Petersburg).

Bionomics. Mesophilous species, associated with deciduous forests where *Populus tremula* is dominant. The flight period is from late VII to mid IX. Larvae feed from V to VII on *Populus tremula* and *Salix* (Salicaceae).

Distribution (Map 261). Eurasian, temperate. Russia, across Ural and S Siberia to Russsian Far East (Amur, S Khabarovsk terr., Primorye) From N and C Europe to N Korea.

Catocala electa (Vieweg, 1790)

(Pl. 13: 8; ♂ genit. Pl. 72: 2; ♀ genit. Pl. 154: 3)

Noctua electa Vieweg, 1790, *Tabellarisches Verz. Churmark Brandenburg. Schmett.* **2**: 33 (Type-locality: Germany: Brandenburg).

Synonymy: *zalmunna* Butler, 1877; *electa tschiliensis* Bang-Haas, 1927.

Bionomics. Meso-hygrophilous species, inhabits various wet deciduous and mixed forests, often in damp places where willow grows. The moth flies from early VII to IX, migratory. Rather common species. Larvae feed in V and IV on various willows *Salix* and poplars *Populus* (Salicaceae).

Distribution (Map 262). Amphi-Eurasian, temperate. European Russia, Far East (Amur, S Khabarovsk and Primorye terr.). – C Europe to Near East, China, Korea, Japan. *Catocala electa* apparently has disjunctive distribution; it is not known from S Siberia nor from Mongolia

Catocala elocata ([Esper, 1787])

(Pl. 12: 16; ♂ genit. Pl. 72: 3; ♀ genit. Pl. 154: 4)

Phalaena, *Noctua elocata* [Esper, 1787], *Die Schmett. Abb. Nat.* **4**(2/1): 127, pl. 99, Noct. 20: 1, 2 (Type-locality: Germany, Erlanden).

Synonymy: *marita* Hübner, [1813]; *nurus* Hübner, 1822; *gitana* Mabille, *locata* Staudinger, 1892 (subsp.).

Bionomics. Mesophilous species, inhabits southern part of forest zone and forest-steppe zone. It occurs in wet river valleys where poplar grow in abundance. The flight period is from mid VII to IX. Larvae feed in V-IV on various willows *Salix* and poplars *Populus* (Salicaceae).

Distribution (Map 263). Western Palaearctic, temperate. Russia, estward to S Ural and Altai. – N Africa, Near East, C and S Europe, Kazakhstan, Central Asia, China, to N India.

Catocala deducta Eversmann, 1843

(Pl. 12: 17-19; ♂ genit. Pl. 72: 4; ♀ genit. Pl. 154: 5)

Catocala deducta Eversmann, 1843, *Bull. Soc. imp. Nat. Mosc.* **16**: 550, pl. 10: 3 (Type-locality: South Altai [SE Kazakhstan, Zaisan lake]).

Synonymy: *uralensis* Spuler, 1908.

Diagnosis. Differs from *C. elocata* in much paler, even whitish (Pl. 12: 19) forewing colour and more contrasting wing pattern. Some specimens have dark grey colour as *C. elocata*, but show more contrasting pattern (Pl. 12: 20). In the male genitalia, most remarkable difference is the shape of the aedeagus, which is straight in *C. elocata* but strongly obtusely curved in proximal part in *C. deducta*; the female genitalia of *C. deducta* differ in more deeply split antrum and 8th tergite.

Bionomics. Mesophilous species, occurs in forest-steppe zone, inhabits open deciduous forest beside river valleys. Flight period VIII-IX. The larva is undescribed, it probably feeds on poplar *Populus* and willow *Salix* (Salicaceae).

Distribution (Map 264). Eastern European – Central Asian, subboreal. SE Russia to S Ural – SE Kazakhstan S Altai, Tarbagatai), Central Asia (Tajikistan).

Note. The relationship between *C. deducta* and *C. elocata* and their specificity requires further study. They are sympatric in south Ural and Kazakhstan. *C. deducta*, especially its whitish form, becomes more common eastwards. The figure on Pl. 12: 19 shows the lectotype of *C. deducta* (labelled as "Or. Zaisan"/ coll. Eversmann) designated by A. Matov in the collection of ZISP.

Catocala puerpera (Giorna, 1791)

(Pl. 12: 20-22; ♂ genit. Pl. 73: 1, 2; ♀ genit. Pl. 154: 6, 7)

Chysis puerpera Giorna, 1791, *Can. Ent. Torino. 142* (Type-locality: [Italy] : Torino).

Synonymy: *amasina* Esper, 1804*; pellex* Hübner, [1808-1809]; *romana* Schultz, 1909; *pallida* Alphéraky, 1887; *tarbagata* Schultz, 1909; *centralasiae* Sheljuzhko, 1943, nec Kkuznetsov, 1903; *orientalis* Staudinger, 1877, **syn. n.**; *pudica* Moore, 1879.

Diagnosis. Goater *et al*. (2003) raised *C. puerpera* var. *orientalis* Staudinger, 1892 to full species. According to the authors it differs from *C. puerpera* in somewhat smaller size, a less zigzag median band on hindwing, a little longer valva and harpe, a little more curved proximal part of the aedeagus. Examining materials from S Russia, Ural, Kazakhstan and Central Asia I did not find substantial differences of *orientalis* with western populations and consider the later as a synonym of *C. puerpera*.

Bionomics. Mesophilous species, occurs in south of forest zone and forest-steppe. Inhabits open forests beside rivers and woody patches in forest-steppe. Fligth period from VII to IX. Larvae of eastern population feed on *Populus pruinosa*, *Salix australior*, *S. tenuis* (Salicaceae) (Degtjareva 1973; Tokgaev 1983).

Distribution (Map 265). European – Cental Asian, subboreal. S Russia to S Ural and W Siberia. – S Europe, Kazakhstan to Tarbagatai, Central Asia, W China.

Catocala sponsa (Linnaeus, 1767)

(Pl. 13: 9; ♂ genit. Pl. 73: 3; ♀ genit. Pl. 154: 8)

Phalaena sponsa Linnaeus, 1767, *Syst. Nat*. (Edn 12): 841 (Type-locality: Europe).

Synonymy: *rejecta* Fischer de Waldheim, 1820; *laeta* Oberthür, 1907; *purpurea* Oberthür, 1922.

Bionomics. Mesophilous species, inhabits forest and forest-steppe zone, associated mainly with old oak woodlands. In some years it appears in abundance in Uralian patchy steppe forests. The moth flies from late VII to early XI. Larvae feed mainly on deciduous oaks *Quercus*, and also on *Alnus*, *Castanea*, *Populus tremula*, *Salix*.

Distribution (Map 266). West Palaearctic, subboreal. Russia, estwards to S Ural. – N Africa, Asia Minor, C and S Europe, W Kazakhstan.

Catocala dula Bremer, 1861

(Pl. 13: 10; ♂ genit. Pl. 73: 4; ♀ genit. Pl. 155: 1)

Catocala dula Bremer, 1861, *Bull. Acad. imp. Sci. St. – Pétersb.* **3**: 493 (Type-locality: Russia: "Bureja-Gebirge" [Amur reg., Bureinsky Range]).

Synonymy: *dula* subsp. *carminea* Mell, 1939.

Bionomics. Mesophilous species, one of the most widespread and common species in the Far East. It inhabits deciduous and mixed forests with oak and patch oak forests in forest-steppe. The flight period is from end VI to IX. Larvae feed on *Quercus mongolica* and *Q. dentata*; in Japan on *Q. acutissima* (Fagaceae).

Distribution (Map 267). Manchurian, nemoral. Transbaikalia, Far East (eastward to Sakhalin and Kuriles; Kamchatka as migrant). – China, Korea, Japan.

Note. Reported for south Kamchatka by Sedykh (1979). However, the species cannot be resident in Kamchatka, because the food plant does not grow in the region. I believe the single known specimen was transported so far north from its permanent habitats by the southern air current during summer cyclone.

Catocala promissa
([Denis & Schiffermüller, 1775])

(Pl. 13: 11; ♂ genit. Pl. 73: 5; ♀ genit. Pl. 155: 2)

Noctua promissa [Denis & Schiffermüller], 1775, *Ank. Syst. Werk Schmett. Wien*.: 90 (Type-locality: [Austria], Vienna district]).

Synonymy: *mneste* Hübner, [1813]; *hilaris* Oberthür, 1907; *electra* Bang-Haas, 1910.

Bionomics. Mesophilous species, occurs mainly in old oak forest, in Ural inhabits patchy steppe oak woodlands. Moths flies in VII-VIII. Larvae feed on deciduous oak *Quercus robur*.

Distribution (Map 268). West Palaearctic, subboreal. Russia, estwards to S Ural. – N Africa, Asia Minor, Caucasus, C and S Europe.

Catocala detrita Warren, 1913

(Pl. 14: 1, 2; ♂ genit. Pl. 74: 1; ♀ genit. Pl. 155: 3)

Catocala lupina subsp. *detrita* Warren, 1913, *in* Seitz, *Gross-Schmett. Erde* **3**: 310, pl. 56e (Type-locality: [Kazakhstan], Uralsk).

Diagnosis. This and the next species are a closely related, partly sympatric species pair. Externally, *C. detrita* differs from *C. lupina* in paler forewing with light yellowish tint, less contrasting pattern, and in hindwing having narrower medial band which is angled at the end, and separate black spot at the end of the terminal band.

Bionomics. Meso-xerophilous species, it occurs in steppe zone, inhabits wet riversides where trees and bushes of poplar and willow grow in abundance. The moth flies from late VII to mid IX. The larva is undescribed, it probably feeds on willows *Salix* (Salicaceae).

Distribution (Map 269). S Russian – Uralian, subboreal. S Russia (Samara reg.), S Ural. – Kazakhstan.

Catocala lupina Herrich–Schäffer, 1851

(Pl. 14: 3, 4; ♂ genit. Pl. 74: 2; ♀ genit. Pl. 155: 4)

Catocala lupina Herrich–Schäffer, 1851, *Syst. Bearb. Schmett. Eur.* **2**: 409, pl. 46: 234, 235 (Type-locality: Russia, Sarepta [Krasnoarmeisk]).

Bionomics. Mesophilous species, occurs in marshes and in wide rivers valley with abundance of willows and poplar. The flight period is in VII and VIII. Larvae feed from IV to VI on poplars *Populus* and willows *Salix* (Salicaceae).

Distribution (Map 270). Euro-Central Asian, subboreal. S Russia to S Ural. – SE Europe, Near East, Transcaucasia, NE Kazakhstan (South Altai, Tarbagatai).

Note. *C. lupina* is sympatric with *C. detrita* in the south Ural and West Kazakhstan, while only *C. lupina* is known from NE Kazakhstan.

Catocala pacta (Linnaeus, 1758)

(Pl. 14: 5; ♂ genit. Pl. 74: 3; ♀ genit. Pl. 155: 5)

Phalaena pacta Linnaeus, 1758, *Syst. Nat*. (Edn 10) **1**: 512 (Type-locality: Europe).

Synonymy: *suecica* Esper, 1788; *deserta* Kozhanchikov, 1925.

Bionomics. Meso-hygrophilous species, inhabits open marshy woodland, wooded river banks and lake margins. Early flyer, from mid VI to early IX. Larvae feed in V-VI on various willows *Salix*, especially on *S. caprea* (Salicaceae).

Distribution (Map 271). Eurasian, boreal. Russia to Ural, through S Siberia, to the Far East, eastwards to Sakhalin. – From N and C Europe, through Kazakhstan and Mongolia to N China.

Catocala kotshubeji Sheljushko, 1925

(Pl. 14: 6; ♂ genit. Pl. 74: 4; ♀ genit. Pl. 155: 6)

Catocala kotshubeji Sheljushko, 1925, *Lepid. Rundsch*. **1**: 1: 1-4 (Type-locality: Primorye, Sutshan [Partizansk]).

Bionomics. Mesophilous species, very rare and local, collected in Primorye in vicinity of Partizansk [Sutschan] and Khasansky district of Primorye terr. Occurs in rich deciduous and mixed forests. The flight period is from late VII to mid VIII. The larva and its foodplants are unknown.

Distribution (Map 272). Manchurian–continental, nemoral. South of the Far East (S Primorye).

Tribe **Sypnini** Holloway, 2005

Sypnini Holloway, 2005: 170, Moths Borneo, 15 & 16: 170. Type genus: *Sypna* Guenée, 1852.

The tribe can be characterised by external similarity and the structure of the male and female genitalia. Medium sized to relatively large moths with palps typically catocalinae with thin 3rd segment. Tibiae usually unspined, while spines present in some genera. Forewing broad, triangular, with cryptic brown pattern and irregular maculation; subterminal line usually biarcuate, most expressed in costal area, often with paler zone apically to concavity of the wing. Hindwing wide, brown, usually darker towards margin, with transverse lines only in marginal zone. In male genitalia, tegumen very broad, somewhat flexed to protect the uncus posteriorly, much longer than vinculum; scaphium often present; saccus long and slender; juxta a small plate; valva usually short, with interior flaps or flanges on dorsal margin of sacculus. Aedeagus rather short (in *Daddala* long, stick-like), vesica short, bulbous. In female genitalia, ostium associated more with 8th segment than with 7th; ductus bursae moderate; corpus bursae small to moderate, without signum.

The *Sypna* generic group was selected by Berio (1959) as "Phylum *Sypna*" and defined as a tribe by Holloway (2005). The group includes five genera: *Sypnoides*, *Sypna*, *Hypersypnoides*, *Daddala* and *Pterocyclophora*. It has higher specific diversity in the Oriental and Ethiopian region (Berio & Fletcher 1956).

Genus ***Hypersypnoides*** Berio, 1958.

Hypersypnoides Berio, 1954, *Annali Mus. civ. Star. nat. Giacomo Doria* 66: 341. Type-species: *Hypersypnoides congoensis* Berio, 1954 [Soutrh-west Africa].

Synonymy: *Othresypna* Berio, 1950.

Wingspan 45-55 mm. Labial palps obliquely directed, rather short, 3rd segment moderately long; antennae of male serrate, ciliate; tibiae spined only in type species, not spined in East Asian species; wings with waved outer margin, broad, brown; hindwing with dark waved bands, reflecting transverse lines of forewing pattern; abdomen with dorsal crests. In male genitalia, uncus short, wide basally, in some species with dorsal process; scaphium sclerotised; tegumen almost equal to vinculum; valva wide, deep, with flange central and oblique. Aedeagus long, thin, straight, with angled proximal end; vesica short, bulbous with patch of small cornuti. In female genitalia, papillae anales rather large; posterior apophyses half the length of anterior ones; ostium wide; antrum long thin; corpus bursae elongated or pyriform.

The genus includes 36 species, distributed in Ethiopian (one species) and Oriental regions, most diverse in the Himalayan subregion and western China. – 1 species.

Hypersypnoides astrigera (Butler, 1885)

(Pl. 14: 7; ♂ genit. Pl. 75: 1; ♀ genit. Pl. 155: 7)

Sypna astrigera Butler, 1885, *Cistula ent*. **3**: 135 (Type-locality: Japan: Nikko; Korea: Chiuzenji).

Diagnosis. Externally similar to *Sypnoides* spp.,

but differs in darker grey-brown colour, more waved transverse lines and presence of distinct white reniform stigma, formed by larger white spot surrounding four small whitish dots.

Bionomics. Mesophilous species, inhabits rich dense deciduous and mixed forests in S Primorye and Kunashir Is The moth flies from mid V to VI. The larva and its foodplants are unknown.

Distribution (Map 273). Manchurian, nemoral. South of the Far East (Primorye and S Kuriles). – China, Korea, Japan, Taiwan.

Genus ***Sypnoides*** Hampson, 1913

Sypnoides Hampson, 1913, *Cat. Lepid. Phalaenae Br. Mus.* **12**: 5. Type-species: *Sypna erebina* Hampson, 1926 [China, Sichuan].

Synonymy: *Pysnoides* Berio, 1950; *Hyposypnoides* Berio, 1958 (subgen.); *Supersypnoides* Berio, 1958 (subgen.).

Wingspan 45-50 mm. Externally similar to the preceding genus. Labial palps obliquely directed, 3rd segment very long, almost equal to 2nd in length; antennae of male fasciculate, bipectinate; mid- and hindtibiae spined, or unspined; wings with waved outer margin, broad, brown; hindwing with bands, continuing transverse lines of forewing; abdomen with dorsal crests. In male genitalia, tegumen enormous, 4 times larger than vinculum, its lobes very broad; in apical part with a pair of massive, extended socii; scaphium sclerotised; vinculum short, often with prominent saccus; uncus variable in shape, rather large, wide or thin, often bearing sclerotised dentate lateral processes; valva large, but smaller than tegumen, lobe-like, with central position of clasper-harpe complex. Aedeagus relatively short and wide, vesica vide, without cornuti. Female genitalia similar to those of the preceding genus, but antrum wide and short, not sclerotised.

Berio and Fletcher recognised three subgenera: *Sypnoides*, *Hyposypnoides* (exclusively African) and *Supersypnoides*. All Far Eastern species belong to the subgenus *Supersypnoides*. The genus includes 31 species, distributed in Manchurian subregion of the Palaearctic, Oriental and Ethiopian regions, most diverse in the Himalayan subregion and western China. – 3 species.

Subgenus ***Supersypnoides*** Berio, 1958

Supersypnoides Berio, 1958, in Berio & Fletcher, *Annali Mus. civ. Stor. nat. Giacomo. Dona* **70**: 344. Type-species: *Sypna erebina* Hampson, 1926 [China].

Tibia of all legs without spines. The other characters as described for the genus. In the Far East the subgenus includes 3 species; all are sympatric and syntopic and are usually difficult to identify.

Sypnoides hercules (Butler, 1881)

(Pl. 14: 8, 9; ♂ genit. Pl. 75: 2; ♀ genit. Pl. 155: 8)

Gisira hercules Butler, 1881, *Trans. ent. Soc. Lond.* **1881**: 579 (Type-locality: Japan: Tokyo).

Synonymy: *rectifasciata* Graeser, 1888 [1889]; *hercules* ab. *albifusa* Warren, 1913; *albimedia* Warren, 1913; *hercules* ab. *gigantea* Berio, 1958.

Diagnosis. Externally similar to *S. picta*, but differs in generally much paler wing colour. In male genitalia, *S. hercules* differs in presence of huge subunci, apically covered in strong setae and strongly curved inward; valva apically pointed.

Bionomics. Mesophilous species, occurs in oak and deciduous and mixed forests. Moths in flight from VII to IX. Larvae feed on Mongolian oak *Quercus mongolica*, in Japan also on *Quercus acutissima* and *Fagus crenata* (Fagaceae).

Distribution (Map 274). Manchurian, nemoral. South of the Far East, to Sakhalin and S Kuriles. – China, Korea, Japan, Nepal.

Sypnoides picta (Butler, 1877)

(Pl. 14: 10-12; ♂ genit. Pl. 75: 3; ♀ genit. Pl. 156: 1)

Sypna picta Butler, 1877, *Cistula ent.* **2**: 244 (Type-locality: Japan: Yokohama, Hakodate).

Synonymy: *achatina* Butler, 1877.

Diagnosis. *S. picta* differs from its allies in dark brown colour and contrasting bluish-white medial fascia in the forewing. The female can be confused with *S. fumosa*, but normally it is somewhat smaller and darker, the medial fascia, if present, is more coarse than in *S. fumosa*. In male genitalia, subunci smaller than in *S. hercules*, and in contrast to *S. fumosa* they curve apically inward; valva rounded apically, broader than in *S. hercules*, but narrower than in *S. fumosa*.

Bionomics. Mesophilous species, occurs in dense deciduous and mixed forests, sometimes in montane dark coniferous taiga. Univoltine. The moth flies from mid VII to IX. Larvae feed on *Quercus mongolica* (Fagaceae), *Rosa acicularis*, *Rubus*, *Malus* (Rosaceae) and *Ulmus* (Ulmaceae) (Sugi 1972).

Distribution (Map 275). Manchurian, nemoral. South of the Far East, to Sakhalin and S Kuriles. – China, Korea, Japan.

Sypnoides fumosa (Butler, 1877)

(Pl. 14: 13-15; ♂ genit. Pl. 75: 4; ♀ genit. Pl. 156: 2)

Sypna fumosa Butler, 1877, *Cistula ent.* **2**: 245 (Type-locality: Japan: Yokohama, Hakodate).

Synonymy: *fuliginosa* Butler, 1877; *picta* ab. *albinigra* Warren.

Diagnosis. Differs from related species in somewhat larger wingspan and narrower elements of wing pattern; white medial fascia, in contrast to *S. picta*, formed by thin lines. In male genitalia, subunci straight, apically covered in strong setae; uncus with fold-like extension medially; valva rounded, much wider than in related species.

Bionomics. Mesophilous species, inhabits dense deciduous and mixed forests and montane dark coniferous taiga. Univoltine. The flight period is from mid VII to IX. Larvae feed on *Quercus mongolica*, *Q. dentata* (Fagaceae), *Rosa* and *Rubus* (Rosaceae) (Sugi 1972).

Distribution (Map 276). Manchurian, nemoral. South of the Far East, to Sakhalin and S Kuriles. – China, Korea, Japan.

Genus ***Daddala*** Walker, 1865

Daddala Walker, 1865, *List Specimens lepid. Insects Colln Br. Mus.* **33**: 974. Type-species: *Daddala quadrisignata* Walker, 1865 [India].

Synonymy: *Elpia* Walker, 1865.

Wingspan 45-55 mm. Externally similar to preceding genus, differs in fasciculate or bipectinate antennae of male; unspined tibiae, more triangular shape of forewing; more waved wings margins; shape of hindwing with process on M3. In male genitalia, uncus moderate, rather wide, broadly extended basally; scaphium sclerotised; tegumen and vinculum almost equal in length; vinculum very narrow; valva rather large, wide at base, constricted from middle and apically. Aedeagus very thin, long, stick-like, with long coecum. In female genitalia, papillae anales rather large, acute; anterior and posterior apophyses long, equal in length; antrum and corpus bursae as in preceding genus.

The genus includes 12 species, distributed exclusively in Oriental regions, most diverse in SE Asia. – 1 species.

Daddala lucilla (Butler, 1881)

(Pl. 14: 16, 17; ♂ genit. Pl. 75: 5; ♀ genit. Pl. 156: 3)

Sypna lucilla Butler, 1881, *Trans. ent. Soc. Lond.* **1881**: 206 (Type-locality: India: Sikkim, Darjiling).

Synonymy: *obscurata* Butler, 1881.

Diagnosis. Externally similar to *Sypnoides* spp., but differs in bipectinate antennae of male and shape of forewing.

Bionomics. Mesophilous species, occasional migrant, twice collected in S Primorye in rich deciduous forest and in open forests with *Quercus dentata*. The moth flies in VI and VII. In Japan, larvae feed on *Q. myrsinaefolia* (Matsui, 1984).

Distribution (Map 277). Oriental-Manchurian, nemoral. South of the Far East (S Primorye, migrant). – Korea, Japan (except Hokkaido), Far East (S Primorye), China, Taiwan, Philippines, Indonesia, New Guinea, Indochina, N India, Nepal.

Tribe **Hypocalini** Guenée, 1852

Hypocalidae Guenée, 1852, *in* Boisduval & Guenée, *Hist. nat. Insectes* (Spec. gén. Lépid.) 7: 73. Type genus: *Hypocala* Guenée, 1852.

Medium sized moths with robust body, forewing relatively narrow with cryptic colours, and hindwing brightly coloured with yellow and black. The clypeofrons fully scaled, forming dense conical tuft of scales; labial palps relatively short. Male genitalia variable in shape, with complex uncus, long or very short vinculum; valva short, and deep, somewhat rectangular, usually with digitus. Aedeagus and vesica variable, usually long and thin, vesica short, tubular. Larvae with all prolegs fully developed. Monobasic, externally well defined tribe. The position of Hypocalini in the subfamily Catocalinae is uncertain. The tribe is found mainly in the Old World tropics, with one Neotropical species.

Genus ***Hypocala*** Guenée, 1852

Hypocala Guenée, 1852, *in* Boisduval & Guenée, *Hist. nat. Insectes* (Lépid.) **7**: 73. Type-species: *Hyblaea deflorata* Fabricius, 1794 [India].

Wingspan 24-38 mm. Antennae of male ciliate; labial palps short, directed forward, beak-like; ocelli present; frons with crest; body robust; forewing relatively narrow, cryptically patterned; hindwind bright, yellow-orange with black marks and terminal band. In male genitalia, uncus variable, short, rather massive, in some species bifurcate or with "ears"; scaphium sclerotised; tegumen shorter or longer than vinculum, in some species vinculum very short with strong saccus or very long and narrow; valva relatively short, variable in shape, usually with digitus. Aedeagus short or long, vesica short, tubular. In female genitalia, ovipositor short, papillae anales small; posterior apophyses half the length of the anterior ones; antrum short, tube-like; ductus bursae with short sclerotised section, and long, narrow membranous one, joined with pyriform or rounded corpus bursae. The moths are migratory.

The genus contains 16 species, widespread mainly in the Old World tropics, one species known from Neotropical region. – 3 species.

Hypocala deflorata (Fabricius, 1794)

(Pl. 14: 19, 20; ♂ genit. Pl. 76: 1; ♀ genit. Pl. 156: 4)

Hyblaea deflorata Fabricius, 1794, *Ent. Syst.* **3** (2): 127 (Type-locality: "India oriental").

Synonymy: *angulipalps s* Guenée, 1852; *moorei* Butler, 1892; *australiae* Butler, 1892.

Diagnosis. Differs from *H. subsatura* in larger size, wider terminal band and absence of large yellow subtornal spot on hindwing.

Bionomics. Mesophilous migratory species. Single specimens irregularly occur in oak and deciduous forests in the southernmost part of Primorye. The moth flies in VI-VII and IX. In Japan, larvae feed on *Diospiros* (Ebenaceae), *Maba sandwiciensis*, *Sapota*, *Royena* (Sapotaceae).

Distribution (Map 278). Palaeotropical, nemoral. South of the Far East Far East (S Primorye). – China, Korea, Japan (except Hokkaido), Taiwan, Indonesia, Sri Lanka, Indochina, India, Nepal, New Zealand, Australia, Hawaii, C and S Africa, Madagascar.

Hypocala subsatura Guenée, 1852

(Pl. 14: 21, 22; ♂ genit. Pl. 76: 2; ♀ genit. Pl. 156: 5)

Hypocala subsatura Guenée, 1852, in Boisduval & Guenée, *Hist. nat. Insectes* (Lépid.) **7**: 75 (Type-locality: Bangladesh, Silhet).

Synonymy: *aspersa* Butler, 1883; *limbata* Butler, 1889; *tungusa* Graeser, 1890.

Bionomics. Mesophilous species, occurs in oak, deciduous and valley mixed forests. Two generations from VI to early IX. Larvae feed on *Quercus mongoloica*, in Japan, on *Quercus acutissima* (Fagaceae), *Diospyros kaki* (Ebenaceae) and *Malus pumila* (Rosaceae).

Distribution (Map 279). Oriental-Manchurian, nemoral. South of the Far East (S Khabarovsk and Primorye terr.). – China, Korea, Japan, Taiwan, Philippines, Indonesia, Indochina, India, Nepal, Pakistan.

Note. Polymorphic species, with two main forms illustrated Pl. 14: 21 and 22.

Hypocala violacea Butler, 1879

(Pl. 14: 18; ♂ genit. Pl. 76: 3; ♀ genit. Pl. 156: 6)

Hypocala violacea Butler, 1879, *Trans. ent. Soc. Lond.* **1879**: 6 (Type-locality: India, Cachar).

Synonymy: *clarissima* Butler, 1892; *kebaea* Bethune-Baker, 1906.

Diagnosis. *H. violacea* differs from *H. subsatura* in larger size, darker, reddish-brown colour of forewing, with reduced yellow patches in hindwing.

Bionomics. Mesophilous species, occasional migrant. One specimen of *H. violacea* has been collected in lowland deciduous forest along Ryazanovka river in early IX in southernmost part of Primorye. The foodplant recorded is *Diospyros* (Ebenaceae) (Robinson *et al*. 2001, Holloway 2005).

Distribution (Map 280). Oriental-Manchurian, nemoral, tropical migrant. South of the Far East (S Primorye). – China, Korea, Japan, Taiwan, Philippines, Indonesia, Indochina, India, Nepal.

Note. The species was not included in the Checklist of the Noctuidae of Asian part of Russia (Kononenko 2005). Reported here for Russia for the first time: 1 male, Russia, Primorye terr., Khasansky distr., vic. Ryazanovka, 6.ix. 1998 (Kononenko) IBSS.

14. Subfamily **Euteliinae** Grote, 1882

Euteliinae Grote, 1882 (1851), *New checklist North Am. Moths*: 33. Type genus: *Eutelia* Hübner, [1823].

Synonymy: Eurhipidae Herrich-Schäffer, [1851] 1845.

Medium sized, rarely small moths. In resting position both forewing and hindwing are folded longitudinally. Antennae of male filiform, serrate or serrate only in basal third; eyes naked, without lashes; frons flat; palps sickle-like, upcurved, 3rd segment long; proboscis developed; the tip of abdomen with two lateral tufts of hairs; forewings relatively long and narrow; M2 of hindwing well developed; frenulum of female formed by 2 setae (long strong seta and short and weak one) Forewing usually brightly coloured; wing pattern formed by characteristic wavy lines; hindwing often with dark border and characteristic mark in anal angle. Coremata formed by pair of glands covered with hairs on 8th segment of abdomen. In male genitalia, uncus sickle-like, often modified, fork-like with lateral extensions; valva usually short; clasper and harpe often reduced; costa short, strong; sacculus often with sclerotised extension. Aedeagus with small or large spine-like cornuti. In female genitalia, basal sternite of abdomen with two parallel folds, ovipositor weakly sclerotised; in *Eutelia* anterior apophyses reduced, 8th sternite with sclerotised extensions; corpus bursae membranous, often with signa; ductus seminalis inserted to caudal part of bursa. Larvae feed on trees and shrubs Cupressaceae, Rutaceae, Myricaceae, Ulmaceae.

Very distinct subfamily, including 25 genera and about 300 species distributed mainly in the tropics and subtropics in the Oriental, Ethiopian and Neotropical regions. 10-15 species are known from the Palaearctic, one genus and two species are known from the Far East.

Genus ***Eutelia*** Hübner, [1823] 1816

Eutelia Hübner, [1823] 1816, *Verz. bekannter Schmett.*: 259. Type-species: *Noctua adulatrix* Hübner, [1813] [Europe].

Synonymy: *Eutesia*: Hübner, [1826] 1816, misspelling; *Eurhipia* Boisduval, 1829; *Phlegetonia* Guenée, 1852; *Ripogenus* Grote, 1865; *Zobia* Saalmüller, 1891; *Alotsa* Swinhoe, 1900; *Silacida* Swinhoe, 1900; *Entelia*: Lower, 1901, misspelling; *Noctasota* Clench, 1954; *Adoraria* Beck, 1996.

Wingspan 28-36 mm. Palps sickle-like, covered in dense scales, upcurved, 3rd segment long; the tip of abdomen with two lateral tufts of hairs; M2 of hindwing well developed; forewing relatively long and narrow; wingpattern formed by characteristic waved lines; hindwing often with terminal border and characteristic mark in anal angle. In male genitalia, uncus simple, or modified, fork-like; sacculus very wide, with extension; valva with clasper and harpe reduced; costa short, strong. Aedeagus with small or large spine-like cornuti. In female genitala, ovipositor weakly sclerotised; anterior apophyses modified, widened or reduced, 8th sternite with sclerotised extensions; corpus bursae membranous often with signa; ductus seminalis inserted to caudal part of bursa.

The genus includes 96 species distributed mainly in the subtropics and tropics of the New and Old World. – 2 species.

Eutelia geyeri (Felder & Rogenhofer, 1874)

(Pl. 14: 23, 24; ♂ genit. Pl. 76: 4; ♀ genit. Pl. 156: 7)

Eurhipia geyeri Felder & Rogenhofer, 1874, *Reise öst. Fregatte Novara* (Zool.) **2** (Abt. 2): pl. 110: 23 (Type-locality: Japan).

Synonymy: *inextricata* Moore, 1882.

Bionomics. Mesophilous species known from Russia from S Primorye and the Kuriles (Kunashir Is.), where migrant specimens have been collected from time to time. It occurs in open deciduous forests and in open biotopes, clearings, steppe slopes, gardens. The moths flie from VI to VIII; after sunset they often visit flowers in flower gardens. In Japan, larvae feed on *Rhus silvestris*, *R. javanica* (Anacardiaceae) and *Quercus acutissima* (Fagaceae) (Miyata 1983; Sugi 1986; Hayashi 2004a).

Distribution (Map 281). Oriental-Manchurian, nemoral. South of the Far East (S Primorye and S Kuriles, Shikotan I.). – China, Korea, Japan, Taiwan, Indonesia, Indochina, India, Nepal.

Eutelia adulatricoides (Mell, 1943)

(Pl. 14: 25-27; ♂ genit. Pl. 76: 5; ♀ genit. Pl. 156: 8)

Phlogophora adulatricoides Mell, 1943, *Zool. Jb.* (Syst.) **76**: 176 (Type-locality: China: Prov. Guangdong [Kanton]).

Synonymy: *indica* Mell, 1943; *cantonensis* Chu & Chen, 1962; *Eutelia blandiatrix*: Hampson, 1912, nec Guenée, 1852.

Diagnosis. Externally very similar to *E. geyeri*, but differs in smaller size, more expressed white elements of the wing colour and details of wing pattern: antemedial line more stronger and more arched than in *E. geyeri*.

Bionomics. Mesophilous species. Migrant specimens occur irregularly in S Primorye in the deciduous forest zone. The moth flies in VII-VIII. In Japan, larvae feed on *Rhus sylvestris* (Anacardiaceae), *Quercus acutissima*, *Q. phillyraeoides* (Fagaceae) and *Liquidamber formosana* (Hamamelidaceae) (Miyata 1983; Hayashi 2004).

Distribution (Map 282). Oriental-Manchurian, nemoral. South of the Far East (S Primorye). – China, Korea, Japan, Taiwan, Indonesia, Indochina, India, Nepal.

15. Subfamily **Plusiinae** Boisduval, [1828]

Plusiinae Boisduval, [1828] 1829, *Eur. Lepid. Index meth.*: 91 (as Plusidi). Type genus: *Plusia* Ochsenheimer, 1816.

Synonymy: Plusiidae Herrich-Schäffer, [1851] 1845; Phytometrinae Hampson, 1913.

Medium sized moths. Frons smooth, antenna in male filiform, finely ciliate, rarely serrate. Head rough-scaled, often with frontal tufts of hairs; eyes large, surrounded by long lashes, in some northern species eyes reduced, elliptoid; labial palps rather short, upturned, with 2nd segment densely hairy, 3rd segment short, in certain genera very long, upcurved and extended over vertex. Proboscis developed. Patagia and tegulae conspicuous, thorax and abdomen often with crests. Legs in most cases without spines, in some genera all tibiae spined. Hindwing with vein M2 developed, but weaker than M3. Forewing usually broad, triangular, apex pointed or acute; outer margin usually slightly concave below termen. Wing colouration usually bright, pattern in most cases with smaller or larger patches of metallic scaling, often forming silvery or golden subcellular stigma in continuation of orbicular stigma, the so-called “gamma mark”.

In male genitalia, uncus narrow, curved and hooked, tegumen narrow, equal to vinculum in length; saccus often with pair of ventro-lateral flanges; juxta (fultura inferior) of variable shape, in some genera with more or less strong apical process; valva oval, rectangular or elongated, sometimes asymmetrical; costa may have stronger process, ventral margin with strong setae, in some groups with blade-like setae; cucullus less distinct, without typical corona, but in tribe Argyrogrammatini with setose area; sacculus variably long and strong, sometimes with long, strong distal process or lobe; clavus present; harpe variable in shape, length and degree of curving. Aedeagus with or without coecum, ventral part always sclerotised, dorsal and lateral parts often weaker; of variable shape and size, often tubular, basally bulbous; armature of vesica variable, from lack of cornuti or one spine-like cornutus to patches of numerous cornuti. In female genitalia, ovipositor usually laterally flattened, setose, papillae stronger or weaker; ostium bursae variable, antrum variable in shape and sclerotisation; ductus bursae variable in length, often with sclerotised ribs; corpus bursae ovate, elliptical, saccate or elongated, usually without signum; appendix bursae variably developed, sometimes large.

The larvae are loopers or semi-loopers with the abdominal prolegs missing or rudimentary on segments 3 and 4 except in the tribe Abrostolini, which have a complete set of the lepidopteran type prolegs. Pupation in a weak silky cocoon made between leaves of the foodplants. Plusiinae are typically nocturnal, but some arctic and high mountain species are diurnal. Many members of the subfamily are well-known migrants, and some of them are serious pest-species, their larvae destroying plantations resulting in heavy economic losses.

Plusiinae are a well defined, compact subfamily of worldwide distribution with about 500 species inhabiting all nature zones. The subfamily is subdivided into four tribes: Abrostolini, Argyrogrammatini, Plusiini and Omorphinini. The Holarctic fauna of the subfamily has been extensively revised recently, and the Palaearctic fauna by Ronkay *at al*. 2008. – 19 genera and 73 species are known from the Asian part of Russia.

References: Kostrovicki 1961; Ichinose, 1962; Eichling & Cunnnigham 1978; Kitching 1987; Lafontaine & Poole 1991; Goater *et al*. 2003; Ronkay *et al*. 2008; Behounek *et al*. 2010.

Tribe **Abrostolini**
Eichlin & Cunningham, 1978

Abrostolini Eichlin & Cunningham, 1978, *Tech. Bull. U. S. Dep. Agric.* 1567: 9. Type genus: *Abrostola* Ochsenheimer, 1816.

Medium sized moths with grey forewings and rather uniform wing pattern without metallic patches or scales. The reniform, orbicular and additional stigmata bordered with black scales; orbicular and additional stigmata completely or partially joined. Larvae with prolegs on abdominal segment 3-4; larval skin smooth. Predominantly Palaearctic tribe, but some species are known from Nearctic, Neotropical and Oriental regions. The tribe consists of 2 genera and about 40 species in the World, 1 genus and 18 species are Palaearctic.

Genus ***Abrostola*** Ochsenheimer, 1816

Abrostola Ochsenheimer, 1816, *Schmett. Eur.* **4**: 88. Type-species: *Phalaena triplasia* Linnaeus, 1758 [Europe].

Synonymy: *Unca* Oken, 1813, suppr.; *Habrostola* Sodoffsky, 1837, emend.; *Unca* Lhomme [1929]; *Inguridia* Butler, 1879; *Trigeminostola* Beck, [1992] 1991; *Asclepistola* Beck, [1992] 1991.

Forewing grey, wing pattern rather uniform, without metallic patches; the reniform, orbicular and additional stigmata bordered with black scales; orbicular and additional stigmata completely or partially joined. In male genitalia, valva massive, usually with prominent basal or subbasal extension on costal margin; clavus wide, lobed; harpe strong, finger-like. Aedeagus short and broad, vesica bulbous, with patch of moderate cornuti and often with large spine-like cornutus. In female genitalia, anterior apophyses arising from sclerotised fold of fore margin of 8th sternite; antrum strongly sclerotised, ductus bursae sclerotised and usually ribbed. Because of their uniform external appearance, most species can only be reliably identified by reference to the genitalia. Larvae mainly oligophagous, on Urticaceae, Cannabaceae, Asclepiadaceae and Lamiaceae. The genus includes 46 species distributed in the Holarctic, Oriental, Ethiopian and Neotropical regions. 14 species are known from the Palaearctic. – 7 species.

Abrostola asclepiadis
([Denis & Schiffermüller], 1775)

(Pl. 15: 1; ♂ genit. Pl. 77: 1; ♀ genit. Pl. 157: 1)

Noctua asclepiadis [Denis & Schiffermüller], 1775, *Ank. Syst. Werk Schmett. Wien.*: 91 (Type-locality: [Austria], Vienna district])

Synonymy: *asclepiadis* Lang, 1789; *jagowi* Bartel, 1904.

Diagnosis. *A. asclepiadis*, compared with the closely related *A. tripartita* and *A. triplasia*, differs in somewhat larger size, bigger and more rounded reniform stigma and the shape of the additional spot, which is more elongated; subterminal field more uniform and more greyish than in *A. triplasia*. In male genitalia, *A. asclepiadis* differs from its allies in characteristic symmetrical saccular lobe, very long harpe and presence of setose carina of aedeagus and small setose cornuti in vesica. In female genitalia, antrum is relatively weaker compared with related species, and the ductus bursae has no distinct lateral prominence.

Bionomics. Meso-thermophilous species, occurs in open forests and forest-steppe biotopes, in meadows, among bushes and in woodsides. The moth flies from mid V to mid VIII. Larvae feed on *Vincetoxicum officinalis* and *V. hirundinaria* (Asclepiadaceae). Overwinters as pupa.

Distribution (Map 283). Eurasian, subboreal. SE Russia to Ural and W Siberia. – From Europe to Kazakhstan and China.

Abrostola triplasia (Linnaeus, 1758)

(Pl. 15: 2; ♂ genit. Pl. 77: 2; ♀ genit. Pl. 157: 3)

Phalaena triplasia Linnaeus, 1758, *Syst. Nat.* (Edn 10) **1**: 517 (Type-locality: Europe).

Synonymy: *trigemina* Werneburg, 1864, unnecessary replacement name.

Diagnosis. *A. triplasia*, compared with *A. asclepiadis*, has somewhat darker grey-brown colour with slight reddish tint; medial and subterminal fields are less contrasted, subterminal line more expressed as thin, yellowish, dentate, broken line. In male genitalia, valva narrower than in *A. asclepiadis* especially in distal part, saccular lobe long, thumb-like, harpe strongly curved in distal third. Aedeagus with large thumb-like extension on carina and with medial large cornuti in vesica. In female genitalia, antrum large, sclerotised, folded; ductus bursae rather short, with distinct lateral prominence; corpus bursae long and narrow.

Bionomics. Mesophilous species, occurs in various habitats, more frequent in open forests, meadows, glades. In southern areas two generations in a year. Larvae feed on *Urtica dioica*, *Boehemeria*, *Parietaria* (Urticaceae) and *Humulus lupulus* (Cannabaceae). Overwinters as pupa.

Distribution (Map 284). Trans-Palaearctic, subboreal. Russia to Ural, through S Siberia to the Far East, Sakhalin and Kuriles. – N Africa, Near East, Caucasus and Transcaucasia, Europe, Kazakhstan, Central Asia, Korea, China.

Note. In earlier literature, the species often referred by authors as *A. trigemina* Werneburg, 1864, which is an unnecessary replacement name (Mikkola & Honey 1993).

Abrostola tripartita (Hufnagel, 1766)

(Pl. 15: 3, 4; ♂ genit. Pl. 77: 3; ♀ genit. Pl. 157: 3)

Phalaena tripartita Hufnagel, 1766; *Berl. Mag.* **3**: 414 (Type-locality: Germany, Berlin).

Synonymy: *urticae* Hübner, 1816; *triplasia* auct.

Diagnosis. *A. tripartita* differs from its allies in somewhat smaller size and more greyish wing colouration, with much less contrast and more greyish basal and subterminal fields; additional spot almost completely joined with orbicular stigma. In male genitalia, costal prominence more abrupt, harpe moderate, straight, juxta very large, extensions of sacculus large, asymmetrical. Aedeagus with three patches of moderate cornuti and moderate finger-like extension. In female genitalia, antrum bilobed, ductus bursae very short, strongly extended at base, with wide lateral prominence.

Bionomics. Mesophilous species, inhabits wooded and open biotopes, occurs in wet meadows, in clearings, glades, among bushes. Bivoltine, with partly overlapping generations. The moth flies from V to IX. Larvae feed on *Urtica dioica* (Urticacea), *Humulus lupulus* (Cannabaceae), *Rubus idaeus* (Rosaceae) and *Vincetoxicum* (Asclepiadaceae). Overwinters as pupa.

Distribution (Map 285). Trans-Palaearctic, subboreal. Russia to Ural, across Siberia to the Far East and Sakhalin. – N Africa, Europe, Near East, Central Asia, Kazakhstan, China, Korea.

Abrostola ussuriensis Dufay, 1958

(Pl. 15: 5, 6; ♂ genit. Pl. 77: 4; ♀ genit. Pl. 157: 4)

Abrostola ussuriensis Dufay, 1958, *Bull. Soc. linn. Lyon* **27**: 157, pl. 2: 5, 6, 11 (Type-locality: Russia: "Ussuri, Nikolsk" [Primorye, Ussuriisk]).

Diagnosis. Externally *A. ussuriensis* differs from the related *A. korbi* in less contrasting wing pattern with yellowish or red-yellowish basal field, smaller reniform stigma and almost separate additional spot. In male genitalia, sacculus longer, saccular extension wider, harpe more straight and slightly curved in apical part. Aedeagus with dense patch of small cornuti, finger-like carina extension smaller then in *A. korbi*. In female genitalia, antrum much larger than in *A. korbi*, ductus bursae very wide, ribbed, lateral extension of ductus prominent, large, finger-like.

Bionomics. Mesophilous species, occurs in various open habitats, in open forests, meadows, glades. Probably two generations from late V to IX. Larvae feed on *Urtica dioica*, *Lamium* and *Humulus japonica*. Overwinters as pupa.

Distribution (Map 286). Manchurian, nemoral. South of the Far East, to Sakhalin and Kuriles. – China, Korea, Japan (Hokkaido, Honshu).

Abrostola korbi Dufay, 1958

(Pl. 15: 7; ♂ genit. Pl. 77: 5; ♀ genit. Pl. 157: 5, 7)

Abrostola korbi Dufay, 1958, *Opuscula Zool.* **13**:1:, 1 (Type-locality: "Ussuri, Kazakewitsch" [vicinity of Khabarovsk]).

Synonymy: *pacifica* Dufay, 1960.

Diagnosis. *A. korbi* differs from the related *A. ussuriensis* in more red-brownish tint of wing, with more reddish basal field, larger reniform stigma and in shape of additional spot closely connected with reniform. In male genitalia, valva somewhat wider and shorter than in *A. ussuriensis*, harpe strongly curved in apical third; sacculus shorter and wider than in *A. ussuriensis*; vesica wider, with larger cornuti and larger finger-like extension. In female genitalia, antrum much smaller and less sclerotised, ductus narrower, lateral finger-like extension much smaller than in *A. ussuriensis*.

Bionomics. Mesophilous species, occurs in forest meadows in broadleaved forest in late VI-VII. The larva and its foodplants are unknown.

Distribution (Map 287). Manchurian, nemoral. South of the Far East (Khabarovsk and Primorye terr., S Kuriles). – Korea, N China, Japan (Hokkaido, Honshu).

Note. *A. korbi* was referred to in the Checklist of the Noctuidae of Asian part of Russia as unrecognised taxon (Kononenko 2005). Its conspecifity with *A. pacifica* clarified by Behounek *et al.* (2010).

Abrostola kaszabi Dufay, 1971

(Pl. 15: 8, 9; ♂ genit. Pl. 77: 6; ♀ genit. Pl. 157: 6)

Abrostola kaszabi Dufay, 1971 *Reichenbachia*, **13**(30): 269: 1-4 (Type-locality: Mongolia).

Diagnosis. *A. kaszabi* can be easily distinguished from its congeners by pale greyish yellow colour of forewing, especially in basal and subterminal fields. In male genitalia, valva broad medially, with short and narrow apical third; harpe massive, juxta large, saccular extension large, thumb-like. Aedeagus with two patches of small spine-like cornuti and plate-like extension. Female genitalia characterised by large bases of posterior apophyses, small, bilobed antrum, very short ductus bursae extended at the base.

Bionomics. Xero-thermophilous species, occurs in steppe and forest-steppe in meadows and woodsides. The moth flies in VI-VII. The larva and its foodplants are unknown.

Distribution (Map 288). Mongolian-Siberian, subboreal. SE Siberia (Buryatia, Irkutsk reg., Transbaikalia). – Mongolia, N China.

Tribe **Argyrogrammatini**
Eichlin & Cunningham, 1978

Argyrogrammatini Eichlin & Cunningham, 1978, *Tech. Bull. U. S. Dep. Agric.* 1567: 12 (as Argyrogrammini). Type genus: *Argyrogramma* Hübner, 1823.

Forewing with metallic spots or patches, rarely they are absent. Abdomen of male with lateral tufts of long hair-like scales on 5-6th segments reaching the 8th segment. Larva with 2 setae of group VII on 1st abdominal segment; the seta III of 9th segment long, hair-like; the larval skin finely spined. The apomorphic characters that define this tribe are mostly in the structure of the male and female genitalia. The tribe is diverse in the tropics and subtropics, especially in the Palaeotropical and the Oriental regions. Many species are strongly migratory, and some of them are economically important pest species.

The tribe comprises many species in 14 genera; 9 genera and 32 species are known from the Palaearctic. – 5 genera, 6 species.

Genus ***Trichoplusia*** McDunnough, 1944

Trichoplusia McDunnough, 1944, *Mem. soc. Calif. Acad. Sci*. **1**: 204. Type-species: *Plusia brassicae* Riley, 1870 [USA] (= *Noctua ni* Hübner [1803]).

Antennae simple; eyes weakly lashed; palps with 3rd segment short and thin. Thorax with tuft of long scales; dorsal crest present on 1st and 3rd segments; male with additional very long lateral tufts on 5-6th abdominal segments. In male genitalia, tegumen and vinculum long, very narrow; valva elongated, narrow, with apex broadly rounded, corona formed with long bristles; sacculus long, sclerotised, harpe long, slender, asymmetrical, curved inward. Aedeagus long, tubular, with large ovoid basal bulb; vesica extremely long, narrowly tubular, sometimes reaching 5 cm. In female genitalia, ovipositor short, anterior and posterior apophyses equal in length, thin; antrum small, cup-shaped; ductus bursae narrow, extremely long, 1.5-2 times longer than abdomen, sclerotised and wrinkled; corpus bursae very small. The genus contains 14 species distributed mainly in the Ethiopian and Oriental regions, in the Palaearctic 4 species. The position of some tropical species in the genus requires revision. – 1 species.

Trichoplusia ni (Hübner, [1803])

(Pl. 15: 10; ♂ genit. Pl. 78: 1; ♀ genit. Pl. 157: 8)

Noctua ni Hübner [1803], *Samml. eur. Schmett.* **3**: pl. 58: 284 (Type-locality: Europe).

Synonymy: *extrahens* Walker, 1857; *significans* Walker, 1857; *florida* Dannehl, 1929; *deserticola* Rothschild, 1913; *brassicae* Riley, 1870; *humilis* Walker, 1857; *innata* Herrich-Schäffer, 1868; *echinocystidis* Behr, 1874.

Bionomics. Eurytopic species, which is highly migratory. It appears in southern areas of Ural, Altai and Primorye as a more or less regular immigrant. It is continuously brooded in subtropical and tropical zones where it is rather abundant and in some years appears in masses. The imago is on wing from spring to late autumn. In Primorye moths have been collected in VII and more frequently in IX - early X. Larvae are polyphagous, recorded on herbaceous plants of 36 botanical families; in the subtropical zone they have often caused serious damage to agricultural plants. *T. ni* is unable to survive the winter in the temperate zone.

Distribution (Map 289). Cosmopolitan. S Ural, Altai, S Primorye. – Occurs in tropical and subtropical zones of all continents, migrating to North Europe, and in Asia to S Ural, Altai, and Primorye.

Genus ***Thysanoplusia*** Ichinose, 1973

Thysanoplusia Ichinose, 1973, *Kontyû* **41**: 137. Type-species: *Phytometra intermixta* Warren, 1913.

Body elongated, with thoracic and abdominal tufts. Forewing elongated, apex acute, with slightly concave termen, wing pattern with large greenish-golden metallic-shining field in medial and terminal areas. In male genitalia, uncus long; tegumen huge and narrow; vinculum long, with extended saccus; valva very long and narrow with parallel margins, cucullus slightly dilated; sacculus short and narrow, with long thin clavus; harpe thin, finger-like. Aedeagus long and thin, with basal bulb; vesica very long, thin, with terminal cornutus or long teeth-like cornuti. In female genitalia, ovipositor rather large, weakly sclerotised, anterior and posterior apophyses thin, equal in length; antrum large, rather long; membranous in proximal part, sclerotised at junction with ductus bursae; ductus bursae narrow, very long, 1.5-2 times longer than bursae, membranous; corpus bursae rather small, saccate, with small appendix bursae. The genus includes 19 species distributed mainly in the Ethiopian and Oriental regions, in the Palaearctic 6 species. – 1 species.

Thysanoplusia intermixta (Warren, 1913)

(Pl. 15: 11; ♂ genit. Pl. 78: 2; ♀ genit. Pl. 157: 9)

Phytometra intermixta Warren, 1913, *in* Seitz, *Gross-Schmett. Erde* **3**: 357, pl. 64: g (Type-locality: China: Prov. Sichuan [Setchuan]).

Synonymy: *brachycalcea* Hampson, 1913.

Bionomics. Mesophilous species, occasional immigrant in S Primorye, a few records made in IX and X. It is continuously brooded in the subtropical and tropical zones where it is rather common. Larvae are polyphagous on various herbaceous plants, reported from *Arctium*, *Aster*, *Cirsium*, *Chrysanthemum* (Asteraceae), *Mentha* (Lamiaceae), *Fragaria* (Rosaceae), *Oenanthe* (Apiaceae), *Urtica* (Urticaceae) and *Panax* (Araliaceae) (Miyata 1983). The species does not hibernate in the temperate zone.

Distribution (Map 290). Oriental-Manchurian. South of the Far East (Primorye, migrant). – China, Korea, Japan, Taiwan, to SE Asia and Australia.

Genus ***Ctenoplusia*** Dufay, 1970

Ctenoplusia Dufay, 1970, *Faune Madagascar* **31**: 91. Type-species: *Plusia limbirena* Guenée, 1852 [Madagascar].

Synonymy: *Acanthoplusia* Dufay, 1970 (subgen.).

Eyes with fine lashes, frons with roof-like tuft between antennae; palps usually short, with short fine 3rd segment. Body with thoracic and abdominal tufts. Abdomen of males often with lateral tufts of brownish-yellow hair-like scales. In male genitalia, uncus rather long; tegumen narrow; vinculum with extended saccus; valva long and narrow; sacculus short and narrow, with long thin clavus; harpe thin, finger-like; ventral margin of valva with ring of flattened blade-like setae which form a pectinate structure. Aedeagus long and thin; vesica rather long, thin, bearing terminal cornuti. In female genitalia, antrum large, rather long, usually membranous in proximal part, ductus bursae narrow, thin, of variable length, heavily sclerotised; corpus bursae ovate or saccate, with small appendix bursae. The genus subdivided into two subgenera, *Ctenoplusia* and *Acanthoplusia*. The genus includes 72 species distributed mainly in the Ethiopian, Oriental and Australian regions, in Palaearctic 6 species. – 2 species.

Subgenus ***Ctenoplusia*** Dufay, 1970

Ctenoplusia* (*Ctenoplusia*) *albostriata
(Bremer & Grey, 1853)

(Pl. 15: 12; ♂ genit. Pl. 78: 3; ♀ genit. Pl. 158: 1)

Plusia albostriata Bremer & Grey, 1853, in Motschulsky, *Études ent*. **1**: 65 (Type-locality: N China).

Synonymy: *subchalybaea* Walker, 1865; *nubila* Moore, 1887; *oxygramma* Hampson, 1894; *transfixa* auct.

Bionomics. Mesophilous species, regular immigrant in S Primorye and Sakhalin. Occurs in various lowland biotopes. Moths usually appear in autumn from late VIII to beginning of XI. In Japan, the species is continuously brooded in 5 generations, moth flies from VI to X. Larvae are polyphagous on *Calystegia* (Convolvulaceae) *Symphytum* (Boraginaceae) *Aster*, *Chrysanthemum*, *Dahlia*, *Dichorocephala latifolia*, *Erigeron* (Asteraceae) (Ichinose 1962, Mutuura *et al*. 1973, Miyata 1983).

Distribution (Map 291). Oriental-Manchurian, nemoral. South of the Far East (Primorye and Sakhalin, migrant). – China, Korea, Japan, Taiwan to SE Asia, Australia and New Zealand.

Subgenus ***Acanthoplusia*** Dufay, 1970

Acanthoplusia Dufay, 1970, *Bull. mens. Soc. linn. Lyon* **39**: 104. Type-species: *Phytometra tarassota* Hampson, 1913 [India].

Ctenoplusia* (*Acanthoplusia*) *agnata (Staudinger, 1892)

(Pl. 15: 13; ♂ genit. Pl. 78: 4; ♀ genit. Pl. 158: 2)

Plusia agnata Staudinger, 1892, in Romanoff, *Mém. Lépid*. **6**: 547 (Type-locality: China: Shanghai).

Synonymy: *sokutsuna* Strand, 1920; *chalcytes* Hampson, 1913, nec Esper, 1787.

Bionomics. Mesophilous species, occurs in open deciduous forest, among bushes and in open grassland. Bivoltine. The moth flies in VI-VII and in VII-IX, the second brood usually more abundant. Larvae are polyphagous on herbaceous plants: *Gossypium* (Malvaceae), *Glycine* (Fabaceae), *Daucus carota* (Apiaceae). In Japan they damage soya bean *Glycine*, cotton *Gossypium*,*Daucus carota* (Mutuura, *et al*. 1973), in the Far East they damage soya bean *Glycine soja*. Overwinters as pupa.

Distribution (Map 292). Oriental-Manchurian, nemoral. South of the Far East, to Sakhalin and Kuriles. – China, Korea, Japan, Taiwan, SE Asia, India, Nepal.

Genus ***Anadevidia*** Kostrowicki, 1961

Anadevidia Kostrowicki, 1961, *Acta zool. Cracov.* **6** 384. Type-species: *Noctua peponis* Fabncius, 1775 [India].

Synonymy: *Podioplusia* Ichinose, 1962.

Body with thoracic and abdominal tufts. Ground colour of forewing reddish-brown; wing pattern formed by parallel transverse lines, without additional metallic spot or areas; metallic sheen weakly expressed, diffuse. In male genitalia, vinculum long, clavus short, harpe absent. Aedeagus rather large, with sclerotised carina; vesica tubular, with medial diverticulum and terminal cornutus. In female genitalia, ovipositor short, sclerotised, antrum sclerotised, split medially; ductus bursae relatively long; corpus bursae membranous, with large or small appendix bursae, ductus seminalis arising from appendix bursae. Larvae oligophagous, feeding on Cucurbitaceae The genus comprises 2 species distributed in the Oriental region and the Manchurian region of the Palaearctic. – 2 species.

Anadevidia peponis (Fabricius, 1775)

(Pl. 15: 16; ♂ genit. Pl. 78: 5; ♀ genit. Pl. 158: 3)

Noctua peponis Fabricius, 1775, *Syst. ent*.: 606 (Type-locality: "East Indies").

Synonymy: *agramma* Guenée, 1852; *inchoata* Walker, 1865; *fumifera* Graeser, 1889 [1890].

Diagnosis. *A. peponis* differs from its congener in paler, brown-pinkish colour of forewing, finer and more distinct pattern and waved subterminal line. In male genitalia, uncus longer and thinner, valva somewhat narrower then in *A. hebetata*. Aedeagus with smaller coecum, apical cornutus a thin, sharp spine. Female genitalia characterised by presence of large bulla equal to corpus bursae in size, in middle of the ductus bursae.

Bionomics. Mesophilous species, rare in southern Primorye. Moths were collected in VIII-IX. Larvae are polyphagous on Cucurbitaceae, Euphorbiaceae, Buddlejaceae, Scrophulariaceae and Lamiaceae. In Japan they have been reported from *Trichosanthes*, *Cucumis*, *Luffa*, *Sehium*, *Lagenaria*, *Cucurbita*, *Paulownia* and *Mercurialis* (Miyata 1983; Hayashi 2004e).

Distribution (Map 293). Oriental-Manchurian, nemoral. South of the Far East (Primorye terr.). – China, Korea, Japan, Taiwan, SE Asia, Oceania, Australia.

Anadevidia hebetata (Butler, 1889)

(Pl. 15: 17; ♂ genit. Pl. 78: 6; ♀ genit. Pl. 158: 4)

Plusia hebetata Butler, 1889, *Illustr. typical Specimens Lepid. Heterocera Colln Br. Mus*. **7**: 71, pl. 131: 1 (Type-locality: India).

Diagnosis. Wing colour darker and more brownish than in *A. peponis*, pattern more diffuse and darker; subterminal line traceable, straight. In male genitalia, uncus shorter, broadened medially, valva somewhat wider than in *A. hebetata*. Aedeagus with large coecum, apical cornutus a rather large, flattened cutter-like spine. In female genitalia, ductus bursae long and thin, corpus bursae large, but proximally separated as small somewhat sclerotised formation with small membranous bullae.

Bionomics. Mesophilous species, occurs in open forest, on meadows, among bushes. Bivoltine, with two overlapping generations from late VI to early X. Larvae feed on Cucurbitaceae.

Distribution (Map 294). Oriental-Manchurian, nemoral. Far East (S Khabarovsk and Primorye terr.). – China, Korea, Japan, Taiwan to SE Asia, India.

Tribe **Plusiini** Boisduval, [1828]

Plusiinae Boisduval, [1828] 1829, *Eur. Lepid. Index meth.*: 91 (as Plusidi). Type genus: *Plusia* Ochsenheimer, 1816.

Synonymy: Plusiidae Herrich-Schäffer, [1851] 1845; Phytometrinae Hampson, 1913; Diachrisiina Beck, 1996; Plusidiina Beck, 1996;.

Forewing with shining spots, lines or patches formed by metallic-shining scales, rarely they are absent. In male genitalia, clavus finger-like, sometimes shortened; saccus short, rarely long. In female genitalia, ostium usually lies in mid or in posterior part of 8th sternite. Larvae without prolegs on 3-4th segment; seta III on 9th segment normal. The tribe includes some of the world's best known migrants, species that can be found in masses many thousands of kilometers away from where they were caterpillars. Some species are serious agricultural pests. The tribe has predominantly Holarctic distribution, it is most diverse in southern parts of the temperate zone and in the subtropics. It includes 24 genera worldwide; 16 genera and over 160 species in the Palaearctic. – 13 genera and 58 species.

Subtribe **Autoplusiina** Kitching, 1987

Autoplusiina Kitching, 1987, *Bull. Nat. Hist., Ent.*, 54: 196. Type genus *Autoplusia* McDunnough, 1944.

The subtribe is weakly defined by the presence in the female genitalia of sclerotised rings at the junction of ductus bursae with corpus bursae (Kitching 1987). The monophyly of the subtribe is questionable, and the placement of the Palaearctic genera in this subtribe is doubtful. Following Ronkay *et al*. (2008) the genera *Erythroplusia*, *Sclerogenia*, *Antoculeora*, *Macdunnoughia* and *Diachrysia* are treated here as members of Autoplusiina. Klyuchko (1985) placed *Erythroplusia* in Argyrogrammatini on the basis of certain imaginal and larval features.

Genus ***Erythroplusia*** Ichinose, 1962

Erythroplusia Ichinose, 1962, *Kontyû* **30**: 249. Type-species: *Plusia rutilifrons* Walker, 1858 [China].

Synonymy: *Perloplusia* Chou & Lu, 1978; *Peroplusia* Poole, 1989, misspell.

Small moths. Body with thoracic and abdominal tufts. Ground colour of forewing grey or grey-brown, with intense reddish elements of wing pattern. Metallic spot and antemedial line well expressed, reddish elements of wing pattern also with metallic sheen. In male genitalia, the most prominent generic autapomorphies are the broad, remarkably asymmetrical valvae with narrow, slightly falcate cucullus and flattened posterior extension of the cucullus. Aedeagus with long tubular vesica armed with a row of separate strong and short cornuti. In female genitalia, the most prominent characters are the long, tubular, membranous-ribbed ductus bursae and the long, conical-falcate cervix bursae originating from the fundus bursae and directed to the junction of ductus and corpus bursae. The genus has 2 species distributed in the Oriental region and Manchurian subregion of the Palaearctic. – 2 species.

Erythroplusia rutilifrons (Walker, 1858)

(Pl. 15: 14; ♂ genit. Pl. 79: 1; ♀ genit. Pl. 158: 5)

Plusia rutilifrons Walker, 1858, *List Specimens lepid. Insects Colln. Br. Mus.* **15**: 1785 (Type-locality: N China).

Synonymy: *adscripta* Staudinger, 1888; *neorutilifrons* Chou & Lu, 1978.

Bionomics. Mesophilous species, inhabiting glades, meadows, forest edges and clearings in deciduous and mixed forest. Bivoltine. The generations partly overlapping. The moth flies in VI-VII and more commonly from late VIII to mid IX. Larvae feed on *Trollius chinensis* (Ranunculaceae), *Oenanthe* (Apiaceae), *Plantago asiatica* (Plantaginaceae) and *Arctium* (Asteraceae) (Miyata 1983; Kogi 1990b).

Distribution (Map 295). Oriental-Manchurian, nemoral. Far East (S Khabarovsk and Primorye terr., Sakhalin). – China, Korea, Japan, Taiwan, Indochina, N India, Nepal.

Erythroplusia pyropia (Butler, 1879)

(Pl. 15: 15; ♂ genit. Pl. 79: 2; ♀ genit. Pl. 158: 6)

Plusia pyropia Butler, 1879, *Ann. Mag. nat. Hist.* (5) **4**: 267 (Type-locality: Japan: Yokohama).

Synonymy: *pseudopyropia* Chou & Lu, 1978.

Bionomics. Mesophilous species, once collected in southern Primorye in open oak forest along the seashore. Moth flies in VII-VIII. In Japan, larvae feed on *Arctium lappa*, *Artemisia* sp. (Asteraceae) and *Oenanthe javanica* (Apiaceae) (Ichinose 1962; Miyata 1983; Kogi 1990b).

Distribution (Map 296). Oriental-Manchurian, nemoral. Far East (S Primorye). – China, Korea, Japan, Taiwan, Indochina, N India, Nepal, Pakistan.

Genus ***Macdunnoughia*** Kostrowicki, 1961

Macdunnoughia Kostrowicki, 1961, *Ada zool. cracov.* **6**: 402. Type-species: *Plusia confusa* Stephens, 1850 [Europe].

Synonymy: *Scleroplusia* Ichinose, 1962; *Puriplusia* Chou & Lu, 1974 (subgen.).

The members of the genus are distinguished by unmistakable external appearance with characteristic, rather uniform wing pattern. The male genitalia are characterised by the well-developed, heavily sclerotised, sometimes slightly or more strongly, asymmetrical ventral saccular lobe, the usually shortly triangular prominence of the dorsal end of the sacculus, and in the apically inwardly curved, somewhat hooked shape of the harpe with the basal plate The female genitalia are characterised by the presence of spinose areas on the penultimate segment situated laterally from the ostium bursae. The genus subdivided into 2 subgenera, *Macdunnoughia* (s. str.) and *Puriplusia*. It comprises 7 species, distributed in the Oriental region and the Manchurian subregion of the Palaearctic. – 4 species.

Subgenus ***Macdunnoughia*** Kostrowicky, 1961

Forewing ground colour pale brownish-grey; silver stigma large, curved. In male genitalia, saccular extension a broad, flattened saccular lobe; vesica with complex and well-developed armature. In female genitalia, corpus bursae with large, rounded signum patch. – 3 species.

Macdunnoughia* (*Macdunnoughia*) *confusa
(Stephens, 1850)

(Pl. 15: 18; ♂ genit. Pl. 79: 3; ♀ genit. Pl. 158: 7)

Plusia confusa Stephens, 1850, *List Spec. Br. Anim. Colln Br. Mus.* **5**: 291 (Type-locality: France).

Synonymy: *gutta* Guenée, 1852; *circumflexa* Esper, 1788;. *bigutta* Staudinger, 1892.

Diagnosis. Well known species well described in numerous taxonomic and applied entomology publications. *M. confusa* differs externally from *M. hybrida* and *M. crassisigna* in absence of comma-like silver streak in the bottom part of the reniform stigma and in the shape of the silver gamma-mark, which is usually narrower than in its congeners.

Bionomics. Eurytopic, widespread migratory species, which inhabits various natural and anthropogenic boiotopes, and shows no strict habitat preference. Multivoltine, with two or three generations in a year, depending on latitude. The moth flies from V to X. Larvae are polyphagous on many herbaceous plants of Ranunculaceae, Polygonaceae, Caryophyllaceae, Brassicaceae, Cannabaceae, Urticaceae, Euphorbiaceae, Fabaceae, Geraniaceae, Lamiaceae and Asteraceae. In the Far East, *M. confusa* have been recorded as a pest of soya bean.

Distribution (Map 297). Trans-Palaearctic, boreal -subboreal. Europe to Ural, through S Siberia to the Far East, Sakhalin, Kuriles and Kamchatka. – N Africa, Near East, Caucasus and Transcaucasia, Europe, Central Asia, Kazakhstan, Mongolia, China, Korea, Japan.

Macdunnoughia* (*Macdunnoughia*) *hybrida
Ronkay, 1986

(Pl. 15: 19; ♂ genit. Pl. 79: 4; ♀ genit. Pl. 158: 8)

Macdunnoughia hybrida Ronkay, 1986, *Annls hist. – nat. Mus. natn. hung.* **78**: 205, pl.: 1, 2 (Type-locality: N Korea: Prov. N. Pyongan).

Diagnosis. Differs from the closely related *M. confusa* in prominent silver gemma-mark and presence of traceable silver comma-like mark in the bottom of the reniform stigma, which is less distinct than in *M. crassisigna*. In male genitalia, it differs from both species in shorter and more asymmetrical extensions of sacculus; from *M. confusa* it differs in stronger band of cornuti, which are much shorter than in *M. crassisigna*. In female genitalia, it differs in shorter ductus bursae and sclerotised caudal part of bursae.

Bionomics. Mesophilous species, together with preceding species occurring in various natural and anthropogenic boiotopes, in meadows, woodsides, edges of fields. Bivoltine, from late V to X. The larva has not been described, probably polyphagous as in the other species of the genus.

Distribution (Map 298). Manchurian–continental, menoral. Far East (S Khabarovsk and Primorye terr.). – N China, Korea.

Note. The paratype of *M. hybrida* is illustrated on Pl. 15: 19.

Macdunnoughia* (*Macdunnoughia*) *crassisigna
(Warren, 1913)

(Pl. 15: 20; ♂ genit. Pl. 79: 5; ♀ genit. Pl. 159: 1)

Phytometra crassisigna Warren, 1913, *in* Seitz, *Gross-Schmett. Erde* **3**: 352, pl. 65: h (Type-locality: Korea, Japan, India).

Synonymy: *rhopalosema* Hampson, 1913; *xizangensis* Chou & Lu, 1976.

Diagnosis. Differs from both *M. confusa* and *M. hybrida* in much broader silvery gamma-mark and more strongly expressed silvery comma-like mark in reniform stigma. In male genitalia, it differs in much thinner and asymmetrical saccular extensions, thinner harpe, massive U-like vinculum and stronger, long, paired band of cornuti. In female genitalia, differs from both relatives in bilobed V-shaped antrum and large sclerotised prominence in caudal part of bursae.

Bionomics. Mesophilous species, occurs in open deciduous forest, in glades, meadows, clearings. The moth flies from VI to mid IX. Larvae are polyphagous on *Arctium lappa*, *Artemisia princeps*, *Petasites japonica* (Asteraceae), ginseng *Panax* (Araliaceae), *Daucus carota* (Apiaceae) (Miyata 1983, Klyuchko 2003).

Distribution (Map 299). Oriental-Manchurian, nemoral. Far East (Primorye, Sakhalin and S Kuriles). – China (to Tibet), Korea, Japan, Taiwan, Nepal, N India.

Subgenus ***Puriplusia*** Chou & Lu, 1974

Puriplusia Chou & Lu, 1974, *Acta ent.* Sinica **17**: 71. Type-species: *Plusia purissima* Butler, 1878 [Yokohama, Japan].

Forewing ground colour variably dark or light grey or greyish brown, stigma straight, streak-like. In male genitalia, saccular lobe narrow, elongated, distally spine-like; armature of vesica simplified and the spinose areas of penultimate segment form recurved grooves. In female genitalia, characteris-

tic structure of the bursa copulatrix with anteriorly developed corpus bursae and elongated, posteriorly projecting appendix bursae. The subgenus includes two species. – 1 species.

Macdunnoughia (***Puriplusia***) ***purissima*** (Butler, 1878)

(Pl. 15: 21; ♂ genit. Pl. 79: 6; ♀ genit. Pl. 159: 2)

Plusia purissima Butler, 1878, *Ann. Mag. nat. Hist.* (5) **1**: 202 (Type-locality: Japan: Yokohama).

Bionomics. Mesophilous species, occurs in open deciduous forest, on meadows, and woodsides. Bivoltine. In Primorye, the moth flies in mid VI and from mid VIII to mid X. Autumn generation usually the more common. The moths often fly by day and visit flowers in gardens. Larvae feed on *Arctium* and *Artemisia* (Asteraceae). (Miyata 1983)

Distribution (Map 300). Manchurian, nemoral. Far East (Primorye, S Kuriles). – China, Korea, Japan.

Genus ***Sclerogenia*** Ichinose, 1973

Sclerogenia Ichinose, 1973, *Kontyû* **41**: 135. Type-species: *Plusia jessica* Butler, 1878.

Externally, the genus is characterised by dark grey forewing with reddish tint, complex wing pattern and small, thin, silvery gamma-shaped stigma. In male genitalia, valvae broad, with heavily sclerotised, digitus-like costa; harpe very long, thorn-shaped and directed ventrally, juxta with large, rounded medial crest. Aedeagus with the simplified *Macdunnoughia*-type vesica with three posterior groups of cornuti. In female genitalia, antrum long, cup-shaped, sclerotised; and the characteristic large, inflated and cristate-ribbed anterior section of ductus bursae fused with lateral part of cervix bursae. Monotypic oriental genus.

Sclerogenia jessica (Butler, 1878)

(Pl. 15: 22; ♂ genit. Pl. 80: 1; ♀ genit. Pl. 159: 3)

Plusia jessica Butler, 1878, *Ann. Mag. nat. Hist.* (5) **1**: 201 (Type-locality: Japan: Yokohama).

Synonymy: *serena* Butler, 1879.

Bionomics. Mesophilous migratory species, collected in Primorye in meadows in open oak-deciduous forests. The moth flies in VIII. In Japan, larvae feed on *Ixeris debilis*, *Sonchus oleraceus*, *Arctium lappa*, *Chrysanthemum*, *Lactuca* (Asteraceae) (Miyata 1983; Klyuchko 2003).

Distribution (Map 301). East-Asian-Manchurian, nemoral. Far East (Primorye, migrant). – China, Korea, Japan, Taiwan, Indochina, N India, Nepal, Pakistan.

Genus ***Antoculeora*** Ichinose, 1973

Antoculeora Ichinose, 1973, *Kontyû* **41**: 136. Type-species: *Plusia ornatissima* Walker, 1858 [N India], misidentification of *Plusia locuples* Oberthür, 1881.

Synonymy: *Cerviplusia* Chou & Lu, 1978.

Rather large moths (wingspan 34-42 mm.). Head and collar reddish; forewing broad, acutely pointed, with large scale tooth at tornal angle; wing pattern with intense coppery-bronze sheen, silvery stigma large. Male genitalia asymmetrical, unusual in shape. All structures strongly sclerotised, uncus very long, thin; juxta very long, medially finely cristate; transtilla with wide sclerotised lobes; valvae strongly asymmetrical, with extremely long, often serrate-dentate saccular extensions, long or very long, clavus large, broad-based; harpes asymmetrical, vesica large, T-shaped with various groups of cornuti and spinulose fields. In female genitalia, antrum is gigantic, heavily sclerotised; antrum-posterior part of ductus bursae with complex structure; bursa long, sacculiform, with rounded-discoidal, strongly ribbed cervix bursae and finely sclerotised medial belt of corpus bursae. The genus includes 3 species distributed in the Oriental region and the Manchurian subregion of the Palaeasrctic. – 1 species.

Antoculeora locuples (Oberthür, 1881)

(Pl. 15: 23; ♂ genit. Pl. 80: 2; ♀ genit. Pl. 159: 4)

Plusia locuples Oberthür, 1881, *Étud. Ent.* **5**: 85, pl. 9: 3 (Type-locality: Russia: Primorye, Askold Is.).

Synonymy: *lushanensis* Chou & Lu, 1978; *ornatissima* auct., nec Walker, 1858.

Bionomics. Mesophilous species, inhabits meadows, clearings and glades in deciduous and mixed forest, rarely in dark coniferous taiga. In Primorye two generations in mid VI-VII, then from mid VIII to late IX. Autumn generation usually more abundant. In Japan, larvae reported from *Lactuca*, *Sonchus*, *Petasites japonicus* (Asteraceae) (Ichinosé 1973, Miyata 1983); due to misidentification of *A. locuples* with *A. ornatissima* the data on foodplant were referred to *A. ornatissima* by authors.

Distribution (Map 302). East-Asian, Manchurian, nemoral. Far East, to Sakhalin and S Kuriles. – China, Korea, Japan, central Nepal.

Note. Before the genus was revised by Ronkay (1997) *A. locuples* was reported by earlier authors for Russia and Japan as *A. ornatissima*.

Genus ***Diachrysia*** Hübner, [1821] 1816

Diachrysia Hübner, [1821] 1816, *Verz. bekannt. Schmett.*: 252. Type-species: *Diachrysia orichalcea* Fabricius sensu Hübner, [1821] 1816 [Italy] (= *Phalaena Noctua chryson* Esper, 1789).

Synonymy: *Chrychrysia* Beck, 1996; *Zosichrysia* Beck, 1996.

Forewing broad, acutely pointed, with subapically weakly or markedly convex outer margin and tooth-like tornal extension; wing pattern with large metallic shining golden-green areas of the medial and sometimes the marginal fields, or the golden markings may be partly or fully reduced. In male genitalia, valvae broad or rather narrow, sclerotised, clavus long, finger-like. Aedeagus short or rather broad, vesica tubular, usually curved or coiled. In female genitalia, antrum relatively small, ductus bursae tubular, ribbed-membranous with more sclerotised anterior part; cervix bursae well-developed, often discoidal and long, corpus bursae narrow, saccate, or antrum large, sclerotised, cervix bursae weakly developed and ample, corpus bursae elliptical-ovoid. Larvae feed on herbaceous plants. A large Holarctic temperate genus with 13 species. – 8 species.

Diachrysia chryson (Esper, 1789)

(Pl. 15: 24; ♂ genit. Pl. 80: 3; ♀ genit. Pl. 159: 5)

Phalaena Noctua chryson Esper, 1789, *Die Schmett. Abb. Nat.* **4** (2): 446, pl. 141, noct. 62: 1 (Type-locality: C Italy).

Synonymy: *aerifera* Sowerby, 1805.

Bionomics. Meso-hygrophilous species, occurs in wet meadows, marshes, open humid deciduous forests, brook valleys. Univoltine. The moth flies from early VII to IX. Larvae feed on *Eupatorium cannabinum*, *Sativa glutinosa*, *Urtica*, *Impatiens*, *Mentha* and other Lamiaceae and Asteraceae. Overwinters as young larva.

Distribution (Map 303). Eurasian, subboreal. Russia to S Ural, through S Siberia to the Far East, Sakhalin and Kuriles. – Europe, Near East, Caucasus, Transcaucasia, Kazakhstan, China, Korea, Japan (Hokkaido, Honshu).

Diachrysia pales (Mell, 1939)

(Pl. 15: 25; ♂ genit. Pl. 80: 4; ♀ genit. Pl. 159: 6)

Phytometra chryson var. pales Mell, 1939, *Dt. ent. Z. Iris* **52**: 138, (Type-locality: China, Tien Shan, lectotype designated by Ronkay & Ronkay, 2008 MNHU, Berlin).

Synonymy: *Phytometra leonina* ab. *coreae* Strand, 1916 (infrasubspecific name); *Phytometra chryson coreae* Bryk, 1948; *Autographa coreae* Inoue & Sugi, 1958.

Diagnosis. *D. pales* is closely related to *D. chryson*, differs in duller forewing with greenish tint and remarkably paler golden-greenish patch. In male genitalia, valva is shorter, tapered and apically rounded, harpe much shorter, wider and flattened. In female genitalia, antrum much longer, appendix bursae twisted, on longer neck, caudal part of bursae more sclerotised and ribbed.

Bionomics. Mesophilous species, occurs in meadows, open hills and open deciduous forests. The moth flies in VII-VIII. Little known species, the larva and its foodplants are unknown.

Distribution (Map 304). Manchurian, nemoral. Far East (Primorye). – China, Korea, Japan.

Note. In the Checklist of the Noctuidae of Asian part of Russia (Kononenko 2005) the species was referred to as *D. coreae*; its synonymy with *D. pales* was clarified by Ronkay *et al*. (2009).

Diachrysia leonina (Oberthür, 1884)

(Pl. 15: 26; ♂ genit. Pl. 80: 5; ♀ genit. Pl. 159: 7)

Plusia leonina Oberthür, 1884, *Étud. Ent.* **10**: 26, pl. 3: 11 (Type-locality: Russia: "Sidemi" [Primorye, Bezverkhovo]).

Synonymy: *humeralis* Butler, 1886.

Diagnosis. *D. leonina*, *D. witti* and two allied species known from China are characterised by absence of metallic-shining patches or spots and presence of violet-grey, yellowish-grey or greenish-grey colour in the forewing. *D. leonina* differs from *D. witti* in dark violet-grey colour of forewing and pale yellowish-grey hindwing.

Bionomics. Meso-hygrophilous species, occurring in deciduous and mixed forests and on wet forest meadows, along valley brooks, and on open foothills. Univoltine. The moth flies from late VII to early IX. Larvae feed on *Urtica* (Urticaceae), *Lamium*, *Melissa*, *Mentha* (Lamiaceae), *Aster* and *Cirsium* (Asteraceae).

Distribution (Map 305). Manchurian, nemoral. Far East, to Sakhalin and Kuriles. – Korea, Japan, China to SE Tibet.

Diachrysia witti L. Ronkay, G. Ronkay & Behounek, 2008

(Pl. 15: 27; ♂ genit. Pl. 80: 6; ♀ genit. Pl. 159: 8)

Diachrysia witti L. Ronkay, G. Ronkay & Behounek, 2008. *Taxonom. Atl. Euras. N. Africa. Noct.* Plusiinae 1: 32 (Type-locality Russia, Primorye terr. vic. Zanadvorovka vill.).

Synonymy *bieti* auct., nec Oberthür, 1884

Diagnosis. *D. witti* can easily be distinguished from the related *D. leonina* in brownish-yellow forewing with bronze sheen and uniformly yellowish-brown hindwing. Compared with *D. leonina*, the male genitalia have uncus somewhat more massive, valva with parallel margins, harpe shorter, flattened and apically rounded. In female genitalia, antrum much broader than in *D. leonina*, ductus bursae long, proximally sclerotised and ribbed, corpus bursae ovoid.

Bionomics. Meso-hygrophilous species, occurring together with preceding species in open deciduous and oak forests, on wet forest meadows, and on open foothills. Univoltine from late VII to early IX. The larva and its foodplants are unknown.

Distribution (Map 306). Manchurian, nemoral. Far East (Primorye). – China, Korea, Japan.

Note. In the Checklist of the Noctuidae of Asian part of Russia (Kononenko 2005) the species was referred to as *D. bieti* Oberthür, 1884.

Diachrysia chrysitis (Linnaeus, 1758)

(Pl. 15: 28, 29; ♂ genit. Pl. 81: 1; ♀ genit. Pl. 160: 1)

Phalaena, *Noctua chrysitis* Linnaeus, 1758, *Syst. Nat.* (Edn 10) **1**: 513 (Type-locality: Europe).

Synonymy: *plesdidior* Ferdinandez, 1929.

Diagnosis. *D. chrysitis* and the next three species make up a group of closely related taxa which can be characterised by strongly expressed metallic yellow-golden or green-golden patches on forewing. *D. chrysitis* differs from its allies in unbroken brown medial area, which divides the golden patch into two

parts. In genitalia structure, it is most close to *D. stenochrysis*.

Bionomics. Mesophilous species, occurring in different kind of habitat from open deciduous forests to meadows, glades and clearings in dark coniferous taiga and subalpine meadows. Uni- or bivoltine, depending on latitude. The moth flies from late V to IX. Larvae are polyphagous, recorded on 16 botanical families of herbaceous plants, preferring *Urtica* (Urticaceae), *Lamium*, *Mentha*, *Origanum*, *Stachys* (Lamiaceae), *Artemisia*, *Taraxacum* (Asteraceae) (Miyata 1983, Bubnova 1980). Overwinters as young larva.

Distribution (Map 307). Eurasian, subboreal. Russia from Ural through Siberia, to the Far East, Sakhalin and Kuriles. – Europe, Near East, Caucasus, Central Asia, Kazakhstan, Mongolia, Korea, China, Japan (Hokkaido).

Diachrysia stenochrysis (Warren, 1913)

(Pl. 15: 30, 31; ♂ genit. Pl. 81: 2; ♀ genit. Pl. 160: 2)

Phytometra stenochrysis Warren, 1913, *in* Seitz, *Gross-Schmett. Erde* **3**: 348, pl. 64f (Type-locality: Japan).

Synonymy: *juncta* Tutt, 1892,; *multauri* Bryk, 1942; *tutti* Kostrowicki, 1961.

Diagnosis. Externally, *D. stenochrysis* differs from the allied *D. chrysitis* in somewhat more robust habitus, larger size, broken medial brown band and medially joined golden patches on forewing. In male genitalia, it differs in somewhat wider and more rectangular valva, shorter harpe, thinner uncus; the vesica without minute setose cornuti. In female genitalia, antrum somewhat broader, ductus bursae more ribbed, corpus bursae larger and more elongated than in *D. chrysitis*.

Bionomics. Meso-hygrophilous species, occurs in various open humid habitats, in wet meadows along seashores, in glades in mixed and dark coniferous forest, open wet deciduous forests, in open creek valleys. Bivoltine. In Primorye flies from VI to IX. Larvae feed on *Urtica*. *dioica* (Urticaceae), *Plantago major* (Plantaginaceae), *Leonurus glaucescens*, *Stachys* (Lamiaceae), *Artemisia*, *Taraxacum* (Asteraceae).

Distribution (Map 308). Eurasian, subboreal. Russia to Ural, through S Siberia to the Far East, Sakhalin and Kuriles. – From C and S Europe, to Mongolia, China, Korea, Japan. The species is rather rare and local in the western part of its area, but much more common and abundant in the eastern part.

Note. The species was referred to in the literature as *D. tutti* Kostrowicki, 1961. The new concept of the taxon and synonymy of *tutti* with *stenochrysis* was established by Goater *et al.* (2003).

Diachrysia nadeja (Oberthür, 1880)

(Pl. 15: 32, 33; ♂ genit. Pl. 81: 3; ♀ genit. Pl. 160: 3)

Plusia nadeja Oberthür, 1880, *Étud. Ent.* **5**: 84, pl. 3: 10 (Type-locality: Russia: Primorye, Askold Is.).

Diagnosis. *D. nadeja* is externally similar to *D. stenochrysis*, but differs in smaller size, the yellow-golden shining patch, which extends almost to tornal angle, and in clearly expressed broken subterminal line. In male genitalia, it differs in having a somewhat extended cucullus with clearly constricted neck and in longer and thinner harpe. Female genitalia differ in much wider and larger antrum, presence of the lateral prominence on the ductus bursae and much smaller pear-shaped corpus bursae.

Bionomics. Meso-hygrophilous species, occurs in wet meadows, along riverbanks and creeks, edges of swamps. Bivoltine from early VI to early X. Larvae are polyphagous on various low herbaceous plants, including *Atriplex*, *Urtica*, *Lamium*, *Taraxacum*, *Glycine*, *Trifolium*, *Galium* and *Plantago*. Probably overwintering as young larva.

Distribution (Map 309). Eurasian, subboreal. SE Russia to Ural, through S Siberia to the Far East, Sakhalin and Kuriles. – Locally in C and S Europe, Caucasus, Mongolia, China, Korea, Japan. The species is more common in the eastern part of its area.

Diachrysia zosimi (Hübner, [1822])

(Pl. 16: 34, 35; ♂ genit. Pl. 81: 4; ♀ genit. Pl. 160: 4)

Noctua zosimi Hübner, [1822], *Samml. Eur. Schmett.* **4**: pl. 142: 651 (Type-locality: Europe).

Diagnosis. *D. zosimi* differs from allied species in stronger metallic sheen in the greenish-golden field, which is outwardly bordered by arched postmedial line and dark metallic subtornal spot. In male genitalia, valva narrow, with almost parallel margins, apically somewhat extended and rounded, harpe large, pointed. In female genitalia, antrum rectangular, ductus bursae rather short, corpus bursae large, saccate.

Bionomics. Meso-hygrophilous species, inhabits wet marshy meadows, open boggy forest, edges of swamps where its foodplants grow. Bivoltine from early VI to early X. Larvae feed mainly on *Sanguisorba officinalis* (Rosaceae) and *Parnassia palustris* (Parnassiaceae) recorded also on *Achillea*, *Urtica*, *Rosa*, *Salix* and *Malus sibirica*. Overwinters as young larva.

Distribution (Map 310). Eurasian, subboreal. Russia to Ural, through S Siberia to the Far East, Sakhalin and Kuriles. – C and S Europe, Mongolia, China, Korea, Japan.

Subtribe **Euchalciina** Chou and Lu, 1979

Euchalciini Chou & Lu, 1979, Entomotaxonomia 1: 76, 77. Type genus: *Euchalcia* Hübner, [1821].

Synonymy: Polychrysiina Kljutshko, 1985; Panchrysiina Beck, 1996.

The subtribe is characterised by the structure of tympanal organ and the distinctly outlined, in lateral view angled tegumen Kitching (1987). The sutribe is clearly monophyletic, despite the fact that none of the recognised strong synapomorphies is consistent for

all genera or missing in certain species of the given genus (Ronkay *et al.* 2008). The larva of most members of the subtribe feed on Ranunculaceae, Boraginaceae and Asteraceae. In Asian part of Russia, the subtribe includes five genera: *Euchalcia*, *Panchrysia*, *Polychrisia*, *Lamprotes* and *Plusidia*.

Genus ***Euchalcia*** Hübner, [1821] 1816

Euchalcia Hübner, [1821] 1816, *Verz. bekannter Schmett.*: 250. Type-species: *Noctua illustrees* Fabricius, 1787 [Slovalia] (= *Noctua variabilis* Piller & Mitterpacher, 1783).

Synonymy: *Adeva* McDunnough, 1944; *Pseudeuchalcia* Ichinose, 1985 (subgen.); *Pareuchalcia* Beck, [1992] 1991(subgen.).

Antennae of male filiform, rarely serrate or bipectinate; palps relatively short, without conspicuous 3rd segment; forewing with pointed or acute apex; wing colour not bright, usually greenish mixed with reddish or pink, metallic sheen diffuse; orbicular, reniform and additional stigmata bordered with line of shining scales, sometimes bordering absent. In male genitalia, uncus strong, massive, valvae rather short, lobe-like, bearing usually finger-like harpe. Aedeagus rather short and wide, vesica tubular, with characteristic large, rounded, somewhat conical basal plate of the terminal cornutus. In female genitalia, ovipositor short, antrum small, often membranous; ductus bursae usually short, sclerotised, often with lateral process. Larvae oligophagous, feeding mainly on Ranunculaceae, Asteraceae and Boraginaceae. Large genus of 54 species with predominantly Palaearctic distribution. The centres of diversity of the genus are the Mediterranean and Central Asian subregions. 11 species.

Euchalcia variabilis (Piller & Mitterpacher, 1783)

(Pl. 15: 36-39; ♂ genit. Pl. 81: 5; ♀ genit. Pl. 160: 5)

Noctua variabilis Piller & Mitterpacher, 1783, *Iter Poseg. Sclav.* **1783**: 70, pl. 6: 3 (Type-locality: Slovakia).

Synonymy: *illustris* Fabricius, 1787; *cuprea* Esper, 1787; *uralensis* Eversmann, 1842 (subsp.); *fuscolivacea* Varga & Ronkay, 1984.

Diagnosis. In Asian part of Russia *E. variabilis* is represented by subsp. *uralensis* Eversmann, 1842, which differs from the nominate subspecies in somewhat smaller size, shorter, less elongated and less pointed forewing. The forewing pattern is more contrasting, the ground colour of the medial field is darker, more olive-brown, the stigmata are better defined.

Bionomics. Meso-hygrophilous, montane species, occurs in lightly wooded and open habitats, clearings, meadows, forest edges, stream valleys. Univoltine. The moth flies from late V-VI to VIII. The foodplants are *Aconitum*, *Thalictrum*, *Delphinium* (Ranunculaceae).

Distribution (Map 311). Eurasian, subboreal. S Russia, Ural, Siberia, east to Transbaikalia, north to Magadan. – Europe, Near East, Caucasus and Transcaucasia, Mongolia, China.

Euchalcia mongolica (Staudinger, 1901)

(Pl. 16: 1, 2; ♂ genit. Pl. 81: 6; ♀ genit. Pl. 160: 6)

Plusia variabilis subsp. *mongolica* Staudinger, 1901, *Cat. Lepid. Palaearct. Faunengeb.* **1901**: 236. Type-locality: Mongolia, Urga [Ulaan Baatar].

Diagnosis. Similar to *E. variabilis*, but differs in narrower wings, more unicolorous median and marginal areas, more intense vivid pink suffusion in marginal area and at outer side of reniform stigma, and the conspicuously stronger outline of the subcellular stigma. In the male genitalia, differing in distally more dilated valva, stronger, thicker harpe; no diagnostic features found in the female genitalia.

Bionomics. Meso-hygrophilous montane species, occurs in alpine meadows, in edges of montane forests. The moth flies from late VI to VIII.

Distribution (Map 312). Central Asian – Siberian montane. Altai and Sayan Mts. – NE Tien Shan, Mongolia.

Euchalcia altaica Dufay, 1968

(Pl. 16: 3, 4; ♂ genit. Pl. 82: 1; ♀ genit. Pl. 160: 7)

Euchalcia altaica Dufay, 1968, *Veröff. Zool. Samml. Münich*. **12**: 39, Taf. 1: 4 (Type-locality: Altai, Ongudai).

Diagnosis. *E. altaica* differs from *E. variabilis* in broader and shorter wings with finer metallic sheen, paler basal field, broader medial field and less oblique crosslines. In male genitalia, it differs in narrower valva with shorter and rather pointed harpe and thicker aedeagus with shorter vesica. In female genitalia, it differs in broader proximal part of the ductus.

Bionomics. Mesophilous montane species, occurs in meadows, hot hillsides, edges of deciduous and mixed forests. The moth flies from late VI to VIII. Larvae feed on *Aconitum* (Ranunculaceae).

Distribution (Map 313). Siberian, subboreal, montane. S Siberia, Altai. – Kazakhstan Altai.

Euchalcia kondarensis Klyuchko, 1989

(Pl. 16: 5, 6; ♂ genit. Pl. 82: 2; ♀ genit. Pl. 160: 8)

Euchalcia kondarensis Klyuchko, 1989, *Vestnik Zoologii* **6**: 76 (Type-locality: Tadjikistan, Hissar Mts, Barzov valley, Kondara).

Diagnosis. Externally, *E. kondarensis* is similar to *E. sergia*, differing in somewhat broader and less elongated forewings with more pink suffusion, more defined ante- and postmedial lines and remarkable broader medial field. In male genitalia, valva broader, harpe longer then in *E. sergia*, vesica without subbasal bulb, with shorter cornutus. Female genitalia differ in shorter, longer (which? B.) and more sclerotised ductus and in absence of sclerotisation in the caudal part of bursae.

Bionomics. Meso-hygrophilous montane species, occurs in wet meadows and glades in deciduous and mixed forests, in wet open hillsides. The moth flies in VI-VII. The larva and its foodplants are unknown.

Distribution (Map 314). Central Asian-Siberi-

an, subboreal, montane. South Siberia (Western Altai). – Central Asia (Tajikistan, Gissar Mts.).

Euchalcia sergia (Oberthür, 1884)

(Pl. 16: 7, 8; ♂ genit. Pl. 82: 3; ♀ genit. Pl. 161: 9)

Plusia sergia Oberthür, 1884, *Étud. Ent.* **10**: 27, pl. 3: 9 (Type-locality: Russia: "Sidemi" [Primorye, Bezverkhovo]).

Diagnosis. *E. sergia* is similar to the allopatric *E. condarensis*. It differs from the latter in the forewing with narrower medial field, generally more pinky colour, better marked stigmata, outlined with silvery-white scales, and more distinct whitish subterminal line. In male genitalia, it differs in narrower valva, stronger harpe and presence of large subbasal bulb in vesica. Female genitalia differ in shorter and wider antrum and sclerotisation in the caudal part of bursae.

Bionomics. Meso-hygrophilous species, occurs in wet meadows and glades in deciduous and mixed forest, on wet open hillsides. The moth flies in VI-VII. The larva and its foodplants are unknown.

Distribution (Map 315). Siberian-Manchurian, boreal. Transbaikalia, S Yakutia, Far East to Sakhalin. – N Korea, Japan (Hokkaido).

[***Euchalcia exornata*** Ronkay, 1987]

(Pl. 16: 9; ♂ genit. Pl. 89: 6; ♀ genit. Pl. 161: 1)

Euchalcia exornata Ronkay, 1987, *Folia Entomol. Hung.* **48**: 219: 7-9 (Type-locality: Mongolia, Bajan Ölgij aimak, Mongol Altay Mts, Caast uul, 3000 m).

Diagnosis. Externally differing from *E. renardi* in larger size, broader forewing with remarkably wider median area, less intense pinkish-rosy markings and the less clearly defined crosslines. The male genitalia in *E. exornata* have broader, distally less dilated valvae with thicker harpe; in the female genitalia, ductus bursae is shorter, anteriorly more roundish curved than in *E. renardi* and the sclerotised plate at junction to corpus bursae is smaller, weaker.

Bionomics. Meso-hygrophilous montane species, occurring in alpine meadows on altitude of about 3000 m. It appears as endemic of the highest ranges of the Mongolian Altai.

Distribution (Map 316). Mongolian Altai, subboreal, montane.

Euchalcia renardi (Eversmann, 1844)

(Pl. 16: 10-12; ♂ genit. Pl. 83: 2; ♀ genit. Pl. 161: 2)

Plusia renardi Eversmann, 1844, *Bull. Soc. imp. Nat. Mosc.* **3**: 595, pl. 15: 2a, b (Type-locality: East Siberia).

Synonymy: *eversmanni* Staudinger, 1896.

Diagnosis. Very variable species closely related to the Central-Asian *E. herrichi* (Staudinger, 1861). Reliable identification is possible only by checking the genitalia: *E. renardi* has much shorter vesica in male and ductus bursae in female than in *E. herrichi*.

Bionomics. Meso-hygrophilous montane species, occurs in S Siberia in wet meadows, open larch forest and montane steppe on altitude up to 2000 m. The moth flies from VI to late VIII. Larvae feed on *Delphinium*, *Trollius* (Ranunculaceae) (Bubnova 1980).

Distribution (Map 317). Siberian-Mongolian, subboreal- montane. Mountains of S Siberia, Magadan reg. – Mongolia.

Euchalcia siderifera (Eversmann, 1856)

(Pl. 16: 13; ♂ genit. Pl. 82: 4; ♀ genit. Pl. 161: 3)

Plusia siderifera Eversmann, 1856, *Bull. Soc. imp. Nat. Mosc.* **2**: 104, pl. 3: 4 (Type-locality: Russia).

Synonymy: *beckeri* Staudinger, 1861; *siderifera achaiae* Dufay, 1968 (subsp.).

Bionomics. Xerothermic species, inhabiting steppe zone in eastern Europe and dry montane steppe in Central Asian mountains. Univoltine. The moth flies in VI-VII. Larvae feed on *Rindera tetraspis* (Boraginaceae); the young larva lives inside shoots of the foodplants (Goater *et al.* 2003).

Distribution (Map 318). Euro-Central Asian, subboreal- eremic. S Russia, Ural. – S Europe (Italy, Balkans), Caucasus, Transcaucasia, Near East, Kazakhstan and Central Asia.

Euchalcia modestoides Poole, 1989

(Pl. 16: 14, 15; ♂ genit. Pl. 82: 5; ♀ genit. Pl. 161: 4)

Euchalcia modestoides Poole, 1989, *Lep. Cat.* Fasc. **118**. Noctuidae 1: 396 (Type-locality: [Germany], Augsburg).

Synonymy: *modesta* Hübner, 1786, nom. praeocc.; *cuprea* Esper, 1787, part.

Bionomics. Meso-hygrophilous species, inhabits forest and forest-steppe, forest meadows, woodsides and glades up to medium altitude. Univoltine. The moth flies from late VI to VIII. Larvae feed on *Pulmonaria mollissima*, *P. obscura*, *P. officinalis*, *Cynoglossum officinale*, *Symphytum tuberosus* (Boraginaceae), *Pterotheca* (Asteraceae) and *Arum* (Araceae). Overwinters as young larva or egg.

Distribution (Map 319). Eurasian, subboreal. Russia to Ural, through S Siberia to the Far East (Amur, S. Khabarovsk and Primorye terr.). – From Europe and western Asia thought Kazakhstan, and Mongolia to NE China, Korea and Japan.

Euchalcia biezankoi (Alberti, 1965)

(Pl. 16: 16; ♂ genit. Pl. 82: 6; ♀ genit. Pl. 161: 5)

Plusia (*Euchalcia*) *biezankoi* Alberti, 1965, *Dt. ent. Z. Iris* (new series) **12**(4-5): 265 (Type-locality: Caucasus, S Russia).

Synonymy: *biezankoi defreinae* Hacker, 1986 (subsp.).

Diagnosis. Externally, *E. biezankoi* is very similar to *E. modestoides*, generally differing in less contrasting ground colour and wing pattern, pale bordering of antemedial and postmedial fascia slightly wider, stigmata more clearly outlined. Male genitalia differ in relatively shorter valva with stronger, wider but shorter harpe, vesica with subbasal diverticulum, armed with spine-like cornutus; female differs in presence of large lateral prominence on ductus bursae.

Bionomics. Meso-xerophilous species, occurs in

montane forest meadows and dry montane steppe in Caucasus; it has been described also from the steppe zone of S Russia and south Ural. In Caucasus bivoltine. The moth flies from late VI to late VIII-IX (Goater *et al.* 2003). The early stages and foodplants unknown.

Distribution (Map 320). Ponto-Caspian, subboreal. S Russia to Ural. – Caucasus and Transcaucasia.

Note. The distribution of this species is poorly known and requires clarification.

Euchalcia consona (Fabricius, 1787)

(Pl. 16: 17; ♂ genit. Pl. 83: 1; ♀ genit. Pl. 161: 6)

Noctua consona Fabricius, 1787, *Mant. Ins.* **2**: 163 (Type-locality: Austria).

Bionomics. Xero-thermophilous, rather local species, occurring in dry and hot steppe, hillsides, rocky grassland on calcareous or saline ground. Bivoltine. The moth flies in VI-VII and VIII-IX. Larvae feed on *Nonea pulla*, *Pulmonaria* and *Lycopsis* (Boraginaceae), *Thalictrum* (Ranunculaceae), *Urtica* (Urticaceae) and *Artemisia* (Asteraceae). Overwinters as egg.

Distribution (Map 321). Euro-Siberian, subboreal. S Russia to Ural, through S Siberia to Altai and Transbaikalia. – C and S Europe, Caucasus, Mongolia.

Genus ***Polychrysia*** Hübner, [1823] 1816

Polychrysia. Hübner, [1821] 1816, *Verz. bekannter Schmett.*: 251. Type-species: *Noctua moneta* Fabricius, 1787 [Austria].

Synonymy: *Polychrisia*: Bethune – Baker, 1906, misspell.

Medium sized, beautifully coloured species; forewing usually broad, apically finely pointed with more or less prominently concave outer margin subapically. Labial palps with shape characteristic of the genus: long or very long, slender, dorsally recurved, most often sickle-shaped; tegulae of characteristic shape: strongly produced, fine, erect. In male genitalia, uncus relatively short, valva wide, lobed, harpe rather thin, long, somewhat extending costal margin. Aedeagus with tubular vesica armed with single subapical spine-like cornutus. In female genitalia, antrum small, funnel-shaped, ductus bursae short; corpus bursae large, saccate, with short membranous or sclerotised appendix bursae. Holarctic temperate genus comprising 6 species. – 5 species.

Polychrysia moneta (Fabricius, 1787)

(Pl. 16: 18; ♂ genit. Pl. 83: 3; ♀ genit. Pl. 161: 7)

Noctua moneta (Fabricius, 1787), *Mant. Ins.* **2**: 162 (Type-locality: Austria).

Synonymy: *flavago* Esper, 1787; *napelli* deVillers, 1789; *argyritis* Esper, [1787].

Bionomics. Meso-hygrophilous species, inhabits mainly woodlands, preferring cold and humid habitats: open montane forest, stream valleys, subalpine meadows, lowlands in northern areas. Univoltine. The moths flies from V to late VII. Larvae feed on *Aconitum*, *Delphinium*, *Consolida* and *Trollius* (Ranunculaceae), *Arctium*, *Artemisia*, *Helianthus* (Asteraceae), *Centranthus* (Valerianaceae). Overwinters as young larva.

Distribution (Map 322). Eurasian, subboreal. Russia to Ural. – Europe, Caucasus and Transcaucasia,

Note. *P. moneta* has for a long time been confused with its sibling species *P. esmeralda* which has been regarded by authors (Kostrowicki 1961) as an eastern Palaearctic subspecies of the former. Mikkola *et al.* (1991) clarified its Holarctic distribution. This pair of species are allopatric in the West and East Palaearctic, the eastern /western limits of their ranges require clarification.

Polychrysia esmeralda (Oberthür, 1880)

(Pl. 16: 19-21; ♂ genit. Pl. 83: 4; ♀ genit. Pl. 161: 8)

Plusia esmeralda Oberthür, 1880, *Étud. Ent.* **5**: 85 (Type-locality: Russia: Primorye, Askold Is.).

Synonymy: *trabea* Smith, 1895 (subsp.); *marusiki* L. Ronkay, G. Ronkay, Behounek & Mikkola, 2008 (subsp.).

Diagnosis. *P. esmeralda* differs externally from *P. moneta* in silvery ground colour and thinner pattern elements. In male genitalia, *P. esmeralda* differs in narrower uncus, not straight, but somewhat curved harpe, more smoothly rounded valva, shorter diverticulum of vesica, with smaller, shorter, basally broader cornutus. The female genitalia differ in shorter ductus and smaller, less sclerotised ribbed basal part of the ductus.

Bionomics. Meso-hygrophilous species, inhabiting deciduous and mixed forests. Occurs in wet meadows, glades, stream valleys. Univoltine. The moth flies from VI to IX. Larvae feed on *Aconitum*, *Thalictrum*, *Delphinium*, *Trollius* (Ranunculaceae), *Pulmonaria* (Boraginaceaee), *Helianthus* (Asteraceae).

Distribution (Map 323). Holarctic, Siberian-American, subboreal- boreal. S Siberia, Far East (northwards to Kamchatka and Magadan, eastwards to the Kuriles (Kunashir, Shikotan and Paramushir Is.). – Kazakhstan, Mongolia, Korea, NE China, N America (Alaska, Canada).

Note. *P. esmeralda* is rather uniform in its external appearance thoughout the Palaearctic part of the range, but the population from the Paramuchir island of North Kuriles Is. differs in extremely dark-golden suffusion on the forewing and generally darker colour. This population was described as subsp. *marusiki* L. Ronkay, G. Ronkay, Behounek & Mikkola, 2008 (Pl. 16: 21). The forming of this melanic form could be explained by strong permanent pollution on Paramushir Isl. by volcanic ash. The Nearctic population is represented by subspecies *trabea* Smith, 1895.

Polychrysia aurata (Staudinger, 1888)

(Pl. 16: 22; ♂ genit. Pl. 84: 1; ♀ genit. Pl. 161: 9)

Plusia aurata Staudinger, 1888, *Stettin. ent. Ztg* **49**: 260 (Type-locality: Russia, "Ussuri").

Bionomics. Meso-hygrophilous, local species, which inhabits mixed and dark coniferous forests, meadows, woodsides, clearings, glades. Univoltine. The moth flies from early VII to mid IX. The larva and its foodplants are unknown.

Distribution (Map 324). Siberian-Manchurian, boreal. Altai, Far East, to Sakhalin, Kuriles and Kamchatka. – N Mongolia, NE China.

Polychrysia splendida (Butler, 1878)

(Pl. 16: 23; ♂ genit. Pl. 83: 5; ♀ genit. Pl. 161: 10)

Deva splendida Butler, 1878, *Ann. Mag. nat. Hist.* (5) **1**: 203 (Type-locality: Japan, Hakodate).

Synonymy: *intractata* Staudinger, 1888; *intractata* Staudinger, 1888; *intracta*: Poole, 1989: 824, misspelling.

Bionomics. Mesophilous species, which inhabits lowland deciduous and mixed forest, occurring in meadows, clearings, along roadsides, in glades. Univoltine. The moth flies from early VII to mid IX. Larvae feed on *Aconitum arcuatum* and *A. grossedentatum* (Ranunculaceae). They make "nests" from leaves of foodplants fixed by silk. The young larvae are living inside the spinning on their foodplant in groups of 5-7 individuals; full grown larvae live alone.

Distribution (Map 325). Siberian-Manchurian, boreal. From S Altai through S Siberia to the Far East, Sakhalin and Kuriles. – N Mongolia, Korea, China, Japan.

Polychrysia sica (Graeser, 1890)

(Pl. 16: 24; ♂ genit. Pl. 83: 6; ♀ genit. Pl. 162: 1)

Plusia sica Graeser, 1890, *Berl. ent. Z.* **25**: 77 (Type-locality: Russia, Amur reg. [Radde] "Raddefka").

Bionomics. Meso-hygrophilous species, occurring in wet meadows along sea or lake shores and in marshy meadows in deciduous and mixed forest. Univoltine. The moth flies in VII-VIII. The larva and its foodplants are unknown.

Distribution (Map 326). Manchurian–continental, nemoral. Far East (Amur reg., S Khabarovsk terr., Primorye). – NE China.

Genus ***Panchrysia*** Hübner, [1821] 1816

Panchrysia Hübner, [1821] 1816, *Verz. bekannter Schmett.*: 252. Type-species: *Noctua aurea* Hübner, [1803] [Europe] (= *Bombyx deaurata* Esper, 1787).

Synonymy: *Tetrargenia* Beck, [1992] 1991.

The species of *Panchrysia* are easily distinguished from the other genera of Euchalciina by the apomorphic bright wing colour, from *Polychrysia* and *Lamprotes* also in the remarkably shorter palps. In the male genitalia, the vesica is always tubular, rather narrow, in all but one species medially strongly recurved and distally densely denticulate or spinulose, with smaller or large basal group of cornuti (a shared apomorphy with *Lamprotes* and *Plusidia*), without distal diverticulum (shared character state with *Plusidia*). In female genitalia, antrum large, cup-shaped, outer margin of ostium sclerotised. The genus is subdivided into two subgenera: *Panchrysia* (s.str.) with 6 species and the monotypic *Hexaureia*. – 3 species.

Panchrysia* (*Panchrysia*) *deaurata (Esper, 1787)

(Pl. 16: 25; ♂ genit. Pl. 84: 2; ♀ genit. Pl. 162: 2)

Bombyx deaurata Esper, 1787, *Die Schmett. Abb. Nat.* **4**: pl. 110, f. 6 (Type-locality: Europe [Slovakia]).

Synonymy: *chryson* Borkhausen, 1792, nec Esper, 1789; *aurea* Hübner, [1803]; *semiargentea* Alpheraky, 1889.

Bionomics. Meso-thermophilous species, inhabiting steppes, forest-steppe, dry rocky slopes, hot hillsides, especially on limestone. Univoltine or bivoltine. The moth flies in V-VI and VII-IX. Larvae feed on *Thalictrum*, *Aconitum*, *Delphinium* (Ranunculaceae). Overwinters as larva.

Distribution (Map 327). Euro-Central Asian, subboreal. SE Russia to Ural, S Siberia to Krasnoyarsk reg. – S and C Europe, Near East, Caucasus, Central Asia, Kazakhstan, N India.

Panchrysia* (*Panchrysia*) *ornata (Bremer, 1864)

(Pl. 16: 26, 27; ♂ genit. Pl. 84: 3; ♀ genit. Pl. 162: 3)

Plusia ornata Bremer, 1864, *Mém. Acad. imp. Sci. St. – Pétersb.* VII Sèrie **8**(1): 103; pl. 8: 15 (Type-locality: Russia: Transbaikalia, Kiachta).

Synonymy: *contacta* W. Kozhantschikov, 1923.

Bionomics. Meso-hygrophilous, rather local species, occurring in humid deciduous and mixed forest, on wet meadows and in clearings, in montane forests up to 1600-1800 m. In Amur region rather common in mixed light oak-larch forests. Univoltine. The moth flies from early VII to late VIII. The larva and its foodplants are unknown.

Distribution (Map 328). Siberian-Central Asian, subboreal. From S Ural through Siberia and to the Far East (north to Kamchatka). – Central Asia, Kazakhstan, Mongolia, Korea, China (to Tibet).

Subgenus ***Hexaureia*** Beck, 1991

Hexaureia Beck, 1991, *Atalanta,Würzburg* **22**(2-4): 226. Type-species: *Plusia dives* Eversmann, 1844.

Forewing short and broad; hindwing with yellow colour. In male genitalia, sacculus very short, sclerotised. Aedeagus medially thickened and sclerotised; vesica straight, long, unarmed. In female genitalia, antrum wide, sclerotised; ductus bursae rather long, straight, with fine longitudinal ribs; appendix bursae globular; corpus bursae globular, membranous. Monotypic Palaearctic subgenus.

Panchrysia* (*Hexaureia*) *dives (Eversmann, 1844)

(Pl. 16: 28; ♂ genit. Pl. 84: 4; ♀ genit. Pl. 162: 4)

Plusia dives Eversmann, 1844, *Bull. Soc. imp. Nat. Mosc.* **17**: 596 (Type-locality: Russia, Irkutsk).

Bionomics. Meso-xerophilous species, occurring in wet and cold meadows, glades and margins in montane forest and subalpime meadows on mid-high altitudes up to 2000 m. Univoltine. The moth flies from late VII to end of VIII. The larva and its foodplants are unknown.

Distribution (Map 329). Eastern Palaearctic, subboreal, montane. Ural, through S Siberia to the Far East, eastwards to Sakhalin and Kamchatka. – Kazakhstan, Mongolia, China to Tibet.

Genus ***Lamprotes*** Reichenbach, Leiptzig, 1817

Lamprotes Reichenbach Leiptzig., 1817, *Jenaische Allg. Lit. – Ztg* l: 287. Type-species: *Phalaena c-aureum* Knoch, 1781.

Synonymy: *Chrysoptera* Berthold, 1827; *Cubena* Walker, 1856.

Labial palps very long, upturned, 3rd segment pointed apically; body slender, forewing colour dark-brown with violet tint and with metallic golden sheen; pattern formed as golden "C". In male genitalia, the generic apomorphies are the armature of the vesica consisting of two or three groups of cornuti (with numerous cornuti in the distal cornuti field) and the presence of a small, globular terminal diverticulum covered with minute spiculi and/or denticles. In female genitalia, the following apomorphies are present: modified structure of the ostium bursae, with reduced number of more subventrally situated setae and large, rather sclerotised main tube. The genus includes 2 species distributed in the temperate zone of the Palaearctic. – 2 species.

Lamprotes c-aureum (Knoch, 1781)

(Pl. 16: 29; ♂ genit. Pl. 84: 5; ♀ genit. Pl. 162: 5)

Phalaena c-aureum Knoch, 1781, *Beitr. Insektesgesch.* **1**: 7, pl. 1: 2 (Type-locality: Germany, Leipzig).

Synonymy: *concha* Fabricius, 1787.

Bionomics. Meso-hygrophilous species, it inhabits lowland and hillsides, forest clearings, open marshy forest, forest-steppe, river valleys. Univoltine or partly bivoltine. The moth flies from V to IX. Larvae feed on *Thalictrum*, *Aquilegia vulgaris* (Ranunculaceae), *Urtica* (Urticaceae). Overwinters as young larva.

Distribution (Map 330). Eurasian, subboreal. Russia, through Ural and S Siberia to the Far East (Amur, Khabarovsk and Primorye terr.). – Europe, Near East, Caucasus, Transcaucasia, Central Asia, Kazakhstan.

Lamprotes mikadina (Butler, 1878)

(Pl. 16: 30; ♂ genit. Pl. 84: 6; ♀ genit. Pl. 162: 6)

Plusia mikadina Butler, 1878, *Ann. Mag. nat. Hist.* (5) **1**: 202 (Type-locality: Japan, Yokohama, Hakodate).

Synonymy: *micadina* Hampson, 1913, emend.

Diagnosis. *L. micadina* differs from its sibling species *L. c-aureum* in more violet-greyish ground colour, less sinuous postmedial line and more greyish hindwing. In male genitalia, it differs in shorter, medially more curved harpe, thinner, more tubular vesica without middorsal cornuti. Female genitalia differ in broader antrum, shorter ductus bursae and strongly curved gelatinous anterior part.

Bionomics. Mesophilous species, occurring in mixed forests in meadows, creek valleys, clearings and glades. Univoltine. The moth flies from early VII to late VIII. Larvae feed on *Thalictrum aquilegifolium* and *Aquilegia* (Ranunculaceae) (Mutuura *et al.* 1973).

Distribution (Map 331). Japanese-Korean. Islands of Russian Far East (S Sakhalin, S Kuriles: Kunashir and Shikotan Is.). – Japan (Hokkaido, Honshu), Korea.

Note. According to Ronkay *et al.* (2008) this species pair is allopatric. Because they are confusingly similar in external appearance, the eastern border of *L. c-aureum* and western border of *L. micadina* require clarification.

Genus ***Plusidia*** Butler, 1879

Plusidia Butler, 1879, *Illust. typical Specimens Lepid. Heterocera Colln Br. Mus.* **3**: 27. *Plusidia abrostoloides* Butler, 1879 [Japan] (= *Noctua cheranthi* Tauscher; 1809).

Closely related to *Lamprotes*. Antenna of male finely serrate; palps dorsally slightly curved, acuminate apex. Forewing with rounded apex; tornal scale-tuft present; wing pattern without metallic shining scales. In male genitalia, clavus broad, rounded-lobate, vesica straight, without medial cornuti field but with long, terminal cornutus. Female genitalia with characteristic structure of the papillae anales; ostium and ductus bursae are shorter, narrower than in *Lamprotes*, corpus bursae is more elongated, elliptical-sacculiform. Larva oligophagous, on Ranunculaceae. The genus is monotypic, distributed in the temperate zone of the Palaearctic.

Plusidia cheiranthi (Tauscher, 1809)

(Pl. 16: 31, 32; ♂ genit. Pl. 85: 1; ♀ genit. Pl. 162: 7)

Noctua cheiranthi Tauscher, 1809, *Mém. Soc. Nat. Mosc.* **2**: 322, pl. 20: 6 (Type-locality: Russia).

Synonymy: *eugenia* Eversmann, 1841; *abrostoloides* Butler, 1879; *separanda* Warren, 1913; *murensis* Warnecke, 1918.

Diagnosis. *P. cheiranthi* is represented in the Asian part of Russia by two subspecies: nominate *cheiranthi* extends from Europe to the Ural region, the subspecies *abrostoloides* Butler, 1879 is distributed eastwards from Ural. The eastern subspecies differs from the nominate one in the shape of the forewing and the shape and size of the apical patch. It has more rounded forewing with pale mossy green ground colour suffused pinkish, less conspicuous antemedial and postmedial lines and narrower and darker, blackish costal part of subterminal line.

Bionomics. Meso-hygrophilous species, occurring in wet meadows, river valleys, in glades in deciduous and mixed forest, on open slopes. Univoltine. The moth flies from VI to VIII. Larvae feed on

Thalictrum flavum, *T. simplegia*, *T. sibirica* and also on *Aquilegia vulgaris*, *A. sibirica* (Ranunculaceae). Univoltine. Overwinters as egg.

Distribution (Map 332). Eurasian, subboreal. Russia to Ural, through S Siberia to the Far East, Sakhalin and Kuriles. – Europe, Near East, Caucasus, Transcaucasia, Kazakhstan, Mongolia, Korea, Japan (Hokkaido, Honshu), NE China.

Subtribe **Plusiina** Boisduval, [1828]

Plusiinae Boisduval, [1828] 1829, *Eur. Lepid. Index meth.*: 91 (as Plusidi). Type genus: *Plusia* Ochsenheimer, 1816.

Synonymy: Plusiidae Herrich-Schäffer, [1851] 1845; Phytometrinae Hampson, 1913; Autographini Eichlin & Cunningham, 1978; Autographini Chou & Lu, 1979; Caloplusiini Chou & Lu, 1979.

The subtribe includes all Plusiini genera which are not placed in Euchalciina or Autoplusiina. On account of the variable character states, which show exceptions to all the usable features, it is difficult to define the subtribe on morphological features. Even so, the monophyly of the subtribe is suggested by strong synapomorphies within it. (Ronkay *et al*. 2008). In the Asian part of Russia, the subtribe contains four genera: *Autographa* (with 15 species), *Cornutiplusia* (1 species), *Syngrapha* (7 species) and *Plusia* (2 species).

Genus ***Autographa*** Hübner, [1821] 1816

Autographa Hübner, [1821] 1816, *Verz. bekannter Schmett.*: 251. Type-species: *Phalaena gamma* Linnaeus, 1758 [Europe].

Forewing with pointed apex, straight outer margin and tooth-like scale extension in tornal angle. Wing colour and pattern characteristic of the genus; forewing usually with reddish-brown or dark brown-grey ground colour, with bluish or violet tint. The silvery gamma-mark is clearly expressed or modified as large patch; hindwing usually grey or yellowish-grey, lighter basally. Male genital armature rather uniform and characteristic of the genus; vinculum short, ventrally strongly constricted, with very small saccus and small ventral tooth; valva blade-like, elongated, somewhat constricted medially, extended apically; clavus long and thin; harpe thin, longer than clavus; cucullus extended, without corona; vesica long, tubular, with medial or apical cornutus. In female genitalia, ovipositor rather short, anterior and posterior apophyses short, equal in length; antrum funnel-shaped; ductus bursae variable in length, sclerotised, ribbed. The genus contains numerous phyletic lineages which are characterised by external and genitalic features. Holarctic genus with 44 species. Most species inhabit various biotopes mainly in the temperate zone. Larvae are polyphagous, some species have economic significance as pests of agricultural plants.

Autographa gamma (Linnaeus, 1758)

(Pl. 16: 33; ♂ genit. Pl. 85: 2; ♀ genit. Pl. 162: 8)

Phalaena gamma Linnaeus, 1758, *Syst. Nat.* (Edn 10) **1**: 513 (Type-locality: Europe).

Synonymy *pulchrina* Haworth, 1809, nec Haworth, 1802; *alepica* Nitsche, 1911; *gammina* Staudinger, 1901; *messmeri* Schadewald 1993; *voelkeri* Schadewald 1993.

Bionomics. Eurytopic, widespread migratory species, most common in southern and central part of its area, but becoming rather rare in Pacific Asia. *A. gamma* is multivoltine, continuously brooded with 3-4 generations in the south of its distribution area. In southern Siberia 1 or 2 generations, the number of generations in the Far East unclear. The moth flies from V to X, and is an active migrant. Migrating individuals have been found north to Magadan and central Yakutia. Migrants have also been collected at light at 2900 m altitude in stony montane tundra near snowline in East Sayan Mts. Larvae are polyphagous, and have been recorded on 343 species of plants of 50 botanical families, preferring Asteraceae, Brassicaceae and Fabaceae (Pospelov 1969). Well investigated pest of field crops, described in detail in many articles and books.

Distribution (Map 333). Trans-Palaearctic, subboreal. Russia to Ural, across S Siberia to the Far East, northwards to Kamchatka and Magadan reg. – N Africa, Near East, Europe, Kazakhstan, Central Asia, Mongolia, China, Korea, Japan to N India; N America (Greenland) (Lafontaine & Poole 1991).

Autographa mandarina (Freyer, 1846)

(Pl. 17: 1, 2; ♂ genit. Pl. 85: 3; ♀ genit. Pl. 162: 9)

Noctua mandarina Freyer, 1846, *Neue Beitr. Schmett. Kde.* **5**: 164, pl. 479: 4 (Type-locality: Russia, Ural).

Synonymy: *intercalaris* Herrich-Schäffer, 1855; *interscalaris* Eversmann, 1857; *typinota* Butler, 1878; *obscura* Oberthür, 1884; *lehri* Klyuchko, 1984.

Diagnosis. *A. mandarina* can be distinguished from its congeners by darker forewing colour, with violaceous-rusty or reddish-brown tint, strong large gamma-mark and fine wing pattern with strong silvery-filled antemedial line. In male genitalia, it differs in narrow valva with long triangular cucullus with prominently arched costal margin and stick-like harpe; vesica rather short, with large tubular medial diverticulum, placed close to cornutus. Female genitalia with straight ductus bursae with characteristic membranous ring in mid part and short antrum.

Bionomics. Meso-hygrophilous species, which inhabits wet glades and meadows in deciduous, mixed and dark coniferous forests and edges of light larch taiga. Bivoltine. In southern Far East, the moth flies from V to IX. Larvae are polyphagous on *Cirsium*, *Artemisia*, *Taraxacum*, *Lactuca*, *Urtica*, *Aegopodium*, *Lamium*, *Onobrychis*, *Linum* and *Plantago*. Overwinters as larva in the mid instars.

Distribution (Map 334). Eurasian, boreal. N and C Europe, Ural, S Siberia, Kazakhstan, Far East, northwards to Kamchatka and Magadan reg. – Mongolia, Korea, Japan (Hokkaido, Honshu), China.

Autographa pulchrina (Haworth, 1802)

(Pl. 16: 36; ♂ genit. Pl. 85: 4; ♀ genit. Pl. 163: 1)

Noctua pulchrina Haworth, 1802, *Lepid. Brit.*: 256 (Type-locality: Great Britain).

Synonymy: *interrogationis* Esper, [1787]; *v-aureum* Hübner, [1802]; *jota* Hübner, [1802]), nec Linnaeus, 1758; *v-aureum* Guenée, 1852; *percontatrix* Aurivillius, 1888.

Diagnosis. *A. pulchrina* is a sister species of *A. buraetica*, which differs externally in darker forewing with more pinky-violet tint and prominent orange-rosy shining patch in medial field. In male genitalia, it differs in somewhat broader valva with longer harpe, medial diverticulum in vesica positioned close to cornutus. In female genitalia, ductus bursae arched, with wider sclerotised plate at junction with corpus bursae.

Bionomics. Meso-hygrophilous species, inhabiting cool damp meadows, wet forest, stream valleys and hillsides. Univoltine. The moth flies from V to VIII. Larvae are polyphagous, recorded on various herbaceous plants of 18 botanical families, preferring *Urtica* (Urticaceae), *Stachys*, *Mentha* and *Lamium* (Lamiaceae) and Asteraceae. Overwinters as young larva.

Distribution (Map 335). European, boreal. Russia to Ural, Altai (confirmed by Volynkin & Perunov 2007). – Europe, N Caucasus,

Note. In the Ural and Altai it occurs sympatrically with sibling species *A. buraetica*.

Autographa buraetica (Staudinger, 1892)

(Pl. 16: 35; ♂ genit. Pl. 85: 5; ♀ genit. Pl. 163: 2)

Plusia pulchrina var. *buraetica* Staudinger, 1892, *Dt. ent. Z. Iris* **5**: 370 (Type-locality: Russia: Siberia, Irkutsk).

Synonymy: *gammoides* Speyer, 1875; *ternei* Klyuchko, 1984; *pulchrina* auct.

Diagnosis. *A. buraetica* is distinguished externally from its sister species, *A. pulchrina*, by less bright and duller forewing with greyish cast, reduced orange–reddish patch in medial part of wing and usually smaller gamma-mark. In male genitalia, the vesica of *A. buraetica* has shorter proximal part and longer distal part, the diverticulum situated in the middle of vesica or close to the base of the cornutus. In the female genitalia, ductus bursae is shorter, straight, with medial knob, and with a narrow, strongly sclerotised plate at junction with corpus bursae.

Bionomics. Meso-hygrophilous species. It is the most common and widespread species of Plusiinae in east Siberia and the Far East. *A. buraetica* occurs in various lowland and montane habitats: in margins, marshes, meadows and glades in deciduous, mixed, and dark coniferous forests. Univoltine. Flies from early VI to late VIII. *A. buraetica* is capable of making long distance migrations. Moths have been collected in stony montane tundra near snowline at 2900 m altitude in East Sayan Mts. Larvae are polyphagous on herbaceous Brassicaceae, Urticaceae, Ericaceae, Plantaginaceae. In Japan, the larva has been reported on *Thalictrum aquilegifolium* (Ranunculaceae) (Miyata 1983).

Distribution (Map 336). Holarctic, temperate. N and C Russia, Ural, through Siberia to the Far East (northwards to Jakutia, Kamchatka and Magadan reg.). – N and C Europe, Kazakhstan, North Mongolia, Korea, Japan (Honshu), China, N America (Alaska, Yukon, NW Territories).

Autographa jota (Linnaeus, 1758)

(Pl. 17: 34; ♂ genit. Pl. 86: 1; ♀ genit. Pl. 163: 3)

Phalaena jota Linnaeus, 1758; *Syst. Nat.* (Edn 10) **1**: 513 (Type-locality: Germany).

Synonymy: *protea* Stoll. 1782; *inscripta* Esper, [1787]; *gammaaurina* Haworth, 1809; *percontationis* Oochsenheimer, 1816; *aurigutta* Hübner, [1821]); *ancora* Frreyer, 183; *bartholomaei* Ménetriés, 1859; *baltica* Speyer, 1875; *anatolica* Schwingenschuss, 1938.

Diagnosis. *A. jota* differs externally from its congeners in pinky-rosy suffusion on forewing and small, usually disjunct gamma-mark. In male genitalia, most similar to *A. pulchrina* and *A. buraetica*, but easily distinguished by straight vesica with smaller medial diverticulum. Female genitalia differ in shorter, less sclerotised antrum and very large, round corpus bursae with sclerotisation in proximal part.

Bionomics. Meso-hygrophilous species, which inhabits warm open stream and river valleys, dry meadows, xeromontane biotopes. Univoltine. Flies from early VI to VIII. Larvae are polyphagous, recorded on various shrubs, trees and herbaceous plants of 17 botanical families, especially Lamiaceae and Asteraceae. Overwinters as young larva.

Distribution (Map 337). European-West Asian, boreal. Russia, to Ural, S Siberia to Altai. – Europe, Near East, Caucasus and Transcaucasia.

Note. The easternmost limits of the distribution of *A. jota* require clarification.

Autographa amurica (Staudinger, 1892)

(Pl. 17: 5, 6; ♂ genit. Pl. 86: 2; ♀ genit. Pl. 163: 4)

Plusia pulchrina var. *amurica* Staudinger, 1892, in Romanoff, *Mém. Lépid.* **6**: 549 (Type-locality: Russia: "Suifun" [Primorye, Razdolnaya river]).

Synonymy: *iota* auct.; *pulchrina* auct.

Diagnosis. *A. amurica* differs from it congeners in remarkably larger size and dark forewing with pinkish-violet tint with thin, disjunct gamma-mark and distinct rusty reddish patch in lower part of medial field. In male genitalia, valva rather narrow, with parallel margins, harpe rather long, straight, vesica projecting dorsally, with remakable large diverticulum in basal third. The female genitalia with cup-shaped antrum, straight ductus bursae and long corpus bursae, extended proximally.

Bionomics. Mesophilous species, occurs in mixed montane forest and dark coniferous taiga on meadows, clearings, glades. Univoltine from late VI to end of VIII. The larva and its foodplants are unknown.

DISTRIBUTION (Map 338). Manchurian, boreal. Far East (north to Kamchatka). – Korea, Japan (Hokkaido, Rishiri Is., Honshu), northeast China.

NOTE. Early authors regarded *A. amurica* as a form or subspecies of *A. jota* or *A. pulchrina*, both of which are in fact allopatric with *A. amurica*; neither species is present in the Far East.

Autographa v-minus (Oberthür, 1884)

(Pl. 16: 37, 38; ♂ genit. Pl. 86: 3; ♀ genit. Pl. 163: 5)

Plusia v-minus Oberthür, 1884, *Étud. Ent.* **10**: 27 (Type-locality: Russia: "Sidemi" [Primorye, Bezverkhovo]).

DIAGNOSIS. *A. v-minus* resembles *A. amurica* and *A. buraetica*, but differs in smaller size and generally more greyish wing colour, less sinuous wing pattern and small, mainly unbroken gamma-mark. In male genitalia, valvae relatively short and broad, harpe shorter and more straight, vesica with medial diverticulum close to cornutus, which is much thinner than in related species and obtuse. Female genitalia much smaller than in *A. amurica*, and differ in membranous part of ductus bursae where it joins antrum; from *A. buraetica* they differ in the undivided ductus.

BIONOMICS. Mesophilous species, occurs in montane mixed forests and open larch or dark coniferous taiga. Univoltine in VII-VIII. The larva and its foodplants are unknown.

DISTRIBUTION (Map 339). Manchurian, boreal. Transbaikalia, Far East (Primorye). – Korea, N China.

Autographa urupina (Bryk, 1942)

(Pl. 17: 7, 8; ♂ genit. Pl. 86: 4; ♀ genit. Pl. 163: 6)

Phytometra urupina Bryk, 1942, *Dt. ent. Z. Iris* **56**: 57 (Type-locality: Russia, Kuriles, Urup I).

DIAGNOSIS. *A. urupina* is most similar to *A. amurica*, but differs clearly in larger and more prominent gamma mark, less expressed violet tint in the forewing and in presence of pale yellowish-grey basal part in hindwing. In male genitalia, harpe extended apically and much shorter, but stronger than in *A. amurica*. Vesica without medial diverticulum. Female genitalia with long sclerotised ductus bursae, which is strongly arched in basal part.

BIONOMICS. Mesophilous species, it occurs in montane mixed forests with *Pinus koraiensis* and in dark coniferous taiga. Univoltine. The moth flies in VII-VIII in montane meadows, clearings, glades. The larva and its foodplants are unknown.

DISTRIBUTION (Map 340). Manchurian, boreal. Far East, north to Kamchatka, Kuriles (Kunashir, Iturup, Urup, Paramushir Is.). – NE China, Japan (Hokkaido).

Autographa nigrisigna (Walker, 1858)

(Pl. 17: 9, 10; ♂ genit. Pl. 87: 1; ♀ genit. Pl. 163: 7)

Plusia nigrisigna Walker, 1858, *List Specimens lepid. Insects Colln. Br. Mus.* **12**: 928 (Type-locality: N India).

DIAGNOSIS. *A. nigrisigna* differs from its congeners in the pale-grey colour of forewing, especially expressed in basal, costal and subterminal areas and in tornal angle; gamma-mark usually disjunct. In male genitalia, valva rather short and broad, harpe long, curved at the base. Vesica without medial diverticulum, cornutus rather large, flattened. Female genitalia differ in small antrum and curved and basally extended ductus bursae.

BIONOMICS. Mesophilous species, it occurs in open deciduous forests, in meadows, in valleys, clearings and glades, often in agricultural ecosystems. Univoltine. The moth flies in Primorye from early VII to mid IX. Larvae are polyphagous on herbaceous plants of the families Fabaceae, Apiaceae, Lamiaceae. Recorded as a pest of soya bean *Glycine max*.

DISTRIBUTION (Map 341). Oriental-Manchurian, nemoral. Transbaikalia, Far East (S Khabarovsk and Primorye terr. – China (to Tibet), Korea, Japan, Butan, N India, Nepal, Pakistan, Afghanistan.

Autographa camptosema (Hampson, 1913)

(Pl. 17: 3, 4; ♂ genit. Pl. 87: 2; ♀ genit. Pl. 163: 8)

Phytometra camptosema Hampson, 1913, *Cat. Lepid. Phalaenae Br. Mus.* **13**: 523, pl. 238: 16.

SYNONYMY: *nekrasovi* Klyuchko, 1985

DIAGNOSIS. *A. camptosema* differs from its congeners in strong pinky-brown colour of forewing with orange shining patch in medial field and unbroken gamma-mark. Male genitalia differ in strong uncus, rather short but wide valva, moderate straight harpe. Vesica with very short medial diverticulum close to cornutus. In female genitalia, antrum wide but shallow, ductus bursae with lateral prominence, arched basally.

BIONOMICS. Meso-xerophilous species, it occurs in mixed mountainous forest and open foothills in montane steppe, and meadows. The moth flies in VII-VIII. The larva and its foodplants are unknown.

DISTRIBUTION (Map 342). Central Asian, subboreal, montane. Russia (Altai). – Kazakhstan, Mongolia, Central Asia to N India.

Autographa macrogamma (Eversmann, 1842)

(Pl. 17: 11, 12; ♂ genit. Pl. 87: 3; ♀ genit. Pl. 164: 1)

Plusia macrogamma Eversmann, 1842, *Bull. Soc. imp. Nat. Mosc.* **1842**(3): 554 (Type-locality: Russia, Ural).

SYNONYMY: *sevastina* Freyer, 1842; *nigroviolacea* Rangnow, 1935.

DIAGNOSIS. *A. macrogamma* can be separated from its congeners by yellowish tint of forewing with rich golden suffusion, and thick golden gamma-mark. In male genitalia, valva extended apically, harpe thin, large, extending to costal margin of valva. Vesica without medial diverticulum. In female genitalia, ductus bursae with lateral prominence, arched basally.

BIONOMICS. Meso-hygrophilous species, it inhabits conifer woodlands in taiga zone, occurs in wet

meadows, clearings, marshes in birch forest, larch and dark coniferous taiga, in mountains to 1500-2000 m. Univoltine. The moth flies from mid VI to VIII-IX. Larvae are polyphagous on various herbs including *Trollius* (Ranunculaceae), Ericaceae, *Urtica* (Urticaceae), Solanaceae, *Mentha*, *Lamium* (Lamiaceae), *Plantago* (Plantaginaceae), *Taraxacum*, *Arctium* (Asteraceae).

DISTRIBUTION (Map 343). Eurasian, boreal. Russia to north and mid Ural, Siberia to the Far East, (northward to Sakhalin, Kamchatka and Magadan). – N Europe, Kazakhstan, N Mongolia, N China.

Autographa bractea ([Denis & Schiffermüller], 1775)

(Pl. 17: 13, 14; ♂ genit. Pl. 87: 4; ♀ genit. Pl. 164: 2)

Noctua bractea [Denis & Schiffermüller], 1775, *Ank. Syst. Werk Schmett. Wien.*: 314 (Type-locality: [Austria], Vienna district]).

SYNONYMY: *securis* deVillers, 1789.

DIAGNOSIS. *A. bractea* differs from its sister species *A. excelsa* in somewhat broader forewing with more acute apex, less developed wing pattern with less expressed pinky-orange sheen, and in the shape of the gamma-mark. Male genitalia of both species are very similar: The male genitalia of *A. bractea* differ in somewhat thinner uncus, narrower valva, longer harpe and smaller cornutus. The female genitalia differ in somewhat wider antrum, less curved ductus bursae, and more rounded corpus bursae.

BIONOMICS. Meso-hygrophilous species, it occurs in wet open forest habitats, in hilly and montane areas, and in subalpine rergions. Univoltine. The moth flies from mid VI to early VIII. Larvae polyphagous on various herbaceous plants in Polygonaceae, Ericaceae, Urticaceae, Apiaceae, Caprifoliaceae, Plantaginaceae, Lamiaceae, and Asteraceae. Overwinters as young larva.

DISTRIBUTION (Map 344). European-West Asian, boreal. Russia to Ural, S Siberia to Altai. – Europe, Kazakhstan, Central Asia, Near East, Caucasus, Transcaucasia.

Autographa excelsa (Kretschmar, 1862)

(Pl. 17: 15, 16; ♂ genit. Pl. 87: 5; ♀ genit. Pl. 164: 3)

Plusia excelsa Kretschmar, 1862, *Berl. ent. Z.* **6**: 135, pl. 1: 5 (Type-locality: Russia).

SYNONYMY: *metabractea* Butler, 1881; *parabractea* Hampson, 1913; *kostjuki* Klyuchko, 1986.

DIAGNOSIS. *A. excelsa* differs from *A. bractea* in brighter forewing colour with more expressed orange sheen, in shape of the gamma-mark and more yellowish coloured hindwing. In male genitalia, uncus somewhat longer and more massive, valva somewhat broader, harpe shorter, cornutus thinner, but longer. Female genitalia differ in curved ductus bursae and in more elongated shape of bursae with prominent fundus.

BIONOMICS. Meso-hygrophilous species, it inhabits wet glades, clearings and meadows in sparse deciduous, mixed and dark coniferous forests. Univoltine. The moth flies from mid VI to early IX. Larvae polyphagous on herbaceous plants, mainly on *Urtica* (Urticaceae) and various Ranunculaceae, Chenopodiaceae, Apiaceae, Plantaginaceae, Lamiaceae, Asteraceae. Overwinters as young larva.

DISTRIBUTION (Map 345). Eurasian, boreal Russia to Ural, through Siberia to the Far East (north to Magadan). – N and Central Europe, China, Korea, Japan.

NOTE. In the Ural and S Siberia *A. excelsa* is sympatric with *A. bractea*.

Genus ***Cornutiplusia*** Kostrowicki, 1961

Cornutiplusia Kostrowicki, 1961, *Acta zool. Cracov.* **6**: 432. Type-species: *Phalaena circumflexa* Linnaeus, 1767 [Europe].

Large moths with relatively narrow, grey forewings, and wing pattern resembling *Autographa*. Hind tibiae spined. Male genitalia generally similar to those of *Autographa*; the main autapomorphy of the genus is the long, tubular vesica with complex armature of cornuti. Female genitalia characterised by long, tubular, apically dilated, discoidal appendix bursae. A monotypic genus represented by a widespread Old World tropical species.

Cornutiplusia circumflexa (Linnaeus, 1767)

(Pl. 17: 17; ♂ genit. Pl. 88: 1; ♀ genit. Pl. 164: 4)

Phalaena circumflexa Linnaeus, 1767, *Syst. Nat.* (Edn 12): 844 (Type-locality: Europe).

SYNONYMY: *unata* Fabricius, 1787; *flexuosa* Donovan, 1807; *graphica* (Herrich-Schäffer, 1851; *daubii* Freyer, 1838; *patefacta* Walker, 1857; *clarescens* Pinker & Bacallado, 1975).

BIONOMICS. Xero-thermophilous, migratory species, occurring in S Ural and S Siberia in various open xerothermic habitats; dry steppe and semideserts. Multivoltine in tropical areas, number of generations in S Siberia unknown. The moth flies in VII and VIII. Larvae are polyphagous on various plants in Berberidaceae, Papaveraceae, Chenopodiaceae, Amaranthaceae, Brassicaceae, Urticaceae, Malvaceae, Rosaceae, Fabaceae, Lamiaceae, Scrophulariaceae, Plantaginaceae, Asteraceae, preferring Solanaceae, Fabaceae and Brassicaceae.

DISTRIBUTION (Map 346). Palaeotropical, subtemperate. S Russia to S Ural, S Siberia to Altai. – S Europe, Kazakhstan, Mongolia, China, Central Asia to Nepal, Near East, Caucasus and Transcaucasia, Africa.

NOTE. Based on the spined hind tibiae, *C. circumflexa* was originally placed in the genus *Syngrapha* by earlier authors, although its similarity to certain *Syngrapha* species is rather superficial.

Genus ***Syngrapha*** Hübner[18213] 1816

Syngrapha Hübner, [1821] 1816, *Verz. bekannter Schmett.*: 250.
Type-species: *Noctua devergens* Hübner, [1813].

SYNONYMY: *Caloplusia* Smith, 1884; *Palaeographa* Kljut-

shko, 1983; *Aingrapha* Beck, [1992] 1991; *Parsyngrapha* Beck, [1992] 1991; *Diasyngrapha* Beck, [1992] 1991; *Microsyngrapha* Beck, [1992] 1991.

Forewing with pointed apex, convex outer margin and tooth-like scale extension in tornal angle. Wing pattern characteristic of the genus, forewing usually with grey-bluish ground colour, clearly expressed or modified silver gamma-mark; hindwing often yellow with blackish sharp or diffuse terminal band. Hindtibia spined. Male genitalia similar to those of *Autographa*, but clavus reduced; tegumen, vinculum and valvae are comparatively shorter; harpe strongly sclerotised, pointed, often curved or claw-like. Aedeagus with vesica usually shorter than aedeagus; vesica armature variable, from the complete lack of cornuti to the presence of basal and terminal cornuti or a larger group of basal spinules. The female genitalia are similar in most features to those of *Autographa* but the ostium bursae is more strongly, often heavily, sclerotised and the ductus bursae usually has broadened parts.

Large Holarctic genus with 38 species, distributed mainly in the Nearctic. Moths inhabit arctic, subarctic and boreal forest zones and high mountains in more southern areas of the temperate zone. – 7 species.

Syngrapha parilis (Hübner, 1808)

(Pl. 17: 18, 19; ♂ genit. Pl. 88: 2; ♀ genit. Pl. 164: 5)

Noctua parilis Hübner, 1808, *Samml. eur. Schmett*. Noct: fig. 422 (Type-locality: Europe).

Synonymy: *quadriplaga* Walker, 1857.

Bionomics. Meso-hygrophilous species, it inhabits wet boggy biotopes in the tundra zone and the alpine belt with rich low vegetation and patches of prostrate *Betula*. In south it occurs in montane regions of S Siberia in the alpine belt on wet subalpine meadows at altitudes up to 2000 m. Univoltine. Flight period from late VI to early VIII. In northern areas moth flies by day in sunshine. Larvae feed on *Vaccinium myrtillus*, *V. uliginosum*, *V. vitis-idaea* (Ericaceae), prostrate birches *Betula tortuosa*, *B. nana* (Betulaceae), reported also on *Salix* (Salicaceae) and *Polygonum aviculare* (Polygonaceae).

Distribution (Map 347). Circumpolar Holarctic, arcto-alpine. Polar Ural, north Siberia and the North East (Chukotka, Kolyma and Kamchatka), mountains of S Siberia (Tuva, N Transbaikalia), Yakutia, mountains of N Amur reg. – N Europe, Novaja Zemlja Is., N America to Labrador and Greenland.

Syngrapha hochenwarthi (Hochenwarth, 1785)

(Pl. 17: 20-22; ♂ genit. Pl. 88: 3; ♀ genit. Pl. 164: 6)

Phalaena hochenwarthi Hochenwarth, 1785, Schrift. Berl. Naturf. Freande **6**: 335, pl. 7: 2 (Type-locality: Europe).

Synonymy: *divergens* Fabricius, 1787, nec Hübner, 1813; *insignata* Reuter, 1893; *hochesvarthi* Hampson, 1913, emend.; lapponaris Schulte, 1952.

Bionomics. Meso-hygrophilous, tundra-alpine species, it inhabits lowland and montane tundra in the north and subalpine meadows between 1700-2500 m in mountains in the south of its area. Univoltine. Flight period from late VI to early VIII. In the north, moths are flying by day in sunshine. Larvae feed on various low herbs including *Vaccinium*, *Ledum* (Ericaceae), *Astragalus alpinus* (Fabaceae), Apiaceae, Scrophulariaceae, *Plantago* (Plantaginaceae), (*Antennaria*, *Solidago virgaurea*, *Taraxacum* (Asteraceae) *Pimpinella saxifraga* (Apiaceae) and *Carex* (Cyperaceae).

Distribution (Map 348). Euro-Siberian, boreal. North Ural, through north Siberia and mountains of S Siberia to Transbaikalia, Yakutia, and towards the north-east to Magadan, Kamchatka and Chukotka. – Montane regions of central Europe, Fennoscandia, mountain systems of southern region in Caucasus, Transcaucasia, Central Asia, north Kazakhstan, and Mongolia and W China.

Note. In the northern part of its distribution, represented by subspecies *S. hochenwarthi lapponaria* (Schulte, 1952), in mountains of the Central Asia, S Siberia and Mongolia represented by subspecies *S. hochenwarthii cuprina* (Warren, 1913) (Ronkay *et al*. 2008).

Syngrapha diasema (Boisduval, 1829)

(Pl. 17: 23-25; ♂ genit. Pl. 88: 4; ♀ genit. Pl. 164: 7)

Plusia diasema Boisduval, 1829, *Gen. index meth*.: 93 (Type-locality: "Lapponia").

Synonymy: *borea* Hampson, 1913, nec Aurivillius, 1890.

Bionomics. Meso-hygrophilous species, it inhabits lowland and montane wet tundra, forest-tundra, occurs in wet boggy open larch taiga and in the subalpine belt in mountains of S Siberia. Univoltine. Moths are flying from VII to VIII. Larvae feed on *Trollius europaeus* (Ranunculaceae), *Polygonum aviculare* (Polygonaceae), *Betula nana*, *B. tortuosa* (Betulaceae), *Vaccinium myrtillus*, *V. uliginosum*, *V. vitis-idaea* (Ericaceae), and *Populus tremula* (Salicaceae). Overwinters as larva.

Distribution (Map 349). Circum-boreal Holarctic, boreo-montane. Polar Ural, N Siberia to North East, through mountains of S Siberia (Tuva, Sayan Mts.) to Transbaikalia, Far East (N Amur reg., N Khabarovsk reg., N Sakhalin, Kamchatka, Magadan reg. and Chukotka). – N Europe; in southern regions of Asia it occurs in mountain areas of Kazakhstan, Mongolia and Kyrgyzstan; N America, from Alaska to Quebec.

Syngrapha microgamma (Hübner, 1823)

(Pl. 17: 26, 27; ♂ genit. Pl. 88: 5; ♀ genit. Pl. 165: 1)

Noctua microgamma Hübner, 1823, *Samml. eur. Schmett*., Noct. **2**: pl. 151: 698, 699 (Type-locality: Europe).

Synonymy: *incompleta* Reuter, 1893; *v-notata* Strand, 1917; *arctica* Rangnow, 1935; *nearctica* Fergusson, 1955 (subsp.).

Bionomics. Tyrphophilous species, inhabiting peat bogs, open boggy coniferous forests, marshy meadows, boggy larch taiga. Univoltine. Moths fly from mid VI to early IX. They often feed during the day at flowers of *Ledum palustre*. Larvae feed on *Betula nana* (Betulaceae), *Salix repens*, *S. myrtilloides* (Salicaceae), *Vaccinium uliginosum*, *Ledum palustre* (Ericaceae). Overwinters as young larva.

Distribution (Map 350). Holarctic, boreal. N Russia to Ural, S Siberia, Far East (Amur reg., Khabarovsk terr., and Sakhalin). – N Europe and mountain regions of C Europe and C Asia, N America from Alaska to Quebec.

Syngrapha ain (Hochenwarth, 1785)

(Pl. 17: 28, 29; ♂ genit. Pl. 88: 6; ♀ genit. Pl. 165: 2)

Noctua ain Hochenwarth, 1785, *Schrift. Berl. Ges. Naturf. Freunde* **6**: 337, pl. 7: 8 (Type-locality: Europe).

Bionomics. Meso-hygrophilous species, inhabitant of lowlands and mountains in the boreal forest zone. It occurs in cool meadows in the upper belt of the coniferous taiga, and in light boggy larch forests. Univoltine. The moth flies from mid VI to IX. They make long migrations, and females occasionally occur rather far from typical habitats. Larvae oligophagous on Pinaceae, feeding on *Larix*, and also recorded on *Picea* and *Abies*. Overwinters as young larva.

Distribution (Map 351). Eurasian, boreal. Ural mountains, through Siberia to the Far East (north to Magadan reg.) to Sakhalin and Kuriles. – C and S Europe (mountains), Near East (mountains), Caucasus, Kazakhstan, Mongolia, Korea, NE China, Japan (Hokkaido, Honshu, mountains).

Note. The nominate subspecies occurs in the mountains of W and C Europe, the subspecies *S. ain persibirica* L.Ronkay, G.Ronkay, Behounek & Mikkola 2000 is distributed eastwards from the Urals (Ronkay *et al*. 2008).

Syngrapha interrogationis (Linnaeus, 1758)

(Pl. 17: 30, 31; ♂ genit. Pl. 89: 1; ♀ genit. Pl. 165: 3)

Phalaena interrogationis Linnaeus, 1758, *Syst. Nat*. (Edn 10) **1**: 513 (Type-locality: Europe).

Synonymy: *aemula* Fabricius, 1787, nec [Denis & Schiffermüller], 1775; *conscripta* Hübner, 1790; *aurosignata* Donovan, 1808; *gamma-argestina* Stephens, 1850; *borealis* Reuter, 1893; *transbaikalensis* Staudinger, 1892 (subsp.); *rosea* Tutt, 1892; *epsilon* Ottolengui, 1900; *flammifera* H. Huese, 1901; *aureomaculata* Vorbodt, 1912; *zeta* Ottolengui, 1902; *pyrenaica* Hampson, 1913; *simplex* Strand, 1917; *sachalinensis* Matsumura, 1925; *herschelensis* Benjamin, 1933; *magnifica* Rangnow, 1936; *norrlandica* Schulte, 1956; *gilarovi* Klyuchko, 1983.

Bionomics. Meso-hygrophilous. Widely distributed in the boreal forest zone, in light larch taiga and montane dark-coniferous forest, in marshy meadows and peatbogs, in northern areas occurring in forest-tundra. Univoltine. The moth flies from late VI to mid VIII. Larvae feed on *Vaccinium myrtillus*, *V. uliginosum*, *Calluna vulgaris*, *Andromeda polyfolia*, *Ledum palustre* (Ericaceae), *Urtica dioica* (Urticaceae), and *Betula nana*, *B. verrucosa* (Betulaceae).

Distribution (Map 352). Holarctic, boreal. N and C Russia to Ural, through Siberia to the Far East (north to Chukotka) to Sakhalin and Kuriles. – N Europe, mountains in C and S Europe, N Mongolia, N Korea, Japan, N China, N America.

Note. According to Ronkay *et al*. (2008), the nominate subspecies occurs in mountains and northern countries of Europe, while subspecies *S. interrogationis transbaikalensis* (Staudinger, 1892) occurs in the eastern part of its vast range.

Syngrapha ottolenguii Dyar, 1903

(Pl. 17: 32-35; ♂ genit. Pl. 89: 2; ♀ genit. Pl. 165: 4)

Syngrapha ottolenguii Dyar, 1903, *U. S. Nat. Mus. Bull*. **52**: 200 (Type-locality: USA, Alaska, Aleutian Is.).

Synonymy: *arctica* Ottolengui, 1902, nec Möschler, 1884; *nyiwonis* Matsumura, 1925 (subsp.); *alpina* Ichinose, 1963.

Diagnosis. *S. ottolenguii* differs from the allied *S. interrogationis* in somewhat smaller size, darker wing colour with more intense pale bluish-grey suffusion; gamma-mark smaller than in *S. interrogations*, often broken. In male genitalia, differs in the shape of valva, which has parallel margins and tapered and pointed apex of costa, harpe much smaller than in *S. interrogations*. Vesica with small subbasal cornutus and large subapical one. In female genitalia, antrum more ribbed, without split on the upper margin, as in *S. interrogationis*.

Bionomics. Meso-hygrophilous species, it inhabits wet subalpine meadows and boggy lowland meadows, seashores, edges of marshes, open marshy larch forests, montane forest-tundra. Univoltine, without obligatory diapause (Yamamura 2008a). The moth flies in VII and early VIII. The larva described by Yamamura *et al*. (2008); in Japan, it feeds on *Empetrum nigrum* (Ericaceae) (Yamamura *et al*. 2008).

Distribution (Map 353). North-Pacific – Holarctic, boreal, montane. Far East (N Khabarovsk reg., Sakhalin, Kuriles, Kamchatka, Magadan reg.). – Japan (Hokkaido), N America (Aleutian Isl., Alaska).

Note. By opinion of Ronkay *et al*. (2008), the Asian populations of *S. ottolenguii* belong to subspecies *S. o. nywonis* (Matsumura, 1925), described from N Sakhalin, while the nominate subspecies occurs in the Aleutian Isl. and western Alaska. Reported for the Khabarovsk terr. from mountains near mouth of Amur river by Dubatolov & Matov (2009).

Genus ***Plusia*** Ochsenheimer, 1816

Plusia Ochsenheimer, 1816, *Schmett. Eur.* **4**: 89. Type-species: *Phalaena festucae* Linnaeus, 1758 [Europe].

Synonymy: *Chrysapidia* Hübner, [1821] 1816; *Palaeoplusia* Hampson, 1913.

Forewing with outer margin almost straight, tornal scale-tooth absent. Ground colour of forewing orange-brownish or golden-brownish; additional spot

modified into two shining spots, apex with silvery apical streak. In male genitalia, tegumen short, half as long as valva or even shorter, harpe thick, rather long, extending beyond costal margin. Aedeagus with short, broad vesica with shorter or longer terminal cornutus. In the female genitalia, there is a smaller or larger sclerotised patch on corpus bursae, sometimes located on a lateral pouch. Larvae oligophagous, feeding on Monocotyledonous plants in Poaceae, Cyperaceae and Juncaceae. Holarctic genus of 5 species. – 2 species.

Plusia festucae (Linnaeus, 1758)

(Pl. 17: 36, 37; ♂ genit. Pl. 89: 3, 4; ♀ genit. Pl. 165: 5)

Phalaena festucae Linnaeus, 1758, *Syst. Nat.* (Edn 10) **1**: 513 (Type-locality: Europe).

Synonymy: *splendida* Rangnow, 1935; *yokohamensis* Bryk, 1948; *japonibia* Bryk, 1948; *kamchadala* Bryk, 1948; *kurilensis* Bryk, 1948; *manchurica* Lempke, 1966.

Bionomics. Hygrophilous species occurring in marshy and swampy habitats, wet meadows, edges of bogs, lake shores, wet pastures. Bivoltine. The moth flies in V-VII and VIII-IX. Larvae feed mainly on *Festuca*, *Calamagrostis*, *Deschampsia*, *Glyceria*, *Phalaris*, *Triticum*, occasionally on *Phragmites* (Poaceae), *Carex* (Cyperaceae) and rarely on other Monocotyledons *Iris*, *Typha*, *Sparganium*. Recorded also on Salicaceae, Brassicaceae, Urticaceae, Rosaceae and Linaceae. Overwinters as young larva.

Distribution (Map 354). Trans-Palaearctic, boreal. Russia to Ural, through Siberia to the Far East (northwards to Chukotka, Sakhalin and Kuriles). – N Africa, Near East, Central Asia, Europe, China, Korea, Japan.

Plusia putnami Grote, 1873

(Pl. 17: 38-40; ♂ genit. Pl. 89: 5; ♀ genit. Pl. 165: 6)

Plusia putnami Grote, 1873, *Bull. Buffalo Soc. Nat. Sci.* **1**: 146, 192, pl. 4: 2 (Type-locality: USA: New York).

Synonymy: *festata* Graeser, 1889 [1890] (subsp.); *punctistigma* Strand, 1917); *barbara* Warren, 1913 (subsp.); *gracilis* Lempke, 1966 (subsp.); *conjuncta* Chou and Lu, 1978; *major* Warren, 1913 (infrasubspecific name); *major* Chou & Lu, 1979.

Diagnosis. *P. putnami* differs from its congener in smaller size, somewhat brighter, more orange-bronze wing colour, most often unbroken gamma-mark and narrower subapical silver streak. In male genitalia, it differs in thinner uncus, shorter but broader valva, stronger and longer harpe. Vesica with a very small subapical cornutus. Female genitalia differ in long, narrow corpus bursae with lateral sclerotised band.

Bionomics. Meso-hygrophilous species, like the preceding species, it inhabits wet meadow biotopes, Abundant in the valley of Amur in meadows with *Calamagrostis*. Univoltine. The moth flies from VI to late VIII. Larvae feed mainly on Monocotyledonous plants, in particular *Calamagrostis langsdorphi*, *Miscanthus chinensis* (Poaceae) and *Carex* (Cyperaceae). Overwinters as young larva.

Distribution (Map 355). Holarctic, subboreal. Russia to Ural, through Siberia to the Far East and Sakhalin. – N Africa, C and S Europe, Near East, Mongolia, China, Korea, Japan, N America.

Note. *P. putnami* has four subspecies: nominate *putnami* is Nearctic; in N Africa (Morocco) *P. p. barbara* (Warren, 1913); in Europe, *P. p. gracilis* (Lempke, 1966) and in Asia, *P. p. festata* Graeser, 1890 (Ronkay *et al*. 2008).

16. Subfamily **Eustrotiinae** Grote, 1882

Eustrotiinae Grote, 1882. *New checklist North American Moths*: 37. Type-genus: *Eustrotia* Hübner, [1821].

Synonymy: Erastridi Stephens, 1850, inval.; Erastridae Herrich-Schäffer, [1851] 1845, inval.; Cerathosiini Grote, 1890; Erastriinae Tutt, 1896; inval.; Erastriini Forbes, 1954, inval.; Lithacodiinae Crumb, 1956.

Small moths, wingspan 16-26 mm.; antennae filiform, ciliate; eyes rounded, naked; frons smooth; palps short or moderate, upturned, the 2nd segment finger-like, usually short; tibia without spines. Forewing moderately wide, with rounded apex, areole present, rarely absent; veins R3 and R4 often equal to R4; in hindwing vein M2 present: it is slightly reduced compared with M3, and it meets the cell at about 3/4 down the cell; wing colour usually brown or ochreous brown with white spots and bands; in many genera wing pattern uniform; abdomen usually with 1-4 dorsal crests on 1st-5th segments. In male genitalia, uncus long, falciform, in some genera weak, stick-like; tegumen usually broad, peniculus moderate, in some genera broad; vinculum slender, saccus moderate; valva usually long, wide at base, in distal two thirds narrow, with parallel margins; costa often broad, harpe absent, cucullus not separated; juxta plate-like. Aedeagus with entirely membranous dorsal half, ductus seminalis starts from membranous medial part or dorsal third of the aedeagus, coecum very long, a unique character of the *Deltote* genera group, not found in any other genera of the Noctuidae. In female genitalia, ovipositor usually weakly sclerotised, although heavily so in some genera, flattened dorsally, knife-like; antrum membranous or sclerotised; ductus bursae usually long, corpus bursae membranous, usually saccate, sometimes with small signa.

Moths are active at dusk and night, some species fly by day. In most genera, larvae feed on herbaceous plants, and many species are oligophagous on Poaceae and Cyperaceae.

The limits of the family and its taxonomic composition is still disputed. The genera listed below were included by early authors in the polyphyletic subfamily Erastrianae (*sensu* Hampson 1910) or Acontiinae (*sensu* auctorum). Speidel *et al*. (1996) segregated the subfamilies Acontiinae, Pseudeustrotiinae, Eustrotiinae, Tytinae and Sinocharinae from Acontiinae (*sensu* auctorum). Kitching & Rawlins, (1999) divided Acontiinae (*sensu* auctorum) into Acontiinae and Eustrotiinae. Fibiger & Lafontaine (2005) recognised the subfamilies separated by Speidel *et al*. (1996), and removed the subfamily Eublemminae from Acontiinae (*sensu* auctorum) and placed *Tyta* in the subfamily Metoponiinae. Here we treat the *Deltote* genus group as the core of Eustotiinae. The placement of *Neustrotia* and *Bryophilina* in Eustrotiinae requires confirmation. The subfamily needs generic revision which takes into account the tropical fauna.

A subfamily of Worldwide distribution, with about 500-700 species in the Old and New Worlds, many of them occur in tropical and subtropical regions. In the Palaearctic about 100-150 species. The subfamily is most diverse in East Asia, and very few genera and species occur in Europe. 14 genera and 25 species occur in the Asian part of Russia.

References: Hampson 1910; Ueda 1984, 1987; Speidel *et al*. 1996; Fibiger & Lafontaine 2005; Fibiger *et al*. 2009; Holloway 2009.

Genus ***Phyllophila*** Guenée, 1852

Phyllophila Guenée, 1852, *in* Boisduval & Guenée, *Hist. nat. Insectes* (Lépid.) **6**: 254. Type-species: *Anthophila wimmerii* Treitschke, 1835 [Yugodlavia] (= *Anthophila obliterata* Rambur, 1833).

Wingspan 24–26 mm. Body rather slender; antennae in male serrate; frons with rounded prominence, without transverse comb; labial palps short, directed obliquely forward, 3rd segment very small. In male genitalia, uncus rather massive, sickle-like; valva constricted from the middle distally and rounded apically; sacculus massive; harpe moderate, massive; juxta triangular, plate-like with small prominence in the middle. Aedeagus moderate, vesica without cornuti. In female genitalia, papillae anales moderate, quadrangular; anterior and posterior apophyses almost equal in length; antrum sclerotised, funnel-shaped; ductus bursae moderate; corpus bursae longer than ductus, saccate, with sclerotised cervix in caudal part.

The genus includes 11 species, three of them occur in the Palaearctic, the others were described from C and S Africa and South America, and their generic position requires revision. – 1 species.

Phyllophila obliterata (Rambur, 1833)

(Pl. 18: 1, 2; ♂ genit. Pl. 90: 1; ♀ genit. Pl. 165: 7)

Anthophila obliterata Rambur, 1833, *Ann. Soc. ent. Fr.* **2**: 27, pl. 2: 17 (Type-locality: Corsica).

Synonymy: *wimmerii* Treitschke, 1835; *recta* Eversmann, 1844; *cretacea* Butler, 1879; *venerica* Bryk, 1948.

Bionomics. Meso-xerophilous species, occurs in dry meadows, bushes, waste lands, hillsides and *Artemisia*-steppe habitats. Bivoltine. The moth flies from end V-VI and VII-IX. Larvae feed on *Artemisia* (Asteraceae). Overwinters as pupa.

Distribution (Map 356). Eurasian, subboreal. S Russia to Ural, through Siberia to Far East (Amur, S Khabarovsk and Primorye terr.). – Europe, Near East, Caucasus, Transcaucasia, Middle Asia, Kazakhstan, China, Korea, Japan.

Genus ***Protodeltote*** Ueda, 1984

Protodeltote Ueda, 1984, *Bull. Kitakyushu nat. Hist. Mus.* **5**: 112. Type-species: *Phalaena pygarga* Hufnagel, 1766 [Germany].

Synonymy: *Deceptria* Beck, 1996; *Lithacodia* auct.; *Erastria* auct.; *Jaspidia* auct.

Small moths, wingspan 22-26 mm. Labial palps short or moderate, upturned; antenna minutely ciliate in males; forewing with rounded apex; areole present; hindwing with M2 developed, starting from below middle of discal cell. In male genitalia, tegumen broad; peniculus moderate; uncus long; valva moderately short, wide in the base; basal lobe of sacculus forms large flat process, cucullus clearly separated, without spines or setae. Aedeagus long, vesica bearing cornuti arranged in rectangular plate and two congregations of small spines. In female genitalia, 8th segment wide; papillae anales sclerotised, quadrangular; posterior apophyses twice as long as anterior ones; ductus bursae long, membranous; corpus bursae saccate, elongated. Fibiger *et al* (2009), in the revision of the European fauna, treated *Protodeltote* as a subgenus of *Deltote*. However, I believe that the revision of the status of other *Deltote* generic groups selected by Ueda (1984, 1987) and *Lithacodia* and *Eustrotia* (sensu auctorum) is necessary before we have a clear concept of Eustrotiinae and the genus *Deltote*. Before a basic revision of the subfamily with account of East Asian taxa has been made, *Protodeltote* is retained here as a valid genus.

The genus includes 10 species, one of them widely distributed in the Palaearctic, the other six are Manchurian and one is Nearctic. – 3 species.

Protodeltote pygarga (Hufnagel, 1766)

(Pl. 18: 3, 4; ♂ genit. Pl. 90: 2; ♀ genit. Pl. 165: 8)

Phalaena pygarga Hufnagel, 1766, *Berl. Mag.* **3**: 408 (Type-locality: Germany., Berlin).

Synonymy: *fasciana* Linnaeus, 1762; *fuscula* [Denis & Schiffermüller], 1775; *polygramma* Esper, 1790; *albilinea* Haworth, 1809; *guenei* Fallou, 1864; *coreana* Bryk, 1948.

Bionomics. Mesophilous species, it inhabits meadows, open humid forests, clearings, wet woodsides, bushes along rivers or streams. Bivoltine. The moth flies from VI-VIII. Larvae feed mainly on *Calamagrostis*, *Brachypodium*, *Molinia*, *Dactylis*, *Elytrigia*, *Lolium*, *Phalaris* (Poaceae), recorded also on *Rubus* (Rosaceae) and *Lonicera* (Caprifoliaceae). Overwinters as pupa.

Distribution (Map 357). Eurasian, subboreal. Russia to Ural, through Siberia to Far East, to Sakhalin and Kuriles. – Europe, Near East, Caucasus, Transcaucasia, Kazakhstan, Korea, Japan and China.

Protodeltote distinguenda (Staudinger, 1888)

(Pl. 18: 5, 6; ♂ genit. Pl. 90: 3; ♀ genit. Pl. 165: 9)

Erastria distinguenda Staudinger, 1888, *Stettin. ent. Ztg* **49**: 265 (Type-locality: Russia: "Raddefka" [Khabarovck terr, Judish autonomy.: Radde]; Khabarovsk terr.: Bikin; Primorye: Vladivostok, "Sutschan-Gebiet" [Partizansk]).

Synonymy: *quadriorbis* Berio, 1977.

Diagnosis. *P. distinguenda* is externally similar to *P. pygarga*, especially its dark form, but differs in finer wing pattern, absence of white dash in the tornal area and presence of prominent white comma-like claviform stigma. Male genitalia differ in shorter uncus, shorter and broader asymmetrical valva with prominent saccular lobes. Female genitalia differ in stronger and longer apophyses and longer ductus bursae.

Bionomics. Mesophilous species, occurs in glades, forest meadows, clearings, wet edges in deciduous woodlands. Bivoltine. The moth flies in VI-VIII in two overlapping generations. Larvae feed on *Opismenus*, *Digitaria*, *Oryza sativa* (Poaceae). Overwinters as pupa.

Distribution (Map 358). Manchurian, nemoral. Far East (S Khabarovsk and Primorye terr.). – Korea, Japan, N China, Taiwan.

Note. The holotype of *Protodeltote distinguenda* is illustrated on Pl. 18: 5.

Protodeltote wiscotti (Staudinger, 1888)

(Pl. 18: 7, 8; ♂ genit. Pl. 90: 4; ♀ genit. Pl. 166: 1)

Erastria wiscotti Staudinger, 1888; *Stettin. ent. Ztg* **49**: 266 (Type-locality: Russia, Primorye, Askold I.; Baranovsky; Ussuri).

Synonymy: *viscotti*, Hampson, 1910 emend.; *jezoensis* Sugi, 1959.

Bionomics. Meso-hygrophilous species, inhabits meadows, open humid forests, clearings, wet woodsides, bushes along rivers, brook valleys. Bivoltine. The moth flies from VI to lateVIII. Larvae feed on Poaceae. Overwinters as pupa.

Distribution (Map 359). Manchurian, nemoral. Far East to S Kuriles. – Korea, Japan, N China.

Genus ***Koyaga*** Ueda, 1984

Koyaga Ueda, 1984, *Bull. Kitakyushu nat. Hist. Mus.* **5**: 119. Type-species: *Miana falsa* Butler, 1885 [Japan].

Synonymy: *Erastria* auct.; *Lithacodia* auct.; *Jaspidia* auct.

Small and medium sized moths, wingspan 22-30 mm. Externally close to the genus *Protodeltote*. In male genitalia, tegumen moderately large; peniculus moderate; uncus long, falciform; valva long, 6-9 times as long as wide with parallel costal and ventral margins; base of costa strongly swollen dorsally; sacculus large and swollen dorsally; harpe absent or present, small, reduced; cucullus well sclerotised, with microsculpture; juxta oblong or triangular. Aedeagus long, with well developed coecum; cornuti present and typically composed of a plate with many small spines. In female genitalia, 8th abdominal tergite weakly sclerotised and narrow; papillae anales quadrangular; anterior apophyses slender and longer than posterior ones; antrum membranous; ductus bursae as long as elongated, saccate corpus bursae.

The genus includes 7 species, distributed in Manchurian subregion of the Palaearctic and in the Oriental region. – 3 species.

Koyaga falsa (Butler, 1885)

(Pl. 18: 9, 10; ♂ genit. Pl. 90: 6; ♀ genit. Pl. 166: 2)

Miana falsa Butler, 1885, *Cistula ent.* **3**: 132 (Type-locality: Japan: Yokohama).

Diagnosis. Externally similar to *P. pygarga*, but differs in 1.5 times larger size, more contrasting wing pattern and more expressed white subtornal mark.

Bionomics. Meso-hygrophilous species. In Russia, known only from S Sakhalin and S Kuriles (Kunashir Is.). It inhabits maritime meadows, open humid mixed forests, clearings, glades, where *Sasa kurilensis* grow. Univoltine. The moth flies in VII and VIII. Larvae feed on *Sasa kurilensis* (Poaceae) (Miyata 1983). Overwinters as pupa.

Distribution (Map 360). Manchurian-Japanese, nemoral. Islands of Russian Far East (S Sakhalin, Kuriles: Kunashir Is.). – China, Korea, Japan.

Koyaga numisma (Staudinger, 1888)

(Pl. 18: 11, 12; ♂ genit. Pl. 91: 1; ♀ genit. Pl. 166: 3)

Erastria numisma Staudinger, 1888, *Stettin. ent. Ztg* **49**: 265 (Type-locality: Russia: Primorye: Vladivostok, Askold I., "Suifun" [Razdolnaya river].

Synonymy: *olivacea* Leech, 1889.

Diagnosis. In presence of white comma-like claviform mark, *K. numisma* similar to *P. distinguenda*, but differs in smaller size, greenish tint of wing pattern and larger stigmata.

Bionomics. Mesophilous species, occurs in meadows, clearings, wet woodsides, bushes along rivers where grasses Poaceae are abundant. Bivoltine. The moth flies from VI to lateVIII, in two generations. Larvae feed on *Miscanthus chinensis* (Poaceae). Overwinters as pupa.

Distribution (Map 361). Manchurian, nemoral. Far East, to Sakhalin and S Kuriles. – China, Korea, Japan.

Koyaga magninumisma (Ahn, 1998)

(Pl. 18: 13, 14; ♂ genit. Pl. 91: 2; ♀ genit. Pl. 166: 4)

Koyaga magninumisma Ahn, 1998, *Illustr. Cat. Noct. Korea*, **3**: 161, 387: 411, (Type-locality: S Korea, Gwangleung).

Synonymy: *magnumisma*, Kononenko et al, 1998, emend.

Diagnosis. *K. magninumisma* is the sister species of *K. numisma*, externally differing in somewhat larger size, more greyish tint of wing colour and larger and more clearly defined orbicular, reniform and claviform stigmata. In male genitalia, it differs from *K. numisma* in longer uncus, broader valva and presence of two patches of small cornuti in vesica; only one rounded patch present in *K. numisma*.

Bionomics. Mesophilous species, occurs with the preceding species in meadows, clearings, wet woodsides, bushes along rivers where Poaceae are abundant. Bivoltine. The moth flies from VI to late VIII, in two generations. The foodplants of larvae are unknown, probably Poaceae.

Distribution (Map 362). Manchurian–continental, nemoral. Far East (S Khabarovsk terr., Primorye). – Korea.

Note. The species was ommited in the Checklist of the Noctuidae of the Asian part of Russia (Kononenko 2005). Reported for the S Khabarovsk terr. by Dubatolov & Dolgikh (2009).

Genus ***Sugia*** Ueda, 1984

Sugia Ueda, 1984, *Bull. Kitakyushu nat. Hist. Mus.* **5**: 125. Type-species: *Erastria stygia* Butler, 1878 [Japan].

Small moths, wingspan 22-24 mm. Externally close to *Protodeltote*. Forewing venation with areole, in hindwing M2 present. In male genitalia, tegumen broad; peniculus not expressed; uncus weakly sclerotised, stick-like; valva long and narrow, about 6-10 times as long as wide, tapered distally; base of costa moderately curved dorsally; sacculus large; harpe absent; cucullus well sclerotised, pointed or bearing short stick-like extension; juxta large, plate-like. Aedeagus long, with well developed coecum; vesica tubular, cornuti as a narrow band of small spines. In female genitalia, 8th abdominal tergite weakly sclerotised and narrow; papillae anales quadrangular; anterior apophyses slender and equal to posterior ones; antrum weakly sclerotised; ductus bursae half the length of corpus bursae; corpus bursae rounded.

The genus includes 5 species, distributed in Manchurian-Pacific subregion and in Oriental region. – 1 species.

Sugia stygia (Butler, 1878)

(Pl. 18: 15, 16; ♂ genit. Pl. 91: 3; ♀ genit. Pl. 166: 5)

Erastria stygia Butler, 1878, *Ann. Mag. nat. Hist.* (5) **1**: 199 (Type-locality: Japan: Yokohama).

Diagnosis. Externally similar to *P. pygarga*, especially to its dark form, but differs in somewhat smaller size, thinner elements of wing pattern, less prominent white subtornal dash if present, and more distinct subterminal line.

Bionomics. Mesophilous species known in Russia only from S Kuriles (Kunashir Is.). Collected in maritime meadows and in glades with bushes of *Sasa kurilensis* in open humid mixed forest. The moth flies in VII. The larva and its foodplants are unknown.

Distribution (Map 363). Manchurian-Japanese, nemoral. Islands of Russian Far East (Kuriles, Kunashir Is.). – China, Korea, Japan.

Genus ***Deltote*** Reichenbah, Leipzig, 1817

Deltote Reichenbah, Leipzig, 1817. *Jenaische Allg. Lif. – Ztg* **1**: 388 [Germany]. Type-species: *Phalaena argentula* Hübner, [1787] (= *Pyralis bankiana* Fabricius, 1775).

Synonymy: *Erastria* Ochsenheimer, 1816, preocc. (Hübner, [1813] [Lepidoptera, Geometridae]); *Lithacodia* Hübner, 1818; *Eustrotia* Hübner, [1821] 1816; *Hemeroptera* Sodoffsky, 1837, replacement name; *Hydrelia* Guenée, 1841, preocc. (Hübner, [1825] 1816 [Lepidoptera, Geometridae]); *Hyela* Stephens, 1850; *Bankia* Guenée, 1852, preocc. (Gray, 1842 [Mollusca]).

Small moths, wingspan 22-24 mm. Externally, close to *Protodeltote*. Forewing with moderately produced apex; areole present; M2 in hindwing developed. Colour and pattern of forewing contrasting, often with silvery or white band or spots. In male genitalia, tegumen broad; peniculus well developed, ear-like; uncus long, slightly twisted, falciform; valva long, with parallel costal and ventral margins; costa narrow, base of costa strongly projected dorsally, at right angle to dorsal margin of valva, in some cases costa with large extension in distal third; sacculus large; harpe absent; cucullus sclerotised; juxta large and strongly narrowed posteriorly. Aedeagus moderate, coecum well developed, cornuti absent. In female genitalia, 8th abdominal tergite weakly sclerotised, moderate; papillae anales quadrangular; anterior apophyses slender and equal to posterior ones; antrum membranous; ductus bursae moderate, half the length of corpus bursae; corpus bursae elongated, saccate, often with long cervix.

Ueda (1984, 1987) synonymised the genera *Lithacodia* (type-species: *Lithacodia bellicula* Hübner, 1818) and *Eustrotia* (type-species: *Phalaena uncula*) with *Deltote* by congenerity of their type-species. Poole (1989) treated *Lithacodia* and *Eustrotia* as distinct genera with 167 and 78 valid species respectively. Some of them belong to *Deltote* and to other genera of *Deltote* generic-group recognised by Ueda (1984, 1987), but the majority require revision of their generic association.

In the present treatment, the genus includes 5 species, three of which are widely distributed in Palaearctic, one is Manchurian and one, *Deltote bellicula* Hübner,1818, the type-speciesof *Lithacodia*, is Nearctic. – 4 species.

Deltote deceptoria (Scopoli, 1763)

(Pl. 18: 17, 18; ♂ genit. Pl. 91: 4; ♀ genit. Pl. 166: 6)

Phalaena deceptoria Scopoli, 1763, *Ent. Carniolica*: 214: 527 (Type-locality: Slovenia, "Carniola, Umg. Idriam").

Synonymy: *lineodes* Hufnagel, 1766; *atratula* [Denis & Schiffermüller, 1775]; *atratula* Hübner, [1800-1803]), nec. Denis & Schiffermüller, 1775.

Bionomics. Mesophilous species, occurs in open valley forest along rivers, warm glades, wet meadows, among bushes. Bivoltine. Flight period from V to VIII. Larva feeds on *Phleum pratense*, *Poa altaica* (Poaceae). Overwinters as pupa.

Distribution (Map 364). Eurasian, subboreal. Russia to Ural, through S Siberia to Far East, to Sakhalin and Kuriles. – Europe, N China.

Deltote uncula (Clerck, 1759)

(Pl. 18: 19, 20; ♂ genit. Pl. 91: 5; ♀ genit. Pl. 166: 7)

Phalaena uncula (Clerck, 1759), *Icones Insect. rariorum* **1**: Pl. 3: 7 (Type-locality: not stated).

Synonymy: *uncana* Linnaeus, 1761; *singularis* Hufnagel, 1766; *unca* [Denis & Schiffermüller, 1775]; *rufotincta* Kolb, 1930.

Bionomics. Hygrophilous species, inhabits wet meadows, marshes, open wet forest, bushes along rivers or banks. Bivoltine. The moth flies in late V-VII and again in VIII-IX. Larvae feed on *Deschampsia caespitosa*, *Phalaris arundinacea* (Poaceae) and *Carex* and *Cyperus* (Cyperaceae). Overwinters as pupa.

Distribution (Map 365). Eurasian, subboreal. Russia to Ural, through Siberia to the Far East, Sakhalin and Kuriles. – Europe, Central Asia, Korea, Japan, N China.

Deltote bankiana (Fabricius, 1775)

(Pl. 18: 21, 22; ♂ genit. Pl. 91: 6; ♀ genit. Pl. 166: 8)

Pyralis bankiana Fabricius, 1775, *Syst. ent.*: 645 (Type-locality: England).

Synonymy: *olivana* [Denis & Schiffermüller, 1775]; *argentula* Hübner, [1787]; *olivea* Hübner, [1803], emend.; *albescens* Draudt, 1935; *uniformis* Draudt, 1935; *amurula* Staudinger, 1892.

Bionomics. Hygrophilous species, occurs together with previous species in wet habitats. Bivoltine. The moth flies from late V to VIII-IX in two generations. Larvae feed on *Calamagrostis*, *Arrhenatherum*, *Brachypodium*, *Bromus*, *Dactylis*, *Elytrigia*, *Molinia*, *Poa* (Poaceae) and *Carex* and *Cyperus* (Cyperaceae), recorded also on *Polygonum bistorta* (Polygonaceae). Overwinters as pupa.

Distribution (Map 366). Eurasian, subboreal. Russia to Ural, through Siberia to the Far East, Sakhalin and Kuriles. – Europe, Near East, Central Asia, Korea, Japan, N China.

Deltote nemorum (Oberthür, 1880)

(Pl. 18: 23, 24; ♂ genit. Pl. 91: 7; ♀ genit. Pl. 166: 9)

Erastria nemorum Oberthür, 1880, *Étud. Ent.* **5**: 82, pl. 4: 2 (Type-locality: Russia: Primorye, Askold I.).

Synonymy: *africana* Leech, 1889, nec Felder & Rogenhofer, 187

Bionomics. Meso-hygrophilous species, inhabits meadows, open wet forest, clearings, wet woodsides, bushes along rivers. Bivoltine. The moth flies from VI to VIII in two generations. The larva and its foodplants are unknown.

Distribution (Map 367). Manchurian, nemoral. Far East (Amur, S Khabarovsk and Primorye terr.). – China, Korea, Japan.

Genus ***Pseudodeltote*** Ueda, 1984

Pseudodeltote Ueda, 1984, *Bull. Kitakyushu nat. Hist. Mus.* **5**: 114. Type-species: *Erastria brunnea* Leech [Japan].

Small moths, wingspan 22-24 mm. Externally, close to *Protodeltote*. In male genitalia, tegumen moderately large; peniculus not developed; uncus slender, long, falciform and densely long-haired; valva short, 2. 5-4 times as long as wide; costa narrow and moderately curved dorsally at the base; cucullus short; basal lobe of sacculus deep and large, and its dorsal margin with a process; juxta small, tapered towards distal margin. Aedeagus moderately large, ventral sclerotised portion broad, coecum well developed; cornuti absent or present. In female genitalia, 8th segment broad; papillae anales large, quadrangular; anterior and posterior apophyses equal in length; antrum wide, membranous; ductus bursae short, membranous, 1/3 length of saccate, elongated corpus bursae.

The genus includes 8 species, all distributed in the Manchurian-Pacific subregion of the Palaearctic and in the Oriental region. – 1 species.

Pseudodeltote brunnea (Leech, 1889)

(Pl. 18: 25-27; ♂ genit. Pl. 91: 8 ♀ genit. Pl. 167: 1)

Erastria brunnea Leech, 1889, *Proc. zool. Soc. Lond.* **1889**: 527, pl. 53: 2 (Type-locality: Japan).

Bionomics. Mesophilous species, in Russia known only from Kuriles (Kunashir Is.). Moths were collected in meadows near the seashore, in glades, and in open humid mixed forest with bushes of *Sasa kurilensis*. The moth flies in VII. The larva and its foodplants are unknown.

Distribution (Map 368). Japanese, nemoral. Islands of Russian Far East (S Kuriles, Kunashir Is.). – Japan.

Genus ***Paraphyllophila*** Kononenko, 1985

Paraphyllophila Kononenko, 1985, Tinea **11**(27): 217. Type-species: *Paraphyllophila confusa* Kononenko, 1985 [Type-locality: Russia, Primorye, Barabash-Levada].

Small moths, wingspan 24 – 27 mm. Antennae filiform; labial palps moderate, 3rd segment half as long as second; proboscis relatively short; frons smooth; forewing broad, straw-yellow, with fine, oblique submedial line, expressed as dark dots outlined by white; vein M2 on hindwing weak. In male genitalia, uncus small, weak, stick-like; tegumen short and very broad, with large pointed "shoulders"; juxta large, elliptoid; valvae basally broad, narrowed distally, slightly pointed at apex, with assymetrical processes on left and right valvae. Aedeagus nearly as long as valva, its ventral wall heavily sclerotised and pointed near apex; vesica tubular, armed with a large spine-like cornutus on broad base. In female genitalia, ovipositor heavily sclerotised, papillae anales broad, pointed, flattened; anterior apophyses somewhat shorter than posterior ones; antrum extended, sclerotised; Ductus bursae with small sclerotised triangular appendix in middle; corpus bursae elongated, saccate; ductus seminalis inserted in caudal part of corpus bursae.

Monotypic Manchurian genus.

Paraphyllophila confusa Kononenko, 1985

(Pl. 18: 28, 29; ♂ genit. Pl. 92: 1; ♀ genit. Pl. 167: 2)

Paraphyllophila confusa Kononenko, 1985, *Tinea* **11**(27): 218 (Type-locality: Russia, Primorye, Kedrovaja Pad' reserve).

Bionomics. Meso-thermophilous species, occurs in dry meadows where *Artemisia* is abundant, in dry forest edges, meadows, slopes and sandy dunes along sea or river shores. Univoltine. The moth flies in VII-VIII. The larva and its foodplants are unknown.

Distribution (Map 369). Manchurian, nemoral. Far East (Amur reg., Primorye terr.). – Korea, Japan (Honshu) (Sugi 1993).

Note. The holotype of *Paraphyllophila confusa* is illustrated on Pl. 18: 28.

Genus ***Micardia*** Butler, 1878

Micardia Butler, 1878, *Ann. Mag. nat. Hist.* (5) **1**: 81. Type-species: *Micardia argentata* Butler, 1878 [Japan].

Small moths, wingspan 22-26 mm. Frons smooth; labial palps upturned, 3rd segment short; antenna of male with dense and short hairs; thorax with distinct crests; forewing with acute apex; areole present; hindwing with M2 developed; wing pattern very much specialised. In male genitalia, tegumen broad; peniculus moderate; uncus broad, rather short; valva long, about 5 times as long as wide; costa broad; valva with broad sacculus, narrow and curved dorsally in distal half. Aedeagus moderate, apically curved ventrally, coecum large, vesica tubular, cornuti composed of series of minute spines. In female genitalia, 8th segment weakly sclerotised and narrow; papillae anales quadrangular; anterior and posterior apophyses equal in length; antrum membranous; cervix bursae 1/5 length of corpus bursae; ductus bursae moderate, about 1/3 length of corpus bursae, membranous; corpus bursae saccate, elongated.

The genus includes 11 species, 9 of which occur in Manchurian-Pacific subregions of the Palaearctic. 3 species have been described from Madagascar, but their generic association requires revision. – 1 species.

Micardia pulchra Butler, 1878

(Pl. 18: 30, 31; ♂ genit. Pl. 92: 2; ♀ genit. Pl. 167: 3)

Micardia pulchra Butler, 1878, *Ann. Mag. nat. Hist.* (5) **1**: 81 (Type-locality: Japan: Yokohama).

Synonymy: *pulchrargenta* Bryk, 1942.

Bionomics. Mesophilous species known in Russia only from S Kuriles (Kunashir Is.). Occurs in meadows and glades in mixed forest and in meadows and sandy dunes along seashores. Univoltine. The moth flies in VII-VIII. The larva and its foodplants are unknown.

Distribution (Map 370). Japanese, nemoral. Islands of Russian Far East (S Kuriles, Kunashir and Shikotan Is.). – Korea, Japan.

Genus ***Erastroides*** Hampson, 1893

Erastroides Hampson, 1893, *Illust. typical Specimens Lepid. Heterocera Colln Br. Mus.* **9**: 20, 98. Type-species: *Erastroides oliviaria* Hampson, 1893 [Sri Lanka].

Small moths, wingspan 24–26 mm. Outer margin of forewing with projection opposite veins M2 and M3 and steeply curved towards tornal angle; M2 in hindwing developed. In male genitalia, uncus long, falciform; tegumen moderate; juxta plate-like; with parallel costal and ventral margins; harpe moderate, weak, stick-like. Aedeagus with coecum; vesica tubular, long, with small stick-like apical cornutus. In female genitalia, papillae anales small, anterior and posterior apophyses small, equal in length, antrum small, cup-shaped, ductus bursae moderately long, slightly sclerotised, corpus bursae large, oval, saccate.

The genus includes 11 species distributed in the Manchurian subregion of the Palaearctic (2 species), the Oriental (6 species) and Neotropical regions (3 species). – 1 species.

Erastroides fentoni (Butler, 1881)

(Pl. 18: 32, 33; ♂ genit. Pl. 90: 5; ♀ genit. Pl. 167: 4)

Erastria fentoni Butler, 1881, *Trans. ent. Soc. Lond.* **1881**: 190 (Type-locality: Japan: Tokyo).

Synonymy: *versicolor* Oberthür, 1884.

Bionomics. Mesophilous species, it inhabits open deciduous forests, glades, meadows, and among bushes. Probably two generations in VI-VIII. The larva and its foodplants are unknown.

Distribution (Map 371). Manchurian, nemoral. Far East (Primorye terr., S Kuriles). – China, Korea, Japan, Taiwan.

Genus ***Naranga*** Moore, 1881

Naranga Moore, 1881, *Proc. zool. Soc. Lond.* **1881**: 359 Type-species: *Xanthodes diffusa* Walker, 1865 [Sri Lanka].

Small moths, wingspan 18–22 mm. Frons smooth; labial palps upturned, 3rd segment short; antenna filiform; forewing with acute apex and oblique outer margin; areole present; hindwing with M3 developed; forewing yellow, orange; wing pattern specialised, expressed by two oblique bands. In male genitalia, uncus long, falciform; tegumen moderate; juxta plate-like; valva basally extended, with parallel costal and ventral margins; harpe absent. Aedeagus with coecum; vesica without cornuti. In female genitalia, papillae anales small, acute, anterior and posterior apophyses small, equal in length, antrum very small, cup-shaped, ductus bursae very long, 4 times longer than small, round corpus bursae.

The genus includes 3 species distributed in the Manchurian subregion of the Palaearctic region, and in the Ethiopian region. – 1 species

Naranga aenescens Moore, 1881

(Pl. 18: 34, 35; ♂ genit. Pl. 92: 3; ♀ genit. Pl. 167: 5)

Naranga aenescens Moore, 1881, *Proc. zool. Soc. Lond.* **1881**: 359 (Type-locality: Taiwan.

Synonymy: *brunnea* Hampson, 1910; *hebescens* Butler, 1879.

Bionomics. Hygrophilous species, inhabits wet meadows, wet woodsides, grassy riverbanks with bushes, and rice fields. The moth flies in VII-VIII. Larvae feed on Poaceae, in Japan reported from *Sasa* and *Oryza sativa* (Miyata 1982). *N. aenescens* has been reported as a pest of rice in Asia.

Distribution (Map 372). Oriental-Manchurian, subtemperate. Far East (Amur, S Khabarovsk and Primorye terr.). – China, Korea, Japan, Taiwan, Indonesia, Indochina, N India, Nepal.

Genus ***Maliattha*** Walker, 1863

Maliattha Walker, 1863, *List Specimens lepid. Insects Colln Br. Mus.* **27**: 86. Type-species: *Maliattha separata* Walker, 1863 [Borneo:Sarawak].

Synonymy: *Hyleopsis* Hampson, 1894; *Proschora* Turner, 1945.

Small moths, wingspan 20–24 mm. Frons smooth; labial palps upturned, 3rd segment moderate; antenna ciliate; forewing venation with areole; hindwing with M2 developed; forewing white, pink, greenish, yellow; wing pattern in some species groups specialised: wing divided in two parts from apical angle to basal third of dorsum, upper, costal area is yellowish, pale ochreous or greenish; the lower terminal and dorsal areas dark, reddish-brown. In male genitalia, uncus short, weak, stick-like; tegumen broad and slender; juxta plate-like; valva large with clavus; costa narrow; cucullus with small finger-like processes armed with tiny claws. Aedeagus small, coecum small; vesica with minute spines or without cornuti. In female genitalia, 8th abdominal sternite sclerotised; papillae anales small, weak; anterior and posterior apophyses small, equal in length, antrum small, cup-shaped, ductus bursae small or moderate, as long as moderate, round or elongated corpus bursae.

The genus includes 68 species distributed in the Manchurian subregion of the Palaearctic region, as well as the Oriental, Ethiopian and Nearctic regions. – 4 species.

References: Kononenko 2000; Ronkay & Sohn 2004.

Maliattha rosacea (Leech, 1889)

(Pl. 18: 36, 37; ♂ genit. Pl. 92: 4; ♀ genit. Pl. 167: 6)

Erastria rosaceae Leech, 1889, *Proc. zool. Soc. Lond.* **1889**: 527, pl. 53: 9 (Type-locality: Japan: Oiwake).

Bionomics. Mesophilous species, occurs in meadows, glades, and woodsides in open deciduous forests. The moth flies from VI to early VIII. The larva and its foodplants are unknown.

Distribution (Map 373). Manchurian, nemoral. Far East (S Primorye). – China, Korea, Japan, Taiwan.

Maliattha chalcogramma (Bryk, 1948)

(Pl. 18: 38, 39; ♂ genit. Pl. 92: 5; ♀ genit. Pl. 167: 7)

Oruza chalcogramma Bryk, 1948, *Ark. Zool.* **41** (A) 1: 112, pl. 5: 7 (Type-locality: N Korea: [Shuotsu]).

Diagnosis. *M. chalcogramma* and the next two species are a group of closely related species hardly separable on external appearance and often confused by early authors. Externally, *M. chalcogramma* is very similar and hardly distinguishable from *M. chasanica*. In male genitalia, it differs in triangular shape of uncus, narrower valva and shape of cucullus, which has three short finger-like extensions armed with spines. Female genitalia differ in elongated shape of corpus bursae and narrower antrum.

Bionomics. Mesophilous species, occurs in dry meadows, dunes, hillsides and warm glades in deciduous open forest. Probably bivoltine. The moth flies from VI to lateVIII. The larva and its foodplants are unknown.

Distribution (Map 374). Manchurian, nemoral. Far East (S Primorye). – China, Korea, Japan.

Note. The species was referred to by early authors as *M. vialis* (Moore, 1882).

Maliattha khasanica Zolotarenko & Dubatolov, 1996

(Pl. 18: 40, 41; ♂ genit. Pl. 92: 6; ♀ genit. Pl. 167: 8)

Maliattha khasanica Zolotarenko & Dubatolov, 1996, *Atalanta*, **26**(1-2): 299 (Type-locality: Russia, Primorye, Khasan disrtrict, Furugel'm Is.).

Diagnosis. Male genitalia of *M. khasanica* differ from those of *M. chalcogramma* in weak, stick-like uncus, wider valva with parallel margins and cucullus with four finger-like extensions armed with spines, the tornal extension twice as long as the others. In female genitalia, antrum much wider, corpus bursae pear-shaped.

Bionomics. Mesophilous. The species has been collected in the southernmost part of Primorie in edges of deciduous forests surrounded by meadows and in sandy dunes along seashores. Univoltine. The moth flies in VII-VIII. The larva and its foodplants are unknown.

Distribution (Map 375). Manchurian, nemoral. S Russian Far Eas (Primorye). – China, Korea.

Maliattha bella (Staudinger, 1888)

(Pl. 18: 42, 43; ♂ genit. Pl. 93: 1; ♀ genit. Pl. 167: 9)

Thalpochares bella Staudinger, 1888, *Stettin. ent. Ztg* **49**: 264 (Type-locality: Russia: Vladivostok).

Diagnosis. *M. bella* differs from its allies in greenish, not straw-yellow, costal half of the forewing and magenta-brown outer part. In male genitalia, it differs in shape of valva, constricted from the mid part and cucullus bearing three large finger-like extensions armed with short spines; in female genitalia, antrum funnel-shaped, more sclerotised compared with that of the other species, corpus bursae rounded.

Bionomics. Mesophilous species, occurring in deciduous and mixed forests in glades, meadows, forest edges. Probably bivoltine. The moth flies from late VI to IX. The larva and its foodplants are unknown.

Distribution (Map 376). Manchurian, nemoral. Far East (Amur, S Khabarovsk and Primorye terr., S Kuriles). – N China, Korea, Japan.

Note. The holotype of *Maliattha bella* is illustrated on Pl. 18: 43.

Chorsia Walker, [1863] 1864

Chorsia Walker, [1863] 1864, J. *Proc. Linn. Soc.* (Zool.) 7: 59. Type-species: *Chorsia maculosa* Walker, [1863] 1864 [Borneo, Sarawak].

Synonymy: *Bryophilina* Staudinger, 1892, **syn. n.**; *Poecilogramma* Butler, 1892, preocc. (Karsch, 1887 [Orthoptera]); *Aeologramma* Strand, 1910, unnec. replacement name; *Peuderiopus* Warren, 1913; *Neustrotia* Sugi 1982.

Small moths, wingspan 14-21 mm. Antennae of fasciculate or in both sexes filiform; frons smooth; labial palps short, 3rd segment is a third of the length of the 2nd; forewing narrow, with cell; hindwing with M2 present but weak; tibiae in male hind tibia in male with long crest of bristles or not haired. The male abdomen with or without pair of basal coremata; in *Ch. mollicula* 1st abdominal segment with paired brush organ; end of abdomen with large paired brush organs. In male genitalia, tegumen broad, 2-2. 5 times higher than vinculum; uncus moderate, somewhat extended, tapered; juxta not expressed; valva basally fused, costa curved in apical third or convex or straight; cucullus present in some species; sacculus large, in some species extended apically to acute narrow or wide, apically free bifurcate process; clasper fold-like, harpe absent. Aedeagus short, thin or long, thick or moderately long; vesica short, with multiple small diverticula and one very large or moderate spine-like cornutus, in some species two cornuti or no cornuti. In female genitalia, papillae anales quadrangular, moderate; anterior and posterior apophyses almost equal in length; ductus bursae sclerotised, thick, short; corpus bursae oval, in some species scobinate, covered with minute spines; cervix bursae in some species developed, signa in most cases absent; in *Ch. mollicula* corpus bursae bearing bar-like signum and minute spines.

Hereby I synonymies the monotypic genus *Bryophilina* Staudinger, 1892, **syn. n.** with *Chorsia* by their congenery. Holloway (2005) synonimised *Neustrotia* with *Chorisa* and placed the genus to the end of Catocalinae (sensu Holloway 2005), while Ueda (1984) placed *Neustrotia* to Eustrotiinae (*Deltote* generic group). Because of the systematic position is not clear I retain *Chorsia* in Eustrotiinae.

The genus includes 24 species distributed in the Manchurian subregion of the Palaearctic region and the Oriental region. – 3 species.

Chorsia costimacula (Oberthür, 1880) **comb. n.**

(Pl. 18: 44, 45; ♂ genit. Pl. 93: 2; ♀ genit. Pl. 168: 1)

Erastria costimacula Oberthür, 1880, *Étud. Ent.* **5**: 83, pl. 4: 4 (Type-locality: Russia: Primorye, Askold Is.).

Synonymy: *serica* Warren, 1912.

Bionomics. Mesophilous species, occurs in glades and meadows in deciduous and coniferous forests. The moth flies in VI-VIII. Larvae feed on *Malus mandshurica* (Rosaceae).

Distribution (Map 377). Manchurian, nemoral. Far East (S Khabarovsk and Primorye terr.). – China, Korea, Japan.

Chorsia noloides (Butler, 1879) **comb. n.**

(Pl. 18: 46, 47; ♂ genit. Pl. 93: 3; ♀ genit. Pl. 168: 2)

Acontia noloides Butler, 1879, *Ann. Mag. nat. Hist.* (5) **4**: 366 (Type-locality: Japan: Yokohama).

Bionomics. Mesophilous species found together with the preceding species in glades and meadows in deciduous and coniferous forests. The moth flies in VI-VIII. Larvae feed on deciduous trees.

Distribution (Map 378). Manchurian, nemoral. Far East (S Khabarovsk and Primorye terr.). – China, Korea, Japan, Taiwan.

Chorsia mollicula (Graeser, 1888 [1889]), **comb. n.**

(Pl. 18: 48, 49; ♂ genit. Pl. 93: 4; ♀ genit. Pl. 168: 3)

Erastria mollicula Graeser, 1888 [1889], *Berl. ent. Z.* **32**, II: 368 (Type-locality: Russia: Khabarovsk).

Synonymy: *blandula* Staudinger, 1892.

Bionomics. Mesophilous species, occurring in various forest habitats, in clearings, glades, woodsides and among bushes. The moth flies from early VI to lateVIII, probably in two generations. The larva and its foodplants are unknown.

Distribution (Map 379). Manchurian-Oriental, nemoral. Far East to S Kuriles. – China, Korea, Japan, Taiwan, Nepal, SE Asia, India.

17. Subfamily **Acontiinae** Guenée, 1841

Acontidi Guenée, 1841. *Annales de la Société Entomologique de France* **10**: 219. Type genus: *Acontia* Ochsenheimer, 1816.

Synonymy: Agrophilidae Duponchel, [1845]; Emmelidi Stephens, 1850; Tarachini Grote, 1890.

Small colourful moths; many are bird-dropping mimics. Tympanum with alula enlarged and forming a flap partially covering the tympanic opening; tympanum hood reduced or absent. Hindwing with M2 developed or weak. In male genitalia, uncus cylindrical, smoothly curved, tapered to pointed tip; scaphium membranous, with hair-like setae; valvae broadest medially or subapically; sacculi and their processes more or less asymmetrical, usually with a heavily sclerotised dorsal crest or lobe; clasper and harpe often asymmetrical; medial part of transtilla rather short. Aedeagus short, widened at ductus ejaculatorius. Female genitalia vari-

ous, in most cases antrum cup-shaped, ductus bursae short. Larvae with two SV setae on first abdominal segment, in this respect different from Eustrotiinae and Bagisarinae.

The subfamily Acontiinae (*sensu auctorum*) as treated by earlier authors is a heterogenous polyphyletic group. Speidel *et al*. (1996) segregated from Acontiinae (*sensu* auctorum) the subfamilies Acontiinae, Pseudeustrotiinae, Eustrotiinae, Tytinae and Sinocharinae. Kitching & Rawlins (1999) divided Acontiinae (*sensu* auctorum) into Acontiinae and Eustrotiinae. Fibiger & Lafontaine (2005) recognised the subfamilies separated by Speidel *et al*. (1996), separated the subfamilies Eublemminae and Acontiinae as monophyletic units, placed the genus *Aedia* in the tribe Aediini of the subfamily Acontiinae, and moved the genus *Tyta* to the subfamily Metoponiinae. According to Fibiger *et al*. (2009) the subfamily consists of 4 tribes: Acontiini, Aediini**,** Armadini and Hypercalymniini. Holloway (2009) gave Aediinae rank as subfamily. The World fauna of *Acontia* was revised by Hacker *et al.* (2008).

The subfamily includes approximately 500 species distributed in the Old and New Worlds, mainly in the south of the temperate zone and in subtropical and tropical regions. The vast majority of the species in the tribe Acontiini are members of genus *Acontia***.** Acontiinae inhabit various kinds of biotope, being most diverse in arid and semi-arid areas. The larvae feed on herbaceous plants. Two genera and 7 species occur in the Asian part of Russia.

References: Fibiger & Lafontaine 2005; Hacker, Legran & Fibiger 2008; Fibiger *et al*. 2009; Holloway 2009.

Tribe **Acontiini** Guenée, 1841

Acontidi Guenée, 1841. *Annales de la Société Entomologique de France* **10**: 219. Type genus: *Acontia* Ochsenheimer, 1816.

Synonymy: Agrophilidae Duponchel, [1845]; Emmelidi Stephens, 1850; Tarachini Grote, 1890.

Most species of the tribe Acontiini have a "bird-droppings" appearance: wing pattern and body colour are pure white or pinkish-white with dark brown or blackish pattern outer margin area. In male genitalia, the tribe is distinguished from the other three tribes in the scaphium which has two brushes of dense, hair-like tufts. The main apomorphy in larval morphology is that seta D2 on segment A9 is stout and projected posteriorly to form an anal fork (Crumb 1956). The other characteristic features as described for the subfamily. The tribe includes approximately 400 species, half of which are found from the New World.

Genus ***Acontia*** Ochsenheimer, 1816

Acontia Ochsenheimer, 1816, *Schmett. Eur.* **4**: 91. Type-species: *Noctua solaris* [Denis & Schiffermuller], 1775 [Austria] (= *Phalaena lucida* Hufnagel, 1766).

Synonymy: *Tarache* Hübner, [1823] 1816; *Erotyla* Hübner, 1822; *Eusceptis* Hübner, 1823 (subgenus); *Desmorpha* Stephens, 1829; *Desmophora* Stephens, 1829; *Euphasia* Stephens, 1830; *Heliothera* Sodoffsky, 1837, replacement name; *Porrotha* Gistl, 1846, replacement name; *Tima* Walker, [1858], preocc. (Eschscholtz, 1829 [Coelenterata]); *Pseudalypia* Edwards, 1874; *Eugraphia* Guenée, 1852; *Metapioplasta* Wallengren, 1865 (subgenus); *Ponometia* Herrich-Schaffer, 1868; *Spragueia* Grote, 1875; *Trichotarache* Grote, 1875; *Fruva* Grote, 1877; *Heliodora* Neumoegen, 1891; *Graeperia* Grote, 1895, unnecess. replacement name; *Therasea* Grote, 1895; *Tarachidia* Hampson, 1898; *Conacontia* Smith, 1900; *Tornacontia* Smith, 1900; *Conochares* Smith, 1905; *Hoplotarache* Hampson, 1910; *Procriosis* Hampson, 1910; *Cardiosace* Hampson, 1910; *Aulotarache* Hampson , 1910; *Neptunia* Barnes & McDunnough, 1911, prerocc.; *Ceratostrotia* Warren, 1913; *Emmelia* Hübner, [1821] 1816 (subgenus); *Erotyla* Hübner, [1806], suppr. name.; *Erotyla* Hübner, 1822, suppr. (ICZN, 1926 Op. 97); *Hemispargueia* Barnes & McDunnough, 1923; *Acropserotarache* Berio, 1937; *Agrophila* Boisduval, 1840; *Fredina* Brandt, 1939; *Uniptena* Nye, 1975; *Acontarache* Berio, 1977 subgenus; *Ascopserotarache* Berio; *Uracontia* Beck, 1996 subgenus.; *Emmelacontia* Beck, 2000; *Olivacontia* Hacker, Legrain & Fibiger 2008 (subgenus).

Small and medium sized, sexually dimorphic moths; many are black and white or yellow and white with bird-dropping mimic pattern. Frons protruding, antennae in both sexes filiform, labial palps porrect, 3rd segment short and smooth, 2nd segment small, hairy beneath; tibia without spines, hindlegs lacking spurs. Males have two brushes of abdominal coremata on segment 7, which are projected laterally during mating. In male genitalia, uncus long, narrow; scaphium with 2 slightly sclerotised crests with dorso-lateral hair-like tufts; sacculus usually asymmetrical, often with large spine-like or club-like process; clasper large, plate-like. Vesica ventrally projected. In the female genitalia, antrum is strengthened ventro-laterally by two long and heavily sclerotised ribs from the 8th abdominal segment to the anterior end of antrum; ductus bursae anteriorly extended as a heavily sclerotised plate on ventral side from apical part of ductus into basal part of corpus bursae. In the larva, prolegs are absent on segments Ab3 and Ab4. Large genus with worldwide distribution, most diverse in arid and semi-arid areas. 20 species are known from the Palaearctic. – 3 species.

Subgenus ***Uracontia*** Beck, 1996

Uracontia Beck, 1996, *Neue Entomol. Nachr.* 36: 30: 50. Type-species: *Acontia urania* Frivaldsky, 1835 a junior synonym of *Phalaena Noctua titania* Esper, [1798].

Males have pockets on the 7th abdominal segment, but the brushes are lost. In male genitalia, scaphial tufts not developed. In female genitalia, sclerotised plate from the anterior part of ductus bursae to the posterior part of corpus bursae is present but very small and hardly reaching corpus. In addition, antrum is long, with prominent, long plates and the ductus bursae is short and membranous. Beck (1996) defined *Uracontia* on two larval characters: mandible without inner-tooth, and dorsal colour pattern on S1, S2, and S8 divided.

Acontia* (*Uracontia*) *melanura (Tauscher, 1809)

(Pl. 18: 50, 51; ♂ genit. Pl. 93: 5; ♀ genit. Pl. 168: 4)

Noctua melanura Tauscher, 1809; *Mém. Soc. Nat. Mosc.* **1806**: 32, pl. 20: 5 (Type-locality: Russia, Sarepta [Krasnoarmeisk].

Synonymy: *eversmanni* Kolenati, 1846; *titania* sensu auct., nec Esper, [1798].

Bionomics. Xero-thermophilous species, occurring in dry steppe habitats, among bushes, on edges of patchy steppe forests, and on warm steppe slopes. Univoltine. The moth flies from mid VI to VIII. Larvae feed on *Malva* (Malvaceae) and other herbaceous plants. Overwinters as pupa.

Distribution (Map 380). European-West Asian, subboreal. S Russia to S Ural. – Near East, Transcaucasia, S Europe Near East, Caucasus, Transcaucasia, Kazakhstan (S Altai).

Subgenus ***Acontia*** Ochsenheimer, 1816

Diagnostic characters as described under the genus. The subgenus differs from *Uracontia* in presence of brushes in the pockets on the 7th abdominal segment of male. In male genitalia, scaphial tufts developed in most species.

Acontia* (*Acontia*) *lucida (Hufnagel, 1766)

(Pl. 18: 52; ♂ genit. Pl. 93: 6; ♀ genit. Pl. 168: 5)

Phalaena lucida Hufnagel, 1766, *Berl. Mag.* **3**(3): 302 (Type-locality: Germany).

Synonymy: *solaris* [Denis & Schiffermüller], 1775; *albicollis* Fabricius, 1781; *upicola* Borkhausen, 1792; *titania* Freyer, nec Esper, 1798; *insolatrix* Hübner, [1819-1822]; *triradiata* Walker, 1858; *triangulum* Costa, 1882.

Bionomics. Xero-thermophilous species, common in steppe zone in dry hillsides, meadows, along roads, among bushes, on edges of patchy forest, and steppe slopes. Two generations. The moth flies at night in V to mid VI and from VII to IX. Larvae are polyphagous on herbaceous plants, including *Chenopodium* (Chenopodiaceae), *Malva rotundifolia*, *M. crispa*, *Althaea officinalis* (Malvaceae), Fabaceae, *Convolvulus arvensis* (Convolvulaceae), *Scrophularia nodosa* (Scrophulariaceae), *Glechoma* (Lamiaceae) and *Taraxacum* (Asteraceae). Overwinters as pupa.

Distribution (Map 381). Western Palaearctic, subboreal. S Russia to S Ural, W Siberia and Altai. – N Africa, C and S Europe, Near East, Caucasus, Transcaucasia, Central Asia, Kazakhstan, Pakistan, N India.

Acontia (*uncertain sedis*) ***martjanovi*** Tschetverikov, 1904 **comb. n.**

(Pl. 18: 55-57; ♂ genit. Pl. 94: 4; ♀ genit. Pl. 168: 7)

Erastria martjanovi Tschetverikov, 1904. *Rev. russe d'Ent.* **4**: 78 (Type-locality: Russia, Minusinsk).

Bionomics. Xero-thermophilous species, occurring in dry steppe habitats, on hot hillsides, dry meadows. The moth often flies by day. The flight period is VI-VII. The larva and its foodplants are unknown.

Distribution (Map 383). Siberian-Mongolian, subboreal. S Siberia (Altai, Tuva, S Krasnoyarsk reg., Irkutsk reg., Transbaikalia). – Mongolia, N China, S Korea.

Subgenus ***Olivacontia*** Hacker, Legrain & Fibiger 2008

Olivacontia Hacker, Legrain & Fibiger 2008, *Esperiana* 14. Type-species *Cilix olivacea* Hampson, 1891 [India: Nilgiri].

The subgenus differs by lost of coremata in male, symmetry of valva, shape of valva with presence of rudimental valva and shape and arming of vesica in male genitalia. Female with elongate corpus bursae bearing the granular to scobunate sone in central part. The subgenus includes 2 species, one distributed in the Oriental region and the other one from Oriental to Manchurian subregion of the Palaearctic.

Acontia* (*Olivacontia*) *olivacea (Hampson, 1891)

(Pl. 18: 53, 54; ♂ genit. Pl. 94: 1; ♀ genit. Pl. 168: 6)

Cilix olivacea Hampson, 1891, *Illustr. typical Specimens Lepid. Heterocera Colln Br. Mus.* **8**: 63, pl. 142: 9 (Type-locality: India: Nilgiri).

Synonymy: *umbrosa* O. Bang-Haas, 1927.

Bionomics. Mesophilous species, occurs in open oak and deciduous forests. The moth flies in VII early VII. The larva and its foodplants are unknown.

Distribution (Map 382). Oriental-Manchurian, nemoral. Far East (Primorye). – China, Korea, Japan (Honshu), Taiwan, Philippines, Thailand, N India, Nepal, Indonesia.

Subgenus ***Emmelia*** Hübner, [1821] 1816

Emmelia Hübner, [1821] 1816, *Verz. bekannter Schmeft.*: 254. Type-species: *Phalaena sulphuralis* Linnaeus, 1767 [Germany] (= *Phalaena*, *Pyralis trabealis* Scopoli, 1763).

The imagines usually smaller than those of the subgenus *Acontia*. Wing pattern often differs considerably from the pattern typical of the subgenus *Acontia*, but the type of colour and genital structures differ only slightly from typical *Acontia*. In male genitalia, valvae broad throughout, broadest apically, less strongly asymmetrical than in subgenus *Acontia*, densely setose distally, clasper-harpe complex elongated, the major part parallel with ventral margin, apically tapered, pointed, often curved; dorsal part of juxta often asymmetrical. Moths inhabit mainly arid areas, some species occur in steppe and forest-steppe zones. They often fly by day. Larvae feed on herbaceous plants, those of some species on flowers.

Acontia* (*Emmelia*) *candefacta Hübner, [1831] 1825

(Pl. 18: 58, 59; ♂ genit. Pl. 94: 3; ♀ genit. Pl. 169: 1)

Tarache candefacta Hübner, [1831] 1825, *Zutr. Samml. exot. Schmett.* 3: 329, pl.[101]: 587, 588, (Type-locality: USA, Pennsylvania).

Bionomics. Xero-thermophilous species; in the 1860's, introduced by man to the Palaearctic in the

vicinity of Krasnodar for the biological control of *Ambrosia artemisifolia*. It inhabits open steppe, agricultural and ruderal areas. In North America, the larvae feed on *Ambrosia* species, *Ambrosia artemisifolia*, *Actium lappa*, and *Aster dumosus* (Asteraceae). In Europe, the moth flies in two generations, V-VI and VIII-IX.

Distribution (Map 484). Holarctic, invasive, subboreal. S and C European part of Russia (Krasnodar terr., Tula reg.), S Ural (north to Ekaterinburg). – S Ukraine, Temperate zone of N America.

Acontia* (*Emmelia*) *trabealis (Scopoli, 1763)

(Pl. 18: 60; ♂ genit. Pl. 94: 4; ♀ genit. Pl. 169: 2)

Phalaena, *Pyralis trabealis* Scopoli, 1763, *Ent. Carniolica*: 240 (Type-locality: Slovenia "Carniola").

Synonymy: *arabica* Hufnagel, 1766; *sulphuralis* Linnaeus, 1767; *sulphurea* [Denis & Schiffermüller], 1775; *arlequinetta* Geoterey, 1785; *trabeata* Borkhausen, 1790; *trabeata* Scriba, 1790; *lugubris* Fabricius, 1793; *pardalina* Walker, 1865.

Bionomics. Eurytopic, thermophilous species, occurring in various lowland and hilly habitats: dry meadows, steppe, woodsides, glades, parks, gardens. Multivoltine, in southern areas producing three generations. The moth flies by day and night from VI to early IX. Larvae feed mainly on *Convolvulus arvensis* (Convolvulaceae), but also on *Atriplex*, *Chenopodium* (Chenopodiaceae), *Fallopia convolvulus* (Polygonaceae); *Gossypium herbaceum*, *Malva* (Malvaceae); *Medicago sativa* (Fabaceae); *Solanum* (Solanaceae). Overwinters as pupa.

Distribution (Map 385). Trans-Palaearctic, subboreal. S Russia to S Ural, through S Siberia to the Far East to Primorye, Sakhalin and S Kuriles. – N Africa, Europe, Near East, Caucasus, Transcaucasia, Central Asia, Kazakhstan, China, Korea, Japan.

18. Subfamily **Aediinae** Beck, 1960

Aediinae Beck, 1960, *Larvalsystematik Eulen*: 85 (key), 343. Type genus: *Aedia* Hübner, [1823].

Holloway (2009) raised the rank of Aedini and defined them as a subfamily distinct from Acontiinae. Most species of the subfamily Aediinae have "*Aedia-Catephia*" appearance: forewing ground colour and body colour black or brown-black, hindwing with pure white basal area and wide, black terminal band. In male genitalia, the tribe is distinguished from the Acontiinae by absence of two brushes of hair-like tufts on scaphium, presence of corona and well developed coremata with dense brush on outer surface of valva. According to Holloway (2009), there are three genera, *Aedia*, *Mosara* Walker, 1855 and *Ecpatia* Turner, 1902 in the subfamily, distributed in the Old World in various biogeographical regions, mainly in tropics and subtropics. Because of the external similarity to Catephiini (Catocalinae) the exact number of species within the tribe is not known. – 1 genus.

Genus ***Aedia*** Hübner, [1823] 1816

Aedia Hübner, [1823] 1816, *Verz bekannter Schmett.*: 260. Type-species: *Noctua leucomelas* Linnaeus sensu Hübner, [1803] [Germany], [= *Noctua funesta* Esper, 1786).

Synonymy: *Anophia* Guenée, 1852.

Medium sized moths with dark-brown forewing, and hindwing with pure white basal area and wide, black terminal band; frons flat; metathorax with tuft of scales, without spines. In male genitalia, vinculum U-shaped; uncus prominent, tapered, spatulate; transtilla with sclerotised lobes; scaphium membranous, without hair-like setae, as in tribe Acontiini; valva rather large, with parallel margins, with strong costa, tip tapered, bearing small corona; harpe-clasper complex asymmetrical; the outer surface of valvae with large coremata with hair brush. The genus comprises 5 species, occurring in Europe, Asia and Africa. – 1 species.

Aedia funesta (Esper, 1786)

(Pl. 18: 61; ♂ genit. Pl. 94: 5; ♀ genit. Pl. 169: 3)

Phalaena, *Noctua funesta* Esper, 1786, *Die Schmett. Abb. Nat.* **4**(1): 72, pl. 88, Noct. 9: 6 (Type-locality: Germany).

Synonymy: *leucomelas*; Hübner, [1803], nec Linnaeus, 1758; *alchymista*; Esper, nec [Denis & Schiffermüller], 1775.

Bionomics. Meso-xerophilous species, common in edges of deciduous forests, meadows, among bushes, and on steppe slopes. Univoltine; in southern areas two generations. The moth flies by day and night from mid V to mid VIII. Larvae feed on *Calystegia sepium*, *Convolvulus arvensis* (Convolvulaceae). Overwinters as larva, pupates in spring after hibernation.

Distribution (Map 386). European-West Asian, subboreal. S Russia to S Ural, S Siberia to Altai. – C and S Europe, Near East, Transcaucasia, Kazakhstan.

19. Subfamily **Nolinae** Bruand, 1846

Nolites [Nolinae] Bruand, 1846. *Mén. Soc. Emul. Doubs* **2**: 113. Type genus: *Nola* Leach, [1815].

Synonymy: Roeseliidae Walker, [1865] 1864; Nolidae Stainton, 1859; Nolidae Speyer & Speyer, 1862; Nolinae Hampson, 1894.

The members of this subfamily are extremely heterogenous, both externally and in the structure of their genitalia. Small, medium, rarely large moths, often brightly coloured. The subfamily Nolinae is monophyletic;

all taxa in the subfamily are united by a peculiar character: a boat-shaped cocoon, constructed by the "two walled method" (Holloway 1998). The eyes are very large, ocelli present, except in tribe Nolini; labial palps porrect, with a long, laterally flattened, densely tufted 2nd segment, and a usually shorter, straight, cylindrical 3rd segment; the exceptions are the two allied subtribes Eariadina and Sarrothripina, in which the 3rd segment is longer than the 2nd. The forewing and hindwing shape and venation are variable; hindwing more often with quadrifine venation, in some genera with trifine venation. Forewing often with raised scales forming two or three patches along subcostal vein, close to the orbicular and reniform stigmata. The retinaculum of the forewing in the males is variable; usually bar-shaped, but in the subtribe Eariadina and some Chloephorini there is no retinaculum, only a short or long comb of stout setae similar to the female retinaculum. Tympanal bullae are completely fused throughout their length. In male genitalia of all tribes, the uncus has been substituted by a pseudouncus or lost (Fibiger *et al*. 2009); juxta variable in shape, often huge, semiglobular. In the female genitalia in the tribes Nolini and Chloephorini (subtribes Chloephorina and Eariadina), cervix bursae often present; in other tribes it is usually small or lost. Pupa and the adult body of many species have sound-producing organs in the basal part of abdomen and also on the forewing.

The status, composition and taxonomic position of the Nolidae have been disputed for a long time by taxonomists. Nolidae (s.str.) was considered by authors as a distinct family of Noctuoidea or as a subfamily of Noctuidae, and Sarrothripinae, Chloephorinae treated as subfamilies of Noctuidae. Holloway (1998) recognised Sarrothripinae, Chloephorinae and Nolinae as members of family Nolidae. Kitching and Rawlins (1999), Fibiger and Lafontaine (2005) and Holloway (2003) treated Nolidae (s.l.) as a distinct family in Noctuoidea; later Lafontaine and Fibiger (2006) treated Nolinae as a subfamily of the Noctuidae. Fibiger *et al.* (2009) placed Nolinae among the "lower trifine" subfamilies on account of the presence of completely fused abdominal bullae as in most trifine subfamilies.

The Nolinae are distributed from the temperate zone to the tropics, where they are most diverse. The subfamily includes 9 tribes, 5 of them (Nolini, Chloephorini, Sarrothipini, Collomenini, Eligmini) are represented in the Asian part of Russia, mainly in the Manchurian subregion of the Palaearctic.

References: De Freina & Witt 1987; Inoue 1982, 1991; Oh 2001; Holloway 1998, 2003; Tschistjakov 2003; Sviridov 2003; Fibiger *et al*. 2009; Laszlo *et al*. 2004, 2005, 2006, 2007a, 2007b, 2010.

Tribe **Nolini** Bruand, 1846

Small to medium sized moths. Ocelli absent. Antenna of male bipectinate, often with long lamellae. The ground colour of the forewing varies between white and black, mainly dull greyish, rarely with more or less brown and silver nuances. Forewing often with small patches of raised scales in basal and central areas. Hindwing venation variable, either quadrifine or trifine. In male genitalia, uncus lost or substituted by pseudouncus; scaphium with two dorso-lateral setose patches, which appear in very different states: some are small, setose, heavily sclerotised plates (*Meganola*); or small, membranous, setose elevations (*Meganola*); or as two tight, short or long hair-like clusters (*Meganola*); or as two long, more or less heavily sclerotised, narrow bands extending from basal part of scaphium to apex or subapical part of the anal tube (*Nola*); harpe present, of small to medium length; in many cases large, broad, flattened, ventrally directed digitus present. In female genitalia, antrum short and membranous or sclerotised (*Nola*) or not expressed (*Meganola*); corpus bursae often with 1-2 signa variable in size, posteriorly positioned at the same side. The larvae with the three last pairs of prolegs only, feeding on a large variety of herbaceous and arboraceous plants

The tribe was formerly treated as a separate family of the Noctuoidea or as a subfamily of Noctuidae or Arctiidae.

The tribe has a worldwide distribution with limited number species in the temperate zone and high diversity in subtropical and tropical zones, especially in the rainforests in SE Asia. The tribe includes over 3000 species worldwide. Five genera and 28 species are known from the Asian part of Russia, distributed mainly in the Manchurian subregion of the Palaearctic.

Genus ***Meganola*** Dyar, 1898

Meganola Dyar, 1898, *Jl N. Y. ent. Soc.* **6**: 43. Type-species: *Meganola conspicua* Dyar, 1898 [USA].

Synonymy: *Rhynchopalpus* auct.; *Roeselia* auct.; *Mimerastria* auct.; *Antennola* de Freina & Witt, 1984.

Small moths. Wingspan 15-30 mm. Antenna of male bipectinate with long lamellae; eyes large, rounded; labial palps relatively short and long, porrect, slightly downturned or straight; hindwing with quadrifid venation (M2 present); head, thorax, and forewing ground colour predominantly grey; wing pattern rather uniform, similar to that of *Nola*. In male genitalia, uncus replaced by a prominent pseudouncus; scaphium with two small, sclerotised, setose, often elevated plates; pleural sclerite fused to peniculus; valva not split, single, lobate; harpe in most species expressed, short, sometimes serrate or with additional extension; juxta plate-like, rhomboid. Aedeagus with narrow coecum; some species have the wall of aedeagus sclerotised by half or less than half of length. In female genitalia, ovipositor short, very wide; anterior and posterior apophyses relative-

ly wide and short, often equal in length; ostium bursae narrow, with heavy sclerotisations at sides; corpus bursae membranous, with 1-2 semilunar signa or sclerotised sculptured bands.

Large genus with more than 60-70 described species distributed all over the World. – 13 species.

Meganola togatulalis (Hübner, 1796)

(Pl. 18: 62, 63; ♂ genit. Pl. 95: 1; ♀ genit. Pl. 169: 4)

Pyralis togatulalis Hübner, 1796, Hübner, 1796, *Samml. eur. Schmett.* **6**: pl. 20: 111 (Type-locality: Europe).

Synonymy: *togatulana* Duponchel, 1845.

Diagnosis. Externally, *M. togatulalis* could be confused with *Nola cucullatella* having similarly well defined, darker basal and subbasal fields. *M. togatulalis* differs from all its congeners in very different forewing pattern. In male genitalia, main differences are the long apically hooked pseudouncus; the small, setose, plate-like elevations of scaphium; the long and very narrow aedeagus, extended dorsally at apex. Female genitalia differ in the rounded ostium and the very narrow and long ductus bursae, with sclerites at basal part.

Bionomics. Meso-thermophilous species, occurs in open deciduous woodlands, forest-steppe, on steppe slopes. Bivoltine, moths flying in VI-VII and VIII-IX. Larvae feed on *Prunus spinosa* (Rosaceae). Overwinters as pupa.

Distribution (Map 387). Western Palaearctic subboreal. Russia to S Ural. – N Africa, Near East, C and S Europe.

Meganola strigula (Denis & Schiffermüller, [1775])

(Pl. 18: 64-67; ♂ genit. Pl. 95: 2; ♀ genit. Pl. 169: 5)

Noctua strigula Denis & Schiffermüller, [1775], *Ank. Syst. Werk Schmett. Wien.*: 69 (Type-locality: [Austria], Vienna district]).

Synonymy: *asperalis* Villers, 1789; *strigulalis* Hübner, 1796; *corticosa* Vallot, 1802; *monachalis* Haworth, 1811; *strigulana* Hübner, 1825; *lineolalis* Eversmann, 1844; *zelleriana* Fischer von Waldheim, 1824.

Diagnosis. Head, thorax, and ground colour of forewing grey, paler in medial field; reniform stigma indicated as a small diffuse whitish dot; crosslines black, jagged, usually distinctly marked, bordered with white, medial shade present, fringes chequered light and dark grey; hindwing grey, gradually darker towards the black terminal line, with an indistinct discal spot. In male genitalia, differs from its congeners in wide pseudouncus, presence of costal extension and prominent, long, finger-like harpe directed ventrally. In female genitalia, ovipositor short, wide; main, posterior part of the long ductus bursae heavily sclerotised, anterior part membranous; corpus bursae large, ovoid, with two signa, and with an anteriorly positioned cervix bursae; appendix bursae small, arising near anterior end of ductus bursae.

Bionomics. Mesophilous species, inhabits open deciduous and mixed woodlands with abundance of *Quercus*. Univoltine, in the southern area bivoltine. The moth in flight in VI-VII and VIII-IX. Larvae feed mainly on *Quercus*, also reported from *Fagus*, *Tilia*, *Prunus*. Overwinters as larva.

Distribution (Map 388). European-West Asian subboreal. Russia to S Ural. – Europe, Caucasus, Near East.

Meganola albula (Denis & Schiffermüller, 1775)

(Pl. 18: 68, 69; ♂ genit. Pl. 95: 3; ♀ genit. Pl. 169: 6)

Noctua albula [Denis & Schiffermьller, 1775], *Ank. Syst. Werk Schmett. Wien.*: 69 (Type-locality: [Austria], Vienna district]).

Synonymy: *albulalis* Hübner, 1796; *albulana* Hübner, [1825]; *albula* var. *nivalis* Caradja, 1934; *formosana* Wileman & West, 1928 (subsp.); *pacifica* Inoue, 1958 (subsp.).

Diagnosis. With its characteristic white forewings, *M. albula* can hardly be confused with any other *Meganola*; medial shade prominent dark-brown; stigmata usually absent, but the white orbicular stigma is visible in the dark forms; fringes white, beige, brown, or black; crosslines most often invisible, and white when apparent. Hindwing white or in some forms brown, darker towards the white or brown terminal line; discal spot absent. In male genitalia, saccus long, narrow, apically pointed, valva long, wide, convex by sclerotised costa, apically rounded; sacculus relatively short, harpe thin, finger-like. Aedeagus long, almost straight, with a short, narrow coecum. In female genitalia, ovipositor short, apophyses slightly shorter than 8th abdominal segment; ostium bursae narrow; ductus bursae narrow, very long, sclerotised, corpus bursae ovoid, with two star-like signa.

Bionomics. Meso-hygrophilous species, occurs in wide range of habitats: wet deciduous and mixed forests and forest-steppe, open areas with scattered bushes and in marshy forests and swamps. Bivoltine. The moth flies from late V to VI and in VII-VIII, to IX. Larvae are polyphagous on *Rubus*, *Vaccinium* and various other herbaceous plants including *Fragaria*, *Potentilla*, *Lotus*, *Trifolium*, *Mentha*.

Distribution (Map 389). Eurasian, subboreal. European part of Russia, S Ural, S Siberia, Transbaikalia, Far East (Amur, S Khabarovsk and Primorye terr.). – C and S Europe, Caucasus, Mongolia, China, Korea, Japan, Taiwan.

Note. Two subspecies occur in East Asia: *Meganola albula formosalesa* (Wileman & West, 1928), described from Taiwan, Kanshirei; and *M. albula pacifica* (Inoue, 1958), described from Japan, Shizuoka Pref.

Meganola fumosa (Butler, 1879)

(Pl. 18: 70-72; ♂ genit. Pl. 95: 4; ♀ genit. Pl. 169: 7)

Nola fumosa Butler, 1879, *Illustr. typical Specimens Lepid. Heterocera Colln Br. Mus.* **3**: 9, pl. 43: 2 (Type-locality: Japan, Yokohama).

Diagnosis. *M. fumosa* differs from its congeners

in somewhat narrower forewing with dark fuscous-grey ground colour and distinct dark pattern, especially expressed in medial feld; antemedian line strongly curved outwardly at middle; postmedian line minutely dentate, excurved from below costa to CuA1, then incurved; medial field with thin black streak between ante- and black postmedian lines. In male genitalia, pseudouncus very thin, long, apically pointed; valva rather long, apically rounded, strongly expanded in middle, with a long pad on outwardly costa,; harpe stick-like, very small. Aedeagus slender, without cornutus. In female genitalia, ovipositor broad, setose; anterior apophyses very short, one-third length of posterior apophyses. Ductus bursae short, membranous; cervix bursae elongated, corpus bursae with two thorn-like signa, lower one twice the size of the other one; appendix bursae large.

Bionomics. Mesophilous species, inhabits oak and deciduous forests. Bivoltine. The moth flies in VI and VII – early IX. Larvae feed on *Quercus mongolica* and *Q. dentata* (Fagaceae).

Distribution (Map 390). Manchurian, nemoral. E Transbaikalia, Far East to S Kuriles. – Korea, NE China, Japan.

Meganola basifascia Inoue, 1958

(Pl. 18: 73; genit. Pl. 95: 5)

Roeselia basifascia Inoue, 1958, *Kontyû* **26**: 235: 2, 7 (Type-locality: Japan, Kushiro).

Diagnosis. In the course of examination of Far Eastern Nolidae, a male specimen of *Meganola* externally similar to *M. bryophilaris* was identified as *M. basifascia*. Unfortunately, the specimen was destroyed, and a Japanese specimen is illustrated here. The male genitalia of *M. basifascia* are very similar to those of *M. bryophilaris* in ground plan and shape of valva, but differ clearly in presence of huge harpe with serrate dorsal margin. Aedeagus moderatly long, but broader than in *M. bryophilaris*, straight, with strong cornutus. Female unknown.

Bionomics. Mesophilous species. Collected in VII in deciduous forest. The larva and its foodplants are unknown.

Distribution (Map 391). Manchurian, nemoral. Far East (Primorye). – Japan.

Meganola bryophilalis (Staudinger, 1887)

(Pl. 18: 74-76; ♂ genit. Pl. 95: 5; ♀ genit. Pl. 169: 8)

Nola bryophilalis Staudinger, 1887, in Romanoff, *Mém. Lépid.* **3**: 181, pl. 10: 5. (Type-locality: Russia, Primorye terr, Askold I.).

Diagnosis. *M. bryophilalis*, together with *M. costalis* and *M. strigulosa* form a species group, which is characterised by presence of vein R3 in forewing and M3 stalked with CuA1 in hindwing; male genitalia with a pair of arms surrounding anal tube; female genitalia with two rows of scobination (except *costalis*) and double thorn-like signa. *M. bryophilalis* differs from allied species in grey wing colour, darker than in *M. costalis* and wing pattern distinct from related species. Forewing with antemedian line angled above cell, then oblique inwardly running straight to dorsal margin; forming fuscous band in costal area; postmedian line gently curved inward, double, dentate on veins; subterminal line fuscous, clouding distinct. Male genitalia with pair of arms surrounding anal tube bearing a bunch of bristles at apex; uncus short and wide; valva rather narrow; harpe strong, small, serrated at dorsal margin, apex roundish; saccus elongated. Aedeagus moderately long, straight, with strong cornutus which is about one-fifth the length of the aedeagus. In female genitalia, ovipositor broad, setose; posterior apophyses broader and longer than anterior ones; ductus bursae rather short; corpus bursae with a pair of triangular signa and with two narrow rows of scobination.

Bionomics. Mesophilous species, occurs in deciduous and mixed forests. The moth flies in VII – early VIII. Larvae feed on *Malus* and *Sorbus* (Rosaceae).

Distribution (Map 392). Manchurian, nemoral. Far East to S Kuriles. – NE China, Japan.

Note. The holotype of *Meganola bryophilalis* is illustrated on Pl. 18: 74.

Meganola costalis (Staudinger, 1887)

(Pl. 18: 77, 78; ♂ genit. Pl. 96: 1; ♀ genit. Pl. 170: 1)

Nola costalis Staudinger, 1887, in Romanoff, *Mém. Lépid.* **3**: 179, pl. 10: 3 (Type-locality: Russia, Primorye terr, Askold I.).

Synonymy: *melanocosta* Inoue, 1961.

Diagnosis. *M. costalis* differs from allied species in pale greyish, sometimes even whitish forewing, and wing pattern with darker brown patch extending from the base to middle of costa; antemedian line indistinct, oblique inwardly; postmedian line minutely dentate, curved from costa to CuA1, then bent inward; hindwing suffused with fuscous. In male genitalia, uncus short and broad, apically blunt; a pair of arms surrounding anal tube with a bundle of bristles distally; valva rather narrow, with distal part rectangular; harpe short, bilobed, apically pointed. Aedeagus slender with a long spined cornutus, nearly one third as long as aedeagus; in female genitalia, ovipositor wide, setose; antrum sclerotised; ductus bursae rather broad with a narrow band-like sclerotisation along margin; corpus bursae ovate, with a pair of very large signa.

Bionomics. Mesophilous species, occurring in deciduous woodlands on forest meadows, edges, clearings. The moth flies in VII – early VIII. Larvae feed on *Malus sieboldi*, *Prunus incisa*, and *Sorbus japonica* (Rosaceae). (Inoue 1982).

Distribution (Map 393). Manchurian, nemoral. Far East (Amur, S Khabarovsk terr., Primorye). – NE China, Korea, Japan.

Meganola strigulosa Staudinger, 1887

(Pl. 18: 79; ♂ genit. Pl. 96: 2; ♀ genit. Pl. 170: 2)

Nola strigulosa Staudinger, 1887, in Romanoff, *Mém. Lépid.* **3**: 180, pl. 11: 4 (Type-locality: Russia: Vladivostok, Askold I.).

Synonymy: *satoi* Inoue, 1970.

Diagnosis. Ground colour of forewing grey, pattern with fuscous median area defined by ante- and postmedian lines; postmedian line strongly curved inwardly near CuA1, then extending to dorsum. In male genitalia, pseudouncus long, apically pointed; valva long, apically rounded, with sclerotised costa, narrower in the middle; harpe short, outwardly dentate. Aedeagus rather long, simple, without cornuti. In female genitalia, papillae anales broad, setose; anterior apophyses very short; ostium rounded; ductus bursae moderate; corpus bursae elongated, with double signa, apex of one is blunt, the other is sharply pointed and with two longitudinal rows of minute scobinations.

Bionomics. Mesophilous species, occurring in deciduous and oak forests in forest meadows and clearings. Bivoltine. The moth flies in V – VI and from mid VII to late VIII. Larvae feed on *Quercus mongolica* and *Q. dentata* (Fagaceae).

Distribution (Map 394). Manchurian, nemoral. Far East (S Khabarovsk and Primorye terr.). – NE China, Korea, Japan.

Note. Poole (1989) referred to the species as a synonym of *Meganola fumosa*.

Meganola shimekii Inoue, 1970

(Pl. 19: 1; ♂ genit. Pl. 96: 3; ♀ genit. Pl. 170: 3)

Roeselia shimekii Inoue, 1970, Bull. Japan ent. Acad. **6**: 5, pl. 1: 15-18 (Type-locality: Japan, Mt. Akiba).

Diagnosis. Externally, *M. shimekii* resembles *M. fumosa*, but differs in more developed and darker subbasal and medial areas. Ground colour of forewing dark grey, wing pattern with basal and medial areas between blackish ante- and postmedian lines dark fuscous; antemedian line strongly excurved anteriorly; postmedian line minutely dentate, straight between R4 and M3, then curved inwardly and again excuved on CuA2; subterminal fuscous, fascia undulated; hindwing dark fuscous. In male genitalia, uncus semi-elliptical, valva distally broadened and apically rounded; harpe with a stick-like straight process. Aedeagus elongated with simple, straight cornutus. In female genitalia, ovipositor short, setose; ostium very small, ductus bursae slender; corpus bursae rounded, with two large signa and two broad patches of minute scobinations.

Bionomics. Mesophilous species, occurring in rich deciduous forests with *Quercus mongolica*. The moth flies in VII – early VIII. The larva has been reported from *Quercus acutissima* in Japan (Inoue 1982).

Distribution (Map 395). Manchurian, nemoral. Far East (S Khabarovsk and Primorye terr.). – Korea, Japan.

Meganola mikabo (Inoue, 1970)

(Pl. 19: 2; ♂ genit. Pl. 96: 4; ♀ genit. Pl. 170: 4)

Roeselia mikabo Inoue, 1970, Bull. Japan Entomol. Acad. **6**: 4, text fig. 1, pl. 1: 2.

Diagnosis. *M. mikabo* is externally similar to *M. fumosa* and *M. bryophilaris*, but differs from *fumosa* in lighter medial field and from *bryophilaris* in thinner, not jagged crosslines. Ground colour grey, darker in medial field; ante and postmedial lines thin, below Cu1 closed and connected by thin black streak; reniform stigma traceable, indicated by whitish scales. In male genitalia, pseudouncus relatively short, pointed; tegumen and vinculum equal in length, juxta narrow, plate-like; valva lobe-like, with strong costa slightly curved, rounded apically; saccus narrow, clasper parallel to ventral margin of valva; harpe prominent, finger-like, serrate on dorsal side. In female genitalia, ovipositor wide, setose, anterior and posterior apophyses massive, posterior apophyses 1.5 times longer than anterior ones; corpus bursae pear-shaped, with two large spine-like signa.

Bionomics. Mesophilous species, occurs in open oak and deciduous forests. Moths collected in VIII. Larvae feed on *Quercus dentata* (Fagaceae).

Distribution (Map 396). Manchurian, nemoral. Far East (S Primorye, Kuriles: Kunashir Is.). – Japan (Hokkaido, Honshu).

Meganola subgigas Inoue, 1982

(Pl. 19: 3; ♂ genit. Pl. 96: 5; ♀ genit. Pl. 170: 5)

Meganola subgigas Inoue, 1982, Moths of Japan, 1: 665, 2: 343, Pl. 229: 45, 351: 10, 353: 8 (Type-locality: Japan, Hokkaido, Oshima, Nakayama Pass).

Synonymy: *gigantula* auct, nec Staudinger, 1878.

Diagnosis. *M. subgigas* is in wing pattern and large size (male: 25 mm., female: 27-28 mm.) similar to *M. gigas*, but it can be separated from the latter as follows: forewing darker; postmedian line rather straight from costa to M3; black scales at basal part of costa less developed. In male genitalia, uncus moderate long, apically pointed, valva rounded distally; harpe stick-like, not serrated; saccus moderately long, trigonate, elongated narrowly at apex. Aedeagus slender, twice smoothly curved, medially and at distal end. In female genitalia, antrum strongly sclerotised, triangular; cervix bursae small; corpus bursae with a file-like signum; appendix bursae developed.

Bionomics. Mesophilous species, occurs in deciduous and mixed forests. Bivoltine. The moth flies from late V to VI and again in VII-VIII. The larva and its foodplants are unknown.

Distribution (Map 397). Manchurian, nemoral. Far East (S Khabarovsk and Primorye terr.). NE China, Korea, Japan (Honshu).

Note. Due to misidentification, erroneously referred to in the Key for the Insects of the Far East (Tschistjakov 2003), Checklist of the Noctuidae

of Asian part of Russia (Kononenko 2005) and in Catalogue of the Lepidoptera of Russia (Matov *et al.* 2007) as *M. gigantula* (Staudinger, 1878). *M. gigantula* has not been recorded in Russia, and all reports of this species from Russia and the Far East refer to *M. subgigas*.

Meganola gigas (Butler, 1884)

(Pl. 19: 4; ♂ genit. Pl. 96: 6; ♀ genit. Pl. 170: 6)

Nola gigas Butler, 1884, *Ann. Mag. nat. Hist.* (5) **13**: 274 (Type-locality: Japan: Honshu [Yesso]).

Synonymy: *maculata* Staudinger, 1887; *nigromaculata* Nagano, 1918.

Diagnosis. *M. gigas* differs from its congeners in large size (wingspan male: 24-26 mm., female: 25-30 mm.) and characteristic wing pattern with prominent grey-brown spot in costal area of medial field. Forewing with antemedian line indistinct, oblique inwardly at middle; postmedian line dotted at veins, angled inwardly on M1; median field in costal area with black scales; hindwing dark fuscous, underside with a discal spot. In male genitalia, tegumen two times longer than vinculum; pseudouncus moderate, apically pointed and hooked; valva rather wide, with well expressed costa, rectangular cucullus and extended in mid part; harpe strong, serrated at dorsal margin; saccus broad. Aedeagus with two sharply defined thorns at apex. In female genitalia, ovipositor rather small, setose; anterior apophyses twice shorter as posterior ones; antrum strongly sclerotised, very large, ductus bursae very short; corpus bursae spherical with a pair of triangular signa.

Bionomics. Mesophilous species, occurs in valleys with rich deciduous forests. The moth flies in VII – early VIII. Larvae feed on *Juglans mandshurica* (Juglandaceae).

Distribution (Map 398). Manchurian, nemoral. Far East (Amur, S Khabarovsk terr., Primorye, S Kuriles). – NE China, Korea, Japan.

Genus ***Evonima*** Walker, 1865

Evonima Walker, 1865, *List Specimens lepid. Insects Colln Br. Mus.* **32**: 505. Type-species: *Evonima aperta* Walker, 1865 [Indonesia, Java].

Synonymy: *Mimerastria* Butler, 1881; *Poecilonola* Hampson, 1900.

Small moths, wingspan 15-24 mm. Antenna of male densely fasciculate, in female shortly ciliate; labial palps moderate, directed forward, 2nd segment very short; forewing venation reduced by one vein in R - sector, except *E. mandschuriana*, with 5 branches of R; hindwing with trifine venation, M2 reduced; forewing pattern colourful with reddish, brown or orange tint. In male genitalia, pseudouncus long, slender, setose; tegumen narrow, high; valva wide, rectangular, lobe-like; sacculus small; harpe directed obliquely from base of costa or to medial part of valva along ventral margin; juxta trapezoid, plate-like. Aedeagus moderate or short, with elongated coecum; cornuti absent. In female genitalia, papillae anales with apical conical extension; anterior and posterior apophyses thin, moderate, longer than segment 8; ductus bursae long, narrow; corpus bursae oval or pyriform, with or without signa.

The genus includes 13-14 species, distributed from Manchurian subregion of the Palaearctic to Oriental region.

Evonima mandschuriana Oberthür, 1880)

(Pl. 19: 5-6; ♂ genit. Pl. 97: 1; ♀ genit. Pl. 170: 7)

Erastria mandschuriana Oberthur, 1880, Etudes Ent. 5: 83, pl. 2: 9 (Type-locality: Russia, Primorye terr., Askold I.).

Diagnosis. *E. mandschuriana* differs from other Nolini in its characteristic wing pattern. Ground colour of forewing brown with silvery scales, suffusion or patches to the postmedian line on costa, to the antemedial line on inner margin; the postmedian line dentate from costa to M2, then bent outwards; outside with a white line; between ante- and postmedian lines brownish; termen ferruginous brown; hindwing fuscous. In male genitalia, pseudouncus long and slender; tegumen 2.5 times longer than vinculum; valva long and rather broad, with sclerotised costa, apically rounded; harpe stick-like, relatively short, with dentate ventral side. Aedeagus relatively long, vesica without cornuti. In female genitalia, anterior and posterior apophyses slender, equal in length; ductus bursae broad and long; base of ductus seminalis with a rounded sclerotised knob; corpus bursae rounded with two signa, one of them minute.

Bionomics. Mesophilous species, occurring in deciduous and oak forests, in forest-steppe. The moth flies in VII – early VI. Larvae feed on *Quercus mongolica* and *Q. dentata* (Fagaceae), reported also from *Prunus subhirtella* and *Malus pumila* (Rosaceae).

Distribution (Map 399). Manchurian, nemoral. S Siberia, Far East (from Amur reg. to Sakhalin). – N Mongolia, Korea, Japan, China.

Note. The holotype of *Evonima mandschuriana* is illustrated on Pl. 19:5.

Genus ***Manoba*** Walker, [1863]

Manoba Walker, [1863]. Type-species: *implenes* Hampson.

Synonymy: *Rhynchopalpus* Hampson, 1893; *Roeselia* sensu Hampson; *Meganola* auct, nec Dyar, 1898; *Mimerastria* auct.

Small, dull grey-brown coloured moths, similar to *Meganola*. Wingspan 20–24 mm. Antenna of male bipectinate; eyes large; labial palps relatively short, porrect, downturned; hindwing with trifine venation (M2 absent); head, thorax, and forewing ground colour predominantly grey; wing pattern rather uniform, similar to that of *Meganola*. In male genitalia, pseudouncus strong, valvae undivided, usually deep, with costal margin straight or slightly concave, ventral margin slightly curved or angled centrally; harpe short and often rather broad, sometimes globular.

Aedeagus often square, vesica small, globular, sometimes with cornuti. Female genitalia similar to those of *Meganola*; with 1-2 horn-like signa. At present, several dozens of species are included in *Manoba*, however the placement of some is unclear. Most species are known from Manchurian and Sino-Himalayan subregion of the Palaearctic and Oriental and Australian regions. – 2 species.

Manoba banghaasi (West, 1925)

(Pl. 19: 8-9; ♂ genit. Pl. 97: 2; ♀ genit. Pl. 170: 8)

Nola banghaasi West, 1925, *Ann. Mag. nat. Hist*. (10) **3**: 194 (Type-locality: Russia, Ussuri [Primorye]).

Synonymy: *banghaasi sumi* Inoue, 1956, *Kontyû* (24) 3: 158, pl. 14: 3, 6 (Type-locality: Japan).

Diagnosis. *M. banghaasi* differs from the other Far-Eastern Nolini in the structure of antennae, which are strongly bipectinate for two-thirds, with antennal rami nearly three times as long as diameter of shaft in male, and minutely ciliate in female. Ground colour of forewing grey, wing pattern composed of small black patches near base and middle of costa, postmedian line faint, dotted on vein. In male genitalia, pseudoncus slender, hooked; scaphium with a pair of arms with no bristles at apex; valva elongated, wide, apex slightly curved dorsally; harpe short, flattened, horn-like with pointed apex, curved dorsally. Aedeagus moderate, straight; vesica large, rounded; side of coecum remarkably narrower, extended on the top. In female genitalia, ductus bursae broad, 2/3 length of corpus bursae, membraneous; corpus bursae with very large, triangular horn-like signum.

Bionomics. Mesophilous, little known species, occurs in deciduous woodlands. The moth flies from VI to mid VIII. The larva and its foodplants are unknown.

Distribution (Map 400). Manchurian, nemoral. Far East (Amur, S Khabarovsk and Primorye terr.,). – Korea, NE China, Japan (Honshu, Kyushu, Yakushima I).

Note. The holotype of *Manoba banghaasi* is illustrated on Pl. 19: 7.

Genus ***Casminola*** Laszlo, G.Ronkay, Witt, 2010

Casminola Laszlo, G.Ronkay, Witt, 2010. Esperiana **15**: 14. Type-species: *Poecilonola chionobasis* Hampson, 1901 [India, Himachal Pradesh].

Small sized, brightly-white coloured moths with contrasting blackish wing pattern in the costal and outer part of forewing. Wingspan 11–16 mm. Antenna of male simple; eyes large, labial palps short, porrect, downturned; hindwing with quadrifine venation (M2 present); head, thorax, and forewing ground colour white or silvery white; wing pattern rather uniform, formed by two oblique black or blackish dashes with silvery scales in costal area and dark with brown postmedial and medial fields. In male genitalia, uncus strong, simplerelatively short; valvae simple, with parallel margins, apically rounded,; harpe rather strong thin, long, apically curved. Aedeagus relatively short, vesica globular, without cornuti. In female genitalia, papillae anales quadrangular; apophyses short, posterior ones are half length of anterior ones; antrum short, tubular; ductus bursae long, corpus bursae rounded, without signa.

The genus includes 10 species listed by Laszlo *et al* (2010); most of them are distributed in Oriental regions. – 1 species.

Casminola pulchella (Leech, 1889)

(Pl. 19: 10, 11; ♂ genit. Pl. 97: 3; ♀ genit. Pl. 171: 1)

Acontia pulchella Leech, 1889, *Proc. zool. Soc. Lond*. **1889**: 524, pl. 53: 10 (Type-locality: Japan, Ohoyama).

Diagnosis. *Casminola pulchella* differs from other Nolini in milky-white ground colour of forewing with a double oblique silver-bluish black bar in costal area before the trace of the waved black antemedian line and diminished postmedian line; submarginal black band also sprinkled with silvery and bluish scales; marginal band chocolate; fringes dark brown. In male genitalia, pseudouncus rather short, narrow apically hooked; valva slender; harpe forming long bar vertically, apex strongly curved inwardly, pointed. Aedeagus short, straight with a stick-like cornutus which is over half the length of aedeagus. In female genitalia, antrum quadrangular, strongly sclerotised; ductus bursae moderately long, membranous; central part of ductus bursae with a big globe; corpus bursae rounded, without signa.

Bionomics. Mesophilous species, collected in open deciduous forest with *Quercus dentata*, and in rich mixed forest. The moth flies in VII – early VIII. The larva and its foodplants are unknown.

Distribution (Map 401). Manchurian, nemoral. Far East (S Primorye). – Korea, Japan (Honshu, Kyushu, Tsushima), China.

Note. The holotype of *Casminola pulchella* is illustrated on Pl. 19: 10.

Genus ***Nolathripa*** Inoue, 1970

Nolathripa Inoue, 1970, Inoue, 1970. *Bull. Japan ent. A cad*. **5**: 38. Type-species: *Nola lactaria* Graeser, 1892 [Russia, Amur reg.].

Small, white and brown coloured moths, wingspan 23–28 mm. Antenna of male ciliate; labal palps with very small 2nd segment; in forewing venation R4 absent, R2, R2 and R5 start from cell, no joint branch; forewing with M3 and Cu1 on short joint trunk. Hindwing with M2 developed. In male genitalia, uncus somewhat extended dorso-ventrally; valva narrow, with narrow, long sacculus and sclerotised ventral bar, slightly split apically; dorsal margin with small extension. Aedeagus moderate, vesica without cornuti. In female genitalia, ovipositor small; anterior and posterior apophyses small, weak; ductus bursae thin, sclerotised; corpus bursae with smart constriction in proximal third, with 2 elongated, basally extended, spined signa.

Monotypic genus, close to East Asian *Dialithoptera* Hampson, 1900 (type-species *Pisara gemmata* Hampson, 1896).

Nolathripa lactaria (Graeser, 1892)

(Pl. 19: 46; ♂ genit. Pl. 97: 4; ♀ genit. Pl. 171: 2)

Nola lactaria Graeser, 1892, *Berl. ent. Z*. **37**, II: 211 (Type-locality: Russia: "Ussuri, "Koslofska" [S Khabarovsk terr. Kozlovka].

Synonymy: *korbi* Püngeler, 1908; *stellata* Wileman, 1911.

Diagnosis. *N. lactaria* can easily be recognised by much larger size than in other Nolini, in milky-white ground colour of forewing, with magenta-brown subterminal and terminal area, and blackish reniform stigma connected with blackish costal spot.

Bionomics. Mesophilous species, occurring in lowland deciduous and mixed forests where *Juglans manchurica* trees are abundant. The moth flies from early VII to early VIII. In Japan, larvae feed on *Juglans ailantifolia* (Juglandaceae) (Miyata 1983).

Distribution (Map 402). Manchurian, nemoral. Far East (Khabarovsk and Primorye terr.). – China, Korea, Japan.

Genus ***Nola*** Leach, 1815

Nola Leach, [1815] 1830, *in* Brewster, *Edinburgh Encycl*. **9**: 135. Type-species: *Noctua palliola* [Denis & Schiffermüller], 1775 [Austria] (=*Phalaena Tinea cucullatella* Linnaeus, 1758).

Synonymy: *Lira* Billberg, 1820; *Chlamifera* Hübner, 1822; *Chlamiphora* Hübner, [1825]; *Roeselia* Hübner, [1825]; *Necla* Walker, 1865; *Automala* Walker, [1863]; *Celama* Walker, 1865; *Pisara* Walker, 1862; *Aradrapha* Walker, [1866]; *Lebena* Walker, 1866; *Minnagara* Walker, 1866; *Argyrophyes* Grote, 1873; *Epizeuctis* Meyrick, 1889; *Deltapterum* Hampson, 1894; *Neonola* Hampson, 1900; *Poliothripa* Hampson, 1902; *Celamoides* van Eecke, 1920; *Idiocyttara* Turner, 1944

Small moths. Antennae of male bipectinate with distinctly shorter lamellae than in *Meganola*; eyes small, elliptical; labial palps relatively short and long, porrect, downturned; head, thorax, and ground colour of forewing whitish or greyish with a brown tint; forewing lacking vein R2 and R3; the hindwing venation is trifid (in *Meganola* quadrifid). In male genitalia, uncus lost; pseudouncus in most cases absent, known only in the Korean species *N. trilinea*; valva bilobed, harpe in most cases expressed, moderate or small; juxta rhomboid, plate-like, laterally extended as two arms to dorsal side. Aedeagus with coecum narrower than in other Nolini; some species have only half or less than half of the wall of aedeagus sclerotised. In female genitalia, ovipositor short, papillae anales short, rounded-triangular or quadrangular; apophyses short, variable in length, posterior apophyses sometimes longer than anterior ones; ostium lies at posterior margin of 8th sternite; ductus bursae relatively long, in some species sclerotised; corpus bursae saccate or pear-shaped, without signa., or with 1-2 spine-like signa.

Distributed worldwide with about 150 described species, most diverse in tropical forests. – 17 species.

Nola cucullatella (Linnaeus, 1758)

(Pl. 19: 12, 13; ♂ genit. Pl. 97: 5; ♀ genit. Pl. 171: 3)

Phalaena Tinea cucullatella Linnaeus, 1758, *Syst. Nat*. (Edn 10) **1**: 537 (Type-locality: Europe).

Synonymy: *ludvigella* Müller, 1764; *palliola* Denis & Schiffermüller, [1775]; *pygmaria* Fabricius, 1794; *palliolalis* Hübner, 1796; *cucullatalis* Haworh, 1811; *cucullatana* Hübner, 1825; *fuliginalis* Stephens, 1834; *palliolana* Duponchel, 184; *cucullalis* Ddoubleday, 1848; *tutulella* Zerny, 1927; *basigrisea* Lempke, 1960; *variegata* Lempke, 1960.

Diagnosis. Superficially, *N. cucullatella* resembles *Meganola togatulalis*. Externally differing from its congeners in grey wing colour with a dark grey basal area from the prominent black antemedial line; crosslines black, postmedial line narrow, slightly jagged; the two medial lines are closer to each other towards the costal margin; both stigmata indistinctly marked or invisible; hindwing grey, discal spot indistinct or absent. In male genitalia, both tegumen and the broad vinculum are very short; scaphium with two extremely long, parallel, stick-like, sclerotised structures; valva relatively short; cucullus bilobed with a deep cleft, costa and the short ventral margin sclerotised, straight; digitus prominent, narrowly triangular; sacculus narrow, about half the width of valva; clasper short, harpe very broad, plate-like and jagged at both sides; juxta shield-like, higher than long, dorsally with a deep cleft. Aedeagus almost straight, vesica with one large, pointed cornutus. In female genitalia, ovipositor short, wide, setose; posterior apophyses longer than anterior apophyses; ostium bursae very large, round, medially positioned on 8th segment; ductus bursae, triangular, very short, corpus bursae large, membranous, with a small anterior extension, with two signa, plate-like with a spine; appendix bursae arising close to anterior end of ductus bursae.

Bionomics. Meso-thermophilous species, occurs in open forests and forest-steppe, in parks and gardens. Bivoltine. The moth flies in VI-VII and VIII-IX. In Europe, larvae feed on rosaceous trees and shrubs *Prunus spinosa*, *Crataegus*, *Sorbus*, *Malus*.

Distribution (Map 403). Western Palaearctic, subboreal. S Russia, S Ural. – NW Africa, C and S Europe to Ukraine (Crimea), N America, introduced (Lafontaine & Schnidt 2010).

Nola confusalis (Herrich-Schäffer, [1847] 1845)

(Pl. 19: 14, 15; ♂ genit. Pl. 97: 6; ♀ genit. Pl. 171: 4)

Roeselia confusalis Herrich-Schäffer, [1847] 1845, *Syst. Bearb. Schmett. Eur*. **2**: 164 (Type-locality: [Europe] not stated).

Synonymy: *confusalis* subsp. *fumosensis* Daniel, 1957.

Diagnosis. *N. confusalis* could be confused with *N. cicatricalis*, but differs in more smooth, less dentate ante and postmedial lines and other elements of wing pattern. Ground colour of forewing pale ash-

grey, with black patch on costa just before postmedian line; antemedian line fuscous, arched; postemedian line gently rounded between R4 to M3 and weakly excurved on vein A; black dashes on veins, proximal margin of inner shading of postmedian line strongly crenulated. In male genitalia, dorsal part of valva with sclerotised sacculus, apex with a spine; harpe thorn-like, oblique inward; saccus broad with nipple-like process; a pair of rod-like processes in 8th abdominal sternite and tergite weak. Aedeagus very short with moderate, curved cornutus in vesica. In female genitalia, anterior apophyses short, half the length of posterior apophyses; antrum bell-shaped, sclerotised; ductus bursae slender with a minutely serrated ribbon-like sclerite present near junction of cervix bursae; cervix bursae broad; ductus seminalis starts from near junction of ductus bursae; corpus bursae ovate with a pair of thorn-like signa.

Bionomics. Mesophilous species, it inhabits rich deciduous forests with various broad-leaved trees. Bivoltine. The moth flies from late V to end of VI and again in VII-VIII. Larvae feed on *Quercus*, *Carpinus*, *Tilia*, *Prunus*, *Vaccinium* and *Mentha*.

Distribution (Map 404). Amphi-Palaearctic, subboreal. Europe, S Ural, SE Siberia (Transbaikalia), Far East, to Sakhalin and S Kuriles. – Korea, Japan (Hokkaido, Honshu).

Nola cicatricalis (Treitschke, 1835)

(Pl. 19: 16-18; ♂ genit. Pl. 98: 1; ♀ genit. Pl. 171: 5)

Hercyna cicatricalis Treitschke, 1835, *Schmett. Eur.* **10** (3): 39 (Type-locality: Hungary).

Synonymy: *cicatricana* Duponchel [1845], emend.; *tuberculalis* Mann, 1857.

Diagnosis. *N. cicatricalis* and *N. confusalis* belong to a group of closely related species; it differs from the latter in narrower and more pointed forewing, more jagged postmedial lines and other elements of wing pattern; in male genitalia, it differs from *N. confusalis* in stronger harpe, longer and broader aedeagus with curved cornutus; in female genitalia, it differs in broader ovipositor, longer apophyses and larger antrum. *N. cicatricalis* can be distinguished from other *Nola* species in the forewing pattern, the position of harpe on the ventral lobe of valva, and the posteriorly asymmetrical ductus bursae.

Bionomics. Mesophilous species, occurring in open warm broad-leaved woodlands with oak, and in old parks with bushes. Univoltine. The moth flies in IV-V. Larvae feed on *Quercus*, *Fagus*, *Betula* and *Rubus*. Overwinters as pupa.

Distribution (Map 405). Amphi-Palaearctic, subboreal. Far East (Amur, Khabarovsk, Primorye). – C and S Europe to Ukraine (Crimea), Near East (Turkey), Caucasus.

Nola aerugula (Hübner, 1793)

(Pl. 19: 19-21; ♂ genit. Pl. 98: 2; ♀ genit. Pl. 171: 6)

Phalaena aerugula Hübner, 1793, *Samml. auserlesener Vögel Schmett.*: **11**, pl. 61 (Type-locality: Europe).

Synonymy: *centonalis* Hübner, 1796; *centonana* Hübner, 1825; *candidalis* Staudinger, 1861;. *littoralis* Paux; 1901; *spitzi* Schawerda, 1921; *contrarialis* Heydemann, 1934; *trituberculana* Heslop, 1959.

Diagnosis. *N. aerugula* is a polymorphic species, represented in E Siberia and the Far East by the subspecies *N. aerugula atomosa* which differs from the nominate subspecies in white ground colour of forewing and thin, yellowish-brown wing pattern, which is extremely reduced in some specimens. Forewing white, more or less completely suffused with pale yellow-brown and irrorated with fuscous scales; antemedian line obscure, curved; postmedian line strongly angled below costa and then obliquely sinuous, with an obscure waved fuscous line along its inner side; subterminal line irregularly sinuous. Hindwing with termen fuscous-brown, terminal line fine, dark. In male genitalia, anal tube slender, long; valva with costal part expanded towards distal end; harpe thorn-like, positioned proximally, rather large, straight. Aedeagus robust, short with a pad-like cornutus; in female genitalia, antrum sclerotised and somewhat rounded; ductus bursae broad; corpus bursae elongated, with two small signa, one sclerotised and somewhat round, the other irregularly oval and scobinate.

Bionomics. Mesophilous species, occurring in wide range of biotopes, from forest-steppe to deciduous and mixed forests, often in margins of peat bogs and moist open woodland. Univoltine. The moth flies in VII- early VIII. Larvae feed on *Quercus mongolica*, *Betula*, *Rubus* and herbaceous plants, including *Lotus*, *Trifolium*, *Fragaria*, *Plantago*.

Distribution (Map 406). Eurasian, subboreal. S Ural, S Siberia, Far East, to Sakhalin and S Kuriles. – C and S Europe, Mongolia, Korea, Japan (Hokkaido, Honshu), NE China (subsp. *atomosa* Bremer, 1861).

Nola crambiformis Rebel, 1902

(Pl. 19: 22, 23; ♂ genit. Pl. 99: 3; ♀ genit. Pl. 171: 7)

Nola crambiformis Rebel, 1903, in: Bartel, 1903, *Dt. ent. Z. Iris* 18: 223 (Russia, S Ural, Orenburg).

Diagnosis. *N. crambiformis*, together with *N. karelica*, *N. aerugula* and three European species forms a species group linked by a combination of characters: the forewing pattern; the spine-like harpe; the prominent, usually comma-shaped cornutus; and the wider than long ostium bursae. *N. crambiformis* differs from other *Nola* species in strongly different forewing pattern, the shape of the cornutus, and the shape of corpus bursae. It is a sexually dimorphic species: in males the forewing ground colour is dark brownish-grey; in females it is white and grey; in both sexes the medial shade is absent; crosslines are prominent, almost straight and parallel; both stigmata traceable as tiny, white dots; hindwing of male grey, that of female white; in some specimens of both

sexes indistinct medial line and discal spot are present. In male genitalia, tegumen narrow, twice as long as vinculum; valva long, bilobed, costa and ventral lobe sclerotised, almost straight, rounded at both tips, costal lobe apically extended; harpe prominent, large, spine-like, transtilla short, sclerotised; juxta plate-like. Aedeagus almost straight, vesica with a short, log-like, apically free, rounded cornutus. In female genitalia, ovipositor wide, setose; posterior apophyses twice as long as anterior ones; ostium sclerotised, wider than high, anteriorly positioned on 8th segment; antrum sclerotised; ductus bursae membranous, in anterior part sclerotised; corpus bursae long, posterior part large, ovoid, with two signa; anterior part much narrower, cylindrical.

Bionomics. Meso-xerophilous, rather rare species, in Ural occurring in forest-steppe and steppe biotopes. Moths collected in VII. The larva and its foodplants are unknown.

Distribution (Map 407). Central Asian, subboreal. Russia: S Ural. – Kazakhstan (Uralsk, Dzhungarian Ala-Tau, Uzbekistan

Nola karelica (Tengström, 1869)

(Pl. 19: 24, 25; ♂ genit. Pl. 98: 4; ♀ genit. Pl. 171: 8)

Nola albula var. *karelica* Tengström, 1869, *Cat. Lepid. Fauna Fenn.*: 298.

Synonymy: *arctica* Schoeyen, 1888; *obsoleta* Reuter, 1893; *amuricola* Warnecke, 1838.

Diagnosis. *N. karelica* differs from related species in larger size, white ground colour of forewing, grey-brown colour of hindwing and details of male and female genitalia. Wing pattern formed by brown crosslines, of which antemedial line is traceable, postmedial line dotted, medial shadow present, postmedial areas brown; both stigmata white, reniform stigma outlined black, orbicular stigma a white dot; fringes chequered white and brown. In male genitalia, valva long, basally huge, bilobed; costal lobe narrow, apically club-like; ventral lobe very broad throughout to the rounded apex; harpe triangular, broad-based, pointed at tip; editum prominent, cone-like, setose, positioned close to base of costa; transtilla relatively broad; juxta plate-like, laterally extended by two small flaps. Aedeagus almost straight, extended ventrally; coecum long and pointed; vesica without cornuti. In female genitalia, ovipositor short, wide, setose; posterior apophyses with large base, twice as long as anterior ones, ostium round, dorsally and laterally sclerotised; posterior part of ductus bursae sclerotised, tapered; anterior part narrow, membranous; corpus bursae long, relatively narrow, gradually broader to anterior part, medially with spicules, but no signa.

Bionomics. Mesophilous species, it inhabits open deciduous and mixed forests and bushes. The moth flies in VII. The larva and its foodplants are unknown.

Distribution (Map 408). Euro-Siberian, boreal. NW Altai (Volynkin, Perunov 2007), Yakutia, Amur reg. – North Europe, Baltic countries,

[***Nola cristatula*** (Hübner, 1793)]

(Pl. 19: 26, 27; ♂ genit. Pl. 98: 5; ♀ genit. Pl. 172: 1)

Phalaena cristatula Hübner, 1793, *Samml. auserlesener Vögel Schmett.* Pl. 34 (Type-locality: Europe).

Synonymy: *cristulalis* Hübner, 1796; *cristulana* Hübner, [1825]; *minualis* auct., nec. Leech, 1888; *cristatula minualis* auct., nec. Leech, 1888.

Diagnosis. *N. cristatula* is a member of the *chlamitulalis* species-group including also *N. chlamitulalis* and two European species. It differs from its congeners in the presence of a dark spot near the orbicular stigma, dark grey hindwing, the shape of the harpe, the number and size of the carina spines, and the shape of antrum. Ground colour of forewing whitish, with light brown medial field, subterminal and terminal areas brown, cross-lines well marked, white, straight; stigmata indistinct, very small, white, with a small, black dot beside orbicular stigma; fringes chequered light brown and grey; hindwing dark grey with a discal spot; terminal line beige; fringes grey. In male genitalia, valva relatively short, bilobed, the cleft less deep than in the other *Nola* species-groups, costa and ventral margin heavily sclerotised, straight, ventral lobe extended into a tiny spine; sacculus relatively long, harpe bifurcate with the anterior process short, triangular, the posterior process longer, sickle-like. Aedeagus almost straight, coecum short, ventral part of carina with a band with 8–10 short, prominent spines, vesica with small plate-like cornutus. In female genitalia, ovipositor short, broad, setose; posterior apophyses twice as long as anterior ones, ostium bursae large, round, medially positioned on 8th segment; antrum heavily sclerotised, twice as long as wide, anterior half of ductus bursae narrow, with sclerites; corpus bursae long, membranous, cylindrical posteriorly, globular anteriorly, with small signum.

Bionomics. Mesophilous species, occurring in wet, open forests, meadows, forest edges, among bushes. Bivoltine. The moth flies in VI-VII and VII-VIII. Larvae feed on *Teucrium chamaedrys* and *Mentha aquatica* (Lamiaceae). Overwinters as larva.

Distribution (Map 409). West Palaearctic, subboreal. S and C Europe, eastwards to Ukraine (Kiev, ZISP colection).

Note. The species was erroneously included in the Checklist of the Noctuidae of the Asian part of Russia (Kononenko 2005) and later in the Catalogue of the Lepidoptera of Russia (Matov *et al.* 2008) for the Ural. It has not been recorded from Russia. We include the diagnosis, data and illustrations of the species here in order to show its differences from *N. minutalis*, confused by authors with *N. cristatula*.

[***Nola chlamitulalis*** (Hübner, [1813])]

(Pl. 19: 28, 29; ♂ genit. Pl. 99: 6; ♀ genit. Pl. 172: 2)

Pyralis chlamitulalis Hübner, [1813], *Samml. eur. Schmett.* **2**, pl. 25: 160 (Type-locality: Europe).

Synonymy: *chlamydulana* Duponchel, [1845]; *cristatula* auct.; *minualis* auct., nec. Leech, 1888; *chlamitulalis minualis* auct., nec. Leech, 1888.

Diagnosis. *N. chlamitulalis* differs from the related *N. cristatula* in absence of a dark spot near the orbicular stigma and presence the two black or dark blue patches at the subterminal line; in male genitalia, in the shape of the bifurcate harpe, the number and size of the carina spines; in female genitalia, in the longer anterior apophyses, shape of antrum and in longer and narrower posterior half of ductus bursae. Ground colour of forewing white, with beige or light brown in the medial area, and with a prominent black outer part of subterminal and the whole terminal area; the subterminal line dominated by two black or blue-shining, semi-circular patches; crosslines weakly marked, white, straight or smoothly curved, stigmata almost untraceable, tiny, white; fringes grey; hindwing white, shading to dark grey towards margin, with a discal spot; terminal line white; fringes light grey. In male genitalia, valva with a less deeply cleft than in *N. cristatula*; costa and ventral margin sclerotised, straight, rounded tips; ventral lobe extended in a tiny spine; harpe bifurcate, the anterior process short, spine-like, the posterior process longer, sickle-like, basally with a ventrally directed, narrow process. Aedeagus almost straight, longer and thinner than in *N. cristatula*, ventral part of carina with a band with 1–2 small and 1–2 larger, prominent spines, vesica with a small, elevated, plate-like cornutus. In female genitalia, ovipositor narrow, anterior and posterior apophyses equal in length; ostium bursae large, round, sclerotised, medially positioned on 8th segment; antrum sclerotised, narrower than in *N. cristatula*; ductus bursae long, narrow, with sclerites; corpus bursae long, membranous, cylindrical posteriorly, globular anteriorly, with a small spine-like signum.

Bionomics. Xero-thermophilous species, occurring in open, warm deciduous forests and forest-steppe and steppe habitats. Bivoltine. The moth flies in IV -early VI and in VII-VIII. Larvae feed on *Odontites*, *Euphrasia*, *Teucrium*, *Scabiosa*.

Distribution (Map 410). West Palaearctic, subboreal. SE Russia (Rostov reg., Krasnodar terr.). – N Africa, S Europe to SE Ukraine (Crimea), N Caucasus, Near East (Turkey, Transcaucasia, Iran, Turkmenia – coll. ZISP).

Note. The species wae erroneously reported in the Checklist of the Noctuidae of the Asian part of Russia (Kononenko 2005) and later in the Catalogue of the Lepidoptera of Russia (Matov *et al.* 2008) for the Ural. It has not been recorded in the region. Due to the confusion with *N. minutalis* it was also reported in the same publications for the Far East (see also the note for *N. minutalis*). The species is known only from S Russia. We include the diagnosis, data and illustrations of the species here in order to show its differences from *N. minutalis*.

Nola minutalis Leech, 1888

(Pl. 19: 30-32; ♂ genit. Pl. 99: 1; ♀ genit. Pl. 172: 3)

Nola minutalis Leech, 1888, *Proc. zool. Soc. Lond.* **1888**: 607, pl. 330: 17 (Type-locality: Japan: Oiwake).

Diagnosis. Externally, *N. minutalis* resembles *N. chlamitulalis* and was considered by early authors to be an eastern subspecies of the it. It differs from *N. chlamitulalis* in smaller size, paler and less distinct wing pattern and in male and female genitalia. Ground colour of wings white with light greyish-brown pattern. Forewing with ante- and postmedian line weak, suffused with light brown, in costal area with large trapezoid pale-brown patch; subterminal field darker brown, strongly crenulate 3 times, as in *N. chlamitulalis*, suffused with dark brown scales and bordered by narrow white fine line; termen pale brown. In male genitalia, anal tube short and broad; valva with costal part broadened medially, rounded distally; ventral part gradually tapering with a minute spine near apex; harpe thorn-like, short; saccus large and strong. Aedeagus short; vesica with 3 cornuti, two of them slender, spine-like, placed on thin apical diverticula, the other short, strongly curved, placed in basal part of vesica. In female genitalia, ductus bursae thin and very long, 1.5 times as long as corpus bursae, in distal third from ostium broad, then becoming narrower and rather sclerotised in middle part, the basal third broad; corpus bursae large, rounded with hat-like signum and large cervix bursae.

Bionomics. Mesophilous species, inhabits wooded biotopes. The moth flies from early VI to VIII. The larva and its foodplants are unknown.

Distribution (Map 411). Manchurian, nemoral. Far East (S Khabarovsk and Primorye terr.). – N China, Korea, Japan (Honshu, Shikoku, Kyushu).

Note. Poole (1989) and some subsequent authors (Oh 2001; Kononenko & Han 2007) erroneously treated this taxon as a synonym of *N. cristatula* or as a subspecies of *N. chlamitulalis* (Inoue 1982, Tschistjakov 2003, Kononenko 2005, Fibiger *et al.* 2009), although Inoue (2001) proved the status of this taxon as a distinct species. The holotype of *Nola minutalis* is illustrated on Pl. 19: 32.

Nola taeniata Snellen, 1875

(Pl. 19: 33-35; ♂ genit. Pl. 99: 2; ♀ genit. Pl. 172: 4)

Nola taeniata Snellen, 1875, *Tijdschr. ent.* **17**: 65, pl. 6: 1 (Type-locality: Indonesia, Celebes).

Synonymy: *candida* Butler, 1879; *fragilis* Swinhoe, 1890; *mesozona* Lucas, 1890; *anpingicola* Strand, 1917.

Diagnosis. *N. taeniata* differs from its congeners in relatively narrow forewing, white ground colour and characteristic wing pattern with dark-brown medial area. Forewing with conspicuous brown spot on costa which extends to faint antemedial line; postmedian line brownish, medial field in outer half brown, with silvery bright coloured line; subterminal line indistinct, irregularly waved; hindwing paler than forewing with small discal spot; in some populations hindwing of female with broad brown terminal band. In male genitalia, valva slightly curved along costa, costal lobe broadened distally; harpe thorn-like, weakly sclerotised; sacculus sclerotised along ventral margin, apex of ventral lobe of valva sharply pointed; saccus triangular. Aedeagus short, robust and slightly bent near middle, with large needle like cornuti. In female genitalia, anterior apophyses broad based, ostium broad; ductus bursae broad and very short; cervix bursae rounded, well developed; corpus bursae ovoid.

Bionomics. Occurs in valleys with deciduous forest. Moths collected in VII and VIII. In China, the larva has been reported on rice *Oryza sativa* (Poaceae), *Morus alba* (Moraceae) and *Gossypium indicum* (Malvaceae).

Distribution (Map 412). Oriental-Manchurian, nemoral. Far East (S Khabarovsk and Primorye terr.). – China, Korea, Japan, Taiwan, Indonesia, Sri Lanka, Malaysia, Myanmar, India, Nepal, Australia.

Nola umetsui Sasaki, 1993

(Pl. 19: 36; ♂ genit. Pl. 99: 3; ♀ genit. Pl. 172: 5)

Nola umetsui Sasaki, 1993, *Japan Heterocerists' J.* 172: 389: 1-6 (Type-locality: Japan, Honshu, Nikaha, Akiro Pref.).

Diagnosis. Externally, *N. umetsui* resembles *N. taeniata*, but differs in broad triangular shape of forewing and characteristic wing pattern. Forewing white with conspicuous brown pattern; antemedal line pale, diffuse, darker in costal area; medial field in outer part dark brown, defined by postmedial line; subterminal line separated by white, wavy, in form of three rounded dashes. In male genitalia, valva broad at base, costal lobe of valva narrow, slightly extended apically; ventral lobe broad, with large thin harpe. Aedeagus short, with moderate spine-like cornutus. In female genitalia, ovipositor broad, setose, anterior apophyses longer than posterior ones, both with wide bases; 8th sternite ribbed; antrum short, ductus bursae short, corpus bursae saccate.

Bionomics. Meso-thermophilous species, occurring in forest-steppe biotopes with dominance of *Miscanthus sinensis* and *Artemisia* and open forest with *Quercus mongolica*, *Ulmus laciniata* and *Fraxinus manchurica*. Moths were collected in the beginning of VIII. The larva and its foodplants are unknown

Distribution (Map 413). Manchurian, nemoral. Far East (SW Primorye). – Japan (Honshu).

Note. The species was not included in the Checklist of the Noctuidae of the Asian part of Russia (Kononenko 2005). First report for Russia.

Nola innocua Butler, 1880

(Pl. 19: 37, 38; ♂ genit. Pl. 99: 4; ♀ genit. Pl. 172: 6)

Nola innocua Butler, 1880, *Proc. zool. Soc. Lond.* **1880**: 671 (Type-locality: Taiwan [Formosa]).

Synonymy: *costimacula* Staudinger, 1887.

Diagnosis. *N. innocua* is externally similar to *N. japonibia*, but differs as follows: forewing broader and ground colour of both wings greyish, costal patches blackish; postemedian line distinct, from costa to M3 somewhat straight, minutely dentate, then oblique inward. In male genitalia, costa strong, costal lobe of valva long, straight, ventral lobe long, apically extended; harpe short, curved inwardly. Aedeagus moderate in length, with small stick-like cornutus. In female genitalia, posterior apophyses about twice as long as anterior apophyses; ductus bursae short, half the length of corpus bursae; antrum half the length of ductus bursae, sclerotised, broad and of irregular shape; corpus bursae slender, with a large hat-like signum.

Bionomics. Mesophilous species, occurs in deciduous woodlands. The moth flies in VII and early VIII. In Japan, the larvae feed on galls produced by Hemiptera on *Distilium racemosum* (Sugi 1987).

Distribution (Map 414). Manchurian nemoral. Far East (Primorye, S Sakhalin and S Kuriles). – Korea, Japan (except Hokkaido), Taiwan.

Note. Poole (1989) referred to the name *costimacula* Staudinger, 1887 as a junior synonym of *N. innocua*. The holotype of *Nola innocua* is illustrated on Pl. 19: 37.

Nola japonibia Strand, 1920

(Pl. 19: 39, 40; ♂ genit. Pl. 99: 5; ♀ genit. Pl. 172: 7, 8)

Celama innocua var. *japonibia* Strand, 1920, *Lep. Cat.* **24**: 454 (Type-locality: Japan).

Diagnosis. *N. japonibia* is externally similar to *N. innocua* and *N. emi*, but differs from them in details of wing pattern and structure of genitalia. Forewing whitish, with 3 dark brown costal patches between basal and postmedian lines; ante-and postmedian lines faint, somewhat crenulate. Hindwing fuscous towards outer margin, with discal spot. In male genitalia, valva with ventral lobe entirely sclerotised, with a spine at apex; harpe thorn-like, oblique inwardly, with pointed apex; saccus broad with central process short, gradually pointed. Aedeagus short, gradually narrowed, with tubular vesica armed with long, thin rod-like cornutus. In female genitalia, anterior and posterior apophyses of same length; ductus bursae long, antrum about 1/4 the length of ductus bursae, broad and weakly sclerotised; corpus bursae elongated, rounded with double signa, one with blunt short process, the other small, serrate with no process.

Bionomics. Mesophilous species, occurring in deciduous woodlands. The moth flies in VI-VIII. The larva and its foodplants are unknown.

Distribution (Map 415). Manchurian nemoral. Far East (S Primorye). – Korea, Japan.

Note. The holotype of *Nola japonibia* is illustrated on Pl. 19: 39.

Nola emi (Inoue, 1956)

(Pl. 19: 41, 42; ♂ genit. Pl. 99: 6; ♀ genit. Pl. 173: 1)

Celama emi Inoue, 1956, *Kontyû*, **24**: 157: 1.

Diagnosis. *N. emi* is externally similar to *N. innocua* and *N. japonibia*, but differs in details of wing pattern and structure of genitalia. Ground colour of forewing greyish-white, with suffusion of greyish scales in outer part; wing pattern with subbasal brown patch in costal area, distinct antemedial line, extended in costal part, triangular dark spot in costal area before antemedial line and distinct, twice curved, thin, black antemedial line; subterminal and terminal areas grey, subterminal line whitish, traceable. In male genitalia, saccus three-lobed, valva with triangular cleft, rather broad costal lobe, apically rounded and acute on ventral side; ventral lobe with sclerotised rod, ended in small spine; sacculus long and strong, harpe rather large, slightly curved. Aedeagus short, with curved cornutus on vesica. In female genitalia, posterior apophyses three times longer than anterior ones, antrum wide, twice as broad as ductus bursae; ductus long, membranous, corpus bursae pyriform, without signa.

Bionomics. Mesophilous species, occurring in woodlands, among bushes and in meadows. The moth flies in V, early -VI. The larva and its foodplants are unknown.

Distribution (Map 416). Manchurian nemoral. Far East (S Primorye, S Kuriles: Kunashir Is.). – Japan (Honshu, Shikoku).

Note. The paratype of *Nola emi* is illustrated on Pl. 19: 41.

Nola neglecta Inoue, 1991

(Pl. 19: 43; ♂ genit. Pl. 100: 1; ♀ genit. Pl. 173: 2)

Nola neglecta Inoue, 1991, *Tyo to Ga*. **42**: 63, text figures (Type-locality: Japan, Honshu, Kamikochi, 1500 m, Nagano Pref.).

Diagnosis. *N. neglecta* differs from its congeners in smaller size, and narrow, pale whitish-grey forewingcolour. Forewing with costal area pale grey, with darker patches in subbasal and medial fields; antemedial line indistinct, postmedial, subterminal and terminal lines traceable as rows of short streaks, cilia grey; hindwing pale whitish-grey darker towards distal angle. In male genitalia, vinculum with broad, three-lobate saccus, valva broad, with broad rectangular cleft; costal lobe extended apically, ventral lobe with sclerotised rib, rounded apically; sacculus elongated, clasper parallel to ventral margin, harpe strong, thin, perpendicular to clasper, juxta plate-like. Aedeagus relatively short, with curved moderate cornutus. In female genitalia, ovipositor broad, papillae anales pointed; anterior apophyses twice as long as posterior apophyses; ostium rounded, sclerotised; antrum well expressed, ductus bursae moderate, membranous; corpus bursae ovoid, bearing small signum, with small cervix bursae.

Bionomics. Mesophilous species, rare in deciduous forests. Moths collected in VI. The larva and its foodplants are unknown.

Distribution (Map 417). Manchurian nemoral. Far East (S Khabarovsk and Primorye terr.). – Japan (Hokkaido, Honshu).

Nola nami (Inoue, 1956)

(Pl. 19: 44; ♂ genit. Pl. 100: 2; ♀ genit. Pl. 173: 3)

Celama nami Inoue, 1956, *Kontyû* **24**: 158, pl. 14: 2, 5.

Diagnosis. Externally, *N. nami* resembles *N. confusalis*. Ground-colour of forewing darker than in *N. confusalis*; forewing with postmedian line distinctly angled on vein A, while in *N. confusalis* it is weakly excurved; hindwing fuscous. In male genitalia, costal lobe of valva straight, with strongly sclerotised costa; lateral lobe broad, with sclerotised rib; harpe thin, rather large, apically slightly curved outwardly; saccus clearly formed. Aedeagus moderate, with curved cornutus. In female genitalia, antrum rather large, forming strongly sclerotised rectanglar plate, its caudal extremity distinct in shape; cervix bursae very small; corpus bursae rounded, with single large signum.

Bionomics. Mesophilous. The species is known in Russia only from S Kuriles (Kunashir Is.). Collected in VII in deciduous forest with meadows with *Sasa kurilensis*. The larval foodplants are unknown.

Distribution (Map 418). Manchurian nemoral. Islands of Russian Far East (S Kuriles, Kunashir Is.). – Korea, Japan.

Note. The paratype of *Nola nami* is illustrated on Pl. 19: 44.

Nola ebatoi Inoue, 1970

(Pl. 19: 45; ♂ genit. Pl. 100: 3; ♀ genit. Pl. 173: 4)

Celama ebatoi Inoue, 1970, *Bull. Jap. Ent. Acad.* 6 : 2 (Type-locality: Japan, Tokyo).

Diagnosis. *N. ebatoi* is closely related to *N. nami*, but it can be separated from it by the following characters: brown patch on costa of forewing distinct, darker; postmedian row of dashes on R5 to M3 forms a straight line as in *N. nami*, but the line on vein A is gently curved as in *N. confusalis*; antemedian line more weakly angled. Male genitalia similar to those of *N. nami* but harpe much shorter, apically pointed; saccus much longer, its apex more acute; a pair of rod-like processes on 8th abdominal sternite and tergite apparently weaker than in *N. nami* or *N. confusalis*. In female genitalia, anterior apophyses very short, 1/3 length of posterior apophyses; antrum rather long, half the length of ductus bursae, forming strongly sclerotised square plate; corpus bursae ovate with minute single signum.

Bionomics. Mesophilous species, occurring in open deciduous forest with *Quercus dentata*. The moths can be collected in VII and early VIII. Larvae and foodplant unknown.

Distribution (Map 419). Manchurian nemoral. Far East (S Khabarovsk terr.). – S Korea, Japan.

Note. The species was reported for the south of Khabarovsk terr. by Dubatolov & Dolgih (2009).

Tribe **Chloephorini** Stainton, 1859

Chloephorinae Stainton, 1859, *Manual British Butterflies and Moths* 2: 186. Type genus: *Chloephora* Stephens, 1827 (= *Pseudoips* Hübner, 1822).

Synonymy: Haliadea Snellen, 1867; Hydrophilinae Börner, 1932; Hylophilini Mell, 1943; Beninae Beck, 1960.

Medium sized moths, on average larger than other Nolinae, rarely small. In resting position, the moths hold wings roof-like. In most species, antennae of both sexes filiform, ciliate or with few tiny bristles. Wing colour often bright, green or reddish, white in subtribe Ariolicina. Forewing with less rounded basal part of costa than in Nolini and Sarrothripini, with all radial veins (R2 - R5) present; raised scales absent; hindwing with quadrifine venation, M3 and CuA1 usually stalked. In male genitalia, uncus substituted by pseudouncus with one pointed tip; juxta large, in most cases weakly sclerotised; transtilla plate-like, sclerotised, apically tapered; in natural position with closed valvae the transtilla looks prominent, with the meeting point of the two lobes as highest point; valvae lobate, often weakly sclerotised, covered with dense hair-like setae, and often with coremata. In female genitalia, ovipositor lobes short and broad, setose, often in a distal ring. Several members of Chloephorini are documented as producing sounds from their body. The larvae are swollen from thoracic segment 2 to abdominal segment 4, and tapered from abdominal segment 6 to 9 (Ahola & Silvonen 2005); all prolegs developed, spread sideways. Pupae without cremaster, but ventrally with a transverse beading at the anterior edge of the 10th abdominal segment.

The tribe was formerly treated as a subfamily of Noctuidae (Sugi 1982a; Speidel *et al*. 1996a) or as subfamily of Nolidae (Kitching & Rawlins 1998, Holloway 2003). Lafontaine & Fibiger (2006) and Fibiger *et al*. (2009) placed it as a tribe of the subfamily Nolinae in Noctuidae. The tribe is divided into four subtribes: Chloephorina Stainton, 1859, Camptolomina Mell, 1943, Careina Moore, 1883, and Ariolicina Mell, 1943.

A mainly tropical tribe, represented by about 500 species, with the centre of diversity in SE Asia. Only a small number of the genera occurs in the temperate zone, mainly in the Manchurian subregion of the Palaearctic. 10 genera of all subtribes are known from the Asian part of Russia

Subtribe **Chloephorina** Stainton, 1859

Chloephorinae Stainton, 1859, *Manual British Butterflies and Moths* 2: 186. Type genus: *Chloephora* Stephens, 1827 (= *Pseudoips* Hьbner, 1822).

Synonymy: Haliadea Snellen, 1867; Hydrophilinae Börner, 1932; Hylophilini Mell, 1943; Beninae Beck, 1960.

Most species of the subtribe have bright green, red or rusty colour of forewing and reduced wing pattern. Main external structural characters and main features of male and female genitalia as described for the tribe.

Genus ***Iragaodes*** Matsumura, 1931

Iragaodes Matsumura, 1931, *Insecta matsum*. **5**: 106. Type-species: *Heterogenea nobilis* Staudinger, 1887 [Russia, Vladivostok].

Small yellowish-brown moths. Antennae of male filiform; labial palps with moderate 3rd segment; forewing venation with additional cell, R3 and R4 fused; on hindwing M2 well developed. In male genitalia, uncus/pseudouncus moderate; tegumen narrow; valva lobe-like, narrow at base, wide in mid part, somewhat narrower and rounded at apex; transtilla prominent; costa with short triangular extension in middle. Aedeagus rather large; vesica relatively short, without cornuti. In female genitalia, papillae anales short, quadrangular; apophyses weak; antrum with bilobed antevaginal plate; ductus bursae weakly sclerotised, moderately long; corpus bursae rounded.

Monotypic genus, distributed mainly in Manchurian subregion of the Palaearctic.

Iragaodes nobilis (Staudinger, 1887)

(Pl. 19: 49, 50; ♂ genit. Pl. 100: 4; ♀ genit. Pl. 173: 5)

Heterogenea nobilis Staudinger, 1887, in Romanoff, *Mém. Lépid.* **3**: 196, pl. 11: 8 (Type-locality: Russia: Vladivostok).

Bionomics. Mesophilous species, occurring in deciduous woodlands. Univoltine. Flight period from mid VI to mid VIII. In Japan, larvae feed on *Carpinus tschonoskii* and *C. cordata* (Betulaceae) (Miyata 1983).

Distribution (Map 420). Manchurian, nemoral. Far East (Primorye). – China, Korea, Japan, Taiwan.

Genus ***Parhylophila*** Hampson, 1912

Parhylophila Hampson, 1912, *Cat. Lepid. Phalaenae Br. Mus.* **11**: xiv, 514. Type-species: *Chloeophora celsiana* Staudinger, 1887 [Russia, Amur reg.].

Medium sized green moths. Wingspan 23–34 mm. Antennae of male ciliate; labial palps directed obliquely upwards or downwards; forewing with almost quadrangular apex and straight outer margin; forewing with R3, R4 and R5, sometimes R2 arising from one trunk, R1 arising from cell; areole absent;

in hindwing M2 developed. In male genitalia, uncus/subuncus short, tapered and pointed; valva with cucullus extended dorsally, sometimes with distinct neck; costa with dorsal extension; juxta Y-shaped. Aedeagus thin, somewhat extended distally; vesica with short or long spine-like cornuti. In female genitalia, papillae anales elongated or wide, large; 8th sternite wide; posterior apophyses rather massive, anterior apophyses rather long; corpus bursae without signa.

The genus includes 2 species, distributed mainly in the Manchurian subregion of the Palaearctic. – 2 species.

Parhylophila celsiana (Staudinger, 1887)

(Pl. 19: 51, 52; ♂ genit. Pl. 100: 5; ♀ genit. Pl. 173: 6)

Chloeophora celsiana Staudinger, 1887 in Romanoff, *Mém. Lépid.* **3**: 177, pl. 10: 1 (Russia, Amur reg.: Radde).

Bionomics. Mesophilous species, inhabits rich deciduous and mixed forest. Univoltine. The moth flies from VI to late VII. The larva and its foodplants are unknown.

Distribution (Map 421). Manchurian, nemoral. Far East (S Khabarovsk and Primorye terr.). – Korea, Japan (Honshu) NE China.

Parhylophila buddhae (Alphéraky, 1897)

(Pl. 19: 53, 54; ♂ genit. Pl. 100: 6; ♀ genit. Pl. 173: 7)

Hylophila buddhae Alphéraky, 1897, in Romanoff, *Mém. Lépid.* **9**: 132, pl. 9: 8 (Type-locality: China, Sitchuan).

Bionomics. Mesophilous. Occurs locally in deciduous and mixed forest with poplar *Populus*. Univoltine. The moth flies from VI to late VII. The larva and its foodplants are unknown.

Distribution (Map 422). Manchurian–continental, nemoral. Transbaikalia, Far East (S Khabarovsk, Primorye terr., Sakhalin). – C and W China.

Genus ***Kerala*** Moore, 1881

Kerala Moore, 1881, *Proc. zool. Soc. Lond.* **1881**: 329. Type-species: *Kerala punctilineata* Moore, 1881 [India]).

Cerala: Hampson, 1912, emendation.

Medium sized moths with narrow wings. Wingspan 32–38 mm. Head large with small eyes; labial palps short, with long 3rd segment; antenna of male filiform or fasciculate; thorax short, wide; wings very long, with almost parallel costal and dorsal margins; forewing with R3 and R4 stalked; areole present; hindwing wide, M2 developed. In male genitalia, uncus/pseudouncus rather short, beak-like, basally swollen; valva large, membranous, lobe-like, with rather strong costa which is apically free from valva; branches of transtilla large, fused basally. Aedeagus relatively short, vesica bulbous with multiple diverticula. In female genitalia, papillae anales quadrangular; apophyses almost equal in length; antrum membranous, funnel-shaped; ductus bursae very short, sclerotised; corpus bursae large, elongated, saccate.

The genus includes 6 species distributed from the Manchurian subregion of the Palaearctic to Oriental region, where it is most diverse. – 1 species.

Kerala decipiens (Butler, 1878)

(Pl. 19: 55, 56; ♂ genit. Pl. 101: 1; ♀ genit. Pl. 173: 8)

Cyana decipiens Butler, 1878, *Ann. Mag. nat. Hist.* (4) **5**: 352 (Type-locality: Japan).

Synonymy: *macroptera* Oberthür, 1880; *fujisana* Matsumura, 1909.

Bionomics. Mesophilous species, inhabits valleys with deciduous or mixed forest. Univoltine. The moth flies from end VI to early VIII. Larvae feed on *Alnus* and *Betula* (Betulaceae).

Distribution (Map 423). Manchurian, nemoral. Far East (from S Khabarovsk terr. to S Kuriles: Kunashir and Shikotan Is.). – China, Korea, Japan, N India.

Genus ***Gelastocera*** Butler, 1877

Gelastocera Butler, 1877, *Ann. Mag. nat. Hist.* (4) **20**: 476. Type-species: *Gelastocera exusta* Butler, 1877 [Japan].

Medium sized moths. Wingspan 22-36 mm. Labial palps short, compressed, with very short 3rd segment; basal 2/3 of antenna of male bipectinate, apically fasciculate; forewing broad, reddish or reddish-ocheous. M2 present in hindwing. In male genitalia, pseudouncus thin, hooked apically; valva membranous, lobe-like, with prominent hairy coremata on outer side; base narrow, distally broadened, without processes, with strong transtilla; branches of transtilla large, fused basally. Aedeagus moderately long, vesica short, with cluster of small cornuti aggregated in row. In female genitalia, papillae anales quadrangular, flattened; apophyses short, almost equal in length; antrum sclerotised, ductus bursae short, with sclerotised colliculum; corpus bursae large, elongated, saccate, without signa.

The genus includes 11 species distributed mainly in the Oriental region and Manchurian subregion of the Palaearctic. – 3-4 species.

Gelastocera ochroleucana Staudinger, 1887

(Pl. 19: 57-60; ♂ genit. Pl. 101: 2; ♀ genit. Pl. 174, 1)

Gelastocera ochroleucana Staudinger, 1887, in Romanoff, *Mém. Lépid.* **3**: 176, pl. 8: 11 (Type-locality: Russia: Raddefka [Khabarovsk terr, Judish autonomy., Radde]; "Suifun" [Primorye, Razdolnaya river].

Diagnosis. Wingspan 26–28 mm. Ground colour of head, body and forewing pale yellowish-brown; basal, subbasal and subterminal fields pale reddish-brown, medial field with purplish-red suffusion, darker in medial shadow, sometimes dark, strongly expressed; crosslines diffuse, indistinct, reniform stigma darker, diffuse, with traceable whitish centre. In male genitalia, valva narrower than in related species, ventral margin of valva tapered; vesica larger than in *G. exusta*, row of cornuti stronger. In female genitalia, antrum wider than in *G. exusta*, ductus bursae wider, colliculum larger than in *G. exusta*.

Bionomics. Mesophilous species, occurring in deciduous forests. Probably two generations. The moth flies in early VI and in VII-VIII. The larva and its foodplants are unknown.

Distribution (Map 424). Manchurian–continental, nemoral. Far East, to Sakhalin and S Kuriles. – Korea.

Note.The syntype of *Gelastocera ochroleucana* is illustrated here on Pl. 19: 59.

Gelastocera exusta Butler, 1877

(Pl. 19: 61-63; ♂ genit. Pl. 101: 3; ♀ genit. Pl. 174: 2, 3)

Gelastocera exusta Butler, 1877, *Ann. Mag. nat. Hist.* (4) **20**: 476 (Type-locality: Japan: Hakodate).

Synonymy: *ochroleucana* f. *designata* Bryk, 1948.

Diagnosis. *G. exusta* is on average larger than *G. ochroleucana*, wingspan 26–32 mm. Ground colour of head, body and forewing pale purplish-red, paler in basal field, darker and more purplish in medial field; basal, antemedial, postmedial and subterminal lines distinct, diffuse; orbicular stigma a dark dot, reniform stigma a dark diffuse spot with traceable whitish centre. In male genitalia, valva broader and shorter than in related species, its costal and ventral margins parallel, vesica narrower and shorter than in related specis. In female genitalia, colliculum smaller than in *G. ochroleucana*.

Bionomics. Mesophilous species, occurring in deciduous and mixed forests. The moth flies from late VI to early IX. Larvae feed on arboraceous plants including *Wisteria*, *Juglans*, *Alnus*, *Carpinus*, *Ulmus*, *Tilia*.

Distribution (Map 425). Manchurian nemoral. Far East, to Sakhalin and S Kuriles – China, Korea, Japan, Taiwan.

Gelastocera eminentissima Bryk, 1948

(Pl. 19: 64-66; ♂ genit. Pl. 101: 4; ♀ genit. Pl. 174: 4)

Gelastocera exusta eminentissima Bryk, 1948 (subsp.), *Ark. Zool.* **41** (A) 1: 116 (Type-locality: N Korea: [Shuotsu]).

Synonymy: *sutshana* Obraztsov, 1950, **syn. n.**; *rubra* Kononenko, 1984.

Diagnosis. *G. eminentissima* is smaller than its congeners, wingspan 23–26 mm. Ground colour of forewing purplish-red, with more purplish tint than in *G. ochroleucana*, basal subbasal fields and thorax with yellowish tint; antemedial line merely indicated, submedial line more distinct, both angled, subterminal line closer to terminal margin of wing, reniform stigma distinct. Male genitalia smaller than in related species, valva narrower, costa not expressed, costal and ventral margins not parallel; vesica broader than in related species. In female genitalia, ductus bursae longer and more strongly sclerotised compared with other species, colliculum narrower but longer, corpus bursae elongated.

Bionomics. Mesophilous species, inhabits deciduous and oak forests, more common in open forest with *Quercus dentata* in S Primorye. The moth flies from early VI to beginning of IX. The larva and its foodplants are unknown.

Distribution (Map 426). Manchurian–continental, nemoral. Far East (S Primorye). – Korea.

Note. The authenticated specimen of *Gelastocera sutshana* identified by Obraztsov, probably the syntype (MZM) has been examined and illustrated here (Pl. 19: 64).

Gelastocera kotshubeji Obraztsov, 1943

(Pl. 19: 67, 68; ♂ genit. Pl. 101: 5; ♀ genit. Pl. 174: 5)

Gelastocera kotshubeji Obraztsov, 1943, *Z. Wien. ent. Ges.* **28**: 80, pl. 5: 5, 7 (Type-locality: Russia, "Sutchan" [Primorye terr., Partizansk]).

Diagnosis. Wingspan 26–28 mm. Ground colour of head, body and forewing pale yellowish-brown; basal, subbasal and subterminal fields pale yellowish-brown, head and patagia brown; medial field with purplish-brown suffusion, darker in medial shadow; crosslines indistinct, reniform stigma large, dark, diffuse, with hardly traceable whitish centre. In female genitalia, ductus bursae and colliculum much larger than in congeners.

Bionomics. Mesophilous species, occurs in deciduous forest. The moth flies in early VI-VII and in end VIII. The larva and its foodplants are unknown.

Distribution (Map 427). Manchurian–continental, nemoral. Far East (Primorye).

Genus ***Macrochthonia*** Butler, 1881

Macrochthonia Butler, 1881, *Trans. ent. Soc. Lond.* **1881**: 599. Type-species: *Macrochthonia fervens* Butler, 1881 [Japan].

Synonymy: *Eccopteroma* Staudinger, 1892.

Similar, and closely related to *Gelastocera*. Wingspan 30–38 mm. Labial palps directed forward, covered with scales; frons and thorax with crest; antenna of male bipectinate; wings broad, reddish or reddish-ocheous in colour. Forewing with R2, R3 and R4, R5 stalked; R3 fused with R4, areole present; M2 in hindwing present. In male genitalia, uncus/pseudouncus thin, hooked apically as in *Gelastocera*; valva membranous, lobe-like, basally narrower, distally broadened, without processes, with strong transtilla fused basally; costa with short finger-like extension. Aedeagus relatively short; vesica short, without cornuti. In female genitalia, papillae anales quadrangular; apophyses small, almost equal in length; antrum sclerotised, very small, membranous; ductus bursae short, widened and finely scobinate proximally, with patch of wrinked sclerotosation; corpus bursae large, rounded, without signa.

Monotypic Manchurian genus.

Macrochthonia fervens Butler, 1881

(Pl. 19: 69, 70; ♂ genit. Pl. 101: 6; ♀ genit. Pl. 174: 6)

Macrochthonia fervens Butler, 1881 *Trans. ent. Soc. Lond.* **1881**: 599 (Type-locality: Japan: Tokyo).

Synonymy: *falcata* Graeser, 1889 [1890]; *pyrausta* Graeser, 1889 [1890].

Bionomics. Mesophilous species, occurring in deciduous and mixed forest. Two generations from early VI to early VII and from mid VIII to IX. Larvae feed on *Ulmus japonica*, *U. davidiana*, in Japan also on *Zelkova serrata* (Ulmaceae).

Distribution (Map 428). Manchurian, nemoral. Far East, to Sakhalin and S Kuriles. – China, Korea, Japan, Taiwan.

Genus ***Pseudoips*** Hübner, 1822

Pseudoips Hübner, 1822, *Syst. – alphab. Verz.*: 59, 63. Type-species: *Pseudoips prasinana* Linnaeus, sensu Hübner, 1822 [a misidentification of *Pyralis fagana* Fabricius, 1781 [Europe].

Synonymy: *Hylophila* Hübner, [1825] 1816; *Chloephora* Stephens, 1827; *Halias* Treitschke, 1829; *Chloephila* Constanti, 1920; *Chloeophora* auct.; *Bena* auct.

Medium sized fresh-green moths; wingspan 29–37 mm. Antenna of male filiform, ciliate; labial palps directed obliquely forward, 3rd segment thin; wing pattern weakly expressed. M2 in hindwing present. In male genitalia, pseudouncus short, sickle-shaped; valva relatively short, constricted medially, without expressed costa or extension; transtilla well expressed; sacculus rather large. Aedeagus thin, rather massive; vesica bulbous, with multiple diverticula, with or without spoon-like cornuti. In female genitalia, ovipositor quadrangular; anterior and posterior apophyses equal in length; ductus bursae short; corpus bursae rounded, often with spot-like signum; bulla present.

The genus includes 6 species, two of which occur in the Palaearctic, the others are distributed mainly in the Oriental region. – 2 species.

Pseudoips prasinana (Linnaeus, 1758)

(Pl. 20: 1-4; ♂ genit. Pl. 102: 1; ♀ genit. Pl. 175: 1)

Phalaena Tortrix prasinana Linnaeus, 1758, *Syst. Nat.* (Edn 10) **1**: 530, [Type-locality: Sweden].

Synonymy: *faganus* Fabricius, 1781; *fagana*; auct; *lineata* Retz, 1783; *viridislienata* Retz, 1783; *sylvana* Fabricius, 1794; *milleri* Capr, 1883; *fiorii* Constantini, 1911; *japonica* Warren, 1913; *hongarica* Warren, 1913; *britannica* Warren, 1913.

Bionomics. Meso-thermophilous. Inhabits broadleaved deciduous forest with oak and birch, in forest-steppe and among bushes along rivers. In southern areas bivoltine. The moth flies from late V to mid VII and in VIII. Larvae are polyphagous on arboraceous plants, mainly on *Quercus* and *Betula* and also on *Ulmus*, *Fraxinus*, *Salix*. The pupa overwinters.

Distribution (Map 429). Eurasian, subboreal. Russia to Ural, throughout Siberia to the Far East, Sakhalin and Kuriles. – Europe, Near East, Korea, Japan and China.

Pseudoips sylpha (Butler, 1879)

(Pl. 20: 5-8; ♂ genit. Pl. 102: 2; ♀ genit. Pl. 175: 2)

Hylophila sylpha Butler, 1879, *Illustr. typical Specimens Lepid. Heterocera Colln Br. Mus.* **3**: 10, pl. 43: 10 (Type-locality: Japan, Yokohama).

Synonymy: *kraeffti* Graeser, 1888; *magnifica* Leech, 1890.

Diagnosis. *P. sylpha* differs from *P. prasinana* in somewhat narrower and more pointed forewing with more distinct, oblique silvery white crosslines, and presence of distinct subterminal line. Males of spring generation have reddish forewing with patches of green in cell and around subterminal line. Male genitalia differ in larger size, more rounded and incurved upper part of valva and larger sacculus. Aedeagus with large spine-like cornutus, those in *P. prasinana* half the length. In female genitalia, ostium bursae much narrover, corpus bursae without sclerotised plate as in *P. prasinana*, but with incurved sclerotised patch, appendix bursae band-like.

Bionomics. Mesophilous species, occurring in open oak and deciduous forests. More common in S Primorye. Bivoltine. The moth flies from late V to early VII and again from mid VIII to mid IX. Larvae on oak *Quercus mongolica*, *Q. dentata*, in Japan, on *Quercus acutissima*, *Q. serrata* (Fagaceae). The pupa overwinters.

Distribution (Map 430). Manchurian, nemoral. Transbaikalia, Far East (S Khabsrovsk terr. and Primorye terr.). – China, Korea, Japan.

Subtribe **Camptolomina** Mell, 1943

Camptolominae Mell, 1943, *Zool. Jb.* (Systematik) 76: 217. Type genus: *Camptoloma* Felder, 1874.

Monobasic tribe, most species are rather uniform in structure of genitalia. The larva has bisetose subventral group of setae on thoracic segments. Most characteristic features described under the genus.

Genus ***Camptoloma*** Felder, 1874

Camptoloma Felder, 1874, *in* Felder & Rogenhofer, 1874, *Reise öst. Fregatte Novara* (Zool.). **2** (Abt. 2). Type-species: *Numenes interiorata* Walker, [1865] [China: Shanghai]).

Synonymy: *Leucopardus* Hampson, 1894.

Medium sized, brightly coloured moths; palps short, compressed, 3rd segment twice as long as 2nd; hindwing with quadrifine venation, M2 starts from end of cell; forewing yellow or white; pattern formed by thin or wide black oblique lines or bands, and red or yellow suffusion or lines in terminal area. In male genitalia, uncus (pseudouncus) well developed, tip hooked; scaphium not expressed, subscaphium slightly sclerotised; tegumen broad, higher than vinculum; transtilla long, strong; valva rather broad, wider basally, constricted medially, with distinct neck; costa short, with prominent terminal extension; valva extended apically with dense setae forming wide "corona" . Aedeagus moderate, cornuti absent. In female genitalia, ovipositor short

and broad; anterior apophyses half the length of the posterior ones; ductus bursae short; corpus bursae rounded, with short appendix, without signa. The genus includes 10 species distributed in the Oriental region and the Manchurian subregion of the Palaearctic. – 1 species.

Camptoloma interiorata (Walker, [1865])

(Pl. 20: 9; ♂ genit. Pl. 102: 3; ♀ genit. Pl. 174: 7)

Numenes interiorata Walker, [1865], *List Specimens lepid. Insects Colln Br. Mus.* **31**: 290 (Type-locality: China: Shanghai).

Synonymy: *erythrophygum* Felder & Rogenhoffer, 1874.

Bionomics. Mesophilous species, rare in S Primorye in sparse deciduous forest with *Q. mongolica* and *Q. dentata*. The moth flies in VII-VIII. In Japan, larvae feed on *Quercus acutissima* and *Q. serrata* (Fagaceae).

Distribution (Map 431). Manchurian-Oriental, nemoral. Far East (S Primorye). – Korea, Japan (except Hokkaido), Taiwan, China, ?India.

Subtribe **Careina** Moore, 1883

Careini Mell, 1943, Zool. Jb. (Systematik) 76: 214. Type genus: *Carea* Walker, [1857].

Medium sized moth with robust body; wing colour usually brown, red-brownish or red; palps short, 3rd segment twice as long as 2nd, hindwing quadrifine, M3 and and CuA1 may be stalked; tymbal organs present in basal sternite of males, distinctly triangular. In male genitalia, gnathos or scaphial structures present; tegumen usually expanded ventrally; valva often paddle-like. In female genitalia, corpus bursae usually with single signum, in *Aiteta* bursae modified, with long and wide ductus seminalis. The subtribe includes 10 genera, distributed mainly in the Oriental tropics, a few species occur in Australia. The occurrence of *Aiteta* in the Far East is doubtful.

Genus ***Aiteta*** Walker, 1856

Aiteta Walker, 1856, *List Specimens lepid Insects Colln Br Mus*: **9**: 69, 131. Type-species: *Aiteta musculina* Walker, 1856 [Philippines].

Synonymy: *Capotena* Walker, 1857; *Brada* Walker, 1858, preocc. (Stimpson, 1854 [Vermes]); *Chaladra* Walker, 1865; *Phanaca* Walker, 1865; *Thyrososcelis* Meyrik, 1889; *Pseudelydna* Hampson, 1894; *Sphingiforma* Bethune-Baker, 1906.

Medium sized moths with narrow forewings. Wingspan 35–38 mm. Antenna of male filiform or fasciculate, ciliate; frons smooth; labial palps short, 3rd segment short, directed forward; forewing narrow and long, with oblique outer margin; M1 on same branch as R4 and R5; in hindwing M3 and Cu1 stalked, M2 present; abdomen conical. In male genitalia, uncus single; scaphium distally broad, with narrow lateral bands; tegumen relatively short, broadened; valva elongated, with curved process from sacculus to basally directed lobe on costal margin; vesica with diverticula with terminal cornuti. In female genitalia, ductus short and broad; corpus bursae large, elongated; appendix bursae (or ductus seminalis) arising from proximal end.

The genus contains 28 species distributed in Oriental and Ethiopian regions. – 1 (?) species.

[***Aiteta curvilinea*** (Staudinger, 1892)]

(Pl. 20: 10; ♀ genit. Pl. 175: 3)

Capotena curvilinea Staudinger, 1892, in *Romanoff, Mém. Lépid.* **6**: 553, pl. 9: 12 (Type-locality: Russia, "Amur").

Diagnosis. Wingspan 36 mm. Body rather robust, forewings narrow, lanceolate with almost parallel costal and ventral margins and oblique outer margin. Ground colour of head, body and forewing brown, forewing with dark-brown suffusion. Wing pattern represented by thin oblique antemedial line and outwardly angled antemedial line, subterminal line hardly traceable. In female genitalia, ovipositor elongated, papillae anales narrow, anterior apophyses long, 1.3 times longer than posterior ones; ostium membranous, antrum long, extending proximally, gradually merging into elongated corpus bursae; appendix bursae huge, tube-like, coiled at junction with corpus bursae and in its proximal part.

Distribution (Map 432). "Amur?".

Note. The species was described by Staudinger (1892) from a single female specimen from "Amur?". No futher records from the Far East are known. As the data label of the holotype is indicated by question mark, it might be a mislabelled specimen collected in the tropical regions of SE Asia. The representatives of the genus *Aiteta* are known only in SE Asia; they have never been reported from Japan, or from Korea or N China. The holotype of *Aiteta curvilinea* is illustrated here (Pl. 20: 10).

Subtribe **Ariolicina** Mell, 1943

Ariolicini Mell, 1943, *Zool. Jb.* (Systematik) 76: 212. Type genus: *Ariolica* Walker, [1863].

Small to medium sized moths rather delicate in build; forewing satiny-white, in some genera with silvery metallic sheen, and sometimes with green, yellow or reddish colour. Male genitalia variable in shape; pseudouncus small or tiny, reduced; valva with strong basal exterior hair-pencil; many genera with scattered small spines in vesica, others with only one cornutus. In female genitalia, corpus bursae with scobination. The subtribe comprises 18 oriental-tropical genera listed by Holloway (2003). – 2 genera.

Genus ***Ariolica*** Walker, [1863] 1864

Ariolica Walker, [1863], 1864, *J. Proc. Linn. Soc.* (Zool.) **7**: 53. Type-species: *Ariolica lineolata* Walker, [1863] 1864 [Borneo: Sarawak].

Synonymy: *Chionomera* Butler, 1881; *Artolica*: Pagenstecher, 1909, misspell.

Small, white-silvery moths. Wingspan 21–26 mm. Palps of male directed obliquely forward, 3rd segment 1.5 times longer than 2nd; ground colour of body and

wings silvery-white, wing pattern formed of black with orange bands; in forewing, areole absent; R2, R3 and R4 branched; in hindwing C stalked with Sc in basal part, R branched with M1, and M3 with Cu; M2 present. In male genitalia, pseudouncus short, sickle-shaped, valva thin, gradually narrower from middle to apex, with short triangular costal extension; on dorsal side from middle covered in short strong setae. Aedeagus rather massive; vesica with spine and sclerotised plate. In female genitalia, papillae anales large, quadrangular; apophyses very short; ostium wide; antrum shallow; ductus bursae thin, short; corpus bursae moderate, with large finely spined signum.

The genus includes 8 species, distributed mainly in the Oriental region. – 1 species.

Ariolica argentea (Butler, 1881)

(Pl. 20: 11, 12; ♂ genit. Pl. 102: 4; ♀ genit. Pl. 175: 4)

Chionomera argentea Butler, 1881, *Trans. ent. Soc. Lond.* **1881**: 18 (Type-locality: Japan, Yokohama).

Bionomics. Meso-hygrophilous species, known in Russia only from S Sakhalin and S Kuriles (Kunashir Is.). Occurs in wet forest meadows and woodsides. Adults in VI-VII. In Japan, larvae feed on *Menziesia multiflora*, *Rhododendron kaempferi*, *R. japonicum*, *R. dilatatum* (Ericaceae) (Miyata 1983).

Distribution (Map 433). Japanese, nemoral. Islands of Russian Far East (S Sakhalin, Kuriles: Kunashir Is.). – Japan, S Korea.

Genus ***Sinna*** Walker, 1865

Sinna Walker, 1865, *List Specimens lepid. Insects Colln Br. Mus.* **32**: 641. Type-species: *Sinna calospila* Walker, 1865 [Indonesia, Java].

Synonymy: *Teinopyga* Felder, 1874.

Medium sized bright, satiny white moths with characteristic reticulated pattern. Wingspan 31–37 mm. Antennae of male filiform; labial palps directed obliquely upwards, 3rd segment almost equal to 2nd; forewing wide, areole short, R3 and R5 stalked with R4; hindwing with M2. In male genitalia, pseudouncus reduced, short or tiny, slender, hooked; tegumen long; valvae elongated, parallel-sided, membranous, with prominent hair pencil at base externally. Aedeagus very thin, long, stick-like. In female genitalia, ovipositor large, posterior apophyses half the length of the anterior ones; antrum bocal-like, with deep split; ductus bursae short; corpus bursae pear-shaped, with floccular thickening and some sclerotisation in basal part.

The genus includes 8 species, distributed in the Manchurian subregion of the Palaearctic and Oriental region. – 1 species.

Sinna extrema (Walker, 1854)

(Pl. 20: 13, 14; ♂ genit. Pl. 102: 5; ♀ genit. Pl. 175: 5)

Deiopeia extrema Walker, 1854, *List Specimens lepid. Insects Colln. Br. Mus.* **2**: 73 (Type-locality: China: Shanghai).

Synonymy: *reticularis* Felder & Rogenhofer, 1874; *clara* Butler, 1881; *ornatissima* Alphéraky, 1897; *koresinna* Bryk, 1948.

Bionomics. Mesophilous species, inhabits lowland deciduous forest with *Juglans* trees in abundance. Bivoltine. The moth flies from late V to VI and in VII-VIII. Larvae feed on *Juglans mandschurica* (Juglandaceae).

Distribution (Map 434). Oriental-Manchurian, nemoral. Far East (S Khabarovsk and Primorye terr.). – China, Korea, Japan, SE Asia (Thailand).

Tribe **Sarrothripini** Hampson, 1894

Sarrothripina Hampson, 1894. *The Fauna of British India including Ceylon and Burma. Moths* 2: 365. Type-genus: *Sarrothripus* Curtis, 1824, a junior synonym of *Nycteola* Ньbner, 1822.

Synonymy: Nycteolae Hübner, [1826] 1816; Nycteolides Herrich-Schäffer, [1846] 1845.

Rather small moths with grey, grey-brown, light-brown (Sarrothripina) or fresh-green, green-pinky, pinky or yellow colour (Eariadina**)**. Wing pattern expressed by crosslines (*Nycteola*) or reduced (*Earias*). Labial palps porrect, slightly down-turned, 3rd segment longer than 2nd. Hindwing with trifid venation, M2 absent. Abdomen with totally fused bullae. In male genitalia, the differences between the species are small. Pseudouncus basally broad, short, in *Earias* bilobed with apically free pointed lobes; tegumen extremely broad, plate-like, vaulted (*Earias*), or very narrow (*Nycteola*); valva rectangular, almost equally broad throughout (in *Nycteola* valva extremely short); sacculus short, half the width of valva; digitus extended in an apically free, process, which is flexible, and may be directed either dorsad or ventrad (in *Nycteola* directed dorsally); clasper rather long; costa with apically free, thumb-like, setose extension; harpe ampulla long, curved, spine-like; juxta round, plate-like (*Earias*) or vertical, plate-like, spatulate, gradually broader ventrally. Aedeagus long with or without spine-like cornutus. In female genitalia, ovipositor shortly quadrangular (*Earias*), or elongated (*Nycteola*); ductus bursae long and narrow, or short and wide; corpus bursae with large globular cervix bursae, ductus seminalis arises at the side of the posterior part of corpus bursae.

The tribe was formerly treated as the subfamily Sarrothripinae of Noctuidae (Sugi 1982a; Speidel *et al.* 1996a), later as a tribe of the subfamily Chloephorinae in Nolidae; the genus *Earias* was considered by early authors to belong in Chloephorinae, later as a subfamily Eariadinae of Nolidae (Kitching & Rawlins 1998; Holloway 2003; Hacker & Fibiger 2005). Lafontaine & Fibiger (2006) and Fibiger *et al.* (2009) placed it as a tribe of the subfamily Nolinae in Noctuidae. Fibiger *et al* (2009) included *Earias* and related genera as a subtribe, Eariadina, in the extended tribe Sarrothripini.

The tribe is distributed from the south temperate

zone to the tropics and subtropics of the Old World where it is most diverse. Twenty one genera and approximately 100 species are known worldwide, 38 of which are known from the Palaearctic. 2 genera and 9 species occur in the Asian part of Russia.

Subtribe **Eariadina** Hampson, 1912

Eariadina Hampson, 1912. *Catalogue of the Lepidoptera Phalaenae in the British Museum* **11**: 456. Type genus: *Earias* Hübner, [1825].

Synonymy: Eariini Beck, 1996.

The members of this subtribe, distributed worldwide, predominantly in subtopics and tropics all have a prominent green, green-pinky or yellow ground colour; wing pattern reduced. External characters and main features of male and female genitalia as described for the genus *Earias* are very consistent in the members of the subtribe. Species of Eariadina occur in almost all conceivable habitats, from the temperate areas to the tropics, where they are most diverse. Many of the tropical and subtropical species are serious pests, the larvae causing damage to many economically important plants, especially cotton.

Genus ***Earias*** Hübner, [1825] 1816

Earias Hübner, [1825] 1816, *Verz. bekannter Schmett.*: 395. Type-species: *Phalaena clorana* [sic] Linnaeus, 1761 [Sweden].

Synonymy: *Earis*: Stephens, 1834, misspell.; *Aphusia* Walker, [1858] 1857; *Aphusa* auct., misspell.; *Digba* Walker, 1862.

Small, bright green, yellow or pink moths, often with white head and hindwing. Wingspan 19–28 mm. Labial palps porrect, slightly down-turned, 3rd segment longer than 2nd, slightly tapering to pointed tip; antennae of male ciliate; forewing venation with R5 on same branch as R3+4, areole absent; hindwing venation trifid, M2 absent; wing pattern of forewing reduced; frenulum present in both sexes. In male genitalia, pseudouncus short, bifid, pointed; valva rectangular, with small setose cucullus; costa sclerotised, apically separated, with prominent ventral extension; ventral margin of juxta shield-like. Aedeagus long, stick-like, without cornuti. In female genitalia, papillae anales small, often elongated; anterior and posterior apophyses almost equal in length; antrum very small, membranous; ductus bursae very thin; corpus bursae oval, elongated, ribbed; ductus seminalis from posterior part of bursae.

The genus includes 53 species, distributed exclusively in the Old World, mainly in tropical and subtropical areas; few species known from temperate zone. – 5 species.

Earias pudicana Staudinger, 1887

(Pl. 20: 16-18; ♂ genit. Pl. 103: 1; ♀ genit. Pl. 175: 6)

Earias pudicana Staudinger, 1887, in Romanoff, *Mém. Lépid.* **3**: 174, pl. 8: 10 (Type-locality: Russia, Vladivostok).

Synonymy: var. *pupillana* Staudinger, 1887; *paginalis* Bryk, 1948.

Diagnosis. *E. pudicana* differs from *E. roseiviridis* and *E. roseifera* in uniformly leaf-green coloured forewing, pink suffusion along costa in basal half of wing (not always expressed) and brownish outer margin of wing. In male genitalia, valva distinctly broader than in allied species, costal extension broader and longer, extension of cucullus longer than in related species. Aedeagus slightly curved, hooked apically. Female genitalia differ in shorter anterior and posterior apophyses, shorter ductus bursae and broader corpus bursae.

Bionomics. Meso-hygrophilous species, inhabits lowland deciduous forests, river and creek valleys with willow bushes. Bivoltine. The moth flies from late V to VI and in VIII-IX. Larvae feed on willows *Salix* (Salicaceae).

Distribution (Map 435). Manchurian, nemoral. Far East, to Sakhalin and S Kuriles. – China, Korea, Japan.

Note.The syntypes of *Earias pudicana* and *Earias pudicana var. pupillana* are illustrated on Pl. 20: 16, 17.

Earias roseifera Butler, 1881

(Pl. 20: 19-21; ♂ genit. Pl. 103: 2; ♀ genit. Pl. 175: 7)

Earias roseifera Butler, 1881, *Trans. ent. Soc. Lond.* **1881**: 18 (Type-locality: Japan: Tokyo).

Synonymy: *erubescens* Staudinger, 1887; *jezoensis* Sugi 1982.

Diagnosis. *E. roseifera* differs from its allies in yellowish-green ground colour of forewing with intense reddish or magenta-reddish diffuse suffusion in central part of the wing. Male genitalia narrower than in *E. pudicana*, costal extension shorter, extension of cucullus much shorter and not curved as in *E. pudicana*. Aedeagus straight. In female genitalia, apophyses and ductus bursae longer, corpus bursae narrower than in *E. pudicana*.

Bionomics. Mesophilous species, occurring together with preceding species in deciduous forests. Bivoltine. The moth flies in VI, VII-VIII. Larvae feed on *Rhododendron* (Ericaceae).

Distribution (Map 436). Oriental-Manchurian, nemoral. Far East (Amur reg., Khabarovsk and Primorye terr.). – China, Korea, Japan, Taiwan, Thailand.

Note.The syntypes of *Earias erubescens*re illustrated on Pl. 20: 19, 20.

Earias roseoviridis Sugi 1982

(Pl. 20: 22-24; ♂ genit. Pl. 103: 3; ♀ genit. Pl. 176: 1)

Earias roseoviridis Sugi 1982, *Moths of Japan* **1**: 797, **2**: 378, pl. 194: 39, 371: 3 (Type-locality: Japan: Amami-Oshima Isl., Sataikuma).

Diagnosis. *E. roseiviridis* differs from *E. roseifera* in larger size, leaf-green ground colour of forewing with well defined pink patch in mid part of the wing; this patch does not reach ventral margin. Male genitalia very similar to related species, differ in pro-

portions of valva, which is somewhat narrower and more elongated than in *E. roseifera*; cucullus narrower and longer than in *E. roseifera*, extension of sacculus curved inwardly. Aedeagus straight, narrower towards tip. In female genitalia, corpus bursae somewhat narrower and less ribbed than in *E. roseifera*.

Bionomics. Meso-hygrophilous species, occurring in wet lowland deciduous forest along rivers where shrubs of *Rhododendron* are abundant. Moths collected in late VIII and early IX. Larvae feed on *Rhododendron* (Ericaceae).

Distribution (Map 437). Manchurian. Far East (S Primorye). – SW China, S Korea, S Japan, Thailand.

Earias clorana (Linnaeus, 1761)

(Pl. 20: 25-27; ♂ genit. Pl. 103: 4; ♀ genit. Pl. 176: 2)

Phalaena, *Tortrix clorana* Linnaeus, 1761, *Fauna Suecia* (Edn 2): 343 (Type-locality: Sweden).

Synonymy: *viride* Retzius, 1783; *afflatana* Fuchs, 1900; *flavimargo* deJoannis, 1908; *chlorana* auct., nec Linnaeus, 1761.

Bionomics. Meso-hygrophilous species, occurring in wet lowland forests, wet meadows, edges of forest, and among willow bushes along rivers. Bivoltine. The moth flies from late V to late VI and from VII to late IX. Oligophagous species, larvae feed on various species of willow, *Salix viminalis*, *S. caprea*, *S. alba*, *S. fragilis*, *S. purpurea* (Salicaceae), some years abundant, damaging willows. Overwinters as pupa.

Distribution (Map 438). Euro-Siberian, subboreal. European Russia, S Ural, S Siberia. – Europe, Near East, Caucasus, Transcaucasia, Central Asia, Kazakhstan, China.

Earias vernana (Fabricius, 1787)

(Pl. 20: 28-30; ♂ genit. Pl. 103: 5; ♀ genit. Pl. 176: 3)

Pyralis vernana Fabricius, 1787, *Mant. Ins.* **2**: 225.

Synonymy: *vernana*; (Hübner, 1793, nec Fabricius, 1787; *obliterata* Bartel, 1914.

Bionomics. Meso-hygrophilous species, inhabits wet deciduous forests along rivers, wet meadows and fields with bushes. Bivoltine. The moth flies in V to late VI and from VII to late IX. Larvae feed on various willows, *Salix viminalis*, *S. caprea*, *S. alba*, *S. fragilis*, *S. purpurea* (Salicaceae). Common, in some years abundant, damaging young willows and poplars. Overwinters as pupa.

Distribution (Map 439). West Palaearctic, subboreal. S Russia to S Ural. – N Africa, C and S Europe, Near East, Caucasus.

Subtribe **Sarrothripina** Hampson, 1894

Sarrothripina Hampson, 1894. *The Fauna of British India including Ceylon and Burma. Moths* 2: 365. Type-genus: *Sarrothripus* Curtis, 1824, a junior synonym of *Nycteola* Hübner, 1822.

Small species with relatively long wings with parallel costal and dorsal margins, and with basal part of costa prominently rounded. Hindwing with trifid venation. In male genitalia, vinculum and tegumen equal in length, very thin; pseudouncus short, basally broad; valva extremely short; juxta huge, vertical, plate-like, spatulate, gradually broader ventrally. Aedeagus long and relatively broad, usually with single short, rarely long, cornutus. In female genitalia, ovipositor elongated, papillae anales large, rather long, acute, both pairs of apophyses long and strong; antrum wide and short, membranous.

The subtribe includes 14 genera, distributed mainly in the Old World tropics; one genus and four species are known from Asian part of Russia.

Genus ***Nycteola*** Hübner, 1822

Nycteola Hübner, 1822, *Syst. – alphab. Verz.*: 60, 66. Type-species: *Tortrix undulana* Hübner, [1799] [Europe] (= *Phalaena revayana* Scopoli, 1772).

Synonymy: *Sarrothripus* Curtis, 1824; *Axia* Hübner, [1825] 1816; *Nycteola* Hübner, [1806], suppr.; *Sarrothripa*: Duponchel, 1834, misspell.; *Sarrothripa*: Duponchel, [1845] 1844, emend.; *Sarothripus*: Agassiz, 1846, emend.; *Subrita* Walker, 1866; *Sarotricha*: Meyrick, 1888, emend.; *Icasma* Turner, 1902; *Dufayella* Căpuse, 1972.

Small, dull, grey and brown moths, resembling Tortricidae in shape of forewing. Wingspan 20-26 mm. Antennae of both sexes filiform; labial palps porrect, slightly upturned, 3rd segment longer than 2nd; forewing with parallel costal and ventral margins; in forewing vein M3 and Cu1 stalked, areole present; hindwing venation trifid, M2 absent. In male genitalia, uncus substituted by short and broad pseudouncus; vinculum and saccus relatively narrow or even thread-like, except for large, flap-like peniculus; valvae very short; cucullus posteriorly with three ovoid, apically setose plates; sacculus strongly fused; transtilla short; digitus apically free, spine-like, as in *Earias*; clasper from centre of valva, oblique to dorsal end of costa; harpe ovoid, short, densely clothed with long, stout setae; juxta ventrally huge, spatulate, broader ventrally, rounded apically, plate-like. Aedeagus long and very narrow, coecum very long; vesica globular, with small, sickle-like cornutus. In female genitalia, papillae anales acute, narrow; anterior apophyses longer than 8th segment; ostium bursae wide; ductus bursae short and broad, with round and sclerotised plate; heavily sclerotised patch from anterior end of ductus bursae to posterior end of corpus bursae; posterior end cylindrical, at anterior edge of cylinder a narrow rope-like or long, drop-shaped cervix bursae; from cylinder a narrow connection to large, narrow, ovoid membranous corpus bursae; ductus seminalis arises at posterior tip of conical appendix bursae.

The genus includes 28 species, distributed over the World from temperate zone to tropics, most diverse in Oriental and Ethiopian regions. – 4 species.

Nycteola degenerana (Hübner, [1799])

(Pl. 20: 31-35; ♂ genit. Pl. 103: 6; ♀ genit. Pl. 176: 4)

Tortrix degenerana Hübner, [1799], *Samml. eur. Schmett.* **7**: pl. 2: 8. (Type-locality: Europe).

Synonymy: *saldolana* Fabricius, 1794; *achatana* deVillers, 1789; *eurasiatica* Dufay, 1961; *hesperica* Dufay, 1958 (subsp.).

Diagnosis. *N. degenerana* differs externally from its allies in more contrasting wing pattern with intense pale-grey suffusion, more distinctly expressed in the subbasal and subterminal fields; the antemedial line waved and postmedial line angled inside. In male genitalia, aedeagus, unlike congeners, with two sclerotised walls and short, hook-like cornutus. Female genitalia differ in huge cervix bursae and relatively small corpus bursae.

Bionomics. Meso-hygrophilous species, occurs in wet deciduous and mixed forests, among willows along rivers and shores. In southern regions, in patches of forest growing on steppe. Bivoltine, overwinters as imago. The overwintered moths start flying from late V to VI, the first generation flies in VII-VIII, the second in IX-X. Larvae feed on *Salix* and *Populus* (Salicaceae).

Distribution (Map 440). Eurasian, boreal. Russia to Ural, through S Siberia to Transbaikalia, Far East to Sakhalin. – Europe, Near East, Mongolia, Korea, Japan and China.

Nycteola asiatica (Krulikowsky, 1904)

(Pl. 20: 36, 37; ♂ genit. Pl. 104: 1; ♀ genit. Pl. 176: 5)

Sarrothripus revayana var. *asiatica* Krulikowski, 1904, *Rev. Russ. Ent.* **4**: 91 (Type-locality: Turkmenia, Ashkhabad).

Synonymy: *populana* Patočka, 1953; *hungarica* Kovács, 1954.

Diagnosis. *N. asiatica* differs from its congeners in more monotonous grey forewing colour, with distinct antemedial and reduced postmedial lines and distinct reddish-brown reniform stigma, suffused with reddish-brown. In male genitalia, differing in presence of very large spine-like cornutus and row of small cornuti in vesica. Female genitalia differ in rather broad ductus bursae with sclerotised patch in proximal part and rounded shape of corpus bursae.

Bionomics. Meso-hygrophilous species, occurs in open deciduous forest, among willows along rivers and creeks. Bivoltine, after hibernation moth flies from mid V to early VI, the first generation in VII early VIII, the second generation in IX-X. Larvae feed on *Salix* and *Populus* (Salicaceae). Overwinters as imago.

Distribution (Map 441). Eurasian, boreal. Ural, through S Siberia to the Far East eastward to Sakhalin. – Europe, Caucasus, Near East, Central Asia, Kazakhstan, Mongolia, Korea, Japan and China, N India, Nepal.

Nycteola eremostola Dufay, 1961

(Pl. 20: 38-41; ♂ genit. Pl. 104: 2; ♀ genit. Pl. 176: 6)

Nycteola eremostola Dufay, 1961, *Dt. ent. Z.* (N. F.) 6(5): 436: 1, 2, (Type-locality: E Kazakhstan, Zaisan, SW Altai, Tarbagatai).

Diagnosis. *N. eremostola* is similar to *N. kuldzhana*, differing in less contrasting and duller forewing colour; smaller basal field; straighter ante and postmedial lines which are waved, not regularly angled; less expressed dark brownish basal field, and in presence of brown dash in costal area. In male genitalia, the most prominent difference is rather large, broad, but flattened spine-like cornutus. Female genitalia differ in broader antrum, presence of sclerotisation on ductus bursae and in size of cervix bursae.

Bionomics. Thermo-hygrophilous species, occurs in forest patches in steppe areas, among willows along rivers and lakes. In the Ural, moths were collected in VII (Nupponen & Fibiger 2006, reported as *N. siculana*), flight period continues to September, then after hibernation presumably from III to V-VI. The larvae feed on *Salix* (Salicaceae) (Matov, pers. comm.).

Distribution (Map 442). Euro-Siberian, subboreal. Russia: S Ural, S Transbakialia. – E Ukraine, Near East (Turkey), Kazakhstan (Uralsk, Zaisan, Tarbagatai).

Note. The species was ommited in the Checklist of the Noctuidae of Asian art of Russia (Kononenko 2005), but later one specimen was found in material in ZMHU from the Ural (coll. Duske, Guberli), one specimen from Transbaikalia (Ulan-Ude [Verkne-Udinsk]) was found in the collection of HNHM.

Note. Reported for the Ural in the Checklist of the Noctuidae of Asian part of Russia (Kononenko 2005) as *N. siculana* (misidentification).

Nycteola kuldzhana Obraztsov, 1954

(Pl. 20: 42-45; ♂ genit. Pl. 104: 3; ♀ genit. Pl. 176: 7)

Nycteola kuldzhana Obraztsov, 1954, *Eos*, **29**: 159 (Type-locality: China, Xinjiang, Aksu, Kuldja).

Diagnosis. *N. kuldzhana* is partially allopatric with *N. eremostola* and can be confused with it. It differs in somewhat more contrasting wing pattern, wider basal area, strongly angled submedial and antemedial lines, darker basal field and darker and wider brown dash in costal area. In male genitalia, it differs in presence of large complex cornutus on wide base. Female genitalia differ in narrower antrum, shorter corpus bursae and larger cervix bursae.

Bionomics. Thermo-hygrophilous species, occurring together with *N. eremostola* in patches of forest in steppe areas, among willows along rivers and lakes. In the Ural moths were collected in VII. The larva and its foodplants are unknown.

Distribution (Map 443). Central Asian, subboreal. SE Russia, S Ural, Tuva. – W Kazakhstan, Central Asia, W China.

Tribe **Collomenini** Kitching, 1984

Collomeninae Kitching & Rawlins, 1999, *in* Kristensen (ed.), *Lepidoptera,Moths and Butts*: 389; Kitching, 1984: 219, established as subfamily of Nolidae. Type genus: *Collomena* Möschler, 1890 (Nolidae).

Synonymy: Collomenini Franclemont & Todd, 1983 nomen nudum, not available (art. 13. 1 ICZN).

Large to medium, rarely small moths; proboscis reduced; forewing elongated, orbicular stigma enlarged, with erect scales in central part. In male genitalia, pseudouncus reduced or lost; valva with strong, separated costa. In female genitalia, corpus bursae with distinctive signum formed by pair of longitudinal sclerotised bands bearing scobination or small spines. The tribe comprises several East Asian genera: *Triorbis* Hampson, 1894, *Gadirtha* Walker, [1858], *Plotheia* Walker, [1858], *Lamprothripa* Hampson, 1912, *Ptisciana* Walker, 1865, *Phaeothripa* Hampson, 1912, *Clettharina* Hampson, 1894 and *Negritothripa*, Inoue, 1970. The genus *Iscadia* Walker, 1857 is distributed also in the Old World; some genera are known from the Ethiopean and Australian regions. – 1 genus.

Genus ***Negritothripa*** Inoue, 1970

Negritothripa Inoue, 1970, Bull. Japan ent. Acad. **5**: 37. Type-species: *Asinduma hampsoni* Wileman, 1911 [Japan].

Synonymy: *Lamprothripa* auct.

Small moths, wingspan 16-20 mm. Antennae of male ciliate; labial palps thin, 2nd segment 2.5 times longer than 3rd; hindwing with quadrifine venation, M2 present; M3 and Cu1 arise from cell separately. In male genitalia, subuncus highly reduced; subscaphium tube finely setose; valvae divided into dorsal spine-like costa and ventral, paddle-shaped lobe; sacculus shallow, weak, bearing long hair-like setae or scales. Aedeagus small, vesica without cornuti. In female genitalia, papillae anales wide; anterior apophyses very short; ductus bursae narrow, thin, weakly sclerotised; corpus bursae elongated, with long, lightly sclerotised longitudinal band-like signa.

The genus includes 5 species, distributed in the Manchurian subregion of the the Palaearctic and in the Oriental region. – 1 species.

Negritothripa hampsoni (Wileman, 1911)

(Pl. 19: 47, 48; ♂ genit. Pl. 104: 4; ♀ genit. Pl. 176: 8)

Asinduma hampsoni Wileman, 1911. *Trans. ent. Soc. Lond.* **1911**: 233 (Type-locality: Japan).

Bionomics. Mesophilous species, occurring in open deciduous and oak forest. The moth flies in VII – early VIII. In Japan, larvae feed on *Quercus acutissima* and *Q. serrata* (Fagaceae) (Miyata 1983).

Distribution (Map 444). Manchurian, nemoral. Far East (S Khabarovsk and Primorye terr.). – Korea, Japan (except Hokkaido), China, Taiwan.

Tribe **Eligmini** Mell, 1943

Eligmini Mell, 1943, *Zool. Jb.* (Systematik) 76: 192, type genus: *Eligma* Hübner, [1819] (Nolidae).

Large species; proboscis reduced, labial palps long, with long, slender 3rd segment. Forewing very narrow, with parallel margins; hindwing venation quadrifine, M2 well developed, arising from cell separately from M3 and Cu1. Wing colour and pattern characteristic of the members of the tribe. Main features of male and female genitalia as described under the genus. Females have pheromone glands associated with the ovipositor.

Holloway (1998, 2003) stated that the position of *Eligma* in Noctuidae was uncertain, while Speidel *et al.* (1996) and Kitching & Rawlins (1999) placed it within the Nolidae in the superfamily Noctuoidea. Monobasic tribe, distributed in the tropics of the Old World.

Genus ***Eligma*** Hübner, [1819] 1816

Eligma Hübner, [1819] 1816, *Verz. bekannter Schmett.*: 165. Type-species: *Phalaena narcissus* Cramer, 1775 (China).

Synonymy: *Heligma* Agassiz, 1846, emend.; *Panligma* Moore, 1858.

Large, robust species; wingspan 70–78 mm. Forewing narrow, olive-white, hindwing yellow with black band. Antenna of male fasciculate, ciliate; labial palps very long, 3rd segment stick-like, apically clubbed; proboscis reduced; abdomen with 2 small brushes; forewing long, narrow, with parallel margins, areole present, very long, R2 and R3 stalked; hindwing normal, with quadrifine venation, M2 arising from cell separate throm M3 and Cu1. In male genitalia, pseudouncus lost; anal tube broad; tegumen and vinculum narrow, tegumen twice height of vinculum; valvae short, unevenly bilobed or apically pointed. Aedeagus short, vesica tubular. Female genitalia with pheromone glands, associated with ovipositor; ductus bursae long and thin, irregular, corpus bursae corrugated and scobinate throughout, with more sclerotised unfolded structure centrally.

The genus includes 10 species, distributed in tropical areas of the the Old World: seven in the Ethiopian region, one in Madagascar and two in the Oriental region. – 1 species. *Eligma narcissus* is highly migratory, it recently populated south Japan and appears in the Far East in the southern part of the temperate zone as an irregular immigrant.

Eligma narcissus (Cramer, 1775)

(Pl. 20: 16; ♂ genit. Pl. 104: 5; ♀ genit. Pl. 177: 1)

Phalaena narcissus Cramer, 1775, *Uitlandsche Kapellen* **1**: 116, pl. 73: E, F (Type-locality: China).

Bionomics. Mesophilous. Rare migrant, collected twice in Primorye in open deciduous forest, and also found during quarantine inspection of the cargo ships coming from Asian countries. The moth flies in VIII-IX. In Japan and China, larvae feed on *Ailanthus altissima* (Simaroubaceae) and probably on other arboraceous plants.

Distribution (Map 445). Oriental-Manchurian, nemoral. Far East (S Primorye). – China, Korea, Japan, Taiwan, Philippines, Indonesia, Indochina, India.

20. Subfamily **Bagisarinae** Crumb, 1956

Subfamily Bagisarinae Crumb, 1956. *United States Department of Agriculture Technical Bulletin No.* **1135**: 76. Type genus: *Bagisara* Walker, 1858.

Medium sized species with broad, colourful, often yellow forewings, and reduced or modified wing pattern. Hindwing venation quadrifine or trifine (M2 present, reduced or absent); retinaculum bar-shaped. The two air sacs (tympanal bullae) on the tergite of abdominal segment A1 are fused as in all other trifine subfamilies. Tympanum with an elongated, flat nodular sclerite, as in most quadrifine subfamilies and a few trifine subfamilies. Brush organs at the base of the abdomen absent, but in some species present on the outer surface of valva. In male genitalia, scaphium is entirely membranous, subscaphium may be sclerotised; tegumen very broad, plate-like, vaulted; vinculum broad, log-like; saccus even broader, valva relatively short and broad, often basally fused; sacculus almost as wide as valva, distally with a small, heavily sclerotised, apically rounded extension; clasper-harpe complex completely absent; digitus visible, extending from middle of costa. Aedeagus narrow, long, and straight, only slightly longer than the slightly broader vesica; vesica without cornuti or with minute spines, with several diverticula. In female genitalia, corpus bursae large, entirely membranous.

The subfamily Bagisarinae was segregated on the basis of larval morphology: by the presence of appendiculate crochets on the prolegs of the larva. Larvae are semi-loopers in all instars, with prolegs absent on A3 and A4 (Crumb 1956; Beck 1999, 2000); each crochet on prolegs subapically with a large semicircular tooth (Crumb 1956), an additional subapical tooth present on mandible (Holloway 1998); three SV setae on A1. The known larvae feed predominantly on Malvaceae. The genus *Amyna* was tentatively placed in Bagisarinae by Holloway (2009), but its position is dubious.

The subfamily includes 40-60 species, distributed throughout the tropics and subtropics of the New and Old World. – 3 genera and 4 species.

References: Fibiger & Lafontaine 2005; Lafontaine & Fibiger 2006; Fibiger *et al.* 2009; Holloway 1998, 2009.

Genus ***Imosca*** Sugi, 1984

Imosca Sugi, 1984, *Tyo Ga* **34** (3): 130. Type-species: *Dyrzela coreana* Matsumura, 1926 [Korea]), replacement name for *Allocosmia* Sugi, 1982.

Synonymy: *Allocosmia* Sugi, 1982 preocc. (Cossoman, 1897 [Mollusca]).

Medium sized, brown coloured moths. Wingspan 24-36 mm. Antennae of both sexes filiform, shortly ciliate; frons smooth; labial palps short, 3rd segment half length of 2nd segment; hindwing venation either trifine and quadrifine (*I. apicalis*). Forewing pattern characteristic of the genus, represented by thin crosslines and bordering of orbicular and reniform stigmata; large, trapezoid dark-brown spot in subapical part and small dark spot in terminal angle. In male genitalia, scaphium membranous, subscaphium slightly sclerotised; juxta broad, shield-like, with deep cleft on distal margin; uncus very relatively short, thin, with two lateral extensions; tegumen with broad lobes, equal in length to broad, U-shaped vinculum; valva wide, relatively short, weakly sclerotised, with sclerotised costa bearing short extension, oblique transverse plate-like clasper and broad sclerotised sacculus with short spine-like extension. Aedeagus apically narrower, with sclerotised carina; vesica tubular, long, projected dorsally, with large subbasal diverticulum. In female genitalia, apophyses thin, anterior apophyses longer than posterior ones, antrum narrow, long, divided at apex, with sharp narrow lobes; ductus bursae short, membranous; corpus bursae large, saccate.

Larvae are semi-loopers, feed on Tiliaceae. *Imosca* was placed in Bagisarinae by Sugi & Sasaki (2001); the genus includes 5 species distributed in Manchurian subregion of Palaearctic and in the Oriental region. – 1 species.

Imosca coreana (Matsumura, 1926)

(Pl. 20: 46; ♂genit. pl. 105: 2; ♀ genit. pl. 177: 2)

Dryzela [sic] *coreana* Matsumura, 1926, *Insecta matsum.* 1: 58, pl. 1: 33 (Type-locality: Korea: Shakoji).

Synonymy: *moltrechti* O. Bang-Haas, 1927; *sutchana* O. Bang-Haas, 1927.

Bionomics. Mesophilous, rather rare species, inhabits rich deciduous and mixed forests where lime trees grow in abundance. Flight period in VII to early VIII. In Japan, the larvae feed on *Tilia japonica* (Tiliaceae) (Sugi & Sasaki 2001).

Distribution (Map 446). Manchurian, nemoral. Russian Far East (Primorye), Korea, Japan, China.

Genus ***Sphragifera*** Staudinger, 1892

Sphragifera Staudinger, 1892, in Romanoff,*Mém. Lépid.* 6: 554. Type-species: *Anthoecia sigillata* Menetries, 1859 [Russia, Amur].

Synonymy: *Sphragidifera*: Bryk, 1948, emend.

Medium sized silvery-white moths. Wingspan 24-36 mm. Antennae of both sexes filiform, shortly ciliate; frons smooth; labial palps short, 3rd segment half length of 2nd segment; forewing venation with cell; hindwing venation trifine, without vein M2. Forewing pattern with main crosslines traceable and large dark-brown spot in subapical part, characteristic of the genus. In male genitalia, scaphium membranous, subscaphium lightly sclerotised; juxta broad, shield-like, membranous; uncus relatively short, thin, arched basally; tegumen with broad

lobes, rather long; vinculum broad, U-shaped; valvae fused with each other centrally; relatively short, weakly sclerotised, with two pair of hairly coremata on outer sides, cucullus apically quadrangular; costa rather strong, with prominent medial digitus; clasper-harpe complex not expressed. Aedeagus in *S. sigillata* dorsally membranous, vesica short, angled perpendicularly, with ring of small seta-like cornuti at base; in *S. biplagiata* vesica is straight, with two hair-like cornutus fields of small setae. In female genitalia, anterior and posterior apophyses, rather massive, short or moderate, equal in length; antrum narrow, funnel-shaped; ductus bursae very long, sclerotised, ribbed; bursae rounded, with or without strong ribbon-like signa; ductus seminalis arising from apical part of ductus bursae.

The larvae are semi-loopers, feed on deciduous trees.

Sphragifera was placed in Bagisarinae by by Sugi & Sasaki (2001); the genus includes 5 species distributed in the Manchurian subregion of the Palaearctic. – 1 species.

Sphragifera sigillata (Ménétriés, 1859)

(Pl. 20: 47; ♂genit. pl. 105: 3; ♀ genit. pl. 177: 3)

Anthoecia? *sigillata* Ménétriés, 1859, *Bull. Acad. imp. Sci. St. Pétersb*. 17: 219 (Type-locality: Russia: "Amur").

Bionomics. Mesophilous species, rather common in deciduous and mixed forest. The flight period is from late VI to late VIII. In Primorye, larvae feed on *Juglans manchurica*; in Japan they have been reported on other arboraceous plants: *Juglans ailantifolia*, *Pterocaria rhoifolia*, *Carpinus cordata* and *Fraxinus japonica* (Miyata 1983).

Distribution (Map 447). Manchurian, nemoral. Russian Far East, Korea, Japan, China, Tawan.

Genus ***Amyna*** Guenée, 1852

Amyna Guenée 1852, *in* Boisduval & Guenée, *Hist. nat. Insectes*. (Lepid) **5**: 406. Type-species: *Amyna selenampha* Guenée, 1852 [Bangladesh, Philippines] (= *Noctua punctum* Fabricius, 1794).

Synonymy: *Ilattia* Walker, 1858; *Berresa* Walker, [1859]; *Lochia* Walker, 1865; *Stridova* Walker, 1869; *Pteraetholix* Grote, 1873; *Chytoryza* Grote, 1876; *Hesperimorpha* Saalmüller, 1880; *Chytirhisa*: Lucas, 1909, misspell.; *Amynodes* Warren, 1913; *Formosamyna* Strand, 1920; *Niphosticta* Turner, 1936, preocc. (Hampson, 1926 [Lepidoptera, Noctuidae); *Trilophia* Turner, 1943; *Hurworthia* Nye, 1975.

Medium sized reddish-brown moths. Wingspan 24-36 mm. Antennae of both sexes filiform; frons smooth; labial palps relatively short, 3rd segment half the length of 2nd; forewing venation with cell; hindwing with vein M2. In male genitalia, uncus short; tegumen broad and long, twice as long as vinculum, with so-called "shoulders"; valva lobe-like with sclerotised costa and sacculus, and soft hairy ventral margin, or separated into costal and ventral lobes; juxta small, plate-like. Aedeagus thin or thick with vesica bulbous, or with diverticula with or without cornuti. In female genitalia, ovipositor wide, papillae anales quadrangular; posterior apophyses 1.3 times longer than anterior ones; antrum weak, funnel-shaped or not expressed; ductus bursae wide, sclerotised or thin, membranous; corpus bursae elongated, with or without ribbon-like signum.

Amyna was tentatively placed in Bagisarinae by Holloway (2009). The systematic position of this genus requires futher study. The genus includes 35 species distributed in tropical and subtropical areas of the Old and New Worlds. – 2 species.

Amyna axis (Guenée, 1852)

(Pl. 20: 48, 49; ♂ genit. Pl. 104: 6; ♀ genit. Pl. 177: 4)

Amyna axis Guenée, 1852, in Boisduval & Guenée, *Hist. nat. Insectes* (Lépid.) **5**: 407 (Type-locality: Tahiti).

Synonymy: *octo* Guenée, 1852; *tecta* Grote, 1876; *flavigutta* Walker, 1858; *perfundens* Walker, 1858; *cephusalis* Walker, 1859; *colon* Guenée, 1862; *vexabilis* Wallengren, 1863; *inornata* Walker, 1865; *leucospila* Walker, 1865; *albigutta* Walker, 1869; *stigmatula* Snellen, 1872; *orbica* Morrison, 1874; *bavia* Felder & Rogenhofer, 1874; *undulifera* Butler, 1875; *monotretalis* Mabille, 1879; *supplex* Swinhoe, 1885; *rufa* Bethune-Baker, 1906.

Bionomics. Mesophilous species, occurring in meadows, woodsides, ruderal areas, and agricultural fields of soy bean. Bivoltine. The moth flies from V to X in two generations. Larvae are polyphagous on Amaranthaceae, Chenopodiaceae, Malvaceae, Fabaceae, Convolvulaceae and Poaceae. Recorded as secondary pest on soya bean *Glycine max*.

Distribution (Map 448). Cosmopolitan, Pantropical-subtemperate. Far East (Primorye). – China, Korea, Japan, SE Asia, Australia and Oceania, Near East, Africa, Madagascar, North, C and S America.

Amyna punctum (Fabricius, 1794)

(Pl. 20: 50; ♂ genit. Pl. 105: 1; ♀ genit. Pl. 177: 5)

Noctua punctum Fabricius, 1794, *Ent. Syst.* **3** (2): 34 (Type-locality: "Ost-India").

Synonymy: *annulata* Fabricius, 1794; *selenampha* Guenée, 1852; *latipennis* Wallengren, 1860; *spoliata* Walker, [1858]; *subtracta* Walker, 1862; *trivenefica* Wallengren, 1863; *urba* Wallengren, 1863; *natalensis* Wallengren, 1865; *latipennis* Walker, 1865; *paradoxa* Saalmüller, 1880.

Bionomics. Occasional migrant in S Primorye. Several records have been made in VIII and early IX in open deciduous forests. In Japan and Korea, the moth flies from VI to VIII. Host-plant record from Japan is *Croton* (Euphorbiaceae).

Distribution (Map 449). Palaeotropic-subtemperate. Far East (Primorye). – China, Korea, Japan, SE Asia, Australia and Oceania, Near East, Africa, Madagascar.

21. Subfamily **Metoponiinae** Herrich-Schaffer, [1851]

Metoponidae Herrich- Schaffer, [1851] 1845, *Syst. Bearbeitung Schmett. Eur.* 2: 386. Type genus: *Metoponia* Duponchel, [1845], a synonym of *Aegle* Hübner, [1823].

Synonymy: Tytina Beck, 1999, a nomen nudum in Beck, 1996.

Small to medium sized moths, usually with quadrifine venation (M2 in hindwing present). Foretibia with claws only in the genus *Mycteroplus*. The nodular sclerite (eupalette) on the tympanal membrane is raised. In male genitalia, the uncus usually long and narrow, but in some genera it is rather short and stout; scaphium membranous, without setae as in Acontiinae; subscaphium in part sclerotised; tegumen broad, pleurite short or broad, plate-like. Vesica usually with patches of moderate cornuti. In female genitalia, ovipositor usually elongated, in some genera short; corpus bursae without signa. Larvae with fully developed prolegs, feeding mainly on flowers, fruits and seeds of their hostplants.

Metoponiinae genera were segregated from Acontiinae and associated with New World subfamily Stirinae by Matthews (1991), then Poole (1996) with doubt included Old World genera in Stiriinae. Fibiger & Lafontaine (2005) re-established the subfamily Metoponiinae with ten European genera. This subfamily includes about 100 species distributed in the Old World, mainly in the West Palaearctic and Ethiopian regions.

References. Mattews 1991; Poole 1996; Fibiger & Lafontaine 2005; Fibiger *et al*. 2009.

Genus ***Panemeria*** Hübner, [1823] 1816

Panemeria Hübner, [1823] 1816, *Verz. bekannter Schmett.*: 262. Type-species: *Noctua heliaca* [Denis & Schiffermüller], 1775 [Austria] (= *Phalaena*, *Noctua tenebrata* Scopoli, 1763).

Synonymy: *Gumnopa* Stephens, 1829; *Heliodes* Guenée, 1841; *Heliaca* Herrich-Schäffer, 1845; *Panhemeria* Spuler, 1907, misspell.

Small gracile moths; antennae filiform, labial palps short, porrect; body and wings dark brown-grey; forewing brown, hindwing with contrasting yellow medial patch and blackish-brown terminal band. In male genitalia, uncus rather short, massive, curved in distal third; juxta plate-like, tegumen with wide lobes; vinculum V-shaped; valva lobe-like, with strong costa and parallel margins, rounded apically; sacculus long, clasper positioned medially on valva. Aedeagus rather short and broad, with short bulbous vesica armed with groups of rather large spines. In female genitalia, ovipositor small, elongated; papillae anales strong, apically rounded; anterior apophyses ¾ length of posterior ones; antrum short, sclerotised, ductus bursae rather short, wide, sclerotised and ribbed; corpus bursae globular, finely scobinate. The genus includes 3 species, distributed mainly in the Mediterranean subregion of the the Palaearctic. – 1 species.

Panemeria tenebrata (Scopoli, 1763)

(Pl. 20: 51, 52; ♂ genit. Pl. 105: 4; ♀ genit. Pl. 177: 6)

Phalaena, *Noctua tenebrata* Scopoli, 1763, *Ent. Carniolica*: 230 (Type-locality: "Carniola").

Synonymy: *arbuti* Fabricius, 1775; *policula* Lang, 1789; *fasciola* Esper, [1791]; *heliaca* [Denis & Schiffermüller], 1775.

Bionomics. Meso-thermophilous species, occurring in meadows, steppe, hillsides, forest patches on steppe. Univoltine, flight period from V to VI. Larvae feed on *Cerastium* and *Stellaria* (Caryophyllaceae) and *Lythrum salicaria* (Lythraceae). Overwinters as pupa.

Distribution (Map 450). European – West Asian, subboreal. S Russia to S Ural. – Europe, Near East.

Genus ***Apaustis*** Hübner, [1823] 1816

Apaustis Hübner, [1823] 18i6, *Verz. bekannter Schmett.*: [258]. Type-species: *Noctua heliophila* Hübner, [1803] [Europe] (=*Noctua rupicola* ([Denis & Schiffermüller], 1775).

Small moths with rather stout body; labial palps short, compressed; body and wings dark brown-grey, collar and the terminal segment of abdomen yellow-ochreous; wing pattern formed by dark-brown lines and prominent white border. In male genitalia, uncus rather thin, curved; juxta plate-like, tegumen and vinculum with wide, strong lobes; vinculum V-shaped; valva lobe-like, with strong costa, distal fourth of valva as short but strong digitus; sacculus strong, clasper positioned centrally, harpe short, wide, finger-like. Aedeagus short, curved, vesica with 3 basal and 1 medial diverticula, the medial one covered with fine spinules.

Female genitalia differ from those of *Panemeria* in strong, sharp ovipositor and in length of anterior apophyses, which are half as long as posterior ones. Monotypic species with east Palaearctic distribution.

Apaustis rupicola ([Denis & Schiffermüller], 1775)

(Pl. 20: 53, 54; ♂ genit. Pl. 105: 5; ♀ genit. Pl. 178: 1)

Noctua rupicola [Denis & Schiffermüller], 1775, *Ank. Syst. Werk Schmett. Wien.*: 90 (Type-locality: [Austria], Vienna district]).

Synonymy: *palliata* Fabricius, 1787; *pallium* Borkhausen, 1892, nec Fabricius, 1794; *theophila* Staudinger, 1866.

Bionomics. Thermophilous species, occurring in dry steppe, hillsides, dry meadows. The moths are diurnal, and take nectar from the flowers of *Thymus*. Univoltine, flight period V-VI. The larva and its foodplants are unknown. Overwinters as pupa.

Distribution (Map 451). European – West

Asian, subboreal. S Russia to S Ural. – S and C Europe, Kazakhstan, Near East.

Genus ***Aegle*** Hübner, [1823] 1816

Aegle Hübner [1823] 1816, *Verz. bekannter Schmett.*: 257. Type-species: *Tortrix kaekeritziana* Hübner [1799] [Europe].

Synonymy: *Metoponia* Duponchel, 1844.

Small and medium sized moths; antennae filiform; labial palps short, compressed; body and forewings yellow or pale yellowish-grey, without pattern; hindwing brown-grey with yellowish terminal line and cilia. In male genitalia, uncus rather short, thin, arched; juxta plate-like, tegumen with wide lobes; vinculum narrow, V-shaped; valva lobe-like, with strong short costa which ends in a small extension; sacculus narrow, long, clasper positioned medially on valva, harpe usually not expressed. Aedeagus rather short and wide with short tubular-bulbous vesica ribbed basally and armed with spines of variable length. In female genitalia, ovipositor elongated; papillae anales rather strong, anterior and posterior apophyses moderate in length or short; antrum membranous, ductus bursae rather short, membranous and ribbed; corpus bursae elongated or sacculate, ribbed proximally.

The genus includes 15 species, distributed mainly in the Mediterranean and Central Asian subregions of the Palaearctic. – 1 species.

Aegle kaekeritziana (Hübner, 1799)

(Pl. 20: 56, 57; ♂ genit. Pl. 105: 6; ♀ genit. Pl. 178: 2)

Tortrix kaekeritziana Hübner, 1799, *Samml. eur. Schmett.* Tortr. **6**: Pl. 26: 163 (Type-locality: Europe).

Synonymy: *flava* Hübner, [1808-1809]; *sulphurifera* Tauscher, 1809; *flavida* auct.; *koekeritziana* auct; *coeceritziana* Hampson, 1910, emend.

Bionomics. Thermophilous species, inhabits dry steppe, hillsides, warm woodsides of steppe patch forests. The moth flies from mid V to VIII. Larvae feed in VII-IX on *Delphinium* and *Consolida regalis* (Ranunculaceae). Overwinters as pupa.

Distribution (Map 452). European – West Asian, subboreal. S Russia to Ural. – S and C Europe, Caucasus and Transcaucasia, Near East, Kazakhstan.

Genus ***Mesotrosta*** Lederer, 1857

Mesotrosta Lederer, 1857, *Noctuinen Eur.*: 44, 190. Type-species: *Scopula signalis* Treitschke, 1829 [Europe].

Small moths; antennae filiform, labial palps short, compressed; body and forewings grey-brown with reddish tint; wing pattern consists of small reniform and orbicular stigmata and paler subterminal field; hindwing brown-grey. In male genitalia, uncus short, straight, rather massive, juxta plate-like; tegumen with wide lobes; vinculum wide, V-shaped; valva lobe-like, slightly constricted in middle; costa strong and short; sacculus massive, with acute saccular extension; clasper positioned centrally, harpe moderate. Aedeagus rather massive with tubular, coiled vesica. In female genitalia, ovipositor short; papillae anales rather wide and strong, anterior and posterior apophyses short; antrum membranous, ductus bursae thin, rather short, membranous; corpus bursae saccate. The genus includes 2 species, distributed in the Mediterranean and Central Asian subregions of the Palaearctic. – 1 species.

Mesotrosta signalis (Treitschke, 1829)

(Pl. 20: 55; ♂ genit. Pl. 106: 1; ♀ genit. Pl. 178: 3)

Scopula signalis Treitschke, 1829, *Schmett. Eur.* **7**: 70 (Type-locality: Europe).

Bionomics. Xero-thermophilous species, occurs in dry steppe biotopes, hillsides, sandy dunes. Flight period in V-VII. Larvae feed on *Inula* (Asteraceae). Overwinters as pupa.

Distribution (Map 453). European, subboreal. S Russia to S Ural. – C and S Europe, Ukraine.

Genus ***Mycteroplus*** Herrich–Schäffer, 1850

Mycteroplus Herrich- Schäffer, [1850] 1845, *Syst. Bearb. Schmett. Eur.* **2**: 191, 242. Type-species: *Xanthia puniceago* Boisduval, 1840 [S Russia].

Synonymy: *Stephania* Guenee, 1852; *Usbeca* Püngeler, 1914; *Acrosphalia* Rebel, 1918.

Medium sized moths. Body rather stout; antennae filiform or serrate, in male shortly ciliate; frons with large rounded prominence, in *M. cornuta* with transverse comb; foretibia with 3-7 large claws; 5th segment of tarsus with 1 claw and spines. In male genitalia, uncus rather massive, straight, short; valva lobe-like, with parallel margins to mid part, somewhat constricted and rounded apically; sacculus narrow, harpe straight, moderate; juxta plate-like, with deep split ventrally in the middle. Aedeagus rather short and massive; vesica short, tubular, armed with moderate spine-like cornuti. In female genitalia, papillae anales wide, quadrangular; anterior apophyses somewhat longer than posterior ones; antrum membranous; ductus bursae very short, membranous; corpus bursae long, pear-shaped, ribbed in caudal part. The genus contains 4 species, distributed in the West and East Palaearctic. – 2 species.

Mycteroplus puniceago (Boisduval, 1840)

(Pl. 20: 58; ♂ genit. Pl. 106: 2; ♀ genit. Pl. 178: 4)

Xanthia puniceago Boisduval, 1840, *Genera Index Meth. Eur. Lepid.*: 146 (Type-locality: Russia).

Bionomics. Xero-thermophilous species, inhabits steppe biotopes, dry meadows, hillsides, ruderal land. Univoltine. The moth flies from VII to IX. Larvae feed on *Atriplex nitens*, *A. nutans*, *Chenopodium polyspermum* (Chenopodiaceae). Overwinters as egg.

Distribution (Map 454). Euro-West Asian, subboreal. S Russia to S Ural, S Siberia. – S Europe, Near East (Turkey), Caucasus, Midd Asia, Kazakhstan, W China.

Mycteroplus cornuta (Püngeler, 1914)

(Pl. 20: 59; ♂ genit. Pl. 106: 3; ♀ genit. Pl. 178: 5)

Usbeca cornuti Püngeler, 1914, *Dt. ent. Z. Iris*, 28: 46, pl. 2: 15 (Type-localty: Kasakhstan, Syr Darja, Baigacum).

Synonymy: *kulmburgi* Rebel, 1918.

Bionomics. Meso-xerophilous. Rare in open, dry deciduous forests, in forest-steppe, on hillsides, in dry meadows. The moth flies in mid VII-VIII. The larva and its foodplants are unknown.

Distribution (Map 455). Central-Asian – Manchurian, subboreal. From Transbaikalia to the Far East, Primorye. – C Asia (Uzbekistan), Kazakhstan, Mongolia, N China, Korea.

Note. *M. cornuta* was referred to in the Checklist of the Noctuidae of the Asian part of Russia (Kononenko 2005) as *Acrosphalia kulmburgi*. The generic name *Acrosphalia* and species name *kulmburgi* were synonymised with *Mycteroplus* and *cornuta* respectively by Poole (1989).

Genus ***Tyta*** Billberg, 1820

Tyta Billberg, 1820, *Enumeratio Insect. Mus. G. J. Billberg*: 88. Type-species: *Noctua italica* Fabricius, 1781 [Italy] (= *Noctua luctuosa* [Denis & Schiffermüller, 1775]).

Synonymy: *Dysthymia* Newman, 1868.

Wingspan 22 – 24 mm. Antenna of male very shortly lamellate; frons with large rounded prominence; labial palps erect, 2nd segment fringed with coarse scales; hind tibia with two long spines; fore- and hindwings blackish with broad white median band. In male genitalia, uncus rather large, bent; scaphium lightly sclerotised; pleurite between tegumen and vinculum narrow, relatively long; valva elongated, harpe asymmetrical; juxta longest medially. Aedeagus short, bent; vesica bulbous, with an apical ventro-lateral patch of short spines on the left side. In female genitalia, papillae anales moderate, anterior and posterior apophyses thin, almost equal in length; antrum sclerotised, rounded; ductus bursae short; corpus bursae rounded, with inner wall clothed with diminutive spines.

The genus was placed by earlier authors in Acontiinae or Catocalinae (sensu auctorum), then separated as the subfamily Tytinae by Speidel *et al*. (1996), placed in Catocalinae as a tribe (Minet, in Leraut 1997; Goater *et al*. 2003), and recently its position was fixed in the subfamily Metoponiinae (Fibiger & Lafontaine 2005). Monotypic.

Tyta luctuosa ([Denis & Schiffermüller, 1775])

(Pl. 20: 60; ♂ genit. Pl. 106: 4; ♀ genit. Pl. 178: 6)

Noctua luctuosa [Denis & Schiffermüller, 1775], *Ank. Syst. Werk Schmett. Wien.*: 90 (Type-locality: [Austria], Vienna district]).

Synonymy: *italica* Fabricius, 1781; *latefascia* Schawerda, 1938.

Bionomics. Xero-thermophilous species, inhabits steppe, hillsides, warm meadows, woodsides. The moth Bivoltine. Moth flies from mid V to IX, both by day and at night. Larvae are polyphagous on herbaceous plants, including *Plantago major*, *Convolvulus*, *Calystegia*, *Malva*, *Chenopodium*, *Linum*, *Glechoma*. Overwinters as larva.

Distribution (Map 456). Western Palaearctic, subboreal. S Russia to S Ural and S Siberia. – N Africa, Near East, Caucasus, Transcaucasia, Europe to Kazakhstan, Central Asia, W China, N America (introduced by man (Lafontaine Schmidt 2010).

22. Subfamily **Sinocharinae** Speidel, Fänger & Naumann, 1996

Sinocharinae Speidel, Fänger & Naumann, 1996, *Syst. Ent.* 21: 247. Type genus: *Sinocharis* Püngeler, 1912.

Medium sized moths. Hindwing with quadrifine venation (vein M2 strong). In males, brush organs (coremata) present. Counter-tympanal cavities small, unlike most trifine Noctuidae (except *Cucullia*), eupallete (sclerotized bar on tympanum membrane) absent.

The genus *Sinocharis* was segregated from the Acontiinae (*sensu* authors) on the basis of its unique combination of characters and treated as representing a distinct subfamily, Sinocharinae, by Speidel *et al*. (1996). The male genitalia of *Sinocharis* are similar to those of Bagisarinae in that the bases of the valvae are fused, the tegumen articulates directly with the vinculum (i.e. pleurite absent), the costa of the valva and the sacculus are extended as spine-like processes, and the ampulla is spine-like. In the female genitalia, the ostium/antrum and the ductus bursae are membranous until just before the corpus bursae where the ductus and posterior part of the corpus bursae and appendix bursae are slightly sclerotised. The larva and food-plant are unknown.

In spite of the similarities of the genital characters with Bagisarinae, Fibiger & Lafontaine (2005) followed Speidel *et al*. (1996) and placed Sinocharinae among the higher noctuids and not with the Bagisarinae, on the basis of the presence of basal abdominal coremata and structure of tympanal organ in *Sinocharis*.

The subfamily contains the monotypic genus *Sinocharis*, distributed in Manchurian subregion of Palaearctic.

Genus ***Sinocharis*** Püngeler, 1912

Sinocharis Püngeler, 1912, *in* Korb, *Mitt. Münch. ent. Ges.* **3**: 7. Type-species: *Sinocharis korbae* Püngeler, 1912 (Russia, Khabarovsk]).

Synonymy: *Noshimea* Matsumura, 1931.

Wingspan 38-40 mm. Antennae simple, in male somewhat thick; frons with blunt conical extension; ground colour of wings milky white with brown pattern in basal and subterminal area which, as in some Acontiinae, produces resemblance to a bird dropping. Male and female genitalia as described for subfamily. Monotypic Manchurian genus.

Sinocharis korbae Püngeler, 1912

(Pl. 20: 61; ♂ genit. Pl. 106: 5; ♀ genit. Pl. 178: 7)

Sinocharis korbae Püngeler, 1912, *Mitt. Münch. ent. Ges.* **3**: 4 (Type-locality: Russia, Khabarovsk: Kazakevichi).

SYNONYMY: *fulgularis* Matsumura, 1931.

BIONOMICS. Meso-xerophilous species, occurring in open deciduous forests in woodsides, clearings, meadows, eadges of forest, grassy steppe slopes. Univoltine. The moth flies from mid VI to VIII. Locally common. The larva and its foodplants are unknown.

DISTRIBUTION (Map 457). Manchurian, nemoral. Far East (S Khabarovsk and Primorye terr.). – Korea, Japan (Honshu), China.

23. Subfamily **Balsinae** Grote, 1896

Balsini Grote, 1896, *Abh. naturw.Ver. Bremen* 14: 88. Type genus: *Balsa* Walker, 1860.

Small grey moths. Hindwing with reduced vein M2. In male genitalia, uncus simple, scaphium membranous, subscaphium sclerotised; tegumen relatively wide; vinculum V-shaped; sacculus elongated, about half length of valva; harpe not expressed; valva simple, with prominent neck in middle, and mid part with sclerotised pointed digitus extended over its ventral margin. Aedeagus relatively short; vesica short, with three patches of small and moderate cornuti. In female genitalia, ovipositor short; anterior apophyses 1.5 times longer than posterior ones; antrum wide, cup-shaped; ductus bursae wide, apically sclerotised, wrinkled; bursae moderate, saccate; ductus seminalis arises from extension of ductus bursae.

Balsinae was separated from Xyleninae by Fibiger & Lafontaine (2005), following Grote (1896), first as a tribe of Xyleninae, subsequently raised to rank of subfamily (Lafontaine & Fibiger 2006). The reason for this is uncertain affinities of *Balsa* within the Xyleninae, particularly because of the simple valva structure and the reduction of the first pair of prolegs in the mature larva, the latter a character more reminiscent of the Eustrotiinae than of Xyleninae. The subfamily includes only the holarctic genus *Balsa*.

Genus ***Balsa*** Walker, 1860

Balsa Walker, 1860, *in* D'Urban, *Can. Nat. & Geol.* **5**: 250. Type-species: *Balsa obliquifera* Walker, 1860 [Canada].

SYNONYMY: *Gargaza* Walker, 1866; *Asisyra* Grote, 1873; *Nolaphana* Grote, 1873.

Wnigspan 30-32 mm. Palps rather long, 3rd segment twice as long as 2nd; eyes large; antenna of male bipectinate, those of female filiform. Forewing relatively long with oblique outer margin; ground colour ash-grey; wing pattern formed by fine dentate ante- and postmedial lines and prominent black streak from mid part of costal margin to Cu-trunk. Male and female genitalia as described for the subfamily. The genus contains three Nearctic and one East Palaearctic species. – 1 species.

Balsa leodura (Staudinger, 1887)

(Pl. 20: 62; ♂ genit. Pl. 106: 6; ♀ genit. Pl. 178: 8)

Nola leodura Staudinger, 1887, in Romanoff, *Mém. Lépid.* **3**: 187, pl. 10: 2 (Type-locality: Russia: Primorye, Vladivostok, Askold I.

SYNONYMY: *malana* auct.

BIONOMICS. Mesophilous species, occurring in deciduous and manchurian mixed forests, in meadows, woodsides, glades, among bushes. The moth flies from early VI to VIII. Larva and foodplants unknown.

DISTRIBUTION (Map 458). Manchurian, nemoral. South-east Transbaikalia, south of Amur reg. and Khabarovsk terr. to Primorye. – China, Korea, Japan.

24. Subfamily **Thiacidinae** Hacker & Zill, 2007

Thiacidinae Hacker and Zill, 2007,*Esperiana Memoir* 3: 180. Type genus *Thiacidas* Walker, 1855.

SYNONYMY: Thiacidini Berio, 1992, unavailable (art. 13. 1 ICZN).

Large and medium sized moths of "notodontid" appearance. Forewing with oblique outer margin; hindwing rounded, much shorter than forewing. Wing colour grey or brown grey, in some species with green or ochreous; pattern formed by transverse lines and dark spots in medial and subapical areas on costal margin, dark spot in basal-subbasal areas, some species with subapical streak; reniform stigma weak, orbicular often not expressed. Frons smooth, scaled; eyes naked; proboscis strongly reduced; labial palps well developed, short. Hindwing with quadrifine venation, M2 strong, but originating quite far from M3. Nodules on the tympanal sclerite absent, the sclerite otherwise similar to that of many Catocalinae; counter-tympanal hood of prespiracular type; tympanal bullae elliptoid, separate; tympanal sclerite smooth, bar-like or smooth, crescent-shaped. In male genitalia, tegumen massive, broad, heavily sclerotised, joined with vinculum by partly fused but distinct short pleurite; transtilla present in many species; scaphium present, with dorsally membranous and ventrally sclerotised tuba analis; valva massive, lobe-like; clasper oblique, with massive harpe of moderate length. Aedeagus massive; vesica configuration of trifine -type. In female genitalia, the base of the posterior apophyses is rod-like or plate-like; corpus bursae membranous, elongated, saccate.

The subfamily presently includes only one Old World genus, *Thiacidas*, with 33 described species and several undescribed ones. Following further study, additional genera, at present of uncertain systematic position will probably be placed in Thiacidinae. Most species are known from the Old World, mainly from the Ethiopian region; the type-species of the genus, *Thiacidas postica*, is known from the Oriental region and South Palaearctic (Sri Lanka, India and Nepal to Iran, Saudi Arabia, and Oman). One species is known from the Manchurian subregion of the Palaearctic.

REFERENCES: Hacker & Zilli 2007.

Genus ***Thiacidas*** Walker, 1855

Thiacidas Walker, 1855, *List Specimens lepid. Insects Colln Br. Mus.* **5**: 979, 1027. Type-species: *Thiacidas postica* Walker, 1855, *ibid.*: 1028, by monotypy [Nepal], originally placed in the Notodontidae. (= *cheituna* Brandt, 1939).

SYNONYMY: *Panthauma* Staudinger, 1892; *Auchensia* Hampson, 1905; *Trisulana* Bethune-Backer; *Galactomoia* Fawcett, 1916; *Pteronycta* Fawcett, 1917.

Wingspan 33-60 mm. Eyes naked; frons scaled; proboscis strongly reduced; labial palps short. Vein M2 in hindwing well developed. Nodules on the tympanal sclerite absent, otherwise sclerite is similar to that of many Catocalinae. Forewing with oblique outer margin; ground colour grey or brown-grey, in some species with green or ochreous; pattern formed by transverse lines and spots in medial and subapical areas on costal margin, dark spot on basal-subbasal areas, some species with subapical streak; reniform stigma weak, orbicular often not expressed; hindwing rounded, much shorter than forewing. Male and female genitalia as described for the subfamily. (Not necessary to repeat the complete description of the genus here. Most of the characters have already been described for the subfamily)

The genus includes 33 species in tropical areas of the Old World. – 1 species.

Thiacidas egregia (Staudinger, 1892)

(Pl. 21: 1, 2; ♂ genit. Pl. 107: 1; ♀ genit. Pl. 179: 1)

Panthauma egregia Staudinger, 1892, in Romanoff, *Mém. Lépid.* **6**: 404, pl. 7: 2 ((Type-locality: Russia: Primorye, Baranovsky).

SYNONYMY: *koreothauma* Bryk, 1948.

BIONOMICS. Mesophilous species, inhabits rich broad-leaved and mixed forests with lime trees in abundance. Univoltine. The moth flies from mid VI to early VIII. Larvae feed on *Tilia mandshurica* (Tiliaceae). Overwinters as pupa.

DISTRIBUTION (Map 459). Manchurian-continental, nemoral. Far East (S Khabarovsk and Primorye terr.). – NE China, Korea.

25. Subfamily **Pantheinae** Smith, 1898

Pantheini Smiths, 1898, in Smiths & Dyar, *Proceeding of the U.S. National museum*: **21**: 4. Type genus *Panthea* Hübner, [1820].

SYNONYMY: Trichoseini Kobes, 1992

Moths of medium size. Antennae of male pectinate, serrate or filiform; labial palps short, compressed, 3rd segment very short; proboscis reduced, rudimentary or shortened; eyes covered in short hairs; ocelli absent or tiny; frons smooth; wings triangular, the outer margin oblique or straight; M2 on hindwing well developed, strong; wing pattern diverse, often well marked. In *Panthea*, tympanal bullae are fused laterally in small dorso-anterior area, in *Trichosea*, *Calocasia*, *Diloba* (Dilobinae) and in Acronictinae they are fused throughout. In male genitalia, uncus often shortened, relatively wide; scaphium membranous, subscaphium partly sclerotised; tegumen broad, usually without peniculus; juxta plate-like, transtilla expressed; valva massive, lobe-like, without corona; sacculus relatively narrow, elongated; cucullus not separated; harpe massive, usually beside or parallel to ventral margin of valva. Aedeagus massive; vesica globular or tubular, armed with large spine-shaped cornuti or groups of moderate or small spines. In female genitalia, papillae anales quadrangular, relatively short; anterior and posterior apophyses relatively short, equal in length; antrum sclerotised, cup-shaped, shallow, ductus usually short; corpus bursae large, often with sclerotised patches. Larvae feed mainly on arboraceous plants, in the genus *Anacronicta*, larvae feed on Poaceae.

Recently Holloway (2009) presented an expanded concept of Pantheinae based on Bornean fauna and transferred several genera formely placed to Erebinae or Catocalinae, including *Arcte* (tribe Arcteini), to the subfamily Pantheinae.

The subfamily includes about 50 species in the world, distributed mainly in the Palaearctic, Oriental and Nearctic regions. The centre of diversity of the subfamily is mountain broad-leaved and mixed forests of Himalaya, Indochina and south China. There are 13 genera and 20 species in the Palaearctic. – 5 genera and 10 species.

REFERENCES: Kozhanchikov 1950; Klyuchko 1978; Kitching & Rawlins 1999; Fibiger *et al.* 2009; Holloway 2009.

Tribe **Pantheini** Smith, 1898

Genus ***Panthea*** Hübner, [1820] 1816

Panthea Hübner, [1820] 1816, *Vens. bekannter Schmett.*: 203. Type-species: *Phalaena coenobita* Esper, 1785 [Germany].

Synonymy: *Elatina* Duponchel, 1845; *Audela* Walker, 1861; *Platycerura* Packard, 1864; *Diphthera*: Hampson, 1913, nec Hübner, 1809.

Wingspan 40-55 mm. Antennae of male pectinate; labial palps very short, compressed, 3rd segment very short; proboscis reduced; eyes covered in short hairs. Vein M2 in hindwing well developed. Forewing triangular, with oblique outer margin; head and thorax hairy; wing colour white or greyish, wing pattern formed by black dentate lines. In male genitalia, uncus very short, subscaphium expressed, large, on wide base; juxta plate-like, transtilla expressed; valva massive, short, quadrangular; sacculus narrow, elongated; harpe massive, extending beyond tip of valva. Aedeagus large; vesica tubular, armed with large spines. In female genitalia, papillae anales quadrangular, relatively short; anterior and posterior apophyses short; antrum weakly sclerotised, cup-shaped; ductus bursae short; corpus bursae large, with sclerotisation in caudal part. Larvae feed on coniferous trees.

The genus includes 11 species distributed in the Palaearctic, Oriental and Nearctic regions. – 1 species.

Panthea coenobita (Esper, 1785)

(Pl. 21: 3-5; ♂ genit. Pl. 107: 2; ♀ genit. Pl. 179: 2)

Phalaena, *Bombyx coenobita* Esper, 1785, *Die Schmett. Abb. Nat.* **3**: 196, pl. 37: 7 (Type-locality: Germany: Leipzig).

Synonymy: *ussuriensis* Warnecke, 1917; *latefasciata* Rebel, 1910; *kotschubeyi* Sheljuzhko, 1920; *immaculata* Sheljuzhko, 1920; *idae* Bryk, 1948.

Bionomics. Mesophilous species, inhabits coniferous woodlands, locally abundant in dark coniferous taiga. Univoltine. The moth flies from late V to VIII. Larvae oligophagous on coniferous trees *Pinus sylvestris*, *P. cembrae*, *P. koraensis*, *Picea*, *Abies*, *Larix* (Pinaceae).

Distribution (Map 460). Eurasian, boreal. Russia to Ural, through S Siberia to the Far East, Sakhalin and Kuriles. – Europe, Asia Minor, Korea, Japan, N China.

Genus ***Trichosea*** Grote, 1875

Trichosea Grote, 1875, *Bull. Buffalo Soc. nat. Sci.* **2**: 213. Type-species: *Phalaena ludifica* Linnaeus, 1758 {Europe].

Synonymy: *Moma* auct.

Wingspan 38-55 mm. Antennae of both sexes filiform, labial palps short, compressed, 3rd segment short; proboscis developed; eyes covered in long hairs. Head and thorax covered in hairs. Vein M2 in hindwing well developed. Forewing broad, white with pattern formed by black dentate lines; hindwing white with yellow along tornal margin. In male genitalia, uncus broad at base, apically tapered; juxta plate-like, transtilla expressed; valva moderate, narrowed to apex; sacculus narrow; clasper arched; harpe thin, curved, situated along ventral margin of valva. Aedeagus large; vesica tubular, armed with patch of small spines. In female genitalia, papillae anales quadrangular, anterior and posterior apophyses short, equal in length; antrum weakly sclerotised, cup-shaped; ductus bursae short and thin; corpus bursae large, membranous. Larvae feed on foliage of broad-leaved trees.

The genus includes 15 species distributed in the Palaearctic and mainly in the Oriental regions. – 2 species.

Trichosea ludifica (Linnaeus, 1758)

(Pl. 21: 6, 7; ♂ genit. Pl. 107: 3; ♀ genit. Pl. 179: 3)

Phalaena ludifica Linnaeus, 1758, *Syst. Nat.* (Edn 10) **1**: 514, Nr. 100 (Type-locality: Europe).

Synonymy: *antrotropa* Bryk, 1948; *azugensis* Bryk, 1948, form.

Bionomics. Mesophilous species, inhabits deciduous, mixed and dark coniferous montane forest. Common, but rather local species. Univoltine. The flight period is from early V to end VII. Larvae dendrophilous and polyphagous, feeding on various trees and shrubs, including *Quercus*, *Betula*, *Prunus*, *Pyrus*, *Malus*, *Padus*, *Sorbus*, *Rosa*, *Tilia*, *Ulmus*, *Carpinus cordata*, *Rhamnus*, *Salix*. Overwinters as pupa.

Distribution (Map 461). Eurasian, boreal. Russia to Ural, through S Siberia to the Far East, Sakhalin and Kuriles. – Europe, China, Korea, Japan.

Note. *Trichosea ludifica* was often referred to in faunistic literature for the Russian Far East as *Trichosea champa* (Kononenko 2005).

[***Trichosea champa*** (Moore, 1879)]

(Pl. 21: 8; ♂ genit. Pl. 107: 4; ♀ genit. Pl. 179: 4)

Moma champa Moore, 1879, *Proc. zool. Soc. Lond.* **1879**: 403, pl. 33: 2 (Type-locality: India: Himachal Pradesh, Dharmsala).

Diagnosis. *T. champa* differs externally from *T. ludifica* in larger size and more robust habitus. Wing pattern more contrasting, expressed by lines broken by strong black streaks. Hindwing with strong yellow colour in ventral part and well expressed terminal band. In male genitalia, uncus longer, valva distinctly broader, harpe longer than in *T. ludifica*. In female genitalia, ductus bursae more sclerotised and ribbed.

Bionomics. Mesophilous species, occurring in rich deciduous and mixed forests. Univoltine. In Korea the moth flies from late V to VII. Larvae polyphagous on foliage of deciduous trees, including *Prunus*, *Malus*, *Pyrus*, *Tilia*, *Salix*, *Carpinus*, *Camellia*, *Acer*, reported also on *Rhododendron metternichii* (Sugi 2001). Overwinters as pupa.

Distribution (Map 462). Manchurian-Himalayan, nemoral. Far East (?S Primorye). – Korea, Japan

China, Taiwan, Nepal, N India.

Note. The species was once reported from Primorye terr. by Alpheraky (1897) from "Sidemi" [Bezverkhovo] on the basis of material collected by M. Jankovsky, which could have originated from Korea. This specimen is illustrated here. The occurrence of *M. champa* in Primorye requires confirmation.

Genus ***Anacronicta*** Warren, 1909

Anacronicta Warren, 1909, in Seitz, *Gross-Schmett. Erde* **3**: 18. Type-species: *Aplectoides caliginea* Butler, 1881[Japan].

Synonymy: *Anacronycta*: Bryk, 1941, emend.

Wingspan 42-65 mm. Antennae of male serrate; labial palps large, upcurved, directed foreward, 3rd segment very short; proboscis developed, short; eyes covered in hairs; head and thorax hairy; vein M2 in hindwing well developed. Forewing broad, dark brown, brown or grey-brown, pattern rather uniform in the genus; hindwing brown-grey. In male genitalia, uncus relatively broad, moderate, apically tapered; tegumen with short peniculus, juxta plate-like, transtilla well expressed; valva large, lobe-like, with parallel costal and ventral margins; costa strong, harpe large, beside or parallel to ventral margin of valva. Aedeagus large; vesica globular, armed with 2-5 short finger-like extensions which in turn are armed with patches of moderate spines. In female genitalia, papillae anales quadrangular, anterior and posterior apophyses short, equal in length; antrum weakly sclerotised, cup-shaped; ductus short and thin; corpus bursae large, membranous with sclerotised cervix and patches of sclerotisation on corpus bursae. Larvae feed on Poaceae.

The genus includes 12 species distributed in Manchurian subregion of the Palaearctic and mainly in the Oriental regions. – 2 species.

Anacronicta caliginea (Butler, 1881)

(Pl. 21: 9, 10; ♂ genit. Pl. 108: 1; ♀ genit. Pl. 179: 5)

Aplectoides caliginea Butler, 1881, *Trans. ent. Soc. Lond.* **1881**: 185 (Type-locality: Japan: Tokyo).

Synonymy: *nitida*: Graeser, 1888 [1889].

Bionomics. Mesophilous species, occurring in valley forests surrounded by meadows, in glades, woodsides and among bushes. Bivoltine. The moth flies from late V to late VI and from VII to late VIII, IX. Larvae feed on *Miscanthus sinensis* (Poaceae) (Sugi 1970). Overwinters as pupa.

Distribution (Map 463). Manchurian, nemoral. Far East, to Sakhalin and Kuriles. – China, Korea, Japan.

Anacronicta nitida (Butler, 1878)

(Pl. 21: 11, 12; ♂ genit. Pl. 108: 2; ♀ genit. Pl. 179: 6)

Aplectoides nitida Butler, 1878, *Ann. Mag. nat. Hist.* (5) **1**: 194 (Type-locality: Japan, Yokohama).

Synonymy: *moupiensis* Leech, 1900; *kurilensis* Bryk, 1942.

Diagnosis. *A. nitida* differs externally from *A. caliginea* in somewhat larger size, pale, more greyish wing colour with prominent large whitish spot in costal part of medial field, outlined by black streak. In male genitalia, *A. nitida* has somewhat narrower and longer valva, extension of sacculus longer and situated along ventral margin of valva. Aedeagus without subbasal diverticulum with patch of cornuti as in *A. caliginea*. Female differs in shorter antrum, longer cervix bursae and presence of two large plate-like signa.

Bionomics. Mesophilous species, in Russia, known only from S Sakhalin and S Kuriles (Kunashir Is.). It inhabits open deciduous and mixed forest with bushes of *Sasa kurilensis*. Bivoltine. The moth flies from late V to VI and again in VII-IX. Larvae feed on *Sasa kurilensis* (Poaceae) (Sugi 1970). Overwinters as pupa.

Distribution (Map 464). Manchurian-Japanese, nemoral. Islands of Russian Far East (S Sakhalin and Kuriles, Kunashir Is.). – Japan, China, Taiwan.

Note. The species occurs in S Kurilae and Sakhalin sympatrically with *A. caliginea*.

Genus ***Tambana*** Moore, 1882

Tambana Moore, 1882, *in* Hewitson & Moore, *Descr. new Indian lepid. Insects Colln late Mr W. S. Atkinson*: 155. Type-species: *Tambana variegata* Moore, 1882 [India].

Wingspan 38-65 mm. Closely related to *Anacronicta*. Antennae of male bipectinate or serrate, labial palps short, compressed, 3rd segment short or moderate; forewing broad; M2 in hindwing developed. Forewing dark brown, brown or grey; hindwing yellowish, yellow or orange with dark terminal band. In male genitalia, *Tambana* is very like *Anacronicta*, but differs in shape of uncus which is rather short, diamond-shaped; more massive harpe situated on ventral margin of valva. In *Tambana*, aedeagus of variable in size and shape, usually rather short and wide; vesica globular or tubular, without finger-like extensions as in *Anacronicta*, with or without moderate spine-like cornuti. Female genitalia similar to those of *Anacronicta*, but usually with stronger sclerotisation in caudal part of corpus bursae.

The genus includes 16-20 species distributed mainly in Oriental region, many in China and Indochina; up to 10 species are known from the Sino-Himalayan and Manchurian subregions of the Palaearctic. – 1 species.

Tambana plumbea (Butler, 1881)

(Pl. 21: 13, 14; ♂ genit. Pl. 108: 3; ♀ genit. Pl. 180: 1)

Plataplecta plumbea Butler, 1881, *Trans. ent. Soc. Lond.* **1881**: 184 (Type-locality: Japan, Tokyo).

Synonymy: *ripleyi* Holland, 1889.

Bionomics. Mesophilous species, in Russia, known only from S Sakhalin and S Kuriles (Kunashir Is.). It inhabits lowland deciduous and mixed forests, meadows with bushes of Kurilian sasa. Bivol-

tine. The moth flies in late V and VII and again in VII-VIII. Larvae feed on *Sasa kurilensis* (Poaceae). Overwinters as pupa.

Distribution (Map 465). Japanese, nemoral. Islands of Russian Far East (S Sakhalin and S Kuriles, Kunashir Is.). – Japan.

Genus ***Xanthomantis*** Warren, 1909

Xanthomantis Warren, 1909, *in* Seitz, *Gross-Schmett. Erde* **3**: 18. Type-species: *Acronycta Cornelia* Staudinger, 1888 [Russia, Primorye terr.].

Synonymy: *Trisuloides* auct.

Wingspan 43-44 mm. Closely related to *Tambana*. Antennae of male pectinate, labial palps short, compressed. Vein M2 in hindwing well developed. Forewing blackish-grey with black dentate or waved pattern; hindwing yellow or orange-yellow; abdomen black. In male genitalia, uncus straight, moderately wide; juxta plate-like; valva sclerotised, moderately wide, narrower and pointed apically; costa well developed; sacculus narrow; harpe massive, relatively short. Aedeagus massive; vesica bulbous, with 2-3 patches of moderate spine-like cornuti. In female genitalia, papillae anales wide, quadrangular; anterior and posterior apophyses on a wide base, equal in length; antrum wide, shallow; ductus bursae short, sclerotised; corpus bursae large, with sclerotisation in caudal part.

The genus includes two species, both distributed in the Manchurian subregion of the Palaearctic. – 2 species.

Xanthomantis cornelia (Staudinger, 1888)

(Pl. 21: 15; ♂ genit. Pl. 108: 4; ♀ genit. Pl. 180: 2)

Acronycta cornelia Staudinger, 1888, *Stettin. ent. Ztg* **49**: 248 (Type-locality: Russia: Primorye: Askold Isl., "Suifun" [Razdolnaya river], Baranovsky.

Synonymy: *honrathii* Graeser, 1888 [1889].

Bionomics. Mesophilous species, occurring in oak and deciduous forest. Univoltine. The moth flies from late V to mid VII. Larvae feed on oak *Quercus mongolica* and *Q. dentata* (Fagaceae). Overwinters as pupa.

Distribution (Map 466). Manchurian-Oriental, continental. Far East (S Khabarovsk and Primorye terr.). – China, Korea, N Thailand.

Xanthomantis contaminata (Draudt, 1937)

(Pl. 21: 16; ♂ genit. Pl. 108: 5; ♀ genit. Pl. 180: 3)

Trisuloides contaminata Draudt, 1937, *Ent. Rdsch.* **54**: 399, pl. 4: 2f (Type-locality: China: Yunnan, Zhejiang [Chekiang], Shandong).

Synonymy: *tamsi* Park & Lee, 1977.

Diagnosis. *A. contaminata* differs from its allies in more blackish forewing, without bluish-grey tint, more wavy wing pattern and in presence of whitish suffusion around the reniform stigma. In male genitalia, it differs in somewhat wider valva with wider harpe and more dense field of cornuti in vesica. Female differs in wider antrum and less sclerotised area in caudal part of bursae.

Bionomics. Mesophilous species, inhabits deciduous forest sympatrically with preceding species. Univoltine. The moth flies from early VI to mid VII. Larvae feed on oak *Quercus mongolica* and *Q. dentata* (Fagaceae). Overwinters as pupa.

Distribution (Map 467). Manchurian–continental, nemoral. Far East (S Khabarovsk and Primorye terr.). – China, Korea.

Genus ***Colocasia*** Ochsenheimer, 1816

Colocasia Ochsenheimer, 1816, *Schmett. Eur.* **4**: 63. *Phalaena coryli* Linnaeus, 1758 [Europe].

Synonymy: *Leptostola* Billberg, 1820; *Demas* Stephens, 1829; *Phineca* Walker, 1856; *Colocasoides* Matsumura, 1931; *Calocasia*: Hampson, 1913, misspell.

Wingspan 35-40 mm. Antennae of male bipectinate, labial palps short, weak, thin, directed downwards; proboscis short, reduced. Forewing wide, with straight outer margin; ground colour grey, patterned brown, rather uniform in the genus. In male genitalia, uncus straight, on wide base; tegumen often with short acute extensions; juxta wide, plate-like, often scobinate; transtilla fused, upper fultura with fused sclerites, forming wide plate; valva well sclerotised, moderately wide, narrower and rounded apically; costa well developed; sacculus wide; harpe rudimentary or absent. Aedeagus rather massive; vesica bulbous, with short basal diverticulum and 1-2 patches of small spine-like cornuti. In female genitalia, papillae anales quadrangular; anterior and posterior apophyses equal in length; antrum wide, sclerotised, ribbed, with split on outer margin; ductus bursae short, more or less sclerotised; corpus bursae large, rounded or elongated, covered with short spines or smooth, with signa.

The genus includes 5 species, one of them with Palaearctic distribution, two are Nearctic and two occur in the Manchurian subregion of the Palaearctic. – 2 species.

Colocasia coryli (Linnaeus, 1758)

(Pl. 21: 17, 18; ♂ genit. Pl. 109: 1; ♀ genit. Pl. 180: 4)

Phalaena coryli Linnaeus, 1758, *Syst. Nat.* (Edn 10) **1**: 503 (Type-locality: Europe).

Synonymy: *corylus* Haworth, 1809; *basistriga* Walker, 185; *medionigra* Vobrodt, 1930; *uniformis* Turati, 1919; *tristis* Ermolaev, 1937.

Bionomics. Mesophilous species, occurring in woodland biotopes, in forest-steppe, among bushes, in parks. Bivoltine. The moth flies from late IV to late VI and from early VII to mid IX. Larvae polyphagous on arboraceous plants, including *Betula*, *Quercus*, *Fagus*, *Carpinus*, *Corylus*, *Alnus*, *Populus*, *Salix*, *Malus*, *Prunus*, *Crataegus*, *Acer*, *Fraxinus*. Overwinters as pupa.

Distribution (Map 468). Euro-Siberian, boreal.

Russia to Ural, across Siberia to south Yakutia. – Europe, Near East, Caucasus, Transcaucasia.

Note. Highly polymorphic, both externally and in genital structure; an albino whitish form (Pl. 21: 19) occurs in the southern Ural.

Colocasia mus (Oberthür, 1884)

(Pl. 21: 19, 20; ♂ genit. Pl. 109: 2; ♀ genit. Pl. 180: 5)

Diloba mus Oberthür, 1884, *Étud. Ent.* **10**: 17, pl. 2: 4 (Type-locality: Russia: Primorye, "Sidemi" [Bezverkhovo]).

Synonymy: *ussuriensis* Kardakoff, 1928; *grisescens* Kardakoff, 1928.

Diagnosis. *C. mus* is externally very similar to *C. coryli*, but differing in larger size, although large specimens of *C. coryli* and small *C. mus* are of equal size and very similar. In male genitalia, *C. mus* differs in somewhat longer uncus, broader and more rounded valva, in shape of juxta and transtilla, and in structure of vesica with field of small scattered cornuti, and without patch of dense cornuti as in *C. coryli*. Female differs in much narrower antrum, shorter ductus and much longer, saccate corpus bursae.

Bionomics. Mesophilous species, inhabits woodland biotopes, among bushes, in parks. Bivoltine, with two overlapping generations. The moth flies from late IV-V to late VI and from mid VII to IX. Larvae feed on arboraceous plants, including *Quercus mongolica*, *Carpinus*, *Betula*, *Alnus hirsuta*, *A. fruticosa*, *Corylus mandshurica*. Overwinters as pupa.

Distribution (Map 469). Manchurian, nemoral. Transbaikalia, Far East, to Sakhalin and Kuriles. – China, Korea, Japan (Hokkaido).

Note. The species is allopatric with *C. coryli*, but their ranges could perhaps overlap in eastern Transbaikalia and south Yakutia.

Tribe **Arcteini** Berio, 1992

Arcteini Berio, 1992, *Memorie Soc. ent. ital.* 70: 294, 298, 301, nomen nudum, not available (art. 13. 1 ICZN), based on the genus: *Arcte* Kollar, 1844.

The tribe was placed by Goater *et al.* (2003) and Fibiger and Lafontaine (2005) in Erebinae of broad concept; however it was not listed in the subsequent publication by Lafontaine & Fibiger (2006). The tribe includes four genera, *Arcte* and possibly related *Pseudoarcte* Viette, 1949, *Pararcte* Hampson, 1926 and *Cyclodes* Guenée, 1852, all tropical. The tribe is characterised by developed vein M2 in forewing and well expressed trifine characters in external appearance, as well as in male genital structure: the presence of corona formed by irregular setae on tip of valva; diamond-plate-like shape of juxta, and position of clasper and harpe. The placement of the tribe in Erebinae is obviously incorrect. Holloway (2009) placed the genera *Arcte* and *Cyclodes* Guenée in the extended subfamily Pantheinae (sensu Holloway 2009). Following him, Arcteini are here placed in the subfamily Pantheinae (sensu lato), but its position requires further revision.

Genus ***Arcte*** Kollar, [1844]

Arcte Kollar, 1844, *in* Hügel, *Kaschmir und des Reich der Sieh* **4**: 477. Type-species: *Arcte polygrapha* Kollar, 1844 [N India].

Synonymy: *Cocytodes* Guenée, 1852; *Arcta*, misspell.

Wingspan 65-85 mm. Large, enigmatic, dark brown moth; body stout, flattened; antenna of male filiform; labial palps thick, closely pressed to head, almost sickle-like, the 3rd segment very small; tibiae of all legs with spines in *A. coerula* or lacking spines in other species; forewing with vein M2 well developed. Forewing rather narrow and elongated, hindwing with bluish area in centre or with bluish marks. Males with massive coremata on 8th abdominal segment; abdomen with crests. In male genitalia, uncus short, massive, angled 90°, with prominent distal comb; scaphium sclerotised; tegumen almost equal to vinculum, with wide peniculus; valva elongated, with small saccus, sclerotised bar along ventral margin and cucullus with corona-like patch of setae; harpe small, stick-like; juxta plate-like. Aedeagus straight; vesica short, bulbous, with patch of small spine-like cornuti. In female genitalia, ovipositor rather small; posterior apophyses 1.5 times longer than anterior ones; antrum small, funnel-shaped; ductus bursae long; corpus bursae elongated, pear-shaped.

The genus includes 5 species distributed mainly in the Old World tropics; 1 species is known from Manchurian subregion of the Palaearctic. – 1 species.

Arcte coerula (Guenée, 1852)

(Pl. 21: 21; ♂ genit. Pl. 50: 1; ♀ genit. Pl. 138: 4)

Cocytodes coerula Guenée, 1852, in Boisduval & Guenée, *Hist. nat. Insectes* (Lépid.) **7**: 41, pl. 13: 10 (Type-locality: E India).

Synonymy: *coerulea* auct., misspelling.

Bionomics. Meso-thermophilous migratory species, occurs in various lowland habitats. In Primorye, worn overwintered migrant females appear in VI early VII. Larvae feed on leaves of *Urtica platyphilla*, *U. thunbergiana* (Urticaceae). They live in groups of 7-15 individuals. Pupation takes place at end of VII-early VIII; fresh moths of new generation appear in mid - late VIII, and continue flying to X. In Japan, larvae feed on *Urtica* and on *Boehmeria niponivea*, *Girardinia*, *Cypholophus moluccanus*, *Pipturus* (Urticaceae), *Broussonetia* (Moraceae) and *Humulus* (Cannabaceae) (Miyata 1983). *A. coerula* is probably unable to survive the winter in the Far East in any stage.

Distribution (Map 147). Oriental, Manchurian-subtemperate. Far East (S Khabarovsk, Primorye, S Sakhalin). – China, Korea, Japan, Taiwan, SE Asia, India, Nepal.

Note. Migratory species, regularly occurring at autumn in the south of the Far East.

26. Subfamily **Dilobinae** Aurivillius, 1889

Dilobinae Aurivillius, 1889. *Nordens Fjärilar*: 79, 95. Type-species: *Phalaena caeruleocephala* Linnaeus, 1758.

Synonymy: Raphiinae Beck, 1996.

Moths of medium size. Antennae of male bipectinate, those of female filiform; labial palps very short, porrect, covered with long hairs directed downwards, compressed laterally, 2nd segment 1.5-2 times longer than 3rd; proboscis reduced, weak; eyes naked; ocelli absent in *Diloba* or minute in *Raphia*. Hindwing with strongly developed M2. Forewing grey or brownish grey with brown pattern; orbicular and reniform stigmata prominent in *Diloba*, in *Raphia* small, black outlined, often absent, even intraspecifically. Tympanal bullae are fused laterally throughout their length. Male and female genitalia of both sexes of *Dilobinae* and *Pantheinae* are similar by many respects: uncus relatively short, basal-laterally enlarged, tapered smoothly outwards; scaphium membranous, subscaphium partly sclerotised; tegumen wide, flattened; pleurite very long and narrow; vinculum and saccus log-like, short; valva long or moderate, tapered apically, rounded at the tip, without corona; sacculus relatively short; clasper relatively short, positioned along ventral margin of valva; harpe prominent, spine-like, straight or very short; juxta plate-like, ventrally rounded, dorsal edge V- shaped. Aedeagus short, straight; vesica projected dorsally, armed with numerous short, spine-like cornuti, subbasally or medially with membranous diverticula and patches with spicules or spine-like cornuti. In female genitalia, ovipositor short, setose, anterior and posterior apophyses relatively short, almost equal in length; ostium bursae as wide as ductus bursae; antrum ventrally with narrow, heavily sclerotised band; ductus bursae with wrinkles, which extend into posterior end of corpus bursae; corpus bursae saccate, broadest subapically, without signa; ductus seminalis arises from broad appendix bursae on right side, close to ductus bursae.

Fibiger *et al.* (2009) synonymised Raphiinae with Dilobinae; the subfamily in modern treatments includes two genera, the Palaearctic *Diloba*, and *Raphia* which is distributed in the Old and New Worlds.

References. Fibiger *et al.* 2009.

Genus ***Diloba*** Boisduval, 1840

Diloba Boisduval, 1840, *Genera Index meth. Eur. Lepid.*: 88. Type-species: *Phalaena caeruleocephala* Linnaeus, 1758 [Europe].

Synonymy: *Episema* auct.

Wingspan 35-42 mm. Antennae of male bipectinate, those of female serrate; labial palps moderate, directed forward, 3rd segment rather long; proboscis reduced, weak, not coiled; eyes naked. Forewing rather narrow, with oblique outer margin; ground colour grey with brown pattern; orbicular and reniform stigmata large, pale, prominent. In male genitalia, uncus short, straight, basally widened; juxta moderate, plate-like; transtilla fused with fultura superior which has fused sclerites forming wide plate; valva well sclerotised, moderately wide, narrower from middle towards tip; sacculus narrow; harpe present, short. Aedeagus massive; vesica bulbous, with short basal and distal diverticula, ventrally covered in numerous small spine-like cornuti. In female genitalia, papillae anales, quadrangular; posterior apophyses longer than anterior ones; antrum wide and shallow; ductus bursae very short, corpus bursae large, saccate, with sclerotised ribbed plate in caudal part.

Monotypic western Palaearctic genus.

Diloba caeruleocephala (Linnaeus, 1758)

(Pl. 21: 22, 23; ♂ genit. Pl. 103: 3; ♀ genit. Pl. 180: 6)

Phalaena, *Bombyx caeruleocephala* Linnaeus, 1758, *Syst. Nat.* (Edn 10) **1**: 504.

Synonymy: *armena* Staudinger, 1871; *coeruleocephala* auct.

Bionomics. Mesophilous species, inhabits forest and forest-steppe, occurring in woodland habitats, parks, gardens. Univoltine. The imago flies from late VII to X. Larvae in VI-VII, feeding mainly on fruit trees (*Prunus armeniaca*, *Crataegus*, *Malus*, *Padus*, *Pyrus*, *Sorbus* (Rosaceae), and also on willows *Salix*, poplar *Populus* (Salicaceae), oak *Quercus* (Fagaceae) and *Corylus* (Betulaceae). Overwinters as egg.

Distribution (Map 470). European-West Asian, subboreal. S Russia. – W Kazakhstan (Uralsk), Europe, Near East (Turkey), Transcaucasia.

Genus ***Raphia*** Hübner, [1821] 1816

Raphia Hübner, [1821] 1816, *Verz. bekannter Schmett.*: 212. Type-species: *Noctua hybris* Hübner, [1813] [Europe].

Synonymy: *Anodonta* Rambur, 1858, preocc. (Lamarck, 1799 [Mollusca]); *Certila* Walker, 1865; *Saligena* Walker, 1865; *Rhaphia*: Agassiz, 1846, emend.

Wingspan 35-48 mm. Antennae of male bipectinate, those of female serrate or filiform, labial palps small or moderate, directed forward; proboscis reduced, short; eyes naked. Forewing rather narrow, with oblique and rounded outer margin. In male genitalia, tegumen wide; uncus rather short, straight, massive; juxta plate-like; valva short, basally wide, narrower and rounded apically; sacculus rather small; harpe present, short, massive. Aedeagus wide, massive; vesica bulbous, on the base covered in numerous tiny spine-like cornuti. In female genitalia, papillae anales very wide, posterior apophyses massive, longer than anterior ones; antrum rather small and shallow; ductus bursae short; corpus bursae elongated, saccate, without signa.

The genus includes 13 species distributed in the Old and New Worlds, one species known from Africa. – 1 species.

Raphia peustera Püngeler, 1906

(Pl. 21: 24, 25; ♂ genit. Pl. 109: 4; ♀ genit. Pl. 180: 7)

Raphia peustera Püngeler, 1906, *Dt. ent. Z. Iris* **19**: 216, pl. 8: 9 (Type-locality: China: Quinghai, Kuku-noor).

Synonymy: *illarioni* Filipjev, 1937; *peusteria* auct.

Bionomics. Meso-thermophilous species, occurring in woodland biotopes, more common in dry localities. In the Far East irregularly occurs in gry open oak forest. The moth flies in VI-VII. The larva and its foodplants are unknown.

Distribution (Map 471). Central Asian – Manchurian–continental, nemoral. Far East (Amur, Khabarovsk and Primorye terr.). – C Asia, Kazakhstan, China, Korea.

27. Subfamily **Acronictinae** Heinemann, 1859

Subfamily Acronictidae Heinemann, 1859, *Schmett. Dtl. und Schweiz* **14**: 297. Type-genus: *Acronycta* Treitschke, 1825, emend. of *Acronicta* Ochsenheimer, 1816.

Synonymy: Apatelinae Grote, 1883; Mominae Hampson, 1902; Cymatophoropsiini Mell, 1943; Craniophorini Beck, 1996.

Medium sized to rather large moths with robust body; antennae of both sexes filiform, or those of male covered with sparse and short hairs; eyes globular, naked; legs without tibial spines; in the genus *Acronicta* frons convex; venation in hindwing confusing: in most genera it is trifine, but in some, M2 is obsolescent, and in others M2 is rather strong. Forewing usually grey, with cryptic pattern and a prominent tornal streak; tympanal bullae are fused laterally throughout their length. In the male genitalia, the tegumen-transtilla muscle confirms that Acronictinae belong among the trifine Noctuidae (Tikhomirov 1979; Kitching & Rawlins 1998). In male genitalia, uncus usually long, hooked at tip; scaphium membranous or sclerotised (in *Craniophora* and *Cranionycta* scaphium extremely developed and heavily sclerotised); tegumen moderate or short, with broad lobes, vaulted; pleurite from vinculum parallel with ventral part of tegumen; vinculum and saccus prominent, the latter V-shaped; valva moderate or short, usually without corona (in *Moma*, *Belciades*, *Nacna*, *Craniophora*, *Cranionycta* with reduced, rarely with complete corona); costal bar usually well built only basally, in some species it is well developed; sacculus ovoid, rarely elongated; clasper beside or oblique to ventral margin, with prominent pollex, free at tip except in some genera; harpe prominent or large, but absent in some genera; editum plate-like, sclerotised. Juxta large, in most cases plate-like. Aedeagus variable in length from relatively short to long; vesica mainly short and broad, projected vertically, usually with one or more membranous diverticula, and armed with sclerotised patches with spinules or spine-like cornuti. In female genitalia, ovipositor much wider than long, setose; posterior apophyses usually short and weak, anterior apophyses longer and stronger than posterior ones; 8th abdominal segment tapered from apophyses to postvaginal plate on ventral side; antrum and ductus bursae often with sclerites; ductus bursae mainly wide; corpus bursae saccate, longer than wide; appendix bursae tapered, with sclerites; ductus seminalis arises at posterior end of appendix bursae, close to ductus bursae.

Larvae colourful, with tufts of hair-like setae; larvae have D1 and D2 pinacula on T2 and T3 fused, and L3 on 3rd to 6th abdominal segment is bisetose (Kozhanchikov 1950).

The subfamily contains more than 400 species (Speidel *et al.* 1996) in the World fauna. It is represented in all climatic zones, except high Arctic, but most diverse in the deciduous broad-leaved forests of the cool temperate zone. The species occur in all sorts of habitat, and feed on many plant families, the woody plants are preferred.

13 genera and 51 species are known from Siberia and the Far East.

References: Hampson 1909; Kozhanchikov 1950; Sugi 1979; Kononenko 2003; Fibiger *et al.* 2009.

Genus ***Cymatophoropsis*** Hampson, 1894

Cymatophoropsis Hampson, 1894, *Fauna Br. India* (Moths) **2**: xvii, 397. Type-species: *Gluphisia sinuata* Moore, 1879 [India].

Synonymy: *Trispila* Houlbert, 1921; *Thyatirides* Kozhantshikov, 1950.

Wingspan 30-32 mm. Antennae of both sexes filiform, ciliate; frons smooth, flat; labial palps rather short, 3rd segment very short, about 1/4 length of 2nd, erect; proboscis developed; eyes naked; hindwing with M2 somewhat reduced. Forewing colour olive-brown, with pattern of large brown spots, bordered with white, characteristic of the genus. In male genitalia, tegumen wide; uncus large, massive or normal, sickle-like; juxta plate-like; valva elongated with parallel margins, rounded distally; sacculus moderate or long; harpe short, stick-like; cucullus not separated, without corona, covered in dense hairs. Aedeagus moderate; vesica tubular, coiled, without cornuti, or with small spines. In female genitalia, papillae anales small and elongated; anterior apophyses twice as long as posterior ones; antrum funnel-shaped, shallow; weakly sclerotised; ductus bursae short; corpus bursae rather narrow, elongated, saccate; somewhat constricted in caudal half.

The genus includes 6 species, distributed in the Oriental region and Manchurian subregion of the Palaearctic. – 2 species.

Cymatophoropsis trimaculata (Bremer, 1861)

(Pl. 22: 1; ♂ genit. Pl. 109: 5; ♀ genit. Pl. 181: 3)

Thyatira trimaculata Bremer, 1861, *Bull. Acad. imp. Sci. St. – Pétersb.* **3**: 483 (Type-locality: Russia: Primorye).

Synonymy: *tripunctata* Bang-Haas, 1927; *tanakai* Inoue & Sugi, 1957.

Bionomics. Mesophilous species, occurring in rich deciduous and mixed forest. Univoltine. The flight period is VI-VIII. Larvae feed on deciduous trees, *Quercus mongolica*, *Malus manchurica*, *Tilia amurensis*.

Distribution (Map 472). Manchurian, nemoral. Far East, to Sakhalin and S Kuriles. – China, Korea, Japan (Hokkaido, Honshu).

[***Cymatophoropsis unca*** (Houlbert, 1921)]

(Pl. 22: 2; ♂ genit. Pl. 109: 6; ♀ genit. Pl. 181: 2)

Trispila unca Houlbert, 1921, in Oberthür, *Étud. Lépid. comparée* **18** (2): 237: 61 (Type-locality: W China, Ta-tsien-lou).

Diagnosis. Compared with the preceding species, *C. trimaculosa* is larger, with more developed pale brownish basal, apical and tornal spots. In male genitalia, *C. unca* differs from its congener in much more slender uncus, less expressed lobes of tegumen, narrower and more rounded valva and more slender aedeagus. Female differs in longer papillae anales, longer and wider ductus bursae and longer and narrower corpus bursae.

Bionomics. Mesophilous. There is a single record of *C. unca* from Primorye. In Korea, it occurs in deciduous forests. The moth flies in VI-VIII. Larvae feed on *Rhamnus* (Rhamnaceae) (Sugi 1982a).

Distribution (Map 473). Manchurian, nemoral. Far East (?Primorye). – China, Korea, Japan (except Hokkaido).

Note. The species was omitted in the Checklist of the Noctuidae of Asian part of Russia (Kononenko 2005), but included in the Catalogue of the Lepidoptera of Russia (Matov *et al*. 2006) on the basis of a single specimen without abdomen from the Far East (Primorye, "Sutchan" [Partizansk] in ZISP collection. Because the genitalia of the specimen were not examined, its identity and the distribution of the species in Russian Far East require confirmation.

Genus ***Nacna*** Nye, 1975

Nacna Fletcher, 1961, *Ruwenzori Exped. 1952*: 198. Type-species: *Canna pulchripicta* Walker, 1865 [India]. Replacement name for *Canna* Walker, 1865.

Synonymy: *Canna* Walker, 1865, preocc. (Gray, 1821 [Mammalia]).

Wingspan 26-32 mm. Antennae of both sexes filiform, ciliate; frons smooth, flat; labial palps rather short, 3rd segment long, erect; proboscis developed; eyes naked; hindwing with M2 somewhat reduced. Forewing emerald-green, with pattern characteristic of the genus. In male genitalia, tegumen wide; uncus straight, curved at base; juxta plate-like; valva elongated, rather narrow, with parallel margins; sacculus moderate; harpe absent; cucullus not separated, with weak corona formed by 15-20 long or short spines. Aedeagus relatively short; vesica tubular, in apical part with 4-12 spine-like cornuti. In female genitalia, papillae anales wide and rather short; anterior and posterior apophyses rather long, stout, almost equal in length; antrum cup-shaped, shallow, weakly sclerotised; ductus bursae wide, saccate, constricted in caudal half.

The genus includes 6 species, distributed in the Oriental region and the Manchurian subregion of the Palaearctic. – 1 species.

Nacna malachitis (Oberthür, 1881)

(Pl. 22: 3; ♂ genit. Pl. 110: 2; ♀ genit. Pl. 181: 3)

Telesilla malachitis Oberthür, 1880, *Étud. Ent.* **5**: 80, pl. 3: 9 (Type-locality: Russia: Primorye, Askold I.).

Synonymy: *splendens* Moore, 1881.

Bionomics. Mesophilous species, occurring in rich deciduous and mixed forest. Probably two generations. The flight period is from early VI to late VIII. Larvae feed on trees: *Malus mandshurica*, *Padus asiatica*, *Pyrus* (Rosaceae) and on *Tilia amurensis* (Tiliaceae).

Distribution (Map 474). Oriental-Manchurian, nemoral. Far East (S Khabarovsk and Primorye terr.). – China, Korea, Japan, Taiwan, Vietnam, Nepal, N India.

Genus ***Belciades*** I. Kozhanchikov, 1950

Belciades Kozhanchikov, 1950, *Fauna SSSR* (Insecta, Lepid.) **12**: 443. *Habrostola niveola* Motschoulsky, 1866.

Wingspan 36-44 mm. Antennae of male serrate or ciliate, labial palps compressed, the 3rd segment long, directed forward; proboscis developed; eyes naked; hindwing with M2 developed. Forewing greyish-green, with pattern of characteristic dark basal and subapical spots. In male genitalia, tegumen moderate; uncus rather short, dagger-shaped; juxta plate-like; valva elongated and rather narrow, with more or less expressed neck; sacculus rather narrow; harpe reduced, very short; ventral margin of valva with long acute extension. Aedeagus moderate; vesica tubular or bulbous, covered with numerous small spine-like cornuti on wide bases. In female genitalia, papillae anales small; anterior and posterior apophyses short, equal in length; antrum small, with well expressed sclerotised antevaginal plate of various shapes, shallow; ductus bursae short; corpus bursae elongated, saccate or long, tubular, with large rounded membranous bulla.

The genus includes 5 species distributed in the Manchurian subregion of the Palaearctic and partly in the Oriental region. – 1 species.

Belciades niveola (Motschulsky, 1866)

(Pl. 22: 6; ♂ genit. Pl. 110: 1; ♀ genit. Pl. 181: 4)

Habrostola niveola Motschulsky, 1866, *Bull. Soc. imp. Nat. Mosc.* **39** (1): 195 (Type-locality: Japan).

Synonymy: *virens* Butler, 1881;. *japyx* Staudinger, 1892.

Bionomics. Mesophilous species, occurring in various types of deciduous and mixed forests. One generation from late V to VIII. Larvae feed of *Tilia amurensis* and *T. mandschurica*; in Japan on *T. japonica* and *T. maximowiczana* (Tiliaceae).

Distribution (Map 475). Manchurian, nemoral. Far East to Sakhalin. – China, Korea, Japan.

Genus ***Belciana*** Walker, 1862 (*uncertain sedis*)

Belciana Walker, 1862, *J. Proc. Linn. Soc.* (Zool.) **6**: 182. Type-species: *Dandaca biformis* Walker, 1858 [Borneo, Sarawak].

Synonymy: *Nalca* Walker, 1866, replacement name.; *Diptheroides* Bethune-Backer 1906; *Diphteroides*: Neave, 1939, misspell.; *Polydesma* auct.

The genus *Belciana* includes 20 mainly Oriental species with characteristic wing pattern, with green or greenish central part of wing and prominent brown or black-brownish patches in costal, apical and tornal areas. However, some species presently placed in the genus seem not to be congeneric, judging from the genitalia structure. In our opinion, *Belciana* as currently treated (Poole 1989; Holloway 2009) is heterogeneous and should be divided into several genera. The genera *Belciana* and the allied *Donda* Moore, 1882, *Diphteroides* Bethune-Baker, 1906 and *Chlorognesia* Warren, 1913, are in urgent need of revision.

Belciana siitanae Remm, 1983

(Pl. 22: 7; ♂ genit. Pl. 110: 3; ♀ genit. Pl. 181: 5)

Belciana siitanae Remm, 1983, *Entom. Orozr.* **62**(3): 596 (Type-locality: Russia, Primorye, Andreevka).

Bionomics. Meso-hygrophilous species, occurring very locally in the extreme south of Primorye in humid, open, deciduous, maritime forests with *Quercus dentata* and *Q. mongolica*, *Tilia mandshurica*, *Fraxinus mandchurica*, *Ulmus laciniata*. Univoltine. The moth flies from VI to early VIII. The larva and its foodplants are unknown.

Distribution (Map 476). Manchurian, nemoral. Far East (S Primorye). – Taiwan.

Note. *B. siitanae* was originally described in the genus *Belciades*. However, the structure of the genitalia indicate that it is not congeneric with *B. biformis*, the type-speciesof *Belciana*; its systematic position requires clarification.

Belciana staudingeri (Leech, 1900)]

(Pl. 22: 8; ♂ genit. Pl. 110: 4; ♀ genit. Pl. 181: 6)

Polydesma staudingeri Leech, 1900. *Trans. ent. Soc. Lond.* **1900**: 551 (Type-locality: N Korea: Wonsan [Gensan]).

Synonymy: *trinubila* Draudt, 1937.

Bionomics. Mesophilous species, in Korea occurring in deciduous and mixed forest. The moth flies in VI and VII. The larva and its foodplants are unknown.

Distribution (Map 477). Manchurian–continental, nemoral. Far East (?Primorye). – Korea, China (to Tibet).

Note. The species was reported for the south of Primorye terr. from "Sidemi" by Kozhanchikov (1950). No further records are known, and its occurrence in the Far East requires confirmation (Kononenko 2005).

Genus ***Euromoia*** Staudinger, 1892

Staudinger, 1892, *in* Romanoff, *Mém. Lépid.* **6**: 632. Type-species: *Euromoia mixta* Staudinger, 1892 [Russia, Primorye].

Synonymy: *Euromoea*: Hampson, 1908, emend.

Wingspan 38-45 mm. Antennae of male ciliate, labial palps compressed, directed forward, 3rd segment short; proboscis developed; eyes naked; hindwing with M2 strongly reduced. Forewing grey with patches of olive-green suffusion; hindwing often yellow with dark terminal band. In male genitalia, all structures sclerotised; tegumen moderate; uncus moderate, straight, curved at base; juxta plate-like; valva with strong costa and ventral margin, somewhat constricted in middle; sacculus massive; clasper as transverse bar, harpe a dentate plate free or fused with lobe of valva. Aedeagus large; vesica tubular, with plate-like cornutus or sclerotised patch. In female genitalia, papillae anales elongated; anterior and posterior apophyses rather long, equal in length; antrum small funnel-shaped with deep split in middle; ductus bursae rather long, sometimes expanded in the middle; ductus bursae short; corpus bursae elongated, saccate or rounded, without signa.

The genus includes 2 species, both distributed in the Manchurian subregion of the Palaearctic and partly in the Oriental region. – 2 species.

Euromoia subpulchra (Alphéraky, 1897)

(Pl. 22: 9, 10; ♂ genit. Pl. 111: 4; ♀ genit. Pl. 181: 7)

Hadena subpulchra Alphéraky, 1897, in Romanoff, *Mém. Lépid.* **9**: 173, pl. 12: 11 (Type-locality: N Korea).

Bionomics. Mesophilous species, inhabits rich, humid, deciduous and mixed forests in lowland and at medium altitudes to 200-400 m. Univoltine. The moth flies in VII and VIII. The larva and its foodplants are unknown.

Distribution (Map 478). Manchurian, nemoral. Far East (Primorye). – China, Korea, Japan, Taiwan.

Euromoia mixta Staudinger, 1892

(Pl. 22: 11-13; ♂ genit. Pl. 111: 3; ♀ genit. Pl. 181: 8)

Euromoia mixta Staudinger, 1892, in Romanoff: *Mém. Lépid.* **6**: 632, pl. 12: 10 (Type-locality: Russia: "Sutschan-Gebiet" [Primorye, Partizansk]).

Synonymy: *tienmushani* Draudt, 1950.

Diagnosis. *E. mixta* differs from its congeners

in duller wing colour with more expressed mossy-greenish tint, absence of white reniform stigma, and less expressed or not expressed yellow patch in the hindwing. The taxon *tienmushani* is the form of *E. mixta* with strongly expressed yellow patch and terminal band in hindwing.

Bionomics. Mesophilous species. Together with *E. subpulchra* occurring in deciduous and mixed woodland and lowland habitats. Univoltine. The moth flies in VII and VIII. The larva and its foodplants are unknown.

Distribution (Map 479). Manchurian, nemoral. Far East (S Khabarovsk and Primorye terr.). – China, Korea, Japan.

Genus ***Subleuconycta*** I Kozhanchikov, 1950

Subleuconycta Kozhanchikov, 1950, *Fauna SSSR* (Insecta) Lepid. **12**: 447. Type-species: *Leuconycta palshkovi* Filipjev, 1937 [Russia, Primorye].

Wingspan 32-34 mm. Antennae of male ciliate, frons smooth, flat; labial palps rather long, 3rd segment long, erect; proboscis developed; eyes naked; hindwing with M2 developed. Forewing whitish-grey, wing pattern with characteristic dark spot between orbicular and reniform stigmata. In male genitalia, tegumen moderate; uncus straight; juxta plate-like; valva elongated, rather narrow, with parallel margins narrowing towards apical part; sacculus narrow and long; harpe short, situated in distal third of valva; cucullus with corona formed by 8-10 long spines. Aedeagus moderate; vesica wide-tubular, in apical part with extension covered in short, dense spines. In female genitalia, papillae anales quadrangular; anterior and posterior apophyses rather short, almost equal in length; antrum funnel-shaped, weakly sclerotised; ductus bursae long, thin, extended basally; corpus bursae saccate, with one signum.

The genus includes 2 species, distributed in the Manchurian subgregion of the Palaearctic and in the Oriental region (Taiwan). – 1 species.

Subleuconycta palshkovi (Filipjev, 1937)

(Pl. 22: 4; ♂ genit. Pl. 111: 1; ♀ genit. Pl. 182: 1)

Leuconycta palshkovi Filipjev, 1937, *Lambillionea* **37**: 64: 1, 2. (Type-locality: Russia: "Sutschan" [Primorye, Partizansk]).

Bionomics. Mesophilous species, inhabits rich deciduous and mixed forests. Univoltine. The moth flies from late VI to mid VIII. The larva and its foodplants are unknown.

Distribution (Map 480). Manchurian, nemoral. Far East (S Khabarovsk and Primorye terr.). – Korea, Japan, N China, Taiwan.

Genus ***Moma*** Hübner, [1820] 1816

Moma Hübner, [1820] 1816, *Verz. bekannter Schmett.*: 203. Type-species: *Noctua aprilina* Linnaeus sensu Hübner, [1803] (= *Phalaena alpium* Osbeck, 1778) [Sweden]).

Synonymy: *Diphthera* Hübner, [1806], suppr.; *Diphtera* Ochsenheimer, 1816, misspell.; *Dipthera* Hübner, [1825], misspell.; *Diphtheramoma* Berio, 1961; *Diphthera* auct.; *Daseochaeta* auct.

Wingspan 30-36 mm. Antennae of male serrate, ciliate; frons smooth, flat; labial palps rather long, 3rd segment long, pointed, erect; proboscis developed; eyes naked; hindwing with M2 developed. Forewing green, wing pattern cryptic, resembling lichens, characteristic of the genus. In male genitalia, tegumen moderate; uncus straight, somewhat extended and pointed at tip; juxta plate-like; valva rather wide, extended medially, narrowed towards apical part; sacculus moderate; harpe moderate, usually flattened, with wide base. Aedeagus moderate; vesica wide-tubular, with moderate spine-like cornuti. In female genitalia, papillae anales quadrangular; anterior and posterior apophyses ones rather short, almost equal in length; antrum sclerotised, funnel-shaped, antevaginal plate deeply split; ductus bursae short, corpus bursae saccate, without signa.

The genus includes 5 species, distributed in the Manchurian subgregion of the Palaearctic and in the Oriental region. – 3 species.

Moma alpium (Osbeck, 1778)

(Pl. 22: 14, 15; ♂ genit. Pl. 111: 5; ♀ genit. Pl. 182: 2)

Phalaena alpium Osbeck, 1778, *Göteborg. Samhalle Handl.* (Wet. Afd.) **1**: 52, pl. 1: 2 (Type-locality: Germany).

Synonymy: *orion* Sepp, 1762; *aprilina* [Denis & Schiffermüller], 1775., nec Linnaeus; *orion* Esper, [1787]; *runica* Gmelhaus, 1788; *aprilina* Linnaeus sensu Hübner, 1803; *murrhina* Graeser, 1888; *designata* Turati, 1923.

Bionomics. Mesophilous species, inhabits rich deciduous and mixed forest. Univoltine. The moth flies from mid V to late VIII. Larvae feed on *Betula*, *Corylus*, *Carpinus*, *Quercus mongolica*, *Populus*, *Sorbus*, *Cerasus*, *Crataegus*. Overwinters as pupa.

Distribution (Map 481). Eurasian, boreal. Russia to Ural, through S Siberia to the Far East, Sakhalin and S Kuriles. – Europe, Asia Minor, Transcaucasia, China, Korea, Japan.

Moma kolthoffi (Bryk, 1948)

(Pl. 22: 16; ♂ genit. Pl. 112: 1; ♀ genit. Pl. 182: 3)

Diphthera alpium kolthoffi Bryk, 1948 (subsp.), *Ark. Zool.* **41** (A) 1: 52, pl. 2: 9 (Type-locality: China: Prov. Jiangsu [Kiangsu], Chinkiang Mts).

Synonymy: *fulvicollis* de Lattin, 1949.

Diagnosis. Externally *M. kolthoffi* differs from *M. alpium* in stronger brown suffusion in terminal field on forewing and in brown borders of tegulae and patagia, which are black in its congeners. In male genitalia, cucullus distinctly narrower than in *M. alpium* and *M. tsushimana*, harpe finger-like, somewhat curved, not flattened as in related species. In female genitalia, antevaginal plate much shorter and broader than in related species, ductus bursae wider, corpus bursae shorter and more rounded.

Bionomics. Mesophilous. Together with preceding species, it inhabits woodlands, more common in open oak forests along the seashore in S Primorye. Univoltine. The moth flies from VI to VIII. Larvae feed on *Carpinus cordata* (Betulaceae). Overwinters as pupa.

Distribution (Map 482). Manchurian, nemoral. Far East (S Khabarovsk and Primorye terr., S Kuriles). – China, Korea, Japan (Hokkaido, Honshu).

Moma tsushimana Sugi 1982

(Pl. 22: 17, 18; ♂ genit. Pl. 112: 2; ♀ genit. Pl. 182: 4)

Moma tsushimana Sugi 1982, *Moths of Japan* **1**: 673; **2**: 345, pl. 165: 8, 9, pl. 538: 7 (Type-locality: Japan: Tsushima Isl., Nii).

Diagnosis. *M. tsushimana* differs from its congeners in more extensive black elements of wing pattern and distinct medial shade. In male genitalia, differs from *M. alpium* in somewhat wider valva, more expanded distally, broader cucullus and broader base of harpe. Female genitalia differ in shape of antevaginal plate with wider split, wider ductus and caudal part of bursae.

Bionomics. Mesophilous species, occurring sympatrically with the two preceding species in southern Primorye. More common in open oak forest. The moth flies in VII, early VIII. The larva and its foodplants are unknown.

Distribution (Map 483). Manchurian, nemoral. Far East (Primorye). – Korea, Japan (Tsushima I.), Taiwan.

Genus ***Gerbathodes*** Warren, 1911

Gerbathodes Warren, 1911, *in* Seitz, *Gross-Schmett. Erde* **3**: 175. Type-species: *Gerbatha angusta* Butler, 1879 [Japan].

Synonymy: *Acronictoides* Kozhantshikov, 1950.

Wingspan 34-38 mm. Antennae of both sexes ciliate; frons smooth; eyes large, naked; labial palps long, the 3rd segment rather long; M2 in hindwing reduced. Forewing grey-brown with whitish and black pattern. In male genitalia, uncus sickle-shaped; tegumen wide; juxta plate-like, weak; valva with parallel margins and short costal extension near rounded apex. Aedeagus large; vesica tubular, with short diverticula. In female genitalia, papillae anales quadrangular; anterior and posterior apophyses rather short, equal in length; antrum funnel-shaped, weakly sclerotised; ductus bursae long, thin, ribbed; corpus bursae saccate, almost equal to ductus, with one signum.

The genus includes 2 species, both of which occur in the Manchurian subregion of the Palaearctic. – 1 species.

Gerbathodes paupera (Staudinger, 1892)

(Pl. 22: 22, 5; ♂ genit. Pl. 111: 2; ♀ genit. Pl. 182: 5)

Craniophora paupera Staudinger, 1892 [July], in Romanoff, *Mém. Lépid.* **6**: 394 (Type-locality: Russia: "Raddefka" [Khabarovsk terr., Judish autonomy., Radde]).

Synonymy: *lichenodes* Graeser, 1892; *connexa* Leech, 1900; *ruvida* Berio, 1977.

Bionomics. Meso-xerophilous. Inhabits deciduous and oak forests. Probably bivoltine. The moth flies from late V to VIII. Larvae feed on oak, *Quercus mongolica* (Fagaceae).

Distribution (Map 484). Manchurian, nemoral. Transbaikalia, Far East to Primorye. – Korea, Japan (Hokkaido, Honshu), China, Taiwan.

Genus ***Craniophora*** Snellen, 1867

Craniophora Snellen, 1867, *Vlinders Nederland* **1867**: 262. Type-species: *Noctua ligustri* [Denis & Schiffermüller], 1775 [Austria].

Synonymy: *Bisulcia* Chapman, 1890; *Miracopa* Draudt, 1950; *Acronycta* auct.

Wingspan 28-42 mm. Externally similar to *Acronicta*. Antennae of male simple, short ciliate; frons smooth; labial palps short, compressed, the 3rd segment short; vein M2 in hindwing reduced. Forewing relatively wide, grey; wing pattern formed by waved lines, characteristic of the genus. In male genitalia, scaphium well expressed, uncus simple, in usually sickle-shaped, relatively short; tegumen narrow; juxta weak, plate-like; valva wide, lobe-like, rounded, weakly sclerotised, in some species with small, reduced corona or tilted on the apex; androconial apparatus in form of a tuft of dense hairs in special pockets in the base of sacculus in inner surface of valva; harpe absent. Aedeagus large, straight; vesica long, tubular, armed with patches of small spines, in some Oriental species with 2-3 very large spine-like cornuti. In female genitalia, papillae anales quadrangular; anterior and posterior apophyses of equal length; antrum funnel-shaped or not expressed; ductus moderate or long, thin, sometimes curved or coiled, in some species wide, membranous; corpus bursae saccate or elongated, without signa. Larvae feed mainly on Oleaceae.

The genus includes 19 species, distributed in Palaearctic, Oriental, Australian and Ethiopian regions. – 3 species.

Craniophora ligustri ([Denis & Schiffermüller], 1775)

(Pl. 24: 19, 20; ♂ genit. Pl. 112: 3; ♀ genit. Pl. 182: 6)

Noctua ligustri [Denis & Schiffermüller], 1775, *Ank. Syst. Werk Schmett. Wien.*: 70 (Type-locality: [Austria], Vienna district]).

Synonymy: *litterata* Panzer, 1804; *coronula* Haworth, 1809; *gigantea* Draudt, 1937; *carbolucana* Hartig, 1968.

Bionomics. Mesophilous species, common in wet lowland deciduous and mixed forest with ash trees and syringa in abundance. Uniovoltine, bivoltine in warm years. The moth flies from V to VIII. Larvae feed mainly on *Ligustrum*, *Syringa*, *Fraxinus* (Oleaceae); recorded also on Betulaceae, Corylaceae, Aceraceae, Elaeagnaceae, Viburnaceae. Overwinters as pupa.

Distribution (Map 485). Trans-Palaearctic, nemoral. European Russia, Far East, to Sakhalin and Primorye terr. – Europe, Near East, Caucasus and Transcaucasia, China, Korea, Japan.

Craniophora praeclara (Graeser, 1890)

(Pl. 24: 21, 22; ♂ genit. Pl. 112: 4; ♀ genit. Pl. 182: 7)

Acronycta praeclara Graeser, 1890, *Berl. ent. Z.* **35**, I: 74 (Type-locality: Russia: "Sidemi" [Primorye, Bezverkhovo], "Raddefka" [Khabarovsk terr., Judish Autonomy, Radde]).

Bionomics. Mesophilous species, occurring in lowland deciduous and mixed forest with abundance of ash trees and syringa. Rather common. Univoltine. The moth flies from mid VI to mid VIII. Larvae feed on *Syringa amurensis*, *Fraxinus rhynchophila*, *F. mandshurica* (Oleaceae). Overwinters as pupa.

Distribution (Map 486). Manchurian, nemoral. Far East, to Sakhalin and Primorye terr. – Korea, Japan (Hokkaido, Honshu), NE China.

Craniophora pacifica Filipjev, 1927

(Pl. 24: 22, 23; ♂ genit. Pl. 112: 5; ♀ genit. Pl. 182: 8)

Craniophora pacifica Filipjev, 1927 *Ann. Mus. Zool. Acad. Sci. d'l'URSS* **28**: 231, pl. 12: 8, 9 (Type-locality: Russia, "Sutschan" [Primorye, Partizansk]).

Synonymy: *kalgana* Draudt, 1931; *niveosparsa*: Kozhantschikov, 1950: 541, nec Matsumura, 1926, misident.

Bionomics. Mesophilous species, common in deciduous and mixed forest in valleys where syringa bushes are abundant. Univoltine. The moth flies in VI-VIII. Larvae feed on *Syringa amurensis*, *Fraxinus rhynchophila*, *F. mandshurica* (Oleaceae). Overwinters as pupa.

Distribution (Map 487). Manchurian, nemoral. Far East (S Khabarovsk and Primorye terr.). – Korea, Japan, NE China.

Genus ***Cranionycta*** de Lattin, 1949

Cranionycta Lattin, 1949, *Z. wien. ent. Ges.* 34: 108. Type-species: *Cranionycta oda* Lattin, 1949 [Russia, Primorye terr.].

Wingspan 28-34 mm. Externally similar to *Craniophora*. Antennae of male short ciliate; frons smooth; labial palps long, erect, with long 3rd segment; vein M2 in hindwing reduced. Forewing narrower than in *Craniophora*, grey, with wing pattern resembling that of *Craniophora*. In male genitalia, scaphium well expressed, heavily sclerotised, uncus simple, straight, in most cases relatively short; tegumen relatively wide; juxta plate-like; valva narrow with parallel margins, rounded at apex, with corona of irregular spines; androconial apparatus absent; harpe present, small or large, hook-like or absent. Aedeagus moderate, straight; vesica tubular, short, armed with one cornutus or row of several moderate cornuti. In female genitalia, papillae anales quadrangular; anterior and posterior apophyses equal; antrum funnel-shaped or not expressed; ductus long or short, sclerotised; corpus bursae saccate, with ribbed appendix bursae.

The genus includes 3 species, distributed in the Manchurian subregion of the Palaearctic and partly in the Oriental region. – 3 species.

Cranionycta jankowskii (Oberthür, 1880)

(Pl. 24: 25-27; ♂ genit. Pl. 112: 6; ♀ genit. Pl. 183: 1)

Apatela jankowskii Oberthür, 1880, *Étud. Ent.* **5**: 69, pl. 7: 1 (Type-locality: Russia: Primorye, Askold I.).

Diagnosis. *C. janowskii* is similar to *C. albonigra*, but differs in larger size, more contrasting and distinct wing pattern with waved crosslines, distinctly outlined orbicular and reniform stigmata and clear basal and subtornal streaks. In male genitalia, differs from *C. albonigra* in rather large, strongly curved harpe and in presence of a single wide, spine-like cornutus in vesica. Female genitalia differ from those of *C. albonigra* in much longer sclerotised ductus bursae and in shape of corpus bursae, with large appendix bursae.

Bionomics. Mesophilous species, inhabits rich, lowland deciduous forests, most common in areas where *Fraxinus* and *Syringa* are abundant. Univoltine. The moth flies from early VII to late VIII. In Japan, larvae have been reported on *Syringa reticulata*, *Fraxinus japonica* and *F. mandshurica* (Oleaceae). (Miyata 1983).

Distribution (Map 488). Manchurian, nemoral. Far East (Primorye, Sakhalin). – N China, Korea, Japan.

Cranionycta albonigra (Herz, 1904)

(Pl. 24: 28, 29; ♂ genit. Pl. 113: 1; ♀ genit. Pl. 183: 2)

Herz, 1904, *Ann. Mus. Zool. Acad. imp. Sci. St. – Pétersb.* **9**: 269, pl. 1: 3 (Type-locality: N Korea: 38. 5 N, 128 E).

Diagnosis. *C. albonigra* differs from *C. jankowskii* in smaller size, less distinct, diffuse wing pattern with more dentate crosslines, indistinct stigmata and basal and subtornal streaks. In male genitalia, harpe short, straight, vesica armed with row of 15-16 moderate cornuti. Female genitalia differ in shorter ductus bursae and smaller appendix bursae.

Bionomics. Mesophilous species, occurring together with preceding species in dense deciduous woodlands. Rather rare compared with *C. jankowskii*. Univoltine. The moth flies from early VII to late VIII. Early stages and foodplants unknown.

Distribution (Map 489). Manchurian–continental, nemoral. Far East (S Khabarovsk and Primorye terr., Sakhalin). – N China, Korea.

Cranionycta oda de Lattin, 1949

(Pl. 24: 30-32; ♂ genit. Pl. 113: 2; ♀ genit. Pl. 183: 3)

Cranionycta oda deLattin, 1949, *Z. wien. ent. Ges.* **34**: 108: 3 (Type-locality: Russia: "Sutschanskii rudnik" [Primorye, Partizansk]).

Synonymy: *transversa* Kozhantschikov, 1950; *inquieta* Draudt, 1950.

Bionomics. Mesophilous, rather common species, inhabits lowland deciduous and mixed forest. Univoltine. The moth flies from early VII to end VIII. The larva and its foodplants are unknown.

Distribution (Map 490). Oriental-Manchurian, nemoral. Far East (S Khabarovsk and Primorye terr., Sakhalin). – China, Korea, Japan (Honshu), Taiwan, Thailand, Nepal.

Genus ***Acronicta*** Ochsenheimer, 1816

Acronicta Ochsenheimer 1816 *Schmett Eur* 4 62. Type-species: *Phalaena leporina* Linnaeus, 1758 [Europe].

Synonymy: *Apatele* Hübner, [1806], suppr.; *Apatele* Hübner, [1808], suppr.; *Acronyctia* Meigen, 1813, misspell.; *Semaphora* Guenée, 1814; *Apatelae* Ochsenheimer, 1816, unavail.; *Apatele* Hübner, [1818], unavail.; *Triaena* Hübner, 1818 (subgen.); *Jocheaera* Hübner[1820] 1816 (subgen.); *Pharetra* Hübner, [1820] 1816, preocc. (Bolten, 1798 [Brachiopoda]); *Apatele* Hübner, 1822; *Acronycta* Treitschke, 1825, emend.; *Apatela* Stephens, 1829, misspell.; *Hyboma* Hübner, [1829] 1816 (subgen.); *Cometa* Sodoffsky, 1837, replacement name.; *Sematophora* Agassiz, [1848], emend.; *Cuspidia* Chapman, 1890; *Viminia* Chapman, 1890 (subgen.); *Chamaepora* Warren, 1909; *Molybdonycta* Sugi, 1979 (subgen.); *Hylonycta* Sugi, 1979 (subgen.); *Euviminia* Beck, 1966; *Aneuviminia* Beck, 1966; *Paraviminia* Beck, 1966; *Subacronycta* Kozhantshikov, 1950 (subgen.).

Wingspan 26-58 mm. Antennae of both sexes filiform, in male shortly ciliate; frons convex, rarely smooth; eyes large, naked; labial palps moderate, compressed, the 3rd segment short; vein M2 in hindwing reduced. Forewing relatively narrow, grey or grey-brown with black cryptic pattern often resembling bark of trees. In male genitalia, uncus straight or sickle-shaped; in some species scaphium expressed, sclerotised; tegumen relatively wide; juxta plate-like, variable in shape; valva usually with parallel margins, rounded at apex; sacculus rather massive, in distal part in most cases with sclerotised edge which continues as saccular extension, often separated from valva. Aedeagus large; vesica usually tubular, rarely globular, armed with moderate or short spine-like or plate-like cornuti. In female genitalia, papillae anales quadrangular; anterior and posterior apophyses moderate, antrum shallow, weakly sclerotised; ductus variable in length, often ribbed; corpus bursae saccate, almost equal to ductus, with a single signum. Larvae of most species feed on trees or bushy plants, in some subgenera on herbaceous plants; some are polyphagous.

The genus is subdivided into 9 subgenera: *Acronicta* Ochsenheimer, 1816, *Triaena* Hübner, 1818, *Hyboma* Hübner, [1820], *Jocheaera* Hübner, [1820], *Viminia* Chapman, 1890, *Molybdonycta* Sugi, 1979, *Hylonycta* Sugi, 1979 and *Plataplecta* Butler, 1878. The genus includes about 160 species distributed mainly in boreal zone of the Holarctic, with 63 species in the Palaearctic and 95 in the Nearctic. In the Palaearctic, most species are concentrated in the zone of broad-leaved forests of the Far East; few species are known from the Oriental and Ethiopian regions. – 24 species.

Subgenus ***Acronicta*** Ochsenheimer, 1816.

Medium sized moths, wing colour white or light-grey with characteristic *Acronicta*-type pattern of thin, black basal streak, subbasal and subterminal lines, reniform and orbicular stigmata and tornal streaks. In male genitalia, uncus sickle-shaped, valva lobed; juxta plate-like; sacculus small, rounded; harpe moderate, straight not exceeding costal margin of valva; clasper elongated, plate-like; process of sacculus not expressed. Aedeagus moderate; vesica tubular or bulbous, relatively large, characteristic according to subgenus, with field of small or moderate spine-like cornuti. In female genitalia, ovipositor quadrangular; ductus bursae short; corpus bursae long, in some species with sclerotisation in caudal part.

The subgenus it is most diverse in the Manchurian subregion. – 7 species.

Acronicta (*Acronicta*) *aceris* (Linnaeus, 1758)

(Pl. 22: 37; ♂ genit. Pl. 113: 3; ♀ genit. Pl. 183: 4)

Phalaena aceris Linnaeus, 1758, *Syst. Nat.* (Edn 10) **1**: 514 (Type-locality: Europe).

Synonymy: *candelisequa* Esper, 179; *infuscata* Haworth, 1809; *paradoxa* Boisduval, 1840; *calceata* Dannehl, 1929; *cazorlensis* Calle, 1982; *judaea* Staudinger, 1901; *aurica* Staudinger, 1901; *johanna* Schawerda, 1940; *rita* Rungs, 1972.

Bionomics. Mesophilous species, inhabits deciduous wet forest with poplar *Populus*. Bivoltine, with one generation in the north and two generations in the south. Part of population with two year life cycle. The moth flies from V to X. Larvae feed on trees, including *Acer*, *Aesculus*, *Juglans*, *Quercus*, *Fagus*, *Carpinus*, *Populus*, *Salix*, *Tilia*, *Ulmus*, *Fraxinus*. Overwinters as pupa, part of pupae overwinters twice.

Distribution (Map 491). Western Palaearctic, subboreal. Russia to Ural and W Siberia. – N Africa, Near East, Caucasus. Transcaucasia, Europe, Kazakhstan, Central Asia.

Acronicta (*Acronicta*) *leporina* (Linnaeus, 1758)

(Pl. 22: 33, 34; ♂ genit. Pl. 113: 4; ♀ genit. Pl. 183: 5)

Phalaena leporina Linnaeus, 1758, *Syst. Nat.* (Edn 10) **1**: 511 () (Type-locality: Europe).

Synonymy: *bicolor* Maasen, 1871; *bradyporina* Treitschke, 1816; *leucogaca* Stichel, 9181; *grisea* Cchreahe, 1906.

Bionomics. Mesophilous species, occurring in deciduous and mixed woodlands and in West Siberian forest-steppe birch forest. Inhabits wet biotopes, often near edges of marshes. Bivoltine, with one generation in the north and two generations in the southern areas. The moth flies from V to IX. Larvae feed mainly on *Betula pubescens*, *B. ermani*, *B. humilis* and rarely on *Alnus* (Betulaceae), also on *Populus*, *Salix*, *Quercus*, *Tilia*, *Ulmus*, *Pyrus*, *Acer*, *Fraxinus*. Overwinters as pupa.

Distribution (Map 423). European-West Asian, boreal. Russia to Ural and W Siberia. – Europe, Near East, Caucasus.

Note. In the Ural and West Siberia partially sympatric with *A. vulpina*.

Acronicta (*Acronicta*) *vulpina* (Grote, 1883)

(Pl. 22: 35, 36; ♂ genit. Pl. 113: 5; ♀ genit. Pl. 183: 6)

Apatela vulpina Grote, 1883, *Can. ent.* **15**: 8 (Type-locality: USA: New York).

Synonymy: *sancta* Edwards, 1888; *leporella* Staudinger, 1888 (subsp.); *cineracea* Graeser, 1888 [1889]; *leporina* auct., nec Linnaeus, 1758.

Diagnosis. *A. vulpina* differs from its sister species, *A. leporina*, in larger size and intense ash-grey, not white, wing colour; in wing pattern, orbicular indistinct or weakly expressed, not connected with costal margin; antemedial line partially distinct, divided into semilunar streaks, in tornal area more distinct, crossed by subtornal streak. In male genitalia, valvae somewhat narrower and longer, juxta wider and higher, harpe longer and thinner; vesica more bulbous, shorter than in *A. leporina* with smaller, but more numerous cornuti. Female genitalia differ in wider antrum and longer and thinner ductus bursae.

Bionomics. Mesophilous species, inhabits deciduous and mixed forest and coniferous taiga with poplar *Populus*. Bivoltine in southern areas. The moth flies in Primorye from late V to VII in one or two generations. Larvae feed on *Alnus hirsuta*, *Betula manshurica* (Betulaceae) and *Populus*, *Salix* (Salicaceae). Overwinters as pupa.

Distribution (Map 492). Holarctic (Siberian-Nearctic), boreal. From Mid Ural (Komi Autonomym Sviridov & Sedykh 2005) and W Siberia to the Far East (north to Kamchatka and Magadan). – Mongolia, Korea, Japan (Hokkaido, Honshu), China, N America.

Note. *A. vulpina* is represented in the Palaearctic by subspecies *leporella* Staudinger, 1888. The population in Upper Kolyma (Magadan region) differs from the other ones in dark-grey general colour.

Acronicta (*Acronicta*) *major* (Bremer, 1861)

(Pl. 22: 38, 39; ♂ genit. Pl. 114: 1; ♀ genit. Pl. 183: 7)

Acronycta major Bremer, 1861, *Bull. Acad. imp. Sci. St. – Pétersb.* **3**: 484 (Type-locality: Russia: "Ussuri, Ema" [Primorye terr.]).

Synonymy: *anaedina* Butler, 1881; *atritaigena* Dubatolov & Zolotarenko, 1995 (subsp.).

Bionomics. Mesophilous species, occurring in rich deciduous and mixed forest, in S Siberia, in montane taiga and birch forests. Univoltine. The moth flies in VI-VIII. Larvae feed on *Malus*, *Pyrus*, *Crataegus* (Rosaceae) and *Morus alba*, *M. nigra* (Moraceae). Overwinters as pupa.

Distribution (Map 493). Siberian-Manchurian, nemoral. S Siberia (Novosibirsk, Altai), Far East to Sakhalin and Kuriles. – China, Korea, Japan.

Note. The population from West Siberia was described as subspecies *atritaigena* Dubatolov & Zolotarenko, 1995; however, no morphological differences compared with the nominate Far Eastern population have been found.

Subgenus *Triaena* Hübner, 1818

Triaena Hübner, 1818, *Zutrage Samml. exot. Schmett.* **1**: 21. Type-species: *Triaena psi* Linnaeus, 1758 [Europe].

Medium sized moths, wing colour light-grey with characteristic pattern formed by thin black basal streak, subbasal and subterminal lines, reniform and orbicular stigmata, and tornal streak. In male genitalia, uncus moderate, juxta bifurcate, U-shaped; sacculus elongated; harpe moderate, straight or slightly curved, not exceeding costal margin of valva; clasper with additional harpe-like extension; dorso-ventral margin of sacculus with short triangular acute process, which is absent in some species. Aedeagus moderate; vesica tubular, relatively large, characteristic of the subgenus, with field of small conical or flattened cornuti. Female genitalia characterised by presence of sclerotised extension (appendix bursae) of various shapes in caudal part of corpus bursae. The subgenus is most diverse in the Manchurian subregion. – 7 species.

Acronicta (*Triaena*) *tridens* ([Denis & Schiffermüller], 1775)

(Pl. 23: 1, 2; ♂ genit. Pl. 114: 2; ♀ genit. Pl. 184: 1)

Noctua tridens [Denis & Schiffermüller], 1775, *Ank. Syst. Werk Schmett. Wien.*: 67 (Type-locality: [Austria], Vienna district]).

Synonymy: *kargalica* Moore, 1878; *soltowensis* Schultz, 1930; *obscurior* de Lattin, 1938.

Diagnosis. *A. tridens* differs from its congeners in somewhat larger size and stronger wing pattern with rather thick streaks, and grey-brownish suffusion in medial field and around streaks. In male genitalia, harpe, extension of clasper and saccular extension much stronger than in the related *A. cuspis*; saccular extension forms an obtuse angle to harpe, thinner and somewhat curved apically. In female genitalia, appendix bursae much shorter than in *A. cuspis*.

Bionomics. Mesophilous species, inhabits woodland and forest-steppe. Bivoltine. The moth flies from V-VI to late VIII- early IX. Larvae feed on various deciduous trees, including *Crataegus*, *Fagus*, *Quercus*, *Rosa*, *Malus*, *Padus*, *Pyrus*, *Sorbus*, *Betula*, *Salix*, *Alnus*, *Fraxinus*. Overwinters as pupa.

Distribution (Map 495). Eurasian, boreal. Russia to Ural, through S Siberia to the Far East to Sakhalin, Kurilea ans Kamchatka). – Europe, Near East, Caucasus, Transcaucasia, Kazakhstan, N Korea, Japan (Hokkaido), China.

Acronicta (*Triaena*) *cuspis* (Hübner, [1813])

(Pl. 23: 3, 4; ♂ genit. Pl. 114: 3; ♀ genit. Pl. 184: 2)

Noctua cuspis Hübner, [1813], *Samml. Eur. Schmett.* **4**: pl. 108: 504 (Type-locality: Europe).

Synonymy: *belgica* Draudt, 1931.

Diagnosis. *A. cuspis* differs from *A. tridens* in generally more grey-bluish tint, finer wing pattern, less developed brownish suffusion. In male genitalia, clasper-harpe complex more delicate than in *A. tridens*, but saccular extension much larger, triangular. In female genitalia, ductus bursae somewhat broader than in *A. tridens*, appendix bursae much larger.

Bionomics. Mesophilous species, occurring in various woodland habitats. The moth flies in VI-VIII. Larvae are polyphagous, feeding on various deciduous trees *Betula*, *Alnus*, *Corylus* (Betulaceae),*Sorbus* (Rosaceae), most common on *Alnus glutinosa*, *A. hirsuta*, *A. incana* (Betulaceae). Overwinters as pupa.

Distribution (Map 496). Trans-Palaearctic, boreal. Russia to Ural, through Siberia to the Far East (east to Sakhalin and Kuriles). – Africa, Europe, Near East, Caucasus and Transcaucasia, Central Asia, Korea, Japan (Hokkaido, Honshu), China.

Acronicta (*Triaena*) *intermedia* (Warren, 1909)

(Pl. 23: 5, 6; ♂ genit. Pl. 114: 4; ♀ genit. Pl. 184: 3)

Acronycta intermedia Warren, 1909 [February], in Seitz, *Gross-Schmett. Erde* **3**: 14, pl. 2: k, replacement name for *Acronycta increta* Butler, 1878.

Synonymy: *increta* Butler, 1878, nec Morrison, 1875; *incretata* Hampson, 1909; *jezoensis* Matsumura, 1925; *formosana* Matsumura, 1928.

Diagnosis. *A. intermedia* differs from its allies in more uniform-grey wing colour and finer wing pattern. In male genitalia, clasper-harpe complex is much more delicate than in *A. tridens* and *A. cuspis*, saccular extension very thin. In female genitalia, corpus bursae narrower than in related species; appendix bursae smaller than in *A. tridens* and *A. cuspis*.

Bionomics. Mesophilous species, occurring in deciduous and mixed forests, parks and gardens. Most common species of subgenus *Triaena*. Bivoltine. The moth flies from early VI to late VIII. Larvae feed on various trees, mainly on *Pyrus*, *Prunus*, *Malus* (Rosaceae), *Salix* (Salicaceae), *Alnus*, *Betula* (Betulaceae) and *Quercus* (Fagaceae). Overwinters as pupa.

Distribution (Map 497). Manchurian-Oriental, nemoral. Far East, to Sakhalin and Kuriles. – China, Korea, Japan, Taiwan, Vietnam, north Thailand.

Acronicta (*Triaena*) *leucocuspis* (Butler, 1878)

(Pl. 23: 7; ♂ genit. Pl. 115: 1; ♀ genit. Pl. 184: 4)

Acronycta leucocuspis Butler, 1878, *Ann. Mag. nat. Hist.* (5) **1**: 78 (Type-locality: Japan: Yokohama).

Synonymy: *sapporensis* Matsumura, 1926; *obsuta* Draudt, 1933.

Diagnosis. Compared with related species, *A. leucocuspis* can be recognised by less expressed streaks and characteristic diffuse whitish bordering of ante and submedial lines and streaks. In male genitalia, clasper-harpe complex smaller than in congeners, but rather massive; saccular extension short, tooth-like. In female genitalia, antrum very broad, ductus broad but short; appendix bursae huge, sclerotised, coiled.

Bionomics. Mesophilous species, inhabits valleys with wet deciduous forest. Probably bivoltine. The moth flies from VI to early IX. Larvae feed on *Alnus japonica* (Betulaceae) and other broad-leaved trees. Overwinters as pupa.

Distribution (Map 498). Manchurian, nemoral. Far East to Sakhalin. – China, Korea, Japan.

Acronicta (*Triaena*) *sugii* (Kinoshita, 1990)

(Pl. 23: 8; ♂ genit. Pl. 115: 2; ♀ genit. Pl. 184: 5)

Triaena sugii Kinoshita, 1990, *Tyô Ga*, **41** (3): 189: 1 (Type-locality: Japan: Nagano).

Diagnosis. *A. sugii* can be recognised by steel-grey forewing colour and pattern with reduced cross-lines, well expressed streaks. In male genitalia, valva relatively narrow; juxta U-shaped; clasper-harpe complex stronger than in *A. leucocuspis*; saccular extension longer and sharper than in *A. leucocuspis*. In female genitalia, appendix bursae much shorter than in allied species.

Bionomics. Mesophilous. Rather rare. Occurs in rich deciduous and mixed forest. Univoltine. The moth flies in VII and VIII. The larva and its foodplants are unknown.

Distribution (Map 499). Manchurian, nemoral. Far East (Primorye). – Korea, Japan (Hokkaido, Honshu).

Acronicta (*Triaena*) *psi* (Linnaeus, 1758)

(Pl. 23: 9-11; ♂ genit. Pl. 114: 3; ♀ genit. Pl. 184: 6)

Phalaena psi Linnaeus, 1758, *Syst. Nat.* (Edn 10) **1**: 514 (Type-locality: Europe).

Synonymy: *perisi* Calle, 1974; *tridens* Hübner, 1803, nec Denis &. Schiffermüller, 1775; *crassistriga* deLattin, 1938; *batnana* Draudt, 1931; *solimana* Draudt, 1938; *tehrana* Wiltshire, 1946; *altaica* Staudinger, 1901; *iliensis* Draudt, 1931.

Diagnosis. *A. psi* differs from its congeners in pale, more uniform whitish wing colour (the Uralian population differs in white colour of forewing) and much finer and more contrasting wing pattern. In male genitalia, valva somewhat shorter, clasper-harpe complex moderate; unlike in other species the saccular extension lacking. In female genitalia, appendix bursae smallest in the subgenus.

Bionomics. Mesophilous species, occurring in woodland and forest-steppe. In southern areas bivoltine. The moth flies in VI-VIII. Larvae polyphagous on various trees, including *Betula*, *Alnus*, *Quercus*, *Salix*, *Populus*, *Tilia*, *Ulmus*, *Carpinus*, *Pyrus*, *Prunus*, *Malus*, *Padus*, *Sorbus*. Overwinters as pupa.

Distribution (Map 500). Trans-Palaearctic, boreal. Russia to Ural, through S Siberia to the Far East (Amur reg., Sakhalin, Magadan reg.). – N Africa, Near East, Europe, Central Asia, Mongolia, China.

Subgenus *Jocheaera* Hübner, [1820] 1816

Jocheaera Hübner, [1820] 1816, *Verz. bekannter Schmett.*: 201. Type-species: *Phalaena alni* Linnaeus, 1767 [Europe].

Medium sized moths, wing colour brown-grey with characteristic dark brown suffusion in medial shade and along inner margin of wing. In male genitalia, uncus moderate, juxta plate-like, V-shaped; sacculus moderate; harpe curved, large, exceeding the costal margin of valva; the ventral margin of valva beyond harpe with wide, long sclerotised edge, quadrangular at apex, with short pointed extension on the tip. Aedeagus moderate; vesica tubular, relatively large, with field of moderate, thin cornuti. The subgenus includes one species in the forest zone of Palaearctic and its counterpart in Nearctic. – 1 species.

Acronicta* (*Jocheaera*) *alni (Linnaeus, 1767)

(Pl. 23: 12; ♂ genit. Pl. 115: 3; ♀ genit. Pl. 184: 7)

Phalaena alni (Linnaeus, 1758), *Syst. Nat.* (Edn 10) **1**: 501 (Type-locality: Europe).

Synonymy: *degener* [Denis & Schiffermüller], 1775; *intensiva* Draudt, 1937; *korealni* Bryk, 1948; *italica* Berio, 1961.

Bionomics. Meso-hygrophilous species, inhabits various woodland habitats, rather common in valleys with wet deciduous forest. Univoltine. Moths are on the wing in VI-VIII. Larvae are polyphagous on trees and shrubs, including *Quercus*, *Alnus*, *Populus*, *Betula*, *Carpinus*, *Corylus*, *Ulmus*, *Sorbus*, *Prunus*, *Malus*, *Pyrus*, *Crataegus*, *Rosa*, *Acer*. Overwinters as pupa.

Distribution (Map 501). Eurasian, subboreal. Russia to Ural, through S Siberia to the Far East and Sakhalin. – Europe, Near East, Caucasus, China, Korea, Japan.

Subgenus ***Hyboma*** Hübner, [1820] 1816

Hyboma Hübner, [1820] 1816, *Verz. bekannter Schmett.*: 200. Type-species: *Noctua strigosa* [Denis & Schiffermüller], 1775 [Europe].

Small moths, wing colour dark grey with black and white pattern, often with dark suffusion along inner margin. In male genitalia, uncus moderate, juxta mainly plate-like, V-shape; sacculus moderate, in distal part with short sclerotised extension or edge, which is not extend ventral margin of valva; valva rather short; almost equal to ventral extension of sacculus. Aedeagus moderate, wide; vesica tubular, relatively large, with several basal diverticula and armed with field of short or moderate cornuti. The subgenus is widely distributed in the deciduous forest zone of the Palaearctic, most species concentrated in the Manchurian subregion. *A. jozana* is tentatively included in the subgenus, but its systematic position requires revision.

Acronicta* (*Hyboma*) *adaucta (Warren, 1909)

(Pl. 23: 13; ♂ genit. Pl. 115: 4; ♀ genit. Pl. 185: 1)

Acronycta adaucta Warren, 1909, *in* Seitz, *Gross-Schmett. Erde* **3**: 16, pl. 3: e (Type-locality: Japan).

Synonymy: *phaedra* Hampson, 1910.

Bionomics. Mesophilous species, occurring in deciduous and mixed forest. Bivoltine. The moth flies from late V to late VIII. In Japan, larvae feed mainly on *Prunus*, *Malus*, *Pyrus* and *Sorbus* (Rosaceae) (Miyata 1983).

Distribution (Map 502). Manchurian, nemoral. ?Altai, Far East, to Sakhalin and Kuriles. – Korea, Japan, NE China.

Acronicta* (*Hyboma*) *strigosa
([Denis & Schiffermüller], 1775)

(Pl. 23: 14, 15; ♂ genit. Pl. 115: 5; ♀ genit. Pl. 185: 2)

Noctua strigosa [Denis & Schiffermüller], 1775, *Ank. Syst. Werk Schmett. Wien.*: 88 (Type-locality: [Austria], Vienna district]).

Synonymy: *favillacea* Esper, 1788; *terrigena* Graeser, 1892; *nigrescens* Barrington, 1896; *bryophiloides* Hormuzaki, 1891; *casparii* Staudinger, 1897; *sachalinensis* Matsumura, 1925.

Diagnosis. Externally, *A. strigosa* could be confused with *A. adaucta*, but it differs in smaller size, presence of yellow patch in the base of forewing and yellowish reniform stigma.

Bionomics. Mesophilous species, occurring in woodland and forest-steppe. In southern areas bivoltine with two overlapping generations. The moth flies from late V to VIII. Larvae polyphagous on various trees, including *Betula*, *Ligustrum*, *Rhamnus*, *Padus asiatica*, *Sorbus*, *Crataegus*, *Prunus domestica*, *P. cerasus*, *Pyrus*, *Malus*. Overwinters as pupa.

Distribution (Map 503). Eurasian, subboreal. S Russia to Ural, through S Siberia to the Far East, Sakhalin and Kuriles. – Europe, Caucasus and Transcaucasia, China, Korea, Japan.

Note.The holotype of *Acronicta terrigena* is illustrated on Pl. 23: 15.

Acronicta* (*Hyboma*) *jozana (Matsumura, 1926)

(Pl. 23: 16; ♂ genit. Pl. 115: 6; ♀ genit. Pl. 185: 3)

Acronycta jozana Matsumura, 1926, *Insecta matsum.* **1**: 1, pl. 1: 5 (Type-locality: Japan: Hokkaido, Jozankei).

Synonymy: *phaedriola* Draudt, 1931.

Bionomics. Mesophilous species, occurring in deciduous and mixed forest, more common in dry biotopes. Univoltine. The moth flies from early VI to VIII. Larvae feed on *Malus domestica* (Rosaceae) (Kozhanchikov 1950). Overwinters as pupa.

Distribution (Map 504). Manchurian, nemoral. Far East (Amur, S Khabarovsk and Primorye terr.). – Korea, Japan (Hokkaido, Honshu), China.

Subgenus ***Molybdonycta*** Sugi, 1979

Molybdonycta Sugi, 1979, *Tinea* **10** (24): 249. Type-species: *Acronycta* omorii Matsumura, 1926 [Type-locality: Japan, Hokkaido].

Medium sized moths, wing colour dark-grey, in fresh specimens with light violet tint. Characterised in male genitalia by relatively short and broad valva, plate-like bilobed harpe and wide juxta with large scobinate bilobation. Aedeagus short and thick, with apical end well sclerotised and spined, connected with sclerotised ribs on bulbous vesica; cornuti spinose or short, conical. In female genitalia, differing from other subgenera in sclerotised antrum, short and sclerotised ductus and presence of large, bulbous sclerotised bulla in caudal part of corpus bursae. The subgenus includes 2 species, both distributed in the Manchurian subgregion of the Palaearctic.

Acronicta* (*Molybdonycta*) *bellula
(Alphéraky, 1895)

(Pl. 23: 17, 18; ♂ genit. Pl. 116: 1; ♀ genit. Pl. 185: 4)

Acronycta bellula Alphéraky, 1895, *Dt. ent. Z. Iris* **10**: 189 (Type-locality: Russia: "Sidemi" [Primorye, Bezverkhovo]).

Synonymy: *cerasi* Howarth, 1951; *chingana* Draudt 1931 (subsp.).

Diagnosis. This and the next species differ well from their congeners in dark grey-violet colour of forewing. Externally, the coastal Far Eastern population is hardly distinguishable from *A. omorii*, but is clearly different from inland Transbaikalia and North China population, separated as subspecies *A. bellula chingana* Draudt 1931. This subspecies has more contrasting wing pattern and well expressed yellowish-brown elements of wing pattern on basal area, transverse lines, reniform and orbicular stigmata.

Bionomics. Mesophilous species, occurs in deciduous and mixed forests; in Transbaikalia in forest-steppe. The moth flies from mid VI to VIII. The larva and its foodplants are unknown. Overwinters as pupa.

Distribution (Map 505). Manchurian, nemoral. S Transbaikalia, Far East to Primorye. – NE Mongolia, Korea, China.

Note. The syntype of *A. bellula chingana* is illustrated on Pl. 23: 18.

Acronicta* (*Molybdonycta*) *omorii
(Matsumura, 1926)

(Pl. 23: 19; ♂ genit. Pl. 116: 2; ♀ genit. Pl. 185: 5)

Acronycta omorii Matsumura, 1926, *Insect. matsum.* **1**: 3, pl. 1: 2 (Type-locality: Japan, Hokkaido).

Diagnosis. Externally, *A. omorii* can hardly be separated from Far Eastern population of *A. bellula*. In male genitalia, it differs in more massive harpe-pollex complex, wider valva and structure of vesica, which has small plate-like cornuti; those in *A. bellula* are medium, spine-like combined with small plate like cornuti. In female genitalia, *A. omorii* differs from *A. bellula* in presence of huge postvaginal plate, structure of antrum and appendix bursae, which is apically separated from corpus bursae, while in *A. bellula* it is not separated.

Bionomics. Mesophilous species, in Russia known only from S Kuriles (Kunashir Is.). Occurring in deciduous and mixed forest. Moths collected in VII. The larva and its foodplants are unknown.

Distribution (Map 506). Japanese, nemoral. Islands of Russian Far East (S Kuriles, Kunashir Is.). – Japan (Hokkaido, Honshu).

Subgenus ***Hylonycta*** Sugi, 1979.

Hylonycta Sugi, 1979, *Tinea* **10** (24): 249. Type-species: *Acronycta carbonaria* Graeser, 1889 [1890 [Type-locality: Type-locality: Russia: Khabarovsk].

Synonymy: *Viminia* auct.; *Pharetra* auct.

Medium and large sized moths, wing colour dark or pale grey, wing pattern resembles bark of deciduous trees; in *A. carbonaria* the hindwing is yellow with black terminal band. In male genitalia, sacculus with extension developed into free, stout arm directed ventro-apically; harpe strongly incurved, extending beyond dorsal edge of valva; valva proper slightly restricted below cucullus, which is rounded or bilobed apically; juxta moderate. Aedeagus moderately long; vesica armed with fine conical cornuti. Larva naked, with finely granulate or spinulose skin; the chaetotaxy is characteristic of the group. The distribution of the members of the subgenus is limited to the deciduous forest zone in the Manchurian subregion of the Palaearctic. It includes four species: *A. carbonaria*, *A. subornata*, *A. catocaloida* and *A. hercules* (Sugi 1979). – 3 species

Acronicta* (*Hylonycta*) *carbonaria
(Graeser, [1890] 1889)

(Pl. 23: 20, 21; ♂ genit. Pl. 116: 5; ♀ genit. Pl. 185: 8)

Acronycta carbonaria Graeser, 1889 [1890], *Berl. ent. Z.* **33**, II: 252 (Type-locality: Russia: Khabarovsk).

Bionomics. Mesophilous, rather rare species, occurring in deciduous and mixed forest with *Quercus mongolica*. The moth flies in VII- early VIII. In Japan, larvae feed on evergreen oaks *Quercus serrata*, *Q. acutissima* (Fagaceae) (Sugi 1970; Miyata 1983).

Distribution (Map 507). Manchurian, nemoral. Far East (Primorye and S Khabarovsk terr.). – Korea, Japan (except Hokkaido).

Note. The holotype of *Acronicta carbonaria* illustrated on Pl. 23: 21.

Acronicta* (*Hylonycta*) *catocaloida
(Graeser, [1889] 1888)

(Pl. 23: 22; ♂ genit. Pl. 117: 1; ♀ genit. Pl. 186: 1)

Acronycta catocaloida Graeser, 1888 [1889], *Berl. ent. Z.* **32**, II: 313 (Type-locality: Russia: Khabarovsk).

Bionomics. Meso-xerophilous species, inhabits deciduous and oak forest, rarely occurring in mixed forest. Univoltine. The moth flies from late VI to VIII. Larvae feed on *Quercus mongolica* (Fagaceae). Overwinters as pupa.

Distribution (Map 508). Manchurian, nemoral. Far East, to Sakhalin and S Kuriles. – China, Korea, Japan.

Acronicta (*Hylonycta*) *hercules* (Felder & Rogenhofer, 1874)

(Pl. 23: 23, 24; ♂ genit. Pl. 117: 2; ♀ genit. Pl. 186: 2)

Acronycta hercules Felder & Rogenhofer, 1874, *Reise öst. Fregatte Novara* (Zool.). **2** (Abt. 2), pl. 109: 2 (Type-locality: Japan).

Bionomics. Mesophilous species, occurring in deciduous and mixed forest with *Ulmus*. Univoltine. The moth flies in VII-VIII. Larvae feed on *Ulmus japonica*, in Japan also on *Zelkova serrata* (Ulmaceae) (Miyata 1983). Overwinters as pupa.

Distribution (Map 509). Manchurian, nemoral. Far East (Amur, S Khabarovsk and Primorye terr.). – China, Korea, Japan, Taiwan.

Subgenus *Viminia* Chapman, 1890

Chapman, 1890 May, *Entomologist*'s *Rec. J. Var*. 1: 26. Type-species: *Phalaena rumicis* Linnaeus, 1758 [Europe].

Medium sized moths, wing colour dark grey with black or blackish wing pattern which is often diffuse; in *A. lutea* hindwing pale-yellow with black terminal band. In male genitalia, uncus moderate, juxta usually plate-like; sacculus moderate or rather massive, distally with short sclerotised saccular extension, which slightly exceeds ventral margin of valva, or is expressed as short triangle; harpe usually straight or slightly curved, not exceeding costal edge of valva. Aedeagus moderate, wide; vesica globular, armed with short or moderate cornuti and sclerotised plate. The subgenus is widely distributed in the deciduous forest zone of the Holarctic; in the Palaearctic most species occur in the Manchurian subregion.

Acronicta (*Viminia*) *menyanthidis* (Esper, [1789])

(Pl. 23: 25, 26; ♂ genit. Pl. 117: 3; ♀ genit. Pl. 186: 3)

Phalaena Noctua menyanthidis Esper, [1789], *Die Schmett. Abb. Nat*. **4**(2/1): 461, pl. 144, Noct. 65: 5 (Type-locality: Germany. Berlin).

Synonymy: *menyanthidis* Vieweg, 1790; *suffusa* Tutt, 1888; *scotica* Tutt, 1888; *arduenna* Gilmer, 1904; *fennica* deLattin, 1940.

Bionomics. Meso-hygrophilous species, inhabits woodland, wet deciduous and mixed forest, and edges of bogs with willows and birch scrub. Univoltine. Moths fly in VI-VII. Larvae feed mainly on *Myrica* (Myricaceae) *Calluna*, *Oxycoccus*, *Vaccinium* (Ericaceae), *Salix* (Salicaceae) *Betula* (Betulaceae); mature larvae feed also on species of Rosaceae, Asteraceae, Gentianaceae, Ranunculaceae, Juncaceae. Overwinters as pupa.

Distribution (Map 510). Eurasian, boreal. Russia to Ural, through Siberia to the Far East (Amur and Khabarovsk terr., north to Magadan reg.). – Europe.

Acronicta (*Viminia*) *auricoma* ([Denis & Schiffermüller], 1775)

(Pl. 23: 27, 28; ♂ genit. Pl. 117: 4; ♀ genit. Pl. 186: 4)

Noctua auricoma ([Denis & Schiffermüller], 1775, *Ank. Syst. Werk Schmett. Wien*.: 67 (Type-locality: [Austria], Vienna district]).

Synonymy: *lapathi* Schrank, 1801; *alpina* Tutt, 1888, nec Freyer, 1858; *similis* Haworth, 1809; *schwingenschussi* Zerny, 1926.

Bionomics. Meso-hygrophilous species, inhabits woodland and forest-steppe. Occurs in wet open forest, in edges of bogs, and among forest-tundra bushes. Univoltine, but in southern areas producing two generations in a year. Moths fly in VI-VII. Larvae polyphagous, mainly on *Betula* and *Salix*, and also on *Populus*, *Carpinus*, *Quercus*, *Sorbus*, *Prunus*, *Ulmus*, *Myrica*, *Rosa*, *Malus*, *Cerasus*, *Crataegus*, *Fraxinus*, and herbaceous Euphorbiaceae, Fabaceae, Lythraceae, Eleagnaceae, Lamiaceae, Dipsacaceae and Asteraceae. Overwinters as pupa.

Distribution (Map 511). Eurasian, boreal. Russia to Ural, through Siberia to Transbaikalai and the Far East (Amur and Khabarovsk reg., north to Magadan reg. and Chukotka). – Europe.

Acronicta (*Viminia*) *dahurica* Kononenko & Han, 2008

(Pl. 23: 29-32; ♂ genit. Pl. 117: 5; ♀ genit. Pl. 186: 5)

Acronicta dahurica Kononenko & Han, 2008, *Zootaxa* 1910: 47, figs 5, 6, 13, 16 (Type-locality: Russia, Transbaikalia, Burgen).

Diagnosis. Externally, *A. dahurica* resembles the dark form of *A. megacephala*, but has narrower forewings and darker, more monotonous blackish colour; it is related to the *A. auricoma* species group, but differs from *A. auricoma* and *A. menyanthides* in the more acute shape of forewing, black-greyish colour and diffuse forewing pattern. Male genitalia massive, with broad, apically extended and bifid uncus, larger harpe and much shorter extension of sacculus. The female genitalia differ from those of *A. auricoma* and *A. menyanthidis* in narrower antrum and longer and narrower ductus bursae.

Bionomics. Thermophilous species, occurring in warm habitats in deciduous forest and forest-steppe. Probably bivoltine. Moths collected in Primorye in early V and in VII in Transbaikalia. Early stages and foodplants unknown.

Distribution (Map 512). Manchurian–continental, boreal. Transbaikalia, Far East (W Primorye). – N China.

Note.The holotype and paratypes of *Acronicta dahurica* are illustrated on Pl. 23: 29, 32.

Acronicta (*Viminia*) *cinerea* (Hufnagel, 1766)

(Pl. 23: 33-37; ♂ genit. Pl. 118: 1, 2; ♀ genit. Pl. 186: 6)

Phalaena cinerea Hufnagel, 1766, *Berl. Mag.* **3**(3): 416 (Type-locality: Germany, Berlin).

Synonymy: *abscondida* Treitschke, 1835; myricae Guenée, 1814; *glaucoptera* Petersen.

Diagnosis. *A. cinerea* is usually smaller than its ally, *A. euphorbiae*. Apex of forewing less acute; forewing colour from light grey to dark-grey, usually a little darker than *A. euphorbiae*; postmedial line somewhat less jagged, lines and stigmata show less contrast. However, wing colour and pattern vary greatly between populations of both species. Most distinct character in male genitalia of *A. cinerea* is the shape of the subbasal diverticulum in vesica, which has two tips, whereas in *A. euphorbiae* there is only one; the field of cornuti in *A. cinerea* is less dense and consists of 30-40 spines, whereas in *A. euphorbiae* it is formed of 50-60 more dense spines. In female genitalia, ostium bursae is narrower in *A. cinerea*, ductus bursae is longer and more sclerotised.

Bionomics. Thermophilous species, occurring in steppe and forest-steppe. In southern areas bivoltine. The moth flies in late V-VI and in VII-IX. Larvae are polyphagous, feeding mainly on *Euphorbia cyparissias* (Euphorbiaceae), but reported also from Betulaceaee, Ericaceae, Salicaceae, Fabaceae, Scrophulariaceae and Asteraceae (Kozhanchikov 1950). Overwinters as pupa.

Distribution (Map 513). Western Palaearctic, subtemperate. Russia to S Ural, S Siberia to Altai and Baikal area. – N Africa, Europe, Near East, Central Asia, Kazakhstan.

Note. The problem of the taxonomy of the sibling species pair *A. cinerea* and *A. euphorbiae*, is not yet definitely resolved. Larval morphology suggests they are a single species with gradual transition of colour and pattern (Beck 1999, 2000), while other researchers consider them to be two distinct species, *A. euphorbiae* with Atlanto-Mediterranean distribution and the Euro-asiatic *A. cinerea* (Fibiger *et al*. 2009): After examination of vast European material and genitalia preparations in the collection of ZMHU and in ZISP, we conclude that only *A. cinerea* is known from the Asian part of Russia. No substantial differences were found between male and female genitalia of the material identified as *A. cinerea* from north Europe (Kullberg *et al*. 2001) and examined specimens from the south Ural, Altai and Irkutsk regions. *A. cinerea* is more common in Europe and European Russia and becomes rather rare east of the Ural.

Acronicta (*Viminia*) *rumicis* (Linnaeus, 1758)

(Pl. 24: 1, 2; ♂ genit. Pl. 118: 2; ♀ genit. Pl. 186: 7)

Phalaena rumicis Linnaeus, 1758, *Syst. Nat*. (Edn 10) **1**: 516 (Type-locality: Europe).

Synonymy: *diffusa* Walker, 1857; *sukriana* Gilmer; *alsinoides* Goest, 1903; *meridionalis* DannielL, 1925; *rumicina* Bryk, 1948; *alicis* Curtis, 1826; *euphrasiae* Sstephens, 1829 nec. Brahm, 1791; *pallida* Rotschild, 1920; *turanica* Staudinger, 1888; *oriens* Inoue & Sugi, 1958.

Bionomics. Mesophilous, eurytopic species, occurring in various open and wooded biotopes, often in ruderal areas. Bivoltine. The moth flies from late V to IX in two overlapping generations. Larvae are polyphagous, and have been recorded on a wide range of herbaceous and arboraceous plants from 52 botanical families, most commonly on Salicaceae, Fagaceae, Myricaceae, Rosaceae, Polygonaceae, Oleaceae, Caprifoliaceae, Ericaceae, Poaceae, Brassicaceae. Overwinters as pupa.

Distribution (Map 514). Trans-Palaearctic, boreal. Russia through Siberia to the Far East, northwards to Kamchatka and Magadan reg. – N Africa, Near East, Europe, Central Asia and Mongolia, China, Korea, Japan, N India.

Acronicta (*Viminia*) *lutea* (Bremer & Grey, 1852)

(Pl. 24: 3, 4; ♂ genit. Pl. 118: 3; ♀ genit. Pl. 186: 8)

Acronycta lutea Bremer & Grey, 1852, in Motschulsky, *Études ent*. **1**: 65 (Type-locality: China: Beijing).

Synonymy: *leucoptera* Butler, 1881; *suigensis* Matsumura, 1926; *metaxantha funesta* Draudt, 1950.

Bionomics. Mesophilous species, inhabits various types of open forest, and found among bushes, in meadows, in edges of marshes, and in fields of soya bean. Univoltine. The moth flies from VI to VIII. Larvae are polyphagous on various arboraceous and herbaceous plants, mainly Salicaceae, Betulaceae, Polygonaceae, Myricaceae, Rosaceae, Fabaceae; recorded as secondary pest of soya bean *Glycine max*. Overwinters as pupa.

Distribution (Map 515). Manchurian, nemoral. S Siberia, Transbaikalia, Far East to Sakhalin. – Mongolia, China, Korea, Japan (Honshu).

Acronicta (*Viminia*) *digna* (Butler, 1881)

(Pl. 24: 5, 6; ♂ genit. Pl. 118: 4; ♀ genit. Pl. 187: 1)

Thalpophila digna Butler, 1881, *Trans. ent. Soc. Lond*. **1881**: 176 (Type-locality: Japan: Yokohama).

Synonymy: *michael* Oberthür, 1884; *hoenei* Matsumura, 1926; *agnata* Draudt, 1937; *metaxantha* Hampson, 1909.

Bionomics. Mesophilous species, occurring in open wet forest, in marshes, among bushes and in meadows along rivers. Univoltine. The moth flies from VI to VIII. Larvae polyphagous on various herbaceous plants. In Japan, *Polygonum cuspidatum* and *Iris laevigata* have been reported as foodplants (Miyata 1983).

Distribution (Map 516). Manchurian, nemoral. Yakutia, Transbaikalia, Far East to Primorye. – Korea, Japan (Honshu, Shikoku, Kyushu), China, Taiwan.

Acronicta (*Viminia*) *raphael* (Oberthür, 1884)

(Pl. 24: 7, 8; ♂ genit. Pl. 118: 5; ♀ genit. Pl. 187: 2)

Acronycta raphael Oberthür, 1884, *Étud. Ent*. **10**: 19, pl. 2: 9 (Type-locality: Russia: "Sidemi " [Primorye, Bezverkhovo]).

Synonymy: *fixseni* Graeser, 1888 [1889]; *raphaelis* Hampson, 1908; *cubitata* Warren, 1914.

Bionomics. Mesophilous species, occurring in wet deciduous forests, in edges of marshes, in boggy riversides. Univoltine. The moth flies from VI to VIII. Larvae are polyphagous on various herbaceous plants; recorded as a pest of soya bean *Glycine max*.

Distribution (Map 517). Manchurian, nemoral. Far East (Amur, S Khabarovsk and Primorye terr.). – Korea, Japan (Honshu, Shikoku, Kyushu), China.

Subgenus ***Subacronicta*** I Kozhanchikov, 1950

Subacronicta Kozhanchikov, 1950, *Fauna SSSR* (Insecta) Lepid. **12**: 456. Type-species: *Noctua megacephala* [Denis & Schifiermuller], 1775 [Austria].

Wingspan 36-42 mm. Antennae of male shortly ciliate; frons strongly convex, with rounded wide extension; labial palps moderate, compressed, the 3rd segment very short; areole in forewing very narrow, vein M2 in hindwing strongly reduced. Forewing relatively wide; wing colour grey, or dark grey. In male genitalia, uncus straight, relatively short; tegumen relatively short and narrow; juxta plate-like, valva usually with almost parallel margins, its ventral side slightly concave in middle, rectangular at apex; sacculus rather massive; harpe small, situated in the depression in distal third of the valva; tip of valva with straight, pointed hook-like extension. Aedeagus moderate, straight or curved; vesica globular, armed with moderate spine-like cornuti. In female genitalia, papillae anales quadrangular; anterior apophyses twice as long as posterior ones; antrum rather long, sclerotised, ribbed; ductus very short; corpus bursae saccate, without signa. Larvae feed on Salicaceae

The subgenus includes 6-8 species, distributed in the temperate and subboreal zones of the Palaearctic. – 2 species.

Acronicta* (*Subacronicta*) *concerpta (Draudt, 1937)

(Pl. 24: 9, 10; ♂ genit. Pl. 116: 3; ♀ genit. Pl. 185: 7)

Acronycta concrepta Draudt, 1937, *Ent. Rdsch.* **30**: 398, pl. 4: 2e (Type-locality: China: Prov. Shensi, Tsinling).

Synonymy: *megacephala* auct.

Diagnosis. Externally, *A concerpta* differs slightly from the allied *A. megacephala* in paler and more uniform ash-grey colour of forewing and less contrasting wing pattern. In male genitalia, valva somewhat narrower, harpe smaller; the aedeagus straight, not arched as in *A. megacephala*; vesica with longer and more numerous cornuti.

Bionomics. Mesophilous species, occurring in deciduous and mixed forest with *Populus davidiana* and in dark coniferous taiga. The moth flies from late VI to VIII. Larvae feed on willows *Salix* and poplar *Populus davidiana* (Salicaceae). Overwinters as pupa.

Distribution (Map 518). East Palaearctic, boreal. N Ural (Komi), S Siberia, Far East, northwards to Kamchatka and Magadan reg. – Japan (Hokkaido), China.

Acronicta* (*Subacronicta*) *megacephala ([Denis & Schiffermüller, 1775])

(Pl. 24: 11, 12; ♂ genit. Pl. 116: 4; ♀ genit. Pl. 185: 8)

Noctua megacephala [Denis & Schiffermüller, 1775], *Ank. Syst. Werk Schmett. Wien.*: 67 (Type-locality: Austria, Vienna).

Synonymy: *rumicis* Esper, 1786, nec Linnaeus, 1758; *schlumbergi* Schultz, 1906; *warpachowskii* Krulikowsky, 190; *dungerni* Rangnow, 1935; *albidior* Wagner, 1923; *ankarensis* Hering, 1933; *gdyrensis* Teich, 1901.

Bionomics. Mesophilous species, occurring in woodland habitats with *Populus tremula*. The moth flies from late VI to VIII. Larvae feed on *Betula*, *Alnus*, *Salix* and *Populus*, reported also on *Quercus* and *Rubus*. Overwinters as pupa.

Distribution (Map 519). Western Palaearctic, boreal. Russia to Ural. – N Africa, Near East, Transcaucasia, Europe.

Genus ***Simyra*** Ochsenheimer, 1816.

Simyra Ochsenheimer, 1816, *Schmett. Eur.* **4**: 81. Type-species: *Noctua nervosa* [Denis & Schiffermüller], 1775 [Austria].

Synonymy: *Cnephata* Billberg, 1820, replacement name; *Symira* Hübner, [1822] 1821, misspell.; *Asema* Sodoffsky, 1837, replacement name; *Nimya* Guenée, 1841, misspell.; *Arsilonche* Lederer, 1857; *Ablepharon* Grote, 1873; *Siymra* Warren, 1912, misspell.; *Ommatostolidea* Benjamin, 1933; *Parasimyra* Beck, 1996.

Wingspan 28-32 mm. Antennae of male filiform, serrate or pectinate; frons smooth; eyes large, naked; labial palps short, directed forward, the 3rd segment very short; proboscis reduced, short; vein M2 in hindwing reduced. Forewing narrow, pointed, often lanceolate; wing colour pale yellowish-grey, greyish-white or silvery white, pattern often reduced to thin lines along veins. Male genitalia very similar to those of some species of *Acronicta* subgenus *Viminia*. Uncus moderate, sometimes thick; juxta wide, plate-like, valva moderate, wide, rounded distally; harpe large; sacculus with short extension along ventral margin of valva, or expressed as short triangle expanding distally of harpe. Aedeagus moderate, wide; vesica globular, armed with moderate cornuti and sclerotised plate. In female genitalia, papillae anales quadrangular, posterior apophyses equal in length or twice as long as anterior ones; antrum not sclerotised or ribbed, moderate in length or short, corpus bursae saccate, in some species with signum.

The genus includes 12 species distributed in the Palaearctic, Nearctic and partly in Oriental region. – 5 species.

Simyra nervosa ([Denis & Schiffermüller], 1775)

(Pl. 24: 13- 15; ♂ genit. Pl. 119: 1; ♀ genit. Pl. 187: 3)

Noctua nervosa [Denis & Schiffermüller], 1775, *Ank. Syst. Werk Schmett. Wien.*: 85 (Type-locality: [Austria], Vienna district]).

Synonymy: *oxyptera* Esper, [1788]; *argentacea* Herrich-Schäffer, 1848; *torosa* Guenée, 1852; *argentea* Spuler, 1901-1908; *expressa* Bang-Haas, 1912.

Bionomics. Xero-thermophilous. Inhabits dry warm steppe. Univoltine in the north, bivoltine in southern areas. The moth flies in IV-V and again in VI-VIII. Larvae feed mainly on *Euphorbia* (Euphorbiaceae), recorded also on *Rumex* (Polygonaceae), *Statice latifolia*, *S. sareptana* (Plumbaginaceae), Crassulaceae, Linaceae, Asteraceae, Juncaceae and *Beckmannia eruciformis* and *Elytrigia repens* (Poaceae). Overwinters as pupa.

Distribution (Map 520). West Palaearctic, subboreal. S Russia to Ural, S Siberia to Transbaikalia.

– C and S Europe, Near East, Central Asia, Kazakhstan, Mongolia.

Simyra splendida Staudinger, 1888

(Pl. 24: 16; ♂ genit. Pl. 119: 2; ♀ genit. Pl. 187: 4)

Simyra splendida Staudinger, 1888, *Stettin. ent. Ztg* **49**: 245 (Type-locality: Russia: Vladivostok).

Synonymy: *niveonitens* Graeser 1888 [1889]; *alsima* Bryk, 1941.

Bionomics. Meso-xerophilous species, occurring in open deciduous forests, meadows, steppe biotopes, around marshes and other open, wet habitats. Univoltine. The moth flies from VII to beginning of IX. Larvae feed on *Artemisia vulgaris*, *Cirsium arvense*, *Taraxacum* (Asteraceae) (Bubnova 1982).

Distribution (Map 521). East Palaearctic, subboreal. S Siberia (Altai), Krasnoyarsk terr, Baikal area, Transbalkalia, Far East (Khabarovsk and Primorye terr.). – Kazakhstan, Mongolia, China, Korea.

Simyra albovenosa (Goeze, 1781)

(Pl. 24: 17, 18; ♂ genit. Pl. 119: 3; ♀ genit. Pl. 187: 5)

Phalaena, *Noctua albovenosa* Goeze, 1781,*Ent. Beitr.* **3**(3): 251 (Type-locality: [Europe]).

Synonymy: *venosa* Borkhausen, 1792; *degener* Hübner, 1808; *atomima* Haworth, 1809; *africana* Rungs, 1956; *centripuncta* Herrich-Schäffer, 1856; *cretacea* Wagner, 1929; *tanaica* Alphéraky, 1908; *tjurana* Draudt, 1936.

Bionomics. Hygro-thermophilous species, occurring locally in wet meadows, around lakes, on boggy river sides, in marshes. Bivoltine in southern areas. The moth flies in mid V-VII and again in VIII -early IX. Larvae feed mainly on hygrophilous monocotyledonous plants, including *Carex*, *Scirpus*, *Eriophorum*, *Typha*, *Elymus*, *Glyceria*, *Arundo*, *Elymus*, *Phragmites*, *Iris*, recorded also on Polygonaceae, Caryophyllaceae, Primulaceae, Salicaceae, Euphorbiaceae, Fabaceae, Menyanthaceae, Asteraceae, Apiaceae. Overwinters as pupa.

Distribution (Map 522). European-West Asian, subtemperate. Russia to S Ural. – Europe, Near East, Caucasus, Transcaucasia, Kazakhstan.

Simyra saepestriata (Alphéraky, 1895) **stat. rev.**

(Pl. 24: 19, 20; ♂ genit. Pl. 119: 4; ♀ genit. Pl. 187: 6)

Simyra albovenosa saepistriata (Alphéraky, 1895), *Dt. ent. Z. Iris* **8**: 188, (Type-locality: Mongolia, Ourga [Ulan Baator]).

Synonymy: *saepistriata* Hampson, 1909, missp.

Diagnosis. Externally, hard to separate from *S. albovenosa*; it has slightly darker colour and more contrasting forewing pattern. Male genitalia, differ in structure of vesica, in which the medial diverticulum has a patch of medium sized cornuti. Female genitalia, differ from those of *A. albovenosa* in stronger and longer anterior and posterior apophyses, thinner but longer ductus bursae, wider corpus bursae and presence of sclerotised signum in corpus bursae.

Bionomics. Xero-thermophilous species, occurring locally in steppe biotopes, wet meadows, and around marshes. The moth flies in mid VIII -early IX. Foodplants of larva unknown, probably monocotyledonous plants as in preceding species.

Distribution (Map 523). East Palaearctic, subtemperate. Altai, Tuva, Transbaikalia, Sakhalian and S Kuriles (Kunashir and Shikotan Is.). – Central Asia, Mongolia, N China, Japan (Hokkaido).

Note. *S. saepestriata* was referred to in the literature for Asian part of Russia and neighbouring countries as its Western-Palaearctic sister species, *S. albovenosa*.

Simyra dentinosa Freyer, 1839

(Pl. 24: 21, 22; ♂ genit. Pl. 119: 5; ♀ genit. Pl. 187: 7)

Simyra dentinosa Freyer, 1839, *Neue Beitr. Schmett. Kde.*: 97, pl. 263: 2, 3 (Type-locality: [Europe]).

Synonymy: *tendinosa* Herrich-Schäffer, 1855; *leucaspis* Fischer de Waldheim, 1840; *zeliha* Korsonor & Lödl, 199.

Bionomics. Xero-thermophilous species, occurring locally in dry sandy steppe and semi-deserts. Bivoltine with one or two generations. The moth flies from late IV to V, in southern areas from III. Larvae feed on *Euphorbia myrsinites*, *E. gerardiana*, *E. macroclara* and *E. esuloides* (Euphorbiaceae). Overwinters as pupa.

Distribution (Map 524). West Palaearctic-Central Asian subboreal. S Russia, S Ural. – N Africa, S Europe, West Kazakhstan, Caucasus and Transcaucasia, Near East, Central Asia.

Genus ***Oxicesta*** Hübner, [1819] 1816

Oxicesta Hübner, [1819] 1816, *Verz. bekannter Schmett.*: 144. Type-species: *Noctua geographica* Fabricius, 1787 [Austria].

Wingspan 23-27 mm. Closely related to *Simyra*. Antennae of male pectinate, lamellate; frons smooth; eyes large, naked; labial palps short, directed forward, the 3rd segment relatively long; proboscis reduced, vein M2 in hindwing developed. Forewing rather wide, yellowish-brown, pattern represented by dentate submedian and subterminal lines and streaks. Male genitalia similar to those of *Simyra* and some species of *Acronicta* subgenus *Viminia*. Uncus thick, short; juxta wide, plate-like, U-shaped; valva rather short and wide, rounded distally; harpe large; sacculus with short extension slightly exceeding ventral margin of valva. Aedeagus short, wide; vesica globular without cornuti. In female genitalia, papillae anales quadrangular, anterior apophyses twice as long as posterior ones; antrum not sclerotised, ductus bursae rather long, corpus bursae elongated, without signa.

The genus includes 3 species distributed mainly in the steppe zone of West Palaearctic. – 1 species.

Oxicesta geographica (Fabricius, 1787)

(Pl. 24: 23, 24; ♂ genit. Pl. 120: 1; ♀ genit. Pl. 188: 1)

Noctua geographica Fabricius, 1787, *Mant. Insect.* **2**: 167.

Synonymy: *sericina* Hübner, 1790; *austera* Esper, [1791].

BIONOMICS. Xero-thremophilous steppe species, it inhabits hot sand steppe and calcareous slopes. Bivoltine. The moth flies from late IV to VI and from VII to X. Larvae in VI-VII and VIII-X, feeding on *Euphorbia cyparissias*, *E. esula*, *E. lucida* (Euphorbiaceae) and *Linaria* (Scrophulariaceae). Overwinters as pupa.

DISTRIBUTION (Map 525). Euro-Central Asian, subboreal. S Russia, S Ural. – S Europe, Near East, Central Asia.

Genus ***Eogena*** Guenée, 1852

Eogena Guenée, 1852, *in* Boisduval & Guenée, *Hist. nat. Insectes* (Lepid.) **5**: 340. Type-species: *Noctua contaminei* Eversmann, 1847 [Russia, Volga reg.].

Wingspan 32-34 mm. Close to *Simyra*. Antennae of male filiform, ciliate; frons smooth; eyes small, naked; labial palps short, directed forward, the 3rd segment short; proboscis reduced, vein M2 in hindwing reduced. Forewing rather wide, pinkish-red, pattern reduced. Male genitalia very similar to *Simyra*. Uncus thick, short; juxta wide, anchor-shaped; valva tapered distally; harpe large; sacculus with short extension slightly exceeding ventral margin of valva. Aedeagus short, wide; vesica globular with basal diverticula, armed with moderate spine-like and plate-shaped cornuti. In female genitalia, papillae anales quadrangular, anterior and posterior apophyses equal in length; antrum wide, not sclerotised, ductus bursae narrow and short, corpus bursae saccate, without signa. Monotypic genus.

Eogena contaminei (Eversmann, 1847)

(Pl. 24: 25, 26; ♂ genit. Pl. 120: 2; ♀ genit. Pl. 188: 2)

Noctua contaminei Eversmann, 1847, *Bull. Soc. imp. Nat. Mosc.* **20** (3): 77, pl. 5: 6 (Type-locality: S Russia, Sarepta).

SYNONYMY: *bombycina* Ménétriés, 1859, 1847; *eogene* Freyer, 1852.

BIONOMICS. Xero-thermophilous steppe species, ocurring locally in dry steppe habitats, saline lands, and salt-marshes. Rather rare and local. Univoltine. The moth flies in IV-V. Larvae feed on *Limonium meyeri*, *Statice gmelini*, *S. tomentella* (Plumbaginaceae). Overwinters as pupa.

DISTRIBUTION (Map 526). West Asian, subboreal. S Russia (Volga area), S Ural. – Transcaspian, Near East.

28. Subfamily **Agaristinae** Herrich-Schäffer, [1858]

Agaristides Boisduval, 1833, *Nouv. Annls Mus. Hist. Nat.* (Paris) 2: 218. Type genus: *Agarista* Leach, 1814.

SYNONYMY: Agaristoidea Herrich-Schäffer, [1858] 1850–8; Agaristiden Herrich-Schäffer, [1858] 1850–8; Agaristidae Walker, [1865] 1864.

Moths of medium and large size, wingspan 30-70 mm. Wing colour and pattern usually bright, hindwing yellow or orange. Antenna of male in some genera club-like extended distally, ciliate or serrate, in other genera normal, filiform; eyes large, rounded, naked; ocelli present; frons often with conical protuberance; labial palps short, compressed, the 3rd segment long, stick-like, club-like or short; proboscis developed; tibia without spines; tympanal organs of noctuoid type; venation trifine: M2 in hindwing weak, much thinner than M1 and M3; in some genera coremata present. Tympanal bullae fused laterally throughout their length. In male genitalia, anal tube sometimes long, scaphium developed, sclerotised; uncus short, moderate or very long; valva lobe-like, cucullus not separated, in most genera with corona; sacculus narrow, clasper elongated, harpe often situated along ventral margin. Aedeagus often with sclerotised band in vesica; muscle m2 well developed, m4 fixed to paratergal sclerites. In female genitalia, posterior apophyses 1.5-2 times longer than posterior ones; corpus bursae and ductus bursae membranous; ductus seminalis often inserted in ductus bursae. Moths active by day and dusk, and many species fly at night. Larvae feed on trees and shrubs, many species of Vitaceae.

Agaristinae was treated as distinct family by early authors; currently it is considered to be a subfamily of Noctuidae. The subfamily includes about 600 species, mainly in tropical and subtropical regions of the Old and New Worlds. About 25 species of 11 genera are known from the Palaearctic, distributed mainly in the Sino-Himalayan and Manchurian subregions. – 3 genera and 4 species.

REFERENCES: Strand 1912; Kiriakoff 1977; Sugi 1982a; 1987; Kononenko 1987, 2003.

Genus ***Mimeusemia*** Butler, 1875

Mimeusemia Butler, 1875, *Ann. Mag. nat. Hist.* (4) **15**: 397. Type-species: *Mimeusemia persimilis* Butler, 1875 [Japan].

Wingspan 46-50 mm. Antennae of male club-like, extended distally; frons with blunt conical protuberance; labial palps erect, 1st and 2nd segments covered with dense hairs, 3rd segment equal to 2nd, naked. Male genitalia extremely large; uncus massive, very long, basally curved, apically pointed; anal tube with large, massive scaphium; tegumen very high, about 2.5 - 3 times higher than vinculum; valva large, massive, triangular, distally with a lobe-like extension, covered with short, dense setae; harpe relatively short, slightly curved. Aedeagus small; vesica tubular, strong, short, without cornuti, curved at 90°. In female genitalia, papillae anales acute, anterior and posterior apophyses sclerotised, equal in length; antrum cup-shaped; ductus bursae long, narrow; corpus bursae rounded; ductus seminalis inserted in ductus bursae.

The genus includes 32 species distributed mainly in the Oriental region. – 1 species.

Mimeusemia persimilis Butler, 1875

(Pl. 24: 27, 28; ♂ genit. Pl. 120: 3; ♀ genit. Pl. 188: 3)

Mimeusemia persimilis Butler, 1875, *Ann. Mag. nat. Hist.* (4) **15**: 397 (Type-locality: Japan: Hokkaido, Hakodate).

BIONOMICS. Mesophilous species, rare in Primorye and Khabarovsk terr., but rather common in S Kuriles (Kunashir Is.). Occurs in various types of woodland. The moth flies by day from late VI to early VIII. Larvae feed on *Cayaratia japonica* (Vitaceae) and *Actinidia arguta* (Actinidiaceae) (Matsuura 1997).

DISTRIBUTION (Map 527). Manchurian, nemoral. Russian Far East (S Khabarovsk and Primorye terr., S Kuriles: Kunashir Is.). – China, Korea, Japan.

Genus ***Sarbanissa*** Walker, 1865

Sarbanissa Walker, 1865, *List Specimens lepid. Insects Colln Br. Mus.* **33**: 746. Type-species: *Sarbanissa insocia* Walker, 1865 [India].

SYNONYMY: *Seudyra* Stretch, 1875; *Zalissa* auct.

Wingspan 36-45 mm. Antennae filiform; frons with acute or blunt conical protuberance; labial palps short, 3rd segment short or elongated, stick-like, 1.5 times longer than 2nd. In male genitalia, some species with sclerotised scaphium; uncus moderate, slightly curved, tegumen and vinculum normal; valva elongated, with parallel margins, sometimes curved in distal third, corona formed by regular row of setae; sacculus narrow and long; harpe thin, stick-like, straight, sometimes absent. Aedeagus short; vesica tubular, strong, short, without cornuti or with stick-like cornutus. In female genitalia, papillae anales elongated, acute; apophyses heavily sclerotised, anterior apophyses 1.5 times longer than posterior ones; antrum membranous, wide, or small, cup-shaped; ductus seminalis thin, relatively long; corpus bursae saccate; ductus seminalis inserted in ductus bursae.

The genus includes 29 species distributed in the Oriental region and the Manchurian subregion of the Palaearctic. – 2 species.

Sarbanissa subflava (Moore, 1877)

(Pl. 24: 29, 30; ♂ genit. Pl. 120: 4; ♀ genit. Pl. 188: 4)

Seudyra subflava Moore, 1877, *Ann. Mag. nat. Hist.* (**4**) 20: 85 (Type-locality: China: prov. Zhejiang [Chekiang].

SYNONYMY: *jankowskii* Alphéraky, 1897; *japonica* Bytinsky-Salz, 1939.

BIONOMICS. Mesophilous species, occurring in deciduous forests. The moth flies by day and is also attracted to light. Flight period in VII-VIII. In Japan, larvae feed on *Parthenocissus tricuspidata*, *Vitis vinifera*, *Ampelopsis brevipedunculata*, *Cayaratia japonica* (Vitaceae) (Miyata 1983).

DISTRIBUTION (Map 528). Manchurian, nemoral. Far East (Primorye terr.). – China, Korea, Japan, Taiwan.

NOTE.The holotype of *zalissa jankowskii* is illustrated on Pl. 24: 31.

Sarbanissa venusta (Leech, 1889)

(Pl. 24: 31, 32; ♂ genit. Pl. 120: 5; ♀ genit. Pl. 188: 5)

Seudyra venusta Leech [1889], *Proc. zool. Soc. Lond.* **1888**: 614, pl. 31: 2 (Type-locality: Japan).

BIONOMICS. Mesophilous species, occurring in humid valleys with dense deciduous or mixed forest with lianas of *Vitis*. The moth flies at night, attracted to light; locally rather common. The flight period is from mid VII to late VIII. Larvae feed on *Vitis amurensis* (Vitaceae). Probably overwintering as pupa.

DISTRIBUTION (Map 529). Manchurian, nemoral. Far East (S Khabarovsk and Primorye terr.). – China, Korea, Japan.

Genus ***Asteropetes*** Hampson, 1901

Asteropetes Hampson, 1901, *Cat. Lepid. Phalaenae Br. Mus.* **3**: xviii, 605 [Type-species: Japan, Hokkaido].

Wingspan 36-38 mm. Antennae filiform; frons with conical protuberance; labial palps elongated, 3rd segment 1.5 times longer than 2nd, with club-like extension. In male genitalia, uncus short, tegumen high, twice height of vinculum, with wide "shoulders"; valva lobe-like, with parallel margins, corona formed by irregular rows of setae; sacculus small; harpe short, oblique, straight; Aedeagus short, with sclerotised carina; vesica bulbous, short, without cornuti. In female genitalia, papillae anales elongated, acute; apophyses heavily sclerotised, anterior apophyses 1.5 times longer than posterior ones; antrum membranous, folded; ductus seminalis relatively short, thin; corpus bursae saccate; ductus seminalis inserted in caudal part of corpus bursae.

Monotypic genus, known only from Japan and S Kuriles.

Asteropetes noctuina (Butler, 1878)

(Pl. 24: 33, 34; ♂ genit. Pl. 120: 6; ♀ genit. Pl. 188: 6)

Sendyra [sic] *noctuina* Butler, 1878, *Ent. Month. Mag.* **15**: 206 (Type-locality: Japan, Hokkaido, Hakodate).

BIONOMICS. Mesophilous species, in Russia known only from S Kuriles (Kunashir Is.). Inhabits light meadows and glades in mixed and dark coniferous forests. The moth flies by day and is also attracted to light. Flight period is from late VI to VII. Larvae feed on *Ampelopsis brevipedunculata*, *Vitis flexuosa, V. coignetiae* (Vitaceae) (Nakamura 1971; Miyata 1983). Probably overwintering as pupa.

DISTRIBUTION (Map 530). Japanese, nemoral. Islands of Russian Far East (Southern Kuriles, Kunashir Is.). – Japan.

LEGENDS TO PLATES

Plate 1. Micronoctuidae, Noctuidae: Boletobiinae, Araeopteroninae, Eublemminae, Aventiinae. (Pages 35–47).

1. *Mimachrostia fasciata* Sugi. Russia, Primorye. IBSS.
2. *Mimachrostia fasciata* Sugi. Russia, Primorye ZMHU.
3. *Mimachrostia fasciata* Sugi. Russia, Khabarovsk terr. SZM.
4. *Micronoctua occi* Fbg. & Kon. Russia, Primorye. PT. IBSS.
5. *Micronoctua occi* Fbg. & Kon. S Korea. PT. CIS.
6. *Micronoctua occi* Fbg. & Kon. S Korea. PT. CIS.
7. *Hypenodes humidalis* Dbld. Norway. ZMUO.
8. *Hypenodes humidalis* Dbld. Russia, Khabarovsk terr. SZM.
9. *Hypenodes rectifascia* Sugi. Japan. HT, NIAES.
10. *Hypenodes rectifascia* Sugi. S Korea. CIS.
11. *Hypenodes rectifascia* Sugi. S Korea. CIS.
12. *Schrankia costaestrigalis* (Steph.). Russia, Primorye IBSS.
13. *Schrankia costaestrigalis* (Steph.). Japan. NIAES.
14. *Schrankia costaestrigalis* (Steph.). Japan. NIAES.
15. *Schrankia costaestrigalis* (Steph.). Japan. NIAES.
16. *Schrankia separatalis* (Herz). Russia, Primorye. IBSS.
17. *Schrankia separatalis* (Herz). S Korea. CIS.
18. *Schrankia separatalis* (Herz). Japan. NIAES.
19. *Schrankia balneorum* (Alph.). Russia, S Ural. KN.
20. *Schrankia balneorum* (Alph.). Russia, S Ural. ZMHU.
21. *Schrankia kogii* Inoue. Russia, Primorye. IBSS.
22. *Araeopteron amoena* Inoue. Russia, Primorye. IBSS.
23. *Araeopteron amoena* Inoue. Russia, Primorye. IBSS.
24. *Araeopteron amoena* Inoue. Russia, Primorye. IBSS.
25. *Araeopteron fragmenta*. Inoue. Russia, Primorye. IBSS.
26. *Araeopteron fragmenta*. Inoue. Russia, Primorye. ZISP.
27. *Araeopteron ussurica*. Fbg. & Kon. Russia, Primorye. IBSS.
28. *Araeopteron ussurica*. Fbg. & Kon. Russia, Primorye. MF.
29. *Araeopteron makikoae.* Fbg. & Kon. Russia, Primorye. IBSS.
30. *Araeopteron makikoae* Fbg. & Kon. Russia, Primorye. IBSS.
31. *Araeopteron nebulosa* Inoue. Russia, Primorye. IBSS.
32. *Araeopteron nebulosa* Inoue. Russia, Primorye. IBSS.
33. *Araeopteron nebulosa* Inoue. Russia, Primorye. IBSS.
34. *Araeopteron patella* Fbg. & Kon. Russia, Primorye. IBSS.
35. *Holocryptis nymphula* (Rbl.). S Korea. CIS.
36. *Holocryptis nymphula* (Rbl.). Russia, Primorye. IBSS.
37. *Eublemma minutata* (Ev.). Russia, S Ural. KN.
38. *Eublemma minutata* (Ev.). Russia, S Ural. KN.
39. *Eublemma pulchralis* (Vill.). Spain. ZFMK.
40. *Eublemma pulchralis* (Vill.). Spain. ZFMK.
41. *Eublemma parva* (Hbn.). France. ZFMK.
42. *Eublemma parva* (Hbn.). France. ZFMK.
43. *Rivula sericealis* (Scop.). Russia, Primorye. IBSS.
44. *Rivula sericealis* (Scop.). Russia, Khabarovsk terr. SZM.
45. *Rivula unctalis* Stgr. Russia, Primorye. HT. MNHU.
46. *Rivula unctalis* Stgr. Russia, Khabarovsk. SZM.
47. *Parascotia fuliginaria* (L.). Russia, Irkutsk reg. ZMHU.
48. *Parascotia fuliginaria* (L.). Russia, Altai. ZMHU.
49. *Odice arcuinna* (Hbn.). Russia, Volga reg. ZMHU.
50. *Odice arcuinna* (Hbn.). Turkey. KN.
51. *Odice arcuinna* (Hbn.). S Korea. NIAES.
52. *Eublemma ostrina* (Hfn.). Uzbekistan. KN.
53. *Eublemma ostrina* (Hfn.). Russia, S Ural. KN.
54. *Eublemma porphyrina* (Frr.). Russia, S Ural. KN.
55. *Eublemma panonica* (Frr.). Russia, S Ural. KN.
56. *Eublemma panonica* (Frr.). Hungary. ZFMK.
57. *Eublemma amasina* (Ev.). Russia, S Ural. KN.
58. *Eublemma amasina* (Ev.). Russia, Primorye. IBSS.
59. *Eublemma rosea* (Hbn.). Austria. ZFMK.
60. *Eublemma rosea* (Hbn.). Austria. ZFMK.
61. *Eublemma purpurina* (D. & S.). Russia, S Ural. MF.
62. *Eublemma purpurina* (D. & S.). Russia, S Ural. KN.
63. *Eublemma amoena* (Hbn.). Russia, S Ural. KN.
64. *Eublemma amoena* (Hbn.). Russia, S Ural. KN.
65. *Eublemma pallidula* (H.–S.). Russia, S Ural. KN.
66. *Eublemma pusilla* (Ev.). Russia, S Ural. KN.
67. *Eublemma pusilla* (Ev.). Russia, S Ural. KN.
68. *Eublemma parallela* (Frr.). Russia, S Ural. KN.
69. *Eublemma polygramma* (Dup.). Russia, S Ural. KN.
70. *Metachrostis sinevi* Kon. & Mat. Russia, Primorye. HT, ZISP.
71. *Metachrostis sinevi* Kon. & Mat. Russia, Khabarovsk terr. PT, SZM.
72. *Laspeyria flexula* (D. & S.). Russia, Primorye. IBSS.
73. *Laspeyria flexula* (D. & S.). Russia, Primorye. IBSS.
74. *Laspeyria subrosea* (Butl.). S Korea. CIS.
75. *Laspeyria subrosea* (Butl.). Russia, Primorye. IBSS.

Plate 2. Aventiinae, Pangraptinae, Phytometrinae. (Pages 47–56).

1. *Enispa lutefascialis* (Leech). Russia, Primorye. IBSS.
2. *Enispa lutefascialis* (Leech). Russia, Primorye. HT *solitaria*. MNHU.
3. *Enispa albosignata* (Stgr.). Russia, Primorye. HT. MNHU.
4. *Enispa albosignata* (Stgr.). Russia, Primorye. SZM.
5. *Enispa bimaculata* (Stgr.). Russia, Primorye. IBSS.
6. *Enispa bimaculata* (Stgr.). Russia, Primorye. SZM.
7. *Corgatha obsoleta* Marumo. Russia, Primorye. IBSS.
8. *Corgatha obsoleta* Marumo. Russia, Primorye. IBSS.
9. *Corgatha costimacula* (Stgr.). Russia, Primorye. IBSS.
10. *Corgatha costimacula* (Stgr.). Russia, Primorye. ZMHU.
11. *Oruza mira* (Butl.). Russia, Primorye. ZMHU.
12. *Oruza mira* (Butl.). Russia, Primorye. IBSS.
13. *Oruza yoshinoensis* (Wil.). Russia, Primorye. ZMHU.
14. *Oruza yoshinoensis* (Wil.). Russia, Primorye. IBSS.
15. *Trisateles emortualis* (D. & S.). Russia, Primorye. IBSS.
16. *Trisateles emortualis* (D. & S.). Norway. ZMUO.
17. *Aventiola pusilla* (Butl.). Russia, Primorye. ZMHU.
18. *Aventiola pusilla* (Butl.). Russia, Primorye. IBSS.
19. *Aventiola pusilla* (Butl.). Russia, Primorye. IBSS.
20. *Anatatha lignea* (Butl.). Russia, Primorye. IBSS.
21. *Anatatha lignea* (Butl.). Russia, Primorye. DN.
22. *Paragona multisignata* (Christ.). Russia, Primorye. HT, ZISP.
23. *Paragona multisignata* (Christ.). Russia, Primorye. IBSS.
24. *Paragona cognata* (Stgr.). Russia, Primorye. IBSS.
25. *Paragona cognata* (Stgr.). Russia, Primorye. HT, MNHU.
26. *Paragona nemorata* (Kon. & Han). S Korea. PT. KNA.
27. *Paragona nemorata* (Kon. & Han). S Korea. PT. KNA.
28. *Holocryptis ussuriensis* (Rbl.). S Korea. CIS.
29. *Holocryptis ussuriensis* (Rbl.). Russia, Primorye. IBSS.
30. *Diomea cremata* (Butl.). Russia, Primorye. ZMHU.
31. *Diomea cremata* (Butl.). Russia, Primorye. ZMHU.
32. *Diomea jankowskii* (Obth.). Russia, Primorye. ZMHU.
33. *Polysciera manleyi* (Leech). Russia, S Kuriles. ZMTU.
34. *Polysciera manleyi* (Leech). Japan. ZMHU.
35. *Naganoella timandra* (Alph.). Russia, Khabarovsk. SZM.
36. *Remmigabara secunda* Remm. Russia, Primorye. IBSS.
37. *Remmigabara secunda* Remm. Russia, Primorye. DN.
38. *Hypostrotia cinerea* (Butl.). Russia, Primorye. IBSS.
39. *Hypostrotia cinerea* (Butl.). Russia, Primorye. IBSS.
40. *Pangrapta costaemacula* Stgr. Russia, Primorye. LT, MNHU.
41. *Pangrapta costaemacula* Stgr. Russia, Primorye. IBSS.
42. *Pangrapta flavomacula* Stgr. Russia, Primorye. ZMHU.
43. *Pangrapta flavomacula* Stgr. Russia, Primorye. IBSS.
44. *Pangrapta vasava* (Butl.). Russia, Primorye. ZFMK.
45. *Pangrapta vasava* (Butl.). Russia, Primorye. IBSS.
46. *Pangrapta suaveola* Stgr. Russia, Primorye. ZMHU.
47. *Pangrapta suaveola* Stgr. Russia, Primorye. IBSS.
48. *Pangrapta lunulata* (Sterz). Russia, Primorye. IBSS.
49. *Pangrapta lunulata* (Sterz). Russia, Primorye. IBSS.
50. *Pangrapta marmorata* Stgr. Russia, Primorye. IBSS.
51. *Pangrapta marmorata* Stgr. Russia, Primorye. IBSS.
52. *Pangrapta obscurata* (Butl.). Russia, Primorye. IBSS.
53. *Pangrapta obscurata* (Butl.). Russia, Primorye. IBSS.
54. *Pangrapta griseola* Stgr. Russia, Primorye. IBSS.
55. *Pangrapta griseola* Stgr. Russia, Primorye. ZMHU.
56. *Pangrapta umbrosa* Leech. Japan. ZFMK.
57. *Pangrapta umbrosa* Leech. Japan. ZFMK.
58. *Phytometra viridaria* (Cl.). Denmark. ZMUO.
59. *Phytometra viridaria* (Cl.). Denmark. ZMUO.
60. *Phytometra viridaria* (Cl.). Kazakhstan. ZMHU.
61. *Phytometra viridaria* (Cl.). France. WS.
62. *Phytometra amata* (Butl.). Russia, Minusinsk. HT *inamoena*. ZISP.
63. *Phytometra amata* (Butl.). Russia, Primorye. ZMHU.
64. *Phytometra amata* (Butl.). Russia, Minusinsk. ZISP.
65. *Colobochyla salicalis* (D. & S.). Russia, Primorye. HT *laetalis*. MNHU.
59. *Colobochyla salicalis* (D. & S.). Russia, Khabarovsk terr. SZM.

Plate 3. Herminiinae. (Pages 57–62).

1. *Edessena hamada* (Feld. & Roghf.). Russia, Primorye. IBSS.
2. *Edessena hamada* (Feld. & Roghf.). Russia, Primorye. DN.
3. *Hadennia incongruens* (Butl.). Russia, Primorye. MF.
4. *Hadennia incongruens* (Butl.). Russia, Primorye. IBSS.
5. *Paracolax tristalis* (Ev.). Russia, Primorye. IBSS.
6. *Paracolax tristalis* (Ev.). Russia, Primorye. IBSS.
7. *Paracolax trilinealis* (Brem.). Russia, Primorye. IBSS.
8. *Paracolax trilinealis* (Brem.). Russia, Primorye. IBSS.
9. *Paracolax fascialis* (Leech). Russia, Primorye. ZMHU.
10. *Paracolax fascialis* (Leech). Russia, Primorye. IBSS.
11. *Paracolax fentoni* (Butl.). Russia, Primorye. IBSS.
12. *Paracolax fentoni* (Butl.). Russia, Primorye. IBSS.
13. *Paracolax albinotata* (Butl.). Russia, S Kuriles. SZM.
14. *Paracolax albinotata* (Butl.). Russia, S Kuriles. SZM.
15. *Gynaephila maculifera* Stgr. Russia, Khabarovsk. SZM.
16. *Gynaephila maculifera* Stgr. Russia, Primorye. IBSS.
17. *Idia quadra* (Graes.). Russia, Primorye. IBSS.
18. *Idia quadra* (Graes.). Russia, Primorye. IBSS.
19. *Idia curvipalpis* (Butl.). Russia, Primorye. IBSS.
20. *Idia curvipalpis* (Butl.). Russia, Primorye. IBSS.
21. *Hydrillodes morosa* (Butl.). Russia, Primorye. IBSS.
22. *Hydrillodes morosa* (Butl.). Russia, Primorye. DN.
23. *Bertula bistrigata* (Stgr.). Russia, Primorye. IBSS.
24. *Bertula bistrigata* (Stgr.). Russia, Primorye. IBSS.
25. *Bertula bistrigata* (Stgr.). Russia, Primorye. IBSS.
26. *Simplicia rectalis* (Ev.). Russia, Primorye. IBSS.
27. *Simplicia rectalis* (Ev.). Russia, Primorye. DN.
28. *Zanclognatha griselda* (Butl.). Russia, Primorye. IBSS.
29. *Zanclognatha griselda* (Butl.). Russia, Primorye. IBSS.
30. *Zanclognatha lilacina* (Butl.). Japan. NSMT.
31. *Zanclognatha lilacina* (Butl.). Russia, Primorye. DN.
32. *Zanclognatha lilacina* (Butl.). Russia, Primorye. DN.
33. *Zanclognatha lunalis* (Scop.). Denmark. ZMUO.
34. *Zanclognatha lunalis* (Scop.). Russia, Volga reg. ZMHU.
35. *Zanclognatha fumosa* (Butl.). Russia, Primorye. HT *assimilis*. MNHU.
36. *Zanclognatha fumosa* (Butl.). Russia, Primorye. IBSS.
37. *Zanclognatha fumosa* (Butl.). Russia, Primorye. IBSS.
38. *Zanclognatha obliqua* Stgr. Russia, Primorye. ZMHU.
39. *Zanclognatha obliqua* Stgr. Japan. NSMT.
40. *Zanclognatha obliqua* Stgr. Russia, Primorye. IBSS.
41. *Zanclognatha tarsipennalis* (Tr.). Russia, Primorye. IBSS.
42. *Zanclognatha tarsipennalis* (Tr.). Russia, Khabarovsk. ZMHU.
43. *Zanclognatha subgriselda* Sugi. Japan. NSMT.
44. *Zanclognatha subgriselda* Sugi. Russia, S Kuriles. IBSS.
45. *Zanclognatha triplex* (Leech). Russia, Sakhalin. ZMTU.
46. *Zanclognatha triplex* (Leech). Russia, S Kuriles. ZISP.
47. *Zanclognatha helva* (Butl.). Russia, Primorye. IBSS.
48. *Zanclognatha helva* (Butl.). Japan. NSMT.

Plate 4. Herminiinae, Hypeninae. (Pages 62–69).

1. *Zanclognatha reticulatis* (Leech). Japan. NSMT.
2. *Zanclognatha reticulatis* (Leech). Russia, Primorye. IBSS.
3. *Zanclognatha umbrosalis* Stgr. Russia, Primorye. IBSS.
4. *Zanclognatha umbrosalis* Stgr. Russia, Primorye. LT. MNHU.
5. *Zanclognatha perfractalis* Bryk. Japan. NSMT.
6. *Zanclognatha perfractalis* Bryk. S Korea. CIS.
7. *Zanclognatha tristriga* W. Kozh. Russia, Minusinsk. HT. ZISP.
8. *Zanclognatha tristriga* W. Kozh. Russia, Amur reg. DN.
9. *Zanclognatha tristriga* W. Kozh. Russia, Transbaikalia. ZMHU.

10. *Zanclognatha tristriga* W. Kozh. Russia, Primorye. IBSS.
11. *Zanclognatha tenuialis* Rbl. Russia, Primorye. ZISP.
12. *Zanclognatha tenuialis* Rbl. Italy. GB.
13. *Zanclognatha violacealis* Stgr. Russia, Primorye. IBSS.
14. *Zanclognatha violacealis* Stgr. Russia, Primorye. HT. MNHU. ST.
15. *Pechipogo strigilata* (L.). S Ural. KN.
16. *Pechipogo strigilata* (L.). Denmark. ZMUO.
17. *Polypogon tentacularia* (L.). Russia, Altai. ZMHU.
18. *Polypogon tentacularia* (L.). Russia, Irkutsk reg. ZMHU.
19. *Polypogon gryphalis* (H.–S.). Russia, Moskow reg. ZFMK.
20. *Polypogon gryphalis* (H.–S.). Russia, Moskow. ZFMK.
21. *Polypogon tarsicrinata* (Bryk.). Russia, Primorye. IBSS.
22. *Polypogon tarsicrinata* (Bryk.). Russia, Primorye. IBSS.
23. *Macrochilo cribrumalis* (Hbn.). Germany. ZFMK.
24. *Macrochilo cribrumalis* (Hbn.). Germany. ZFMK.
25. *Herminia grisealis* (D. & S.). Russia, Primorye. IBSS.
26. *Herminia grisealis* (D. & S.). Russia, Primorye. IBSS.
27. *Herminia robiginosa* (Stgr.). Russia, Primorye. HT. MNHU. ST.
28. *Herminia robiginosa* (Stgr.). Russia, Sakhalin. ZMTU.
29. *Herminia tarsicrinalis* (Knoch). Russia, Novosibirsk. ZMHU.
30. *Herminia tarsicrinalis* (Knoch). Russia, Mary El. ZMHU.
31. *Herminia arenosa* Butl. China. ZFMK.
32. *Herminia arenosa* Butl. China. ZFMK.
33. *Herminia stramentacealis* Brem. Russia, Primorye. IBSS.
34. *Herminia stramentacealis* Brem. Russia, Primorye. DN.
35. *Herminia dolosa* Butl. Japan. NSMT.
36. *Herminia dolosa* Butl. Russia, S Kuriles. ZMTU.
37. *Sinarella aegrota* (Butl.). Russia, Primorye. IBSS.
38. *Sinarella aegrota* (Butl.). Russia, Primorye. IBSS.
39. *Sinarella cristulalis* Stgr. Russia, Primorye. HT. MNHU.
40. *Sinarella cristulalis* Stgr. Russia, Primorye. IBSS.
41. *Sinarella cristulalis* Stgr. Russia, Primorye. ZMHU.
42. *Sinarella nigrisigna* (Leech). China. ZFMK.
43. *Sinarella punctalis* (Herz). Russia, Primorye. IBSS.
44. *Sinarella punctalis* (Herz). Russia, Primorye. IBSS.
45. *Sinarella japonica* (Butl.). Russia, Primorye. IBSS.
46. *Zekelita ravulalis* (Stgr.). Russia, Volga reg. ZMHU.
47. *Zekelita ravulalis* (Stgr.). Russia, S Ural. KN.
48. *Zekelita ravulalis* (Stgr.). Kazakhstan. ZFMK.
49. *Hypena stygiana* Butl. Russia, Primorye. ZMHU.
50. *Hypena stygiana* Butl. Russia, Primorye. IBSS.
51. *Hypena zilla* Butl. Russia, Primorye. ZMHU.
52. *Hypena zilla* Butl. Russia, Primorye. ZMHU.
53. *Hypena zilla* Butl. Russia, Primorye. IBSS.
54. *Hypena crassalis* (Ev.). Germany. ZFMK.
55. *Hypena crassalis* (Ev.). Denmark. ZMUO.
56. *Hypena crassalis* (Ev.). Denmark. ZMUO.
57. *Hypena squalida* (Butl.). Russia, Primorye. IBSS.
58. *Hypena squalida* (Butl.). Russia, Primorye. IBSS.

Plate 5. Hypeninae. (Pages 69–74).

1. *Hypena bicoloralis* Graes. Russia, Primorye. ZMHU.
2. *Hypena bicoloralis* Graes. Russia, Khabarovsk. HT. ZISP.
3. *Hypena nigrobasalis* (Herz). Russia, Primorye. IBSS.
4. *Hypena nigrobasalis* (Herz). Japan. ZMHU.
5. *Hypena nigrobasalis* (Herz). Russia, Primorye. ZMTU.
6. *Hypena bipartita* (Stgr.). Russia, Primorye. IBSS.
7. *Hypena bipartita* (Stgr.). Russia, Primorye. IBSS.
8. *Hypena bipartita* (Stgr.). Russia, Primorye. HT. MNHU.
9. *Hypena semialbata* Sugi. Russia, S Kuriles. IBSS.
10. *Hypena semialbata* Sugi. Russia, S Kuriles. IBSS.
11. *Hypena proboscidalis* (L.). Russia, Moskow reg. ZFMK.
12. *Hypena proboscidalis* (L.). Russia, Primorye. IBSS.
13. *Hypena proboscidalis* (L.). Russia, Primorye. ZMHU.
14. *Hypena rostralis* (L.). Russia, S Ural. KN.
15. *Hypena rostralis* (L.). Russia, Novosibirsk. ZMHU.
16. *Hypena rostralis* (L.). Kazakhstan. ZMHU.
17. *Hypena rostralis* (L.). Russia, Volga reg. ZMHU.
18. *Hypena obesalis* Tr. Russia, Tuva. ZMHU.
19. *Hypena obesalis* Tr. Russia, Tuva. ZMHU.
20. *Hypena obesalis* Tr. Russia, S Ural. KN.
21. *Hypena tristalis* Led. Russia, Kemerovo reg. ZFMK.
22. *Hypena tristalis* Led. Russia, Krasnoyarsk reg. ZMHU.
23. *Hypena narratalis* Wlk. Russia, Primorye. IBSS.
24. *Hypena narratalis* Wlk. Russia, Primorye. IBSS.
25. *Hypena kengkalis* Brem. Russia, Primorye. IBSS.
26. *Hypena conspersalis* Stgr. Russia, Primorye. HT. MNHU.
27. *Hypena conspersalis* Stgr. Russia, Primorye. IBSS.
28. *Hypena claripennis* (Butl.). China. ZFMK.
29. *Hypena amica* (Butl.). China. ZFMK.
30. *Hypena tatorhina* Butl. Russia, Primorye. ZISP.
31. *Hypena tatorhina* Butl. Japan. NIAES.
32. *Hypena tamsi* Fil. Russia, Primorye. IBSS.
33. *Hypena tamsi* Fil. Russia, Primorye. IBSS.
34. *Hypena tamsi* Fil. Russia, Primorye. HT. ZISP.
35. *Protoschrankia ijimai* Sugi. Japan. PT. NIAES.
36. *Protoschrankia ijimai* Sugi. Russia, S Kuriles. IBSS.
37. *Gonepatica opalina* (Butl.). Russia, Primorye. IBSS.
38. *Gonepatica opalina* (Butl.). Russia, Primorye. IBSS.
39. *Hepatica anceps* Stgr. Russia, Primorye. HT. MNHU.
40. *Hepatica anceps* Stgr. Russia, Primorye. IBSS.
41. *Lophomilia polybapta* (Butl.). Russia, Primorye. GG.
42. *Lophomilia polybapta* (Butl.). Russia, Primorye. GG.
43. *Lophomilia flaviplaga* (Warr.). Russia, S Kuriles. IBSS.
44. *Lophomilia flaviplaga* (Warr.). Russia, Primorye. IBSS.
45. *Lophomilia nekrasovi* (Kon. & Beh.). Russia, Primorye. PT. IBSS.
46. *Lophomilia nekrasovi* (Kon. & Beh.). Russia, Primorye. HT. ZISP.
47. *Lophomilia kogii* (Sugi). Russia, Primorye. ZMHU.
48. *Stenbergmania albomaculalis* (Brem.). Russia, Primorye.ZMHU.
49. *Paragabara flavomacula* (Obth.). Russia, Primorye. HT. BMNH.
50. *Paragabara curvicornuta Kon. & Matov*. Russia, Primorye. HT. ZISP.
51. *Paragabara curvicornuta* Kon. & Mat. Russia, Primorye. PT. IBSS.
52. *Paragabara ochreipennis* Sugi. China, Shanghai. FMK.
53 *Paragabara ochreipennis* Sugi. Russia, Primorye. ZISP.

Plate 6. Erebinae, Calpinae. (Pages 75, 76).

1. *Erebus macrops* (L.). China. ZFMK.
2. *Metopta rectifasciata* (Mén.). Japan. ZFMK.
3. *Spirama helicina* (Hbn.). China. ZFMK.
3. *Ischjya manlia* (Cram.). Thailand. AP.
5. *Eudocima tyrannus* (Gn.). Russia, Primorye. ZFMK.
6. *Eudocima falonia* (L.). Russia, Primorye. IBSS.
7. *Eudocima falonia* (L.). Korea. CIS.

Plate 7. Calpinae, Catocalinae. (Pages 77–84).

1. *Anomis flava* (Ev.). Russia, Primorye. IBSS.
2. *Anomis flava* (Ev.). Russia, Primorye. IBSS.
3. *Anomis mesogona* (Wlk.). Russia, Primorye. IBSS.
4. *Anomis involuta* (Wlk.). S Korea. CIS.
5. *Anomis involuta* (Wlk.). Russia, Primorye. IBSS.
6. *Anomis privata* (Wlk.). S Korea. CIS.
7. *Anomis privata* (Wlk.). S Korea. CIS.
8. *Anomis leucolopha* Prout. Russia, Primorye. ZMHU.
9. *Anomis leucolopha* Prout. Russia, Primorye. IBSS.
10. *Calyptra thalictri* (Borkh. Russia, Primorye. IBSS.
11. *Calyptra hokkaida* (Wil.). Russia, Primorye. IBSS.
12. *Calyptra lata* (Butl.). Russia, Primorye. IBSS.
13. *Oraesia emarginata* (Ev.). Russia, Primorye. ZMHU.
14. *Oraesia emarginata* (Ev.). Russia, Primorye. IBSS.
15. *Oraesia excavata* (Butl.). Japan. ZFMK.
16. *Oraesia excavata* (Butl.). China. ZFMK.
17. *Plusiodonta casta* (Butl.). Russia, Primorye. ZMHU.
18. *Plusiodonta casta* (Butl.). Russia, Primorye. IBSS.
19. *Scoliopteryx libatrix* (L.). Russia, Primorye. ZMHU.
20. *Chrysorithrum amata* (Brem. & Gr.). Russia, Primorye. IBSS.
21. *Chrysorithrum amata* (Brem. & Gr.). Russia, Primorye. IBSS.
22. *Chrysorithrum flavomaculata* (Brem.). Russia, Primorye. IBSS.
23. *Anumeta cestis* (Mén.). Kyrgyzstan. ZFMK.
24. *Anumeta fractistrigata* (Alph.). Turkmenia. MF.
25. *Lygephila lusoria* (L.). Russia, S Ural. ZMHU.
26. *Lygephila lubrica* (Frr.). Russia, Buryatia. ZMHU.
27. *Lygephila lubrica* (Frr.). Russia, Tuva. ZFMK.
28. *Lygephila lubrica* (Frr.). Russia, Buryatia. ZMHU.
29. *Lygephila lubrica* (Frr.). Russia, Buryatia. ZMHU.
30. *Lygephila ludicra* (Hbn.). Russia, Irkutsk reg. ZMHU.
31. *Lygephila ludicra* (Hbn.). Russia, Buryatia. ZMHU.

Plate 8. Catocalinae. (Pages 84–87).

1. *Lygephila maxima* (Brem.)**.** Russia, Primorye. IBSS.
2. *Lygephila emaculata* (Graes.). Russia, Khabarovsk terr. HT. ZISP.
3. *Lygephila emaculata* (Graes.). Russia, Khabarovsk terr. ZISP.
4. *Lygephila dubatolovi* Fbg., Kon. & Nils. Russia, Primorye. HT. SZM.
5. *Lygephila dubatolovi* Fbg., Kon. & Nils. Russia, Primorye. PT. DN.
6. *Lygephila vulcanea* (Butl. Russia, Primorye. IBSS.
7. *Lygephila mirabilis* (Bryk). Russia, Primorye. IBSS.
8. *Lygephila craccae* (D. & S.). Russia, Primorye. IBSS.
9. *Lygephila craccae* (D. & S.). Russia, Primorye. IBSS.
10. *Lygephila craccae* (D. & S.). Russia, S Ural. ZMHU.
11. *Lygephila viciae* (Hbn.). Russia, Primorye. IBSS.
12. *Lygephila viciae* (Hbn.). Russia, Novosibirsk reg. ZMHU.
13. *Lygephila viciae* (Hbn.). Russia, Tuva. ZMHU.
14. *Lygephila pastinum* (Tr.). Russia, Primorye. IBSS.
15. *Lygephila pastinum* (Tr.). Russia, S Ural. ZMHU.
16. *Lygephila procax* (Hbn.). Russia, Primorye. IBSS.
17. *Lygephila procax* (Hbn.). Russia, S Ural. KN.
18. *Lygephila recta* (Brem.). Russia, Primorye. IBSS.
19. *Lygephila recta* (Brem.). Russia, Primorye. IBSS.
20. *Autophila glebicolor* (Ersch.). Kazakhstan. HNHM.
21. *Autophila glebicolor* (Ersch.). Kazakhstan. HNHM.
22. *Autophila rasilis* (Pglr.). Russia, Altai. AV.
23. *Autophila asiatica* (Stgr.). Russia, Altai. AV.
24. *Autophila inconspicua* (Butl.). Russia, Primorye. IBSS.
25. *Autophila chamaephanes* Brsn. Russia. “Sibiria”. ZMHU.
26. *Autophila chamaephanes* Brsn. Russia, S Ural. ZMHU.
27. *Apopestes phantasma* (Ev.). Kazakhstan. ZMHU.
28. *Apopestes indica* Moore. Russia, Primorye. IBSS.

Plate 9. Catocalinae. (Pages 87–95).

1. *Arytrura musculus* (Mén.). Russia, Primorye. ZMHU.
2. *Arytrura subfalcata* (Mén.). Russia, Primorye. ZMHU.
3. *Arytrura subfalcata* (Mén.). Khabarovsk reg. IBSS.
4. *Acantholipes regularis* (Hbn.). Russia, S Ural. KN.
5. *Drasteria pulverosa* Wiltsh. Russia, Tuva. ZFMK.
6. *Drasteria mongoliensis* Wiltsh. Russia, Tuva. ZMHU.
7. *Drasteria caucasica* (Kolenati). Russia, Volga reg. SZM.
8 *Drasteria picta* (Christ.). Tadjikistan. ZMHU.
9. *Drasteria cailino* (Lef.). Russia, S Ural. KN.
10. *Drasteria rada* (Bsdv.). Russia, S Ural. KN.
11. *Drasteria saisani* (Stgr.). Turkey. KN.
12. *Drasteria scolopax* (Alph.). W China. ZFMK.
13. *Drasteria catocalis* (Stgr.). Russia, Altai. AV.
14. *Drasteria catocalis* (Stgr.). W China, Kulja. ZFMK.
15. *Euclidia glyphica* (L.). Russia, Irkutsk reg. ZMHU.
16. *Euclidia dentata* Stgr. Russia, Primorye. ST. MNHU.
17. *Euclidia dentata* Stgr. Russia, Primorye. IBSS.
18. *Euclidia juvenilis* (Brem.). Russia, Primorye. ZMHU.
19 *Callistege mi* (Clerck). Russia, Novosibirsk. ZMHU.
20. *Callistege mi* (Clerck). Russia, S Ural. ZMHU.
21. *Callistege fortalitium* (Tausch.). Russia, S Ural. KN.
22. *Euclidia triquetra* (D. & S.). Russia, S Ural. KN.
23. *Gonospilea munita* (Hbn.). Russia, Volga reg. ZMHU.
24. *Gonospilea munita* (Hbn.). Russia, S Ural. KN.
25. *Gonospilea munita* (Hbn.). Russia, Volga reg. ZMHU.
26. *Melapia electaria* (Brem.). Russia, Primorye. IBSS.
27. *Remigia frugalis* (Ev.). China. ZFMK.
28. *Mocis undata* (Ev.). China. ZFMK.
29. *Mocis annetta* (Butl. Russia, Primorye. ZMHU.
30. *Mocis ancilla* (Warr.). Russia, Primorye. IBSS.
31. *Blasticorhinus ussuriensis* (Brem.). Russia, Amur reg. HT. ZISP.
32. *Blasticorhinus ussuriensis* (Brem.). Russia, Primorye. IBSS.

33. *Blasticorhinus ussuriensis* (Brem.). Russia, Primorye. IBSS.
34. *Blasticorhinus unduligera* (Butl.). Russia, Primorye. IBSS.
35. *Blasticorhinus unduligera* (Butl.). Russia, Primorye. IBSS.
36. *Serrodes campana* Gn. China. ZFMK.
37. *Artena dotata* (Ev.). Thailand. AP.

Plate 10. Catocalinae. (Pages 96–101).

1. *Thyas juno* (Dalman). Russia, Primorye. IBSS.
2. *Ophiusa tirhaca* (Cramer). Russia, Primorye. GG.
3. *Minucia lunaris* (D. & S.). Germany. ZFMK.
4. *Bastilla arctotaenia* (Gn.). Russia, Primorye. IBSS.
5. *Bastilla maturata* (Wlk.). Russia, Primorye. IBSS.
6. *Bastilla stuposa* (Ev.). Russia, Primorye. IBSS.
7. *Dysgonia mandschuriana* (Stgr.). Russia, Primorye. IBSS.
8. *Dysgonia mandschuriana* (Stgr.). Russia, Primorye. IBSS.
9. *Dysgonia dulcis* (Butl.). China. ZFMK.
10. *Dysgonia obscura* (Brem. & Gr.). Russia, Primorye. IBSS.
11. *Dysgonia obscura* (Brem. & Gr.). China. ZFMK.
12. *Dysgonia obscura* (Brem. & Gr.). Russia, Primorye. ZMHU.
13. *Grammodes stolida* (Ev.). Russia, S Ural. ZMHU.
14. *Catephia alchymista* (D. & S.). Turkey. ZFMK.
15. *Pericyma albidentaria* (Frr.). Russia, Volga reg. ZMHU.
16. *Pericyma albidentaria* (Frr.). Turkey. ZFMK.
17. *Pericyma albidentaria* (Frr.). Russia, Volga reg. ZMHU.
18. *Clytie gracilis* (O.B.–H.) Uzbekistan. ZISP.
19. *Clytie gracilis* (O.B.–H.). Kazakhstan. ZFMK.
20. *Catocala fulminea* (Scop.). Russia, S Ural. KN.
21. *Catocala fulminea* (Scop.). Russia, Primorye. IBSS.
22. *Catocala conversa* (Esp.). Spain. ZFMK.
23. *Catocala obscena* Alph. Russia, Primorye. GG.
24. *Catocala doerriesi* Stgr. Russia, Primorye. ZISP.

Plate 11. Catocalinae. (Pages 101–103).

1. *Catocala neonympha* (Esp.). Russia, S Ural. KN.
2. *Catocala streckeri* Stgr. Russia, Primorye. ZISP.
3. *Catocala praegnax* Wlk. Russia, Primorye. IBSS.
4. *Catocala abamita* Brem. & Gr. S. China. ZFMK.
5. *Catocala eminens* Stgr. Russia, Primorye. IBSS.
6. *Catocala separans* Leech. Russia, Primorye. IBSS.
7. *Catocala separans* Leech. Russia, Primorye. IBSS.
8. *Catocala duplicata* Butl. N Korea. ZFMK.
9. *Catocala musmi* (Hmps.). Russia, Primorye. GG.
10. *Catocala nymphaeoides* H.–S. Russia, Transbaikalia. ZMHU.
11. *Catocala nymphaeoides* H.–S. Russia, Transbaikalia. ZMHU.
12. *Catocala deuteronympha* Stgr. Russia, Primorye. IBSS.
13. *Catocala deuteronympha* Stgr. Russia, Transbaikalia. ZMHU.
14. *Catocala ella* Butl. Russia, Primorye. SZM.
15. *Catocala helena* Ev. Russia, Transbaikalia. ZMHU.
16. *Catocala agitatrix* Graes. Russia, Transbaikalia. ZMHU.
17. *Catocala agitatrix* Graes. Russia, Primorye. IBSS.
18. *Catocala bella* Butl. Russia, Primorye. ZMHU.
19. *Catocala columbina* Leech. China. ZFMK.
20. *Catocala nubila* Butl. Japan. ZMHU.

Plate 12. Catocalinae. (Pages 103–106).

1. *Catocala koreana* Stgr. Russia, Primorye. IBSS.
2. *Catocala koreana* Stgr. Russia, Primorye. IBSS.
3. *Catocala moltrechti* (O.B.–H.). Russia, Primorye. HT. MNHU.
4. *Catocala moltrechti* (O.B.–H.). Russia, Primorye. IBSS.
5. *Catocala proxeneta* Alph. Russia, Primorye. IBSS.
6. *Catocala proxeneta* Alph. Russia, Primorye. IBSS.
7. *Catocala danilovi* (O.B.–H.). Russia, Primorye. IBSS.
8. *Catocala danilovi* (O.B.–H.). Russia, Primorye. HT. MNHU.
9. *Catocala dissimilis* Brem. Russia, Primorye. IBSS.
10. *Catocala nagioides* Wil. Russia, Primorye. IBSS.
11. *Catocala actaea* Feld. & Roghf. Russia, Primorye. IBSS.
12. *Catocala pirata* (Herz). Russia, Primorye. IBSS.
13. *Catocala pirata* (Herz). Russia, Primorye. IBSS.
14. *Catocala bokhaica* (Kon.). Russia, Primorye. IBSS.
15. *Catocala bokhaica* (Kon.). Russia, Khabarovsk. SZM.
16. *Catocala elocata* (L.). Russia, S Ural. ZMHU.
17. *Catocala deducta* Ev. Russia, S Ural. ZMHU.
18. *Catocala deducta* Ev. Russia, S Ural. ZFMK.
19. *Catocala deducta* Ev. LT. SE Kazakhstan, Zaisan. ZISP.
20. *Catocala puerpera* Giorna. N Kazakhstan. ZISP.
21. *Catocala puerpera* Giorna. Russia, S Ural. KN.
22. *Catocala puerpera* Giorna. Russia, Novosibirsk reg. SZM.

Plate 13. Catocalinae. (Pages 103–106).

1. *Catocala fraxini* (L.). Russia, Altai. ZMHU.
2. *Catocala fraxini* (L.). Russia, Primorye. IBSS.
3. *Catocala lara* Brem. Russia, Primorye. IBSS.
4. *Catocala lara* Brem. Russia, Primorye. IBSS.
5. *Catocala nivea* Butl. Russia, Primorye. IBSS.
6. *Catocala nupta* (L.). Russia, Primorye. IBSS.
7. *Catocala adultera* Mén. Russia, Khabarovsk. SZM.
8. *Catocala electa* (View.). Russia, Primorye. ZMHU.
9. *Catocala sponsa* (L.). Russia, S Ural. KN.
10. *Catocala dula* Brem. Russia, Khabarovsk. SZM.
11. *Catocala promissa* (D. & S.). Germany. ZFMK.

Plate 14. Catocalinae, Euteliinae. (Pages 106–111).

1. *Catocala detrita* Warr. NW Kazakhstan, Uralsk. ZFMK.
2. *Catocala detrita* Warr. Russia, "Ural". ZFMK.
3. *Catocala lupina* H.–S. W Kazakhstan, Uralsk. ZFMK.
4. *Catocala lupina* H.–S. SE Kazakhstan, Saisan. ZISP.
5. *Catocala pacta* (L.). Russia, S Ural. KN.
6. *Catocala kotshubei* Shel. Russia, Primorye. IBSS.
7. *Hypersypnoides astrigera* (Butl.). Russia, Primorye. ZMHU.
8. *Sypnoides hercules* (Butl.). Russia, Amur reg. ZFMK.
9. *Sypnoides hercules* (Butl.). Amur reg. ZFMK.
10. *Sypnoides picta* (Butl.). Russia, Primorye. IBSS.
11. *Sypnoides picta* (Butl.). Russia, Primorye. IBSS.

12. *Sypnoides picta* (Butl.). Russia, Primorye. IBSS.
13. *Sypnoides fumosa* (Butl.). Russia, Primorye. IBSS.
14. *Sypnoides fumosa* (Butl.). Russia, Primorye. IBSS.
15. *Sypnoides fumosa* (Butl.). Russia, Primorye. IBSS.
16. *Daddala lucilla* (Butl.). Russia, Primorye. IBSS.
17. *Daddala lucilla* (Butl.). China. ZFMK.
18. *Hypocala violacea.* Russia, Primorye. IBSS.
19. *Hypocala deflorata* (Ev.). Thailand. AP.
20. *Hypocala deflorata* (Ev.). Thailand. AP.
21. *Hypocala subsatura* Gn. Russia, Primorye. IBSS.
22. *Hypocala subsatura* Gn. Russia, Primorye. IBSS.
23. *Eutelia geyeri* (Feld. & Roghf.). Japan. ZMHU.
24. *Eutelia geyeri* (Feld. & Roghf.). Japan. ZFMK.
25. *Eutelia adulatricoides* (Mell). China. ZFMK.
26. *Eutelia adulatricoides* (Mell). China. ZMUC.
27. *Eutelia adulatricoides* (Mell). Russia, Primorye. ZISP.

Plate 15. Plusiinae. (Pages 112–121).

1. *Abrostola asclepiadis* (D. & S.). Denmark. MF.
2. *Abrostola triplasia* (L.). Russia. ZMHU.
3. *Abrostola tripartita* (Hfn.). Russia, Altai. ZMHU.
4. *Abrostola tripartita* (Hfn.). Denmark. ZMUO.
5. *Abrostola ussuriensis* Duf. Russia, Primorye. IBSS.
6. *Abrostola ussuriensis* Duf. Japan. ZMHU.
7. *Abrostola pacifica* Duf. Japan. ZMHU.
8. *Abrostola kaszabi* Duf. Russia. Buryatia. IBSS.
9. *Abrostola kaszabi* Duf. Russia. Irkutsk reg. ZISP.
10. *Trichoplusia ni* (Hbn.). Russia, Primorye. IBSS.
11. *Thysanoplusia intermixta* (Warr.). Russia, Primorye. ZMHU.
12. *Ctenoplusia albostriata* (Brem. & Gr.). Russia, Primorye. IBSS.
13. *Ctenoplusia agnata* (Stgr.). Russia, Primorye. IBSS.
14. *Erythroplusia rutilifrons* (Wlk.). Russia, Primorye. IBSS.
15. *Erythroplusia pyropia* (Butl.). N Korea. HNHM.
16. *Anadevidia peponis* (Ev.). Russia, Primorye. IBSS.
17. *Anadevidia hebetata* (Butl.). Thailand. HNHM.
18. *Macdunnoughia confusa* (Steph.). Russia, Primorye. IBSS.
19. *Macdunnoughia hybrida* Ronk. N Korea. PT. HNHM.
20. *Macdunnoughia crassisigna* (Warr.). Russia, Primorye. IBSS.
21, *Macdunnoughia purissima* (Butl.). Russia, Primorye.IBSS.
22. *Sclerogenia jessica* (Butl.). China. ZFMK.
23. *Antoculeora locuples* (Obth.). Russia, Primorye. IBSS.
24. *Diachrysia chryson* (Esp.). Russia, Primorye. IBSS.
25. *Diachrysia pales* (Mell). N Korea. ZFMK.
26. *Diachrysia leonina* (Obth.). Russia, Primorye. IBSS.
27. *Diachrysia witti* L.Ronk., G.Ronk. & Beh. Russia, Primorye. IBSS.
28. *Diachrysia chrysitis* (L). Russia, S Ural. KN.
29. *Diachrysia chrysitis* (L). Russia, Irkutsk reg. ZMHU.
30. *Diachrysia stenochrysis* (Warr.). Russia, Primorye. IBSS.
31. *Diachrysia stenochrysis* (Warr.). Russia, Primorye. IBSS.
32. *Diachrysia nadeja* (Obth. Russia, Primorye. IBSS.
33. *Diachrysia nadeja* (Obth. Russia, Primorye. IBSS.
34. *Diachrysia zosimi* (Hbn.). Russia, S Ural. KN.
35. *Diachrysia zosimi* (Hbn.). Russia, Primorye. IBSS.
36. *Euchalcia variabilis* (Pill.). Russia, S Ural. KN.
37. *Euchalcia variabilis* (Pill.). Russia, S Ural. KN.
38. *Euchalcia variabilis* (Pill.). Russia, S Ural. KN.
39. *Euchalcia variabilis* (Pill.). Russia, Irkutsk reg. ZMHU.

Plate 16. Plusiinae. (Pages 121–128).

1. *Euchalcia mongolica* (Stgr.). Kazakhstan, Altai. HNHM.
2. *Euchalcia mongolica* (Stgr.). Russia, Altai. ZISP.
3. *Euchalcia altaica* Duf. Kazakhstan, Altai. HNHM.
4. *Euchalcia altaica* Duf. Kazakhstan, Altai. HNHM.
5. *Euchalcia kondarensis* Kl. Russia, Altai. HNHM.
6. *Euchalcia kondarensis* Kl. Russia, Altai. HNHM.
7. *Euchalcia sergia* (Obth.). Russia, Amur reg. ZFMK.
8. *Euchalcia sergia* (Obth.). Russia, Amur reg. ZFMK.
9. *Euchalcia exornata* Ronk. Mongolia. HNHM.
10. *Euchalcia renardi* (Ev.). Russia, Altai. ZMHU.
11. *Euchalcia renardi* (Ev.). Russia, Magadan reg. ZMHU.
12. *Euchalcia renardi* (Ev.). Russia, Magadan reg. ZMHU.
13. *Euchalcia siderifera* (Ev.). Russia, S Ural. KN.
14. *Euchalcia modestoides* Poole. Russia, S Ural. KN.
15. *Euchalcia modestoides* Poole. Russia, Amur reg. ZFMK.
16. *Euchalcia biezankoi* (Alberti). Russia, N Caucasus. HNHM.
17. *Euchalcia consona* (Ev.). Russia, Novosibirsk reg. HNHM.
18. *Polychrysia moneta* (Ev.). Russia, S Ural. ZMHU.
19. *Polychrysia esmeralda* (Obth.). Russia, Altai. ZMHU.
20. *Polychrysia esmeralda* (Obth.). Kazakhstan, Altai. ZMHU.
21. *Polychrysia esmeralda* (Obth.). Russia, N Kuriles, Paramushir. ZMHU.
22. *Polychrysia aurata* (Stgr.). Russia, Primorye. IBSS.
23. *Polychrysia splendida* (Butl.). Russia, Primorye. IBSS.
24. *Polychrysia sica* (Graes.). Russia, Primorye. DN.
25. *Panchrysia deaurea* (Hbn). Russia, S Ural. KN.
26. *Panchrysia ornata* (Brem.). Russia, Novosibirsk reg. ZMHU.
27. *Panchrysia ornata* (Brem.). Russia, S Ural. KN.
28. *Panchrysia dives* (Ev.). Russia, S Ural. KN.
29. *Lamprotes c–aureum* (Knoch). Denmark. MF.
30. *Lamprotes mikadina* (Butl.). Russia, Sakhalin. IBSS.
31. *Plusidia cheiranthi* (Tausch.). Russia, S Ural. KN.
32. *Plusidia cheiranthi* (Tausch.). Russia, Altai. ZMHU.
33. *Autographa gamma* (L.). Denmark. ZMUO.
34. *Autographa jota* (L.). Denmark. ZMUO.
35. *Autographa buraetica* (Stgr.). Russia, Tuva. ZFMK.
36. *Autographa pulchrina* (Haw.). Denmark. ZMUO.
37. *Autographa v–minus* (Obth.). Russia, Primorye. IBSS.
38. *Autographa v–minus* (Obth.). Russia, Transbaikalia. HNHM.

Plate 17. Plusiinae. (Pages 128–132).

1. *Autographa mandarina* (Frr.). Russia, Primorye. IBSS.
2. *Autographa mandarina* (Frr.). Russia, Primorye. IBSS.

3. *Autographa camptosema* (Hmps.). Kazakhstan. ZMHU.
4. *Autographa camptosema* (Hmps.). Russia, Altai. ZMHU.
5. *Autographa amurica* (Stgr.). Russia, Primorye. ZMHU.
6. *Autographa amurica* (Stgr.). Russia, Amur. IBSS.
7. *Autographa urupina* (Bryk). Russia, N Kuriles, Paramushir. ZMHU.
8. *Autographa urupina* (Bryk). Russia, Sakhalin. IBSS.
9. *Autographa nigrisigna* (Wlk.). Russia, Primorye. IBSS.
10. *Autographa nigrisigna* (Wlk.). Russia, Primorye. IBSS.
11. *Autographa macrogamma* (Ev.). Russia, Altai. KN.
12. *Autographa macrogamma* (Ev.). Norway. MF.
13. *Autographa bractea* (D. & S.). Russia, Altai. KN.
14. *Autographa bractea* (D. & S.). Russia, S Ural. KN.
15. *Autographa excelsa* (Kretsch.). Russia, Primorye. IBSS.
16. *Autographa excelsa* (Kretsch.). Russia, Primorye. MF.
17. *Cornutiplusia circumflexa* (L.). Turkey. MF.
18. *Syngrapha parilis* (Hbn.). Russia, Chukotka. IBSS.
19. *Syngrapha parilis* (Hbn.). Russia, Tuva. ZFMK.
20. *Syngrapha hochenwarthi* (Hoch.). Russia, Altai. ZMHU.
21. *Syngrapha hochenwarthi* (Hoch.). Russia, Polar Ural. ZISP.
22. *Syngrapha hochenwarthi* (Hoch.). Russia, Chukotka. ZMHU.
23. *Syngrapha diasema* (Bsdv.). Russia, Magadan reg. IBSS.
24. *Syngrapha diasema* (Bsdv.). Russia, Tuva. ZFMK.
25. *Syngrapha diasema* (Bsdv.). Russia, N Transbaikalia. ZFMK.
26. *Syngrapha microgamma* (Hbn.).Russia, S Ural. ZMHU.
27. *Syngrapha microgamma* (Hbn.). Russia. ZMHU.
28. *Syngrapha ain* (Hoch.). Russia, S Ural. KN.
29. *Syngrapha ain* (Hoch.). Russia, Tuva. ZFMK.
30. *Syngrapha interrogationis* (L.). Russia, Magadan reg. ZMHU.
31. *Syngrapha interrogationis* (L.). Norway. ZMUO.
32. *Syngrapha ottolenguii* (Dyar). Russia, N Kuriles, Paramushir. ZMHU.
33. *Syngrapha ottolenguii* (Dyar). Russia, Magadan reg. IBSS.
34. *Syngrapha ottolenguii* (Dyar). Russia, Kamchatka. IBSS.
35. *Syngrapha ottolenguii* (Dyar). Russia, Kamchatka. IBSS.
36. *Plusia festucae* (L.). Russia, S Ural. ZMHU.
37. *Plusia festucae* (L.). Russia, Magadan reg. ZMHU.
38. *Plusia putnami* Grt. Russia, Tuva. ZFMK.
39. *Plusia putnami* Grt. Russia, Amur reg. ZFMK.
40. *Plusia putnami* Grt. Russia, Primorye. IBSS.

Plate 18. Eustrotiinae, Acontiinae, Aediinae, Nolinae. (Pages 133–145).

1. *Phyllophila obliterata* (Ramb.). Russia, S Ural. KN.
2. *Phyllophila obliterata* (Ramb.). Russia, Primorye. ZMHU.
3. *Protodeltote pygarga* (Hfn.). Russia, Mary El. ZMHU.
4. *Protodeltote pygarga* (Hfn.). Russia, Ural. KN.
5. *Protodeltote distinguenda* (Stgr.). Russia, Primorye. HT. MNHU.
6. *Protodeltote distinguenda* (Stgr.). Russia, Primorye. ZMHU.
7. *Protodeltote wiscotti* (Stgr.). Russia, Primorye. IBSS.
8. *Protodeltote wiscotti* (Stgr.). Russia, Primorye. HT. MNHU.
9. *Koyaga falsa* (Butl.). Japan. ZMHU.
10. *Koyaga falsa* (Butl.). Russia, Sakhalin. IBSS.
11. *Koyaga numisma* (Stgr). Russia, Primorye. ZMHU.
12. *Koyaga numisma* (Stgr). Russia, Primorye. IBSS.
13. *Koyaga magninumisma* (Ahn). Russia, Primorye. IBSS.
14. *Koyaga magninumisma* (Ahn). Russia, Primorye. ZISP.
15. *Sugia stygia* (Butl.). Japan. ZMHU.
16. *Sugia stygia* (Butl.). Japan. ZMHU.
17. *Deltote deceptoria* (Scop.). Russia, S Ural. KN.
18. *Deltote deceptoria* (Scop.). Russia, Transbaikalia. GB.
19. *Deltote uncula* (Clerck). Russia, S Ural. ZMHU.
20. *Deltote uncula* (Clerck). Russia, S Ural. KN.
21. *Deltote bankiana* (Ev.). Russia, Novosibirsk reg. ZMHU.
22. *Deltote bankiana* (Ev.). Russia, S Ural. KN.
23. *Deltote nemorum* (Obth.). Russia, Primorye. IBSS.
24. *Deltote nemorum* (Obth.). Russia, Primorye. IBSS.
25. *Pseudodeltote brunnea* (Leech). Japan. ZMHU.
26. *Pseudodeltote brunnea* (Leech). Russia, S Kuriles. SZM.
27. *Pseudodeltote brunnea* (Leech). Russia, S Kuriles. SZM.
28. *Paraphyllophila confusa* Kon. Russia, Primorye. HT. ZISP.
29. *Paraphyllophila confusa* Kon. Russia, Primorye. IBSS.
30. *Micardia pulchra* Butl. Japan. ZFMK.
31. *Micardia pulchra* Butl. Japan. CNHM.
32. *Erastroides fentoni* (Butl.). Russia, Primorye. IBSS.
33. *Erastroides fentoni* (Butl.). Russia, Primorye. IBSS.
34. *Naranga aenescens* Moore. Russia, Primorye. IBSS.
35. *Naranga aenescens* Moore. Russia, Primorye. IBSS.
36. *Maliattha rosacea* (Leech). Russia, Primorye. IBSS.
37. *Maliattha rosacea* (Leech). Russia, Primorye. IBSS.
38. *Maliattha chalcogramma* (Bryk). Korea. CIS.
39. *Maliattha chalcogramma* (Bryk). Russia, Primorye. IBSS.
40. *Maliattha khasanica* Zol. & Dubat. China. ZFMK.
41. *Maliattha khasanica* Zol. & Dubat. China. ZFMK.
42. *Maliattha bella* (Stgr.). Russia, Amur reg. IBSS.
43. *Maliattha bella* (Stgr.). Russia, Primorye. ST. MNHU.
44. *Chorsia costimacula* (Obth.). Russia, Primorye. ZMHU.
45. *Neustrotia costimacula* (Obth.). Russia, Primorye. IBSS.
46. *Chorsia noloides* (Butl.). Russia, Primorye. ZMHU.
47. *Chorsia noloides* (Butl.). Russia, Primorye. IBSS.
48. *Chorsia mollicula* (Graes.). Russia, Primorye. ZMHU.
49. *Chorsia mollicula* (Graes.). Russia, Primorye. IBSS.
50. *Acontia melanura* (Tausch.). Russia, S Ural. KN.
51. *Acontia melanura* (Tausch.). Russia, S Ural. KN.
52. *Acontia lucida* (Hfn.). Russia, S Ural. KN.
53. *Acontia olivacea* (Hmps.). Russia, Primorye. IBSS.
54. *Acontia olivacea* (Hmps.). Russia, Primorye. IBSS.
55. *Acontia martjanovi* Tschetv. Russia, Chita reg. SZM.
56. *Acontia martjanovi* Tschetv. Russia, Tuva. ZFMK.
57. *Acontia martjanovi* Tschetv. Russia, Buryatia. ZMHU.
58. *Acontia candefacta*. Ukraine. MF.
59. *Acontia candefacta*. Ukraine. MF.
60. *Acontia trabealis* (Scop.). Russia, Primorye. IBSS.
61. *Aedia funesta* (Esp.). Austria. ZFMK.
62. *Meganola togatulalis* (Hbn.). Turkey. TWM.
63. *Meganola togatulalis* (Hbn.). Turkey. TWM.
64. *Meganola strigula* (D. & S.). France. TWM.

65. *Meganola strigula* (D. & S.). France. TWM.
66. *Meganola strigula* (D. & S.). Holland. NHML.
67. *Meganola strigula* (D. & S.). Russia, Primorye. NHML.
68. *Meganola albula* (D. & S.). Russia, Primorye. IBSS.
69. *Meganola albula* (D. & S.). Russia, Primorye. IBSS.
70. *Meganola fumosa* (Butl.). Russia, Primorye. ZFMK.
71. *Meganola fumosa* (Butl.). Russia, Primorye. IBSS.
72. *Meganola fumosa* (Butl.). Russia, Primorye. IBSS.
73. *Meganola basifascia* Inoue. Japan. After Inoue 1982.
74. *Meganola bryophilalis* (Stgr.). Russia, Primorye. HT. MNHU.
75. *Meganola bryophilalis* (Stgr.). Russia, Primorye. IBSS.
76. *Meganola bryophilalis* (Stgr.). Russia, Primorye. IBSS.
77. *Meganola costalis* (Stgr.). Russia, Primorye. IBSS.
78. *Meganola costalis* (Stgr.). Russia, Primorye. IBSS.
79. *Meganola strigulosa* (Stgr.). Russia, Primorye. IBSS.

Plate 19. Nolinae. (Pages 146–158).

1. *Meganola shimekii* (Inoue). Japan. KE.
2. *Meganola mikabo* (Inoue). Russia, Primorye. IBSS.
3. *Meganola subgigas*. Inoue. Japan. After Inoue 1982.
4. *Meganola gigas* (Butl.). Russia, Primorye. IBSS.
5. *Evonima mandschuriana* (Obth.). Russia, Primorye. HT. BMNH.
6. *Evonima mandschuriana* (Obth.). Russia, Primorye. TWM.
7. *Manoba banghaasi* (West). Russia, Khabarovsk. HT. BMNH.
8. *Manoba banghaasi* (West). Russia, Primorye. DN.
9. *Manoba banghaasi* (West). Japan. HT *banghaasi sumi.* BMNH.
10. *Casminola pulchella* Leech. Japan. HT. BMNH.
11. *Casminola pulchella* Leech. Korea. CIS.
12. *Nola cucullatella* (L.). Germany. NHML.
13. *Nola cucullatella* (L.). Germany. NHML.
14. *Nola confusalis* (H.–S.). Austria. NHML.
15. *Nola confusalis* (H.–S.). Austria. NHML.
16. *Nola cicatricalis* (Tr.). Hungary. ZFMK.
17. *Nola cicatricalis* (Tr.). Holland. NHML.
18. *Nola cicatricalis* (Tr.). Russia, Primorye. IBSS.
19. *Nola aerugula* (Hbn.). Russia, Altai. ZMHU.
20. *Nola aerugula* (Hbn.). Hungary. TWM.
21. *Nola aerugula* (Hbn.). Russia, Primorye. NHML.
22. *Nola crambiformis* Rbl. Russia, S Ural. KN.
23. *Nola crambiformis* Rbl. Russia, S Ural. KN.
24. *Nola karelica* (Tengstr.). Finland. TWM.
25. *Nola karelica* (Tengstr.). Norway. ZMUO.
26. *Nola cristatula* (Hbn.). Holland. NHML.
27. *Nola cristatula* (Hbn.). Holland. NHML.
28. *Nola chlamitulalis* (Hbn.). Holland. NHML.
29. *Nola chlamitulalis* (Hbn.). Holland. NHML.
30. *Nola minutalis* Leech. S Korea. CIS.
31. *Nola minutalis* Leech. Russia, Primorye. IBSS.
32. *Nola minutalis* Leech. Japan. HT. BMNH.
33. *Nola taeniata* Snell. Russia, Primorye. IBSS.
34. *Nola taeniata* Snell. S Korea. CIS.
35. *Nola taeniata* Snell. Russia, Primorye. ZISP.
36. *Nola umetsui* Sasaki. Russia, Primorye. ZISP.
37. *Nola innocua* Butl. Japan. HT. BMNH.
38. *Nola innocua* Butl. S Korea. CIS.
39. *Nola japonibia* Strand. Taiwan. HT. BMNH.
40. *Nola japonibia* Strand. Russia, Primorye. IBSS.
41. *Nola emi* (Inoue). Japan. PT. BMNH.
42. *Nola emi* (Inoue). Russia, Primorye. IBSS.
43. *Nola neglecta* Inoue. Russia, Primorye. IBSS.
44. *Nola nami* (Inoue). Japan. HT. BMNH.
45. *Nola ebatoi* (Inoue). S Korea. CIS.
46. *Nolathripa lactaria* (Graes.). Russia, Primorye. IBSS.
47. *Negritothripa hampsoni* (Wil.). Russia, Primorye. IBSS.
48. *Negritothripa hampsoni* (Wil.). Russia, Primorye. IBSS.
49. *Iragaodes nobilis* (Stgr.). Russia, Primorye. IBSS.
50. *Iragaodes nobilis* (Stgr.). Russia, Primorye. IBSS.
51. *Parhylophila celsiana* (Stgr.). Russia, Khabarovsk terr. IBSS.
52. *Parhylophila celsiana* (Stgr.). Russia, Primorye. DN.
53. *Parhylophila buddhae* (Alph.). Russia, Khabarovsk terr. IBSS.
54. *Parhylophila buddhae* (Alph.). Russia, Khabarovsk terr. IBSS.
55. *Kerala decipiens* (Butl.). Russia, Primorye. IBSS.
56. *Kerala decipiens* (Butl.). Russia, Primorye. IBSS.
57. *Gelastocera ochroleucana* Stgr. Russia, Primorye. DN.
58. *Gelastocera ochroleucana* Stgr. MNHU. Russia, S Kuriles. SZM.
59. *Gelastocera ochroleucana* Stgr. Russia, Primorye. ST.
60. *Gelastocera ochroleucana* Stgr. Russia, Primorye. IBSS.
61. *Gelastocera exusta* Butl. Russia, Primorye. DN.
62. *Gelastocera exusta* Butl. Russia, Primorye. ZISP.
63. *Gelastocera exusta* Butl. Russia, Primorye. IBSS.
64. *Gelastocera eminentissima* Bryk. Russia, Primorye. HT *sutschana*. ZSM.
65. *Gelastocera eminentissima* Bryk. Russia, Primorye. IBSS.
66. *Gelastocera eminentissima* Bryk. Russia, Primorye. IBSS.
67. *Gelastocera kotshubeji* Obraz. Russia, Primorye. DN.
68. *Gelastocera kotshubeji* Obraz. Russia, Primorye. DN.
69. *Macrochthonia fervens* Butl. Russia, Primorye. IBSS.
70. *Macrochthonia fervens* Butl. Russia, Primorye. IBSS.

Plate 20. Nolinae, Bagisarinae, Sinocharinae, Balsinae. (Pages 158–170).

1. *Pseudoips prasinana* (L.). Russia, Primorye. IBSS.
2. *Pseudoips prasinana* (L.). Russia, Primorye. IBSS.
3. *Pseudoips prasinana* (L.). Russia, Primorye. IBSS.
4. *Pseudoips prasinana* (L.). Russia, Primorye. IBSS.
5. *Pseudoips sylpha* (Butl.). Russia, Khabarovsk. SZM.
6. *Pseudoips sylpha* (Butl.). Russia, Primorye. IBSS.
7. *Pseudoips sylpha* (Butl.). Japan. IBSS.
8. *Pseudoips sylpha* (Butl.). Russia, Primorye. IBSS.
9. *Camptoloma interiorata* (Wlk.). S Korea. CIS.
10. *Aiteta curvilinea* (Stgr.). Russia, “Amur”. HT. MNHU.
11. *Ariolica argentea* (Butl.). Russia, Sakhalin. IBP.
12. *Ariolica argentea* (Butl.). Japan. ZMHU.
13. *Sinna extrema* (Wlk.). Russia, Khabarovsk. SZM.
14. *Sinna extrema* (Wlk.). Russia, Primorye. IBSS.
15. *Eligma narcissus* (Cramer). Russia, Primorye. IBSS.

16. *Earias pudicana* Stgr. Russia, Primorye. ST. MNHU.
17. *Earias pudicana* Stgr. Russia, Primorye.
HT *pudicana* var. *pupillana*. MNHU.
18. *Earias pudicana* Stgr. Russia, Primorye. IBSS.
19. *Earias roseifera* Butl. Russia, "Amur".
ST *erubescens*. MNHU.
20. *Earias roseifera* Butl. Russia, "Amur".
ST *erubescens*.MNHU.
21. *Earias roseifera* Butl. Russia, Primorye. SZM.
22. *Earias roseoviridis* Sugi. Russia, Primorye. IBSS.
23. *Earias roseoviridis* Sugi. Russia, Primorye. IBSS.
24. *Earias roseoviridis* Sugi. S Korea. NIAST.
25. *Earias clorana* (L.). Holland. NHML.
26. *Earias clorana* (L.). Russia, Ikutsk. ZISP.
27. *Earias clorana* (L.). Russia, Novosibirsk. ZMHU.
28. *Earias vernana* (F.). Austria. NHML.
29. *Earias vernana* (F.). Austria. NHML.
30. *Earias vernana* (F.). Austria. NHML.
31. *Nycteola degenerana* (Hbn.). Russia, Primorye. IBSS.
32. *Nycteola degenerana* (Hbn.). Russia, Primorye. IBSS.
33. *Nycteola degenerana* (Hbn.). Russia, Primorye. ZMHU.
34. *Nycteola degenerana* (Hbn.). Russia, Primorye. IBSS.
35. *Nycteola degenerana* (Hbn.). Russia, Altai. ZMHU.
36. *Nycteola asiatica* (Krul.). Russia, Primorye. IBSS.
37. *Nycteola asiatica* (Krul.). Russia, Primorye. ZMHU.
38. *Nycteola eremostola* Duf. Russia, S Ural. KN.
38. *Nycteola eremostola* Duf. Russia, S Ural. KN.
40. *Nycteola eremostola* Duf. Russia, S Ural. ZMHU.
41. *Nycteola eremostola* Duf. W Kazakhstan, Uralsk. ZISP.
42. *Nycteola kuldzhana* Obraz. Mongolia. MF.
43. *Nycteola kuldzhana* Obraz. Russia, Volga reg. ZMHU.
44. *Nycteola kuldzhana* Obraz. Tadjikistan. MF.
45. *Nycteola kuldzhana* Obraz. Afghanistan. MF.
46. *Imosca coreana* (Mats.). Russia, Primorye. IBSS.
47. *Sphragifera sigillata* (Mén.). Russia, Primorye. IBSS.
48. *Amyna axis* (Gn.). Russia, Primorye. IBSS.
49. *Amyna axis* (Gn.). China. ZFMK.
50. *Amyna punctum* (Ev.). Indonesia. ZFMK.
51. *Panemeria tenebrata* (Scop.). Russia, S Ural. KN.
52. *Panemeria tenebrata* (Scop.). Denmark. DN.
53. *Apaustis rupicola* (D. & S.). Croatia. ZFMK.
54. *Apaustis rupicola* (D. & S.). Greece. DN.
55. *Mesotrosta signalis* (Tr.). Austria. ZFMK.
56. *Aegle kaekeritziana* (Hbn.). Slovakia. DN.
57. *Aegle kaekeritziana* (Hbn.). Russia, S Ural. KN.
58. *Mycteroplus puniceago* (Bsdv.). Russia, S Ural. KN.
59. *Mycteroplus cornuta* (Pglr.). Russia, Chita reg. HNHM.
60. *Tyta luctuosa* (D. & S.). Germany. ZFMK.
61. *Sinocharis korbae* Pglr. Russia, Primorye. MF.
62. *Balsa leodura* (Stgr.). Russia, Primorye. IBSS.

Plate 21. Thiacodinae, Pantheinae, Dilobinae.
(Pages 171–177).

1. *Thiacidas egregia* Stgr. Russia, Primorye. IBSS.
2. *Thiacidas egregia* Stgr. Russia, Primorye. IBSS.
3. *Panthea coenobita* (Esp.). Russia, Primorye. IBSS.
4. *Panthea coenobita* (Esp.). Russia, Primorye. IBSS.
5. *Panthea coenobita* (Esp.). Russia, S Ural. KN.
6. *Trichosea ludifica* (L.). Russia, S Ural. KN.
7. *Trichosea ludifica* (L.). Russia, Primorye. IBSS.
8. *Trichosea champa* (Moore). Russia,
Primorye, "Sidemi". ZISP.
9. *Anacronicta caliginea* (Butl.). Russia, Primorye. IBSS.
10. *Anacronicta caliginea* (Butl.). Russia, Primorye. IBSS.
11. *Anacronicta nitida* (Butl.). Russia, S Sakhalin. IBSS.
12. *Anacronicta nitida* (Butl.). Russia, S Sakhalin. IBSS.
13. *Tambana plumbea* (Butl.). Russia, S Sakhalin. IBSS.
14. *Tambana plumbea* (Butl.). Russia, S Sakhalin. IBSS.
15. *Xanthomantis cornelia* (Stgr.). Russia, Primorye. IBSS.
16. *Xanthomantis contaminata* (Drdt.). Russia,
Primorye. IBSS.
17. *Colocasia coryli* (L.). Russia, S Ural. KN.
18. *Colocasia coryli* (L.), whitish form. Russia, S Ural. KN.
29. *Colocasia mus* (Obth.). Russia, Primorye. IBSS.
20. *Colocasia mus* (Obth.). Russia, Primorye. IBSS.
21. *Arcte coerula* (Gn.). Russia, Primorye. IBSS.
22. *Diloba coeruleocephala* (L.). Russia, Volga reg. ZMHU.
23. *Diloba coeruleocephala* (L.). Denmark. ZMUO.
24. *Raphia peustera* Pglr. Russia, Primorye. IBSS.
25. *Raphia peustera* Pglr. China. ZFMK.

Plate 22. Acronictinae. (Pages 178–184).

1. *Cymatophoropsis trimaculata* (Brem.). Russia,
Primorye. IBSS.
2. *Cymatophoropsis unca* (Houlb.). Russia, Primorye. ZISP.
3. *Nacna malachitis* (Obth.). Russia, Primorye. ZFMK.
4. *Subleuconycta palshkovi* (Fil.). Russia, Primorye. IBSS.
5. *Gerbathodes paupera* (Stgr.). Russia, Primorye. IBSS.
6. *Belciades niveola* (Motsch.). Russia, Primorye. IBSS.
7. *"Belciana" siitanae* Remm. Russia, Primorye. ZFMK.
8. *"Belciana" staudingeri* (Leech). China. ZFMK.
9. *Euromoia subpulchra* (Alph.). Russia, Primorye. IBSS.
10. *Euromoia subpulchra* (Alph.). S Korea. CIS.
11. *Euromoia mixta* Stgr. S Korea. CIS.
12. *Euromoia mixta* Stgr. Russia, Primorye. IBSS.
13. *Euromoia mixta* Stgr. Russia, Primorye. IBSS.
14. *Moma alpium* (Osb). Russia, Primorye. IBSS.
15. *Moma alpium* (Osb). Russia, Khaabrovsk. ZISP.
16. *Moma kolthoffi* (Bryk). Russia, Primorye. IBSS.
17. *Moma tsushimana* Sugi. Russia, Primorye. IBSS.
18. *Moma tsushimana* Sugi. S Korea. CIS.
19. *Craniophora ligustri* (D. & S.). Russia,
Primorye. IBSS.
20. *Craniophora ligustri* (D. & S.). Russia, Primorye. IBSS.
21. *Craniophora praeclara* (Graes.). Russia, Primorye. IBSS.
22. *Craniophora praeclara* (Graes.). Russia, Primorye. IBSS.
23. *Craniophora pacifica* Fil. Russia, Primorye. IBSS.
24. *Craniophora pacifica* Fil. Russia, Primorye. IBSS.
25. *Cranionycta jankowskii* (Obth.). Russia, Primorye. IBSS.
26. *Cranionycta jankowskii* (Obth.). Russia, Primorye. MF.
27. *Cranionycta jankowskii* (Obth.). Russia, Primorye. MF.
28. *Cranionycta albonigra* (Herz). S Korea. CIS.
29. *Cranionycta albonigra* (Herz). Russia, Primorye. IBSS.
30. *Cranionycta oda* deLatt. Russia, Primorye. IBSS.

31. *Cranionycta oda* deLatt. Russia, Primorye. IBSS.
32. *Cranionycta oda* deLatt. Russia, Primorye. IBSS.
33. *Acronicta leporina* (L.). Russia, St.–Peterburg. ZMHU.
34. *Acronicta leporina* (L.). Russia, Moskow reg. ZFMK.
35. *Acronicta vulpina* (Grt.). Russia, Primorye. IBSS.
36. *Acronicta vulpina* (Grt.). Russia, Magadan reg. ZMHU.
37. *Acronicta aceris* (L.). Russia, Moskow reg. ZFMK.
38. *Acronicta major* (Brem.). Russia, Primorye. IBSS.
39. *Acronicta major* (Brem.). Russia, Novosibirsk reg. SZM.

Plate 23. Acronictinae. (Pages 184–188).

1. *Acronicta tridens* (D. & S.). Russia, Sakhalin. IBSS.
2. *Acronicta tridens* (D. & S.). Russia, Primorye. IBSS.
3. *Acronicta cuspis* (Hbn.). Russia, Tuva. ZMHU.
4. *Acronicta cuspis* (Hbn.). Russia, Irkutsk reg. ZMHU.
5. *Acronicta intermedia* (Warr.). Russia, Primorye. IBSS.
6. *Acronicta intermedia* (Warr.). Russia, Primorye. IBSS.
7. *Acronicta leucocuspis* (Butl.). Russia, Primorye. IBSS.
8. *Acronicta sugii* (Kinoshita). Russia, Primorye. IBSS.
9. *Acronicta psi* (L.). Russia, Novosibirsk. ZMHU.
10. *Acronicta psi* (L.). Russia, S Ural. KN.
11. *Acronicta psi* (L.). Russia, S Ural. KN.
12. *Acronicta alni* (L.). Russia, Primorye. IBSS.
13. *Acronicta adaucta* (Warr.). Russia, Primorye. IBSS.
14. *Acronicta strigosa* (D. & S.). Russia, Primorye. IBSS.
15. *Acronicta strigosa* (D. & S.). Russia, Amur reg.
HT *terrigena*. ZISP.
16. *Acronicta jozana* (Mats.). Russia, Primorye. ZMHU.
17. *Acronicta bellula* (Alph.). Russia, Primorye. IBSS.
18. *Acronicta bellula* (Alph.). N China. ST *chingana*. MNHU.
19. *Acronicta omorii* (Mats.). Russia, S Kuriles. SZM.
20. *Acronicta carbonaria* (Graes.). N Korea. HNHM.
21. *Acronicta carbonaria* (Graes.). Russia, Khabarovsk.
HT. ZISP.
22. *Acronicta catocaloida* (Graes.). Russia, Primorye. IBSS.
23. *Acronicta hercules* (Feld. & Roghf.). Russia,
Primorye. IBSS.
24. *Acronicta hercules* (Feld. & Roghf.). Russia, Primorye. IBSS.
25. *Acronicta menyanthidis* (View.). Russia,
Novosibirsk. ZMHU.
26. *Acronicta menyanthidis* (View.). Russia, Buryatia. ZMHU.
27. *Acronicta auricoma* (D. & S.). Russia,
Magadan reg. ZMHU.
28. *Acronicta auricoma* (D. & S.). Russia, Buryatia. GG.
29. *Acronicta dahurica* Kon. & Han. Russia,
Chita reg. HT. HNHM.
30. *Acronicta dahurica* Kon. & Han. Russia,
Chita reg. PT. HNHM.
31. *Acronicta dahurica* Kon. & Han. Russia,
Primorye. PT. IBSS.
32. *Acronicta dahurica* Kon. & Han. N China. PT. HFU.
33. *Acronicta cinerea* (Hfn.). Russia, S Ural. KN.
34. *Acronicta cinerea* (Hfn.). Russia, Altai. AV.
35. *Acronicta cinerea* (Hfn.). Russia, Tjumen reg. ZISP.
36. *Acronicta cinerea* (Hfn.). Russia, Irkutsk reg. ZISP.
37. *Acronicta cinerea* (Hfn.). Kazakhstan. ZISP.

Plate 24. Acronictinae, Agaristinae.
(Pages 188–193).

1. *Acronicta rumicis* (L.). Russia, Primorye. IBSS.
2. *Acronicta rumicis* (L.). Russia, Primorye. IBSS.
3. *Acronicta lutea* (Brem. & Gr.). Russia, Primorye. IBSS.
4. *Acronicta lutea* (Brem. & Gr.). Russia, Primorye. IBSS.
5. *Acronicta digna* (Butl.). Russia, Primorye. IBSS.
6. *Acronicta digna* (Butl.). Russia, Primorye. IBSS.
7. *Acronicta raphael* (Obth.). Russia, Primorye. IBSS.
8. *Acronicta raphael* (Obth.). Russia, Primorye. IBSS.
9. *Acronicta concerpta* (Drdt.). Russia, Primorye. IBSS.
10. *Acronicta concerpta* (Drdt.). Russia, Primorye. IBSS.
11. *Acronicta megacephala* (D. & S.). Russia, S Ural. KN.
12. *Acronicta megacephala* (D. & S.). Russia, S Ural. ZMHU.
13. *Simyra nervosa* (D. & S.). Russia, Burjatia. ZMHU.
14. *Simyra nervosa* (D. & S.). W Kazakhstan. ZFMK.
15. *Simyra nervosa* (D. & S.). Kazakhstan.
ST *expressa*. MNHU.
16. *Simyra splendida* Stgr. Russia, Primorye. IBSS.
17. *Simyra albovenosa* (Goeze). Denmark. ZMUO.
18. *Simyra albovenosa* (Goeze). Denmark. ZMUO.
19. *Simyra saepistriata* (Alph.). Russia, Tuva. ZMHU.
20. *Simyra saepistriata* (Alph.). Mongolia. GB.
21. *Simyra dentinosa* Frr. Turkmenia. ZMHU.
22. *Simyra dentinosa* Frr. Kazakhstan. ZFMK.
23. *Oxicesta geographica* (Ev.). Russia, S Ural. KN.
24. *Oxicesta geographica* (Ev.). Russia, S Ural. KN.
25. *Eogene contaminei* (Ev.). W Kazakhstan, Uralsk. NHML.
26. *Eogene contaminei* (Ev.). Russia, Volga reg. ZMHU.
27. *Mimeusemia persimilis* Butl. Russia, Primorye. IBSS.
28. *Mimeusemia persimilis* Butl. Russia, Primorye. IBSS.
31. *Sarbanissa subflava* (Moore). Russia,
Primorye, "Sidemi". HT *jankowskii*. ZISP.
32. *Sarbanissa subflava* (Moore). Japan. CNHM.
29. *Sarbanissa venusta* (Leech). Russia, Primorye. IBSS.
30. *Sarbanissa venusta* (Leech). Russia, Primorye. IBSS.
33. *Asteropetes noctuina* Butl. Japan. ZMHU.
34. *Asteropetes noctuina* Butl. Russia, S Kuriles. IBSS.
36. *Catocala deuteronympha* Stgr., melanic form. Russia,
Primorye. SZM.
36. *Catocala ella* Butl., melanic form. Russia,
Primorye. SZM.

Addendum

When this book was ready for printing I have received an information about collecting of tropical migranting species *Ischija manley* (Cramer, 1776) (subfamily Erebinae) in Primorye, firstly recorded in Russia. Because it was not possible to insert the new data to the systematic part and genitalia figurs to the main plates, I placed it here as an addendum to systematic part and documentation of the record. The male and female genitalia are illustrated in additional plate on p. 425. I am grateful to S. Veriga (Vladivostok) for valuable information and presented for identification photo of living specimen.

Genus ***Ischyja*** Hubner, [1823], 1816

Ischyja Hübner, [1823] 1816, *Verz. bekannter Schmett.*: 265. Type-species: *Phalaena*, *Noctua manlia* Cramer, 1776, [India], Coromandel Coast.

Synonymy: *Potamorphora* Guenee, 1852; *Ischya*, Agassiz [1840], emend.

Large sized moths with rather robust body and triangular, apically tiped, cryptic dark coloured forewing and with blue or white flash fascia on hindwing. Antennae of male flattened dorso-ventrally, fasciculated. Labial palps directed forwards, 3rd segment very slended but equal to the 2nd in length. Most speciae are sexual dimorphic: females much larger than males, with more uniform forewing; in male the hindwing venation strongy modyfied with disruption and shortening of cell and separation of M2. Male genitalia very uniform in structure throughout the genus: uncus strong, with apical clav, scaphium presents, juxta modified from inverted V-shaped; valva robust, massive basally, narrowed distally; sacculus very long, massive, costa strong, harpe not presents. Aedeagus with somewhat convolute vesica, bearing three patches of sclerotisation with minute cornuti or with scobination. In female genitalia 7th sternite reduced, its marging covers ostium; ductus bursae short, sclerotised; corpus bursae sclerotised and corugated in its proximal part, in its bottom third constricted, with ovate membranous bottom part, separated by constriction. Larva of the type species descrived and illustrated by Kuroko & Lewwanich (1993). Holloway (2005) reffered many records of hostplants of the larva *Ischyja* belong mainly to tropical plant families: Amaranthaceae, Anacardiaceae, Bromeliaceae, Burseraceae, Combretaceae, Dipterocarpaceae, Fagaceae, Lauraceae, Sapindaceae, Vitaceae, Lardizabalaceae.

The genus includes about 15 species distributed in the tropics and subtropics of Oriental and Australian regions, predominantly in South East Asia. – 1 species.

Ischyja manlia (Cramer, 1776)

(Pl. 6: 4; ♂ genit. Pl. 189: 1; ♀ genit. Pl. 189: 2)

Phalaena, *Noctua manlia* Cramer, 1776, Uitl. Kapellen 1: 444, Pl. 92: A (Type locality: [India], Coromandel Coast).

Synonymy: *squalida* Fabricius, 1787; *amboinensis* Felder, 1862

Bionomics. Tropical species, distributed from India and Nepal through Indochina to South China and Taiwan, migranting specimens were recorded in south of Japan (Sugi 1982) and extreme south of S Korea (Sohn & Cho 2005). Collecting data: 1 female, Russia, Primorye terr., Nadezhdinsky distr., Gusevka, 20.VII 2010, by light (A. Kozlov leg.). Larvae feed on lives of litchi (*Litchi chinensis*, Sapindaceae), mango (*Mangifera indica*, Anacaridacea) and longan (*Dimocarpis longan*, Sapindacea) (Kuroko & Lewwanich 1993); Adult are fruit piercing moths, attacking longan and guava (Banziger 1982; Kuroko & Lewwanich 1993).

Distribution (Map 531). Russia, S Primorye terr. (migrant). – Indonesia, Malaysia, Thailand, Cambodia, Vietnam, Nepal, India, Sri Lanka, Philippines, Taiwan, S Japan (Honshu, Kyushu, Yakushima Is., Amami Oshima Is., Okinawa Honto Is., Iriomote Is.), S Korea.

COLOUR PLATES 1-24
AND
GENITALIA PLATES 25-188

CONTENTS

	Imago	Male genitalia	Female genitalia
Family **MICRONOCTUIDAE**	1	25	121
Family **NOCTUIDAE**	1-24	25-120	121-188
1. Subfam. RIVULINAE	1	25	121
2. Subfam. BOLETOBIINAE	1	25	121
3. Subfam. HYPENODINAE	1	25, 26	121-122
4. Subfam. ARAEOPTERONINAE	1	26, 27	122
5. Subfam. EUBLEMMINAE	1	27-30	122-124
6. Subfam. AVENTIINAE	1, 2	30-34	124-127
7. Subfam. PANGRAPTINAE	2	34-35	127,128
8. Subfam. PHYTOMETRINAE	2	35, 36	128
9. Subfam. HERMINIINAE	3, 4	37-43	128-133
10. Subfam. HYPENINAE	4, 5	43-48	133-137
11. Subfam. EREBINAE	6	49	138
12. Subfam. CALPINAE	6, 7	49-53	138-140
13. Subfam. CATOCALINAE	7-14	53-76	140-156, 188
14. Subfam. EUTELIINAE	14	76	156
15. Subfam. PLUSIINAE	15-17	77-89	157-165
16. Subfam. EUSTROTIINAE	17	90-93	166-168
17. Subfam. ACONTIINAE	17	93, 94	168, 169
18. Subfam. AEDIINAE	17	94	169
19. Subfam. NOLINAE	17-20	95-104	169-177
20. Subfam. BAGISARINAE.	20	104, 105	177, 178
21. Subfam. METOPONIINAE	20	105, 106	178
22. Subfam. SINOCHARINAE	20	106	178
23. Subfam. BALSINAE	20	106	178
24. Subfam. THIACIDINAE	21	107	179
25. Subfam. PANTHEINAE	21	107-109	179, 180
26. Subfam. DILOBINAE	21	109	180
27. Subfam. ACRONICTINAE	22-24	109-120	181-188
28. Subfam. AGARISTINAE	24	120	188
Addendum	6	189	189

Plate 1. Micronoctuidae, Rivulinae, Araeopteroninae, Boletobinae, Eublemminae, Aventiinae

Plate 2. Aventiinae, Pangraptinae, Phytometrinae

Plate 3. Herminiinae

Plate 4. Herminiinae, Hypeninae

Plate 5. Hypeninae

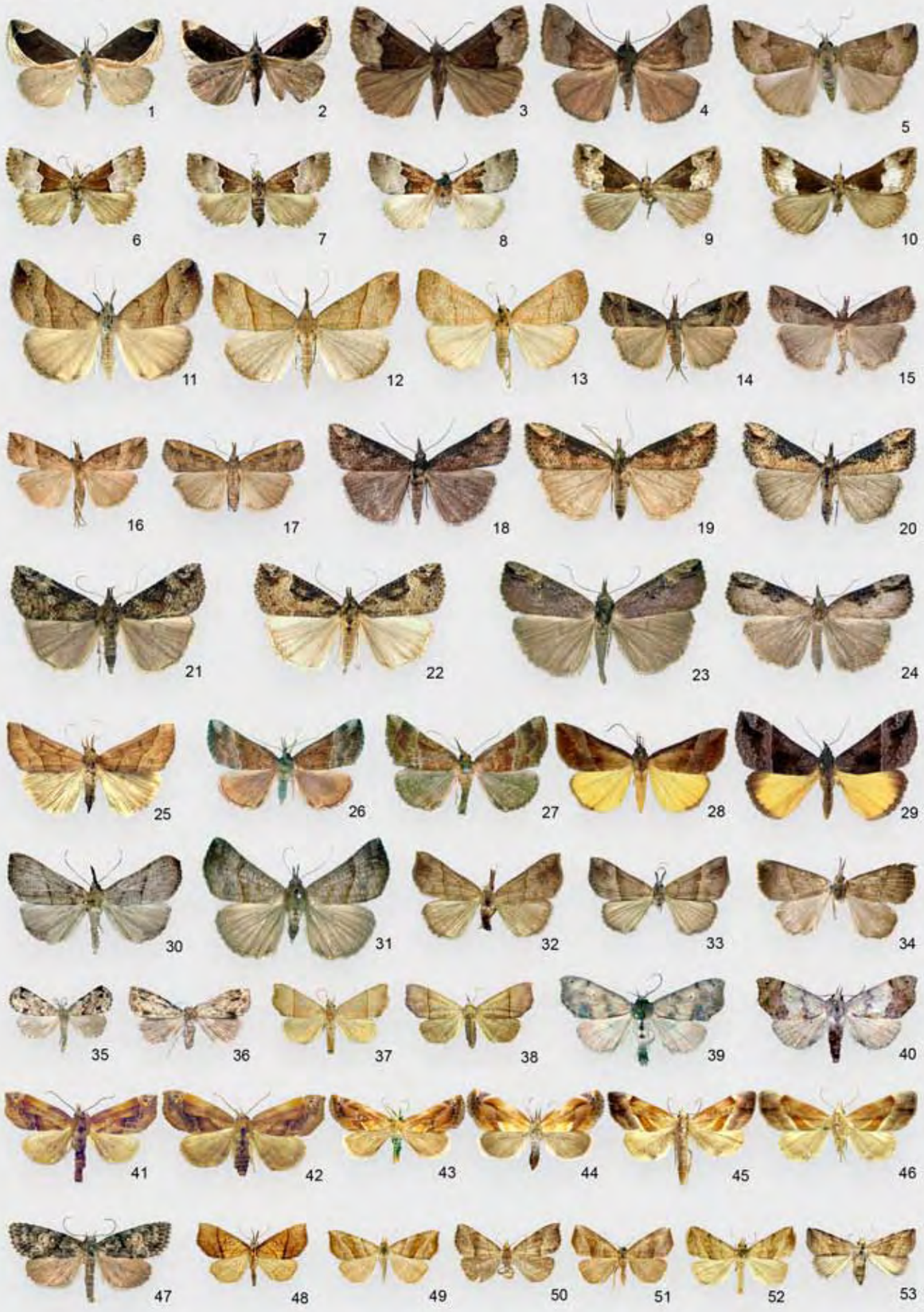


Plate 6. Erebinae, Calpinae

Plate 7. Calpinae, Catocalinae

Plate 8. Catocalinae

Plate 9. Catocalinae

Plate 10. Catocalinae

Plate 11. Catocalinae

Plate 12. Catocalinae

Plate 13. Catocalinae

Plate 14. Catocalinae, Euteliinae

Plate 15. Plusiinae

Plate 16. Plusiinae

Plate 17. Plusiinae

Plate 18. Eustrotiinae, Acontiinae, Aediinae, Nolinae

Plate 19. Nolinae

Plate 20. Nolinae, Bagisarinae, Metoponiinae, Sinocharinae, Balsinae

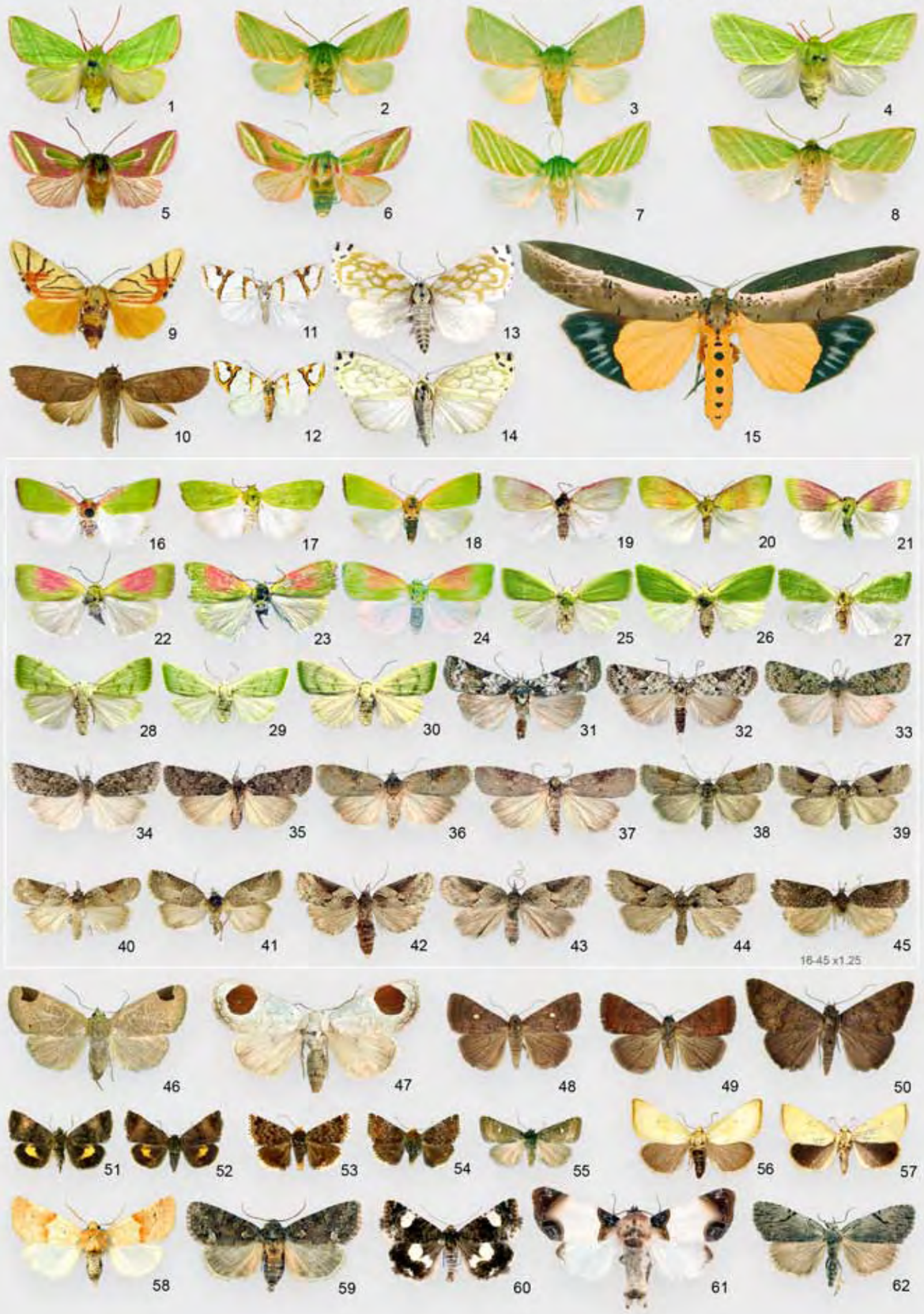


Plate 21. Thiacidinae, Pantheinae, Dilobinae

Plate 22. Acronictinae

Plate 23. Acronictinae

Plate 24. Acronictinae, Agaristinae

Plate 25. Micronoctuidae, Noctuidae: Riviliinae, Boletobinae, Hypenodinae

1

Mimachrostia fasciata.
Russia, Primorye. MF. Aedeagus: Russia. 0230 AM.

2

Micronoctua occi.
S Korea. 42/96 VK. NIAST. Aedeagus: Russia. 0231 AM.

3

Rivula sericealis.
N China. 12/05 VK. CIS.

4

Rivula unctalis.
Russia, Primorye. VK. HT. MNHU.

5

Parascotia fuliginaria.
Russia, Ural. 5498 MF.

6

Hypenodes humidalis.
Finland. 014 ER. ZMHU.

Plate 26. Noctuidae: Hypenodinae, Araeopteroninae

1

Hypenodes rectifascia.
S Korea. 32/95 VK. NIAST.

2

Schrankia costaestrigalis.
Hungary. 820 LR. HNHM.

3

Schrankia separatalis.
S Korea. 67-1 HL. CIS.

4

Schrankia kogii.
S Korea. 65-1 HL. CIS.

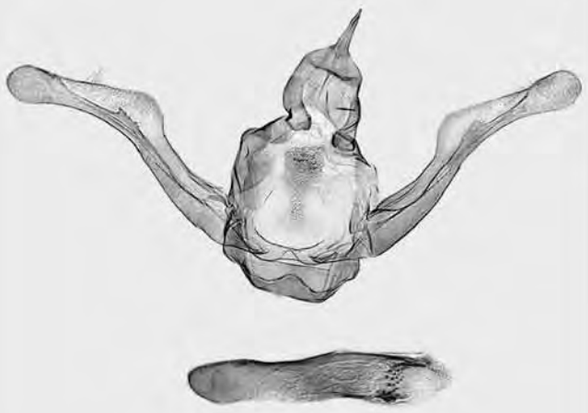
5

Schrankia balneorum.
Russia, Daghestan. AM. ZISP.

6

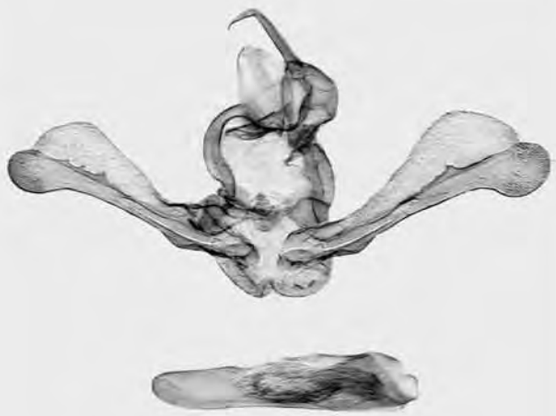
Araeopteron amoena.
S Korea. 5182 NIAST.

1



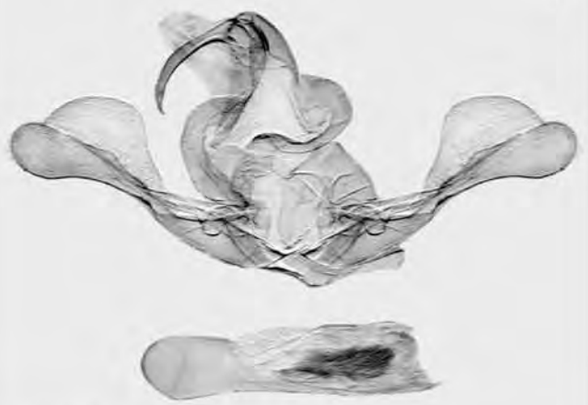
Araeopteron fragmenta.
Japan. MF.

2



Araeopteron nebulosa.
Russia, Primorye. 5076 MF.

3

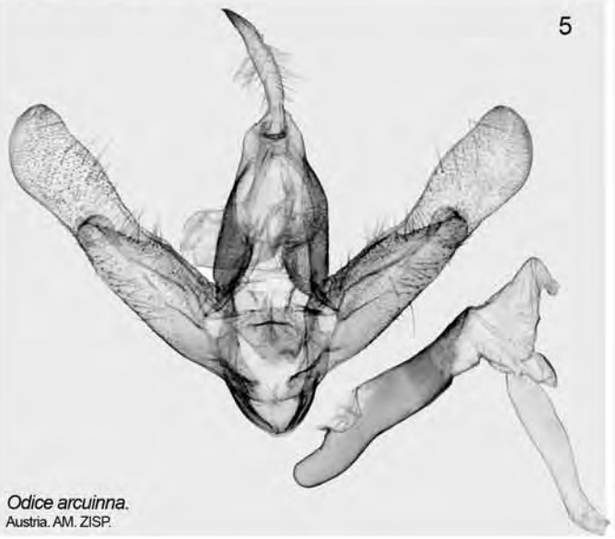


Araeopteron ussurica.
Russia, Primorye. 5747 MF.

4

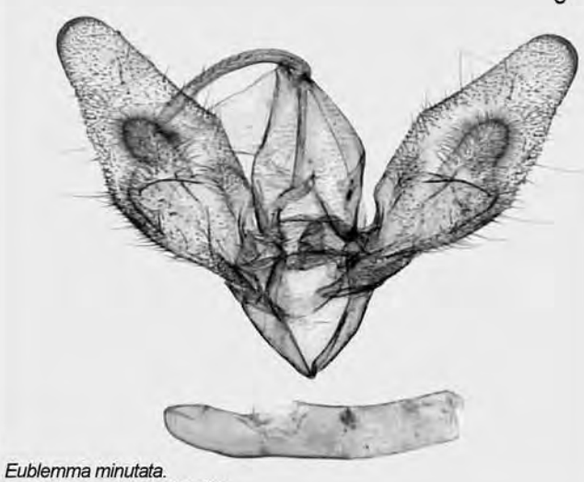
Araeopteron makikoae.
Russia, Primorye. 5750 MF.

5



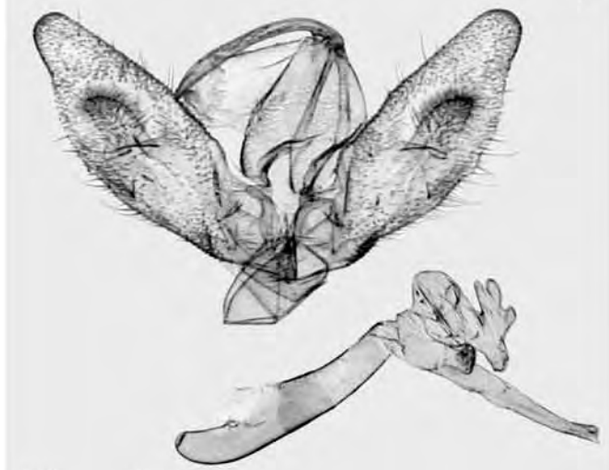
Odice arcuinna.
Austria. AM. ZISP.

6



Eublemma minutata.
Russia, Volga reg., Sarepta. AM. ZISP.

1

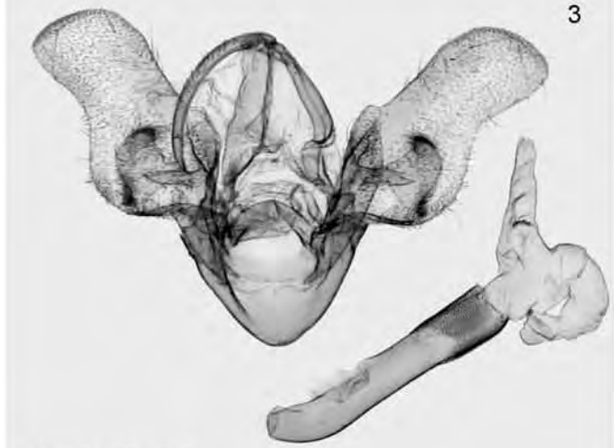


Eublemma pulchralis.
Russia, Volga reg., Sarepta. AM. ZISP.

2

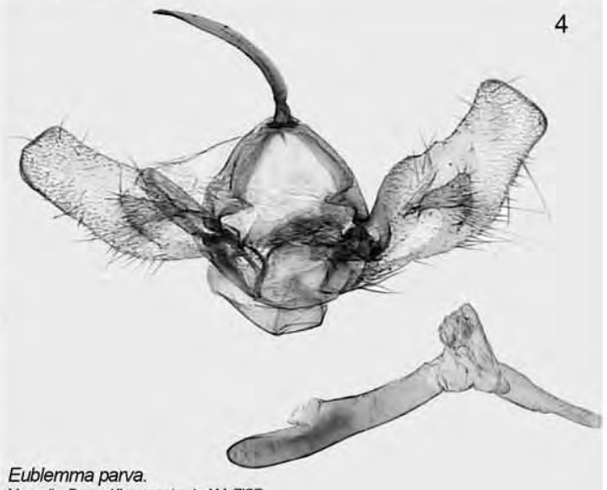
Eublemma ostrina.
Turkey. 2345 VK. ZFMK.

3



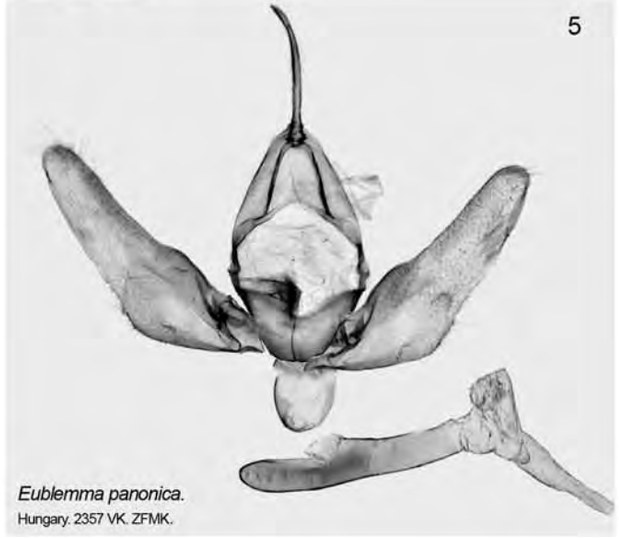
Eublemma porphyrinia.
Russia, Altai. AM. ZISP.

4



Eublemma parva.
Mongolia, Bayan-Khongor aimak. AM. ZISP.

5



Eublemma panonica.
Hungary. 2357 VK. ZFMK.

6

Eublemma amasina.
Russia, Altai. AM. ZISP.

1

Eublemma rosea
Europe. 2217 VK. ZFMK.

2

Eublemma purpurina.
S Russia, Stavropol reg. AM. ZISP.

3

Eublemma amoena.
S Russia, Volga reg., Sarepta. AM. ZISP.

4

Eublemma pallidula.
S Russia, Astrachan reg. AM. ZISP.

5

Eublemma parallela.
S Russia, Sarepta. AM. ZISP.

6

Eublemma pusilla.
W Kazakstan, Uralsk. AM. ZISP.

1

Eublemma polygramma.
Spain. 2352 VK. ZFMK.

2

Metachrostis sinevi.
HT. Russia, S Primorye. AM. ZISP.

3

Laspeyria flexula.
Russia, Primorye. AM. ZISP. Aed.: Denmark. 4285 MF.

4

Laspeyria subrosea.
S Korea. 5077 ASB. NIAST.

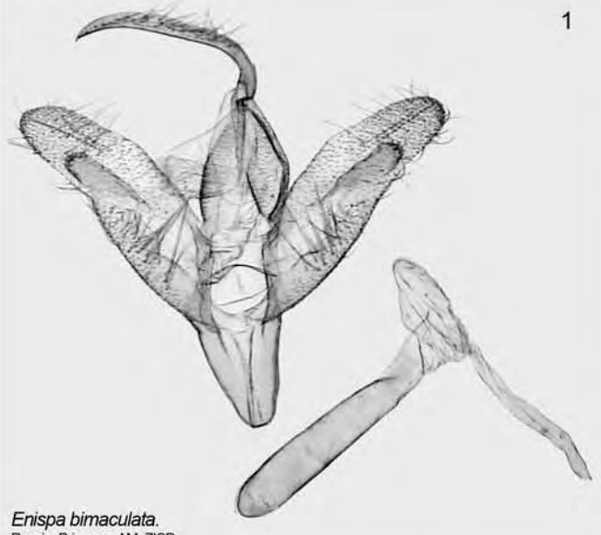
5

Enispa lutefascialis.
S Korea. 5065 ASB. NIAST.

6

Enispa albosignata.
Russia, Primorye. AM. ZISP.

1



Enispa bimaculata.
Russia, Primorye. AM. ZISP.

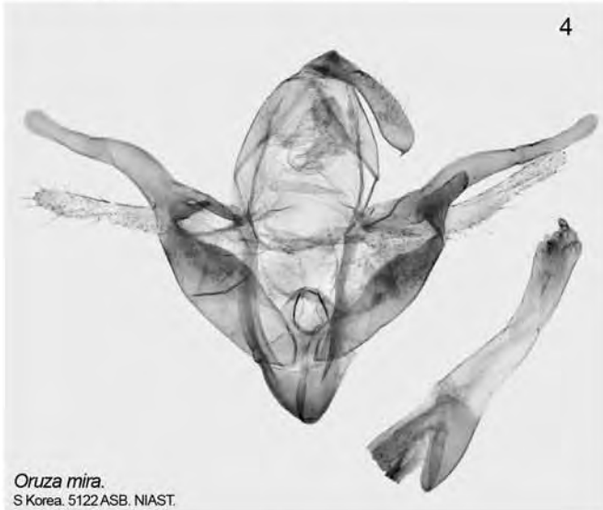
2

Corgatha obsoleta.
N Korea. 7272 LR. HNHM.

3

Corgatha costimacula.
S Korea. 5077 ASB. NIAST.

4

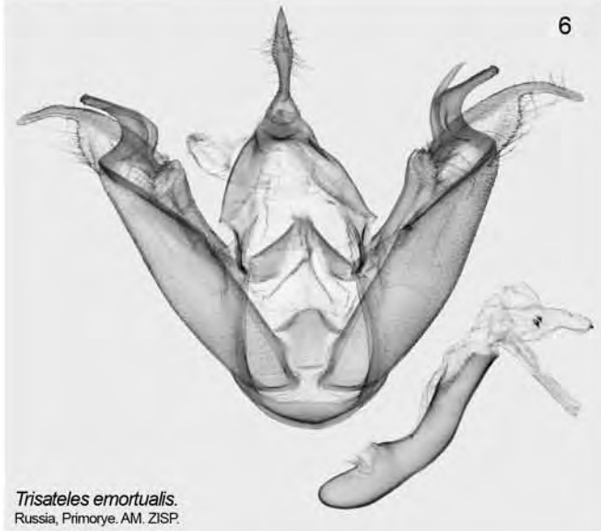


Oruza mira.
S Korea. 5122 ASB. NIAST.

5

Oruza yoshinoensis.
China. 2338 VK. ZFMK.

6

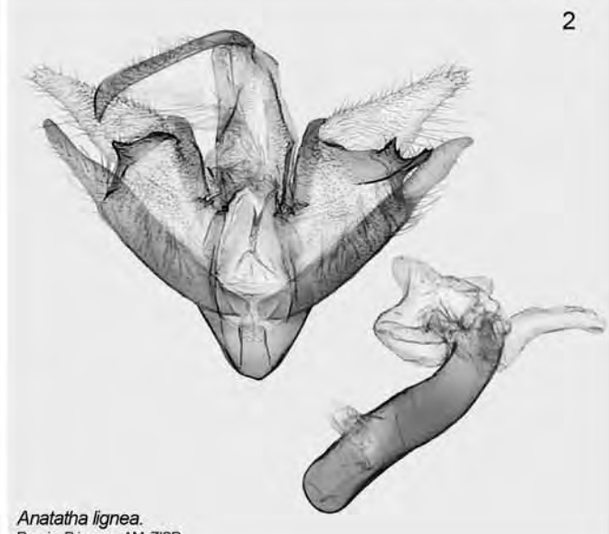


Trisateles emortualis.
Russia, Primorye. AM. ZISP.

1

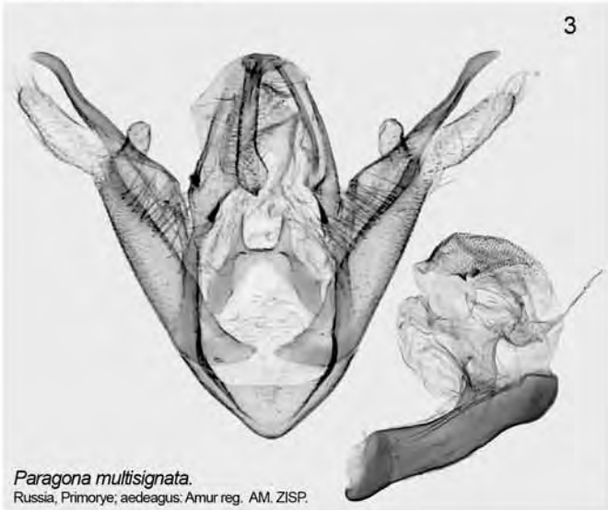
Aventiola pusilla.
Russia, S Khabarovsk terr. AM. ZISP.

2



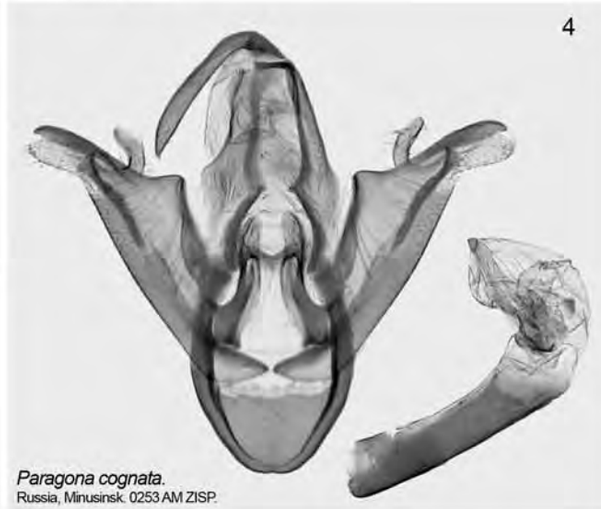
Anatatha lignea.
Russia, Primorye. AM. ZISP.

3



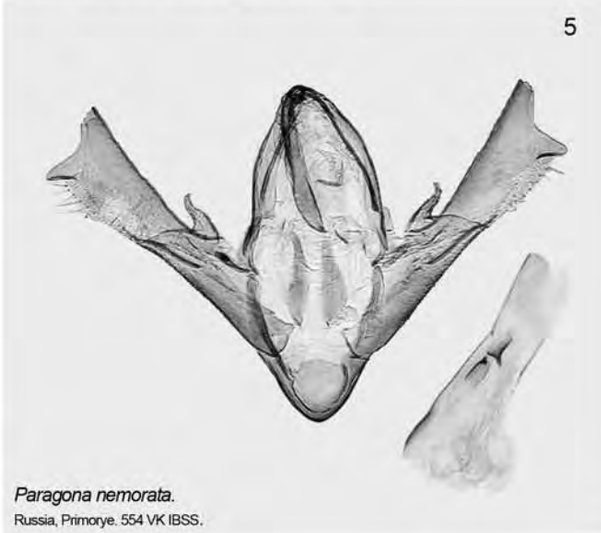
Paragona multisignata.
Russia, Primorye; aedeagus: Amur reg. AM. ZISP.

4



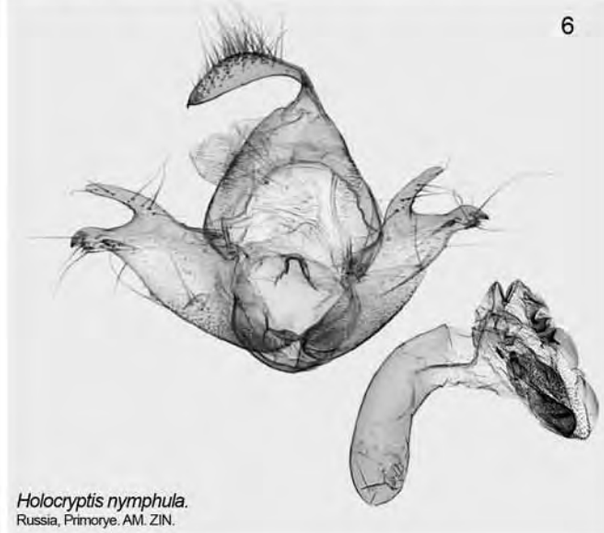
Paragona cognata.
Russia, Minusinsk. 0253 AM ZISP.

5



Paragona nemorata.
Russia, Primorye. 554 VK IBSS.

6



Holocryptis nymphula.
Russia, Primorye. AM. ZIN.

1

Holocryptis ussuriensis.
S Korea. 5116 VK. NIAST.

2

Diomea cremata.
Russia, Primorye. AM. ZISP.

3

Diomea jankowskii.
Russia, Primorye. AM. ZISP.

4

Polysciera manleyi.
Japan. 200108 VK. ZMHU

5

Naganoella timandra.
Russia, Primorye. AM. ZISP.

6

Remmigabara secunda.
S Korea. 275-1 HL. CIS.

1

Hypostrotia cinerea.
Russia, Primorye. AM. ZIN.

2

Pangrapta costaemacula.
Russia, Primorye. 654 VK. IBSS.

3

Pangrapta suaveola.
S Korea. 234-1 HL. CIS.

4

Pangrapta vasava.
N China. 771 HL. CIS.

5

Pangrapta flavomacula.
Russia, Primorye. AM. ZISP.

6

Pangrapta lunulata.
S Korea. 11295/10 VK. NIAST.

1

Pangrapta marmorata.
S Korea. 242-1 HL. CIS.

2

Pangrapta obscurata.
S Korea. 62/05 VK. CIS.

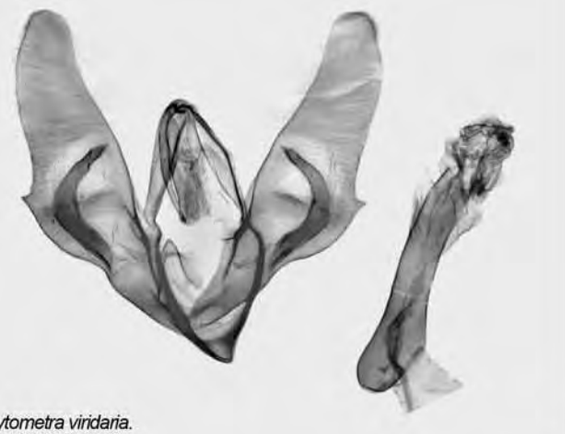
3

Pangrapta griseola.
S Korea. 59/05 VK. CIS.

4

Pangrapta umbrosa.
Japan. 2324 VK. ZFMK.

5

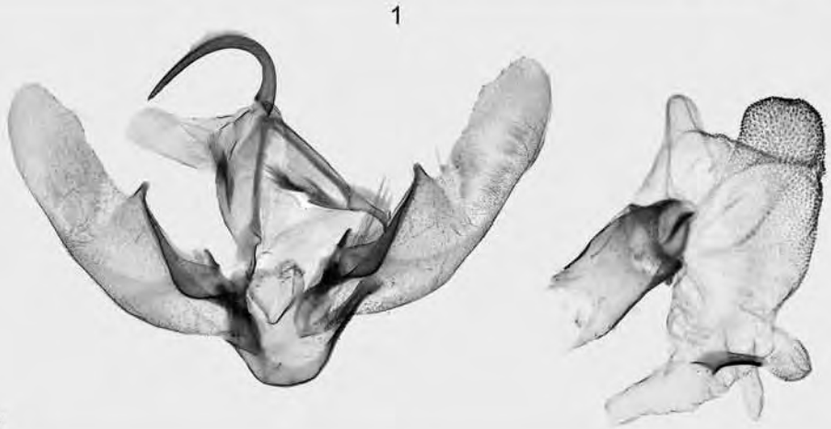


Phytometra viridaria.
Europe. 2311 VK. ZFMK.

6

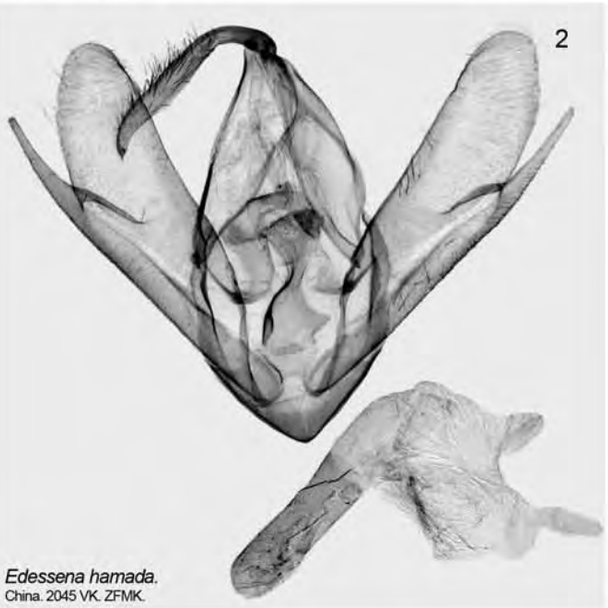
Phytometra amata.
China. 2330 VK. ZFMK.

1



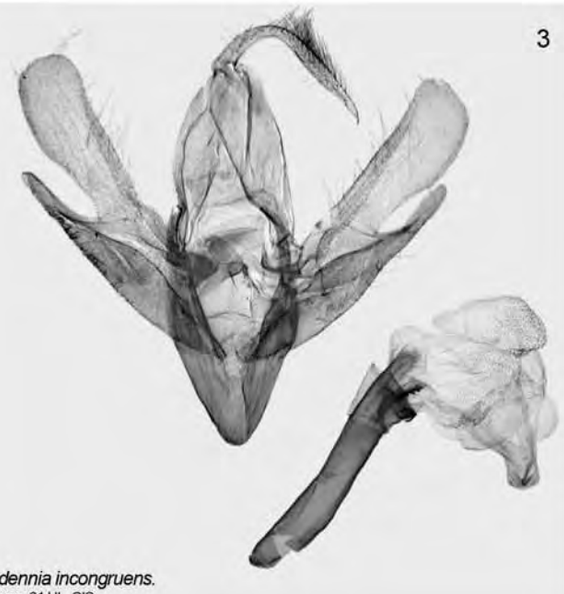
Colobochyla salicalis.
Russia, Primorye. 5238 MF.

2



Edessena hamada.
China. 2045 VK. ZFMK.

3



Hadennia incongruens.
S Korea. 61 HL. CIS.

4

Paracolax tristalis.
Russia, Khabarovsk. 2047 VK. ZFMK.

5

Paracolax trilinealis.
Russia, Primorye 2094 VK. ZFMK.

1

Paracolax fascialis.
S Korea. 301 HL. CIS.

2

Paracolax fentoni.
N China. 38/05 VK. CIS.

3

Paracolax albinotata.
Japan. 2046 VK. ZFMK.

4

Idia quadra.
Russia, Primorye. 4/05 VK. CIS.

5

Idia curvipalpis.
Russia, Primorye 2052 VK. ZFMK.

6

Gynaephila maculifera.
N Korea. 7695 LR. HNHM.

1

Hydrillodes morosa.
S Korea. 55/05 VK. CIS.

2

Bertula bistrigata.
S Korea. 20-1 HL. CIS.

3

Simplicia rectalis.
China. 2053 VK. ZFMK.

4

Zanclognatha griselda.
Russia, S Kuriles, Kunashir I. 857 VK. IBSS.

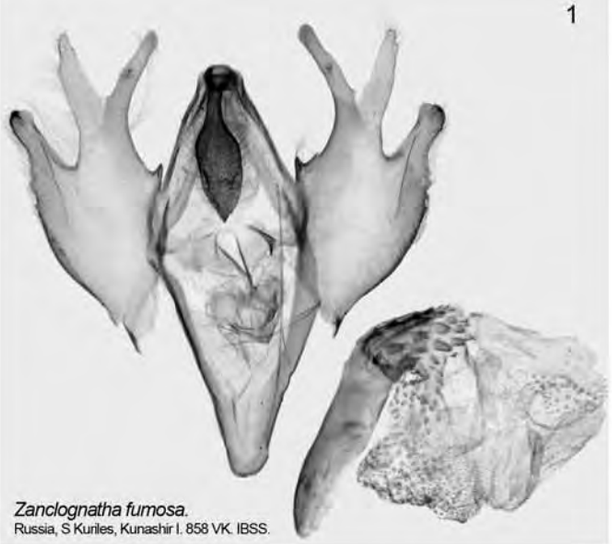
5

Zanclognatha lilacina.
Japan (after Owada, 1987).

6

Zanclognatha lunalis.
N China 19 HL. CIS.

1

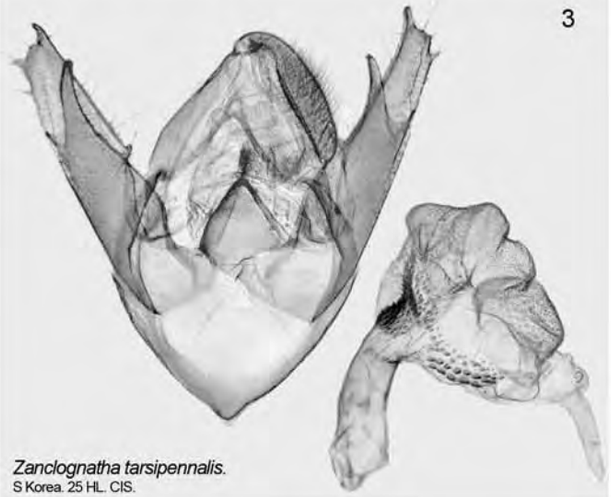


Zanclognatha fumosa.
Russia, S Kuriles, Kunashir I. 858 VK. IBSS.

2

Zanclognatha obliqua.
Japan. 1889 SS. NIAES.

3

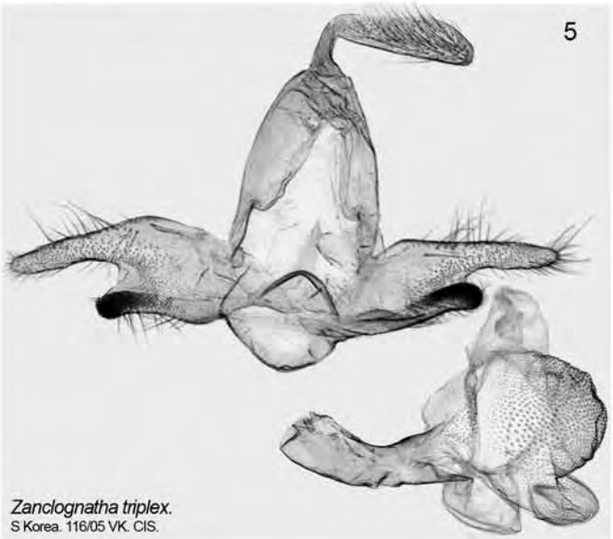


Zanclognatha tarsipennalis.
S Korea. 25 HL. CIS.

4

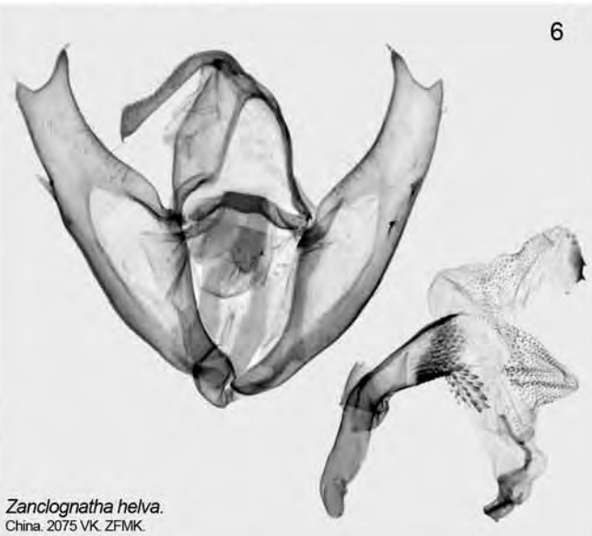
Zanclognatha subgriselda.
Russia, S Kuriles, Kunashir I. 856 VK. IBSS.

5



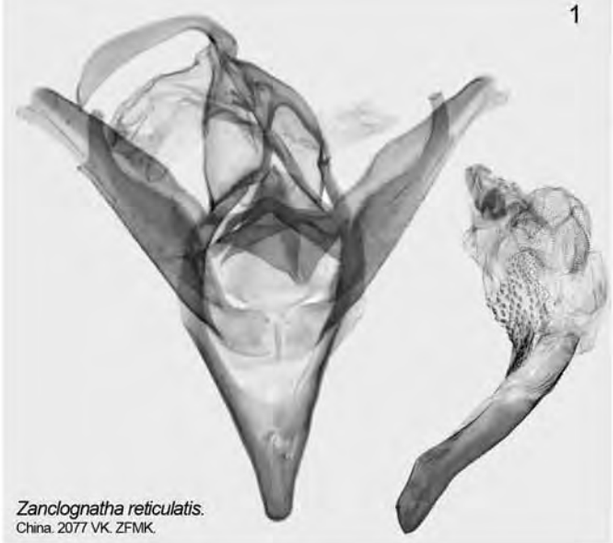
Zanclognatha triplex.
S Korea. 116/05 VK. CIS.

6



Zanclognatha helva.
China. 2075 VK. ZFMK.

1

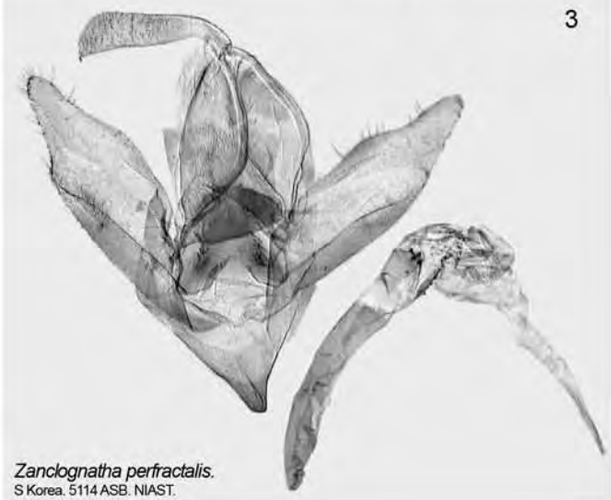


Zanclognatha reticulatis.
China. 2077 VK. ZFMK.

2

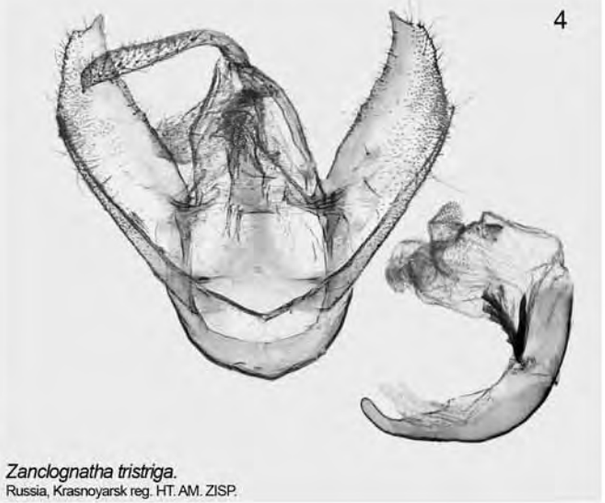
Zanclognatha umbrosalis.
S Korea. HL. CIS.

3



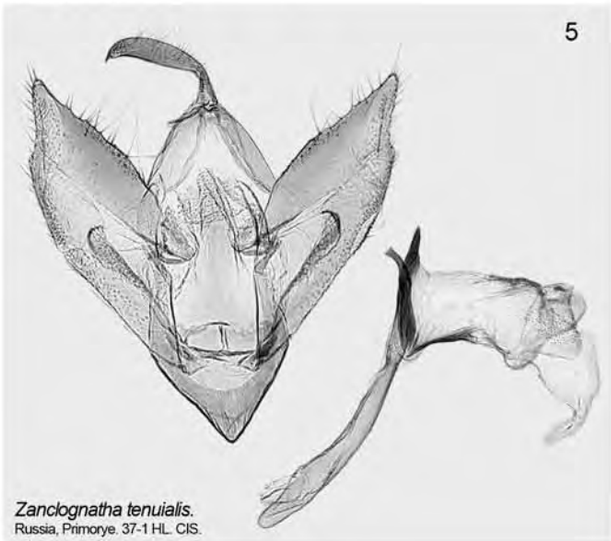
Zanclognatha perfractalis.
S Korea. 5114 ASB. NIAST.

4



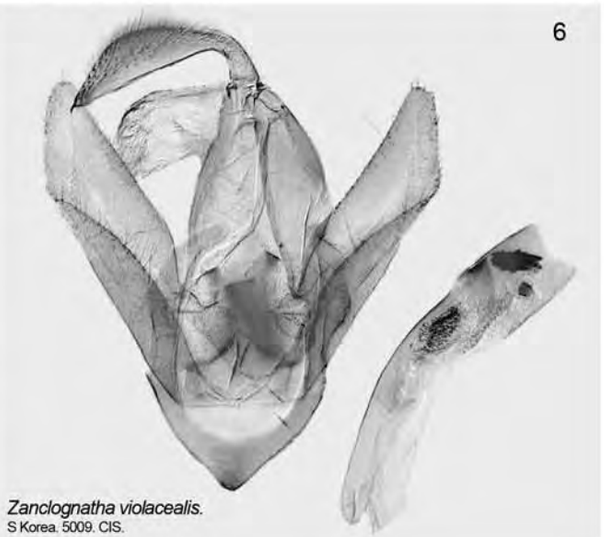
Zanclognatha tristriga.
Russia, Krasnoyarsk reg. HT. AM. ZISP.

5



Zanclognatha tenuialis.
Russia, Primorye. 37-1 HL. CIS.

6



Zanclognatha violacealis.
S Korea. 5009. CIS.

1

Pechipogo strigilata.
Russia. 2060 VK. ZFMK.

2

Polypogon tentacularia.
Germany. 2062 VK. ZFMK.

3

Polypogon gryphalis.
Abhasia. AM. ZISP.

4

Polypogon tarsicrinata.
N Korea. 2058 VK. ZFMK.

5

Macrochilo cribrumalis.
Germany 2056 VK. ZFMK.

6

Herminia grisealis.
Russia, Primorye. 2085 VK. ZFMK.

1

Herminia robiginosa.
Russia,Primorye. 746 VK. IBSS.

2

Herminia tarsicrinalis.
S Korea. 43-1 HL. CIS.

3

Herminia arenosa.
S Korea. 44-2 HL. CIS.

4

Herminia stramentacealis.
Japan. 2082 VK. ZFMK.

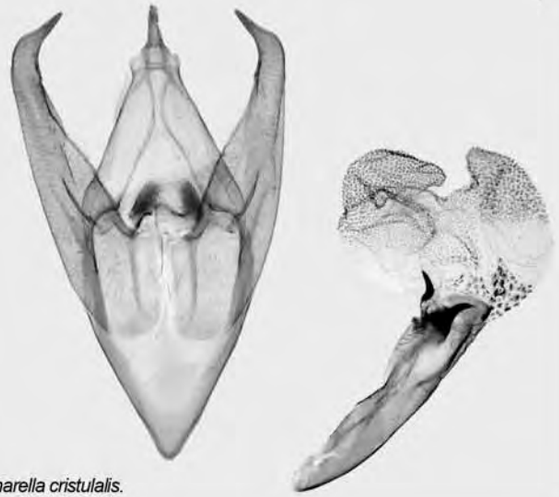
5

Herminia dolosa.
Japan. 4024. SS. NIAES.

6

Sinarella aegrota.
China. 2092 VK. ZFMK.

1



Sinarella cristulalis.
China. 2089 VK. ZFMK.

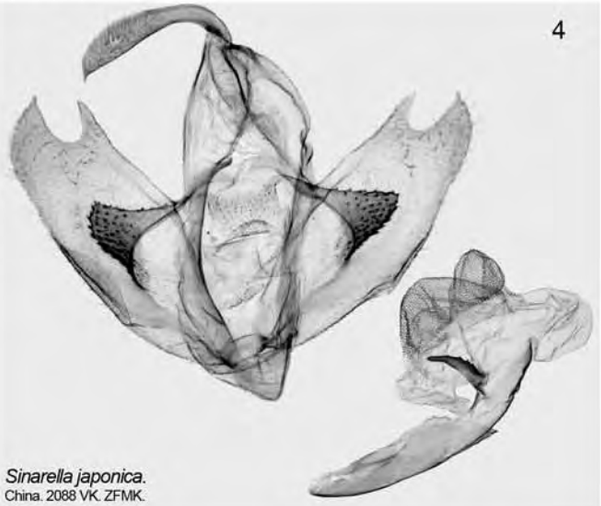
2

Sinarella nigrisigna.
China. 2091a ZFMK.

3

Sinarella punctalis.
S Korea. 37 HL. CIS.

4



Sinarella japonica.
China. 2088 VK. ZFMK.

5

Zekelita ravulalis.
Kazakstan. VK. WS.

6

Hypena stygiana.
Japan. 2308 VK. ZFMK.

1

Hypena zilla.
Russia, Primorye. 887 VK. IBSS.

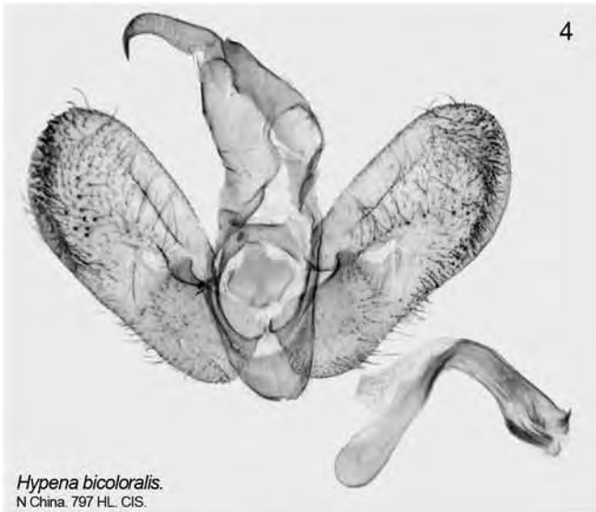
2

Hypena crassalis.
Finland. 2309 VK. *ZFMK.*

3

Hypena squalida.
N China. 798 HL. CIS.

4



Hypena bicoloralis.
N China. 797 HL. CIS.

5

Hypena nigrobasalis.
S Korea. 74-1 HL. CIS.

6

Hypena bipartita.
Russia, Sakhalin. 723 VK. IBSS.

1

Hypena semialbata.
Russia, S Kuriles, Kunashir I. 861 VK. IBSS.

2

Hypena proboscidalis.
N Korea. 2098 VK. ZFMK.

3

Hypena rostralis.
Europe. 2302 VK. ZFMK.

4

Hypena obesalis.
Europe. 2099 VK. ZFMK.

5

Hypena tristalis.
N Korea. 2098 VK. ZFMK.

6

Hypena narratalis.
Russia, Primorye. 728 VK. IBSS.

1

Hypena kengkalis.
S Korea. 80-1 HL. CIS.

2

Hypena conspersalis.
S Korea. 52 HL. CIS.

3

Hypena claripennis.
China. 2096 VK. ZFMK.

4

Hypena amica.
N China. 2094 VK. ZFMK.

5

Hypena tatorhina.
Japan. 3386 SS. NIAES.

6

Hypena tamsi.
Russia, Primorye. 886 VK. IBSS.

1

Protoschrankia ijimai.
Japan. 561 SS. NIAES.

2

Gonepatica opalina.
S Korea. 247-1 HL. CIS.

3

Hepatica anceps.
Russia, Primorye. AM. ZISP.

4

Lophomilia polybapta.
S Korea. 249. HL. CIS.

5

Lophomilia flaviplaga.
Russia, S Kuriles, Kunashir I. 855 VK IBSS.

6

Lophomilia nekrasovi.
Russia, Primorye. 842 VK. IBSS.

1

Lophomilia kogii.
Russia, Primorye. AM. ZISP.

2

Stenbergmania albomaculalis.
China. 2310 VK. ZFMK.

3

Paragabara flavomacula.
Russia, Primorye. AM. ZISP.

4

Paragabara curvicornuta.
Russia, Primorye. AM. ZISP.

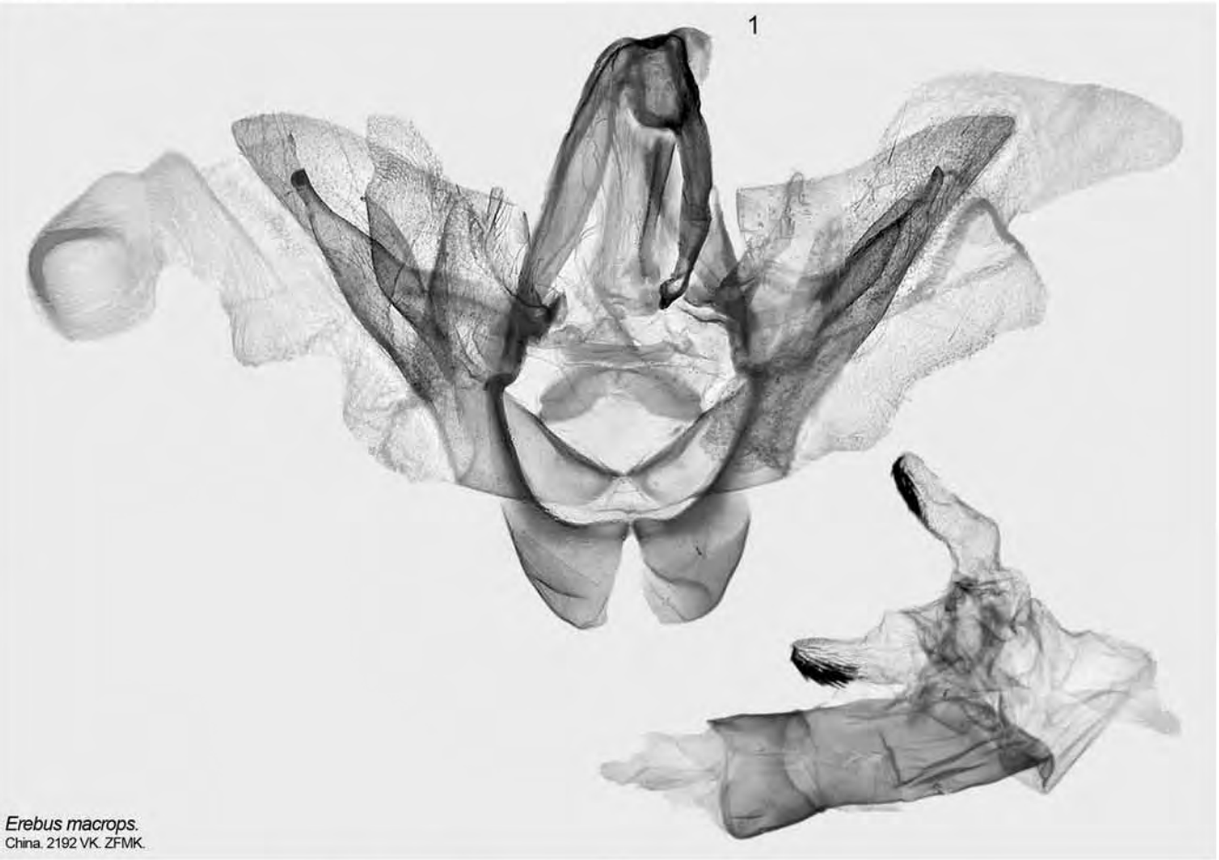
5

Paragabara curvicornuta.
Russia, Primorye. AM. ZISP.

6

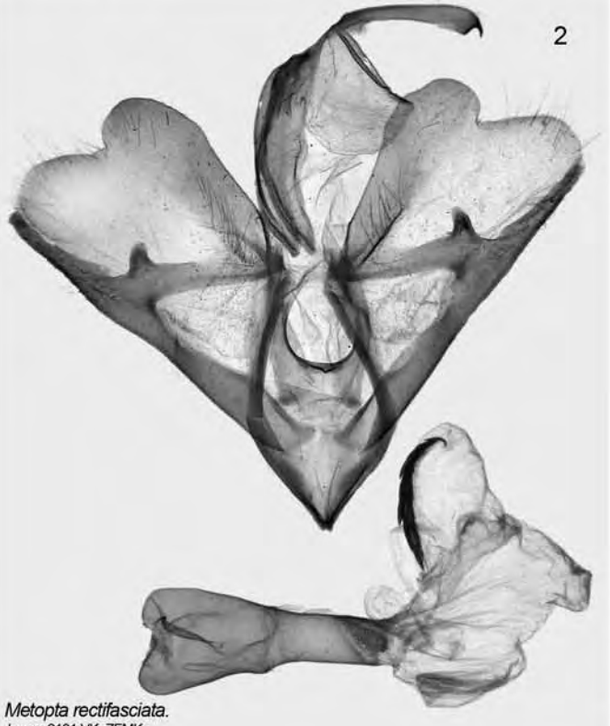
Paragabara ochreipennis.
Russia, Primorye. AM. ZISP.

1



Erebus macrops.
China. 2192 VK. ZFMK.

2

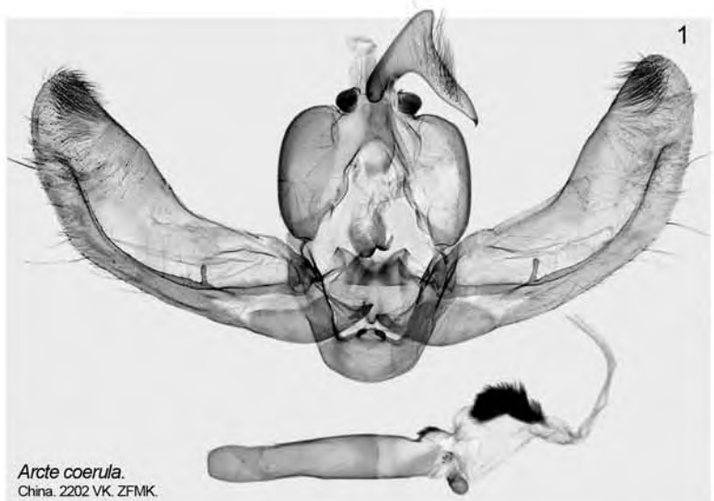


Metopta rectifasciata.
Japan. 2131 VK. ZFMK.

3

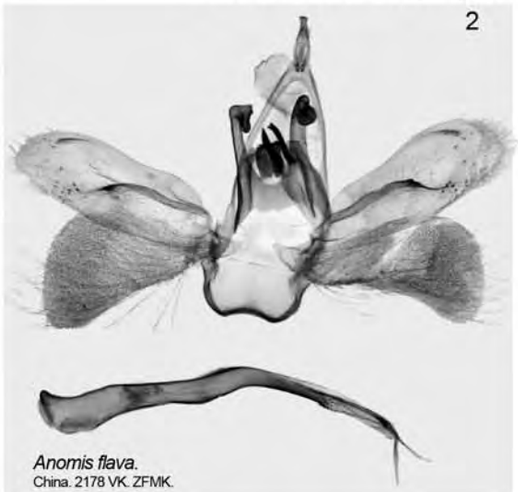
Spirama helicina.
China. 2141 VK. ZFMK.

1



Arcte coerula.
China. 2202 VK. ZFMK.

2

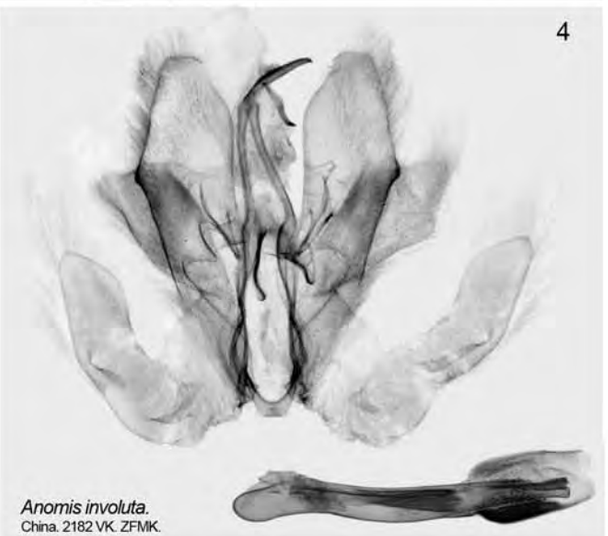


Anomis flava.
China. 2178 VK. ZFMK.

3

Anomis mesogona.
China. 2180 VK. ZFMK.

4



Anomis involuta.
China. 2182 VK. ZFMK.

5

Anomis privata.
Japan. 2176 VK. ZFMK.

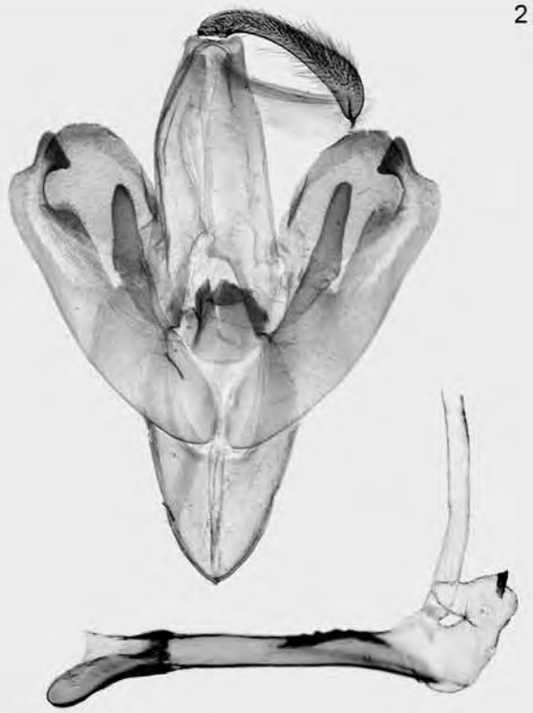
6

Anomis leucolopha.
S Korea. 94-19 VK. NIAST.

1

Scoliopteryx libatrix.
Denmark. 4236 MF.

2



Calyptra thalictri.
N China. 47-1 HL. CIS. Aed.: Denmark. MF.

3

Calyptra hokkaida.
S Korea. 187-2 HL. CIS.

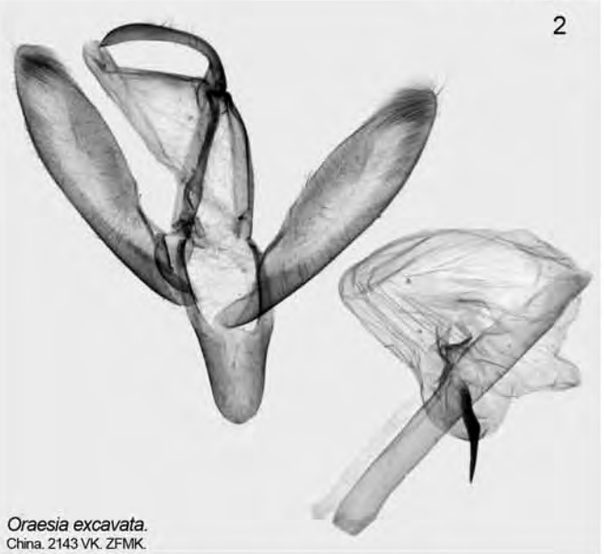
4

Calyptra lata.
S Korea. 188-1 HL. CIS.

1

Oraesia emarginata.
China. 2160 VK. ZFMK.

2



Oraesia excavata.
China. 2143 VK. ZFMK.

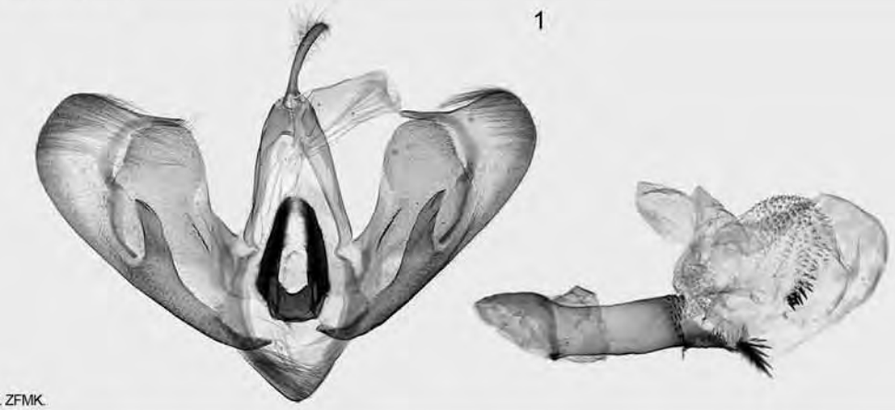
3

Eudocima tyrannus.
S Korea. 197-1 HL. CIS.

4

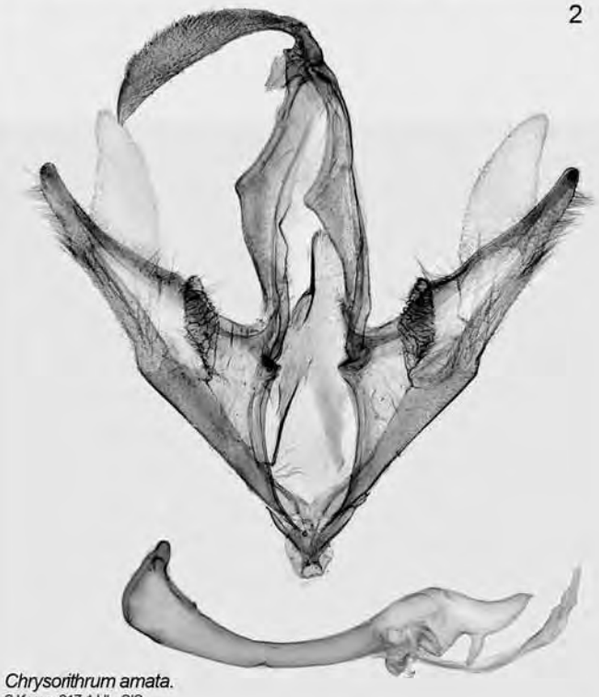
Eudocima falonia.
China. 2194 VK. ZFMK.

1



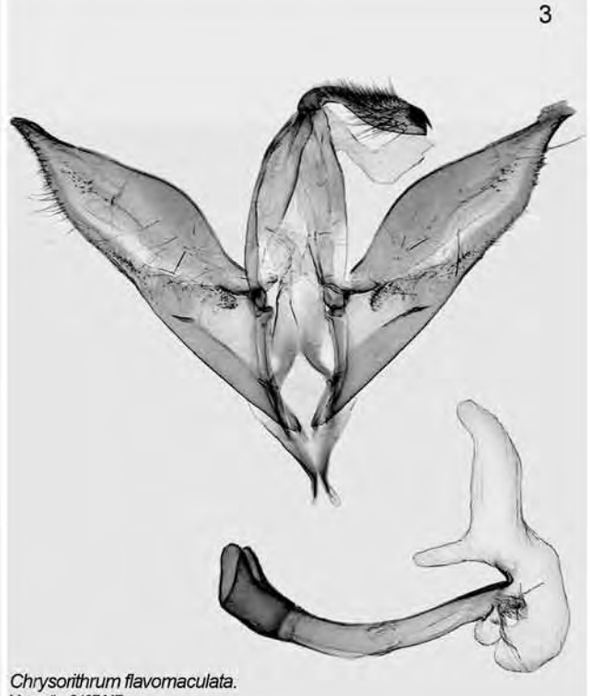
Plusiodonta casta.
Russia, Primorye. 863 VK. ZFMK.

2



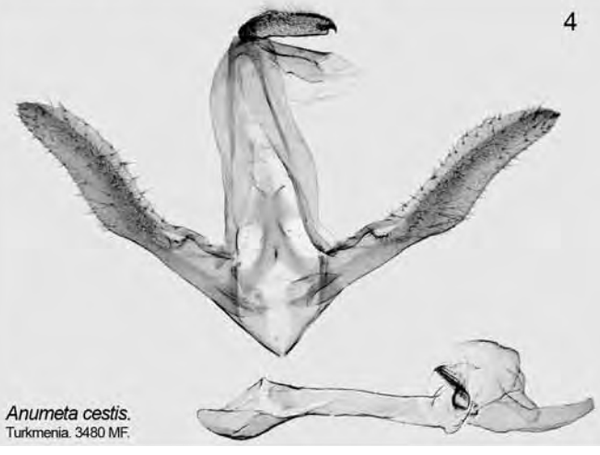
Chrysorithrum amata.
S Korea. 217-1 HL. CIS.

3



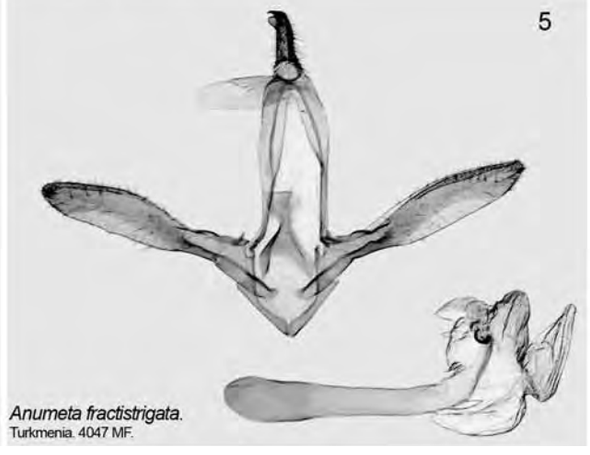
Chrysorithrum flavomaculata.
Mongolia. 3467 MF.

4



Anumeta cestis.
Turkmenia. 3480 MF.

5

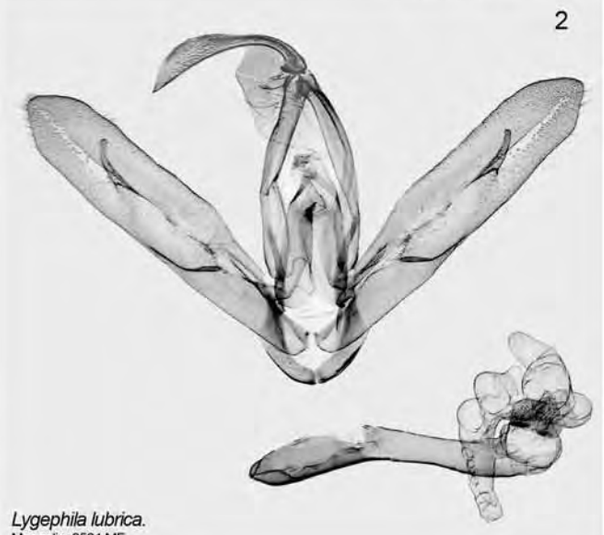


Anumeta fractistrigata.
Turkmenia. 4047 MF.

1

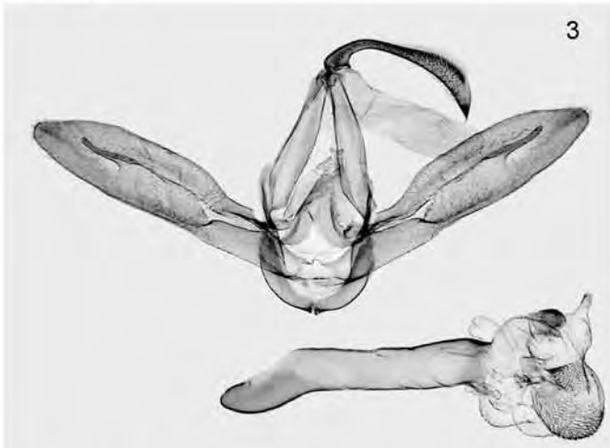
Lygephila lusoria.
Italy. 1346 AZ.

2



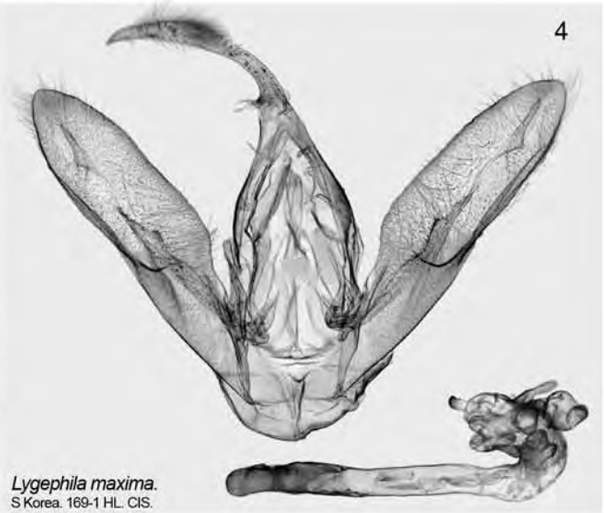
Lygephila lubrica.
Mongolia. 3581 MF.

3



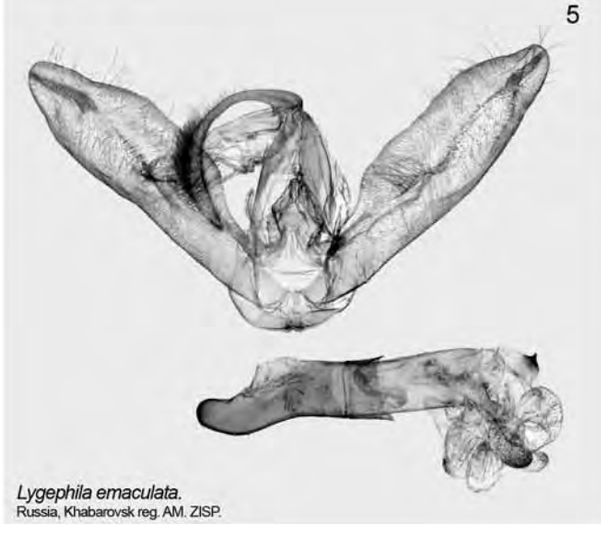
Lygephila ludicra.
Turkey. 3561 MF.

4



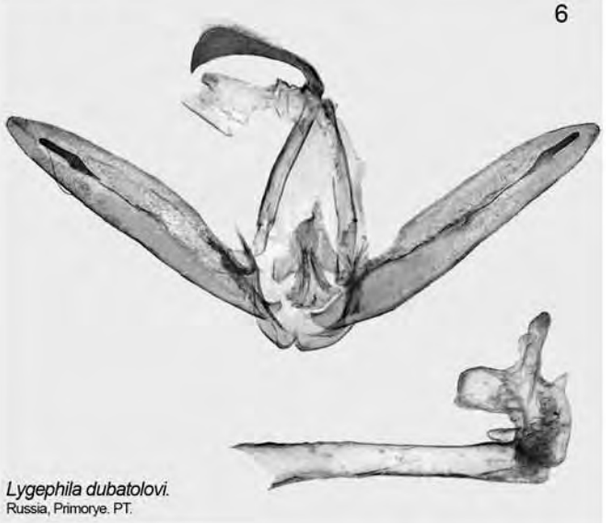
Lygephila maxima.
S Korea. 169-1 HL. CIS.

5



Lygephila emaculata.
Russia, Khabarovsk reg. AM. ZISP.

6



Lygephila dubatolovi.
Russia, Primorye. PT.

1

Lygephila vulcanea.
N China. 171-1 HL. CIS.

2

Lygephila mirabilis.
S Korea. 172-1 HL. CIS.

3

Lygephila craccae.
Greece. 2891 MF.

4

Lygephila viciae.
Denmark. 3577 MF.

5

Lygephila pastinum.
Denmark. 3578 MF.

6

Lygephila procax. =nigricostata.
S Korea. 179-1 HL. CIS.

1

Lygephila recta.
Russia, Primorye. 851 VK. IBSS.

2

Autophila glebicolor.
Mongolia. 1769 LR. HNHM.

3

Autophila rasilis.
Russia, Altai. AV.

4

Autophila asiatica.
Russia, Altai. AV. Aedeagus: Turkey. 3583 MF.

5

Autophila chamaephanes.
Russia, S Ural. 3670 MF.

6

Autophila inconspicua.
Russia, Primorye. 756 VK. IBSS.

1

Apopestes phantasma.
Turkmenia. 2101 VK. ZFMK.

2

Apopestes indica.
Russia, Primorye. 585 VK. IBSS.

3

Acantholipes regularis.
Turkey. 3566. MF.

4

Arytrura musculus.
N China. 226-1 HL. CIS.

5

Arytrura subfalcata.
N China. 227-2 HL. CIS.

1

Drasteria pulverosa.
Russia, Tuva. 14/110396 JK. ZMHU.

2

Drasteria mongoliensis.
Mongolia. 4799. GB.

3

Drasteria caucasica.
Romania. 3497 MF.

4

Drasteria picta.
Kazakstan. 3544 MF.

5

Drasteria cailino.
Spain. 1551 MF.

6

Drasteria rada.
Mongolia. 3546 MF.

1

Drasteria saisani.
Turkmenia. 3484 MF.

2

Drasteria scolopax.
Chinese Turkestan. 2104. VK. ZFMK.

3

Drasteria catocalis.
Russia, Altai. AV.

4

Euclidia glyphica.
Greece. 3571 MF.

5

Euclidia dentata.
S Korea. 146-1 HL. CIS.

6

Euclidia juvenilis.
S Korea. 148-1 HL. CIS.

1

Callistege mi.
Denmark. 3575 MF.

2

Callistege fortalitium.
Mongolia. 3565 MF.

3

Gonospileia triquetra.
Greece. 3549 MF.

4

Gonospileia munita.
Turkey. 3576 MF.

5

Melapia electaria.
S Korea. 152-1 HL. CIS.

6

Remigia frugalis.
Buthan. 2115 VK. ZFMK.

1

Mocis undata.
China. 2129 VK. ZFMK.

2

Mocis annetta.
S Korea. 150-1 HL. CIS.

3

Mocis ancilla.
S Korea. 971218/22 VK.

4

Serrodes campana.
China. 2196 VK. ZFMK.

5

Artena dotata.
China. 2127 VK. ZFMK.

1

Catephia alchymista.
Spain. 3567 MF.

2

Pericyma albidentaria.
Greece. 3568 MF.

3

Thyas juno.
S Korea. 157-1 HL. CIS.

4

Ophiusa tirhaca.
Greece. 3470 MF.

5

Minucia lunaris.
Greece. 4233 MF.

1

Clytie gracilis.
Turkmenia. 4057 MF.

2

Bastilla arctotaenia.
China. 2121 VK. ZFMK.

3

Bastilla maturata.
China. 2124 VK. ZFMK.

5

Bastilla mandschuriana.
S Korea. 262 HL. CIS.

4

Bastilla stuposa.
China. 2119 VK. ZFMK.

1

Dysgonia dulcis.
S Korea. 143-1 HL. CIS.

2

Dysgonia obscura.
S Korea. 144-1 HL. CIS.

3

Grammodes stolida.
Greece. 3472 MF.

4

Blasticorhinus ussuriensis.
Russia, Far East. "Ussuri, Maak." HT. AM ZISP.

5

Blasticorhinus unduligera.
S Korea. 110/05 VK. CIS.

1

Catocala fulminea.
S Korea. 1030 HL. CIS. Aed.: Slovakia. 3466 MF.

2

Catocala neonympha.
Turkey. 3418 MF.

3

Catocala conversa.
Greece. 3463 MF.

4

Catocala obscena.
China. 2198 VK. ZFMK.

5

Catocala abamita.
S Korea. 110-1 HL. CIS.

1

Catocala doerriesi.
S Korea. 1051 HL. CIS.

2

Catocala helena.
N China. 112-1 HL. CIS.

3

Catocala eminens.
S Korea. 1057 HL. CIS.

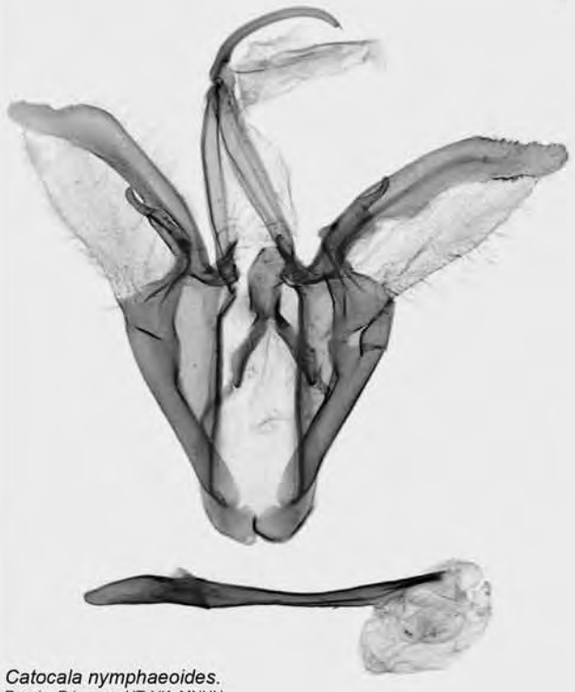
4

Catocala separans.
S Korea. 111-1 HL. CIS.

5

Catocala duplicata.
S Korea. CIS 1042.

1

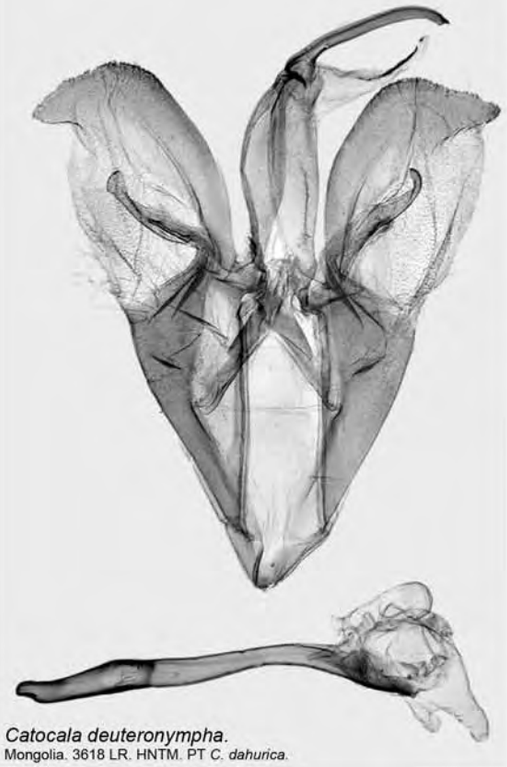


Catocala nymphaeoides.
Russia, Primorye. HT. VK. MNHU.

2

Catocala ella.
S Korea. 124-1 HL. CIS.

3

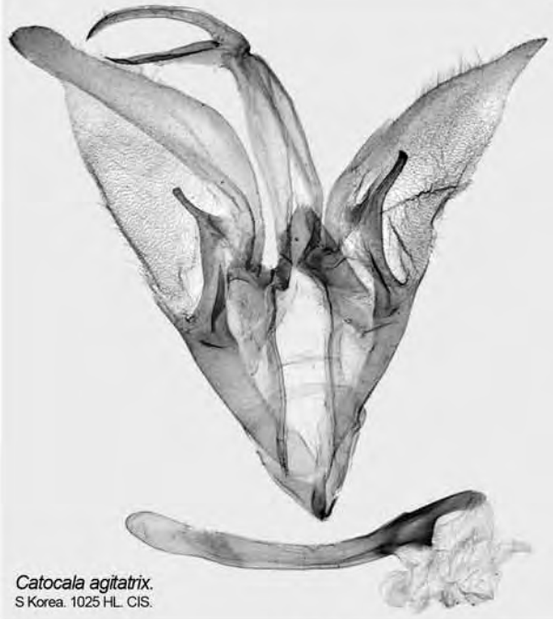


Catocala deuteronympha.
Mongolia. 3618 LR. HNTM. PT *C. dahurica.*

4

Catocala praegnax.
S Korea. 1065 HL. CIS.

1



Catocala agitatrix.
S Korea. 1025 HL. CIS.

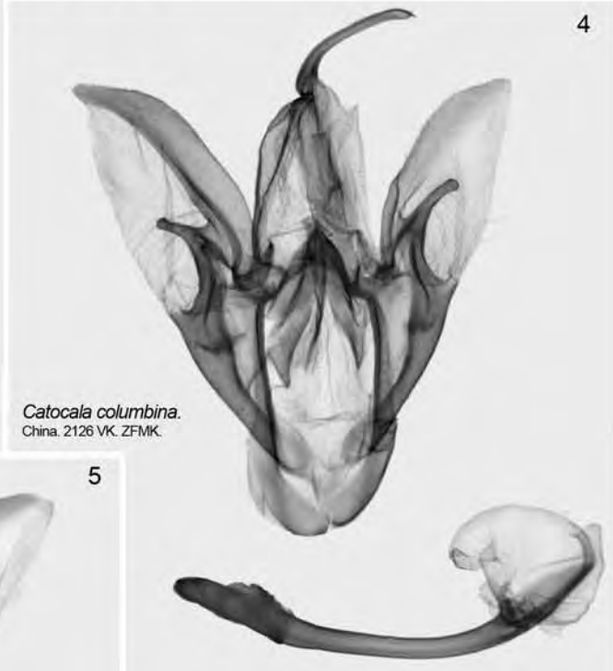
2

Catocala bella.
S Korea. 1033 HL. CIS.

3

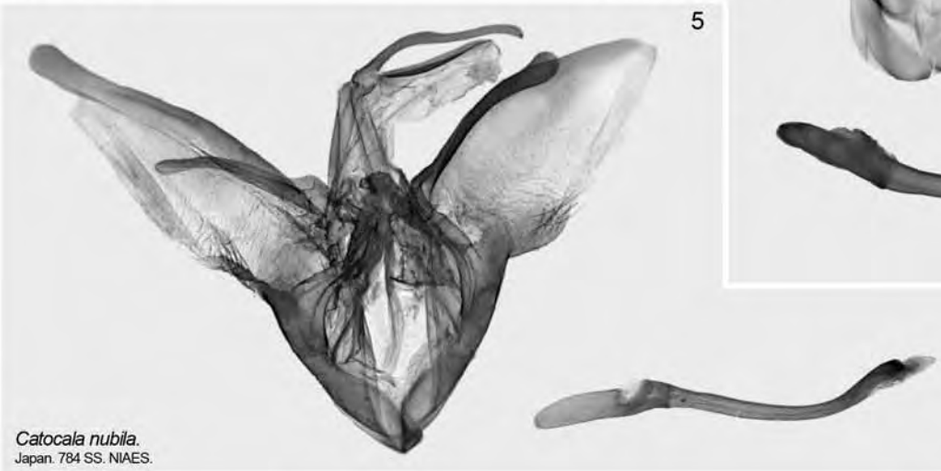
Catocala koreana.
S Korea. 1040 HL. CIS.

4



Catocala columbina.
China. 2126 VK. ZFMK.

5



Catocala nubila.
Japan. 784 SS. NIAES.

1

Catocala proxeneta.
S Korea. 118-1 HL. CIS.

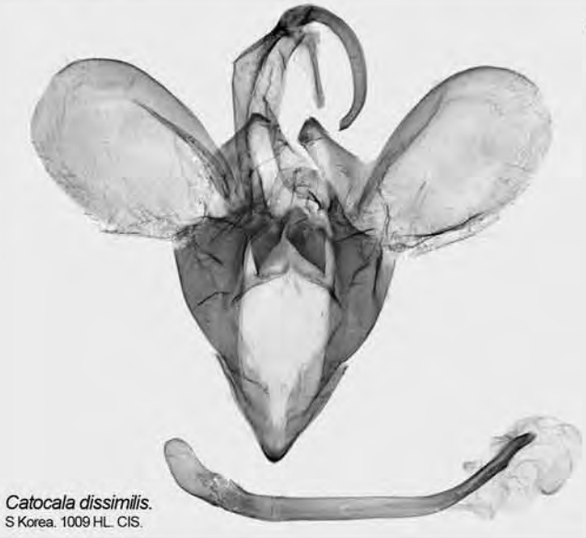
2

Catocala danilovi.
N China. 464 HL. CIS.

3

Catocala moltrechti.
Russia, Primorye. AM. ZISP.

4



Catocala dissimilis.
S Korea. 1009 HL. CIS.

5

Catocala streckeri.
S Korea. 1081 HL. CIS.

1

Catocala nagioides.
S Korea. 1020 HL. CIS.

2

Catocala actaea.
S Korea. 1028 HL. CIS.

3

Catocala pirata.
S Korea. 1015 HL. KNA.

4

Catocala bokhaica.
Russia, Primorye. 865 VK. IBSS.

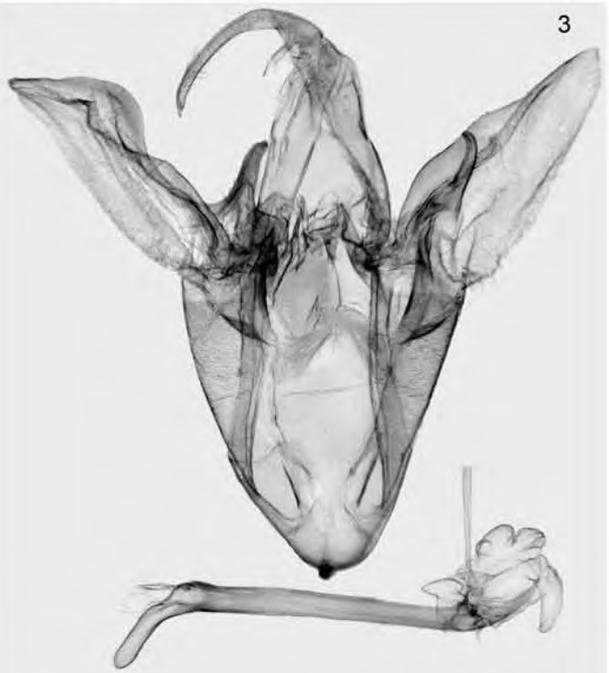
1

Catocala fraxini.
S Korea. 1068 HL. CIS. Aed.: Denmark. 3416 MF.

2

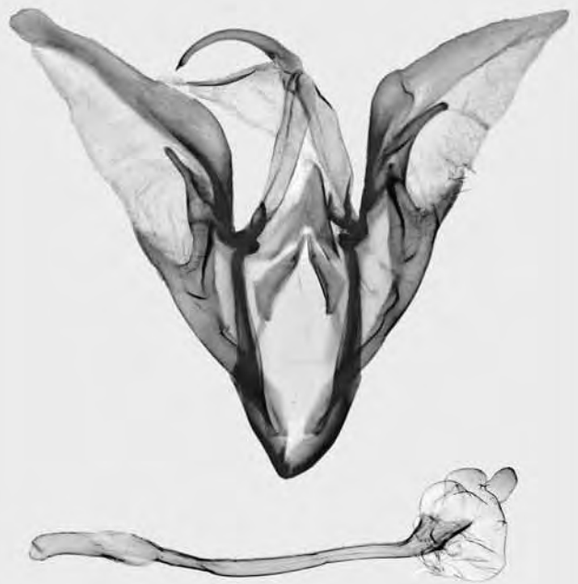
Catocala lara.
N China. 97-1 HL. CIS.

3



Catocala nivea.
S Korea. 98-1 HL. CIS.

4

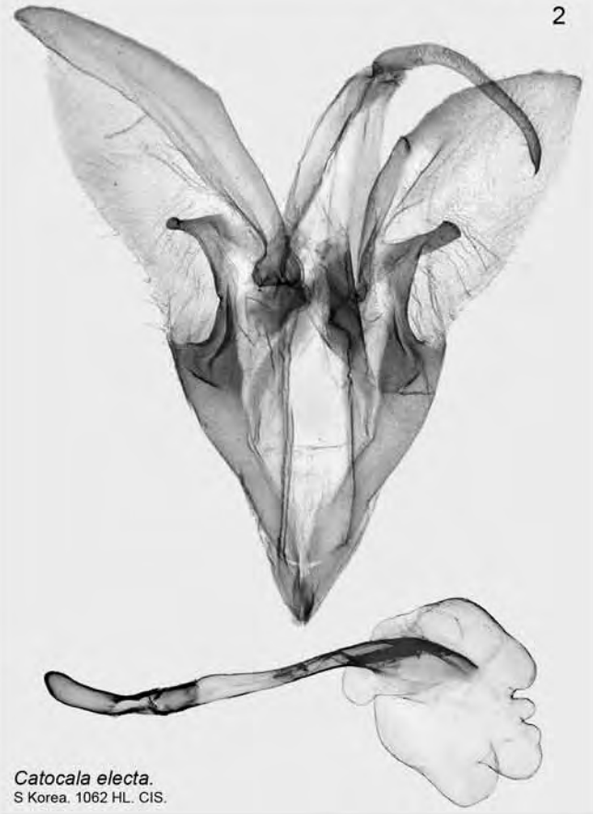


Catocala adultera.
Finland. 3815 MF.

1

Catocala nupta.
S Korea. 1060 HL. CIS.

2



Catocala electa.
S Korea. 1062 HL. CIS.

3

Catocala elocata.
Greece. 3449. MF.

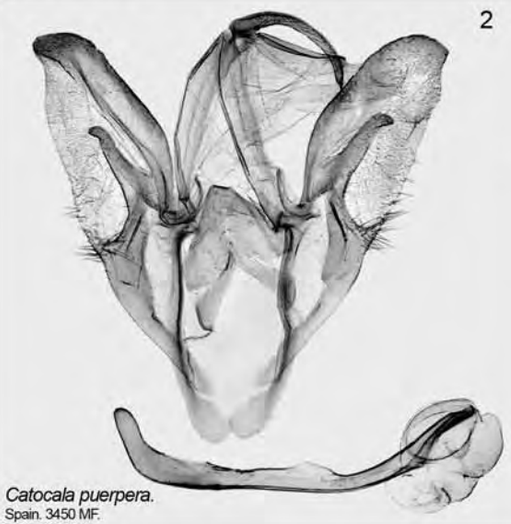
4

Catocala deducta.
Russia, S Ural. 3814 MF.

1

Catocala puerpera.
Kazakstan, Uralsk. AM. ZISP.

2



Catocala puerpera.
Spain. 3450 MF.

5

Catocala promissa.
Denmark. 4245 M.F.

3

Catocala sponsa.
Denmark. 3454. MF.

4

Catocala dula.
S Korea. 1045 HL. CIS.

1

Catocala detrita.
Russia, S Ural. 3624 MF.

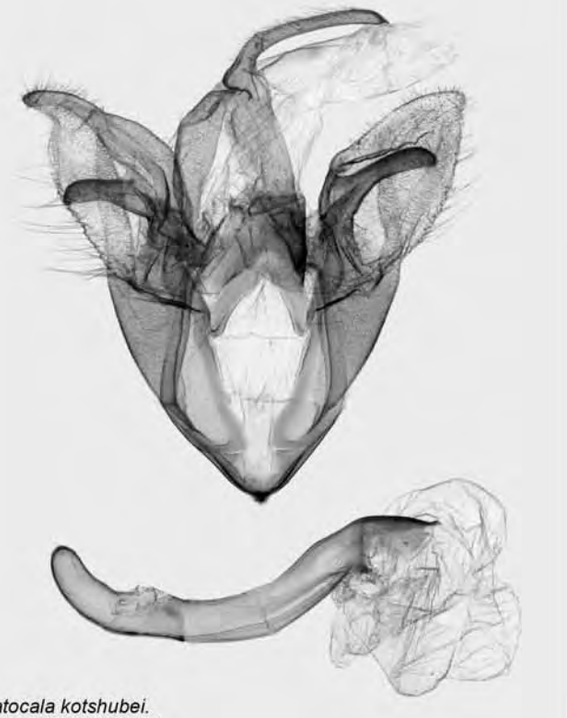
2

Catocala lupina.
Russia, S Ural. 2003 VK. ZFMK.

3

Catocala pacta.
Sweden. 3457 MF.

4

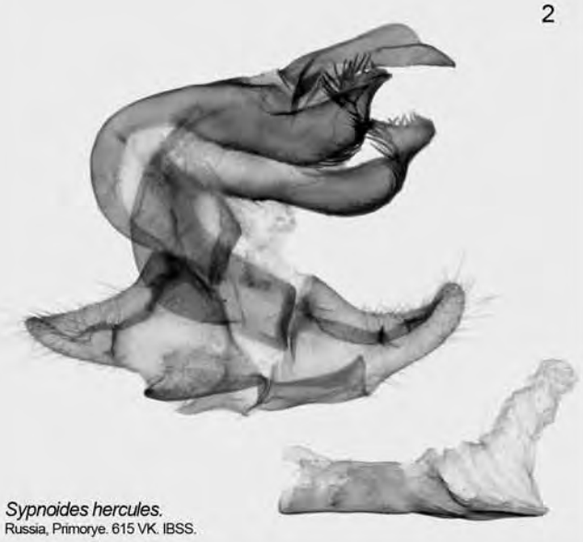


Catocala kotshubei.
Russia, Primorye. AM. ZISP.

1

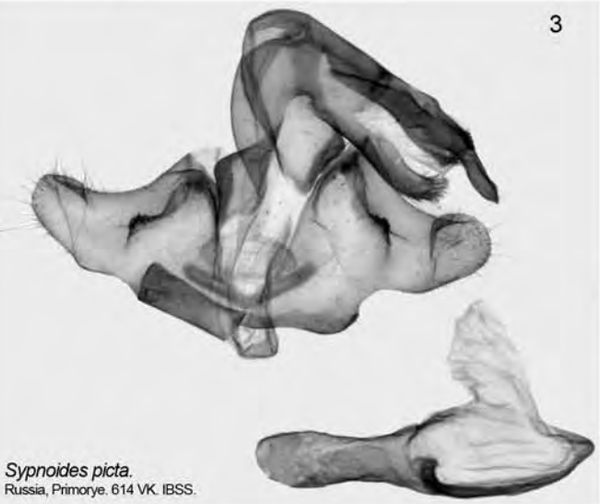
Hypersypnoides astrigera.
S Korea. 209-1 HL. CIS.

2



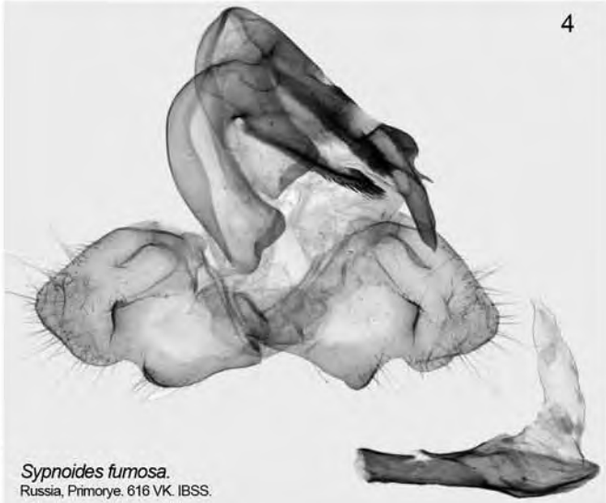
Sypnoides hercules.
Russia, Primorye. 615 VK. IBSS.

3



Sypnoides picta.
Russia, Primorye. 614 VK. IBSS.

4



Sypnoides fumosa.
Russia, Primorye. 616 VK. IBSS.

5

Daddala lucilla.
China. 2116 VK. ZFMK.

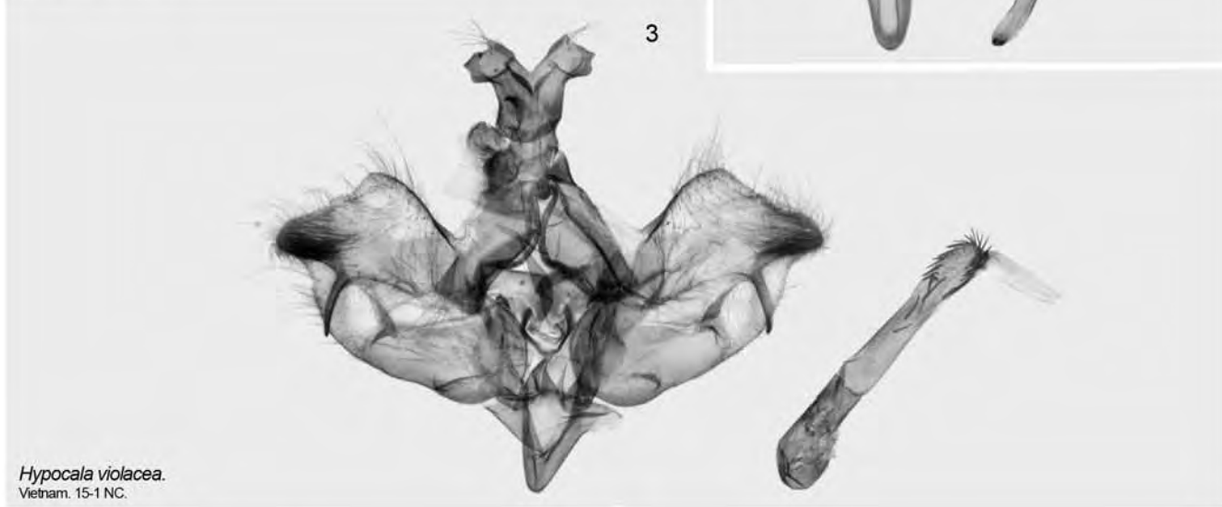
1

Hypocala deflorata.
Japan. 2106 VK. ZFMK.

2

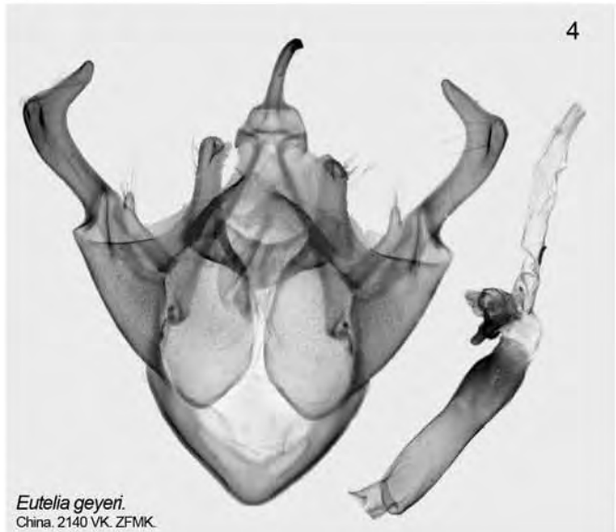
Hypocala subsatura.
Vietnam. 19-1 NC.

3



Hypocala violacea.
Vietnam. 15-1 NC.

4



Eutelia geyeri.
China. 2140 VK. ZFMK.

5

Eutelia adulatricoides.
Nepal. 2206 VK. ZFMK.

1

Abrostola asclepiadis.
Hungary. 7857 LR. HNHM.

2

Abrostola triplasia.
N China. 18 HL. CIS.

3

Abrostola tripartita.
Hungary. 7853 LR. HNHM.

4

Abrostola ussuriensis.
Russia, Primorye. 4496 LR. HNHM.

5

Abrostola pacifica.
Japan. 2696 LR. HNHM.

6

Abrostola kaszabi.
Mongolia. 2733 LR. HNHM.

1

Trichoplusia ni.
USA. 262. DL. CNC.

2

Thysanoplusia intermixta.
Japan. 4792 LR. HNHM.

3

Ctenoplusia albostriata.
N Korea. 85 LR. HNHM.

4

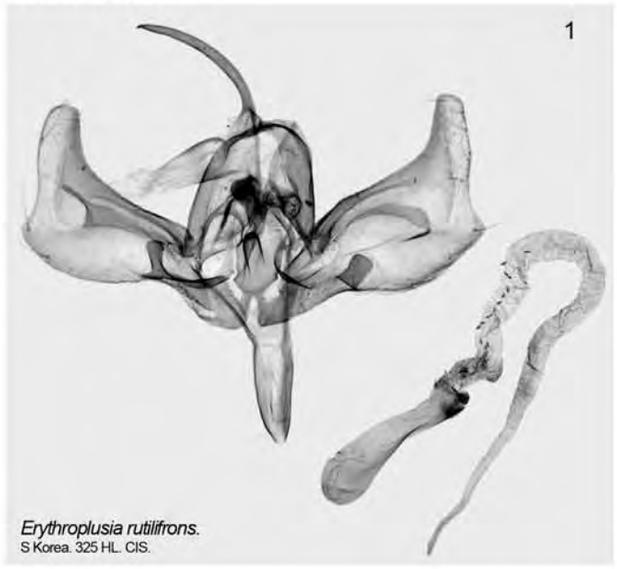
Ctenoplusia agnata.
N Korea. 94 LR. HNHM.

5

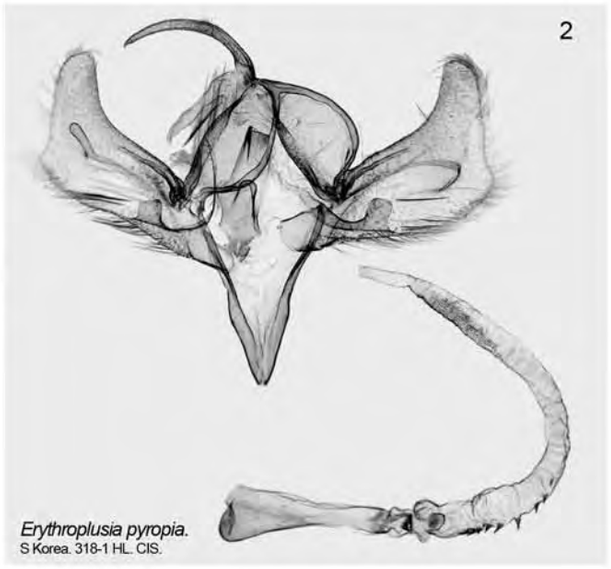
Anadevidia peponis.
S Korea. 2066 LR. HNHM.

6

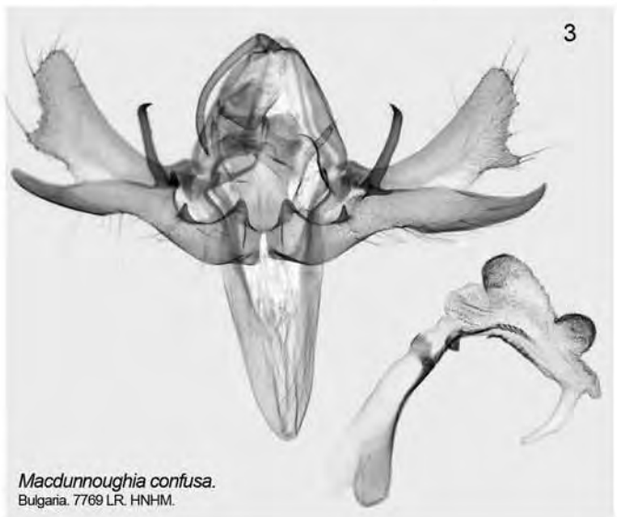
Anadevidia hebetata.
S Korea. 2067 LR. HNHM.



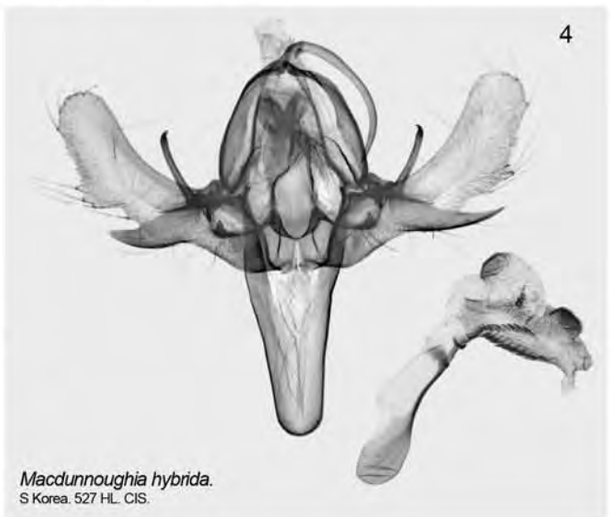
Erythroplusia rutilifrons.
S Korea. 325 HL. CIS.



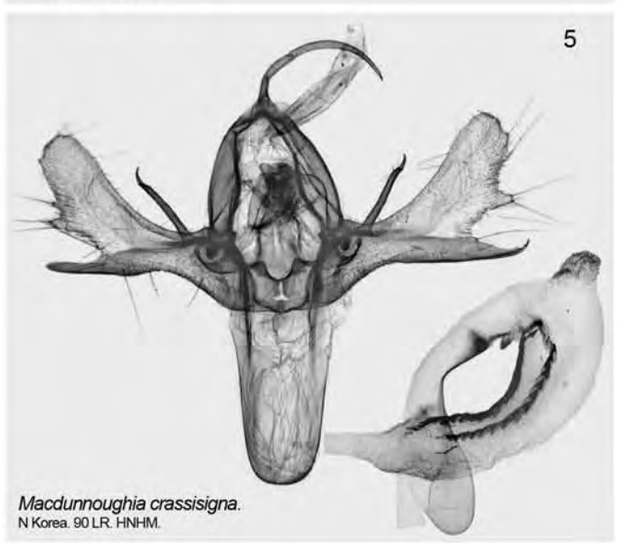
Erythroplusia pyropia.
S Korea. 318-1 HL. CIS.



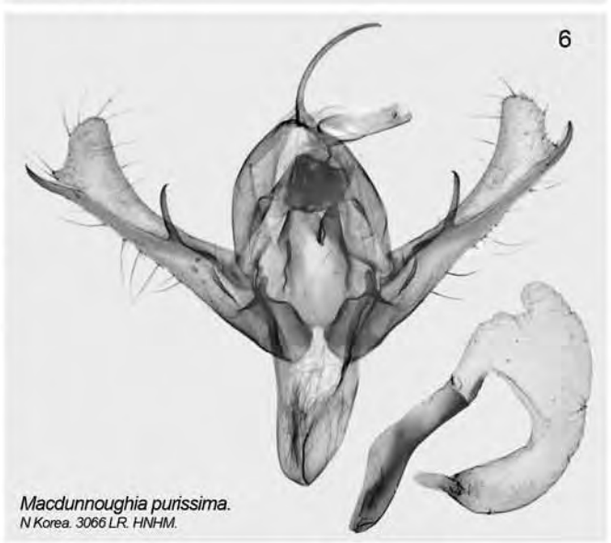
Macdunnoughia confusa.
Bulgaria. 7769 LR. HNHM.



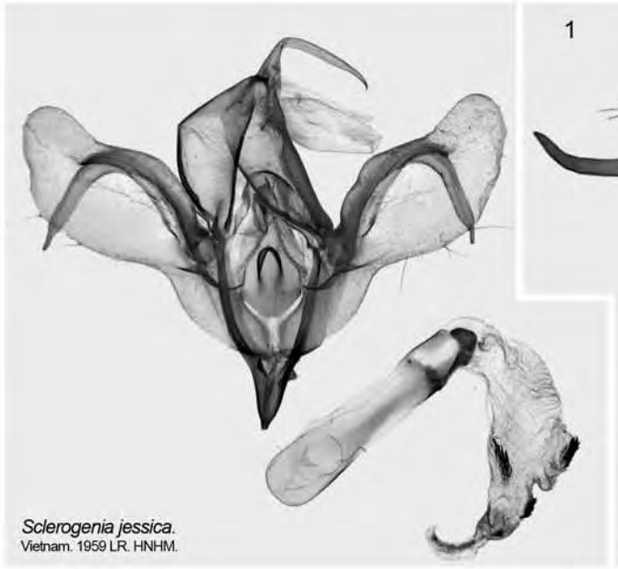
Macdunnoughia hybrida.
S Korea. 527 HL. CIS.



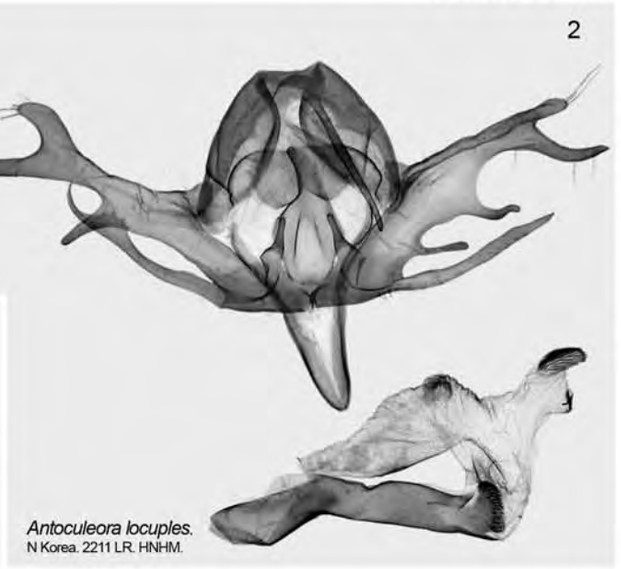
Macdunnoughia crassisigna.
N Korea. 90 LR. HNHM.



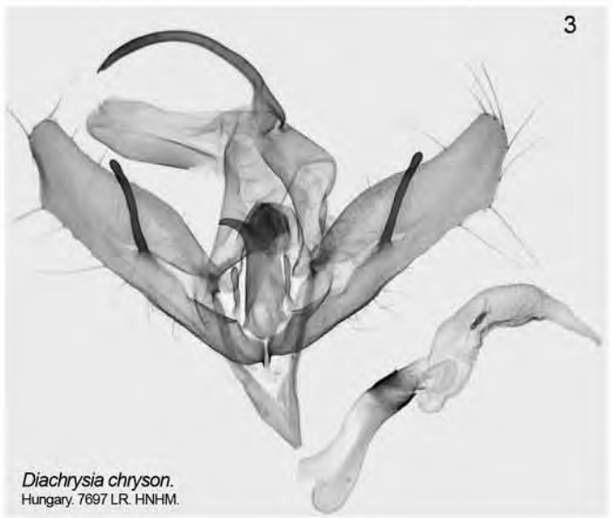
Macdunnoughia purissima.
N Korea. 3066 LR. HNHM.



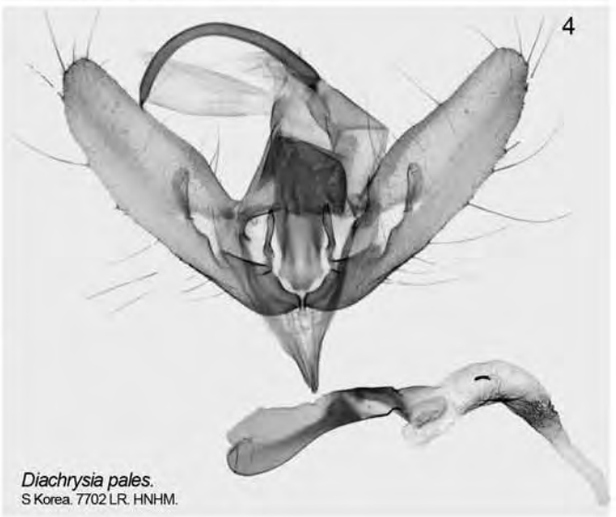
Sclerogenia jessica.
Vietnam. 1959 LR. HNHM.



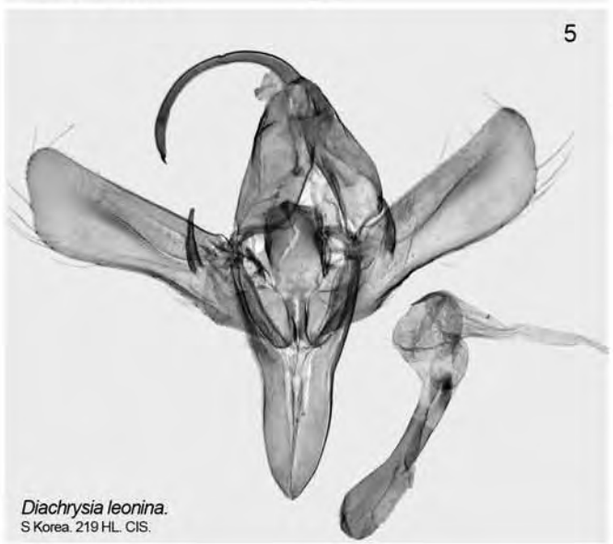
Antoculeora locuples.
N Korea. 2211 LR. HNHM.



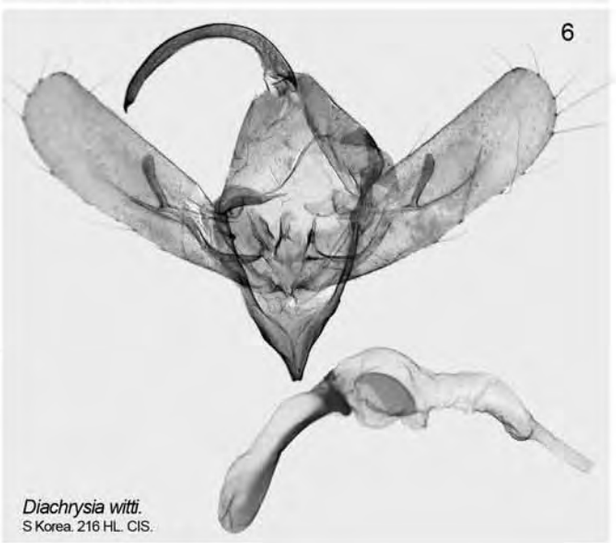
Diachrysia chryson.
Hungary. 7697 LR. HNHM.



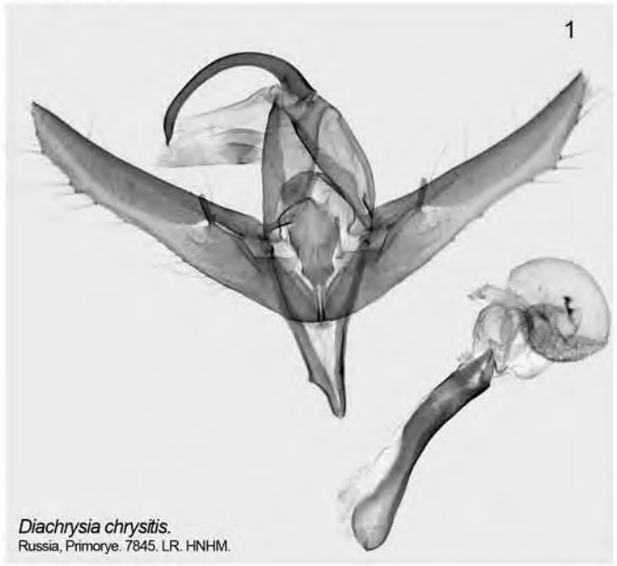
Diachrysia pales.
S Korea. 7702 LR. HNHM.



Diachrysia leonina.
S Korea. 219 HL. CIS.

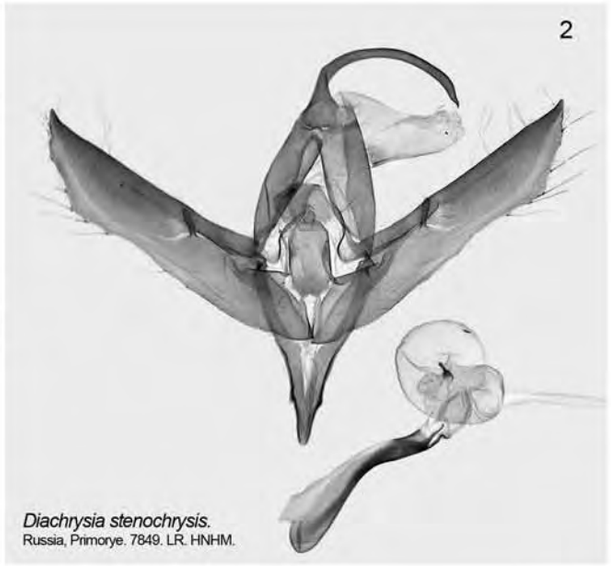


Diachrysia witti.
S Korea. 216 HL. CIS.



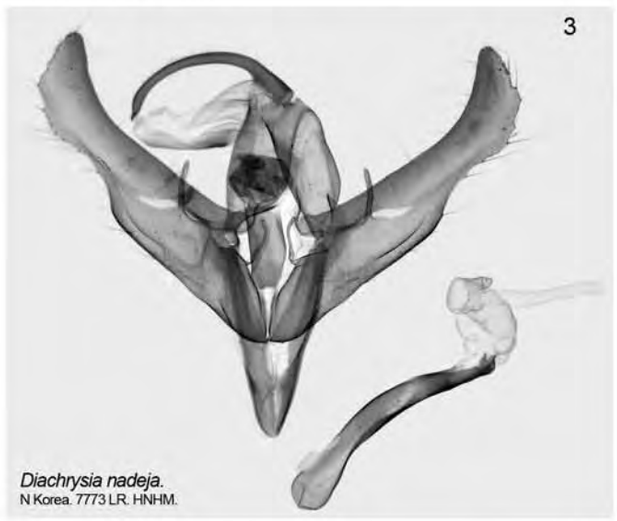
1

Diachrysia chrysitis.
Russia, Primorye. 7845. LR. HNHM.



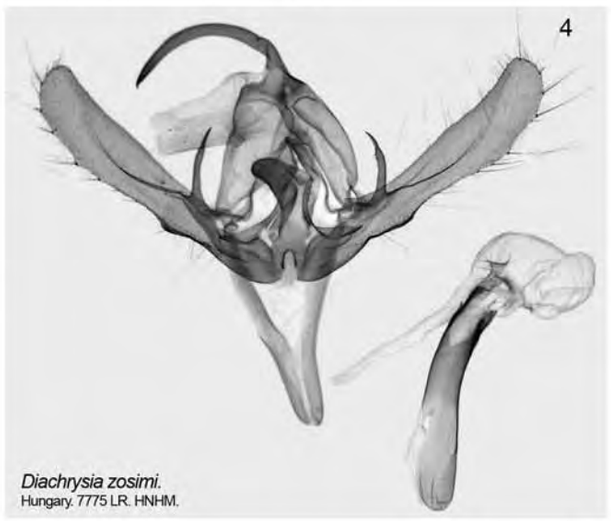
2

Diachrysia stenochrysis.
Russia, Primorye. 7849. LR. HNHM.



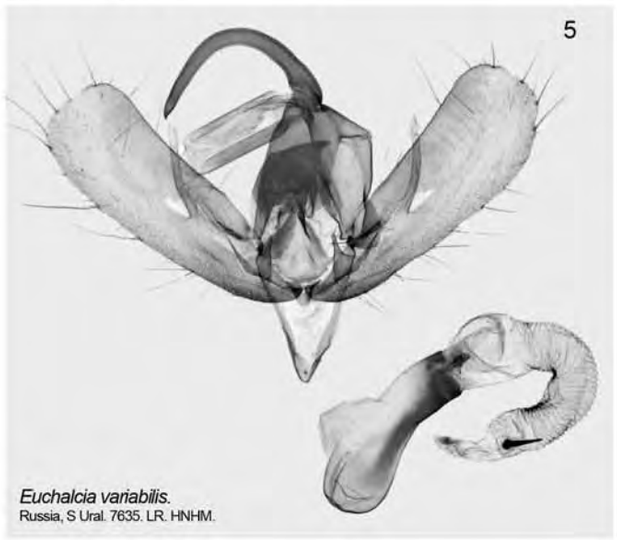
3

Diachrysia nadeja.
N Korea. 7773 LR. HNHM.



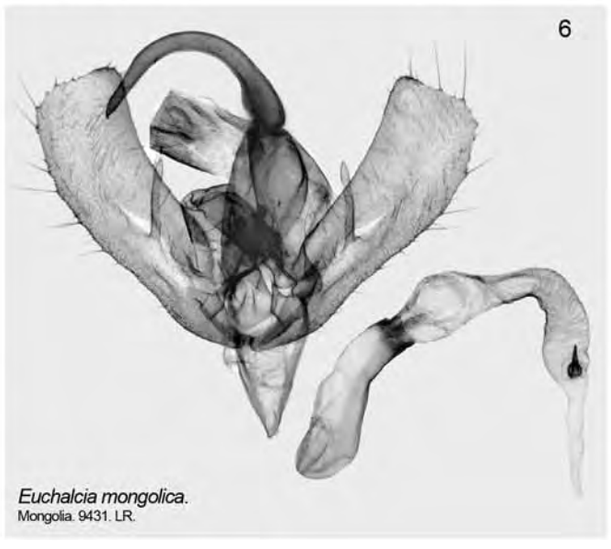
4

Diachrysia zosimi.
Hungary. 7775 LR. HNHM.



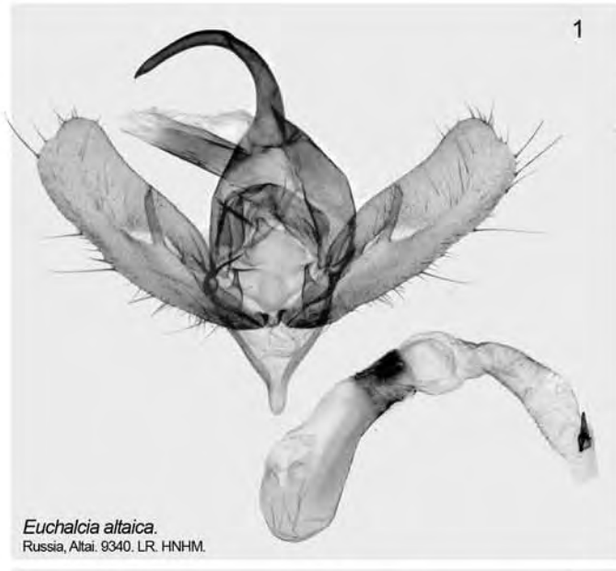
5

Euchalcia variabilis.
Russia, S Ural. 7635. LR. HNHM.



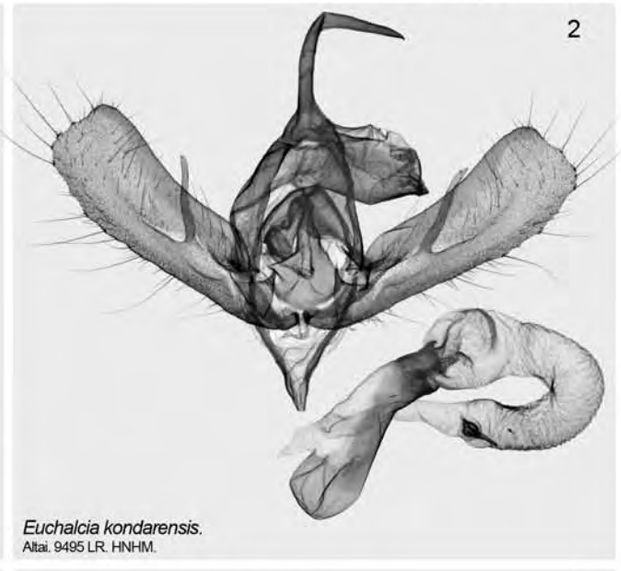
6

Euchalcia mongolica.
Mongolia. 9431. LR.



1

Euchalcia altaica.
Russia, Altai. 9340. LR. HNHM.



2

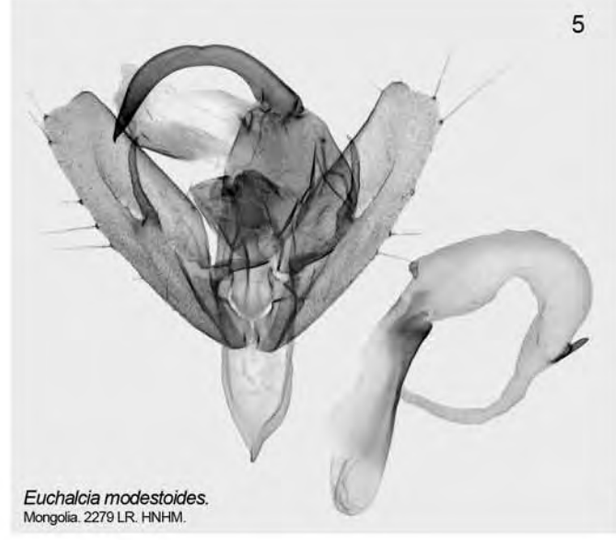
Euchalcia kondarensis.
Altai. 9495 LR. HNHM.

3

Euchalcia sergia.
Russia, Primorye. 9413 LR. HNHM.

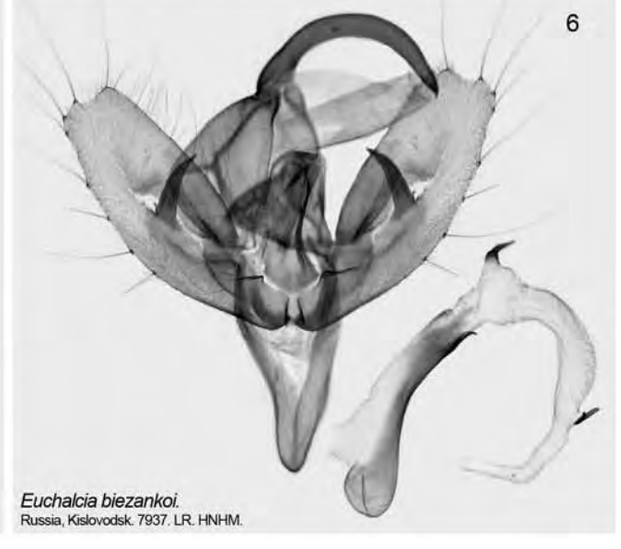
4

Euchalcia siderifera.
Kazakstan. 6887. LR. HNHM.



5

Euchalcia modestoides.
Mongolia. 2279 LR. HNHM.



6

Euchalcia biezankoi.
Russia, Kislovodsk. 7937. LR. HNHM.

1

Euchalcia consona.
Germany. 7763. LR. HNHM.

2

Euchalcia renardi.
Mongolia. 2057 LR. HNHM.

3

Polychrysia moneta.
Sweden. 7717 LR. HNHM.

4

Polychrysia esmeralda.
Russia, Altai. 7713 LR. HNHM.

5

Polychrysia splendida.
Russia, Kuriles. 7550 LR. HNHM.

6

Polychrysia sica.
NE China. AM. ZISP.

1

Polychrysia aurata.
NE China. 221 HL. CIS.

2

Panchrysia deaurea.
Armenia. 7719. LR. HNHM.

3

Panchrysia ornata.
Mongolia. 7731 LR. HNHM.

4

Panchrysia dives.
Mongolia. 7733 LR. HNHM.

5

Lamprotes c–aureum.
Austria. 7735 LR. HNHM.

6

Lamprotes mikadina.
Korea. 9137 LR. HNHM.

1

Plusidia cheiranthi.
N China. 278 HL. CIS.

2

Autographa gamma.
Bulgaria. 7831 LR. HNHM.

3

Autographa mandarina.
Russia, Amur. 2335 LR. HNHM.

4

Autographa pulchrina.
Hungary. 7296 LR. HNHM.

5

Autographa buraetica.
N China. 16 HL. CIS.

1

Autographa jota.
Finland. 7823 LR. HNHM.

2

Autographa amurica.
Russia, Amur reg. 2172 VK. ZFMK.

3

Autographa v-minus.
Russia, Primorye. 763 VK. IBSS.

4

Autographa urupina.
Russia, Sakhalin. 766 VK. IBSS.

1

Autographa nigrisigna.
Russia, Primorye. 684. VK. IBSS.

2

Autographa camptosema.
Tajikistan, Pamir. AM. ZISP.

3

Autographa macrogamma.
Finland. 7819 LR. HNHM.

4

Autographa bractea.
Italy. 7814 LR. HNHM.

5

Autographa excelsa.
Russia, Altai. 7817 LR.

1

Conutiplusia circumflexa.
Turkmenia. 7791 LR. HNHM.

2

Syngrapha parilis.
Sweden. 7777. LR. HNHM.

3

Syngrapha hochenwarthi.
Germany. 7787 LR. HNHM.

4

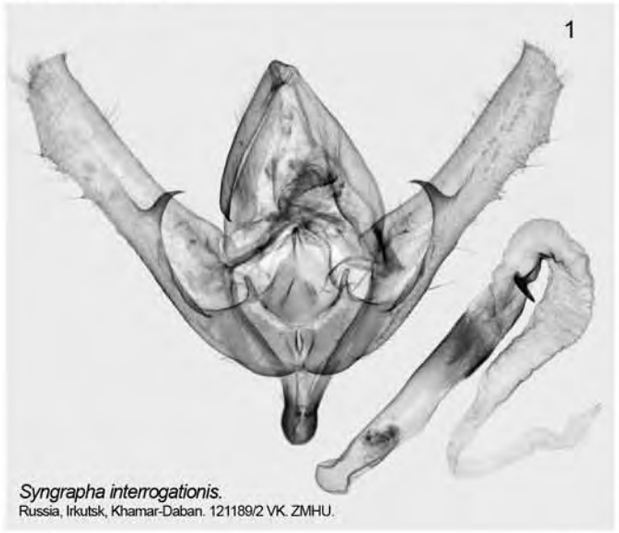
Syngrapha diasema.
Finland. 8964 ER. ZMHU.

5

Syngrapha microgamma.
Sweden. 7779. LR. HNHM.

6

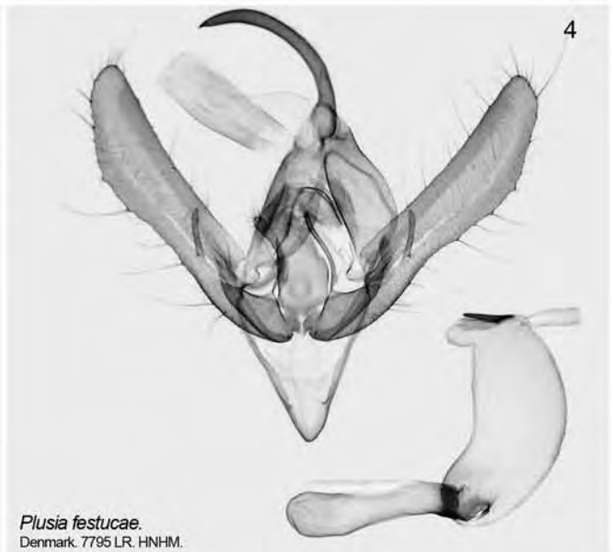
Syngrapha ain.
Russia, Irkutsk, Khamar-Daban. 101095/1 KM. ZMHU.



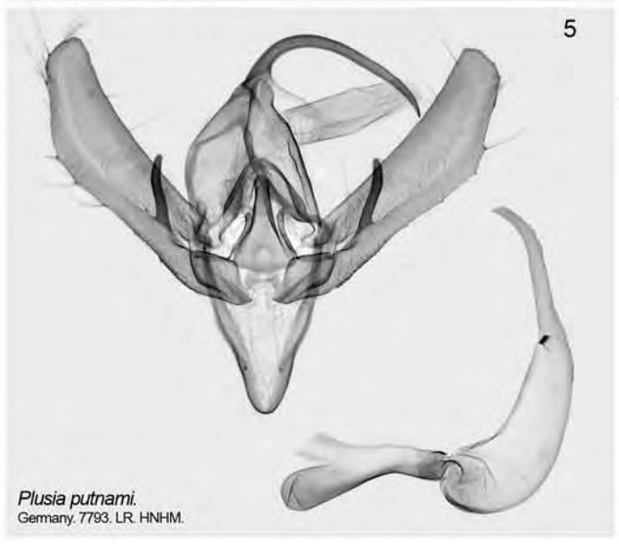
Syngrapha interrogationis.
Russia, Irkutsk, Khamar-Daban. 121189/2 VK. ZMHU.

Syngrapha ottolenguii.
Russia, Magadan reg, 121189/5 VK. ZMHU.

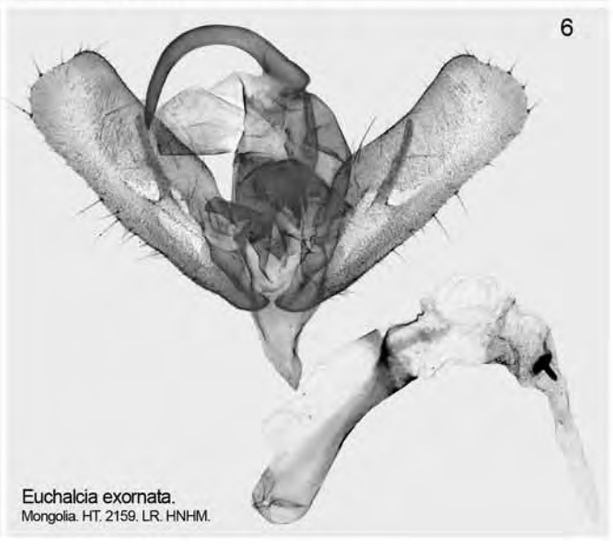
Plusia festucae.
Russia, Chukotka. 512 VK. IBSS.



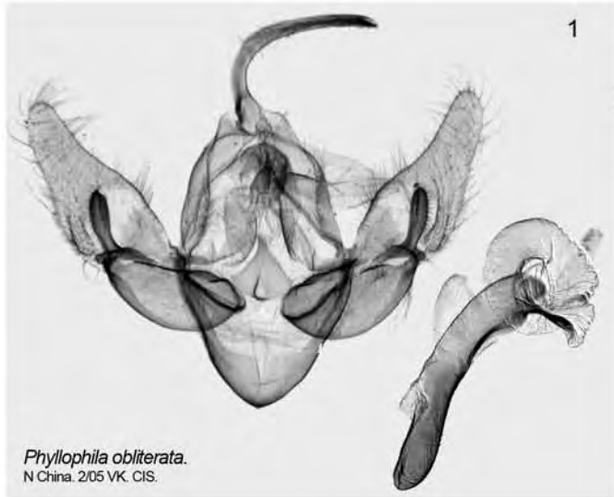
Plusia festucae.
Denmark. 7795 LR. HNHM.



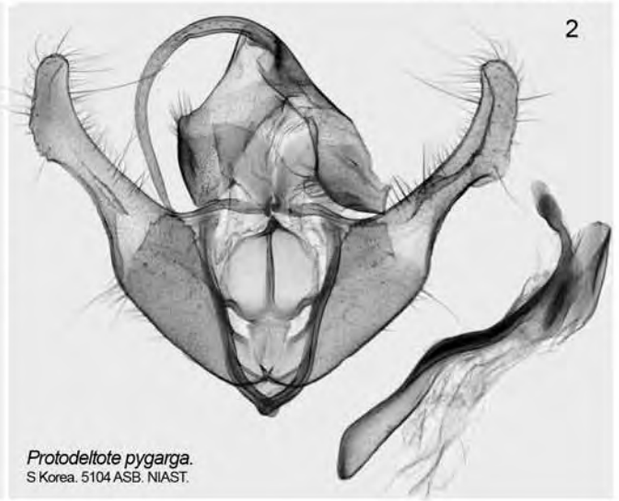
Plusia putnami.
Germany. 7793. LR. HNHM.



Euchalcia exornata.
Mongolia. HT. 2159. LR. HNHM.

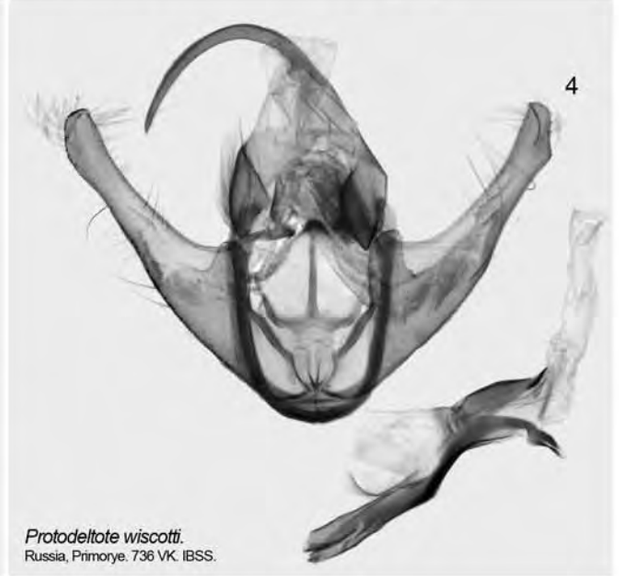


Phyllophila obliterata.
N China. 2/05 VK. CIS.

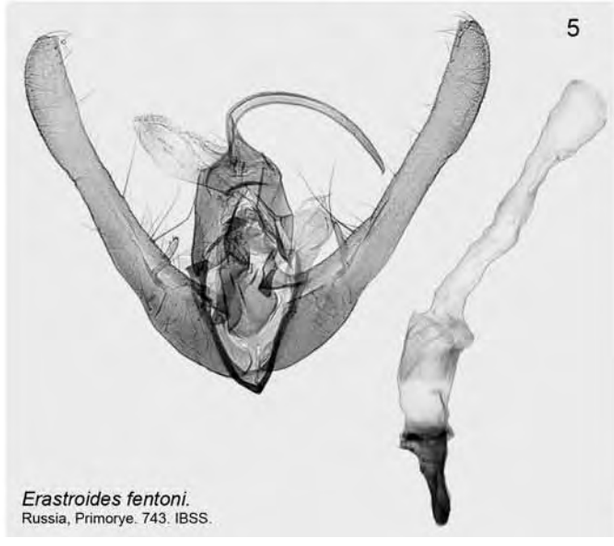


Protodeltote pygarga.
S Korea. 5104 ASB. NIAST.

Protodeltote distinguenda.
N China. 70 HL. CIS.



Protodeltote wiscotti.
Russia, Primorye. 736 VK. IBSS.



Erastroides fentoni.
Russia, Primorye. 743. IBSS.

Koyaga falsa.
Russia, Sakhalin. 737 VK. IBSS.

1

Koyaga numisma.
N Korea. 7726 LR. HNHM.

2

Koyaga magninumisma.
Pussia, Primorye terr. 0054AM. ZISP.

3

Sugia stygia.
Japan. 7751 LR. HNHM.

4

Deltote deceptoria.
Russia, Primorye. 741 VK. IBSS.

5

Deltote uncula.
Austria. 9837. LR. HNHM.

6

Deltote bankiana.
S Korea. 5045 ASB. NIAST.

7

Deltote nemorum.
S Korea. 5097 ASB. NIAST.

8

Pseudodeltote brunnea.
Japan. 7749 LR. HNHM.

1

Paraphyllophila confusa.
Russia, Primorye. PT. AM. ZISP.

2

Micardia pulchra.
Japan. 2242 VK. ZFMK.

3

Naranga aenescens.
China. 2210 VK. ZFMK.

4

Maliattha rosacea.
S Korea. 5113 ASB. NIAST.

5

Maliattha chalcogramma.
N Korea. 7723 LR. HNHM.

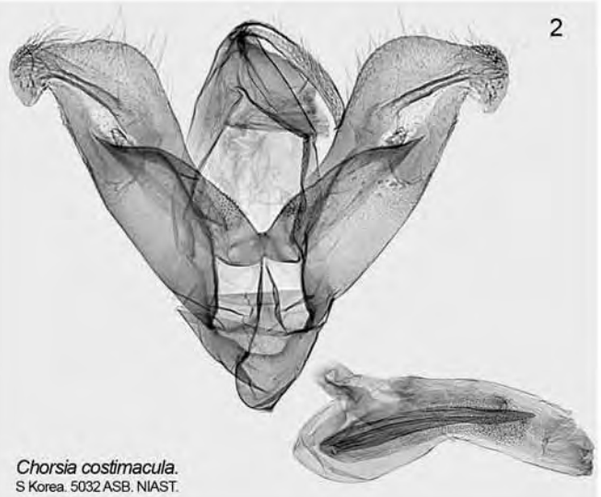
6

Maliattha khasanica.
S Korea. 7221 LR. HNHM.

1

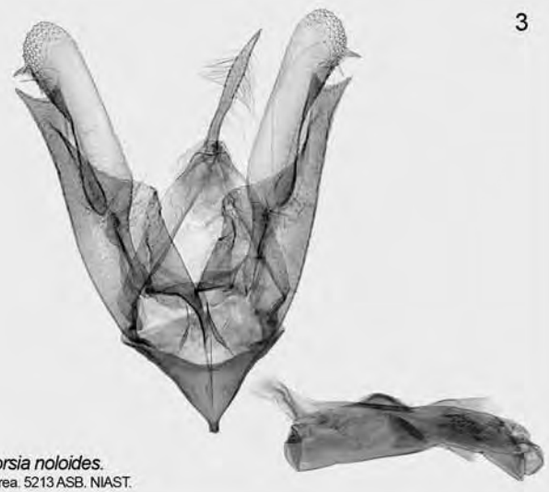
Maliattha bella.
Japan. 7757 LR. HNHM.

2



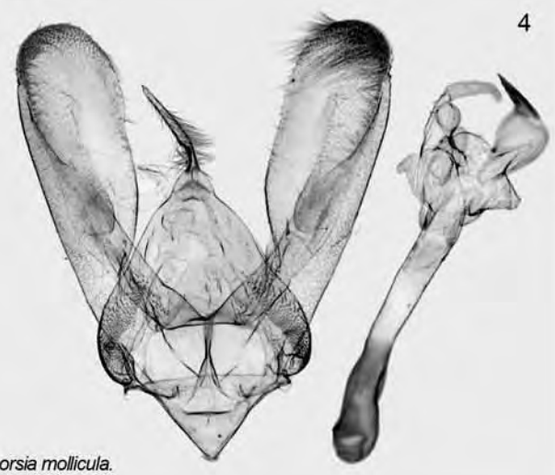
Chorsia costimacula.
S Korea. 5032 ASB. NIAST.

3



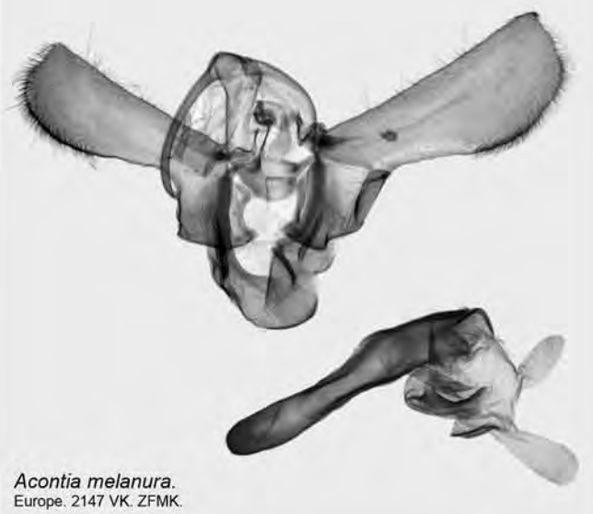
Chorsia noloides.
S Korea. 5213 ASB. NIAST.

4



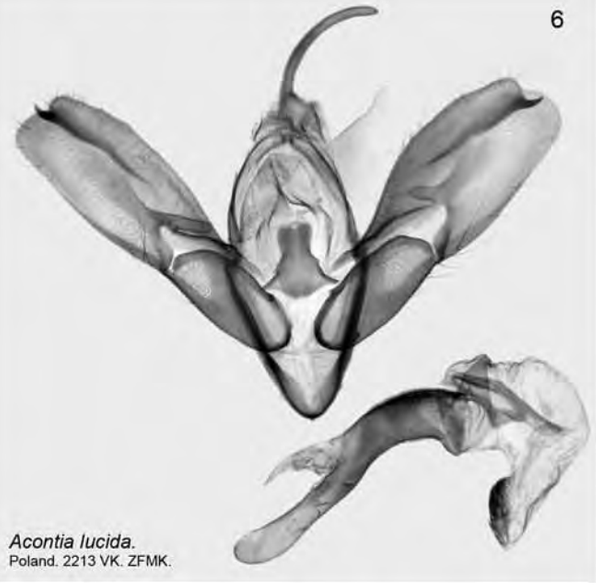
Chorsia mollicula.
S Korea. 436-1 HL. CIS.

5



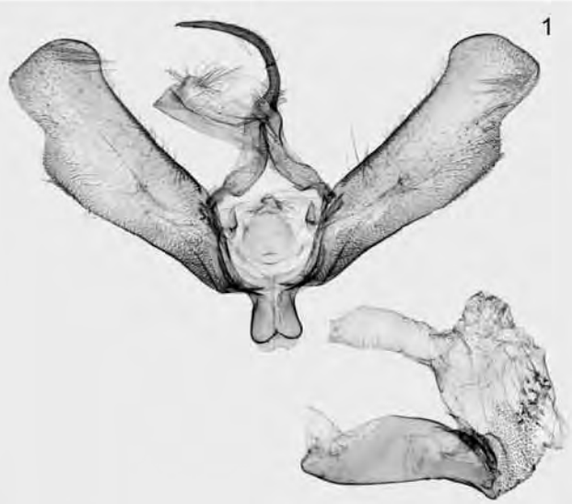
Acontia melanura.
Europe. 2147 VK. ZFMK.

6



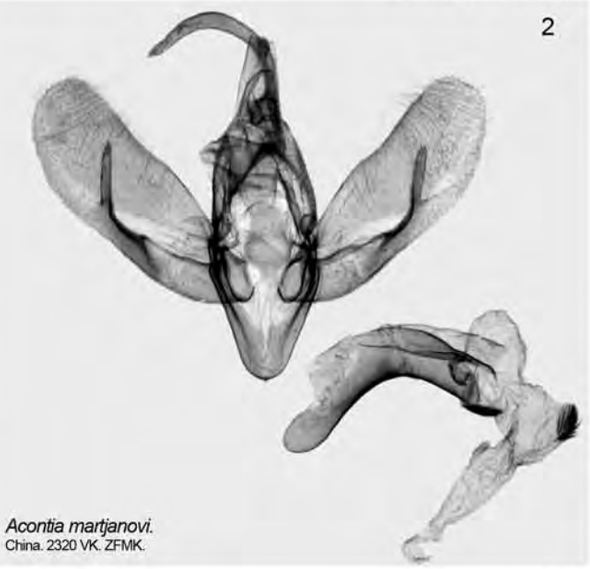
Acontia lucida.
Poland. 2213 VK. ZFMK.

1



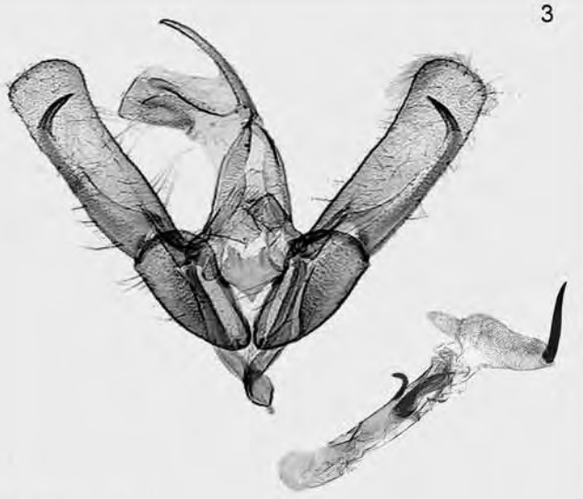
Acontia olivacea.
Russia, Primorye. 734 VK. IBSS.

2



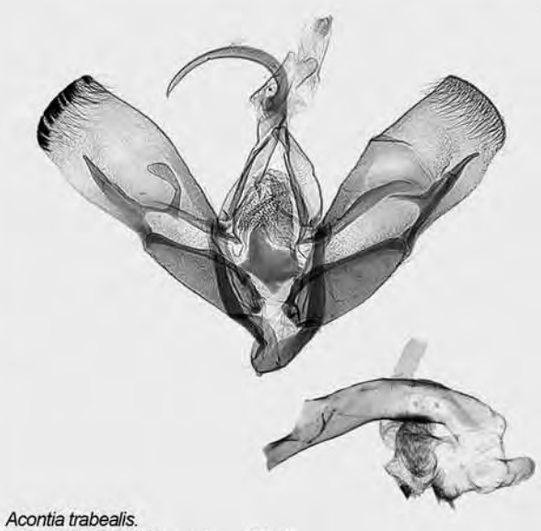
Acontia martjanovi.
China. 2320 VK. ZFMK.

3



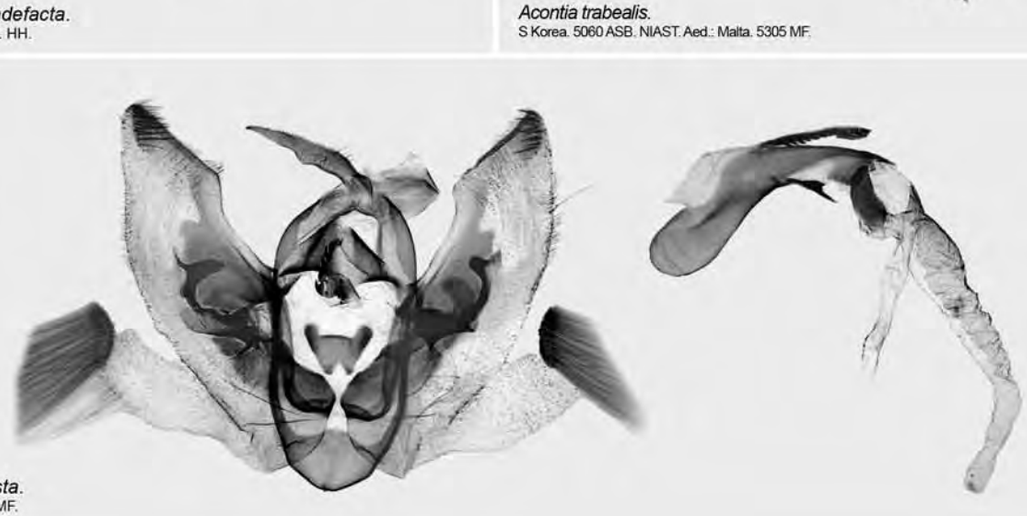
Acontia candefacta.
Ukraine. 12162. HH.

4



Acontia trabealis.
S Korea. 5060 ASB. NIAST. Aed.: Malta. 5305 MF.

5



Aedia funesta.
Ukraine. 3554 MF.

1

Meganola togatulalis.
Hungary. N84 GL.

2

Meganola strigula.
Hungary. N93 GL.

3

Meganola albula.
Russia, Primorye. 21 YC. IBSS.

4

Meganola fumosa.
Russia, Primorye. 3 YC. IBSS.

5

Meganola basifascia.
Russia, Primorye. YC. IBSS.

6

Meganola bryophilalis.
Russia, Primorye. YC. IBSS.

1

Meganola costalis.
Russia, Primorye. 203 YC. IBSS.

2

Meganola strigulosa.
Russia, Primorye. 25 YC. IBSS.

3

Meganola shimekii.
Japan. (After Inoue, 1982).

4

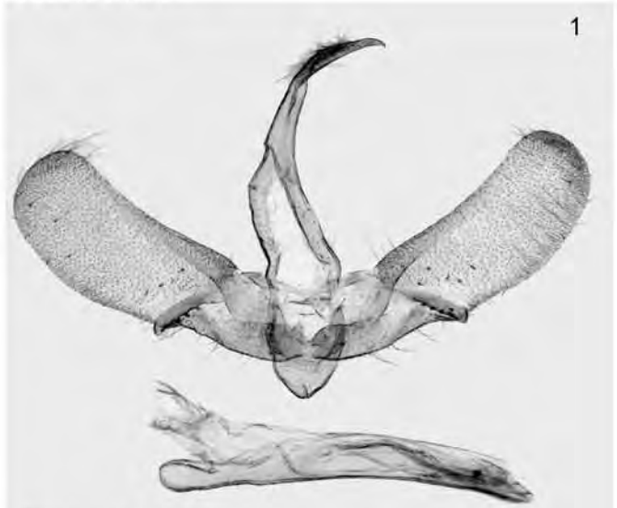
Meganola mikabo.
Russia, Primorye. 35 YC. IBSS.

5

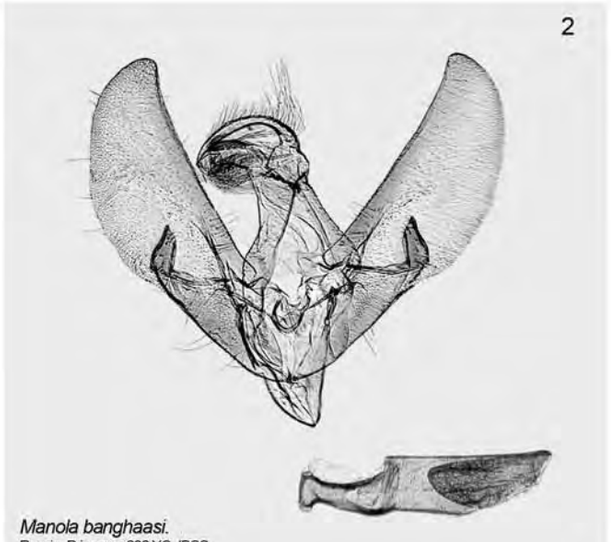
Meganola subgigas
Russia, Primorye. 5 YC. IBSS.

6

Meganola gigas.
Russia, Primorye. 216 YC. IBSS.



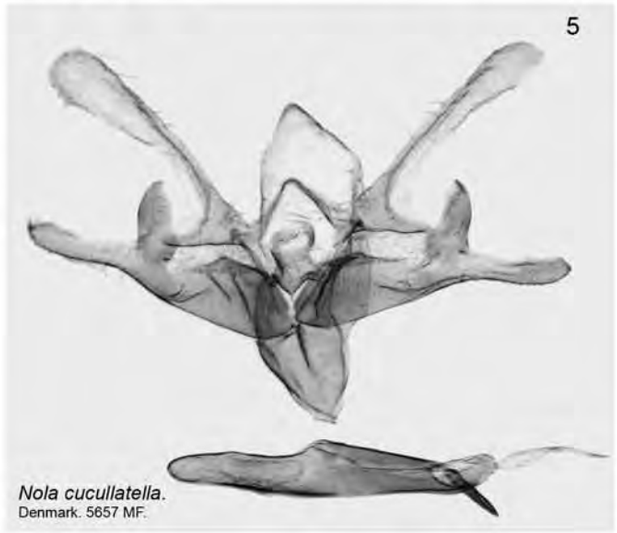
Evonima mandschuriana.
Russia, Primorye. 214 YC. IBSS.



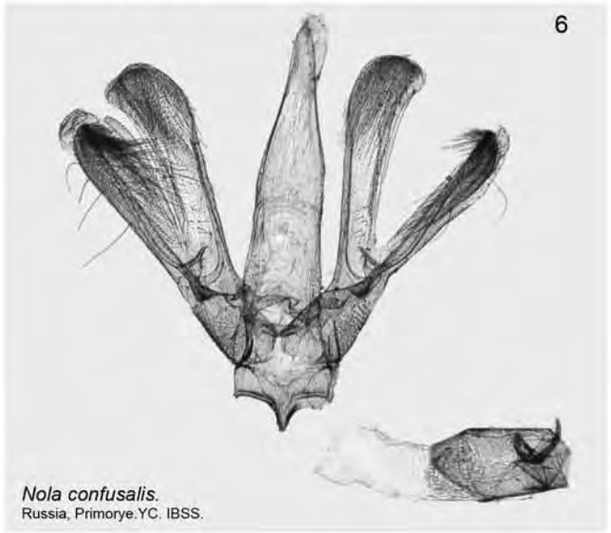
Manola banghaasi.
Russia, Primorye. 202 YC. IBSS.

Casminola pulchella.
S Korea. 2/010607 CY. CIS.

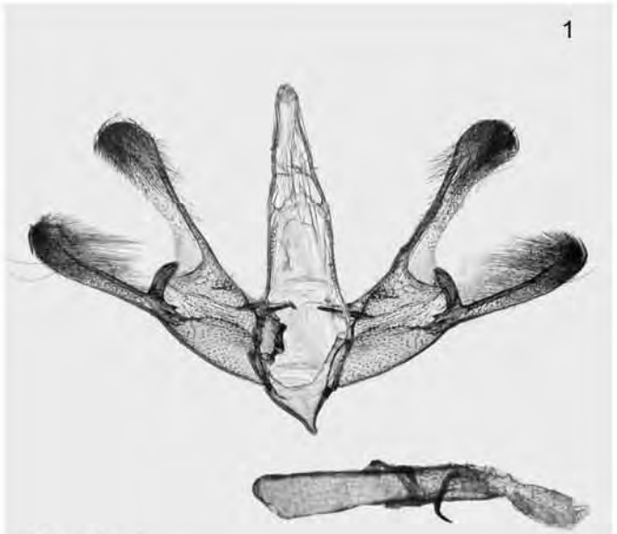
Nolathripa lactaria.
Russia, Primorye. VK. IBSS.



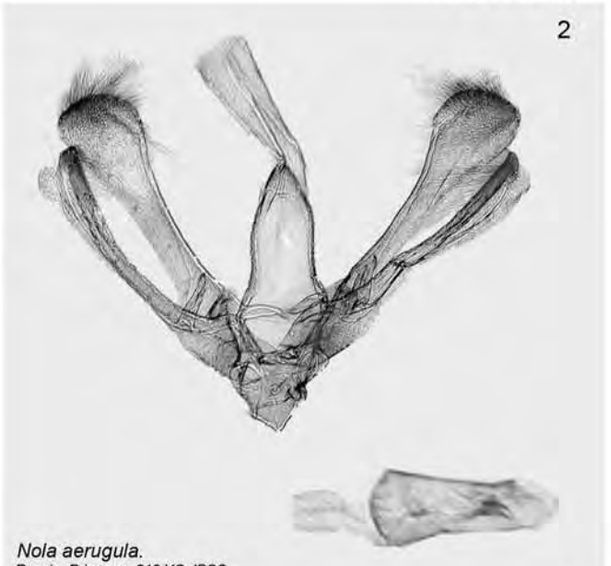
Nola cucullatella.
Denmark. 5657 MF.



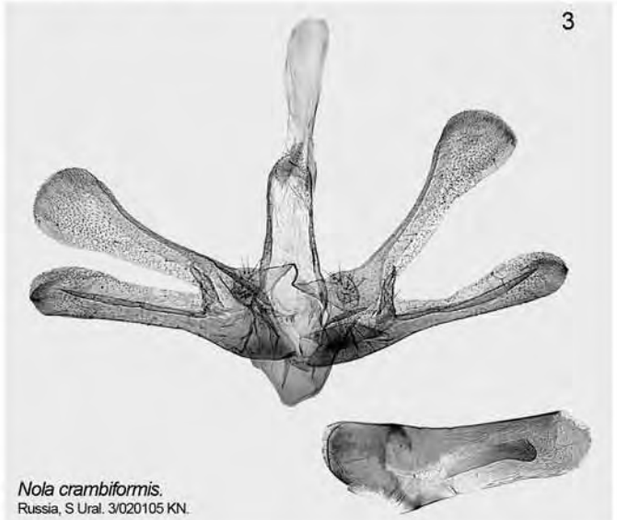
Nola confusalis.
Russia, Primorye.YC. IBSS.



Nola cicatricalis.
Russia, Primorye.YC. IBSS.

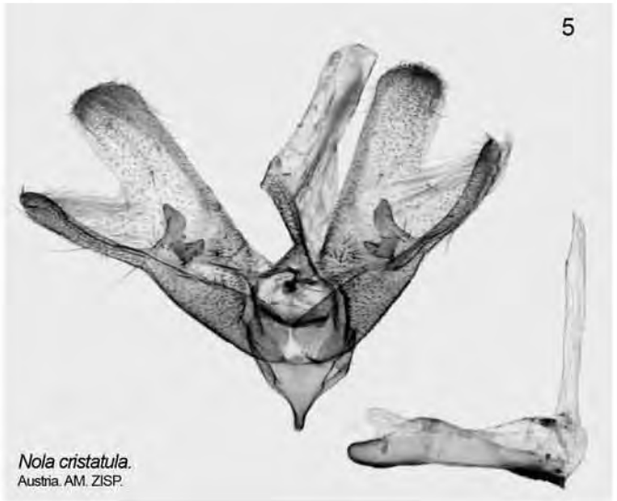


Nola aerugula.
Russia, Primorye. 210 YC. IBSS.



Nola crambiformis.
Russia, S Ural. 3/020105 KN.

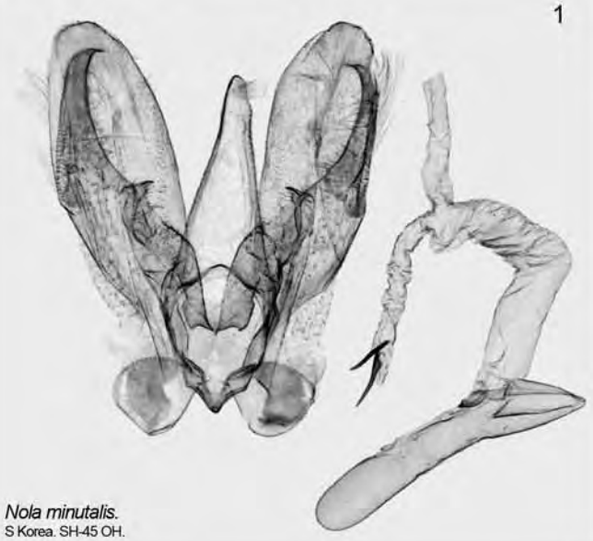
Nola karelica.
Finland. N276 LR. HNHM.



Nola cristatula.
Austria. AM. ZISP.

Nola chlamitulalis.
France. AM. ZISP. Aed. France. 5655 MF.

1

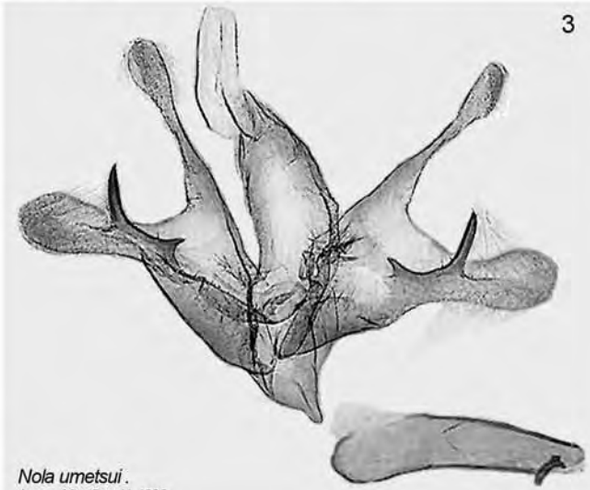


Nola minutalis.
S Korea. SH-45 OH.

2

Nola taeniata.
S Korea. SH-35 OH.

3



Nola umetsui .
Japan. After Sasaki, 1993

4

Nola innocua.
Russia, Primorye. YC. IBSS.

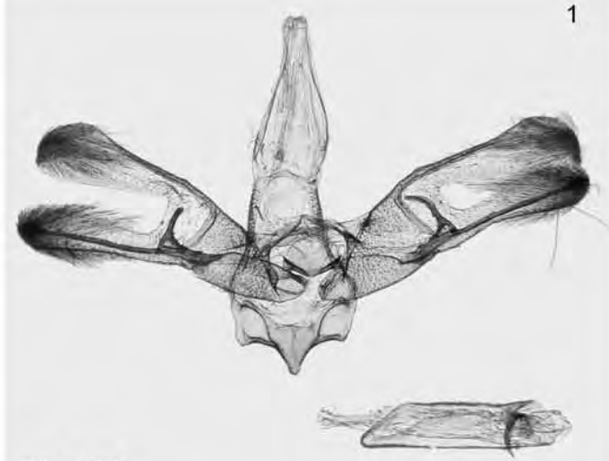
5

Nola japonibia.
Russia. Amur. AM. ZISP.

6

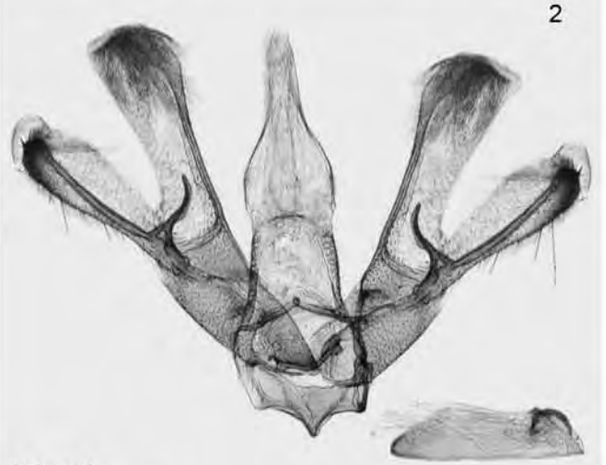
Nola emi.
Russia, Primorye. 41 YC. IBSS.

1



Nola neglecta.
Russia, Primorye. YC. IBSS.

2

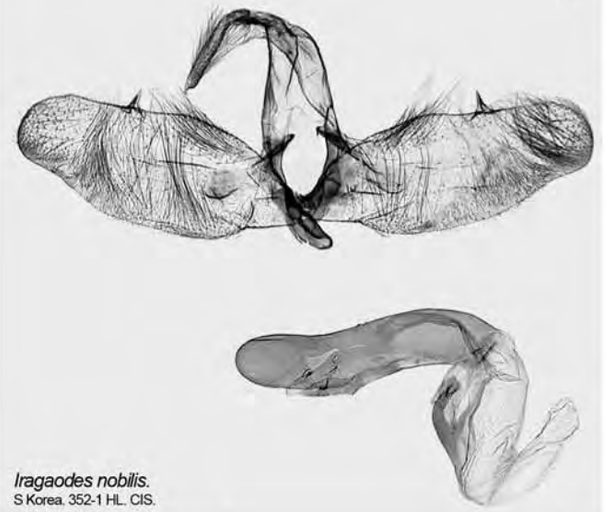


Nola nami.
Russia, Primorye. 17 YC. IBSS.

3

Nola ebatoi.
S Korea. SH-52 OH.

4



Iragaodes nobilis.
S Korea. 352-1 HL. CIS.

5

Parhylophila celsiana.
Russia, Primorye. 730 VK. IBSS.

6

Parhylophila buddhae.
Russia, Primorye. 732 VK. IBSS.

1

Kerala decipiens.
S Korea. 356-1 HL. CIS.

2

Gelastocera ochroleucana.
S Korea. 4847 LR. HNHM.

3

Gelastocera exusta.
S Korea. 4848 LR. HNHM.

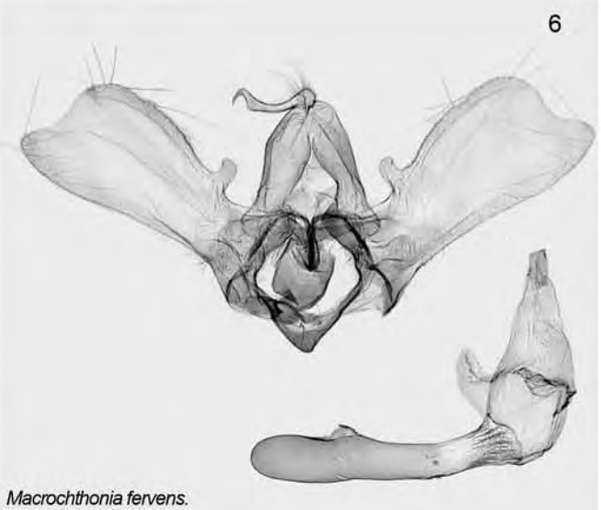
4

Gelastocera eminentissima.
Russia, Primorye. 359-1 HL. CIS.

5

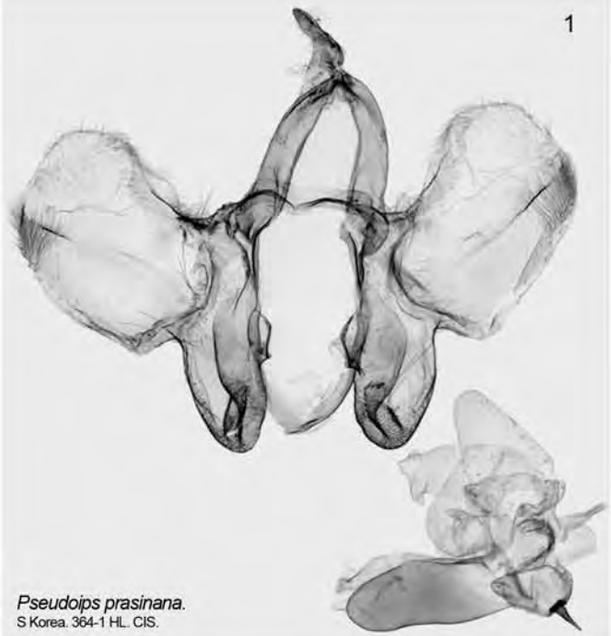
Gelastocera kotshubeji.
Russia, Primorye. 890 VK. IBSS.

6



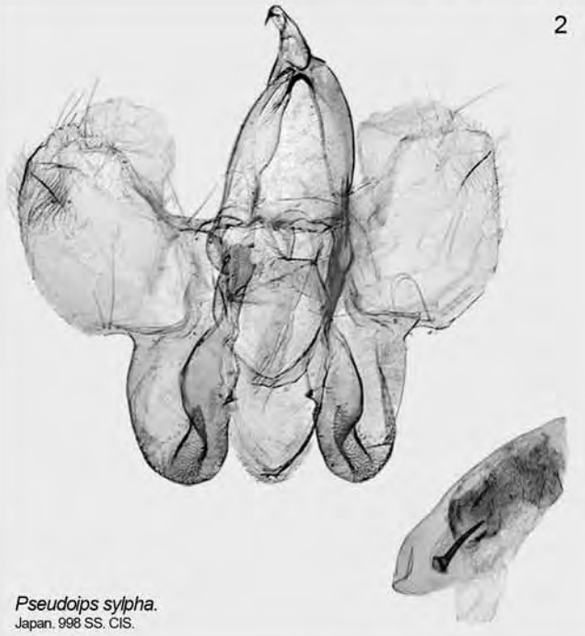
Macrochthonia fervens.
S Korea. 361-1 HL. CIS.

1



Pseudoips prasinana.
S Korea. 364-1 HL. CIS.

2

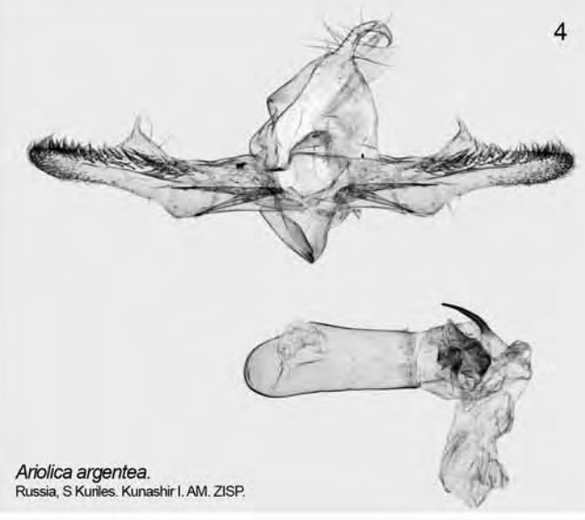


Pseudoips sylpha.
Japan. 998 SS. CIS.

3

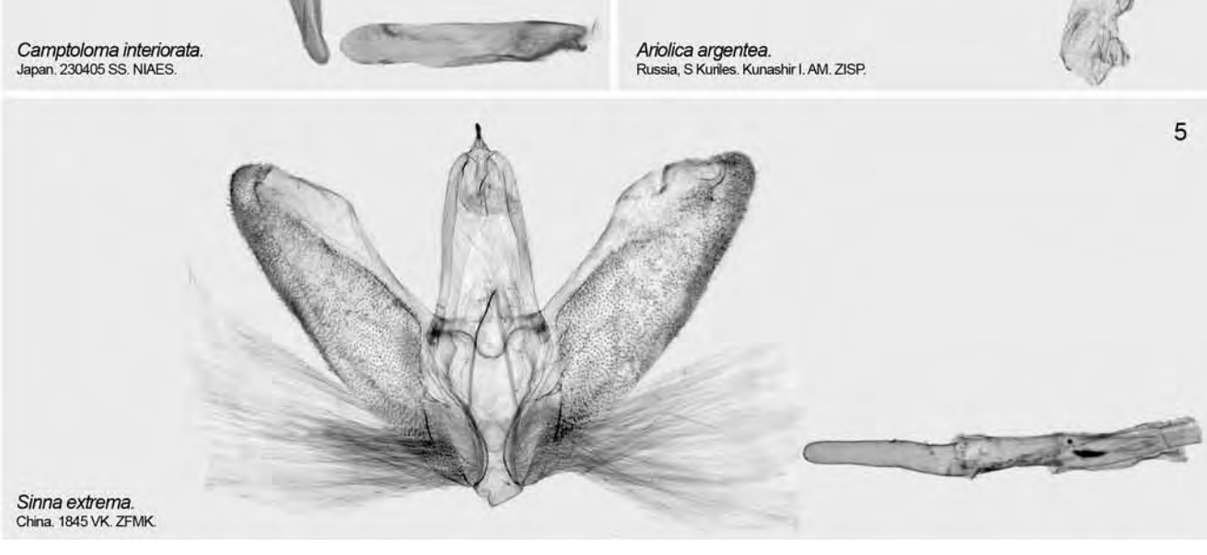
Camptoloma interiorata.
Japan. 230405 SS. NIAES.

4



Ariolica argentea.
Russia, S Kuriles. Kunashir I. AM. ZISP.

5



Sinna extrema.
China. 1845 VK. ZFMK.

1

Earias pudicana.
S Korea. 721 HL. CIS.

2

Earias roseifera.
S Korea. 27/05 VK. CIS.

3

Earias roseoviridis.
Russia, Primorye. 883 VK. IBSS.

4

Earias clorana.
Russia, Irkutsk reg. AM. ZISP.

5

Earias vernana.
Austria. AM. ZISP.

6

Nycteola degenerana.
Russia, S Ural. 5484 MF.

1

Nycteola asiatica.
Uzbekistan. 5646 MF.

2

Nycteola ereemostola.
Russia, S Ural. 5613 MF.

3

Nycteola kuldzhana.
Russia, S. Ural. 5614 MF.

4

Negritothripa hampsoni.
S Korea. 9/05 VK. CIS.

5

6

Eligma narcissus.
S Korea. 343-1 HL. CIS.

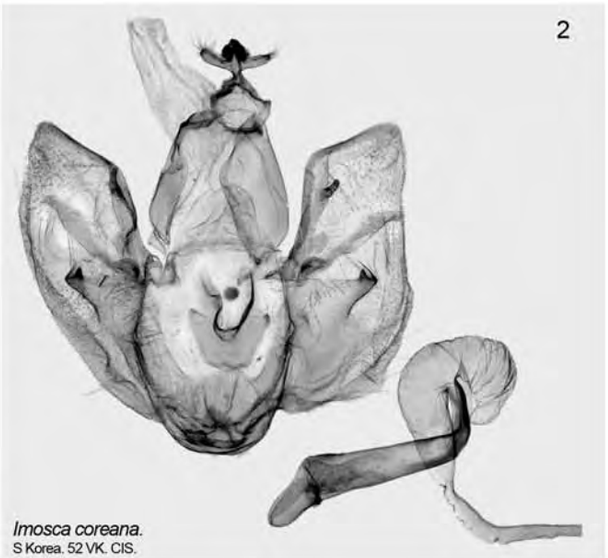
6

Amyna axis.
China. 2315 VK. ZFMK.

1

Amyna punctum.
China. 2319 VK. ZFMK.

2

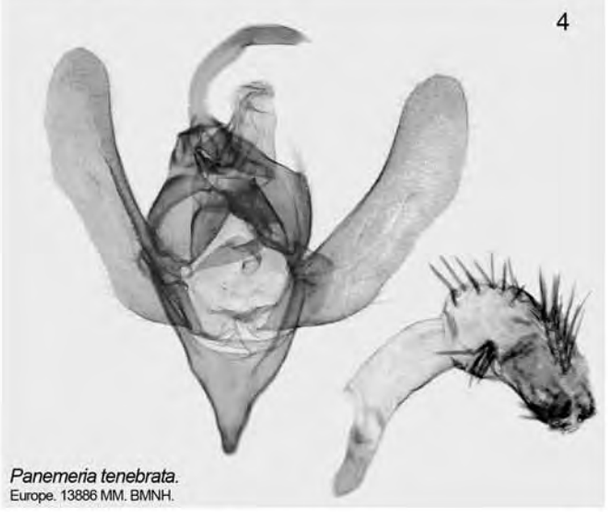


Imosca coreana.
S Korea. 52 VK. CIS.

3

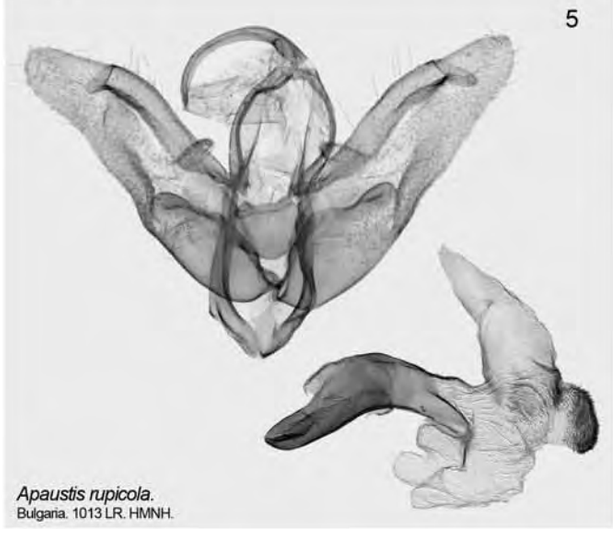
Sphragifera sigillata.
N China. 4/05 VK.CIS.

4



Panemeria tenebrata.
Europe. 13886 MM. BMNH.

5

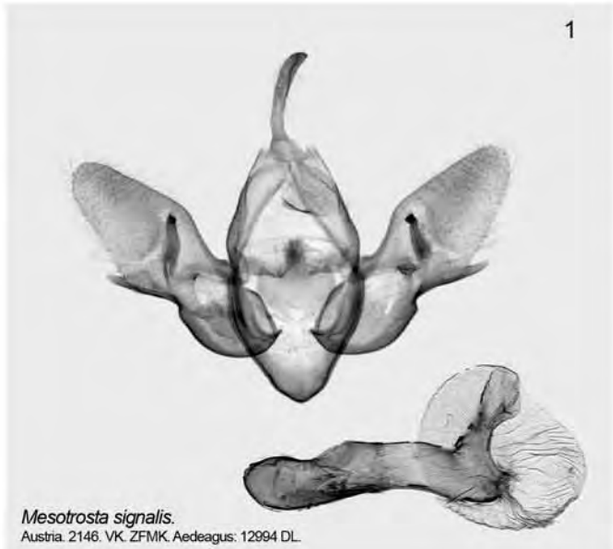


Apaustis rupicola.
Bulgaria. 1013 LR. HMNH.

6

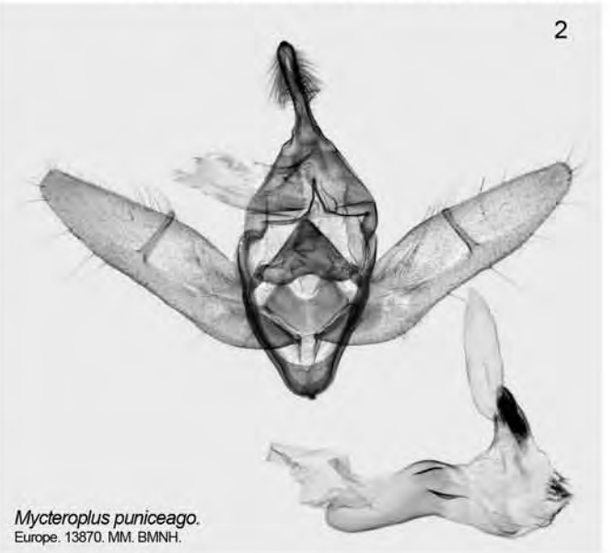
Aegle kaekeritziana.
Europe. 13832. MM. BMNH.

1



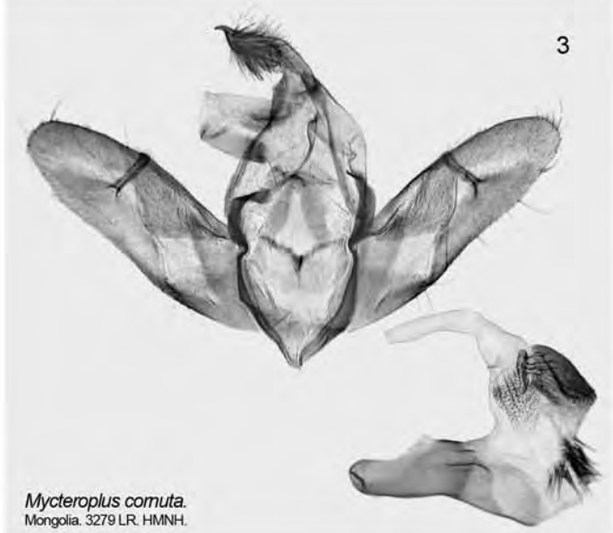
Mesotrosta signalis.
Austria. 2146. VK. ZFMK. Aedeagus: 12994 DL.

2



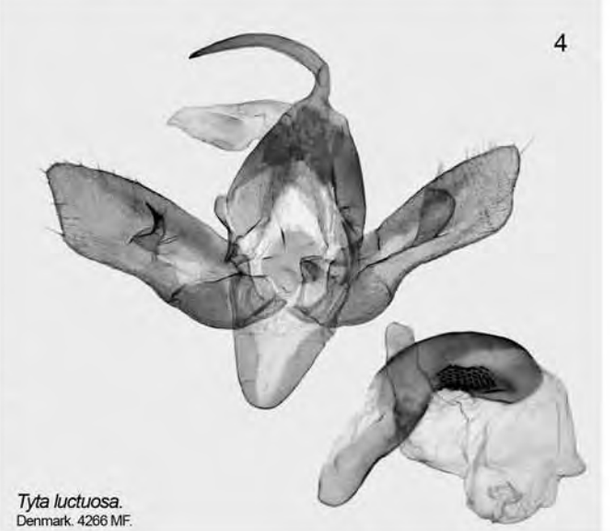
Mycteroplus puniceago.
Europe. 13870. MM. BMNH.

3



Mycteroplus comuta.
Mongolia. 3279 LR. HMNH.

4



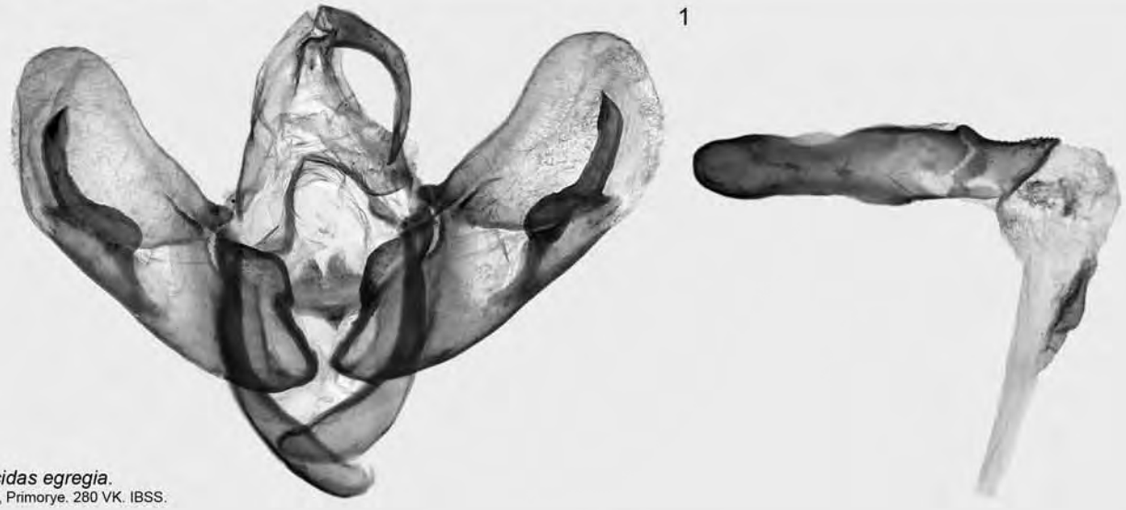
Tyta luctuosa.
Denmark. 4266 MF.

5

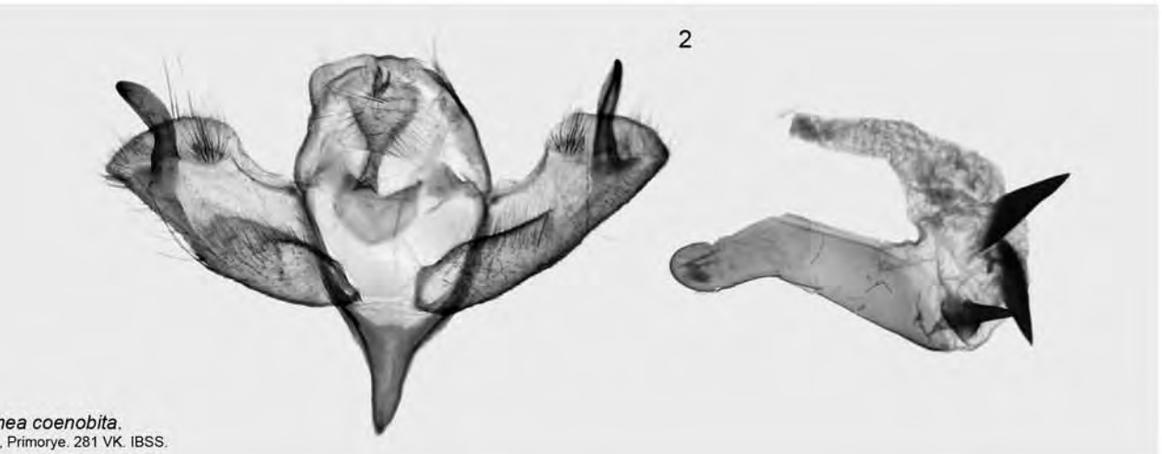
Sinocharis korbae.
Russia, Primorye. 5338 MF.

6

Balsa leodura.
S Korea. 690-1 HL. CIS.

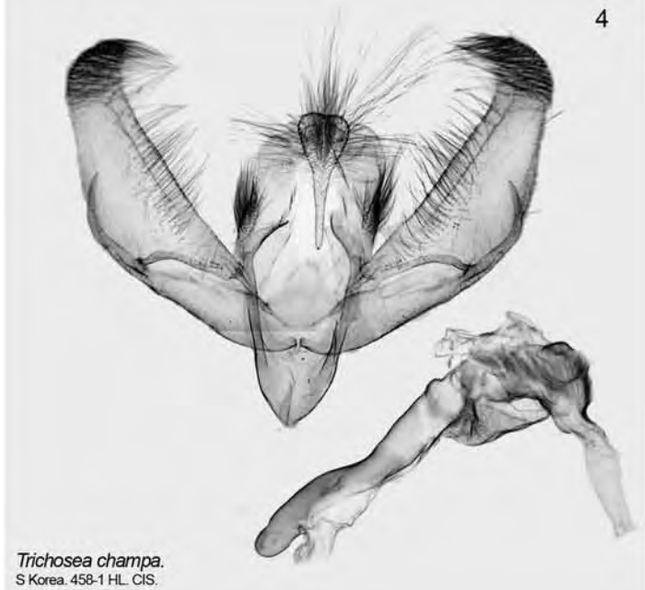


Thiacidas egregia.
Russia, Primorye. 280 VK. IBSS.



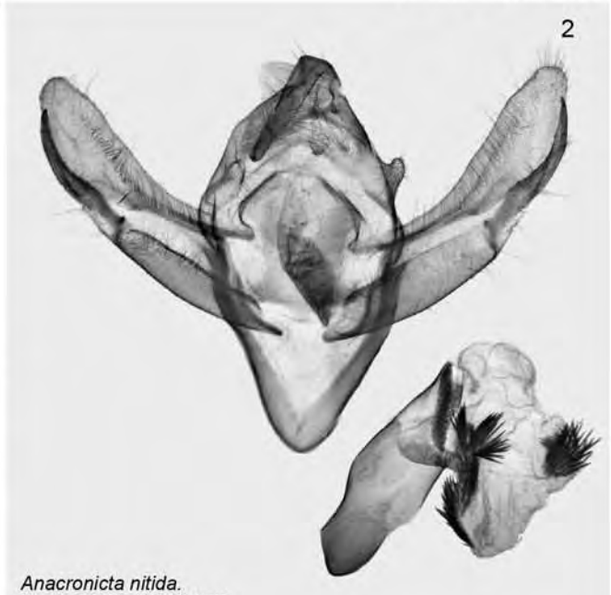
Panthea coenobita.
Russia, Primorye. 281 VK. IBSS.

Trichosea ludifica.
Russia, Sakhalin. 278 VK. IBSS.

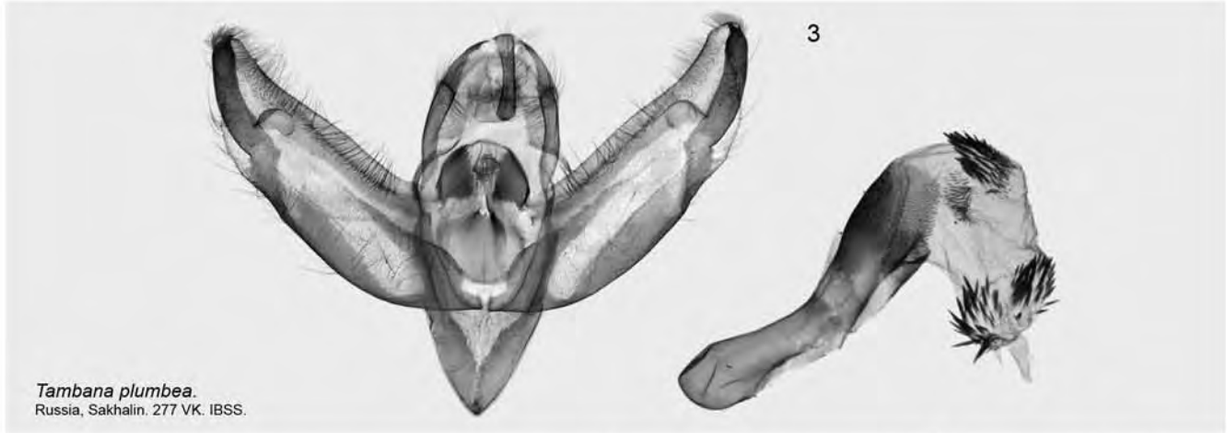


Trichosea champa.
S Korea. 458-1 HL. CIS.

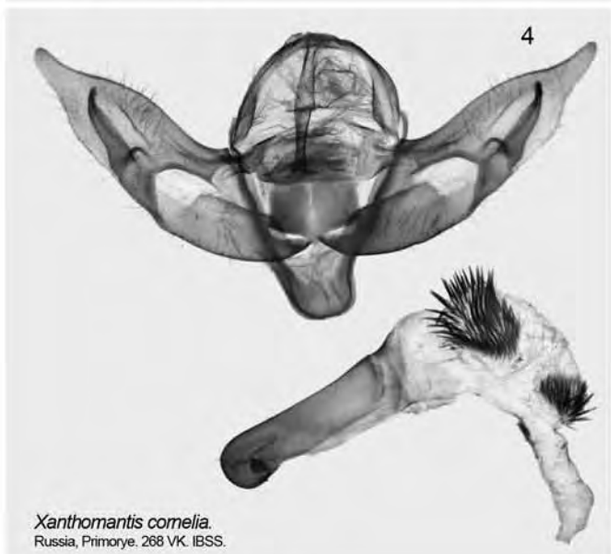
Anacronicta caliginea.
Russia, Primorye. 272 VK. IBSS.



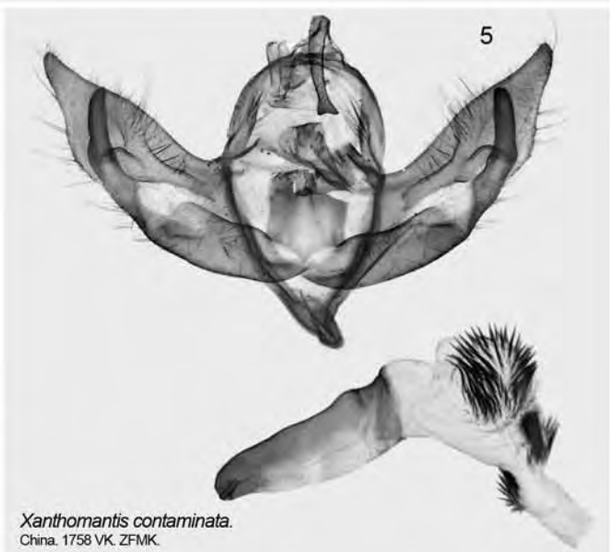
Anacronicta nitida.
Russia, Sakhalin. 275 VK. IBSS.



Tambana plumbea.
Russia, Sakhalin. 277 VK. IBSS.



Xanthomantis cornelia.
Russia, Primorye. 268 VK. IBSS.



Xanthomantis contaminata.
China. 1758 VK. ZFMK.

1

Colocasia coryli.
Russia, S Ural. 050798/1 VK. ZMHU.

2

Colocasia mus.
Russia, Primorye. 050798/7 VK. ZMHU.

3

Diloba coeruleocephala.
Austria. 2108 VK. ZFMK.

4

Raphia peustera.
Russia, Primorye. 269 VK. IBSS.

5

Cymatophoropsis trimaculata.
Russia, Primorye. 286 VK. IBP.

6

Cymatophoropsis unca.
S Korea. 462-1. HL. CIS.

1

Belciades niveola.
N Korea. 1641 VK. ZFMK.

2

Nacna malachitis.
Russia, Primorye. 1787 VK. ZFMK.

3

Belciana siitanae.
Russia, Primorye. 288 VK. IBP.

4

Belciana staudingeri.
S Korea. 645 HL. CIS.

1

Subleuconycta palshkovi.
Russia, Primorye. 323 VK. IBP.

2

Gerbathodes paupera.
S Korea. 471-1 HL. CIS.

3

Euromoia mixta.
RFE, Primorye. 270 VK. CIS.

4

Euromoia subpulchra.
Primorye. 271 VK. IBSS.

5

Moma alpium.
Russia, Khabarovsk reg. 15/210394. VK. IBSS.

1

Moma kolthoffi.
Russia, Primorye. 292 VK. IBSS.

2

Moma tsushimana.
Russia, Primorye. 291 VK. IBSS.

3

Craniophora ligustri.
S Korea. 499-1 HL. CIS.

4

Craniophora praeclara.
S Korea. 500-1 HL. CIS.

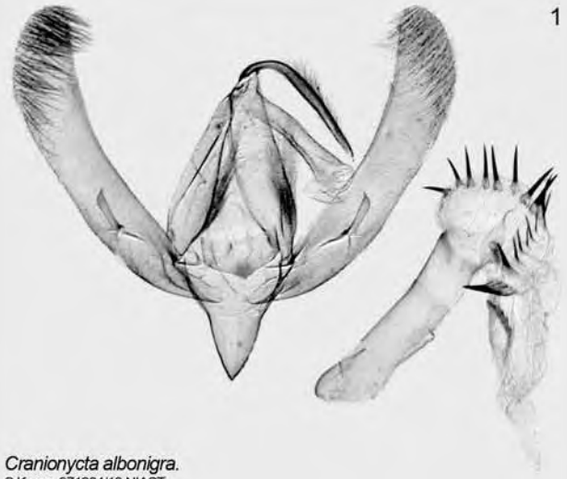
5

Craniophora pacifica.
RFE, Primorye. 310 VK. IBP.

6

Cranionycta jankowskii.
S Korea. 503-1 HL. CIS.

1

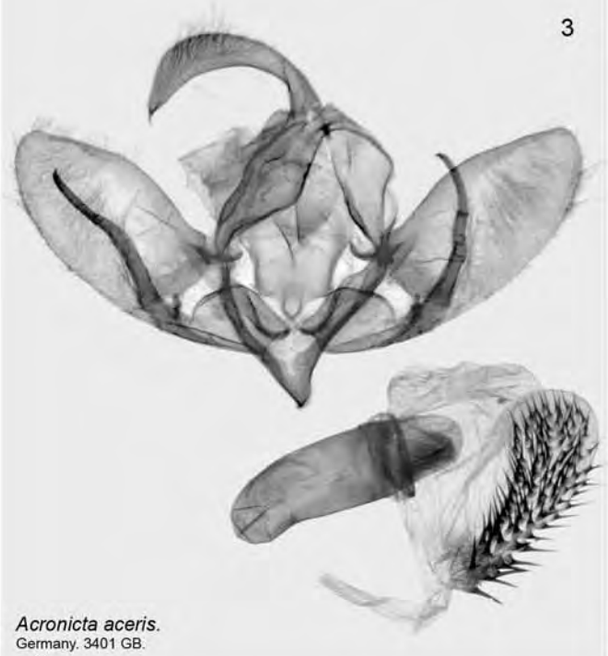


Cranionycta albonigra.
S Korea. 971204/13 NIAST.

2

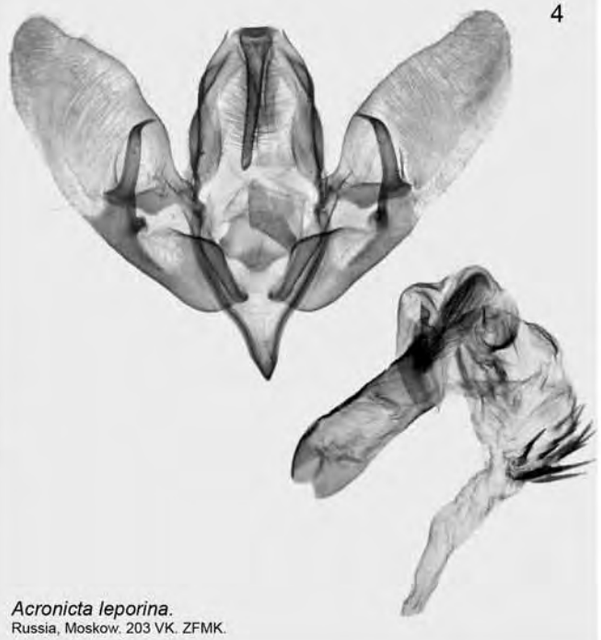
Cranionycta oda.
S Korea. 505-1 HL. CIS.

3



Acronicta aceris.
Germany. 3401 GB.

4

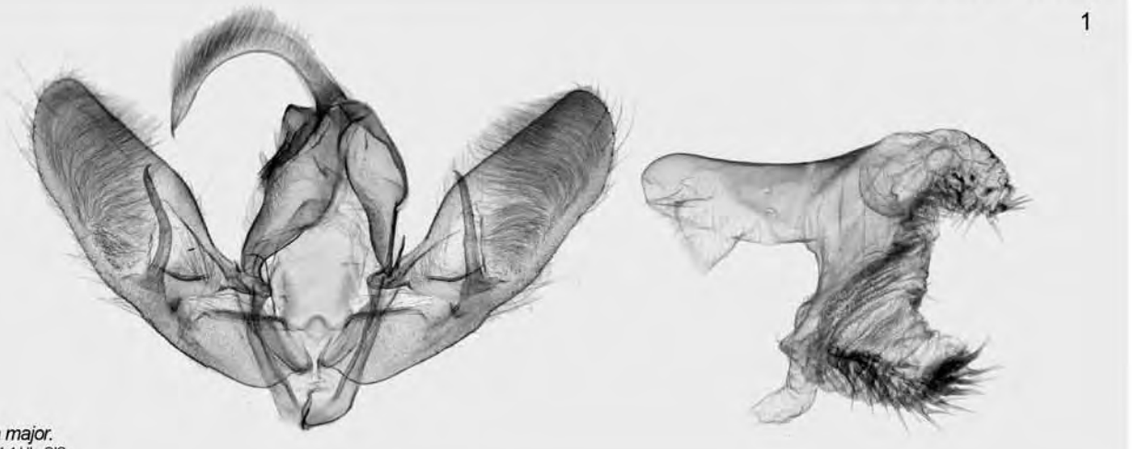


Acronicta leporina.
Russia, Moskow. 203 VK. ZFMK.

5

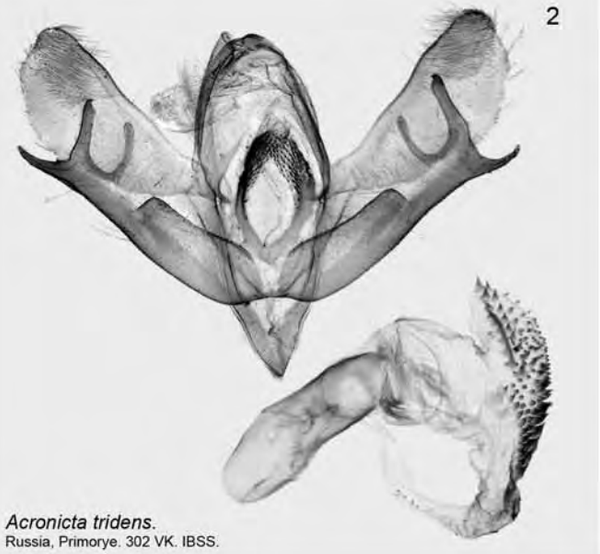
Acronicta vulpina.
Russia, Primorye. 9048 ER. ZMHU.

1



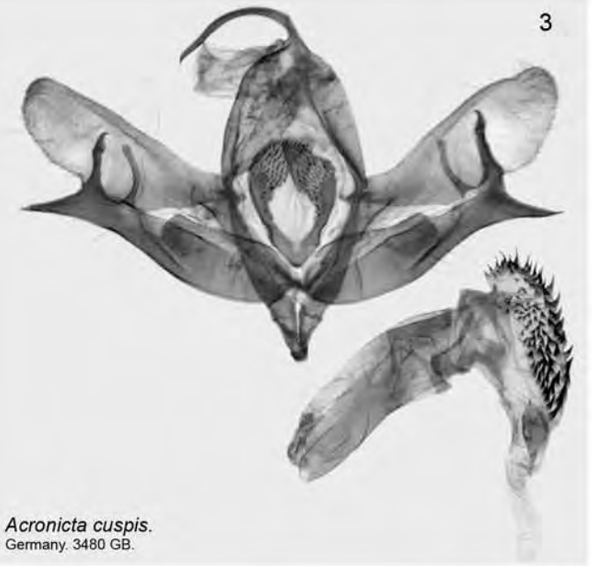
Acronicta major.
S Korea. 474-1 HL. CIS.

2



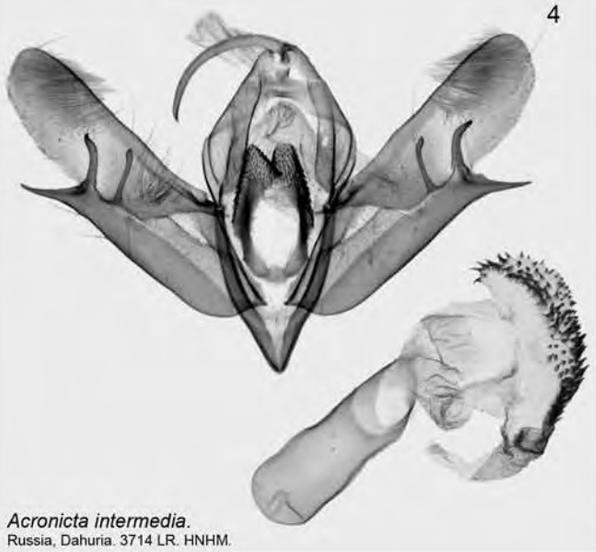
Acronicta tridens.
Russia, Primorye. 302 VK. IBSS.

3



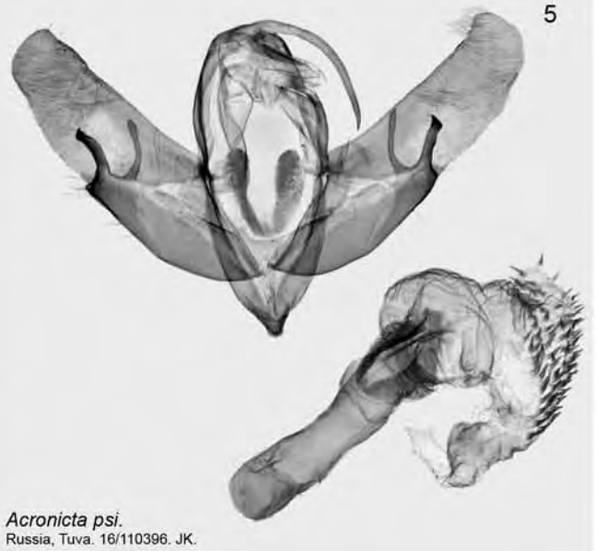
Acronicta cuspis.
Germany. 3480 GB.

4



Acronicta intermedia.
Russia, Dahuria. 3714 LR. HNHM.

5



Acronicta psi.
Russia, Tuva. 16/110396. JK.

1

Acronicta leucocuspis.
S Korea. 971204/12 VK. NIAST.

2

Acronicta sugii.
Russia, Primorye. 307 VK. IBP.

3

Acronicta alni.
S Korea. 105/05 VK. CIS.

4

Acronicta adaucta.
S Korea. 475-1 HL. CIS.

5

Acronicta strigosa.
S Korea. 476-1 HL. CIS.

6

Acronicta jozana.
N Korea. 282 LR. HNHM.

1

Acronicta bellula.
N China. Type *A. chingana*. VK. *MNHU.*

2

Acronicta omorii.
Russia, S Kuriles, Kunashir I. 317 VK. IBSS.

3

Subacronycta concerpta.
N Korea. 1838 VK. ZFMK.

4

Subacronycta megacephala.
Finland. 11/050698 VK. ZMHU.

5

Acronicta carbonaria.
RFE, Primorye. AM. ZIN.

1

Acronicta catocaloida.
S Korea. 489-1 HL. CIS.

2

Acronicta hercules.
S Korea. 490-1 HL. CIS.

3

Acronicta menyanthidis.
Europe. 2000 VK. ZFMK.

4

Acronicta auricoma.
Germany. 3493 GB.

5

Acronicta dahurica.
Russia, Primorye. 716 VK. IBSS.

1

Acronicta cinerea.
Russia, Altai. AV.

2

Acronicta rumicis.
S Korea. 492-1 HL. CIS.

3

Acronicta lutea.
Russia, Amur. 1852 VK. ZFMK.

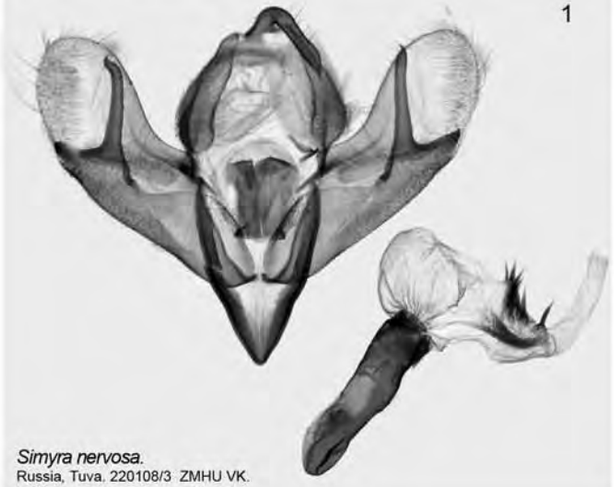
4

Acronicta digna.
China. 1850 VK. ZFMK.

5

Acronicta raphael.
Russia, Primorye. 300 VK. IBSS.

1

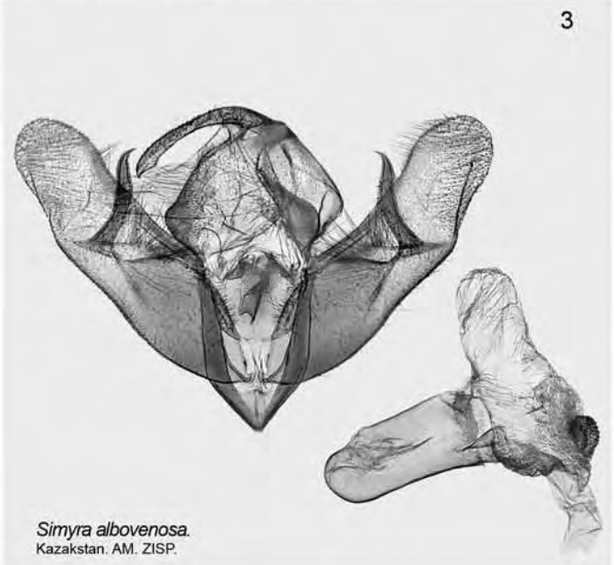


Simyra nervosa.
Russia, Tuva. 220108/3 ZMHU VK.

2

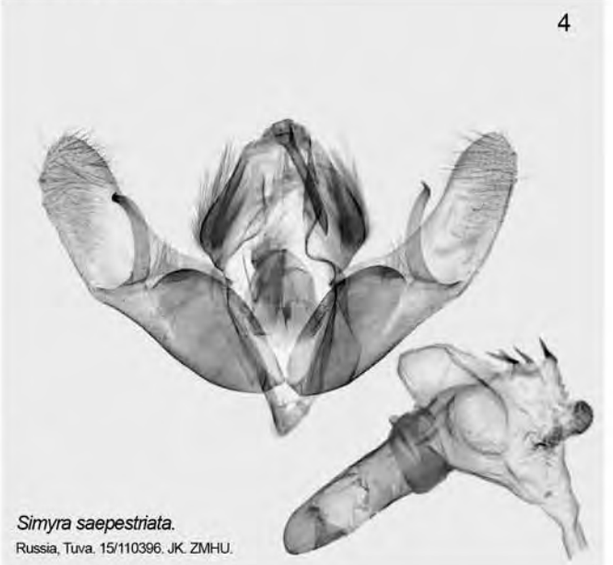
Simyra splendida.
Russia, Primorye. 321 VK. IBSS.

3



Simyra albovenosa.
Kazakstan. AM. ZISP.

4

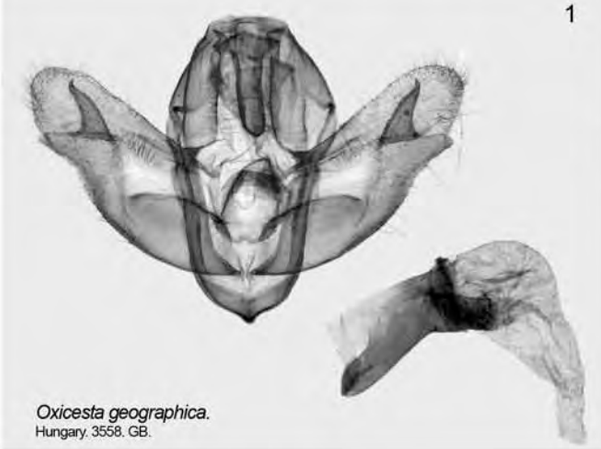


Simyra saepestriata.
Russia, Tuva. 15/110396. JK. ZMHU.

5

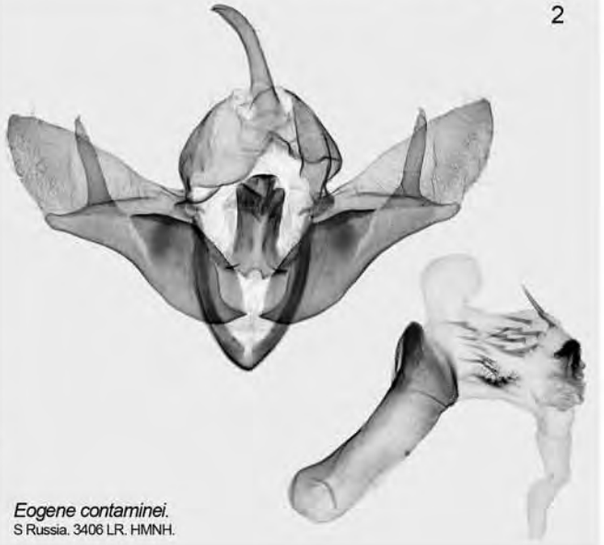
Simyra dentinosa.
Turkey. 3406 LR. HNHM.

1



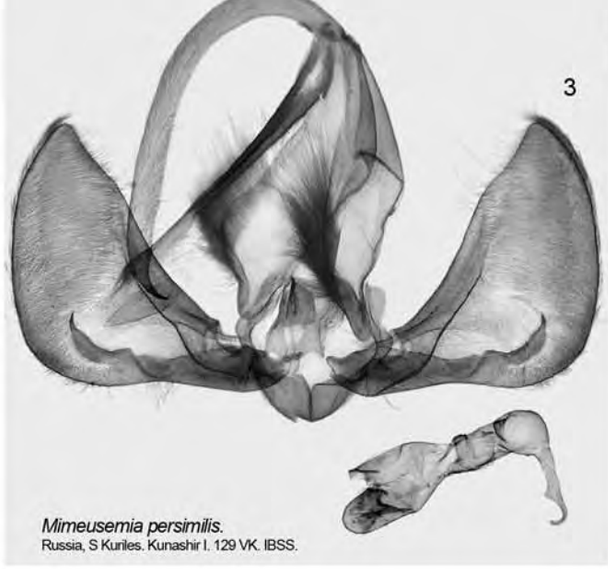
Oxicesta geographica.
Hungary. 3558. GB.

2



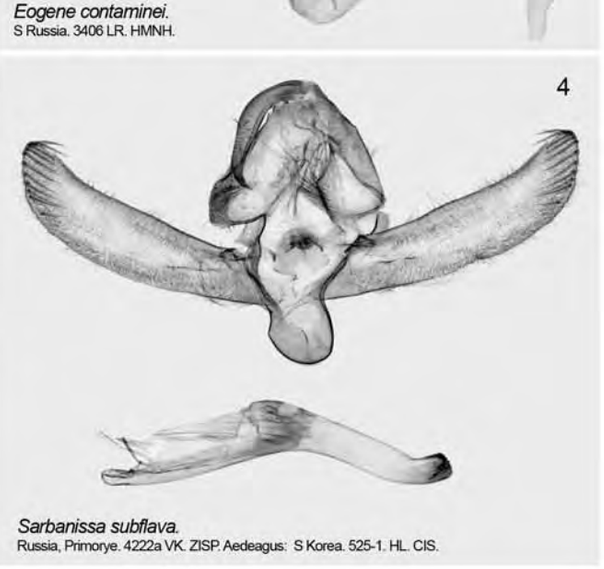
Eogene contaminei.
S Russia. 3406 LR. HMNH.

3



Mimeusemia persimilis.
Russia, S Kuriles. Kunashir I. 129 VK. IBSS.

4



Sarbanissa subflava.
Russia, Primorye. 4222a VK. ZISP. Aedeagus: S Korea. 525-1. HL. CIS.

5

Sarbanissa venusta.
Russia, Primorye. 131 VK. IBSS.

6

Asteropetes noctuina.
Russia, Kuriles. Kunashir I. 134 VK. IBSS. Aed.: Japan. 7455 LR.

1

Mimachrostia fasciata.
Russia, Primorye territory. 3678 MF.

2

Micronoctua occi.
S Korea. KNA. Buyn.

3

Rivula sericealis.
S Korea. 81 HL. CIS.

4

Rivula unctalis.
Russia, S Kuriles, Kunashir I. VK. SZM.

5

Parascotia fuliginaria.
Hungary. 2217 VK. ZFMK.

6

Hypenodes humidalis.
Denmark. 5615 MF.

7

Hypenodes rectifascia.
Japan. 94 KE.

8

Schrankia costaestrigalis.
Kanary Isl. 3049 MF.

9

Schrankia separatalis.
N Korea. ZIN. AM.

1

Schrankia kogii.
S Korea. 65-2 HL. CIS.

2

Schrankia balneorum.
Russia, Daghestan. AM. ZISP.

3

Araeopteron amoena.
S Korea. 5181 ASB. NIAST.

4

Araeopteron fragmenta.
Japan. MF.

5

Araeopteron nebulosa.
Russia, Primorye. 5076 MF.

6

Araeopteron makikoae.
Russia, Primorye. 5753 MF.

7

Araeopteron platela.
Korea. NIAST

8

Odice arcuinna.
Turkey. 2221 VK. ZFMK.

9

Eublemma minutata.
Germany. 2397 GB.

1 *Eublemma pulchralis.* Spain. 2353 VK. ZFMK.

2 *Eublemma ostrina.* Turkey. 2344 VK. ZFMK.

3 *Eublemma porphyrinia.* Kazakstan, Tarbagatai. AM. ZISP.

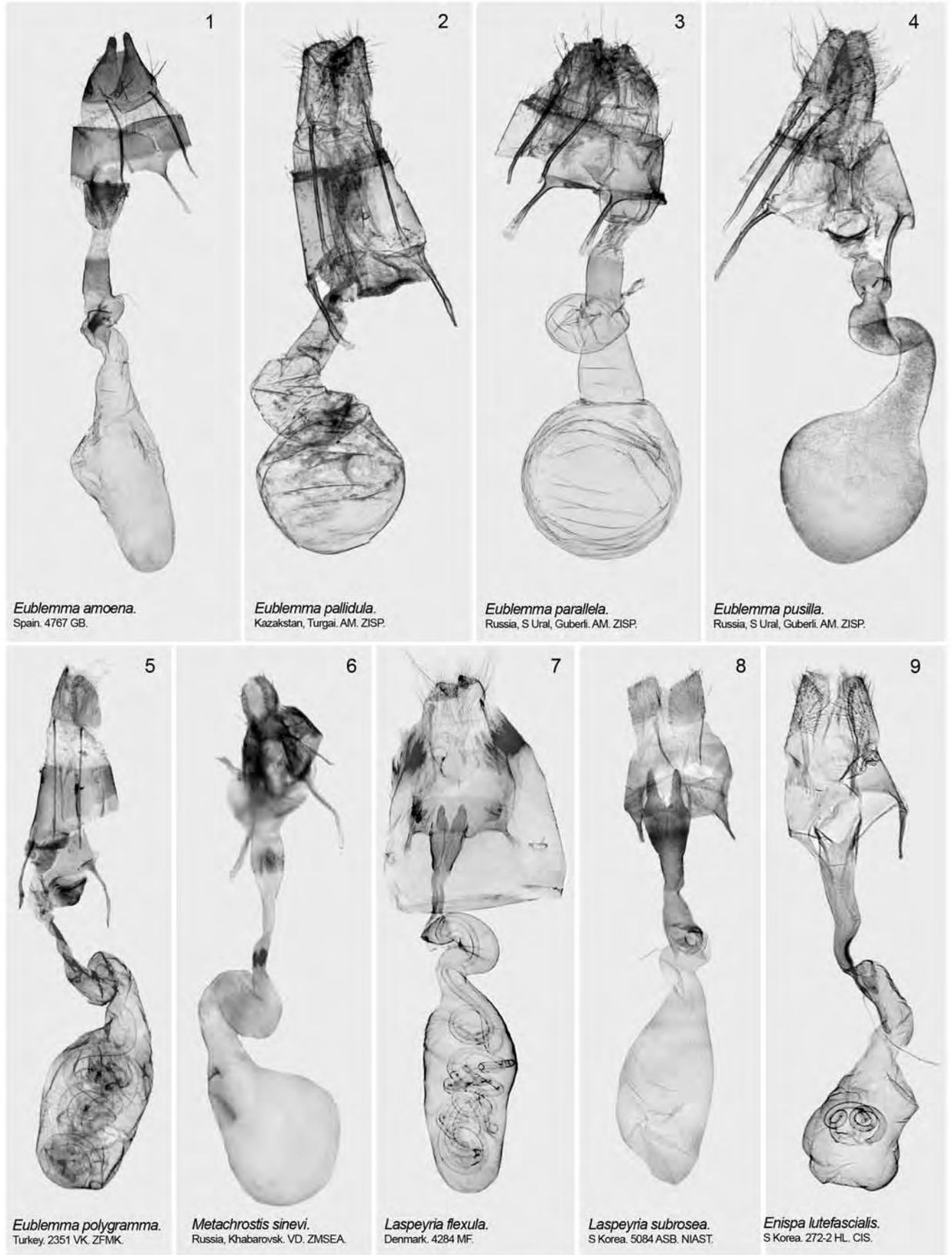
4 *Eublemma parva.* Jugoslavia. 2355 VK. ZFMK.

5 *Eublemma panonica.* Hungary. 2350 VK. ZFMK.

6 *Eublemma amasina.* Japan. 2346 VK. ZFMK.

7 *Eublemma rosea.* Europe. 2348 VK. ZFMK.

8 *Eublemma purpurina.* W Kazakstan, Uralsk. 2342 VK. ZFMK.



1 *Eublemma amoena.* Spain. 4767 GB.

2 *Eublemma pallidula.* Kazakstan, Turgai. AM. ZISP.

3 *Eublemma parallela.* Russia, S Ural, Guberli. AM. ZISP.

4 *Eublemma pusilla.* Russia, S Ural, Guberli. AM. ZISP.

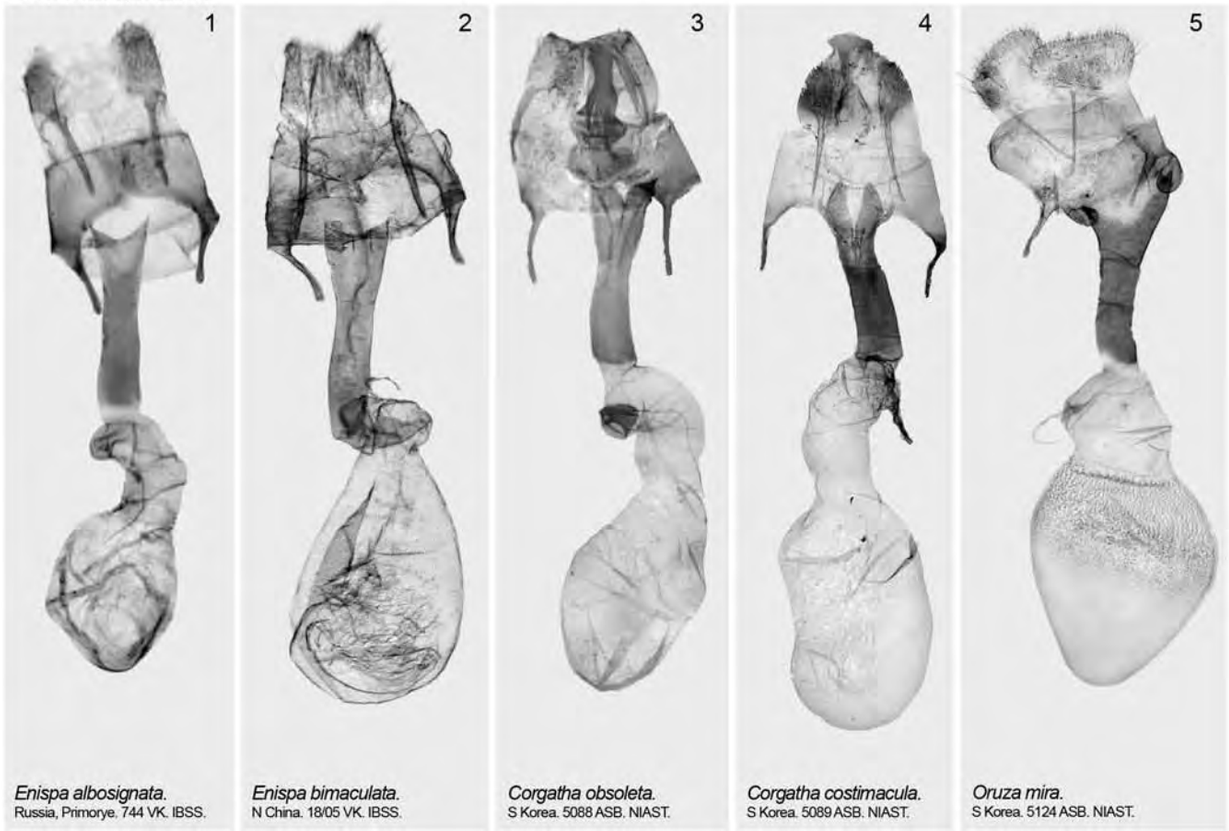
5 *Eublemma polygramma.* Turkey. 2351 VK. ZFMK.

6 *Metachrostis sinevi.* Russia, Khabarovsk. VD. ZMSEA.

7 *Laspeyria flexula.* Denmark. 4284 MF.

8 *Laspeyria subrosea.* S Korea. 5084 ASB. NIAST.

9 *Enispa lutefascialis.* S Korea. 272-2 HL. CIS.



1 *Enispa albosignata.* Russia, Primorye. 744 VK. IBSS.

2 *Enispa bimaculata.* N China. 18/05 VK. IBSS.

3 *Corgatha obsoleta.* S Korea. 5088 ASB. NIAST.

4 *Corgatha costimacula.* S Korea. 5089 ASB. NIAST.

5 *Oruza mira.* S Korea. 5124 ASB. NIAST.

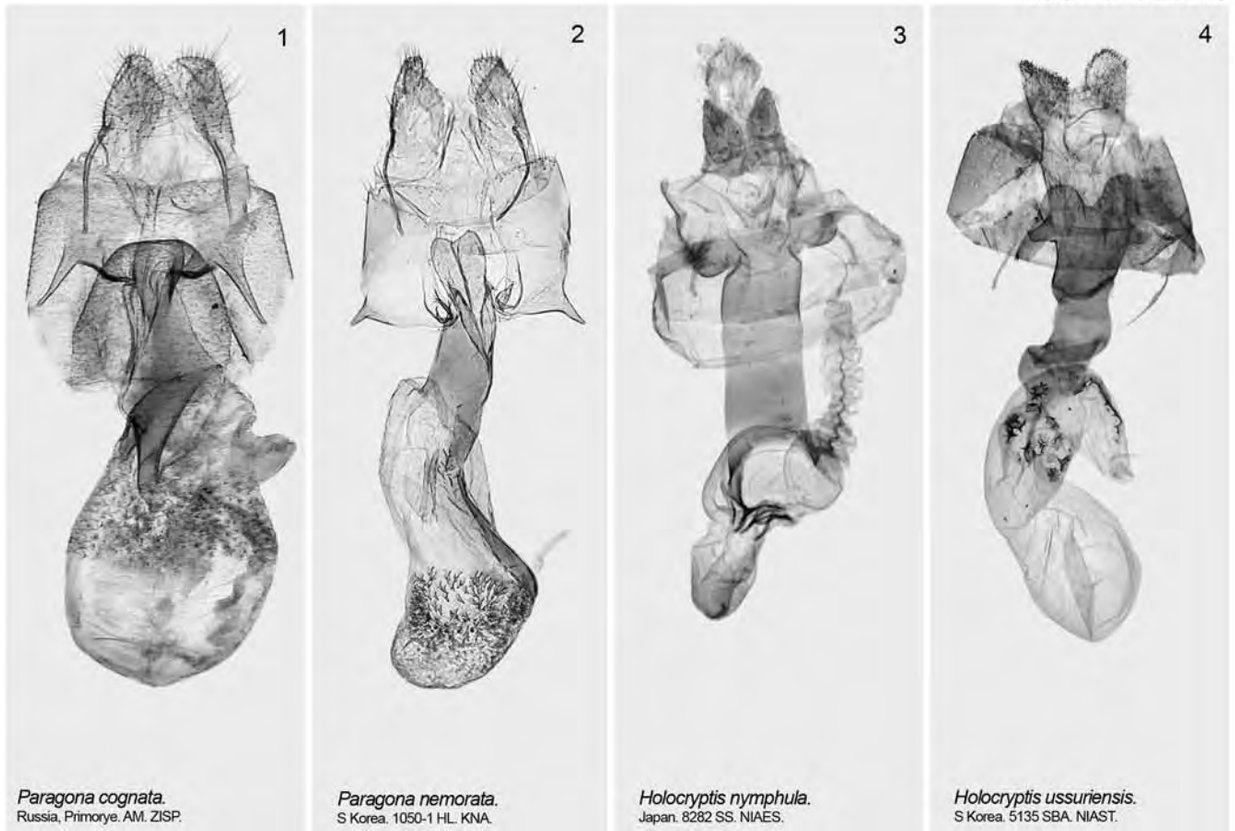
6 *Oruza yoshinoensis.* Russia, Primorye. 742 VK. IBSS.

7 *Trisateles emortualis.* N China. 193 HL. CIS.

8 *Aventiola pusilla.* S Korea. 5068 ASB. NIAST.

9 *Anatatha lignea.* S Korea. 21-2 SJC.

10 *Paragona multisignata.* N China. 789 HL. CIS.



1 *Paragona cognata.* Russia, Primorye. AM. ZISP.

2 *Paragona nemorata.* S Korea. 1050-1 HL. KNA.

3 *Holocryptis nymphula.* Japan. 8282 SS. NIAES.

4 *Holocryptis ussuriensis.* S Korea. 5135 SBA. NIAST.

5 *Diomea cremata.* S Korea. 259-2 HL. CIS.

6 *Diomea jankowskii.* S Korea. 261-2 HL. CIS.

7 *Polysciera manleyi.* Japan. 93 KE.

8 *Naganoella timandra.* S Korea. 256-2 HL. CIS.

9 *Remmigabara secunda.* S Korea. 275-2 HL. CIS.

1

Hypostrotia cinerea.
S Korea. 40/05 VK. CIS.

2

Pangrapta costaemacula.
N Korea. 3221 VK. ZFMK.

3

Pangrapta suaveola.
S Korea. 234-2 HL. CIS.

4

Pangrapta vasava.
S Korea. 236-2 HL. CIS.

5

Pangrapta flavomacula.
Russia, Primorye. 2328 VK. ZFMK.

6

Pangrapta lunulata.
N China. 64/05 VK. CIS.

7

Pangrapta marmorata.
S Korea. 242-2 HL. CIS.

8

Pangrapta obscurata.
S Korea. 61/05 VK. CIS.

1

Pangrapta griseola.
S Korea. 58/05 VK. CIS.

2

Pangrapta umbrosa.
Japan. 2323 VK. ZFMK.

3

Phytometra viridaria.
Europe. 2211 VK. ZFMK.

4

Phytometra amata.
Russia, Primorye. 2331 VK. ZFMK.

5

Colobochyla salicalis.
N China. 22/05 VK.

6

Edessena hamada.
Japan. 2044 VK. ZFMK.

7

Hadennia incongruens.
S Korea. 59 HL. CIS.

8

Paracolax tristalis.
Russia, Khabarovsk. 2048 VK.

9

Paracolax trilinealis.
S Korea. 60 HL. CIS.

1

Paracolax fascialis.
S Korea. 62 HL. CIS.

2

Paracolax fentoni.
N China. 40/05 VK. CIS.

3

Paracolax albinotata.
Russia, S Kuriles. 745 VK. IBSS.

4

Idia quadra.
S Korea. 1021 HL. KNA.

5

Idia curvipalpis.
China. 5051 VK. ZFMK.

6

Gynaephila maculifera.
S Korea. 285-2 HL. CIS.

7

Hydrillodes morosa.
S Korea. 17-2 HL. CIS.

8

Bertula bistrigata.
S Korea. 20-2 HL. CIS.

9

Simplicia rectalis.
China. 2053 VK. ZFMK.

1

Zanclognatha griselda.
Japan. 2067 VK. ZFMK.

2

Zanclognatha lilacina.
Russia, Primorye. 5717 MF.

3

Zanclognatha lunalis.
Russia, Krasnoyarsk. 2066 VK. ZFMK.

4

Zanclognatha fumosa.
Japan. 2070 VK. ZFMK.

5

Zanclognatha obliqua.
Russia, Primorye. 2073 VK. ZFMK.

6

Zanclognatha tarsipennalis.
S Korea. 186 HL. CIS.

7

Zanclognatha subgriselda.
Japan, Hokkaido. 2069 VK. ZFMK.

8

Zanclognatha triplex.
Japan. 2072 VK. ZFMK.

1

Zanclognatha helva.
Japan. 2074 VK. ZFMK.

2

Zanclognatha reticulatis.
Japan. (Afrer Owada, 1987).

3

Zanclognatha umbrosalis.
Russia, Primorye. 2076 VK. ZFMK.

4

Zanclognatha perfractalis.
Russia, Primorye. 3525 LR. HNHM.

5

Zanclognatha tristriga.
Russia, Krasnoyarsk reg. AM. ZISP.

6

Zanclognatha tenuialis.
Germany. 5647. MF.

7

Zanclognatha violacealis.
S Korea. 130 HL. CIS.

8

Pechipogo strigilata.
Germany. 2061 VK. ZFMK.

1

Polypogon tentacularia.
S Korea. 51 HL. CIS.

2

Polypogon gryphalis.
Abhasia. AM. ZISP.

3

Polypogon tarsicrinata.
N Korea. 2057 VK. ZFMK.

4

Macrochilo cribrumalis.
Germany 2055 VK. ZFMK.

5

Herminia grisealis.
Russia, Primorye. 2084 VK. ZFMK.

6

Herminia robiginosa.
Japan. (After Owada, 1987).

7

Herminia tarsicrinalis.
Turkey. 2079 VK. ZFMK.

8

Herminia arenosa.
S Korea. 44-2 HL. CIS.


1

Herminia stramentacealis.
Japan. 2082 VK. ZFMK.


2

Herminia dolosa.
Japan. 2083. SS. NIAES.


3

Sinarella aegrota.
China. 2091 VK. ZFMK.


4

Sinarella cristulalis.
S Korea. 13-2a HL. CIS.


5

Sinarella nigrisigna.
China. 2091a ZFMK.


6

Sinarella punctalis.
N China. 142 HL. CIS.


7

Sinarella japonica.
Russia, Primorye. 2087 VK. ZFMK.


8

Zekelita ravulalis.
W Kazakstan. Uralsk. AM. ZISP.


1

Hypena stygiana.
Japan. 2307 VK. ZFMK.


2

Hypena zilla.
Russia, Primorye. 649 VK. IBSS.


3

Hypena crassalis.
Finland. 2310 VK. ZFMK.


4

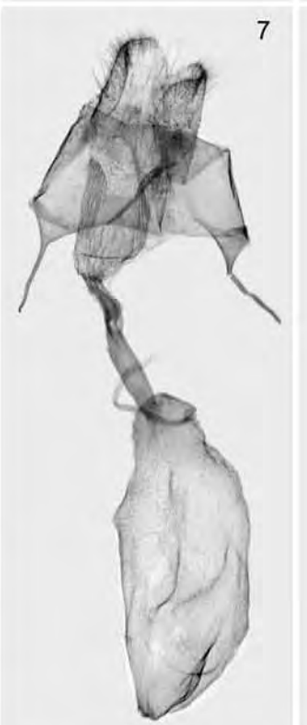
Hypena squalida.
S Korea. 76-2 HL. CIS.


5

Hypena bicoloralis.
S Korea. 72-2 HL. CIS.


6

Hypena nigrobasalis.
S Korea. 74-2 HL. CIS.


7

Hypena bipartita.
Russia, Sakhalin. 724 VK. IBSS.


8

Hypena semialbata.
Russia, S Kuriles, Kunashir I. 861 VK. IBSS.

Hypena proboscidalis.
Russia. 2097 VK. ZFMK.

Hypena rostralis.
Russia, Ural. Ekaterinburg. AM. ZISP.

Hypena obesalis.
Russia. East Siberia. Irkutsk. AM. ZISP.

Hypena tristalis.
Russia. 2097 VK. ZFMK.

Hypena narratalis.
Russia, Primorye. 728 VK. IBSS.

Hypena kengkalis.
S Korea. 80-2 HL. CIS.

Hypena conspersalis.
S Korea. 24 HL. CIS.

Hypena claripennis.
Japan. 2095 VK. ZFMK.

Hypena amica.
Russia, Khabarovsk. 2093. VK. ZFMK.

Hypena tatorhina.
Japan. 5633 SS. NIAES .

Hypena tamsi.
Russia, Primorye. HT. AM. ZISP.

Protoschrankia jimai.
Japan. 4350 SS. NIAES .

Gonepatica opalina.
Japan. 2329 VK. ZFMK.

Hepatica anceps.
S Korea. 255-2 HL. CIS.

Lophomilia polybapta.
N China. VK. HFU.

Lophomilia flaviplaga.
S Korea. 250-2 HL. CIS.

1

Lophomilia nekrasovi.
China. VK. ZFMK. VK.

2

Lophomilia kogii.
S Korea. 231-2 HL. CIS.

3

Stenbergmania albomaculalis.
China. 2311 VK. ZFMK.

4

Paragabara curvicornuta.
Russia, Primorye. 868 AM. ZISP.

5

Paragabara flavomacula.
Russia, Amur. AM. ZISP.

6

Paragabara flavomacula.
Russia, Primorye. AM. ZISP.

7

Paragabara ochreipennis.
Japan. AM. ZISP.

8

Paragabara ochreipennis.
China. 2333 VK. ZFMK.

1

Erebus macrops.
China. 2191 VK. ZFMK.

2

Metopta rectifasciata.
N Korea. 2132 VK. ZFMK.

3

Spirama helicina.
China. 2142 VK. ZFMK.

4

Arcte coerula.
China. 2201 VK. ZFMK.

5

Anomis flava.
China. 2176 VK. ZFMK.

6

Anomis mesogona.
Japan. 2179 VK. ZFMK.

7

Anomis involuta.
China. 2181 VK. ZFMK.

1

Anomis privata.
Japan. 2176 VK. ZFMK.

2

Anomis leucolopha.
China. 2184 VK. ZFMK. PT *Anomis maxima*.

3

Scoliopteryx libatrix.
Denmark. C113 BG.

4

Calyptra thalictri.
Greece. 4248 MF.

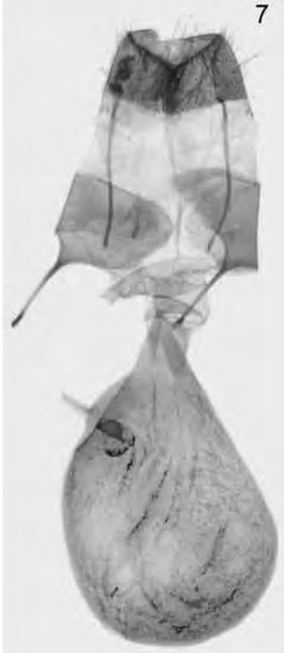
5

Calyptra hokkaida.
S Korea. 187-2 HL. CIS.

6

Calyptra lata.
S Korea. 188-2 HL. CIS.

7



Oraesia emarginata.
Philippines. 3946 GB.

8

Oraesia excavata.
Japan. 2144 VK. ZFMK.

1

Plusiodonta casta.
S Korea. 35/05 VK. CIS.

2

Eudocima tyrannus.
S Korea. 197-2 HL. CIS.

3

Eudocima falonia.
China. 2193 VK. ZFMK.

4

Chrysorithrum amata.
S Korea. 217-2 HL. CIS.

5

Chrysorithrum flavomaculata.
Mongolia. C79 BG.

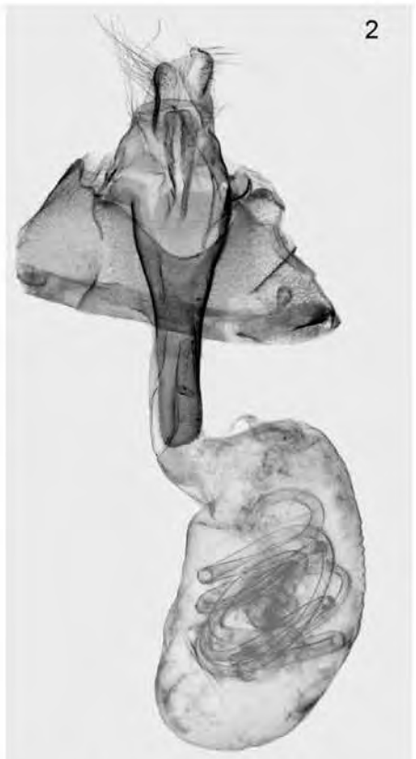
6

Anumeta cestis.
Turkmenia. C99 BG.

7

Anumeta fractistrigata.
Kazakstan. C94 BG.

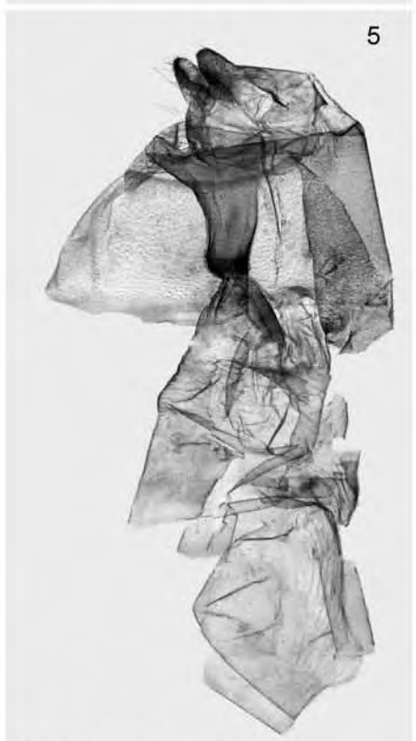
Lygephila lusoria.
Hungary. 1358 AZ.



Lygephila lubrica.
Mongolia. 4255 MF.

Lygephila ludicra.
Mongolia. C70 BG.

Lygephila maxima.
Russia, Primorye. 5725 MF.



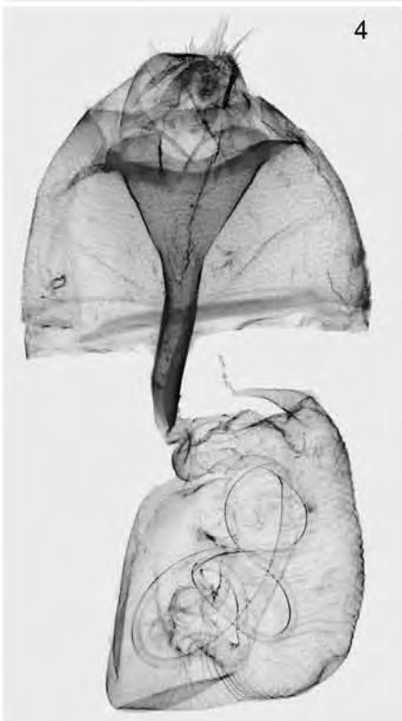
Lygephila emaculata.
Russia, Amur. HT. 14969. AM. ZISP.

Lygephila dubatolovi.
Russia, Primorye. 5699 MF.

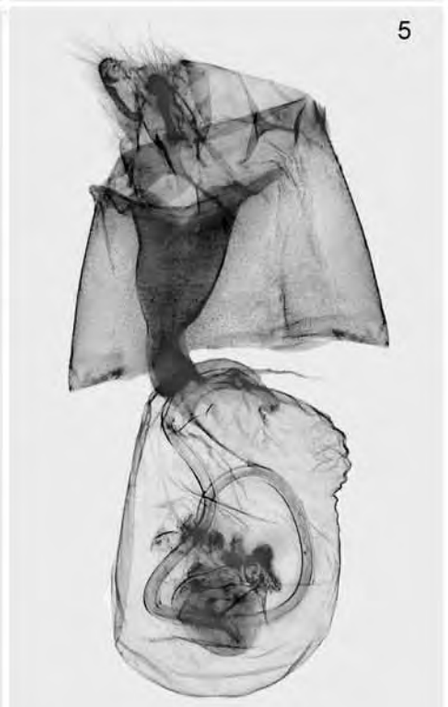
Lygephila vulcanea.
Primorye. AM. ZISP.

Lygephila mirabilis.
Russia, Primorye. 849 VK. IBSS.

Lygephila craccae.
France. C22 BG.



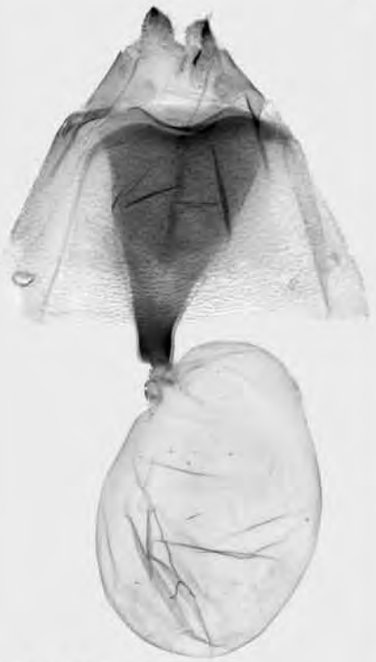
Lygephila viciae.
France. C28 BG.



Lygephila pastinum.
France. C21 BG.

Lygephila procax.
N China. 75/05 VK. CIS.

1



Lygephila recta.
S Korea. 10/230507 CY. CIS.

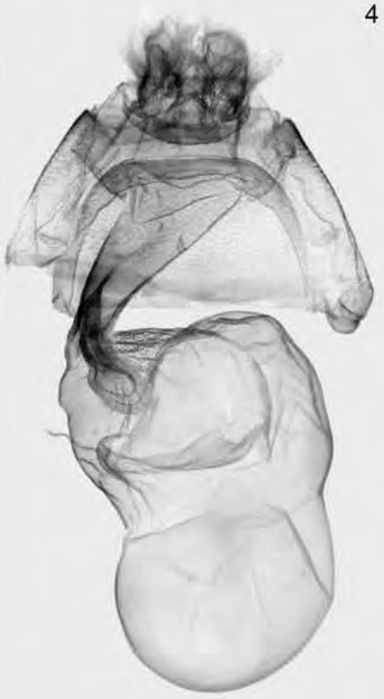
2

Autophila glebicolor.
Mongolia. 1708 LR. HNHM.

3

Autophila chamaephanes.
Russia, S Ural. 3671 MF.

4

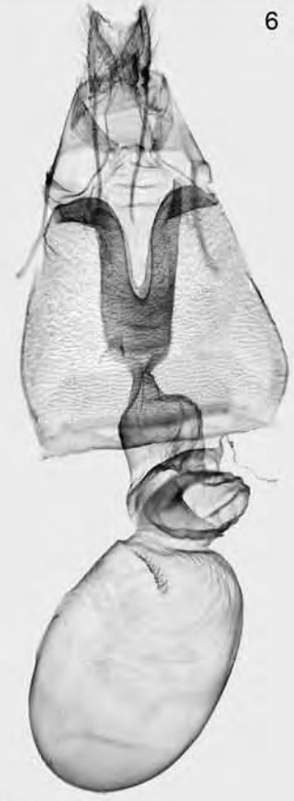


Autophila inconspicua.
S Korea. 168-2 HL. CIS.

5

Apopestes phantasma.
Kyrgizia. 2100 VK. ZFMK.

6



Apopestes indica.
S Korea. 167-2 HL. CIS.

1

Acantholipes regularis.
Turkey. C64 BG.

2

Arytrura musculus.
N China. 226-2 HL. CIS.

3

Arytrura subfalcata.
N China. 227-2 HL. CIS.

4

Drasteria pulverosa.
Russia, Tuva. VK. B. Shmitz.

5

Drasteria mongoliensis.
Russia, Tuva. VK. B. Shmitz.

6

Drasteria caucasica.
Bulgaria. C14 BG.

7

Drasteria picta.
Turkmenia. C100 BG.

8

Drasteria cailino.
Spain. C71 BG.

1

Drasteria rada.
Mongolia. C62 BG.

2

Drasteria saisani.
Turkey. C99 BG.

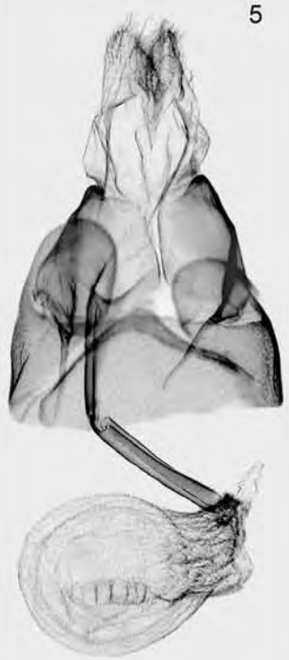
3

Drasteria scolopax.
Tadjikistan. 4720 GB.

4

Drasteria catocalis.
Russia, Altai. AV.

5



Euclidia glyphica.
Denmark. 4265 MF.

6

Euclidia dentata.
S Korea. 146-2 HL. CIS.

7

Callistege juvenilis.
S Korea. 148-2 HL. CIS.

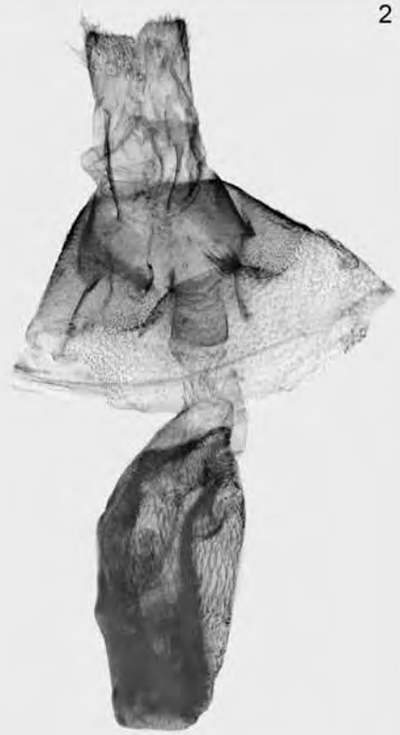
8

Euclidia mi.
Denmark. 4242 MF.

1

Callistege fortalitium.
Russia, S Ural. C144 BG.

2



Gonospileia triquetra.
Austria. C3 BG.

3

Gonospileia munita.
Turkey. C57 BG.

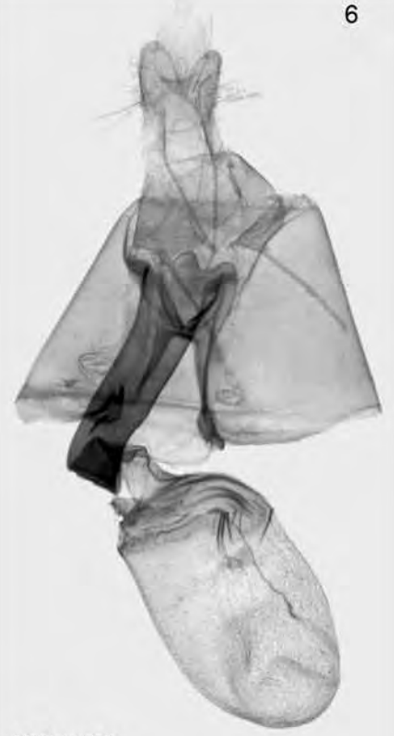
4

Melapia electaria.
S Korea. 152-2 HL. CIS.

5

Remigia frugalis.
Buthan. 2116 VK. ZFMK.

6



Mocis undata.
China. 2130 VK. ZFMK.

1

Mocis annetta.
S Korea. 150-2 HL. CIS.

2

Mocis ancilla.
S Korea. 151-2 HL. CIS.

3

Catephia alchymista.
France. 4254 MF.

4

Pericyma albidentaria.
Turkey. C116 BG.

5

Serrodes campana.
Vietnam. 11/200507 CY. CIS.

6

Artena dotata.
China. 2128 VK. ZFMK.

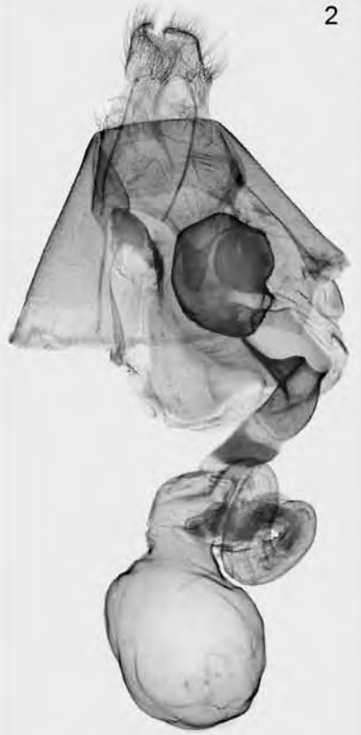
7

Thyas juno.
S Korea. 157-2 HL. CIS.

1

Ophiusa tirhaca.
Cyprus. 4249 MF.

2



Minucia lunaris.
France. C17 BG.

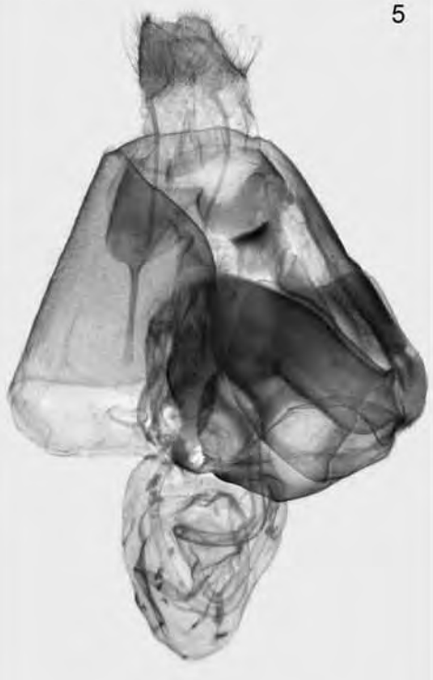
3

Clytie gracilis.
Kazakstan. 4058 MF.

4

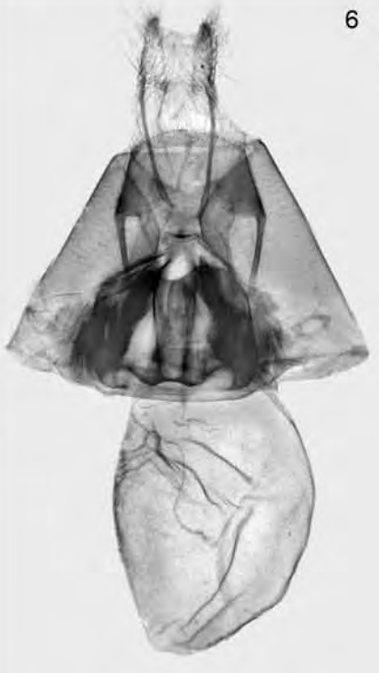
Bastilla arctotaenia.
China. 2122 VK. ZFMK.

5



Bastilla maturata.
China. 2123 VK. ZFMK.

6



Bastilla stuposa.
China. 2120 VK. ZFMK.

1

Bastilla mandschuriana.
S Korea. 45 HL. CIS.

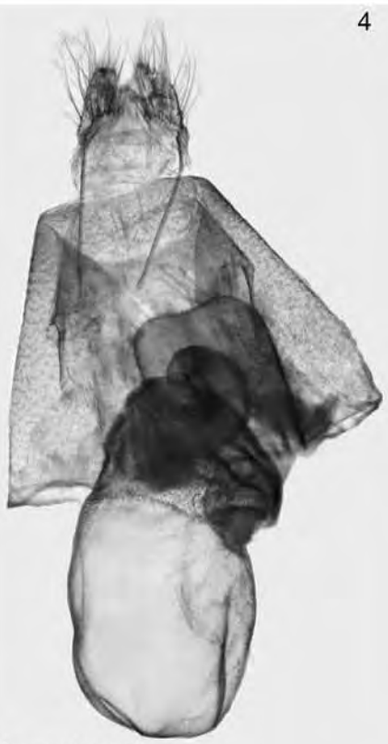
2

Dysgonia dulcis.
S Korea. 143-2 HL. CIS.

3

Dysgonia obscura.
S Korea. 144-2 HL. CIS.

4



Grammodes stolida.
Greece. G123 BG.

5

Blasticorhinus ussuriensis.
S Korea. 211 HL. CIS.

6

Blasticorhinus unduligera.
S Korea. 115/05 VK. CIS.

1

Catocala fulminea.
S Korea. 1029 HL. CIS.

2

Catocala neonympha.
Turkey. C52 BG.

3

Catocala conversa.
France. C46 BG.

4

Catocala obscena.
S Korea. 1066 HL. CIS.

5

Catocala abamita.
S Korea. 110-2 HL. CIS.

6

Catocala doerriesi.
S Korea. 1050 HL. CIS.

7

Catocala eminens.
S Korea. 1064 HL. CIS.

8

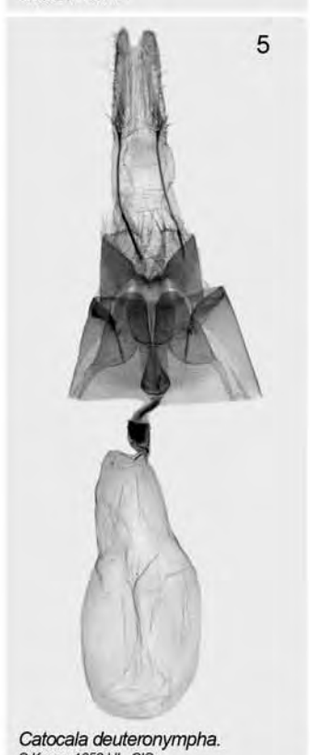
Catocala separans.
S Korea. 1070 HL. CIS.

Catocala duplicata.
S Korea. 1043 HL.

Catocala helena.
N China. 112-2 HL. CIS.

Catocala nymphaeoides.
N China. 41 HL. CIS.

Catocala ella.
S Korea. 124-2 HL. CIS.



Catocala deuteronympha.
S Korea. 1053 HL. CIS.

Catocala praegnax.
S Korea. 1063 HL. CIS.

Catocala agitatrix.
S Korea. 1036 HL. CIS.

Catocala bella.
S Korea. 1034 HL. CIS.

Catocala columbina.
China. 2125 VK. ZFMK.

Catocala nubila.
Japan. 2652 SS. NIAES .

Catocala koreana.
S Korea. 1040 HL. CIS.

Catocala proxeneta.
Russia. 651VK. IBSS.

Catocala streckeri.
S Korea. 1080 HL. CIS.

Catocala danilovi.
Russia, Primorye. 652 VK. IBSS.

Catocala moltrechti.
Russia, Primorye. 653 VK. IBSS.

Catocala dissimilis.
S Korea. 1009-2 HL. CIS.

1

Catocala nagioides.
S Korea. 1015 HL. CIS.

2

Catocala actaea.
S Korea. 1025 HL. CIS.

3

Catocala pirata.
Russia, Primorye. 865 VK. IBSS.

4

Catocala bokhaica.
Russia, Primorye. 673 VK. ZISP.

5

Catocala fraxini.
England. C137 BG.

6

Catocala lara.
N China. 97-2 HL. CIS.

7

Catocala nivea.
S Korea. 98-2 HL. CIS.

1

Catocala nupta.
S Korea. 1065 HL. CIS.

2

Catocala adultera.
Finland. C51 BG.

3

Catocala electa.
Spain. C38 BG.

4

Catocala elocata.
Spain. C36 BG.

5

Catocala deducta.
Russia, S Ural. C98 BG.

6

Catocala puerpera.
France. C37 BG.

7

Catocala puerpera.
Russia, S Ural. C140 BG.

8

Catocala sponsa.
France. C32 BG.

1

Catocala dula.
S Korea. 1046 HL. CIS.

2

Catocala promissa.
England. C39 BG.

3

Catocala detrita.
Russia, S Ural. C118 BG.

4

Catocala lupina.
Croatia. C43 BG.

5

Catocala pacta.
Sweden. C42 BG.

6

Catocala kotshubeji.
Russia, Primorye. AM. ZISP.

7

Hypersypnoides astrigera.
N China. 652 HL. CIS.

8

Sypnoides hercules.
S Korea. 207-2 HL. CIS.

1

Sypnoides picta.
Russia, Primorye. 870 VK. IBSS.

2

Sypnoides fumosa.
Russia, Primorye. 463 VK. IBSS.

3

Daddala lucilla.
China. 2118 VK. ZFMK.

4

Hypocala deflorata.
Japan. 2107 VK. ZFMK.

5

Hypocala subsatura.
Vietnam. 19-2 NC.

6

Hypocala violacea.
Vietnam. 15-2 NC.

7

Eutelia geyeri.
China. 2167 VK. ZFMK.

8

Eutelia adulatricoides.
Nepal. 2205 VK. ZFMK.

Abrostola asclepiadis.
Hungary. 7855 RL. HNHM.

Abrostola triplasia.
Hungary. 7862 LR. HNHM.

Abrostola tripartita.
Hungary. 7854 RL. HNHM.

Abrostola ussuriensis.
S Korea. 524 HL. CIS.

Abrostola pacifica.
Japan. 9177 LR. HNHM.

Abrostola korbi.
Russia, Ktabarovsk. HT. LR. MMU.

Abrostola kaszabi.
Russia, Irkutsk reg. AM. ZISP.

Trichoplusia ni.
Macedonia. 7798 LR. HNHM.

Thysanoplusia intermixta.
Vietnam. 4159 LR. HNHM.

Ctenoplusia albostriata.
S Korea. 298-2 HL. CIS.

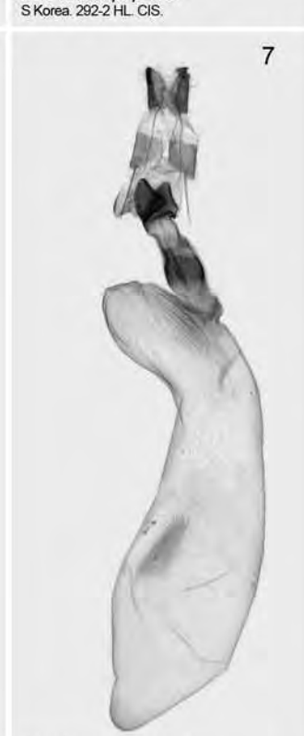
Ctenoplusia agnata.
N Korea. 98 LR. HNHM.

Anadevidia peponis.
S Korea. 292-2 HL. CIS.

Anadevidia hebetata.
S Korea. 293-2 HL. CIS.

Erythroplusia rutilifrons.
S Korea. 317-2 HL. CIS.

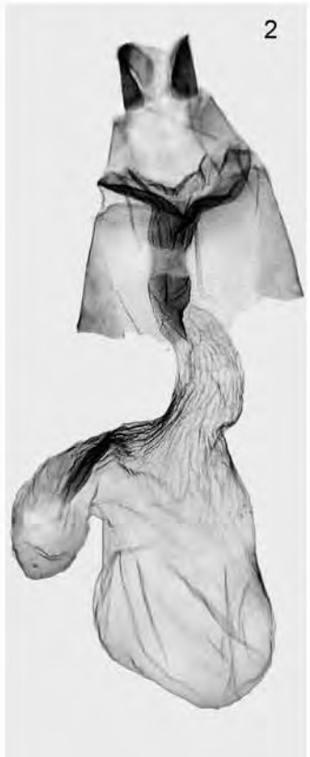
Erythroplusia pyropia.
Japan. 2156 VK. ZFMK.



Macdunnoughia confusa.
S Korea. 282 HL. CIS.

Macdunnoughia hybrida.
N Korea. PT. 228 LR. HNHM.

Macdunnoughia crassisigna.
S Korea. 14/230507 CY. CIS.



Macdunnoughia purissima.
S Korea. 324-2 HL. CIS.

Sclerogenia jessica.
Nepal. 5650 MF.

Antoculeora locuples.
Japan 4632 LR. HNHM.

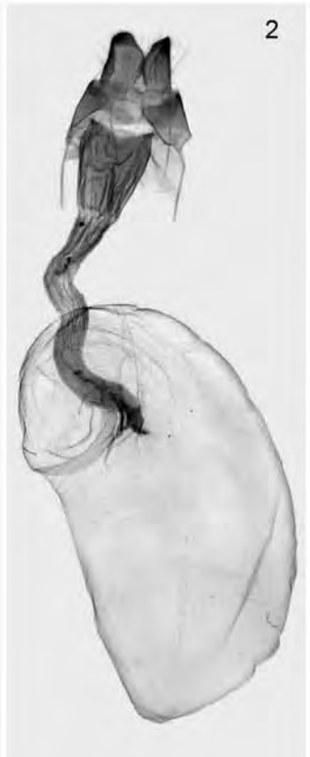
Diachrysia chryson.
N Korea. 7710 LR. HNHM.

Diachrysia pales.
S Korea. 7703 LR. HNHM.

Diachrysia leonina.
S Korea. 220 HL. CIS.

Diachrysia witti.
Russia, Primorye. 9481 LR. HNHM.

Diachrysia chrysitis.
Russia, Primorye. 7852. LR. HNHM.



Diachrysia stenochrysis.
Russia, Sakhalin. 7850. LR. HNHM.

Diachrysia nadeja.
Russia, Primorye. 7774 LR. HNHM.

Diachrysia zosimi.
Hungary. 7776 LR. HNHM.

Euchalcia variabilis.
Russia, S Ural. 7651. LR. HNHM.

Euchalcia mongolica.
Mongolia 9434 LR. HNHM.

Euchalcia altaica.
Russia, Altai. 9183f LR. HNHM.

Euchalcia kondarensis.
Russia, Altai. 9415 LR. HNHM.

Euchalcia sergia.
Russia, Primorye. 305-2 HL. CIS.

Euchalcia exornata.
Mongolia. 2198 LR. HNHM.

Euchalcia renardi.
Mongolia. 2056 LR. HNHM.

Euchalcia siderifera.
Turkey. 7768 LR. HNHM.

Euchalcia modestoides.
Austria. 7766 LR. HNHM.

Euchalcia biezankoi.
Armenia. 946. LR. HNHM.

Euchalcia consona.
Austria. RL7764. HNHM.

Polychrysia moneta.
Sweden. 7717 LR. HNHM.

Polychrysia esmeralda.
S Korea. 287 HL. CIS.

Polychrysia aurata.
NE China. 222 HL. CIS.

Polychrysia splendida.
N China. 529 HL. CIS.

Polychrysia sica.
Russia, Primorye. 188 VK. ZFMK.

Panchrysia deaurea.
Uzbekistan. 7720. LR. HNHM.

Panchrysia ornata.
Mongolia. 7732 LR. HNHM.

Panchrysia dives.
Mongolia. 7734 RL. HNHM

Lamprotes c–aureum.
Germany. 7736 LR. HNHM.

Lamprotes mikadina.
N China. 289 HL. CIS.

Plusidia cheiranthi.
Slovenia. 7760 LR. HNHM.

Autographa gamma.
Italy. 7832 LR. HNHM.

Autographa mandarina.
N China. 271 HL. CIS.

1

Autographa pulchrina.
Hungary. 7303 LR. HNHM.

2

Autographa buraetica.
N China. 293 HL. CIS.

3

Autographa jota.
Switzerland. 7824. LR. HNHM.

4

Autographa amurica.
Russia, Amur reg. 2171 VK. ZFMK.

5

Autographa v-minus.
N Korea. 112 LR. HNHM.

6

Autographa urupina.
Russia, Sakhalin. 702 VK. IBSS.

7

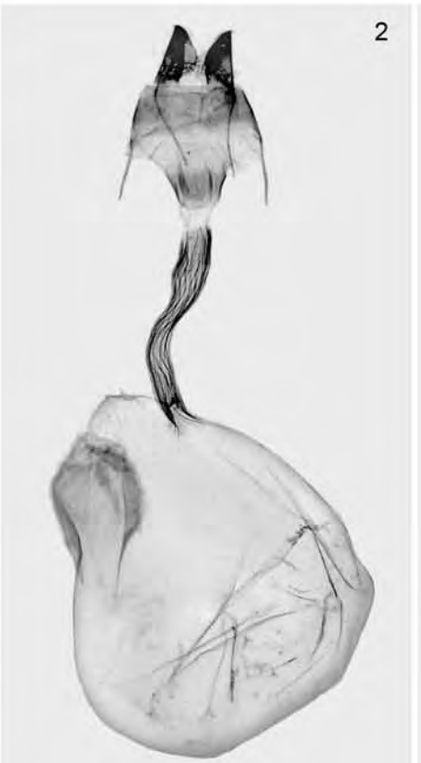
Autographa nigrisigna.
Russia, Primorye. 700. VK. IBSS.

8

Autographa camptosema.
Mongolia. 9184f LR. HNHM.

1

Autographa macrogamma.
Finland. 7820 LR. HNHM.



2

Autographa bractea.
Slovakia. 7966 LR. HNHM.

3

Autographa excelsa.
N China. 276 HL. CIS.

4

Cornutiplusia circumflexa.
Canary Isl. 7792. HNHM.

5

Syngrapha parilis.
Sweden. 7778. LR. HNHM.

6

Syngrapha hochenwarthi.
Italy. 7782 LR. HNHM.

7

Syngrapha diasema.
Norway. 7758 LR. HNHM.

1

Syngrapha microgamma.
Poland. 7780. LR. HNHM.

2

Syngrapha ain.
Russia, Irkutsk reg.101095/2 KM. ZMHU.

3

Syngrapha interrogationis.
Russia, Magadan reg, 121189/3 VK. ZMHU.

4

Syngrapha ottolenguii.
Russia, Kamchatka. 888 VK. IBSS.

5

Plusia festucae.
Romania. 7796. LR. HNHM.

6

Plusia putnami.
Sweden. 7794. LR. HNHM.

7

Phyllophila obliterata.
S Korea. 5155 NIAST.

8

Protodeltote pygarga.
N China. 18 HL. CIS.

9

Protodeltote distinguenda.
S Korea. 411-2 HL. CIS.

1

Protodeltote wiscotti.
Russia, Primorye. 735 VK. IBSS.

2

Koyaga falsa.
S Korea. 409-2 HL. CIS.

3

Koyaga numisma.
S Korea. 410-2 HL. CIS.

4

Koyaga magninumisma.
Russia, Primorye.

5

Sugia stygia.
Japan. 988 SS. NIAES.

6

Deltote deceptoria.
Russia, Primorye. 740 VK. IBSS.

7

Deltote uncula.
Russia, Primorye. 739 VK.

8

Deltote bankiana.
S Korea. 5238 ASB. NIAST.

9

Deltote nemorum.
N China. 17/05 VK. CIS.

1

Pseudodeltote brunnea.
Russia, S Kuriles, Kunashir I. VK. SZM.

2

Paraphyllophila confusa.
Russia, Primorye. PT. AM. ZISP.

3

Micardia pulchra.
Japan. 2317 VK. ZFMK.

4

Erastroides fentoni.
S Korea. 5111 ASB. NIAST.

5

Naranga aenescens.
Japan. 2356 VK. ZFMK.

6

Maliattha rosacea.
S Korea. 5150 ASB. NIAST.

7

Maliattha chalcogramma.
China. 1858 VK. ZFMK.

8

Maliattha khasanica.
Russia, Primorye. 945 VK. IBSS.

9

Maliattha bella.
China. 1857 VK. ZFMK.

1

Chorsia costimacula.
S Korea. 5221 ASB. NIAST.

2

Chorsia noloides.
S Korea. 5212 ASB. NIAST.

3

Chorsia mollicula.
S Korea. 13/05 VK. CIS.

4

Acontia melanura.
Europe. 2148 VK. ZFMK.

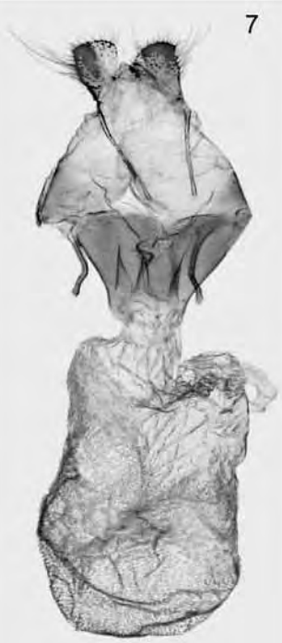
5

Acontia lucida.
Europe. 2212 VK. ZFMK.

6

Acontia olivacea.
S Korea. 5057 ASB. NIAST.

7



Acontia martjanovi.
Russia, Siberia. AM. ZISP.

1

Acontia candefacta.
Ukraine. 14650 HH.

2

Acontia trabealis.
S Korea. 5061 ASB. NIAST.

3

Aedia funesta.
France. 83C. BG.

4

Meganola togatulalis.
Turkey. 5664 MF.

5

Meganola strigula.
Denmark. 5660 MF.

6

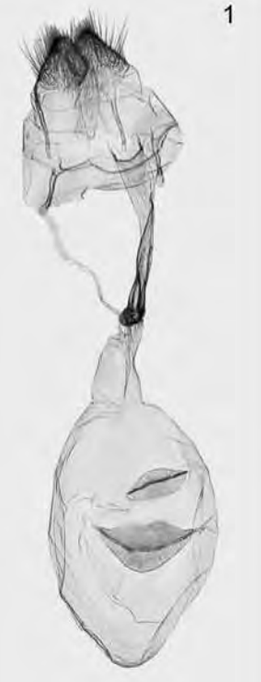
Meganola albula.
Hungary. N79 GL.

7

Meganola fumosa.
Russia, Primorye. 148 YC. IBSS.

8

Meganola bryophilalis.
N China. HL.



1

Meganola costalis.
Russia, Primorye. 205 YC. IBSS.

2

Meganola strigulosa.
Russia, Primorye. YC. IBSS.

3

Meganola shimekii.
Japan (After Inoue, 1982).

4

Meganola mikabo.
Russia, Primorye. 047 YC. IBP.

5

Meganola subgigas.
Russia, Primorye. YC. IBSS.

6

Meganola gigas (Butler, 1884).
Russia, Primorye. IBP-42Ch.

7

Evonima mandschuriana .
Primorye. 118 Ch. IBSS.

8

Manoba banghaasi.
S Korea. 7/010607 CY. CIS.

1

Casminola pulchella.
S Korea. 2/010607 CY. CIS.

2

Nolathripa lactaria.
RFE, Primorye. VK. IBP.

3

Nola cucullatella.
Denmark. 5658 MF.

4

Nola confusalis.
Russia, Primorye. YC. IBSS.

5

Nola cicatricalis.
Russia, Primorye. 16 YC. IBSS.

6

Nola aerugula.
Russia, Primorye. 206 YC. IBSS.

7

Nola crambiformis.
Russia, Ural. 1/020105 GP.

8

Nola karelica.
Finland. N277 LR. HNHM.

1

Nola cristatula.
Austria. AM. ZISP.

2

Nola chlamitulalis.
Greece. 5661 MF.

3

Nola minutalis.
S Korea. 2006 OH. CIS.

4

Nola taeniata.
Russia, Primorye. 873 VK. IBSS.

5

Nola umetsui.
Russia, Primorye. AM. ZISP.

6

Nola innocua.
S Korea. 2053 OH. CIS.

7

Nola japonibia.
Japan. GR. BMNH.

8

Nola japonibia.
Russia, Primorye. AM. ZISP.

1

Nola emi.
Russia, Primorye. YC. IBSS.

2

Nola neglecta.
Russia, Primorye. YC. IBSS.

3

Nola nami.
Japan. SH-183 OH. CIS.

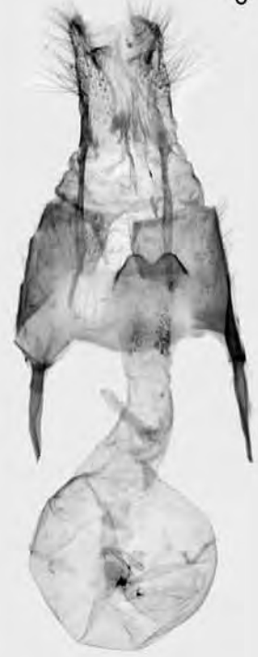
4

Nola ebatoi.
S Korea. 2051 OH. CIS.

5

Iragaodes nobilis.
S Korea. 352-2 HL. CIS.

6



Parhylophila celsiana.
Russia, Primorye. 729 VK. IBSS.

7

Parhylophila buddhae.
Russia, Primorye. 731 VK. IBSS.

8

Kerala decipiens.
S Korea. 356-2 HL. CIS.

1

Gelastocera ochroleucana.
Russia, Primorye. 879 VK. IBSS.

2

Gelastocera exusta.
S Korea. 357-2 HL. CIS.

3

Gelastocera exusta.
Russia, Primorye. AM. ZISP.

4

Gelastocera eminentissima.
Russia, Primorye. 359-1 HL. CIS.

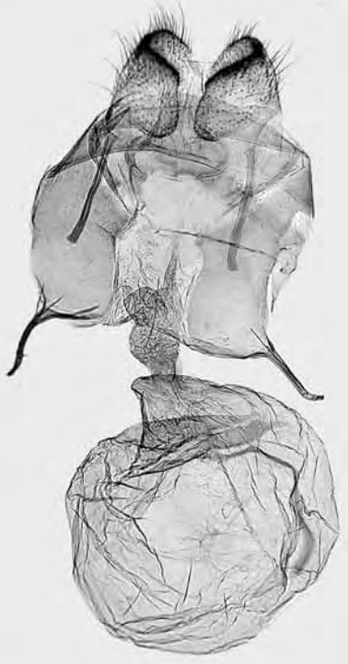
5

Gelastocera kotshubeji.
Russia, Primorye. AM. ZISP.

6

Macrochthonia fervens.
S Korea. 361-2 HL. CIS.

7



Camptoloma interiorata.
S Korea. 120/290507 CY. CIS.

1

Pseudoips prasinana.
S Korea. 364-2 HL. CIS.

2

Pseudoips sylpha.
Japan. 1510 SS. NIAES .

3

Aiteta curvilinea.
Russia, "Amur" HT. VK. ZMHU.

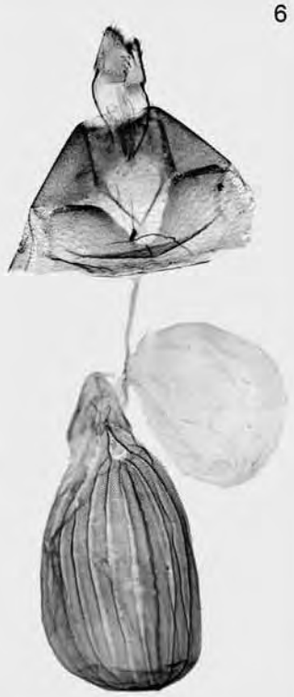
4

Ariolica argentea.
Russia, S Kuriles. ZIN AM.

5

Sinna extrema.
S Korea. 370-2 HL. CIS.

6



Earias pudicana.
S Korea. 355-2 HL. CIS.

7

Earias roseifera.
S Korea. 26/05 VK. CIS.

1

Earias roseoviridis.
Russia, Primorye. 883 VK. IBSS.

2

Earias clorana.
Russia, Irkutsk reg. AM. ZISP.

3

Earias vernana.
Austria. AM. ZISP.

4

Nycteola degenerana.
Russia, Primorye. 864 VK. IBSS.

5

Nycteola asiatica.
Kirghisia. 5654 MF.

6

Nycteola eremostola.
W Kazakstan. AM. ZISP.

7

Nycteola kuldzhana.
Uzbekistan. 5613 MF.

8

Negritothripa hampsoni.
S Korea. 10/05 VK. CIS.

1

Eligma narcissus.
China. 1287 LR. HNHM.

2

Imosca coreana.
S Korea. 38 VK. CIS.

3

Sphragifera sigillata.
S Korea. 703-2 HL. CIS.

4

Amyna axis.
China. 2315 VK. ZFMK.

5

Amyna punctum.
China. 2318 VK. ZFMK.

6

Panemeria tenebrata.
Europe. 13883 MM. BMNH.

1

Apaustis rupicola.
Europe. 13698. MM. BMNH.

2

Aegle kaekeritziana.
Europe. 13885. MM. BMNH.

3

Mesotrosta signalis.
Austria. 2145. VK. ZFMK.

4

Mycteroplus puniceago.
Europe. 13871. MM. BMNH.

5

Mycteroplus comuta.
N China. 71/05 VK. CIS.

6

Tyta luctuosa.
Greece. 4241 MF.

7

Sinocharis korbae.
Russia, Primorye. 5339 MF.

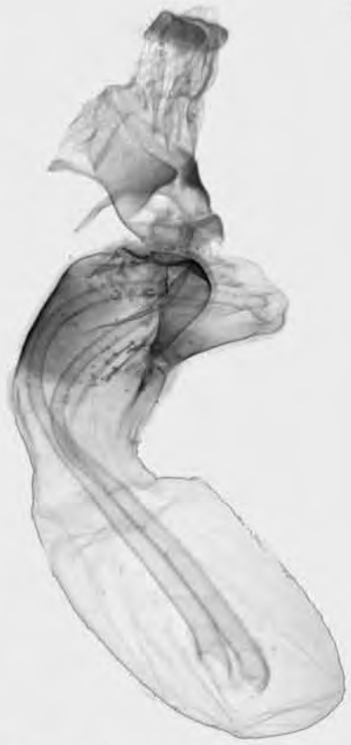
8

Balsa leodura.
S Korea. 2/05 VK. CIS

1

Panthauma egregia.
China. 2197 VK. ZFMK.

2



Panthea coenobita.
Russia, Primorye. 282 VK. IBSS.

3

Trichosea ludifica.
N China. 19b HL. CIS.

4

Trichosea champa.
S Korea. 1016 HL. KNAE.

5

Anacronicta caligínea.
Russia, Primorye. 273 VK. IBSS.

6

Anacronicta nitida.
Russia, Sakhalin. 655 VK. IBSS.

1

Tambana plumbea.
Russia, Sakhalin. 276 VK. IBSS.

2

Xanthomantis cornelia.
Russia, Primorye. 267 VK. IBSS.

3

Xanthomantis contaminata.
S Korea. 01295/2 VK. IBSS.

4

Colocasia coryli.
Germany. 2186 VK. ZFMK.

5

Colocasia mus.
S Korea. N China. 70/05 VK. CIS.

6

Diloba coeruleocephala.
Hungary. 2109 VK. ZFMK.

7

Raphia peustera.
N China. 460-2 HL. CIS.

Cymatophoropsis trimaculata.
S Korea. 57/05 VK. CIS.

Cymatophoropsis unca.
S Korea. 462-2 HL. CIS.

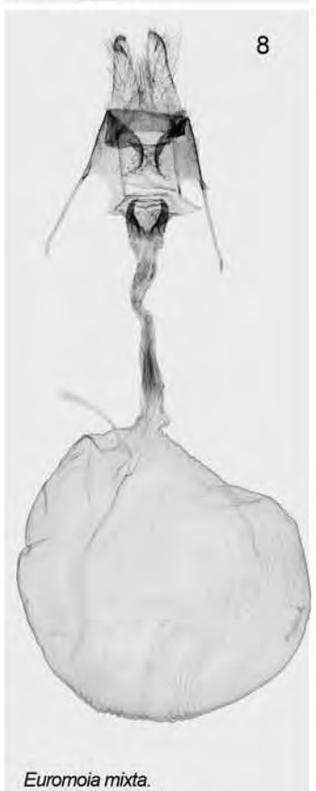
Nacna malachitis.
S Korea. 69/05 VK. CIS.

Belciades niveola.
Japan. 1641 VK. ZFMK.

Belciana siitanae.
Russia, Primorye. 654 VK. IBP.

Belciana staudingeri.
N Korea. 2165 VK. ZFMK.

Euromoia subpulchra.
S Korea. 466-2 HL. CIS.



Euromoia mixta.
S Korea. 465-2 HL. CIS.

Subleuconycta palshkovi.
S Korea. 784 HL. CIS.

Morna alpium.
N China. 639 HL. CIS.

Morna kolthoffi.
S Korea. 641 HL. CIS.

Morna tsushimana.
S Korea. 74/05 VK. CIS.

Gerbathodes paupera.
S Korea. 79/05 VK. CIS.

Craniophora ligustri.
S Korea. 499-2 HL. CIS.

Craniophora praeclara.
S Korea. 500-2 HL. CIS.

Craniophora pacifica.
Russia, Primorye. 310 VK. IBP.

1

Cranionycta jankowskii.
S Korea. 5/230507 CY. CIS.

2

Cranionycta albonigra.
S Korea. 6/230507 CY. CIS.

3

Cranionycta oda.
S Korea. 505-2 HL. CIS.

4

Acronicta aceris.
Germany. 3402 GB.

5

Acronicta leporina.
Finland. 293 VK. IBSS.

6

Acronicta vulpina.
S Korea. 473-2 HL. CIS.

7

Acronicta major.
S Korea. 474-2 HL. CIS.

1

Acronicta tridens.
Germany. 3326 GB.

2

Acronicta cuspis.
Austria. 34810 GB.

3

Acronicta intermedia.
Japan. 2004. VK. ZFMK.

4

Acronicta leucocuspis.
S Korea. 485-2 HL. CIS.

5

Acronicta sugii.
S Korea. 1017 HL. KNA.

6

Acronicta psi.
Germany. 2003 VK. ZFMK.

7

Acronicta alni.
N China. 1774-2 HLH.


1

Acronicta adaucta.
N China. Che-57. CIS.


2

Acronicta strigosa.
N China. 679 HL. CIS.


3

Acronicta jozana.
S Korea. 15 VK. NIAST.


8

Acronicta carbonaria.
Russia, Primorye. AM. ZISP.


4

Acronicta bellula.
Russia, Primorye. 657 VK. IBP.


5

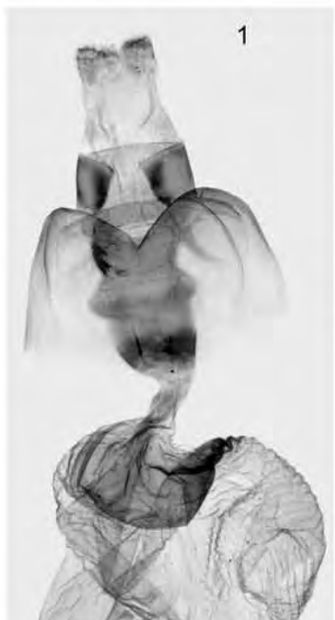
Acronicta omorii.
Russia, S Kuriles, Kunashir I. ZMIASE.


6

Acronicta concerpta.
Russia, Primorye. 659 VK. IBP.


7

Acronicta megacephala.
Russia, Moskow. 2159 VK. ZFMK.


1

Acronicta catocaloida.
S Korea. 489-2 HL. CIS.


2

Acronicta hercules.
S Korea. 490-2 HL. CIS.


3

Acronicta menyanthidis.
Germany. 2190 VK. ZFMK.


4

Acronicta auricoma.
Germany. 3494 GB.


5

Acronicta dahurica.
N China, Inner Mongolia. VK.


6

Acronicta cinerea.
Denmark. 8/100397 JK. ZMHU.

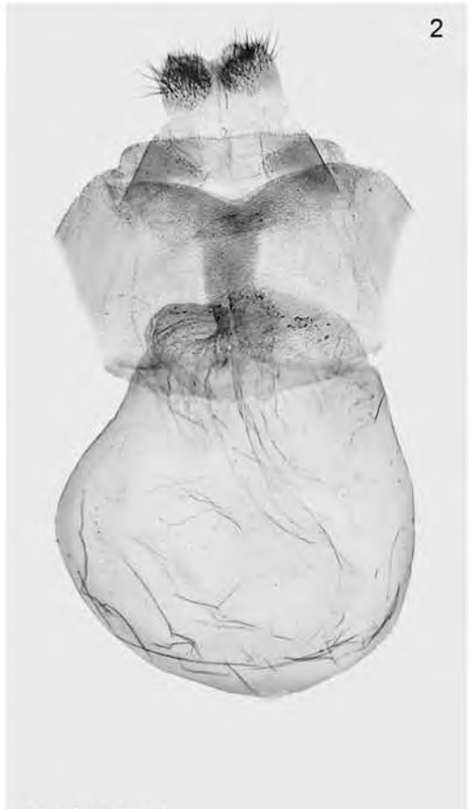

7

Acronicta rumicis.
S Korea. 492-2 HL. CIS.


8

Acronicta lutea.
S Korea. 493-2 HL. CIS.

Acronicta digna.
S Korea. 494-2 HL. CIS.



Acronicta raphael.
Russia, Primorye. 493-2 HL. CIS.

Simyra nervosa.
Austria. 3548 GB.

Simyra splendida.
N China. 497-2 HL. CIS.

Simyra albovenosa.
Spain. GB3554.

Simyra saepestriata.
Monogolia. GB.

Simyra dentinosa.
Turkey. 2111 VK. ZFMK.

Oxicesta geographica.
Hungary. 2114 VK. ZFMK.

Eogene contaminei.
S Russia. 2111 VK. ZFM K.

Mimeusemia persimilis.
S Korea. 2/230507 CY. CIS.

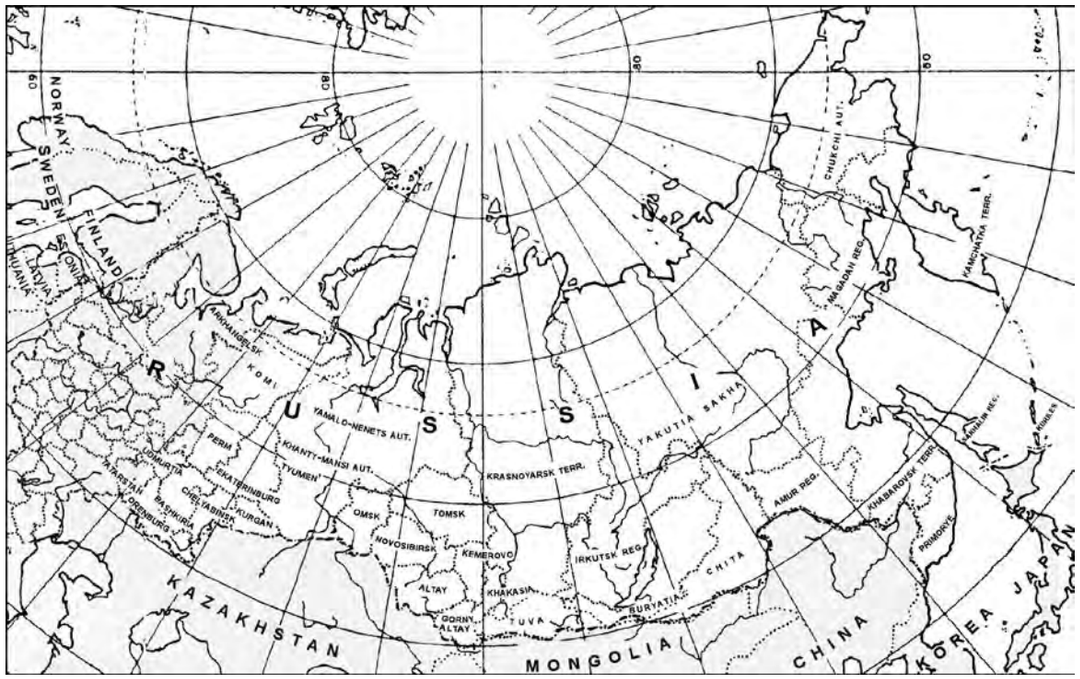
Sarbanissa subflava.
Russia, Primorye. 4222b VK. ZISP.

Sarbanissa venusta.
Russia, Primorye. 132 VK. IBSS.

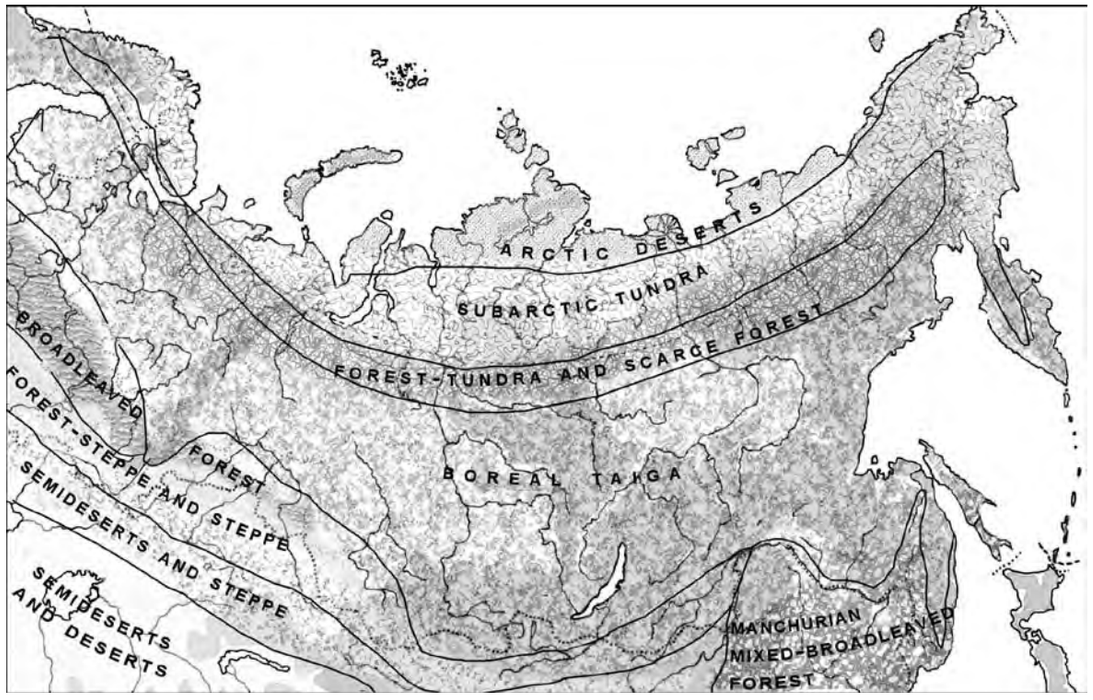
Asteropetes noctuina.
Russia, S Kurules. Kunashir I. 135 VK. IBSS.

Autophila rasilis.
Russia, Altai. AV.

Autophila asiatica.
Russia, Altai. AV.



Administrative division of Asian part of Russia.

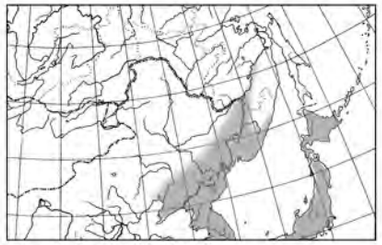


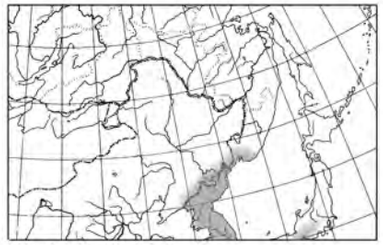
Nature zones of Asian part of Russia

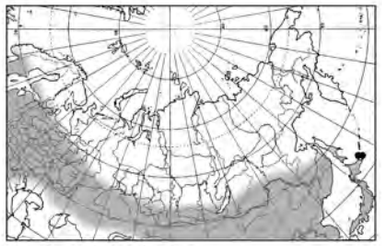
DISTRIBUTION MAPS

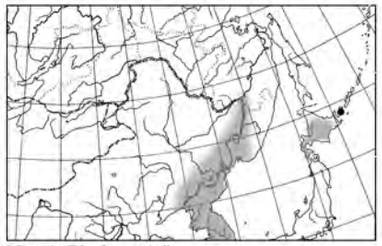
CONTENTS

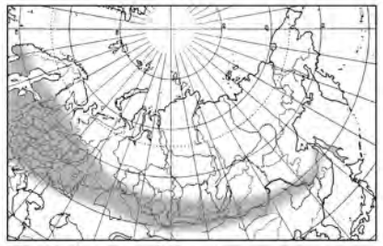
	Maps
Family **MICRONOCTUIDAE**	1, 2
Family **NOCTUIDAE**	2–530
1. Subfam. RIVULINAE	3, 4
2. Subfam. BOLETOBIINAE	5
3. Subfam. HYPENODINAE	6–11
4. Subfam. ARAEOPTERONINAE	12–17
5. Subfam. EUBLEMMINAE	18–33
6. Subfam. AVENTIINAE	34–56
7. Subfam. PANGRAPTINAE	57–65
8. Subfam. PHYTOMETRINAE	66, 68
9. Subfam. HERMINIINAE	69–112
10. Subfam. HYPENINAE	113–143
11. Subfam. EREBINAE	144
12. Subfam. CALPINAE	145–161
13. Subfam. CATOCALINAE	162–280
14. Subfam. EUTELIINAE	281, 282
15. Subfam. PLUSIINAE	283–355
16. Subfam. EUSTROTIINAE	356–379
17. Subfam. ACONTIINAE	380–385
18. Subfam.AEDIINAE	386
19. Subfam. NOLINAE	387–445
20. Subfam. BAGISARINAE.	446–449
21. Subfam. METOPONIINAE	450–456
22. Subfam. SINOCHARINAE	457
23. Subfam. BALSINAE	458
24. Subfam. THIACIDINAE	459
25. Subfam. PANTHEINAE	460–469
26. Subfam. DILOBINAE	470, 471
27. Subfam. ACRONICTINAE	472–526
28. Subfam. AGARISTINAE	527–530

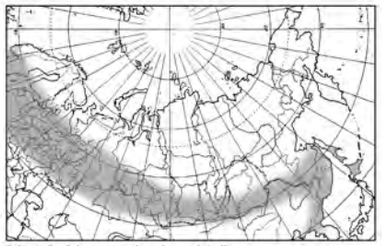

Map 1. *Mimachrostia fasciata.*

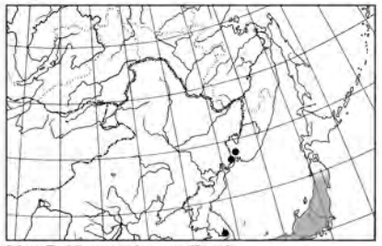

Map 2. *Micronoctua occi.*

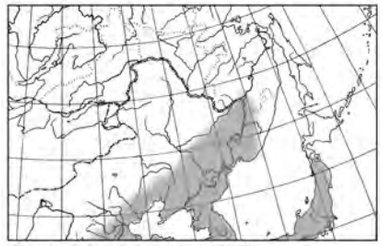

Map 3. *Rivula sericealis.*

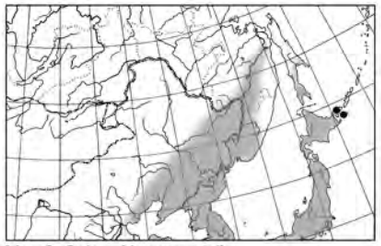

Map 4. *Rivula unctalis.*

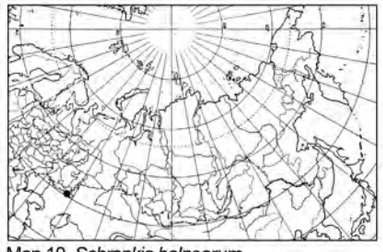

Map 5. *Parascotia fuliginaria.*

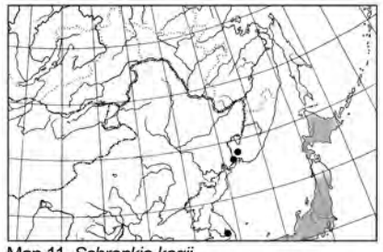

Map 6. *Hypenodes humidalis.*


Map 7. *Hypenodes rectifascia.*


Map 8. *Schrankia costaestrigalis.*


Map 9. *Schrankia separatalis.*


Map 10. *Schrankia balneorum.*


Map 11. *Schrankia kogii.*

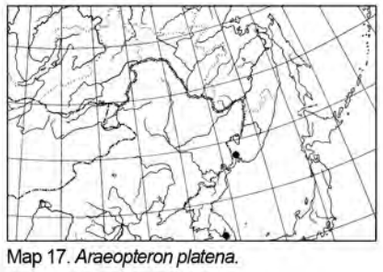

Map 12. *Araeopteron amoena.*

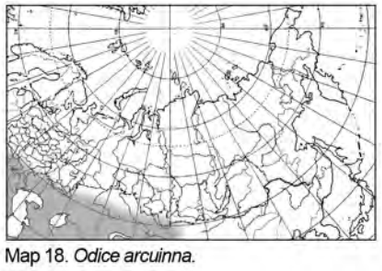

Map 13. *Araeopteron fragmenta.*

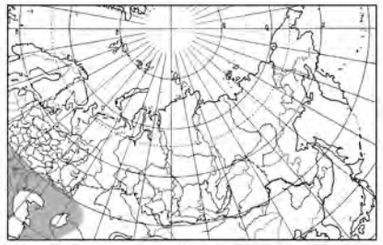

Map 14. *Araeopteron nebulosa.*

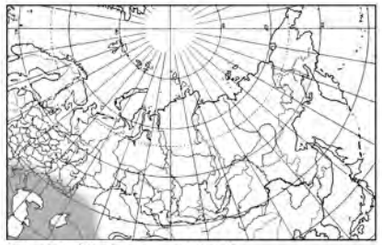

Map 15. *Arareopteron ussurica.*

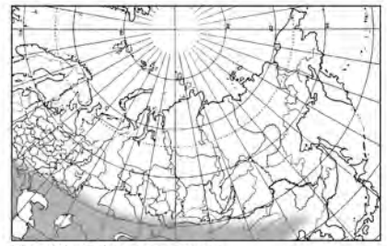

Map 16. *Araeopteron makikoae.*

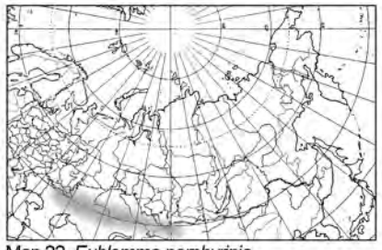

Map 17. *Araeopteron platena.*

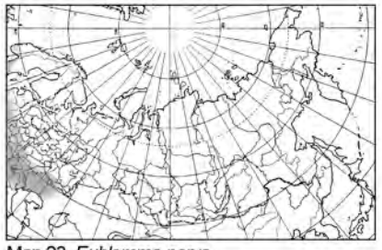

Map 18. *Odice arcuinna.*

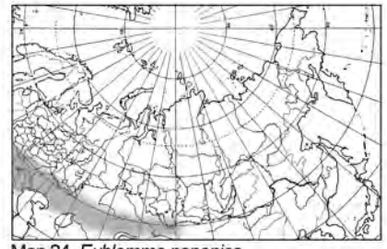

Map 19. *Eublemma minutata.*

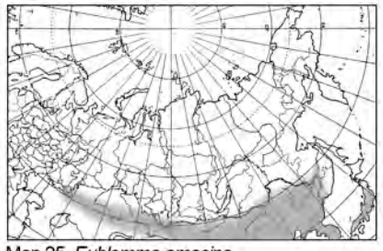

Map 20. *Eublemma pulchralis.*

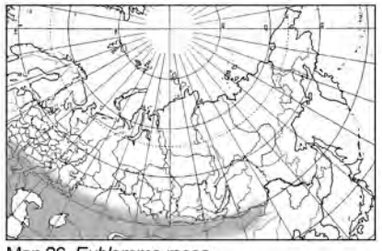

Map 21. *Eublemma ostrina.*

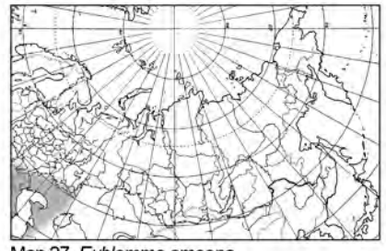

Map 22. *Eublemma porphyrinia.*

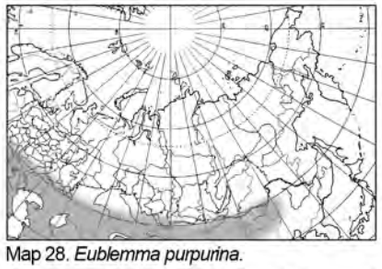

Map 23. *Eublemma parva.*

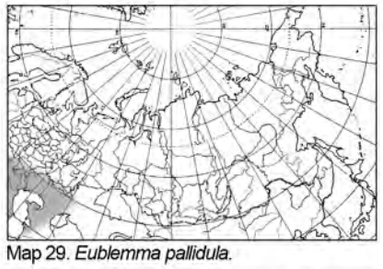

Map 24. *Eublemma panonica.*

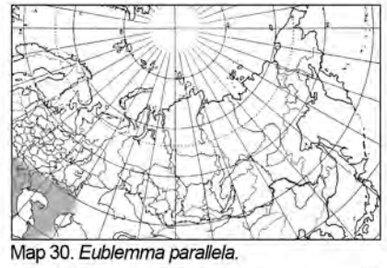

Map 25. *Eublemma amasina.*

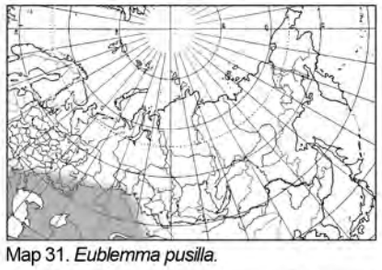

Map 26. *Eublemma rosea.*

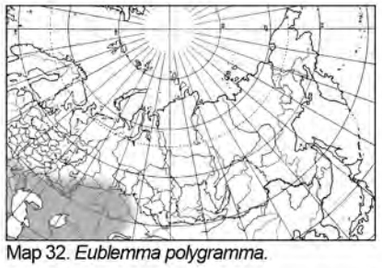

Map 27. *Eublemma amoena.*

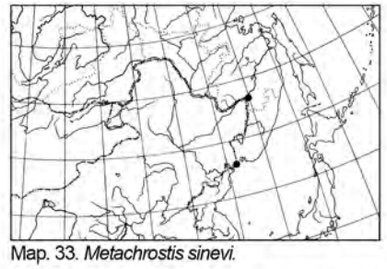

Map 28. *Eublemma purpurina.*

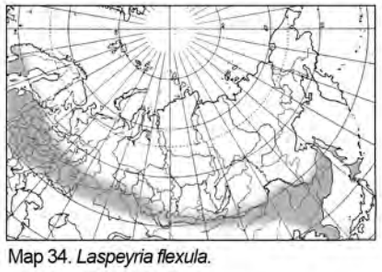

Map 29. *Eublemma pallidula.*

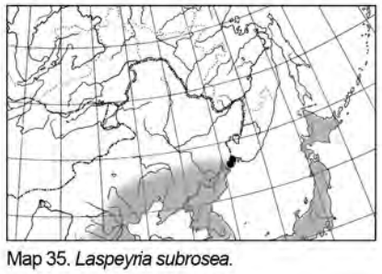

Map 30. *Eublemma parallela.*

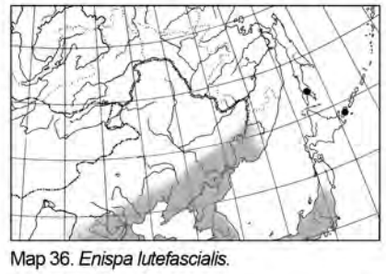

Map 31. *Eublemma pusilla.*

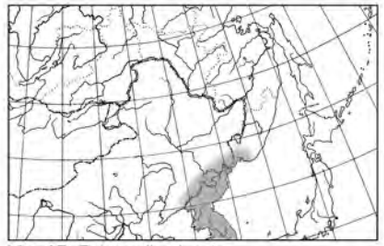

Map 32. *Eublemma polygramma.*

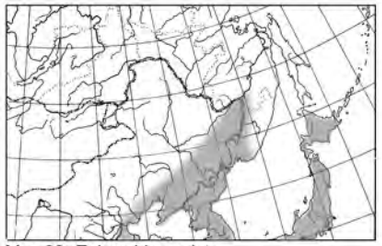

Map. 33. *Metachrostis sinevi.*

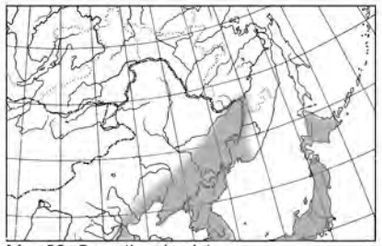

Map 34. *Laspeyria flexula.*

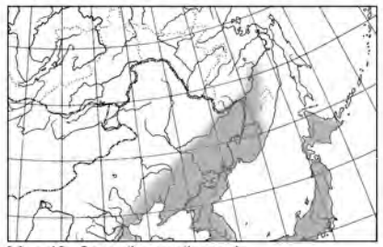

Map 35. *Laspeyria subrosea.*

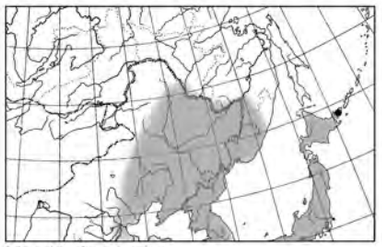

Map 36. *Enispa lutefascialis.*

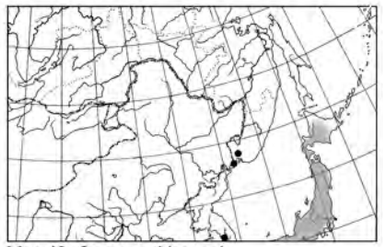

Map 37. *Enispa albosignata.*

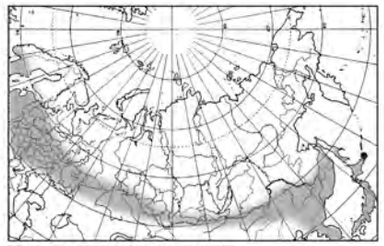

Map 38. *Enispa bimaculata.*

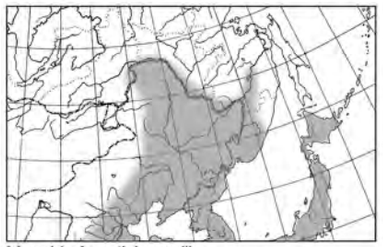

Map 39. *Corgatha obsoleta.*

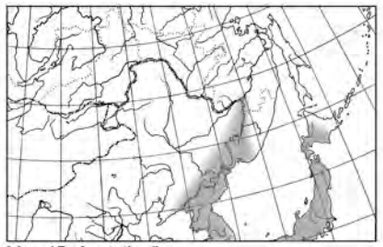

Map 40. *Corgatha costimacula.*

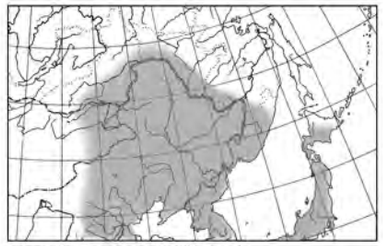

Map 41. *Oruza mira.*

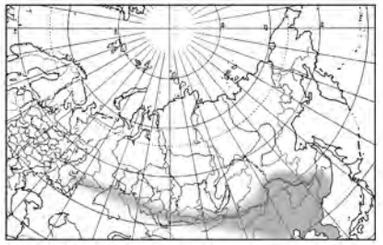

Map 42. *Oruza yoshinoensis.*

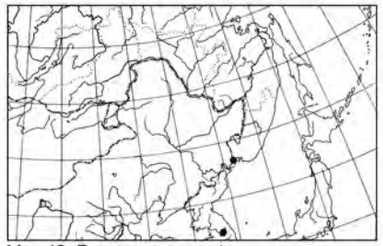

Map 43. *Trisateles emortualis.*

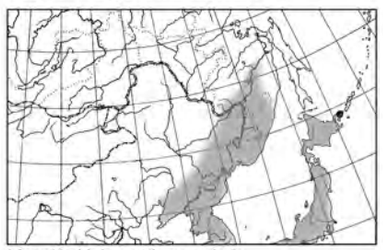

Map 44. *Aventiola pusilla.*

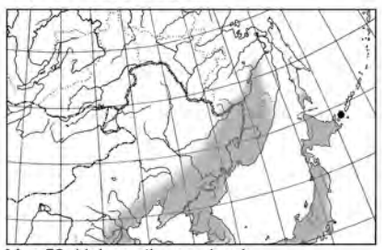

Map 45. *Anatatha lignea.*

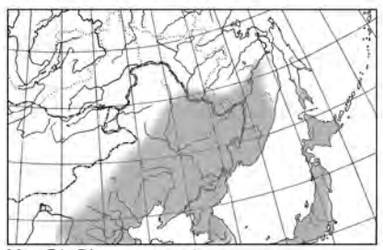

Map 46. *Paragona multisignata* .

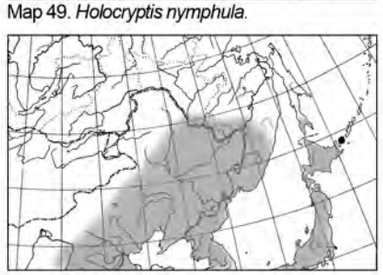

Map 47. *Paragona cognata.*

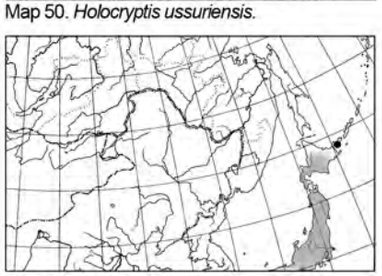

Map 48. *Paragona nemorata.*

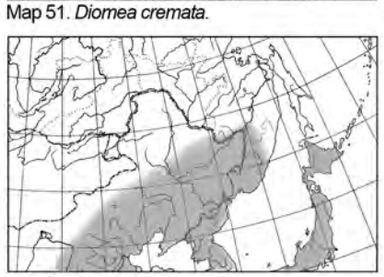

Map 49. *Holocryptis nymphula.*

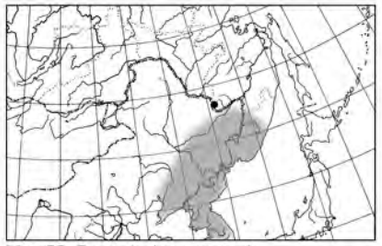

Map 50. *Holocryptis ussuriensis.*

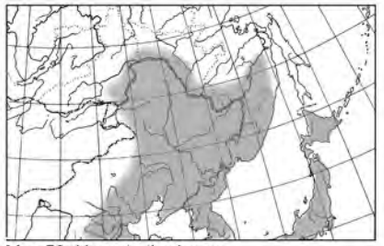

Map 51. *Diomea cremata.*

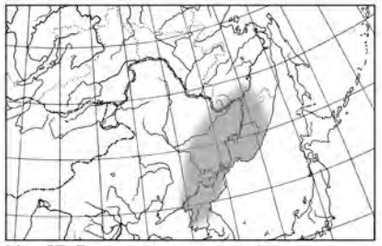

Map 52. *Diomea jankowskii* .

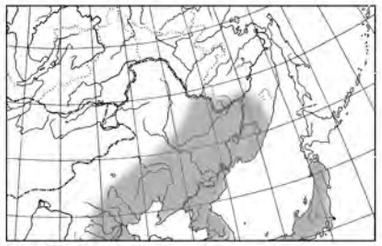

Map 53. *Polysciera manleyi.*

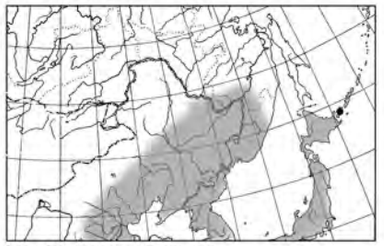

Map 54. *Naganoella timandra* .

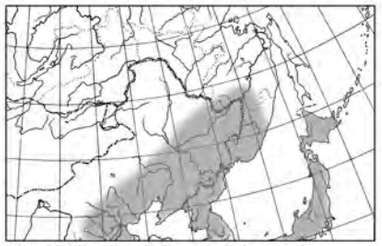

Map 55. *Remmigabara secunda.*

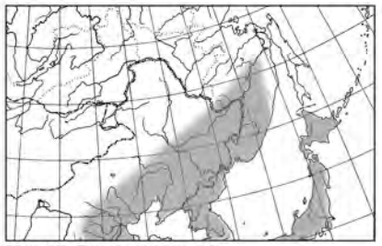

Map 56. *Hypostrotia cinerea.*

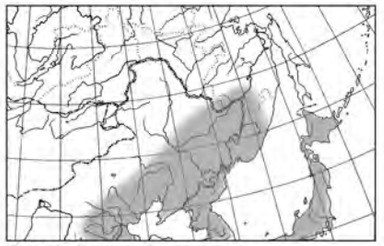

Map 57. *Pangrapta costaemacula.*

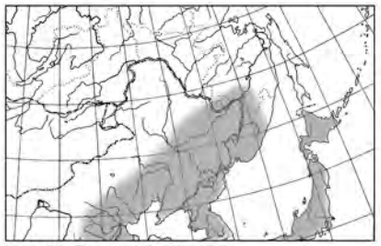

Map 58. *Pangrapta suaveola.*

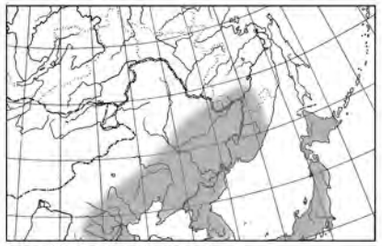

Map 59. *Pangrapta vasava.*

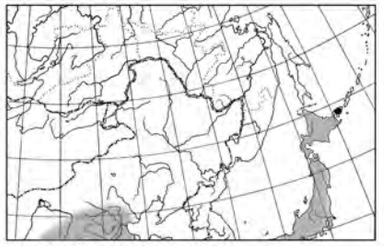

Map 60. *Pangrapta flavomacula.*

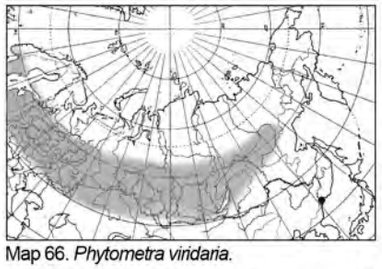

Map 61. *Pangrapta lunulata.*

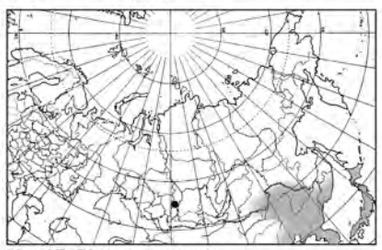

Map 62. *Pangrapta marmorata.*

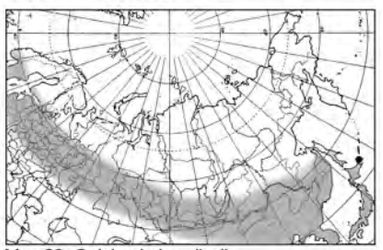

Map 63. *Pangrapta obscurata.*

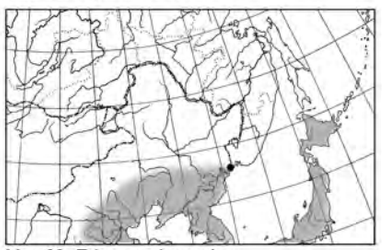

Map 64. *Pangrapta griseola.*

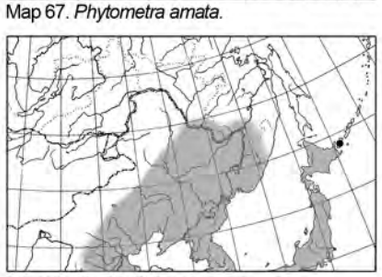

Map 65. *Pangrapta umbrosa.*

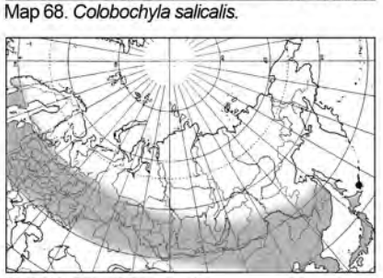

Map 66. *Phytometra viridaria.*

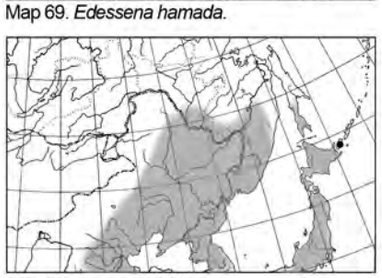

Map 67. *Phytometra amata.*

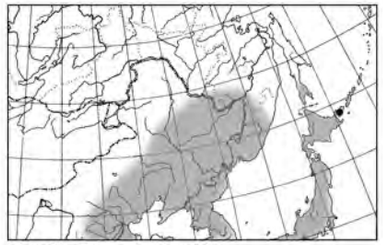

Map 68. *Colobochyla salicalis.*

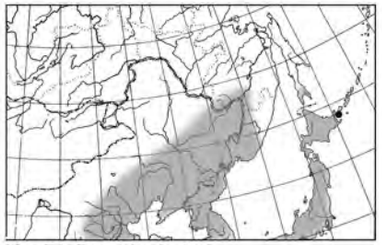

Map 69. *Edessena hamada.*

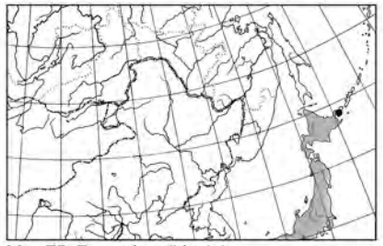

Map 70. *Hadennia incongruens.*

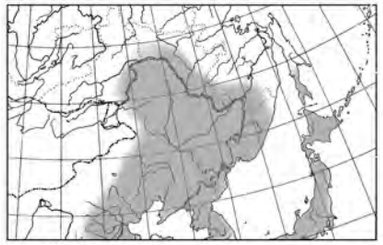

Map 71. *Paracolax tristalis.*

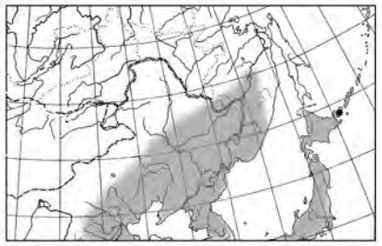

Map 72. *Paracolax trilinealis.*

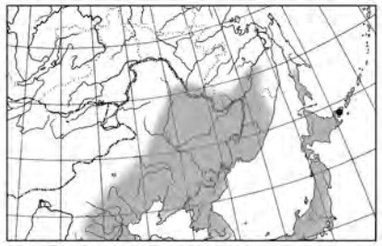

Map 73. *Paracolax fascialis.*

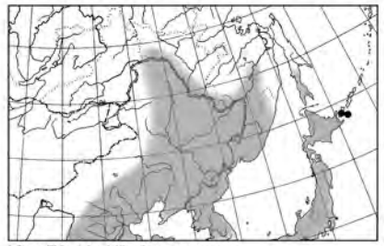

Map 74. *Paracolax fentoni.*

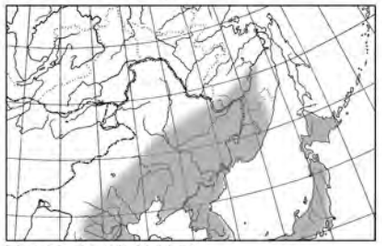

Map 75. *Paracolax albinotata.*

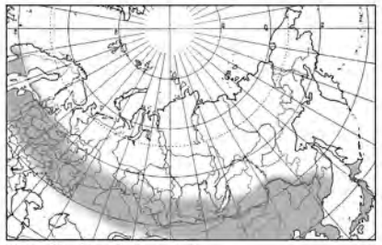

Map 76. *Idia quadra.*

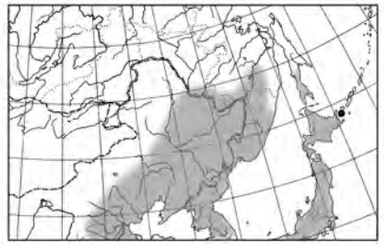

Map 77. *Idia curvipalpis.*

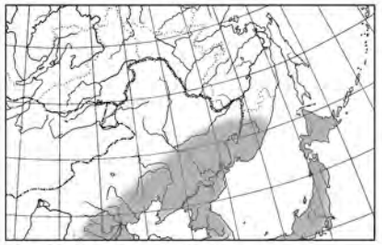

Map 78. *Gynaephila maculifera.*

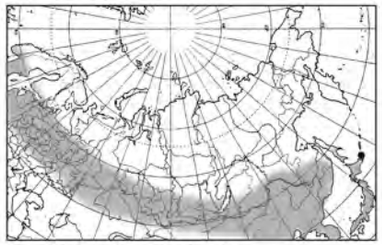

Map 79. *Hydrillodes mororosa.*

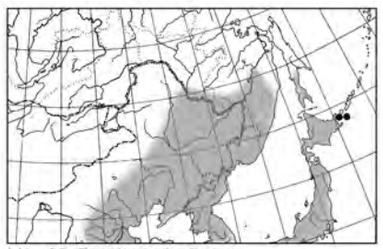

Map 80. *Bertula bistrigata.*

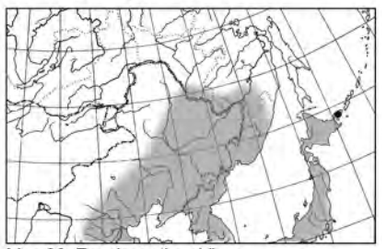

Map 81. *Simplicia rectalis.*

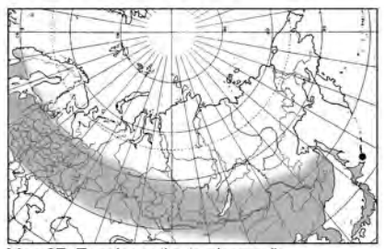

Map 82. *Zanclognatha griselda.*

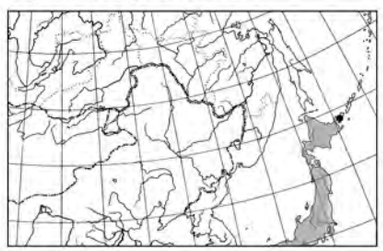

Map 83. *Zanclognatha lilacina.*

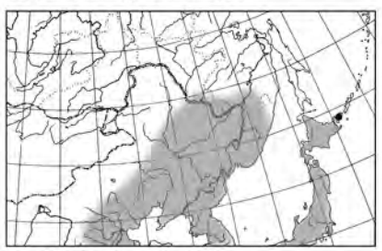

Map 84. *Zanclognatha lunalis.*

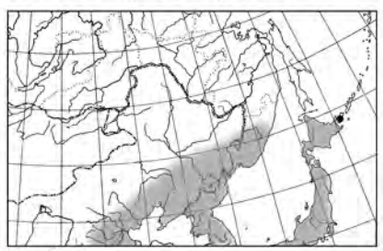

Map 85. *Zanclognatha fumosa.*

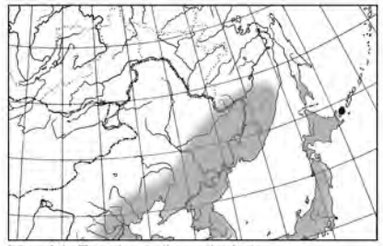

Map 86. *Zanclognatha obliqua.*

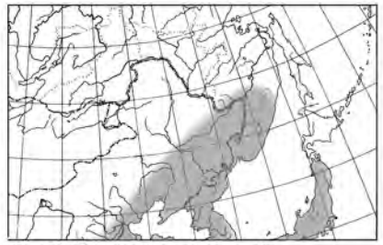

Map 87. *Zanclognatha tarsipennalis.*

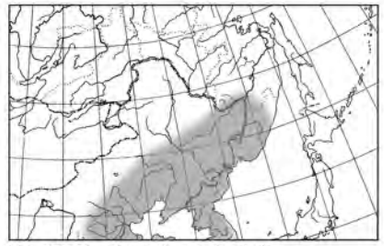

Map 88. *Zanclognatha subgriselda.*

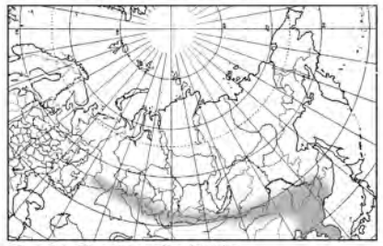

Map 89. *Zanclognatha triplex.*

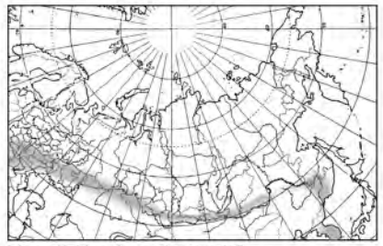

Map 90. *Zanclognatha helva.*

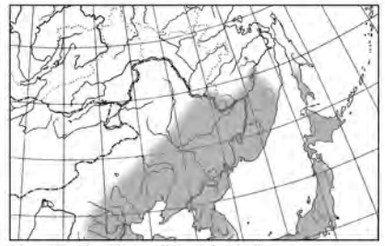

Map 91. *Zanclognatha reticulatis.*

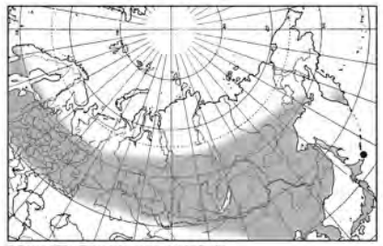

Map 92. *Zanclognatha umbrosalis.*

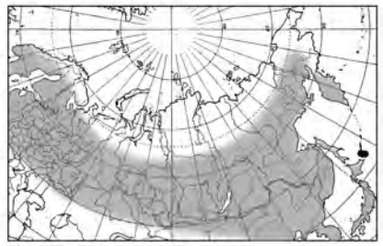

Map 93. *Zanclognatha perfractalis.*

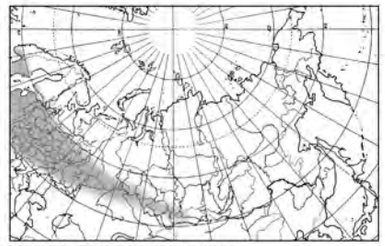

Map 94. *Zanclognatha tristriga.*

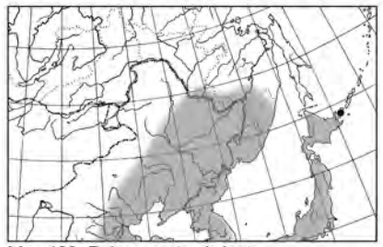

Map 95. *Zanclognatha tenuialis.*

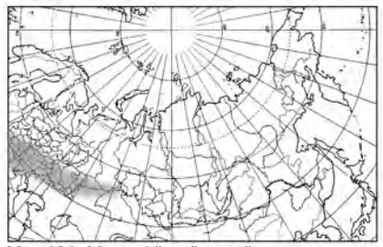

Map 96. *Zanclognatha violacealis.*

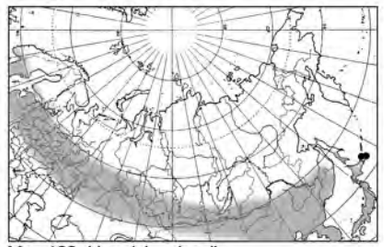

Map 97. *Pechipogo strigilata.*

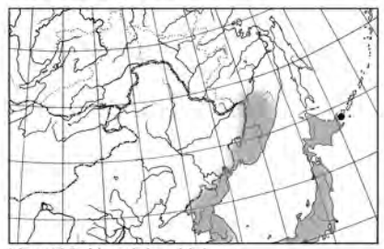

Map 98. *Polypogon tentacularia.*

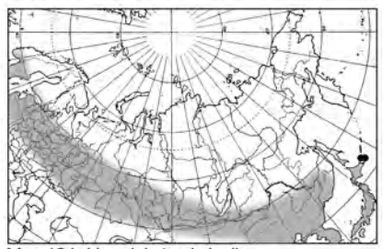

Map 99. *Polypogon gryphalis.*

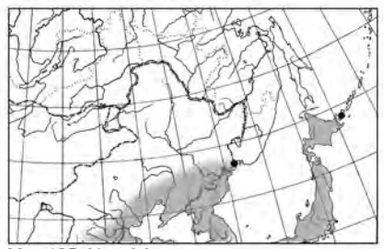

Map 100. *Polypogon tarsicrinata.*

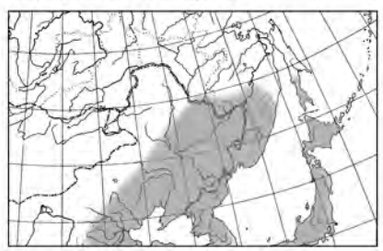

Map 101. *Macrochilo cribrumalis.*

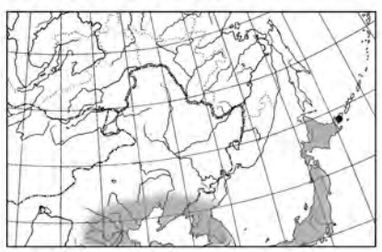

Map 102. *Herminia grisealis.*

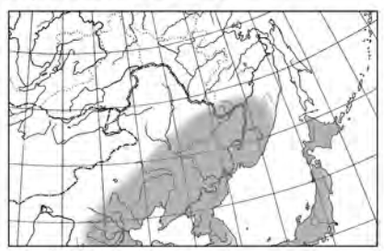

Map 103. *Herminia robiginosa.*

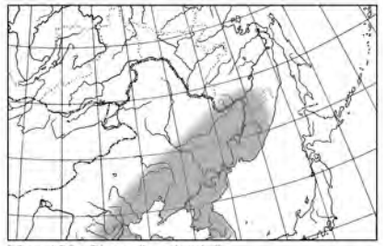

Map 104. *Herminia tarsicrinalis.*

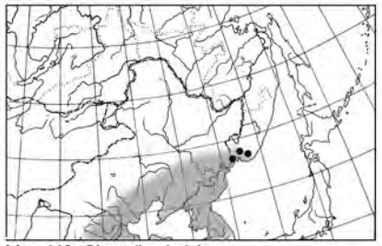

Map 105. *Herminia arenosa.*

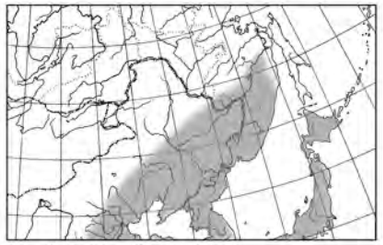

Map 106. *Herminia stramentacealis.*

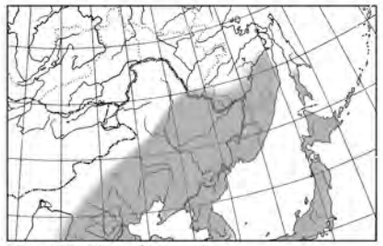

Map 107. *Herminia dolosa.*

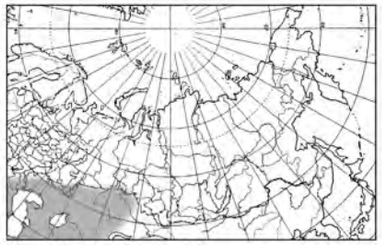

Map 108. *Sinarella aegrota.*

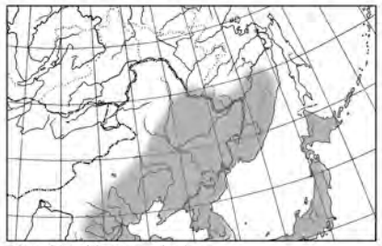

Map 109. *Sinarella cristulalis.*

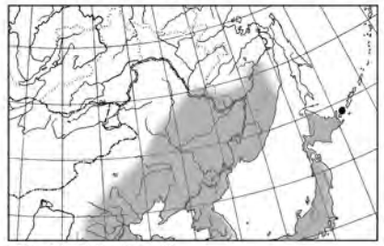

Map 110. *Sinarella nigrisigna.*

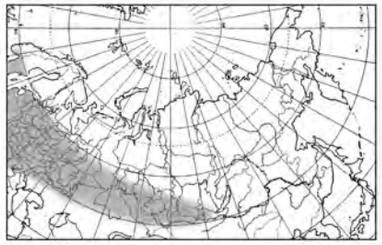

Map 111. *Sinarella punctalis.*

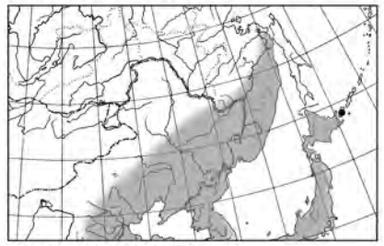

Map 112. *Sinarella japonica.*

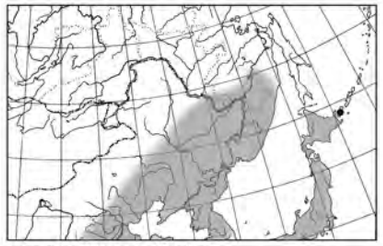

Map 113. *Zekelita ravulalis.*

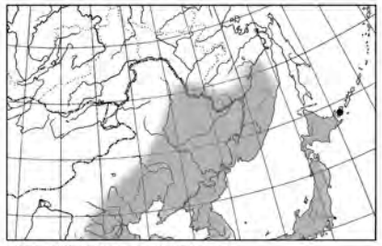

Map 114. *Hypena stygiana.*

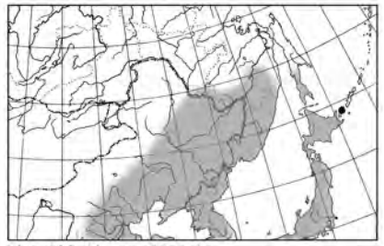

Map 115. *Hypena zilla.*

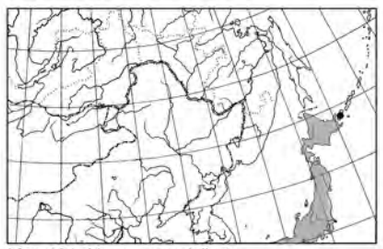

Map 116. *Hypena crassalis.*

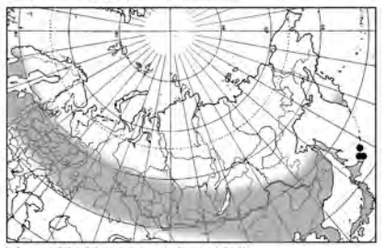

Map 117. *Hypena squalida.*

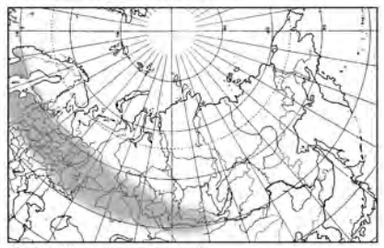

Map 118. *Hypena bicoloralis.*

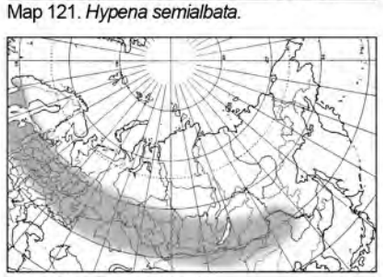

Map 119. *Hypena nigrobasalis.*

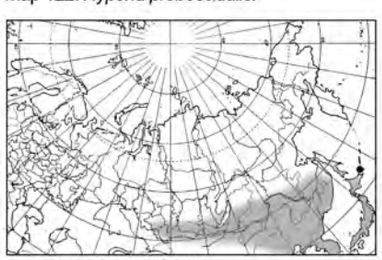

Map 120. *Hypena bipartita.*

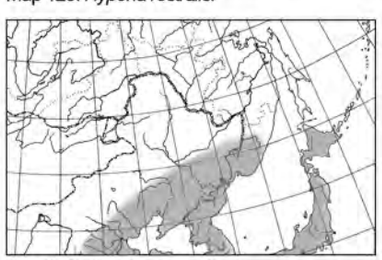

Map 121. *Hypena semialbata.*

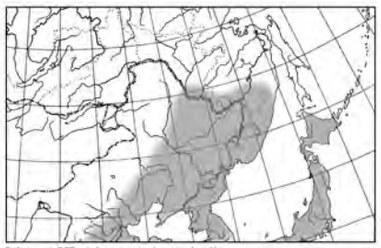

Map 122. *Hypena proboscidalis.*

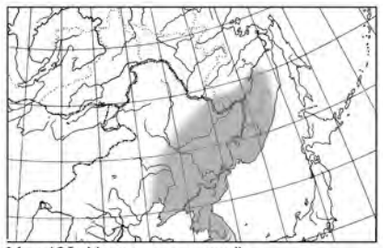

Map 123. *Hypena rostralis.*

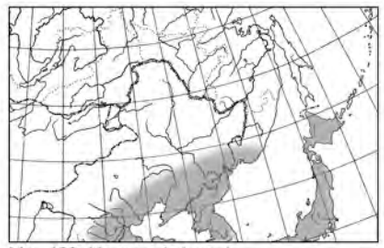

Map 124. *Hypena obesalis.*

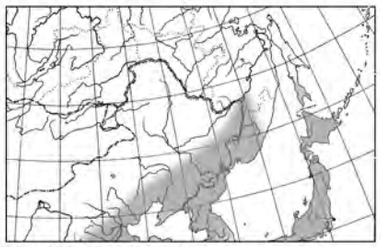

Map 125. *Hypena tristalis.*

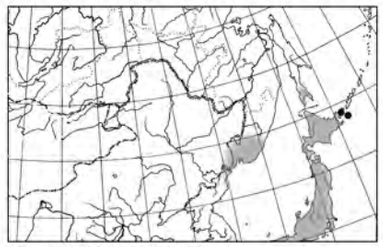

Map 126. *Hypena narratalis.*

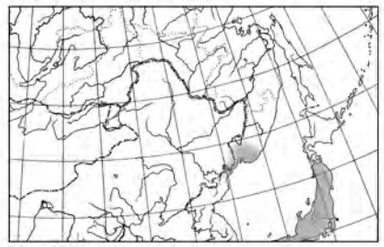

Map 127. *Hypena kengkalis.*

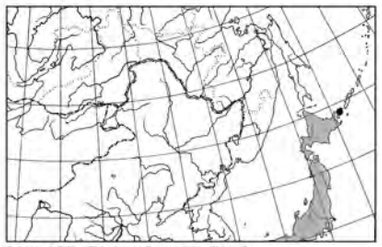

Map 128. *Hypena conspersalis.*

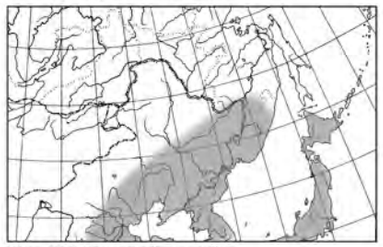

Map 129. *Hypena claripennis.*

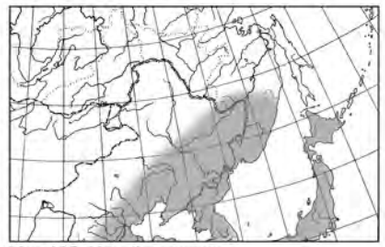

Map 130. *Hypena amica.*

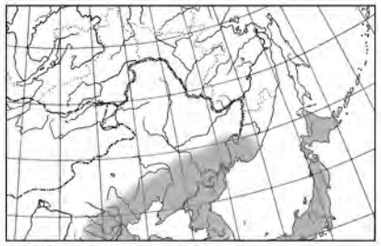

Map 131. *Hypena tatorhina.*

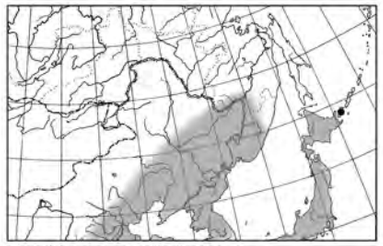

Map 132. *Hypena tamsi.*

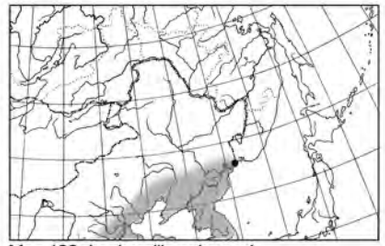

Map 133. *Protoschrankia ijimai.*

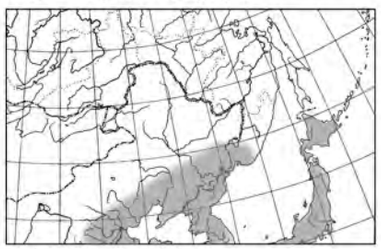

Map 134. *Gonepatica opalina.*

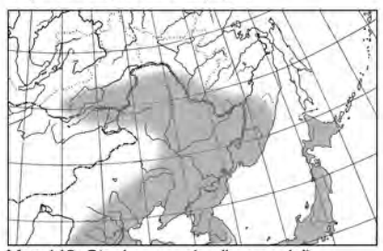

Map 135. *Hepatica anceps.*

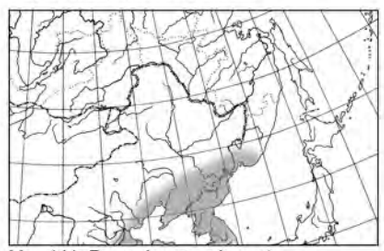

Map 136. *Lophomilia polybapta.*

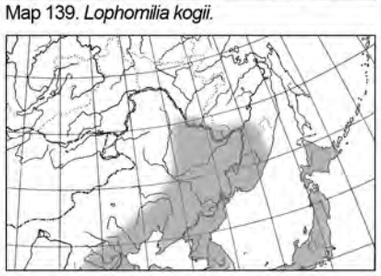

Map 137. *Lophomilia flaviplaga.*

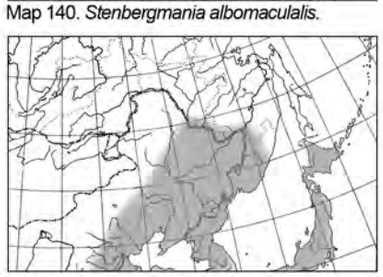

Map 138. *Lophomilia nekrasovi.*


Map 139. *Lophomilia kogii.*

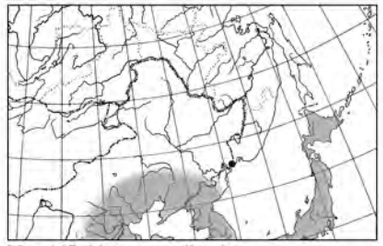

Map 140. *Stenbergmania albomaculalis.*

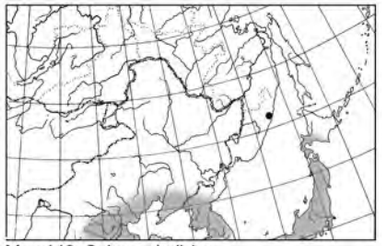

Map 141. *Paragabara curvicornuta.*

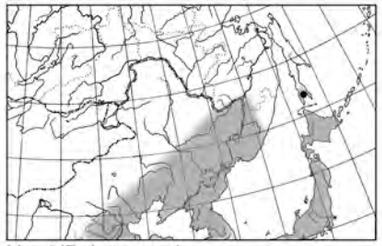

Map 142. *Paragabara flavomacula.*

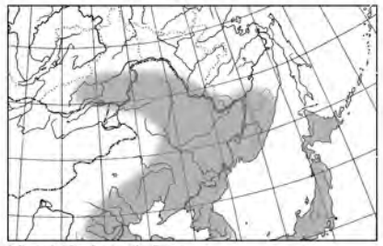

Map 143. *Paragabara ochreipennis.*

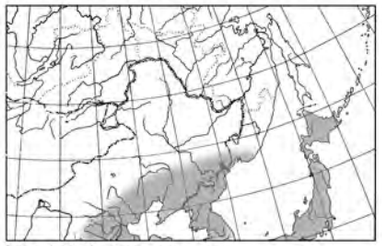

Map 144. *Erebus macrops.*

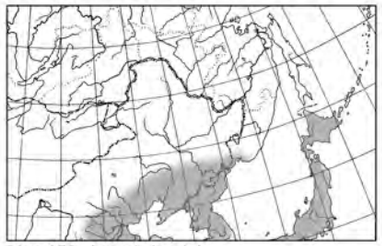

Map 145. *Metopta rectifasciata.*

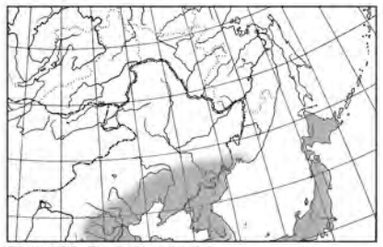

Map 146. *Spirama helicina.*

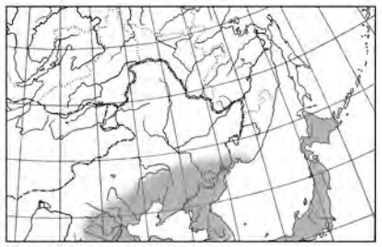

Map 147. *Arcte coerula.*

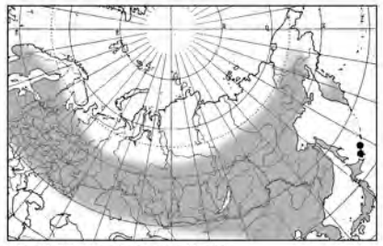

Map 148. *Anomis flava.*

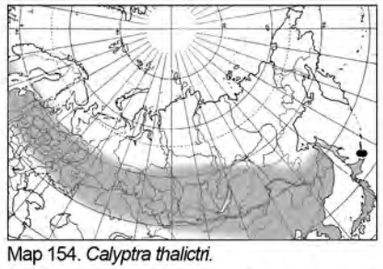

Map 149. *Anomis mesogona.*


Map 150. *Anomis involuta.*

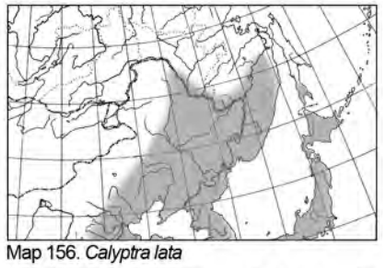

Map 151. *Anomis privata.*


Map 152. *Anomis leucolopha.*


Map 153. *Scoliopteryx libatrix.*

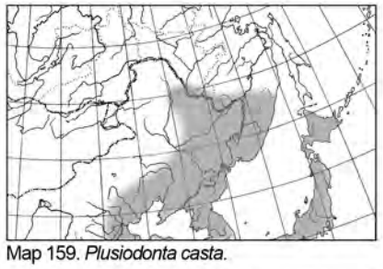

Map 154. *Calyptra thalictri.*

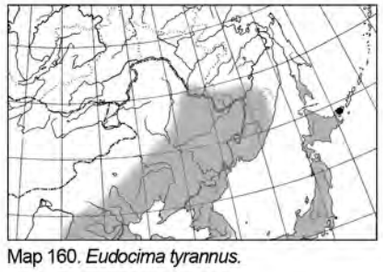

Map 155. *Calyptra hokkaida.*

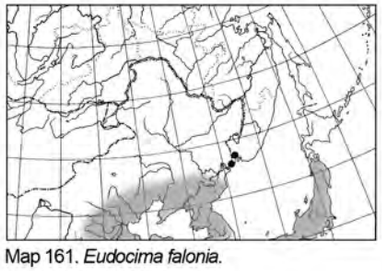

Map 156. *Calyptra lata*

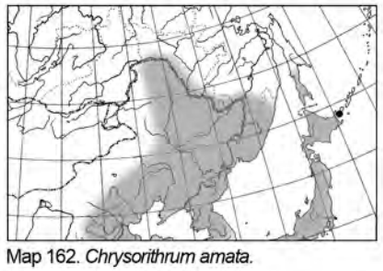

Map 157. *Oraesia emarginata.*

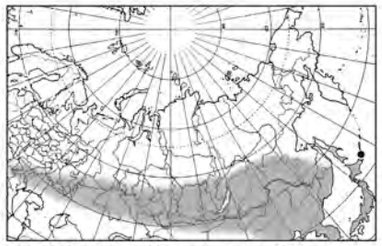

Map 158. *Oraesia excavata.*

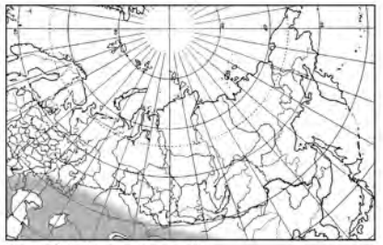

Map 159. *Plusiodonta casta.*

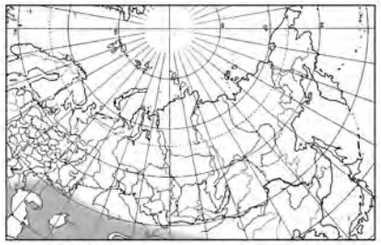

Map 160. *Eudocima tyrannus.*

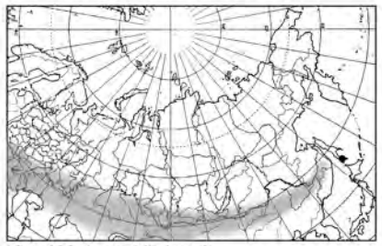

Map 161. *Eudocima falonia.*

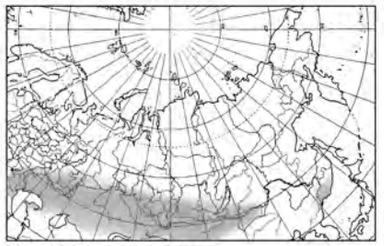

Map 162. *Chrysorithrum amata.*

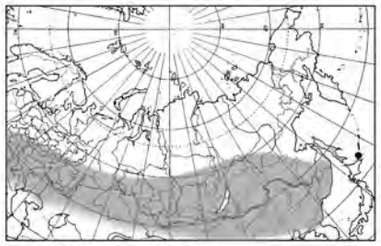

Map 163. *Chrysorithrum flavomaculata.*

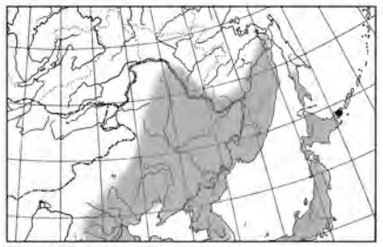

Map 164. *Anumeta cestis.*

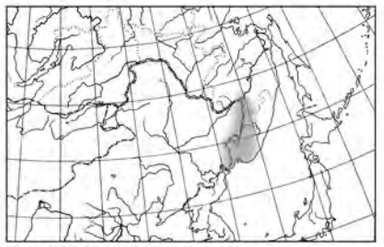

Map 165. *Anumeta fractistrigata.*

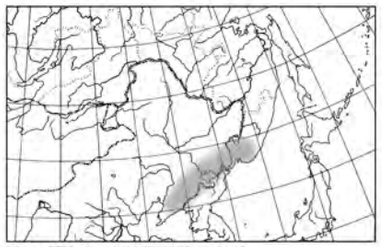

Map 166. *Lygephila lusoria.*

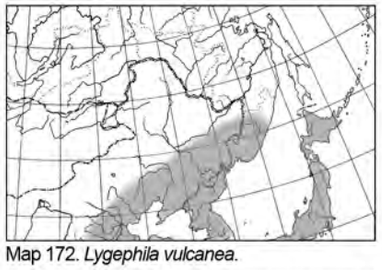

Map 167. *Lygephila lubrica.*

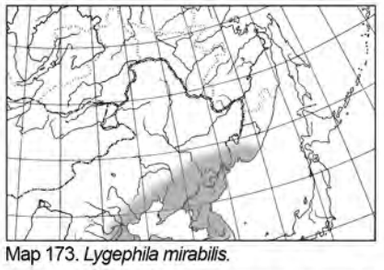

Map 168. *Lygephila ludicra.*

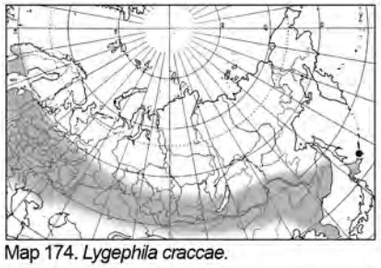

Map 169. *Lygephila maxima.*

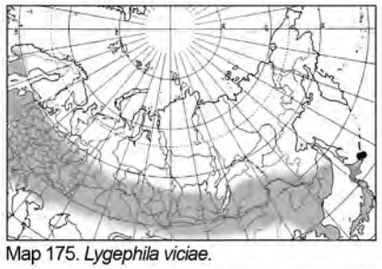

Map 170. *Lygephila ernaculata.*

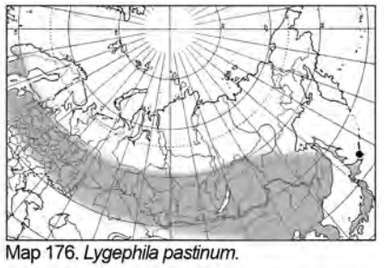

Map 171. *Lygephila dubatolovi.*

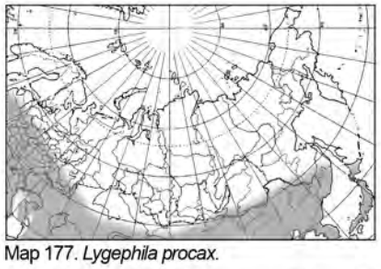

Map 172. *Lygephila vulcanea.*

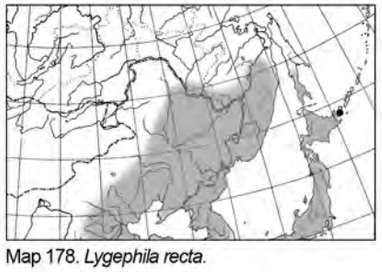

Map 173. *Lygephila mirabilis.*

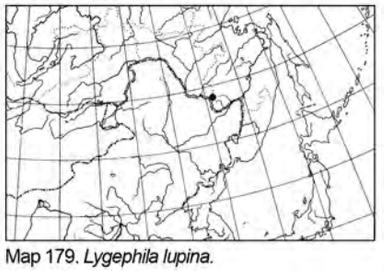

Map 174. *Lygephila craccae.*

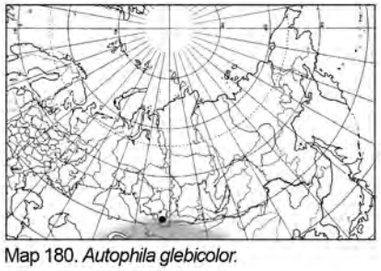

Map 175. *Lygephila viciae.*

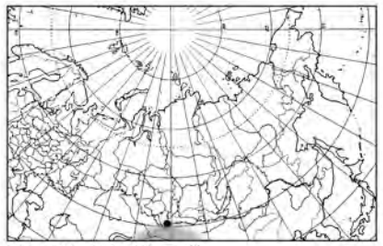

Map 176. *Lygephila pastinum.*

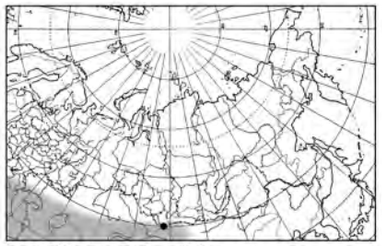

Map 177. *Lygephila procax.*

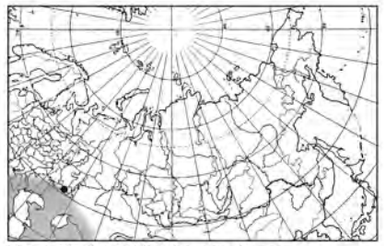

Map 178. *Lygephila recta.*

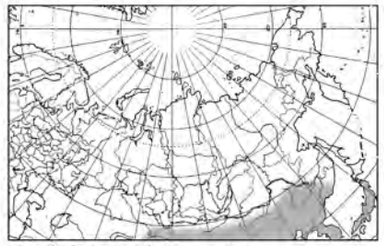

Map 179. *Lygephila lupina.*

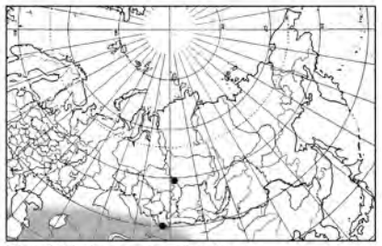

Map 180. *Autophila glebicolor.*

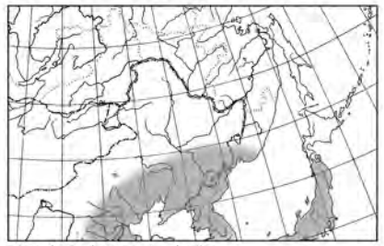

Map 181. *Autophila rasilis.*

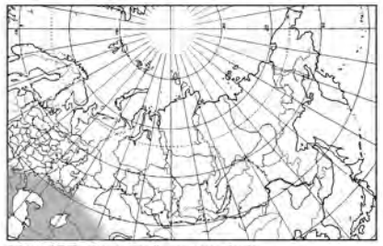

Map 182. *Autophila asiatica.*

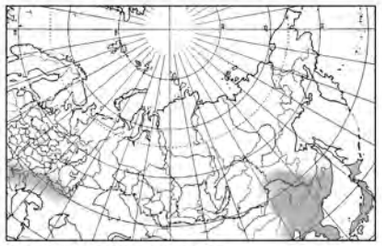

Map 183. *Autophila charnaephanes.*

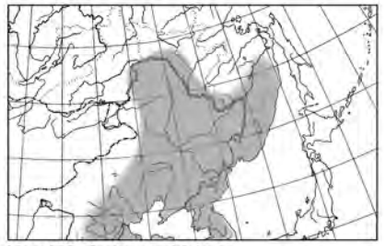

Map 184. *Autophila inconspicua.*

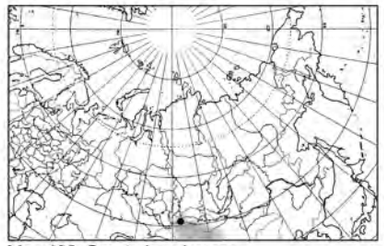

Map 185. *Apopestes phantasma.*

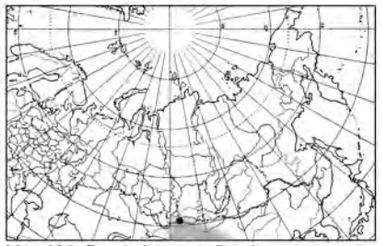

Map 186. *Apopestes indica.*

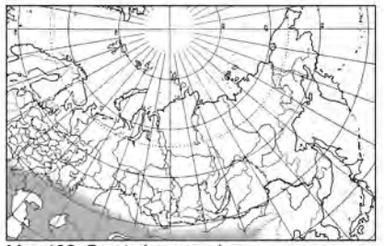

Map 187. *Acantholipes regularis.*

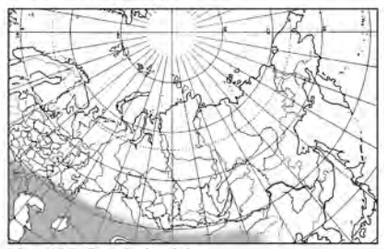

Map 188. *Arytrura musculus.*

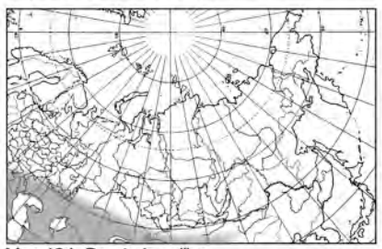

Map 189. *Arytrura subfalcata.*

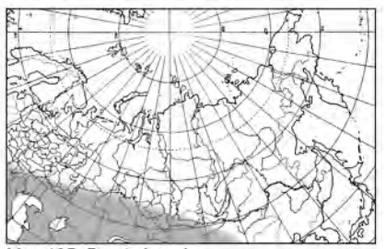

Map 190. *Drasteria pulverosa.*

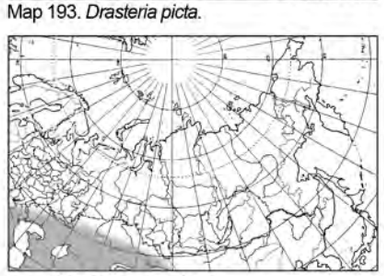

Map 191. *Drasteria mongoliensis.*

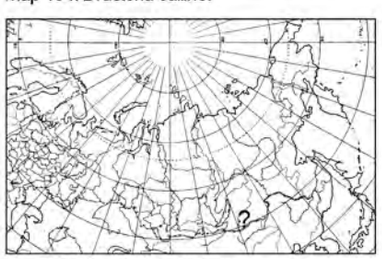

Map 192. *Drasteria caucasica.*

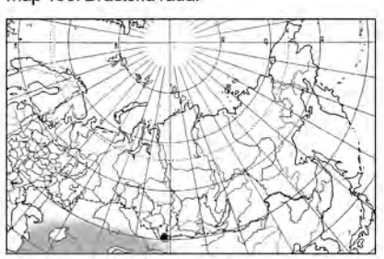

Map 193. *Drasteria picta.*

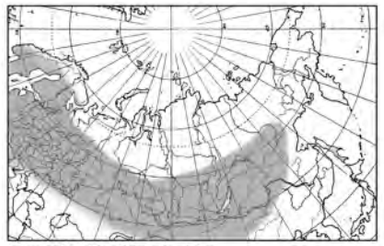

Map 194. *Drasteria cailino.*

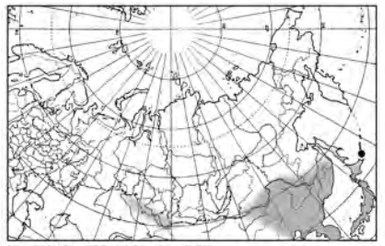

Map 195. *Drasteria rada.*

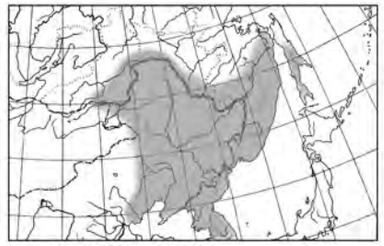

Map 196. *Drasteria saisani.*

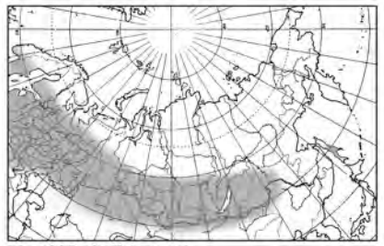

Map 197. *Drasteria scolopax.*

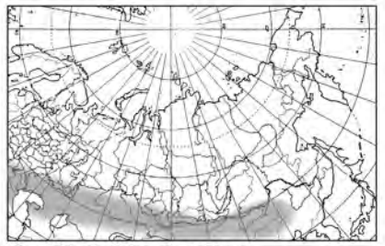

Map 198. *Drasteria catocalis.*

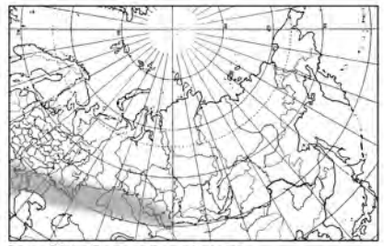

Map 199. *Euclidia glyphica.*

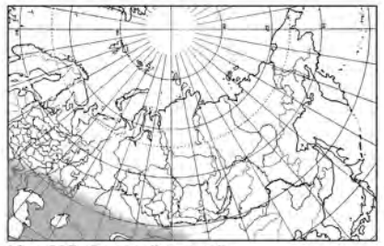

Map 200. *Euclidia dentata.*

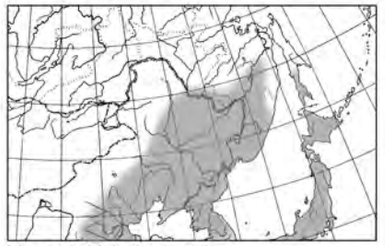

Map 201. *Euclidia juvenilis.*

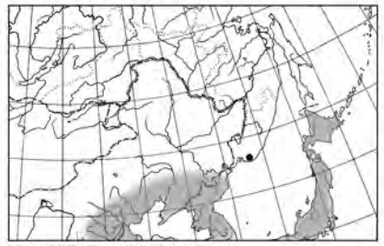

Map 202. *Callistege mi.*

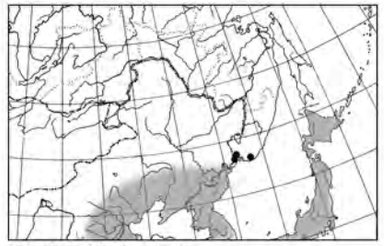

Map 203. *Callistege fortalitium.*

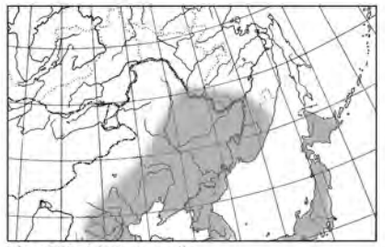

Map 204. *Gonospilea triquetra.*

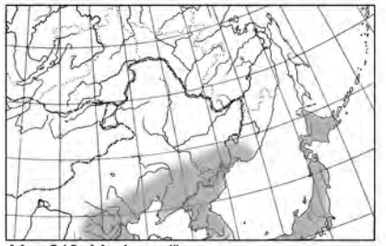

Map 205. *Gonospilea munita.*

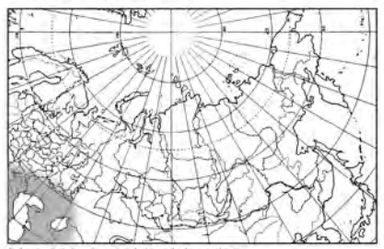

Map 206. *Melapia electaria.*

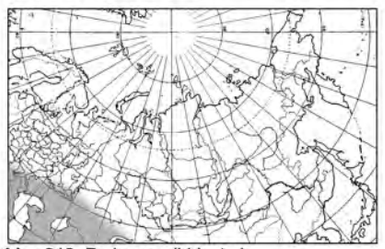

Map 207. *Remigia frugalis.*

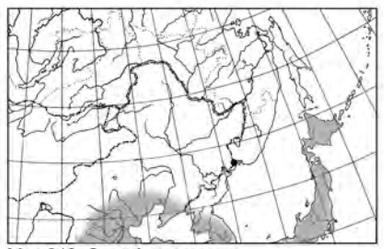

Map 208. *Mocis undata.*

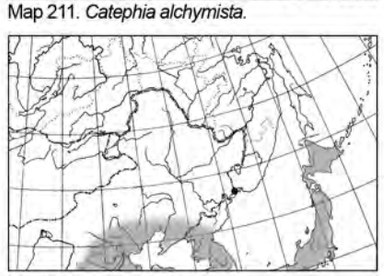

Map 209. *Mocis annetta.*

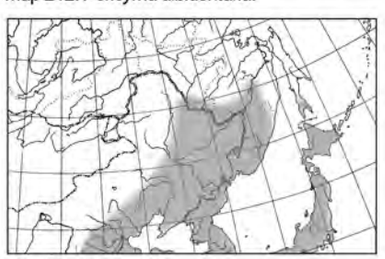

Map 210. *Mocis ancilla.*

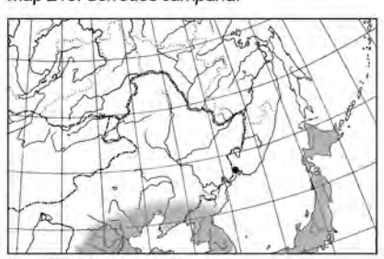

Map 211. *Catephia alchymista.*

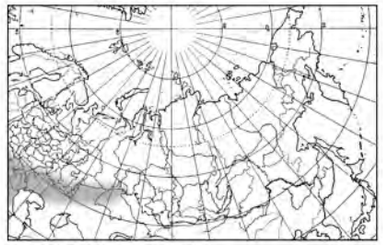

Map 212. *Pericyma albidentaria.*

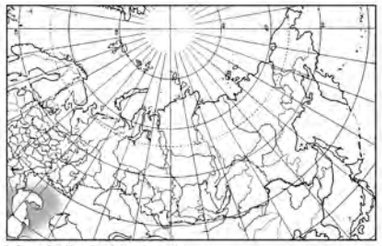

Map 213. *Serrodes campana.*

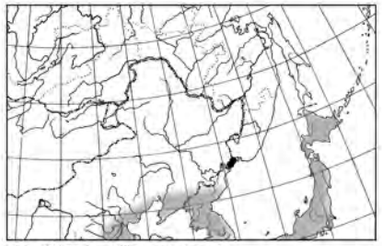

Map 214. *Artena dotata.*

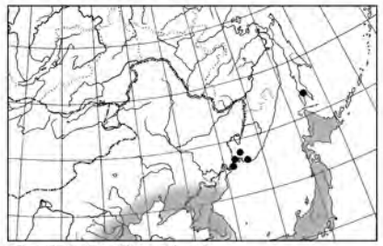

Map 215. *Thyas juno.*

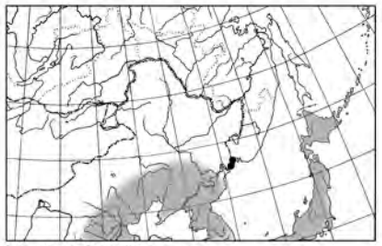

Map 216. *Ophiusa tirhaca.*

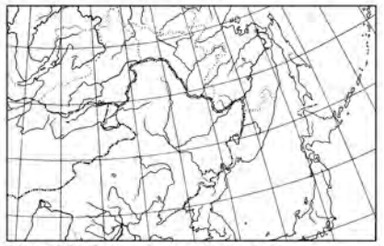

Map 217. *Minucia lunaris.*

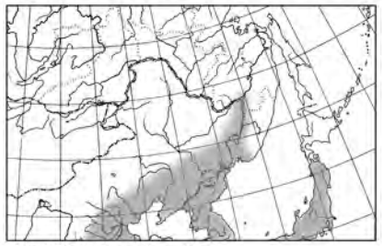

Map 218. *Clytie gracilis.*

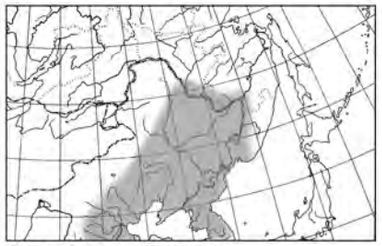

Map 219. *Bastilla arctotaenia.*

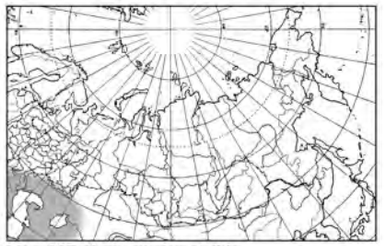

Map 220. *Bastilla maturata.*

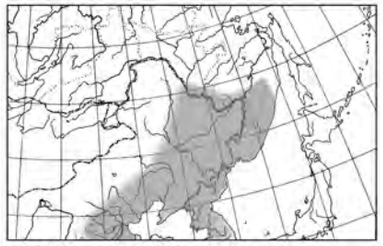

Map 221. *Bastilla stuposa.*

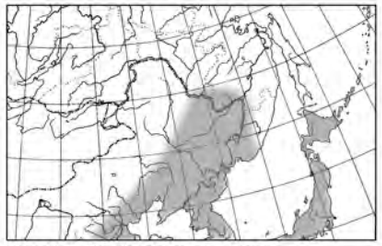

Map 222. *Dysgonia mandschuriana.*

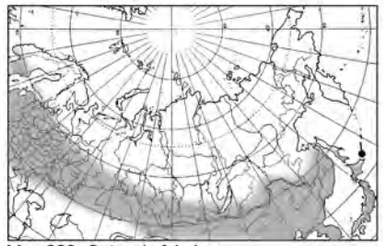

Map 223. *Dysgonia dulcis.*

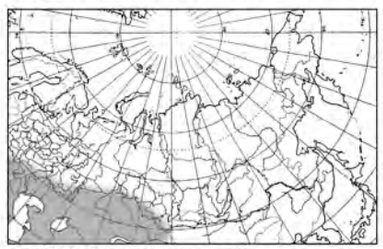

Map 224. *Dysgonia obscura.*

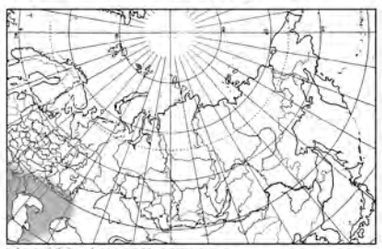

Map 225. *Grammodes stolida.*

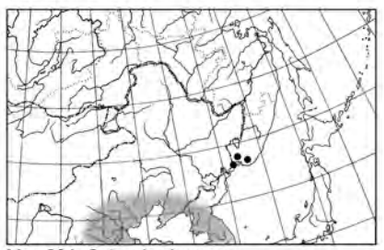

Map 226. *Blasticorhinus ussuriensis.*

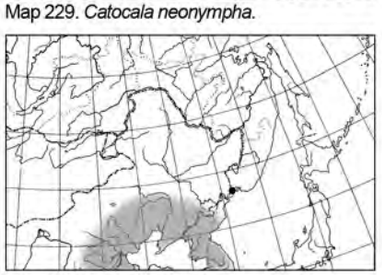

Map 227. *Blasticorhinus unduligera.*

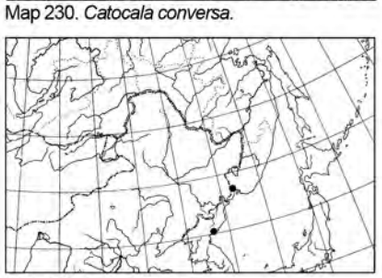

Map 228. *Catocala fulminea.*

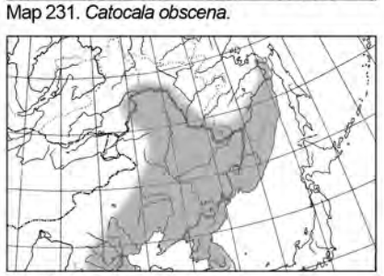

Map 229. *Catocala neonympha.*

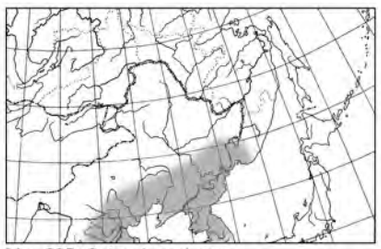

Map 230. *Catocala conversa.*

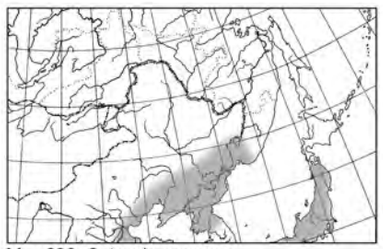

Map 231. *Catocala obscena.*

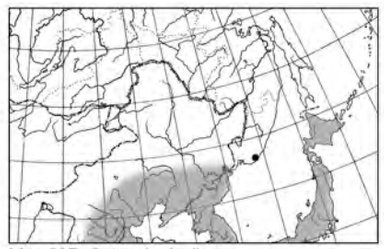

Map 232. *Catocala abamita.*

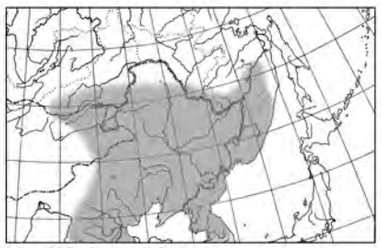

Map 233. *Catocala musmi.*

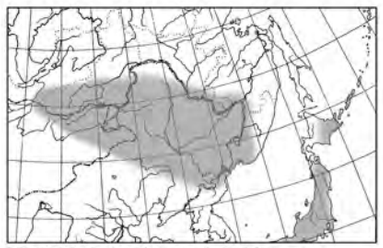

Map 234. *Catocala doerriesi.*

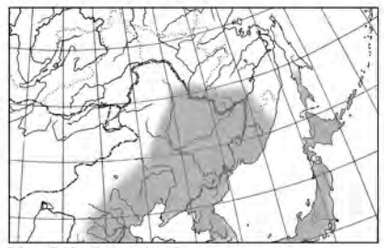

Map 235. *Catocala eminens.*

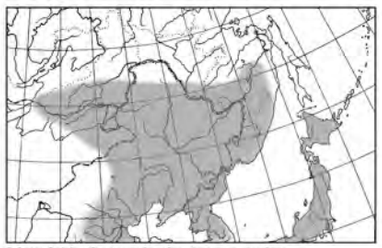

Map 236. *Catocala separans.*

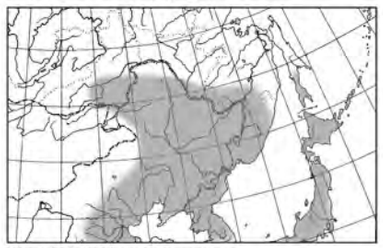

Map 237. *Catocala duplicata.*

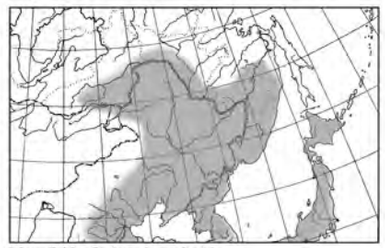

Map 238. *Catocala helena.*

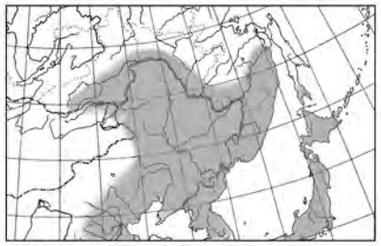

Map 239. *Catocala nymphaeoides.*

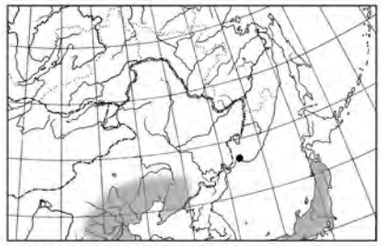

Map 240. *Catocala ella.*

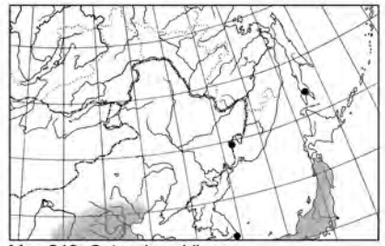

Map 241. *Catocala deuteronympha.*

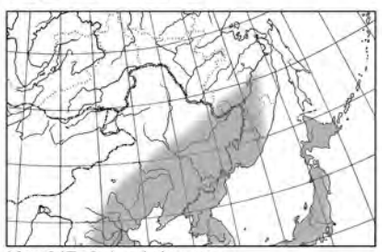

Map 242. *Catocala praegnax.*

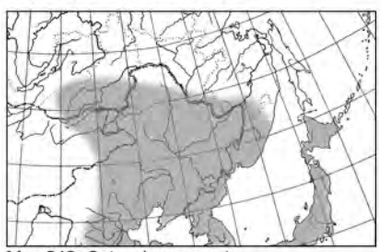

Map 243. *Catocala agitatrix.*

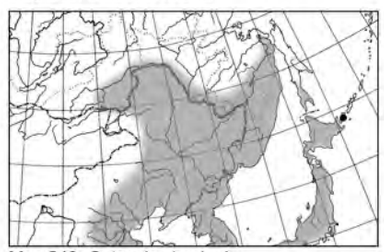

Map 244. *Catocala bella.*

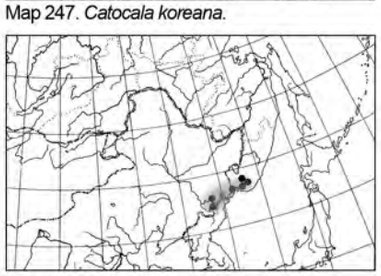

Map 245. *Catocala columbina.*

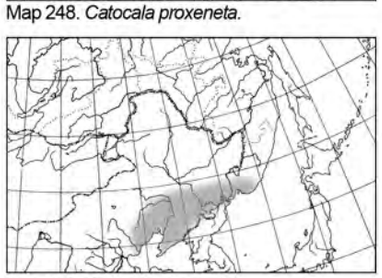

Map 246. *Catocala nubila.*

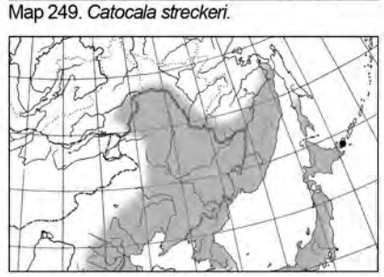

Map 247. *Catocala koreana.*

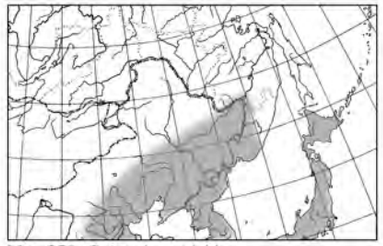

Map 248. *Catocala proxeneta.*

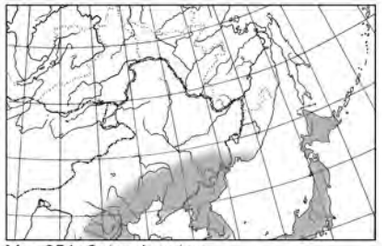

Map 249. *Catocala streckeri.*

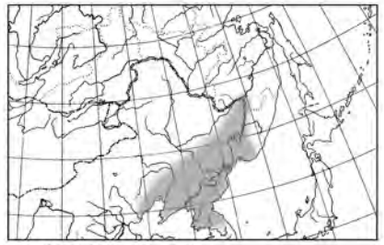

Map 250. *Catocala danilovi.*

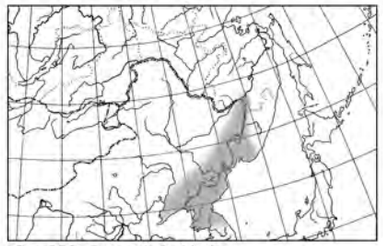

Map 251. *Catocala moltrechti.*

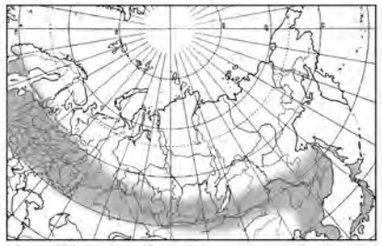

Map 252. *Catocala dissimilis.*

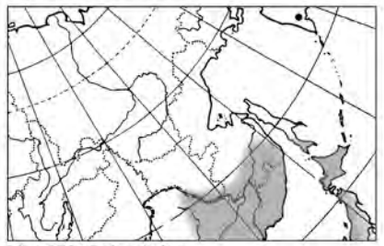

Map 253. *Catocala nagioides.*

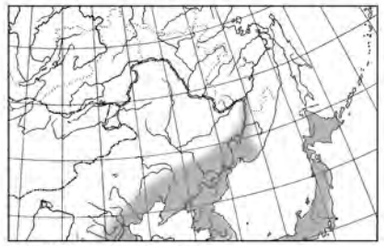

Map 254. *Catocala actaea.*

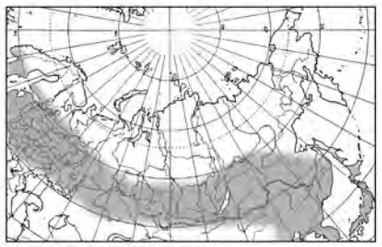

Map 255. *Catocala pirata.*

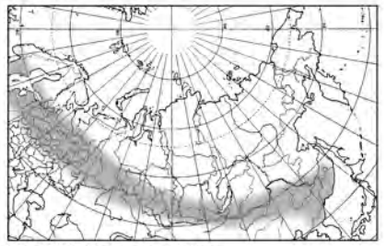

Map 256. *Catocala bokhaica.*

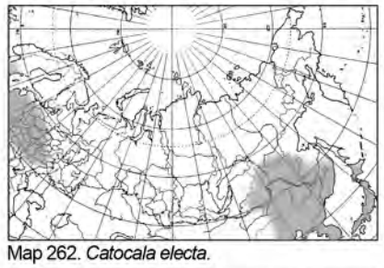

Map 257. *Catocala fraxini.*

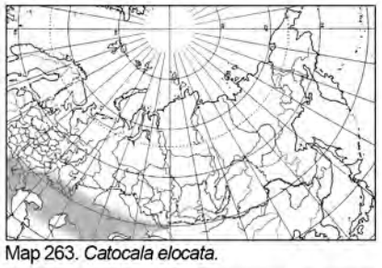

Map 258. *Catocala lara.*

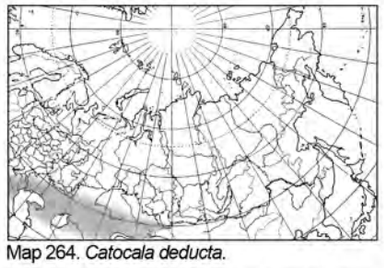

Map 259. *Catocala nivea.*

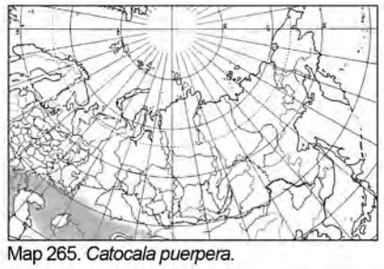

Map 260. *Catocala nupta.*

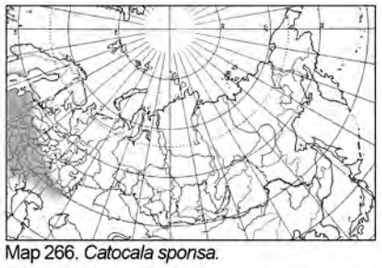

Map 261. *Catocala adultera.*

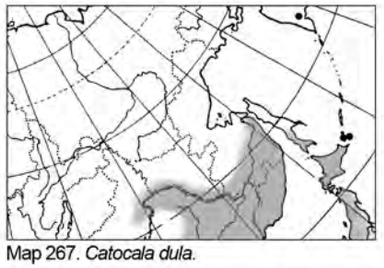

Map 262. *Catocala electa.*

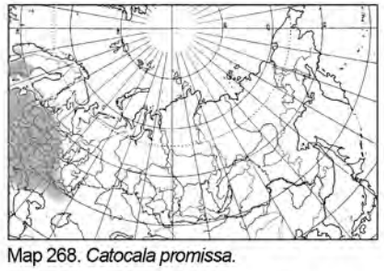

Map 263. *Catocala elocata.*

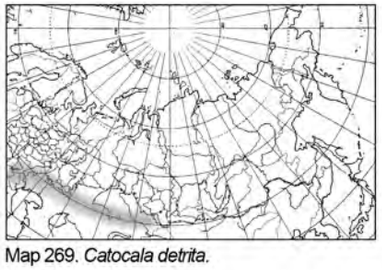

Map 264. *Catocala deducta.*

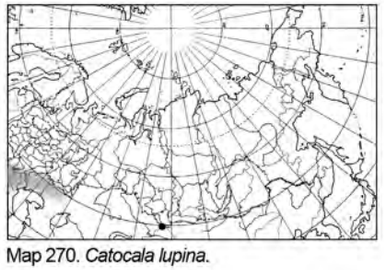

Map 265. *Catocala puerpera.*

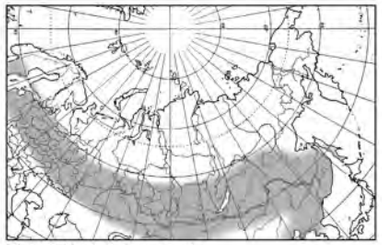

Map 266. *Catocala sponsa.*

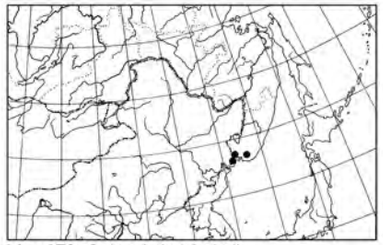

Map 267. *Catocala dula.*

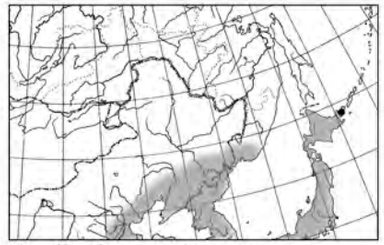

Map 268. *Catocala promissa.*

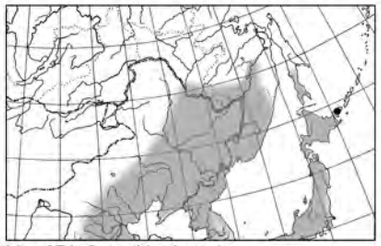

Map 269. *Catocala detrita.*

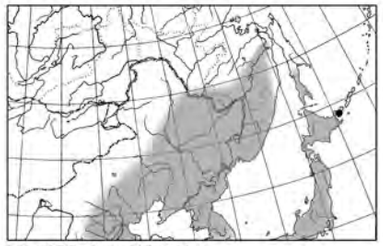

Map 270. *Catocala lupina.*

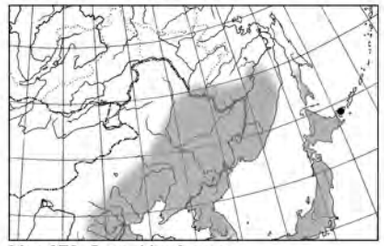

Map 271. *Catocala pacta.*

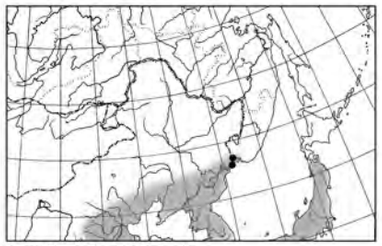

Map 272. *Catocala kotshubeji.*

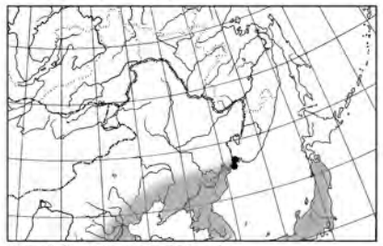

Map 273. *Hypersypnoides astrigera.*

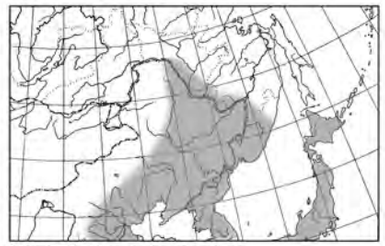

Map 274. *Sypnoides hercules.*


Map 275. *Sypnoides picta.*


Map 276. *Sypnoides fumosa.*

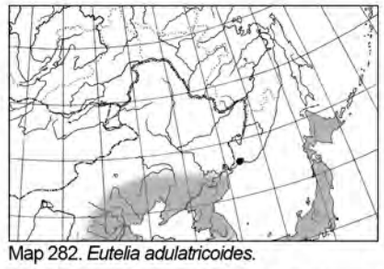

Map 277. *Daddala lucilla.*

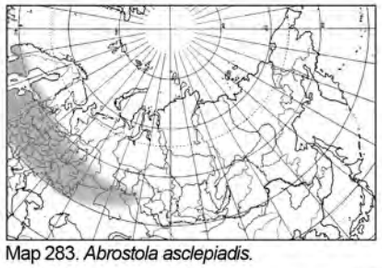

Map 278. *Hypocala deflorata.*

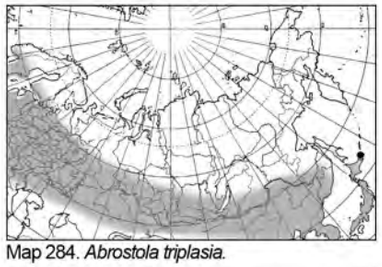

Map 279. *Hypocala subsatura.*

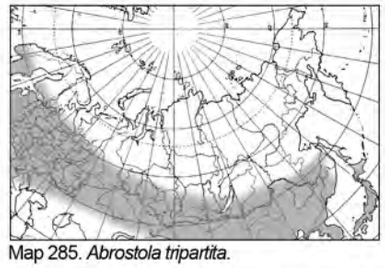

Map 280. *Hypocala violacea.*

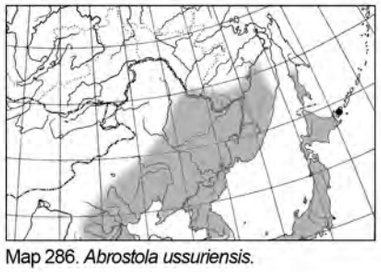

Map 281. *Eutelia geyeri.*

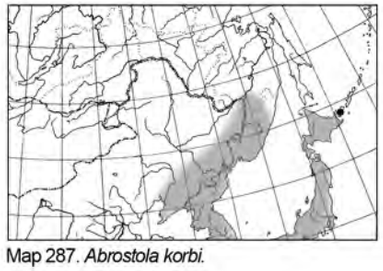

Map 282. *Eutelia adulatricoides.*

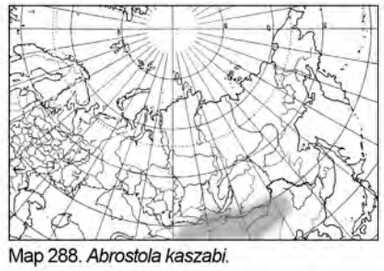

Map 283. *Abrostola asclepiadis.*

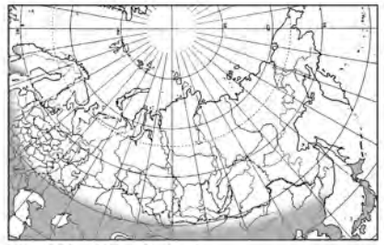

Map 284. *Abrostola triplasia.*

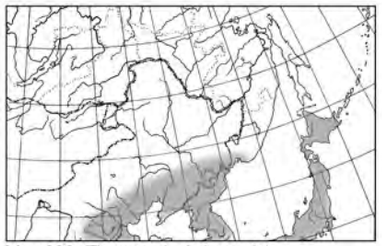

Map 285. *Abrostola tripartita.*

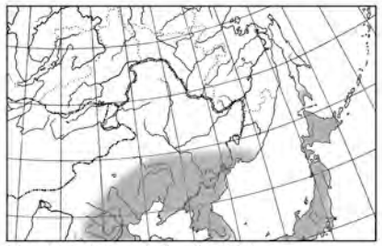

Map 286. *Abrostola ussuriensis.*

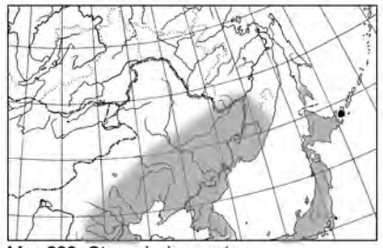

Map 287. *Abrostola korbi.*

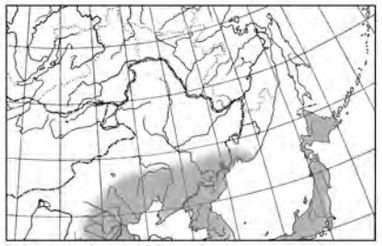

Map 288. *Abrostola kaszabi.*

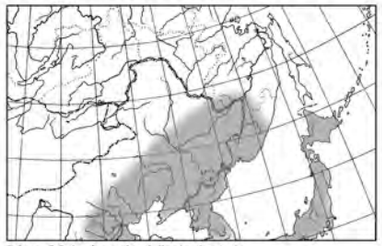

Map 289. *Trichoplusia ni.*

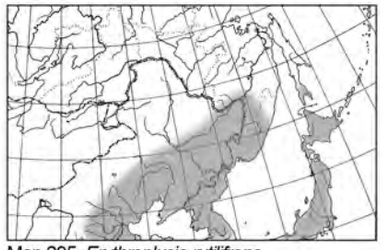

Map 290. *Thysanoplusia intermixta.*

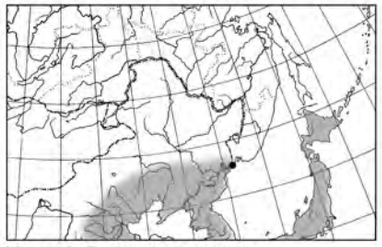

Map 291. *Ctenoplusia albostriata.*

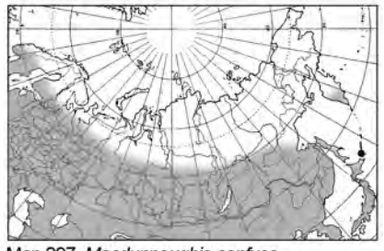

Map 292. *Ctenoplusia agnata.*

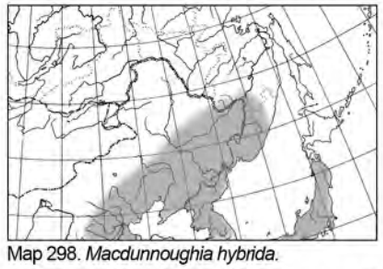

Map 293. *Anadevidia peponis.*

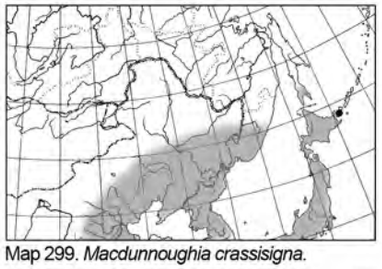

Map 294. *Anadevidia hebetata.*

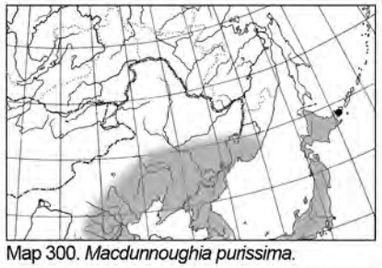

Map 295. *Erythroplusia rutilifrons.*


Map 296. *Erythroplusia pyropia.*

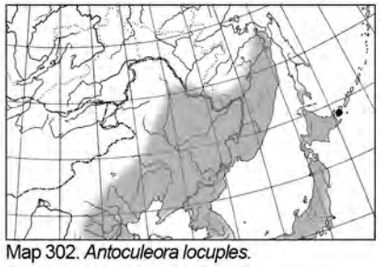

Map 297. *Macdunnoughia confusa.*

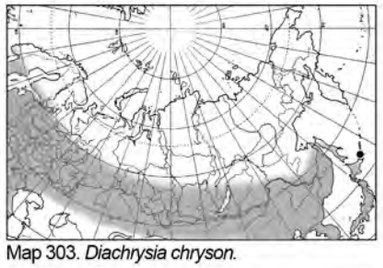

Map 298. *Macdunnoughia hybrida.*

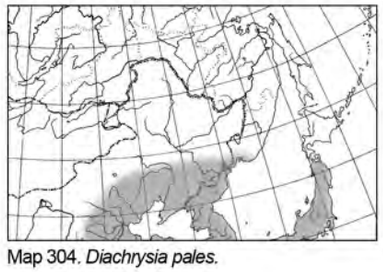

Map 299. *Macdunnoughia crassisigna.*

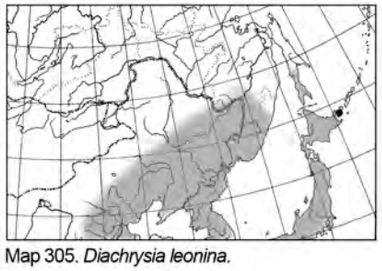

Map 300. *Macdunnoughia purissima.*

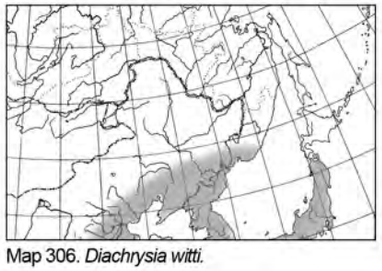

Map 301. *Sclerogenia jessica.*

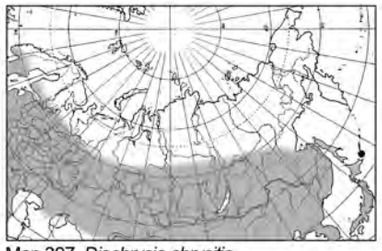

Map 302. *Antoculeora locuples.*

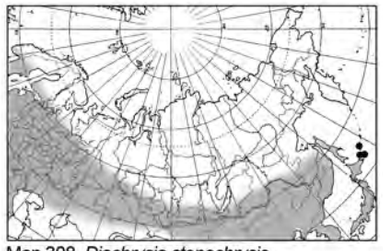

Map 303. *Diachrysia chryson.*

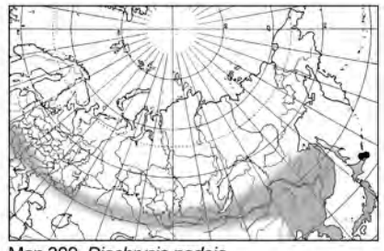

Map 304. *Diachrysia pales.*

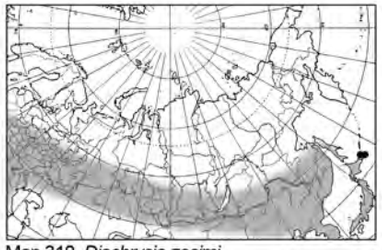

Map 305. *Diachrysia leonina.*

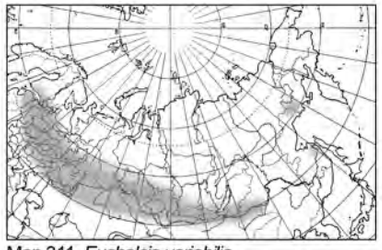

Map 306. *Diachrysia witti.*

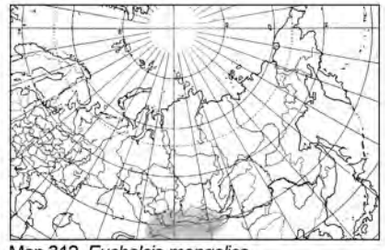

Map 307. *Diachrysia chrysitis.*

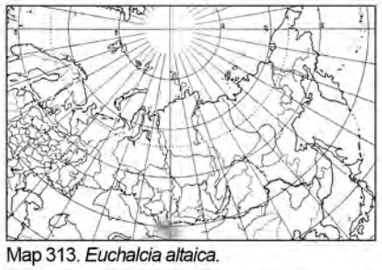

Map 308. *Diachrysia stenochrysis.*

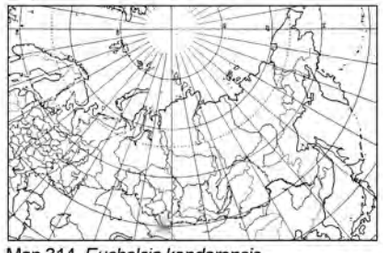

Map 309. *Diachrysia nadeja.*

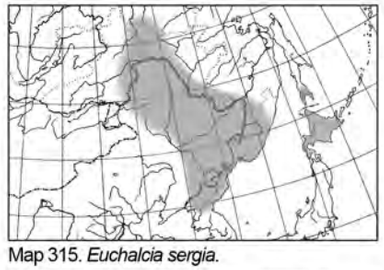

Map 310. *Diachrysia zosimi.*

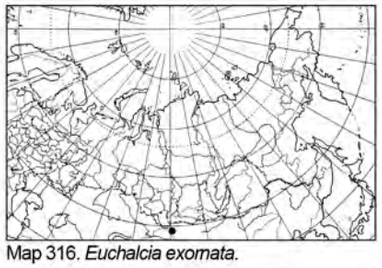

Map 311. *Euchalcia variabilis.*

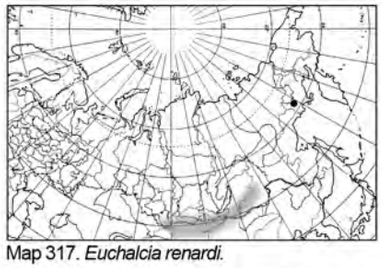

Map 312. *Euchalcia mongolica.*


Map 313. *Euchalcia altaica.*

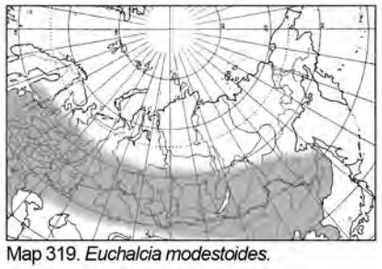

Map 314. *Euchalcia kondarensis.*


Map 315. *Euchalcia sergia.*

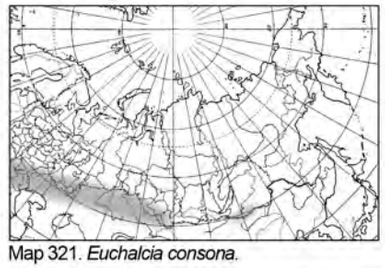

Map 316. *Euchalcia exornata.*

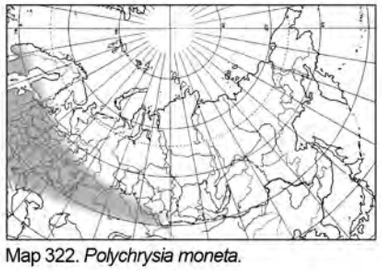

Map 317. *Euchalcia renardi.*

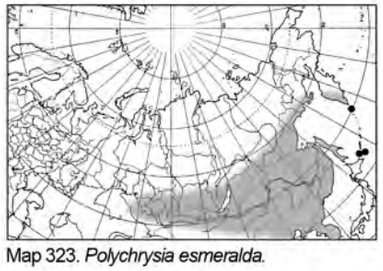

Map 318. *Euchalcia siderifera.*

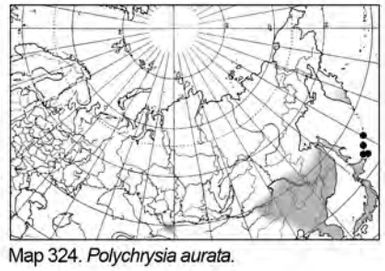

Map 319. *Euchalcia modestoides.*

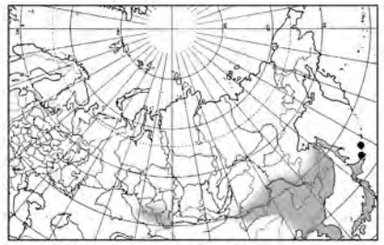

Map 320. *Euchalcia biezankoi.*

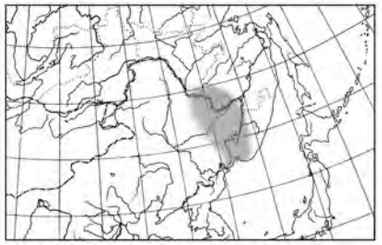

Map 321. *Euchalcia consona.*

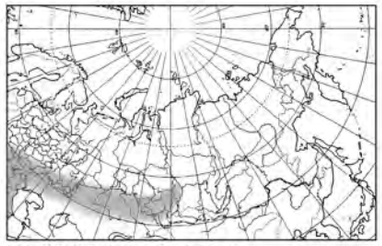

Map 322. *Polychrysia moneta.*

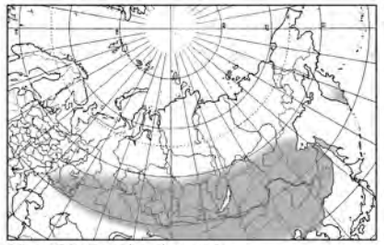

Map 323. *Polychrysia esmeralda.*

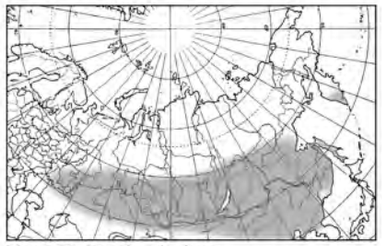

Map 324. *Polychrysia aurata.*

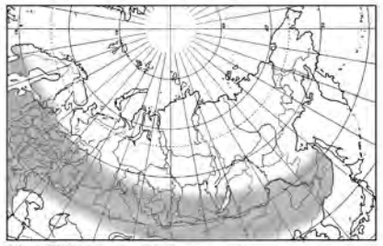

Map 325. *Polychrysia splendida.*

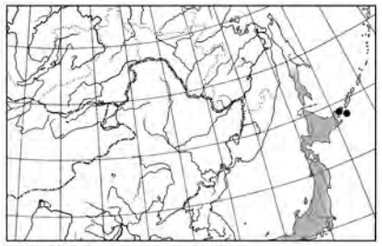

Map 326. *Polychrysia sica.*

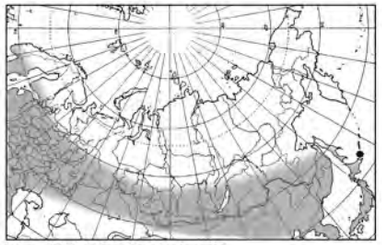

Map 327. *Panchrysia deaurata.*

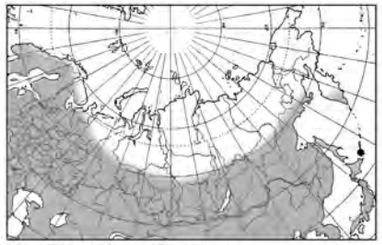

Map 328. *Panchrysia ornata.*

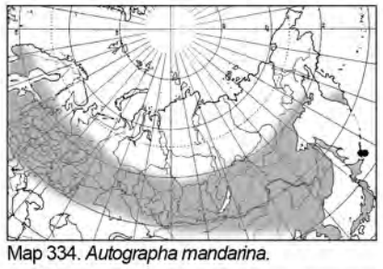

Map 329. *Panchrysia dives.*

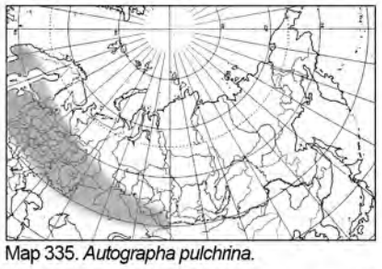

Map 330. *Lamprotes c-aureum.*

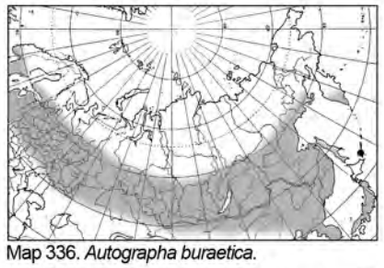

Map 331. *Lamprotes mikadina.*

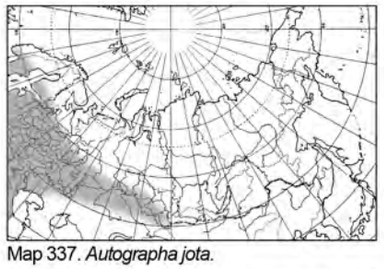

Map 332. *Plusidia cheiranthi.*

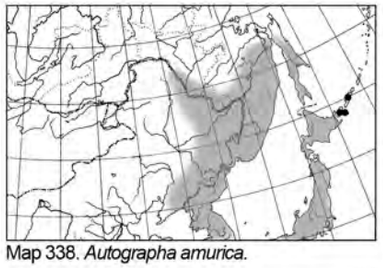

Map 333. *Autographa gamma.*

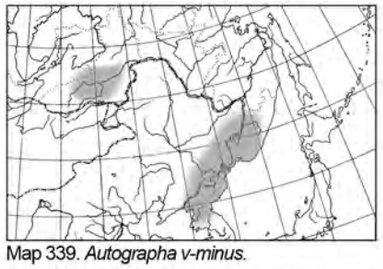

Map 334. *Autographa mandarina.*

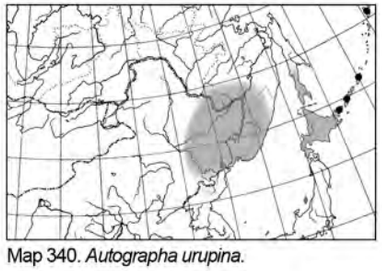

Map 335. *Autographa pulchrina.*

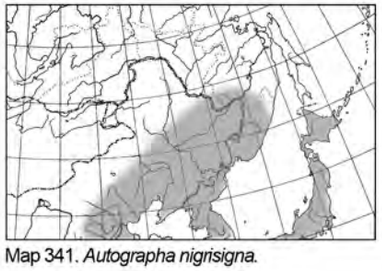

Map 336. *Autographa buraetica.*

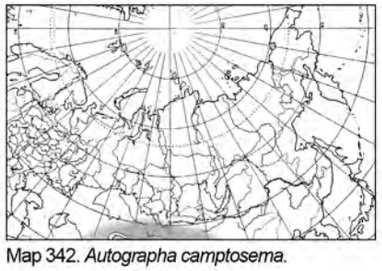

Map 337. *Autographa jota.*

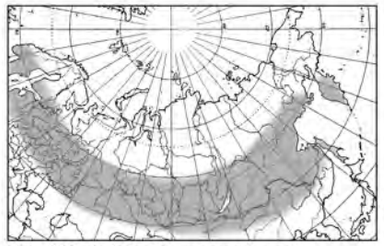

Map 338. *Autographa amurica.*

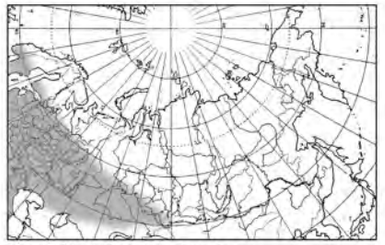

Map 339. *Autographa v-minus.*

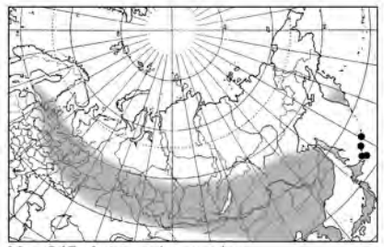

Map 340. *Autographa urupina.*

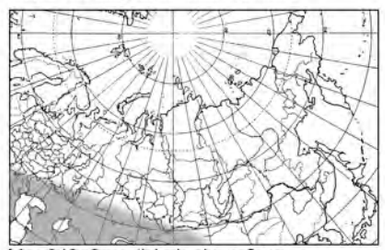

Map 341. *Autographa nigrisigna.*

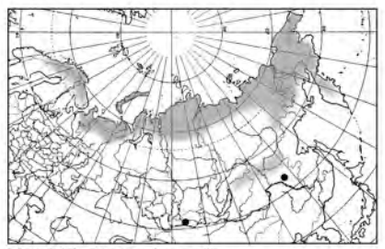

Map 342. *Autographa camptosema.*

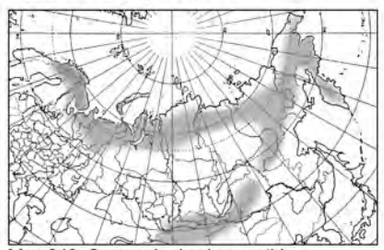

Map 343. *Autographa macrogamma.*

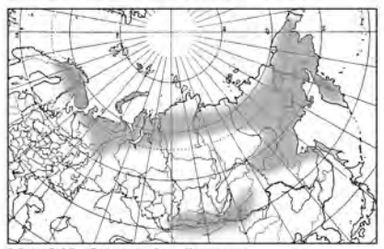

Map 344. *Autographa bractea.*

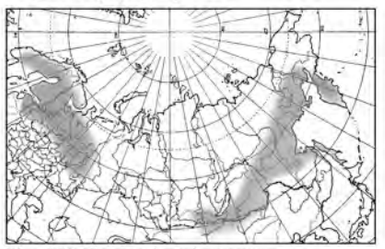

Map 345. *Autographa excelsa.*

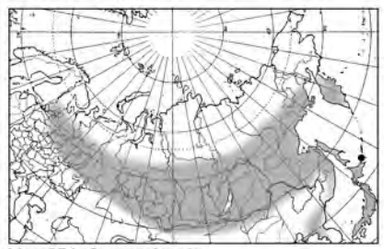

Map 346. *Cornutiplusia circumflexa*

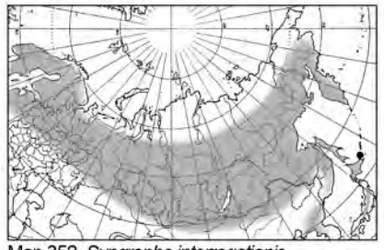

Map 347. *Syngrapha parilis.*

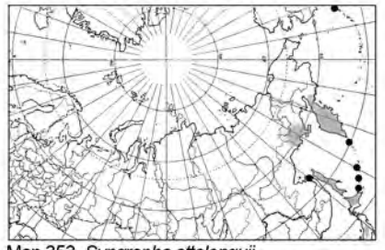

Map 348. *Syngrapha hochenwarthi.*

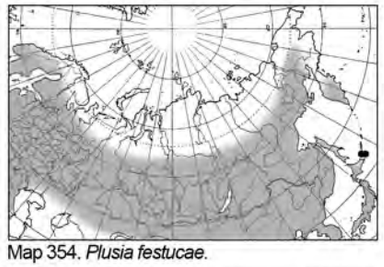

Map 349. *Syngrapha diasema.*

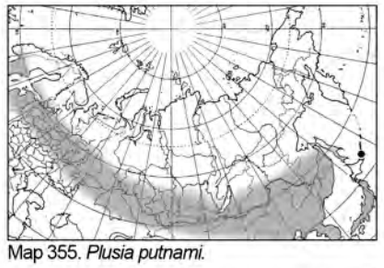

Map 350. *Syngrapha microgamma.*

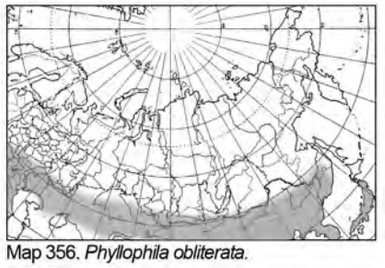

Map 351. *Syngrapha ain.*

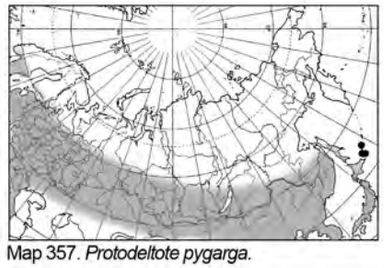

Map 352. *Syngrapha interrogationis.*

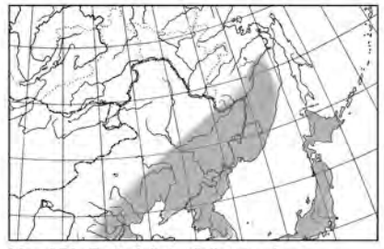

Map 353. *Syngrapha ottolenguii.*

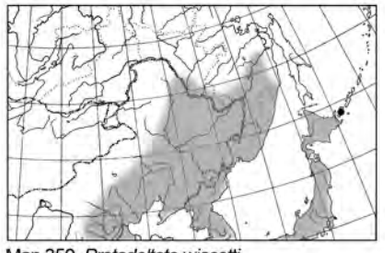

Map 354. *Plusia festucae.*

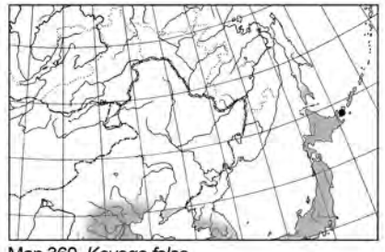

Map 355. *Plusia putnami.*

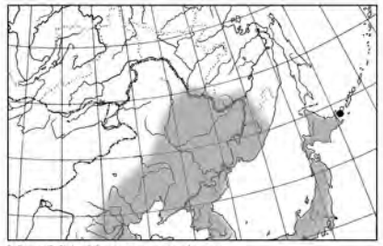

Map 356. *Phyllophila obliterata.*

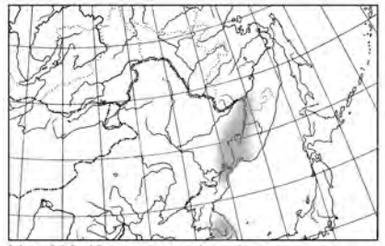

Map 357. *Protodeltote pygarga.*

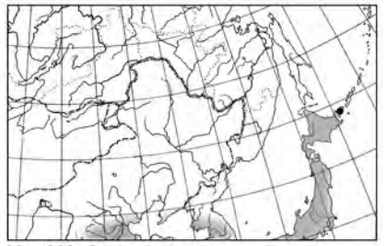

Map 358. *Protodeltote distinguenda.*

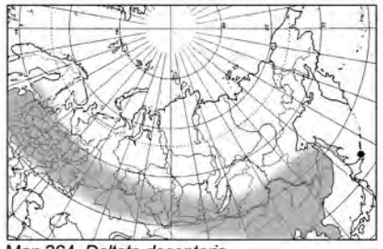

Map 359. *Protodeltote wiscotti.*

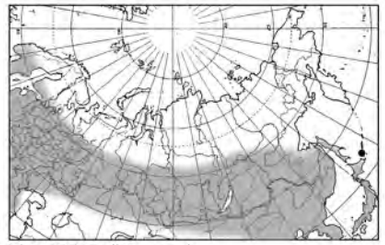

Map 360. *Koyaga falsa.*

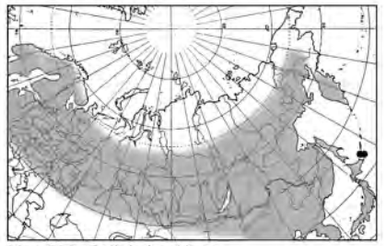

Map 361. *Koyaga numisma.*

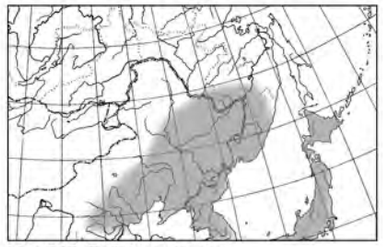

Map 362. *Koyaga magninumisma.*

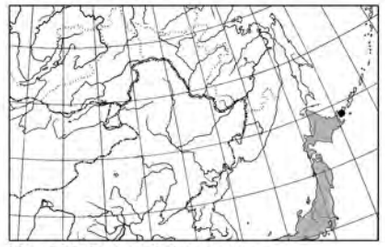

Map 363. *Sugia stygia*

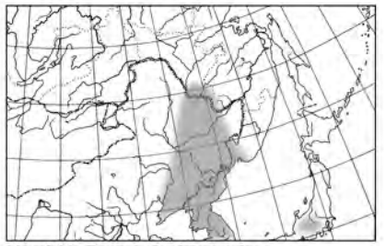

Map 364. *Deltote deceptoria.*

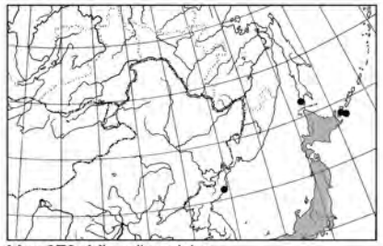

Map 365. *Deltote uncula.*

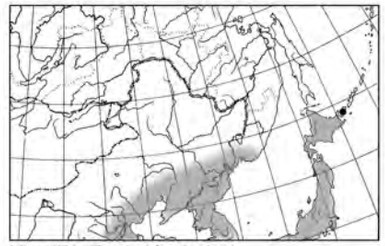

Map 366. *Deltote bankiana.*

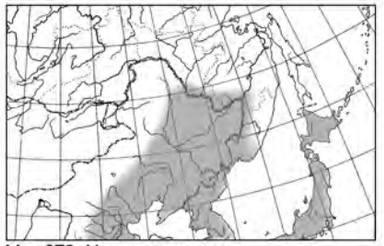

Map 367. *Deltote nemorum.*

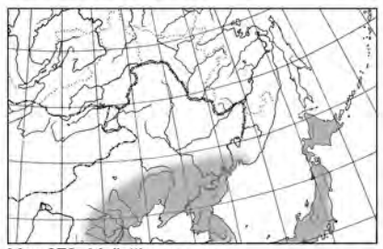

Map 368. *Pseudodeltote brunnea.*

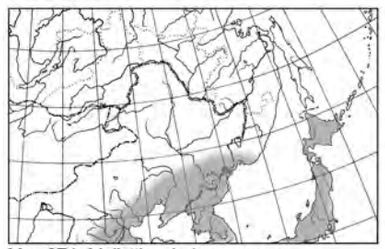

Map 369. *Paraphyllophila confusa*

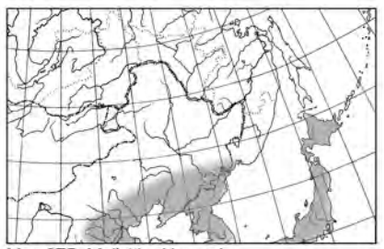

Map 370. *Micardia pulchra.*

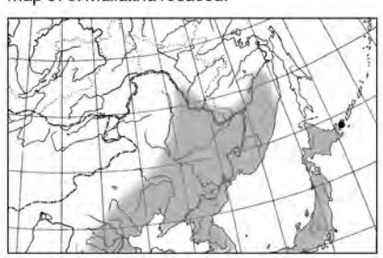

Map 371. *Erastroides fentoni.*

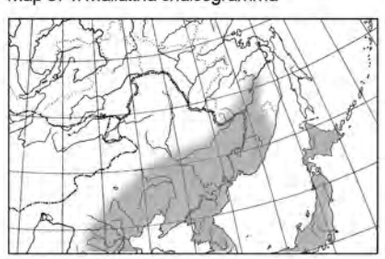

Map 372. *Naranga aenescens.*

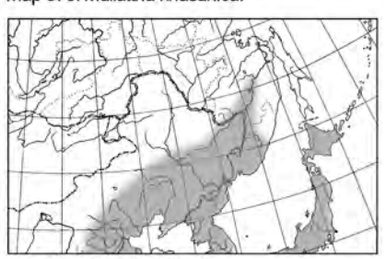

Map 373. *Maliattha rosacea.*

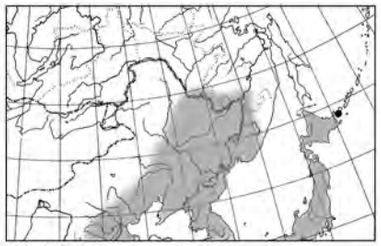

Map 374. *Maliattha chalcogramma*

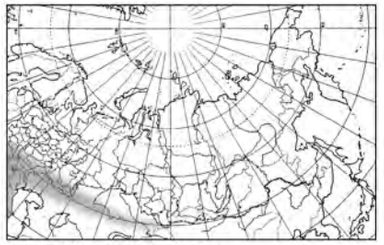

Map 375. *Maliattha khasanica.*

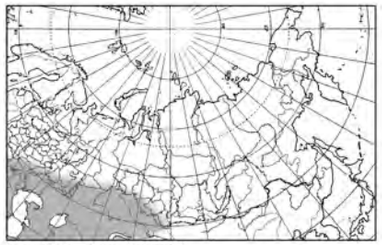

Map 376. *Maliattha bella.*

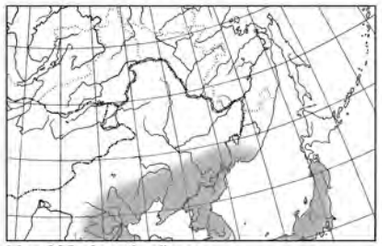

Map 377. *Chorsia costimacula.*

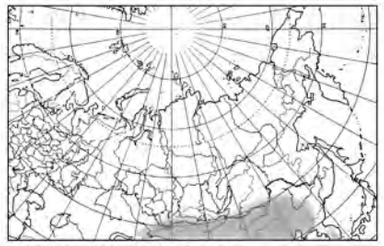

Map 378. *Chorsia noloides.*

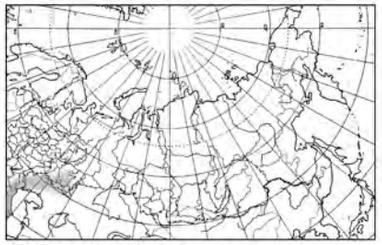

Map 379. *Chorsia mollicula.*

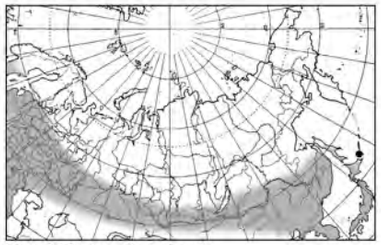

Map 380. *Acontia melanura.*

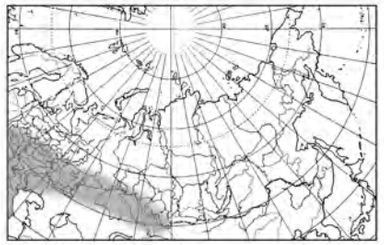

Map 381. *Acontia lucida.*

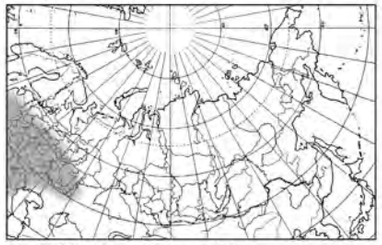

Map 382. *Acontia olivacea.*

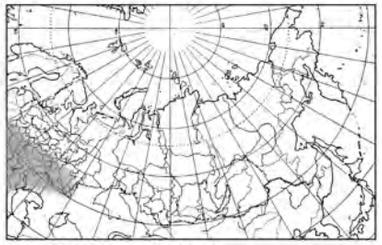

Map 383. *Acontia martjanovi.*

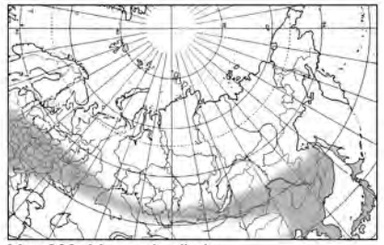

Map 384. *Acontia candefacta.*

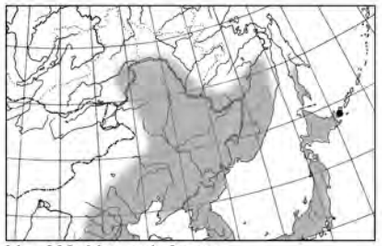

Map 385. *Acontia trabealis.*

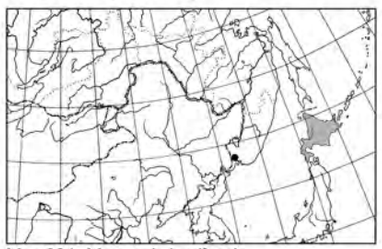

Map 386. *Aedia funesta.*

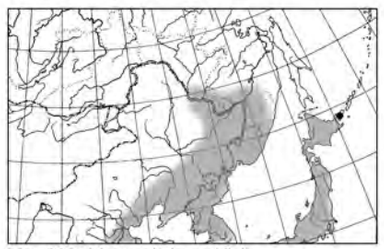

Map 387. *Meganola togatulalis.*

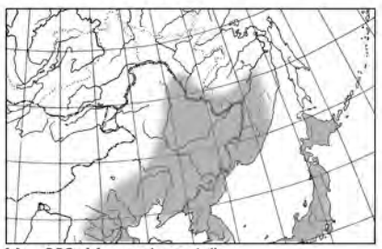

Map 388. *Meganola strigula.*

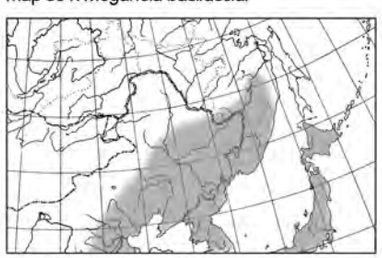

Map 389. *Meganola albula.*

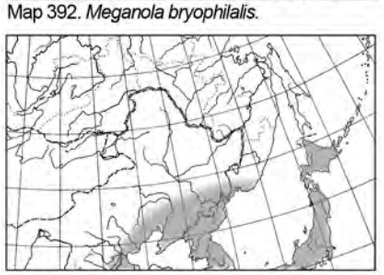

Map 390. *Meganola fumosa.*

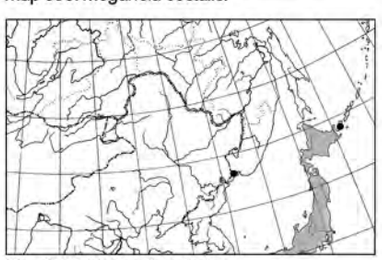

Map 391. *Meganola basifascia.*

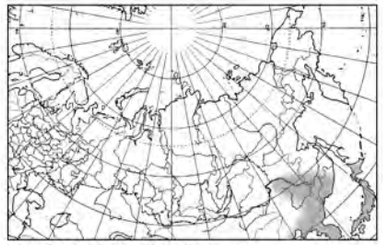

Map 392. *Meganola bryophilalis.*

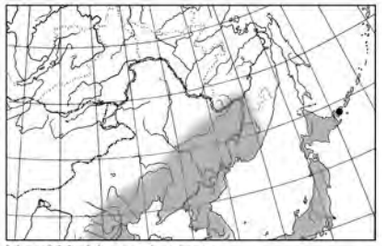

Map 393. *Meganola costalis.*

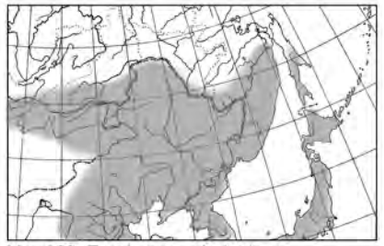

Map 394. *Meganola strigulosa.*

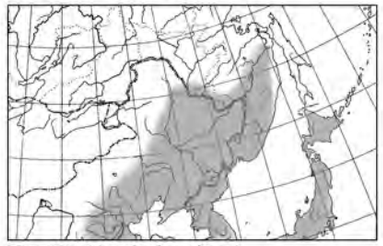

Map 395. *Meganola shimekii.*

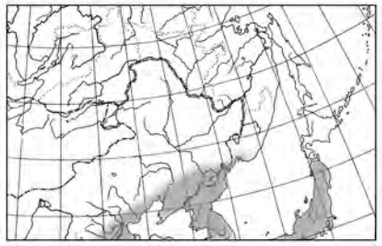

Map 396. *Meganola mikabo.*

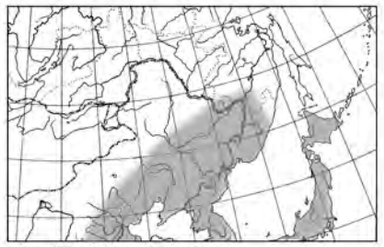

Map 397. *Meganola subgigas.*

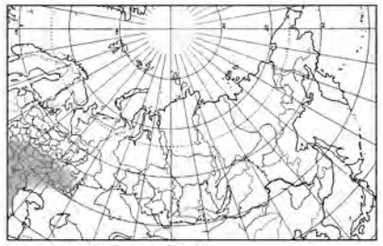

Map 398. *Meganola gigas.*

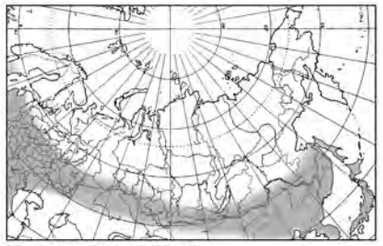

Map 399. *Evonima mandschuriana.*

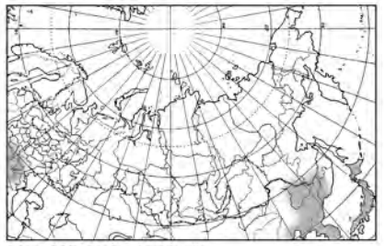

Map 400. *Manoba banghaasi.*

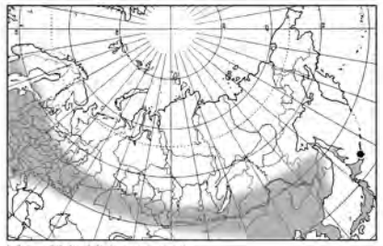

Map 401. *Casminola pulchella.*

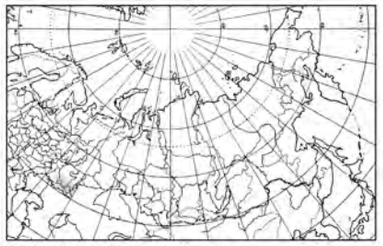

Map 402. *Nolathripa lactaria.*

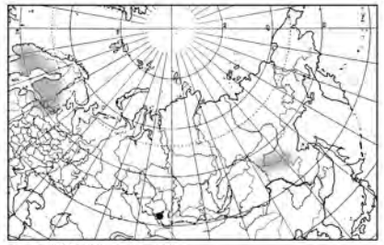

Map 403. *Nola cucullatella.*

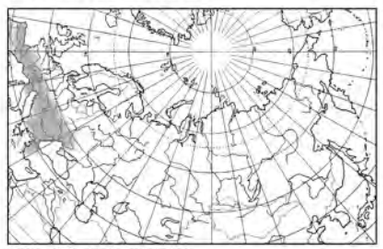

Map 404. *Nola confusalis.*

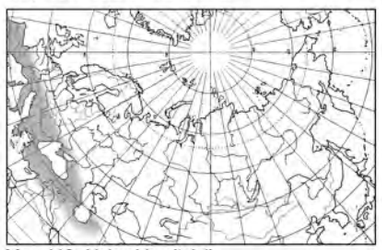

Map 405. *Nola cicatricalis.*

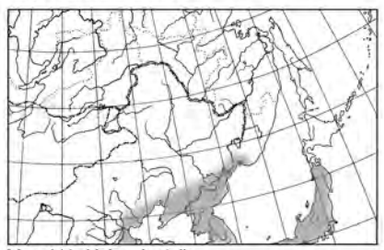

Map 406. *Nola aerugula.*

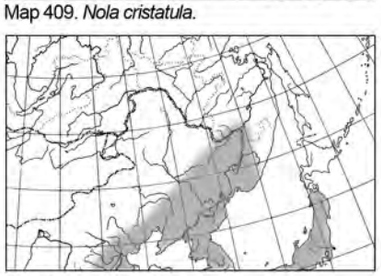

Map 407. *Nola crambiformis.*

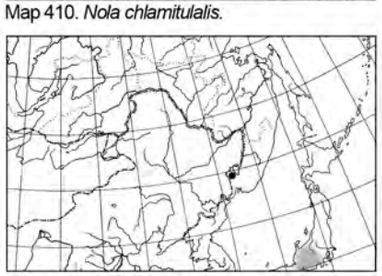

Map 408. *Nola karelica.*

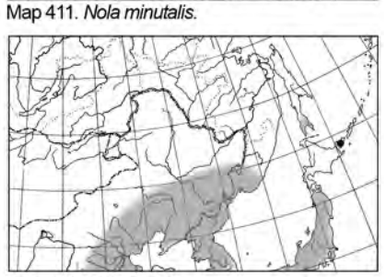

Map 409. *Nola cristatula.*

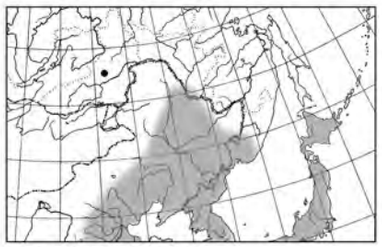

Map 410. *Nola chlamitulalis.*

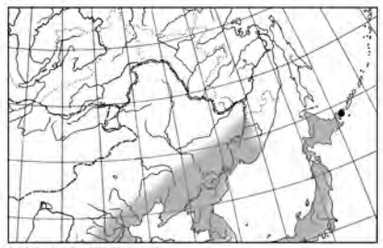

Map 411. *Nola minutalis.*

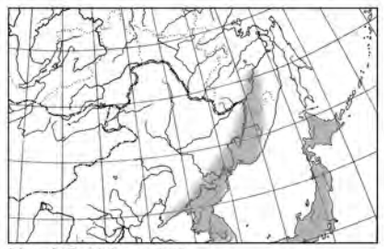

Map 412. *Nola taeniata.*

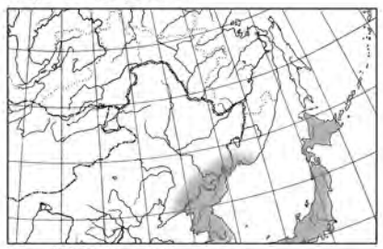

Map 413. *Nola umetsui.*

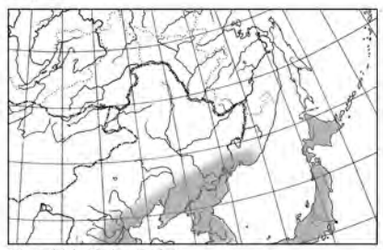

Map 414. *Nola innocua.*

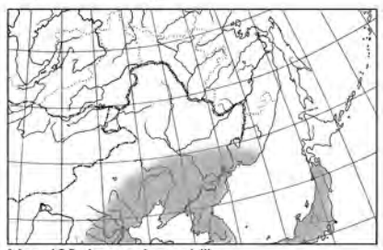

Map 415. *Nola japonibia.*

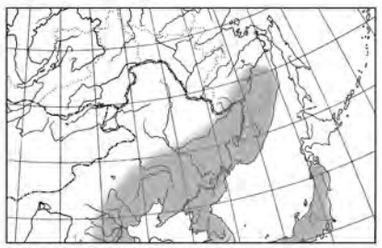

Map 416. *Nola emi.*

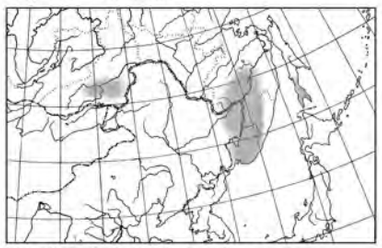

Map 417. *Nola neglecta.*

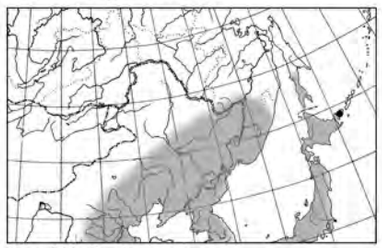

Map 418. *Nola nami.*

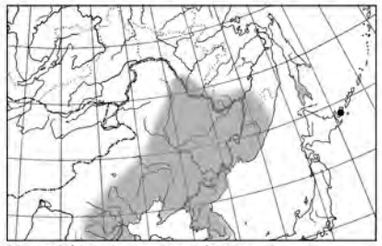

Map 419. *Nola ebatoi.*

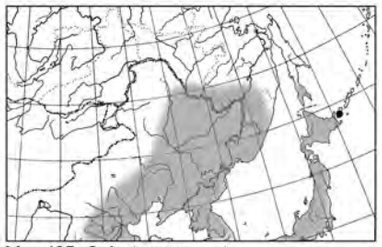

Map 420. *Iragaodes nobilis.*

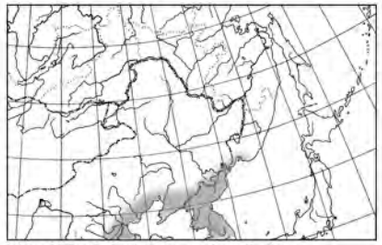

Map 421. *Parhylophila celsiana.*

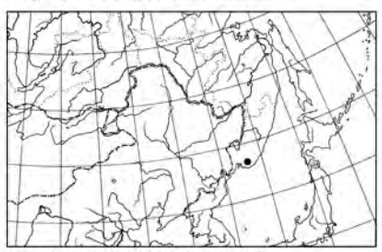

Map 422. *Parhylophila buddhae.*

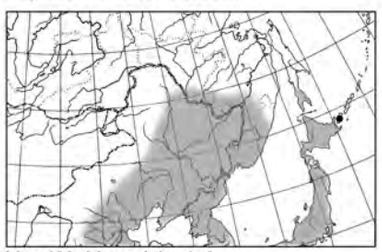

Map 423. *Kerala decipiens.*

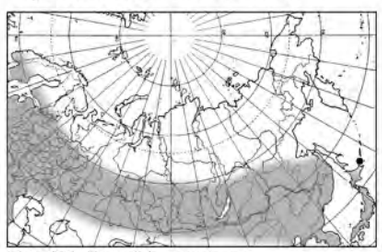

Map 424. *Gelastocera ochroleucana.*

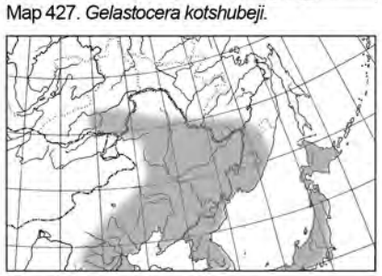

Map 425. *Gelastocera exusta.*

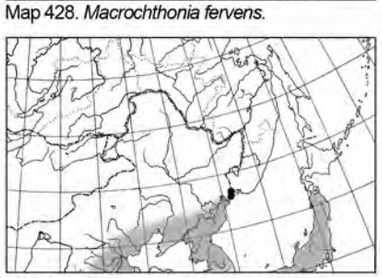

Map 426. *Gelastocera eminentissima.*

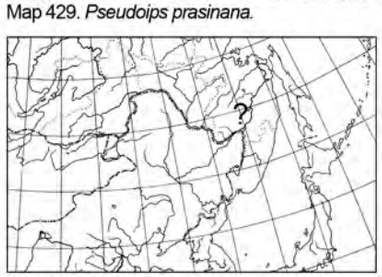

Map 427. *Gelastocera kotshubeji.*

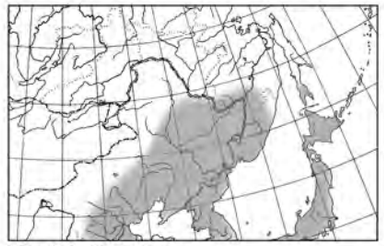

Map 428. *Macrochthonia fervens.*

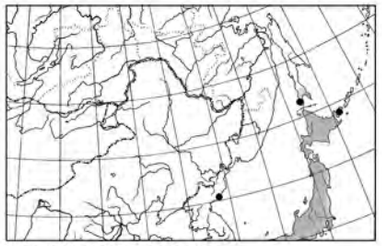

Map 429. *Pseudoips prasinana.*

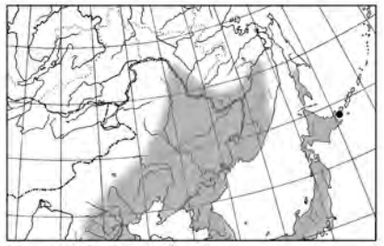

Map 430. *Pseudoips sylpha.*

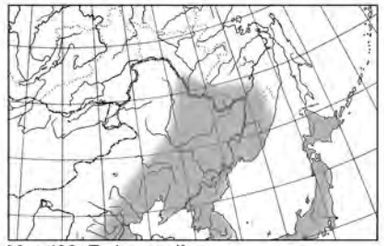

Map 431. *Camptoloma interiorata.*

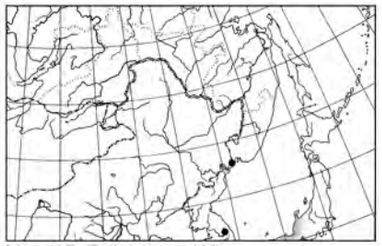

Map 432. *Aiteta curvilinea.*

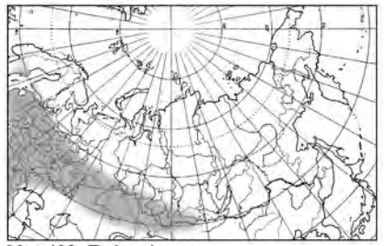

Map 433. *Sinna extrema.*

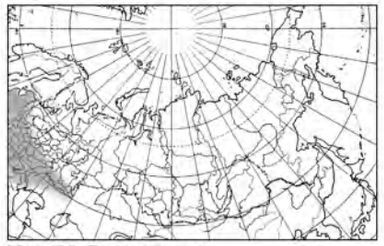

Map 434. *Ariolica argentea.*

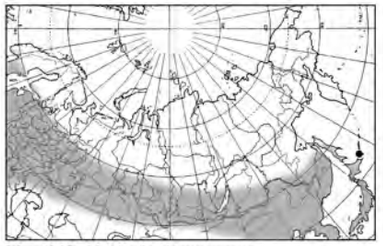

Map 435. *Earias pudicana.*

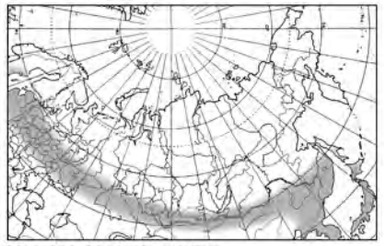

Map 436. *Earias roseifera.*

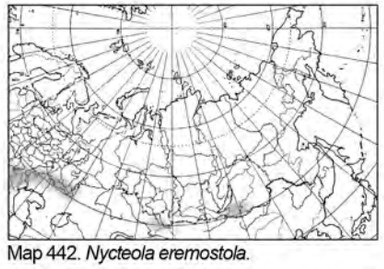

Map 437. *Earias roseoviridis.*

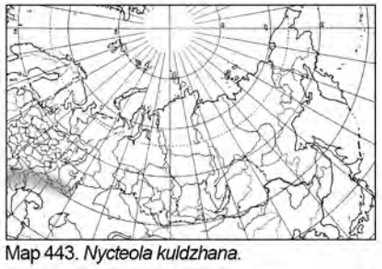

Map 438. *Earias clorana.*

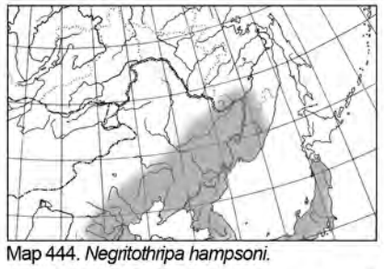

Map 439. *Earias vernana.*


Map 440. *Nycteola degenerana.*

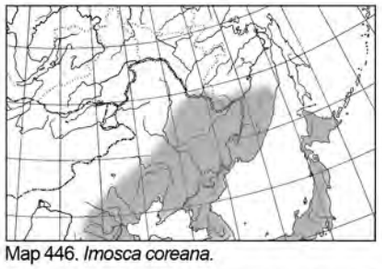

Map 441. *Nycteola asiatica.*

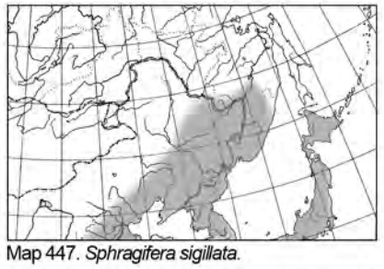

Map 442. *Nycteola eremostola.*

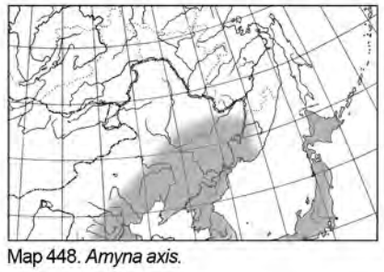

Map 443. *Nycteola kuldzhana.*

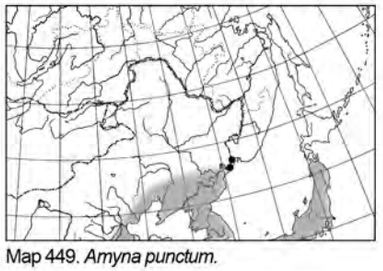

Map 444. *Negritothripa hampsoni.*

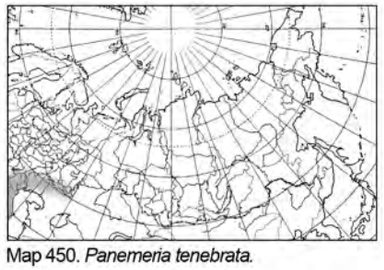

Map 445. *Eligma narcissus.*

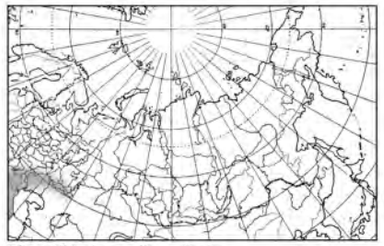

Map 446. *Imosca coreana.*

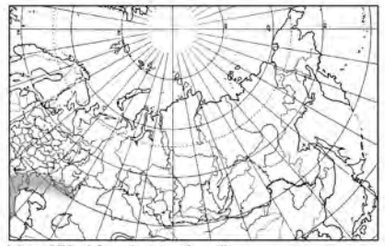

Map 447. *Sphragifera sigillata.*

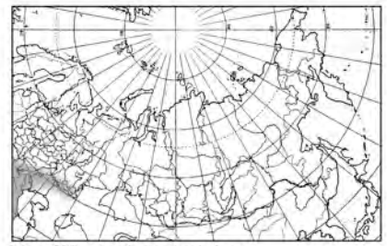

Map 448. *Amyna axis.*

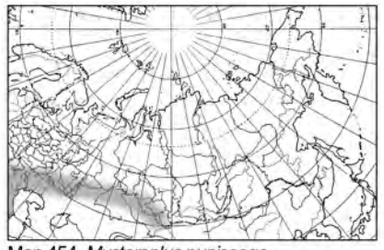

Map 449. *Amyna punctum.*

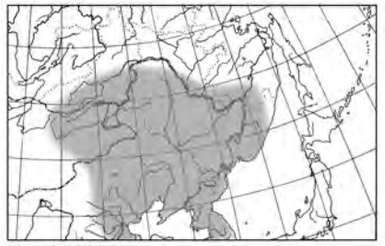

Map 450. *Panemeria tenebrata.*

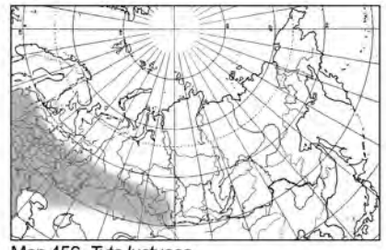

Map 451. *Apaustis rupicola.*

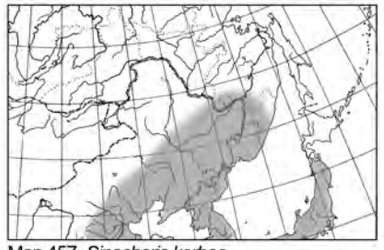

Map 452. *Mesotrosta signalis.*

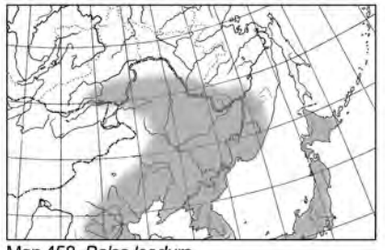

Map 453. *Aegle kaekeritziana.*

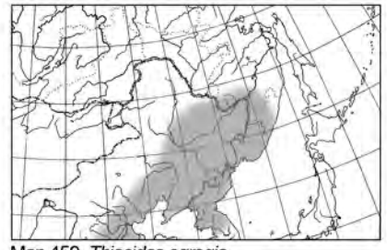

Map 454. *Mycteroplus puniceago.*

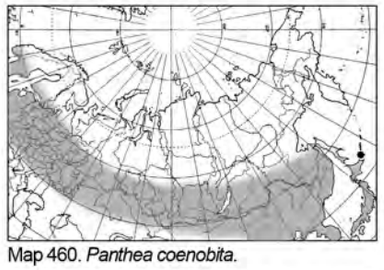

Map 455. *Mycteroplus cornuta.*

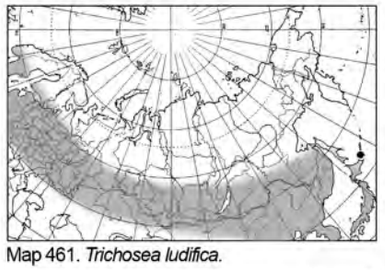

Map 456. *Tyta luctuosa.*

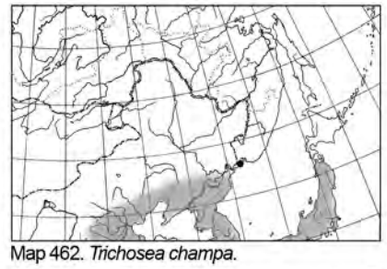

Map 457. *Sinocharis korbae*

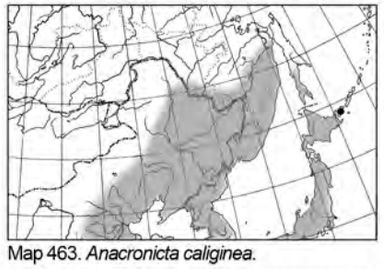

Map 458. *Balsa leodura.*


Map 459. *Thiacidas egregia.*

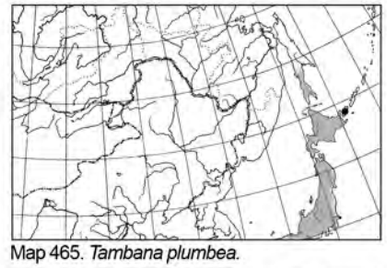

Map 460. *Panthea coenobita.*

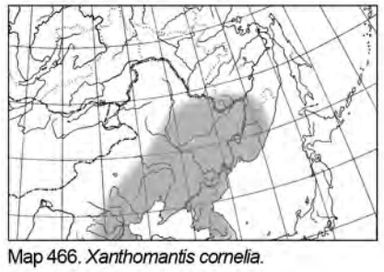

Map 461. *Trichosea ludifica.*


Map 462. *Trichosea champa.*

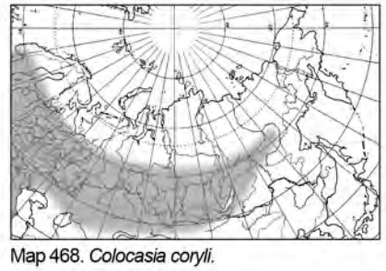

Map 463. *Anacronicta caliginea.*

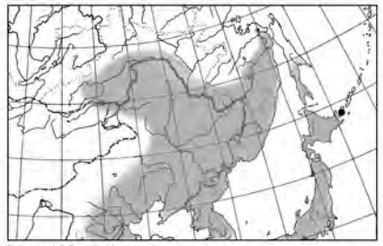

Map 464. *Anacronicta nitida.*

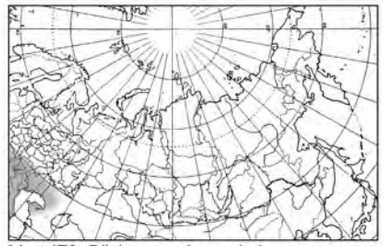

Map 465. *Tambana plumbea.*

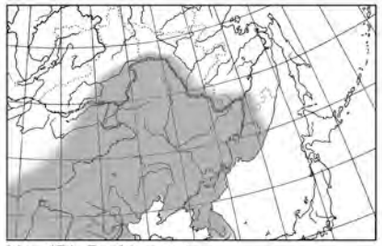

Map 466. *Xanthomantis cornelia.*

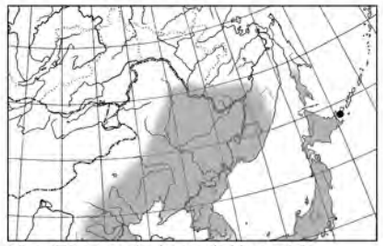

Map 467. *Xanthomantis contaminata.*

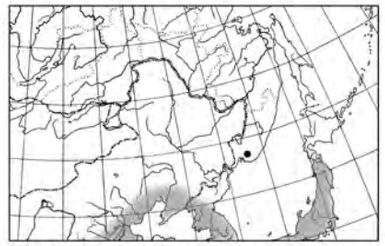

Map 468. *Colocasia coryli.*

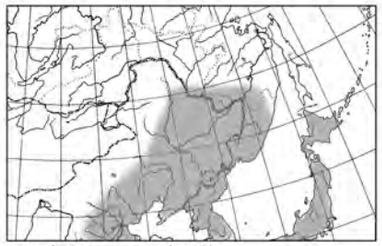

Map 469. *Colocasia mus.*

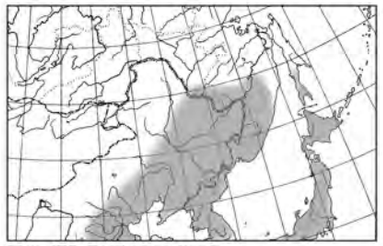

Map 470. *Diloba caeruleocephala.*

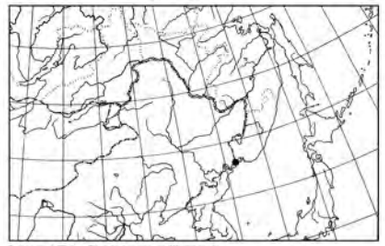

Map 471. *Raphia peustera.*

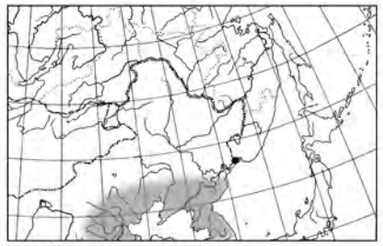

Map 472. *Cymatophoropsis trimaculata.*

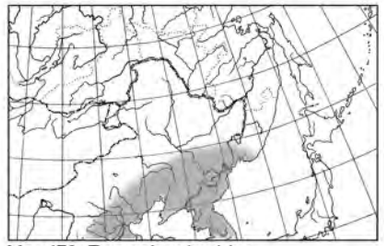

Map 473. *Cymatophoropsis unca.*

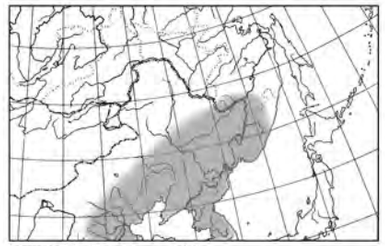

Map 474. *Nacna malachitis.*

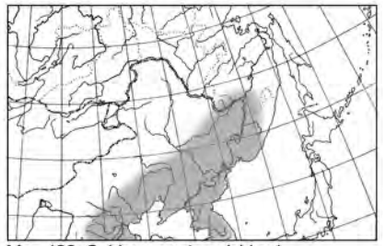

Map 475. *Belciades niveola.*

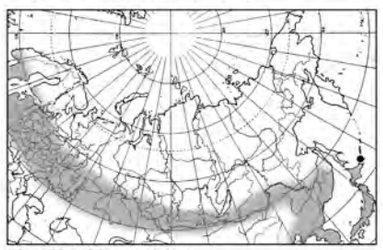

Map 476. *Belciana siitanae.*

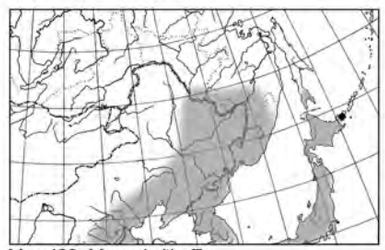

Map 477. *Belciana staudingeri.*

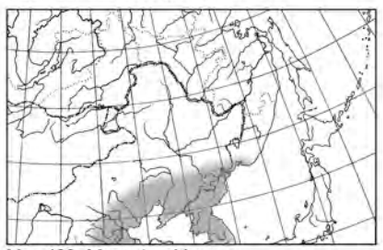

Map 478. *Euromoia subpulchra.*

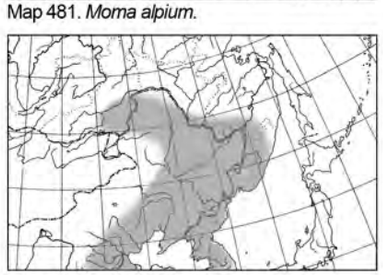

Map 479. *Euromoia mixta.*

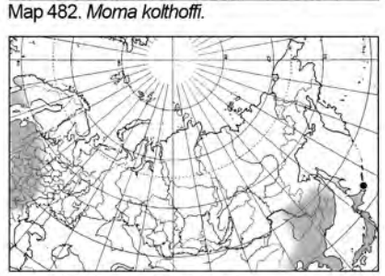

Map 480. *Subleuconycta palshkovi.*

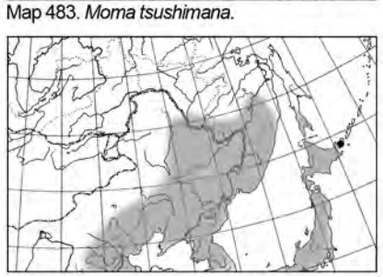

Map 481. *Moma alpium.*

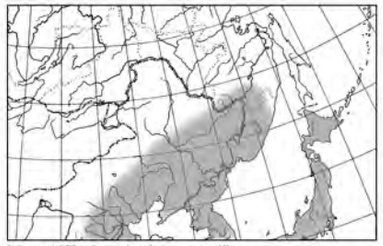

Map 482. *Moma kolthoffi.*

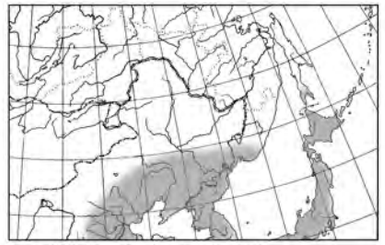

Map 483. *Moma tsushimana.*

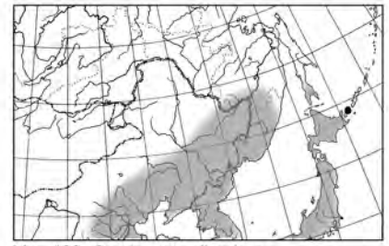

Map 484. *Gerbathodes paupera.*

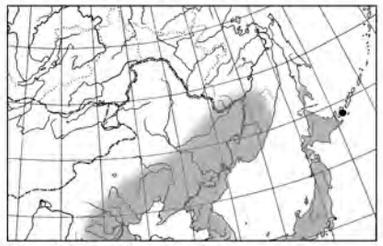

Map 485. *Craniophora ligustri.*

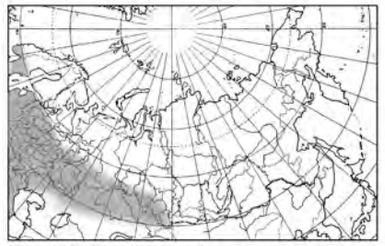

Map 486. *Craniophora praeclara.*

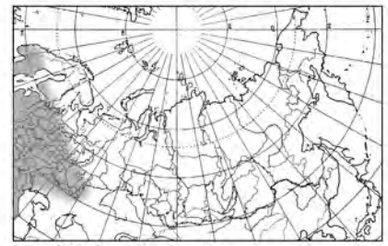

Map 487. *Craniophora pacifica.*

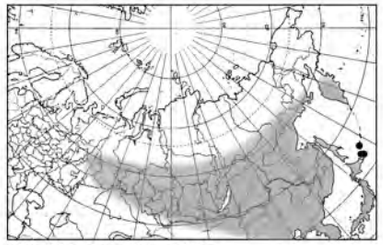

Map 488. *Cranionycta jankowskii.*

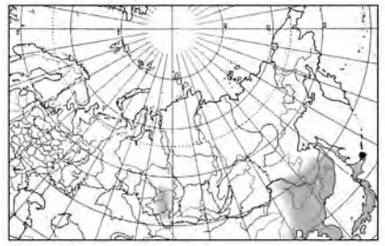

Map 489. *Cranionycta albonigra.*

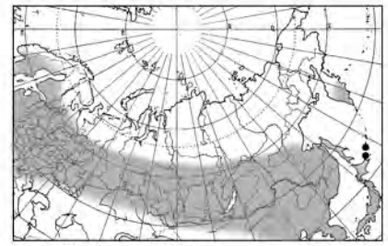

Map 490. *Cranionycta oda.*

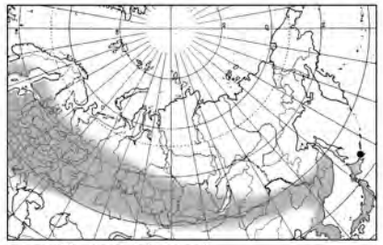

Map 491. *Acronicta aceris.*

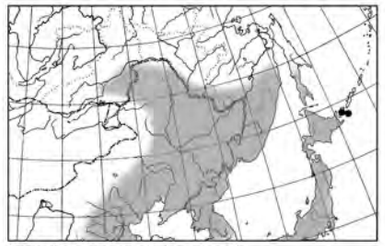

Map 492. *Acronicta leporina.*

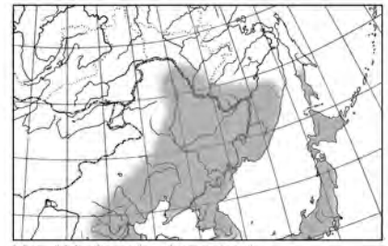

Map 493. *Acronicta vulpina.*

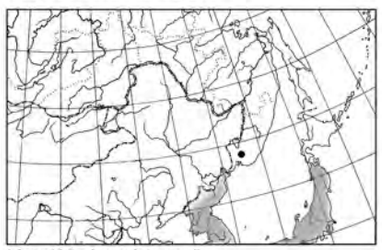

Map 494. *Acronicta major.*

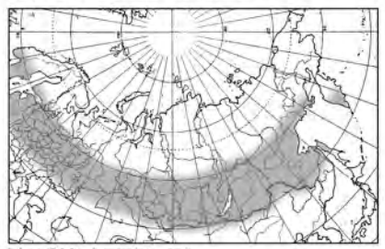

Map 495. *Acronicta tridens.*

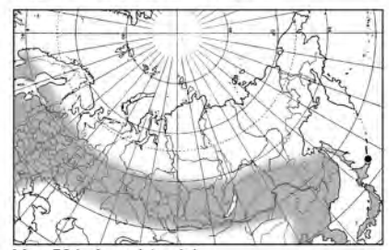

Map 496. *Acronicta cuspis.*

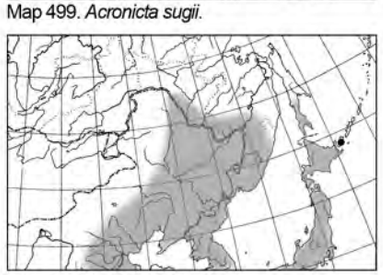

Map 497. *Acronicta intermedia.*

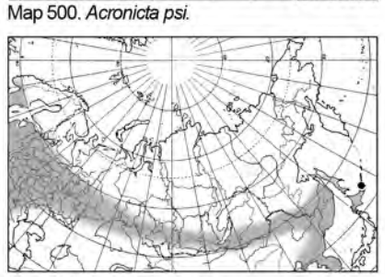

Map 498. *Acronicta leucocuspis.*

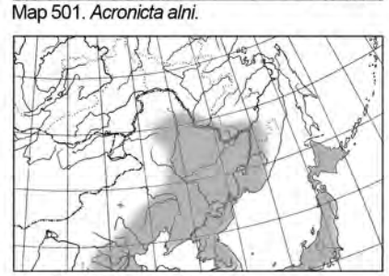

Map 499. *Acronicta sugii.*

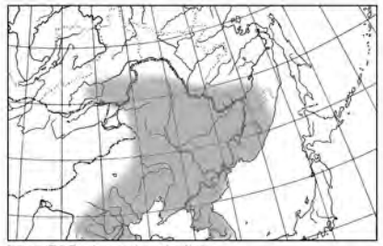

Map 500. *Acronicta psi.*

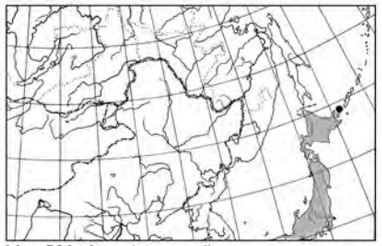

Map 501. *Acronicta alni.*

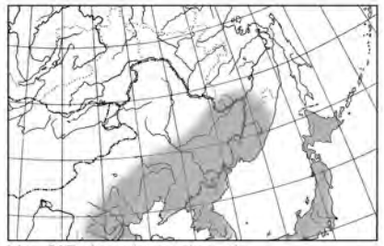

Map 502. *Acronicta adaucta.*

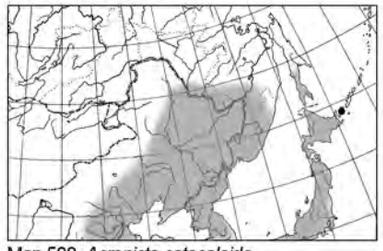

Map 503. *Acronicta strigosa.*

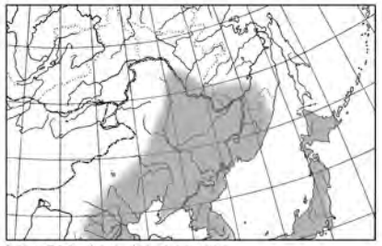

Map 504. *Acronicta jozana.*

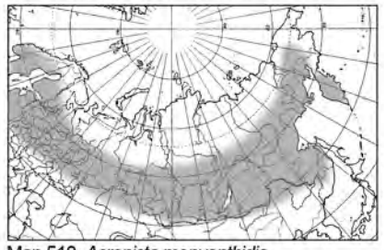

Map 505. *Acronicta bellula.*

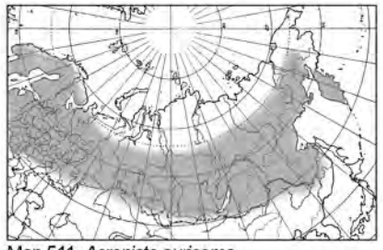

Map 506. *Acronicta omorii.*

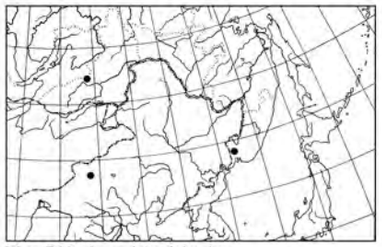

Map 507. *Acronicta carbonaria.*

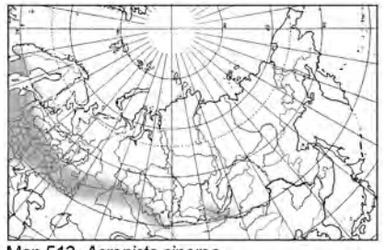

Map 508. *Acronicta catocaloida.*

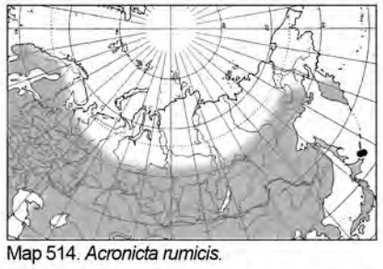

Map 509. *Acronicta hercules.*

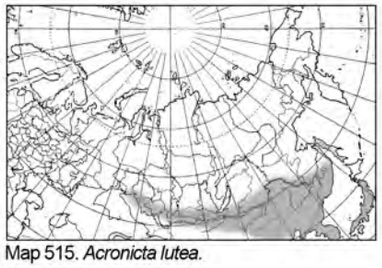

Map 510. *Acronicta menyanthidis.*

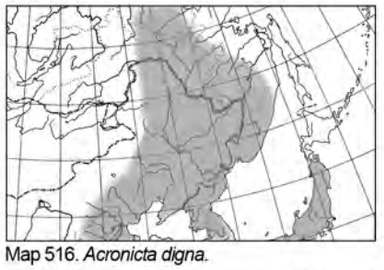

Map 511. *Acronicta auricoma.*

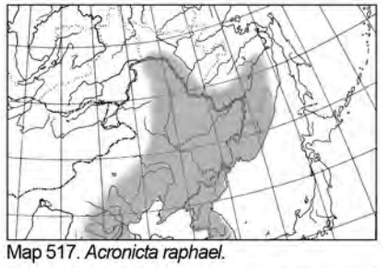

Map 512. *Acronicta dahurica.*

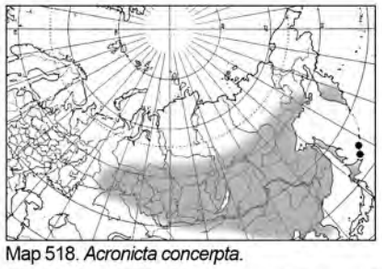

Map 513. *Acronicta cinerea.*

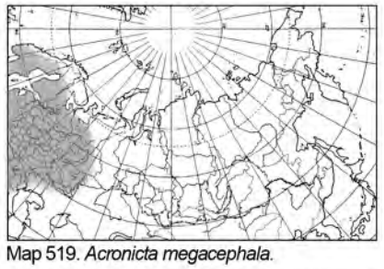

Map 514. *Acronicta rumicis.*

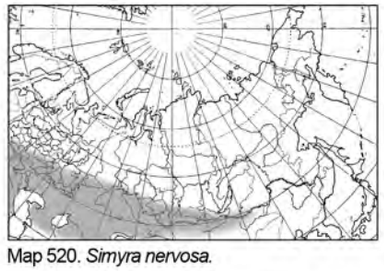

Map 515. *Acronicta lutea.*

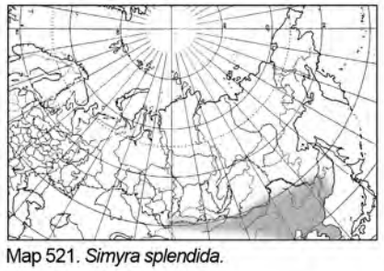

Map 516. *Acronicta digna.*

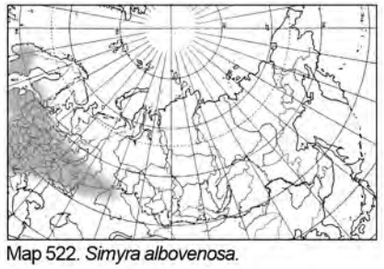

Map 517. *Acronicta raphael.*

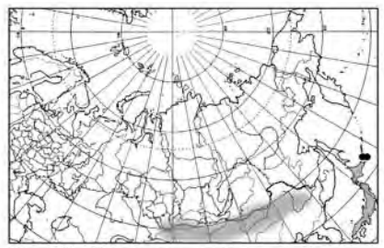

Map 518. *Acronicta concerpta.*

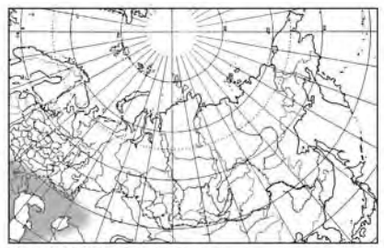

Map 519. *Acronicta megacephala.*

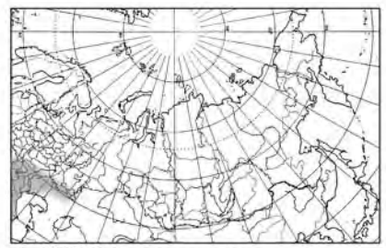

Map 520. *Simyra nervosa.*

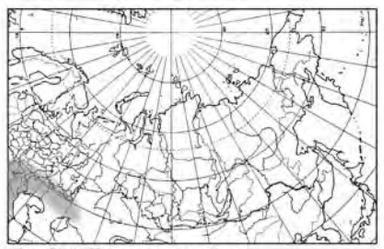

Map 521. *Simyra splendida.*

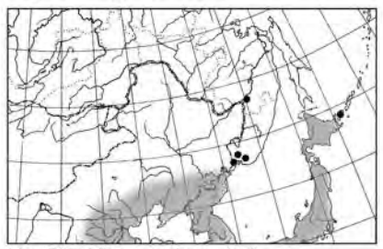

Map 522. *Simyra albovenosa.*

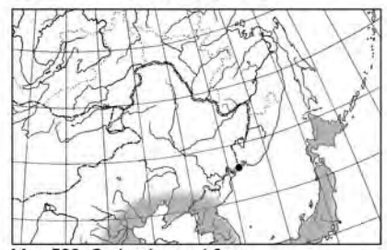

Map 523. *Simyra saepestriata.*

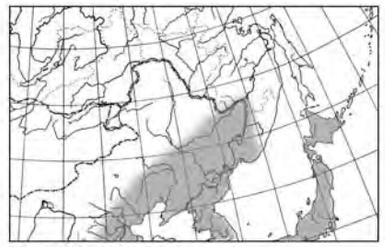

Map 524. *Simyra dentinosa.*

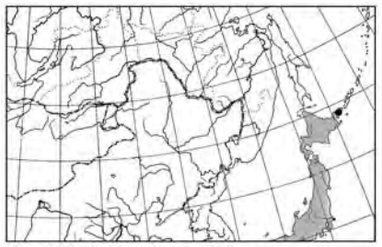

Map 525. *Oxicesta geographica.*


Map 526. *Eogena contaminei.*


Map 527. *Mimeusemia persimilis.*


Map 528. *Sarbanissa subflava.*


Map 529. *Sarbanissa venusta.*


Map 530. *Asteropetes noctuina.*

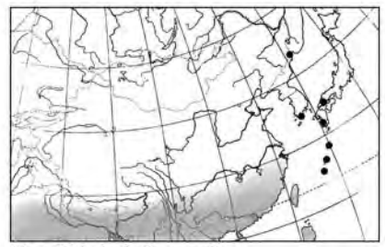
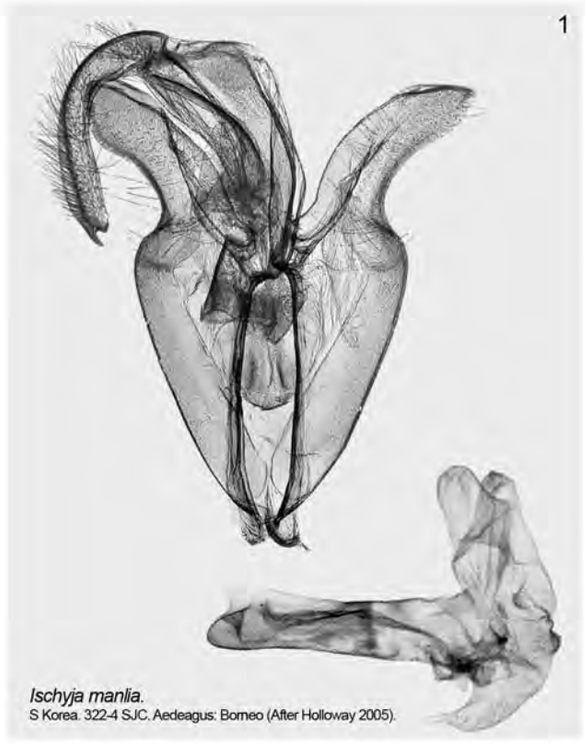

Map 531. *Ischyja manlia.*

Plate 189. Addendum to Erebinae



Ischyja manlia.
S Korea. 322-4 SJC. Aedeagus: Borneo (After Holloway 2005).

Ischyja manlia.
S Korea. 339-3 SJC.

CHECKLIST

of the species treated in vol. 2 of Noctuidae Sibiricae

Family **MICRONOCTUIDAE** Fibiger, 2005

MIMACHROSTIA Sugi 1982
fasciata Sugi 1982

MICRONOCTUA Fibiger 1997
occi Fibiger & Kononenko, 2008

Family **NOCTUIDAE** Latreille, 1809

Subfamily **RIVULINAE** Grote, 1895

RIVULA Guenée, [1845] 1844
MOTINA Walker, 1863
PLOTEIA Walker 1863, praeocc.
CHOLIMMA Walker, 1864
RHAZUNDA Walker, 1866
PASIRA Moore, 1882, preocc.
RIVULANA Bethune-Baker, 1911
ALIKANGIANA Strand, 1920
PAUROSCELES Turner, 1945
THOPELIA Nye, 1975, repl. name
sericealis (Scopoli, 1763)
munda Hufnagel, 1766
ochracea Moore, 1882
distincta Rothschild, 1920
dubitatrix Bryk, 1948
unctalis Staudinger, 1892

Subfamily **BOLETOBIINAE** Guenée, [1858] 1857

BOLETOBIINI Grote, 1895

PARASCOTIA Hübner, [1825]1816
BOLETOBIA Boisduval, 1840
BOLITOBIA: Agassiz, 1846, emend.
KARA Matsumura, 1925
fuliginaria (Linnaeus, 1761)
carbonaria [Den. & Schiff.], 1775
lignaria Fabricius, 1794
lunulata Fabricius, 1794
sachalinensis Matsumura, 1925
mineta Franclemont, 1985

Subfamily **HYPENODINAE** Forbes, 1954

HYPENODES Doubleday, 1850
SCHRANKIA Herrich-Schäffer, 1845, preocc.
THOLOMIGES Lederer, 1857
SCHRANCKIA: Walker, [1859] 1858, emend.
MENOPSIMUS Dyar, 1907
humidalis Doubleday, 1850
turfosalis Wocke, 1850
rectifascia Sugi 1982

SCHRANKIA Hübner, [1825] 1816
HYPENODES Guenée, 1854, preocc.
COSTANKIA Beck, 1996
costaestrigalis (Stephens, 1834)
lugubris Dannehl, 1925, infrasubsp., var.
separatalis (Herz, 1904)
squalida Wileman & South, 1917
kogii Inoue, 1979
balneorum (Alphéraky, 1880)

Subfamily **ARAEOPTERONINAE** Fibiger, 2005

ARAEOPTERON Hampson, 1893
ARAEOPTERUM Hampson, 1895, emend.
THELXINOA Turner, 1902
ESSONISTIS Meyrick, 1902
ARAEOPTERELLA Fibiger & Hacker, 2001
ARAEOPTERA Hampson, 1910, emend.
nebulosa Inoue, 1965
amoena Inoue, 1958
fragmenta Inoue, 1965
ussurica Fibiger & Kononenko, 2008
makikoae Fibiger & Kononenko, 2008
patella Fibiger & Kononenko, 2008

Subfamily **EUBLEMMINAE** Forbes, 1954

ANTHOPHILIDAE Duponchel, [1845] 1844, unavail.
MICRADI Stephens, 1850
EUBLEMMINI Franclemont & Todd, 1983

ODICE Hübner, [1823]
GLOSSODICE Berio, 1991
arcuinna (Hübner, 1790)
inamoena Hübner, [1803]
argillacea Tauscher, 1809
pergrata Rambur, 1858

EUBLEMMA Hübner, [1821] 1816
ANTHOPHILAE Hübner, [1806], suppr.
ANTHOPHILA Ochsenheimer, 1816, preocc.
PORPHYRINIA Hübner, [1821] 1816
EROMENE Hübner, [1821] 1816
TROTHISA Hübner, [1821] 1816
ECTHETIS Hübner, [1821] 1816
ANTHOPHYA: Duponchel, 1929, misspell.
HELIOMANES Sodoffsky, 1837, repl. name
MICROPHISA Boisduval, 1840
MICRA Guenée, 1841., preocc.
MICROPHYSA: Guenée, 1841, emend., preocc.
MICROPHYSA: Agassiz, 1846, emend., preocc.
GLAPHYRA Guenée, 1841, preocc.
THALPOCHARES Lederer, 1853, repl. name
MIXOCHARIS Lederer, 1853
AUTOBA Walker, [1863] 1864
SILDA Walker, 1863
VESCISA Walker, 1864
ZALACA Walker, [1866] 1865
MESTLETA Walker, 1865
EUMESTLETA Butler, 1892
EUBLEMMOIDES Bethune-Baker, 1906
COCCIDIPHAGA Spuler, 1907
THALOMICRA Spuller, 1907
ZONESTHIOUSA Thierry-Mieg, 1907
POLYORYCTA Warren, 1911
GYOPHORA Warren, 1913
SMICROLOBA Warren, 1913
EUMICREMMA Berio, 1954
EUPSOROPSIS Berio, 1969
HONEYANIA Berio, 1989
RHYPLAGA Nye, 1975
ROSEOBLEMMA Beck, 1996
PANOBLEMMA Beck, 1996
PARVABLEMMA Beck, 1996
minutata (Fabricius, 1794)
noctualis Hübner, 1796
paula Hübner, [1809]
[**pulchralis** (Villers, 1789)]
candidana Fabricius, 1794
minuta Hübner, [1809]
perlana Hübner-Geyer, [1830])
rectifascia Joanis, 1909
parva Duponchel, nec Hübner, 1803
ostrina (Hufnagel, 1808)
numida Lukas, 1849
carthami Herrich-Schäffer, 1851
aestivalis Guenèe, 1852
pseudostrina Rotshchild, 1914
thasia Koutsaftikis, 1973
porphyrina (Freyer, 1845)
parva (Hübner, 1808)
panonica (Freyer, 1840)
kindermannii Boisduval, 1840
lenis Eversmann, 1844
pannonica auct.
amasina (Eversmann, 1842)
paradisea Butler, 1878
rosea (Hübner, [1790])
rosina Hübner, [1800-1803]
*schernhammer*i Rühl, 1890
sinuata Schwingenschuss, 1938
decolorata Wagner, 1913
purpurina ([Den. & Schiff.], 1775)
secunda Staudinger, 1901
amoena (Hübner, [1803])
respersa Hübner, 1790, nec Den. & Schiff., 1775
rata: Treitschke, 1826, nec Guenèe, 1852
bythynica Bethune-Baker, 1888
pallidula (Herrich-Schäffer, 1856)
parallela (Freyer, 1842)
concinnula Herrich-Schäffer, 1856, nec Bsdv., 1840
densata Warren, 1912
pusilla (Eversmann, 1834)
concinnula: Boisduval, 1840
proxima Fischer de Waldheim, 1840
polygramma (Duponchel, 1842)
argillacea Eversmann, 1844)
nuda Christoph, 1862)
violetta Staudinger, 1889

METACHROSTIS Hübner, [1820] 1816
LEPTOSIA Guenée, 1841, preocc.
sinevi Kononenko & Matov, 2009

Subfamily **AVENTIINAE** Tutt, 1896

TRISATELINI Beck, 1999

LASPEYRIA Germar, 1810
COLPOSIA Hübner, 1816
LASPEYRESIA: Reichenbach, Leipzig, 1817, emend.
AVENTIA Duponchel, 1829
LASPEYRESIA Herrich-Schäffer, 1839 emend.
EUTELES Gistl, 1849, unnecess. repl. name
SOPHTA Walker, [1863] 1862
NACERASA Walker, 1866
PERYNEA Hampson, 1910
TROGATHA Hampson, 1910
flexula ([Den. & Schiff.], 1775)
sinuata Fabricius, 1775
flexularia: Hübner, 1799, emend.
subrosea (Butler, 1881)
nawai Nagano, 1918
gifuensis Nagano, 1918

ENISPA Walker, [1866] 1865
MICRAESCHUS Butler, 1878
CHARA Staudinger, 1892
TROGACONTIA Hampson, 1892
lutefascialis (Leech, 1889)
solitaria Staudinger, 1892
albosignata (Staudinger, 1892)
bimaculata (Staudinger, 1892)
leucosticta Hampson, 1910

CORGATHA Walker, [1859] 1858
PALURA Walker, 1861
GURIAUNA Walker, 1861
AUSINZA Walker, 1864
ZITNA Walker, [1866]
NACERASA Walker, 1866
CELEOPSYCHE Butler, 1879
PSEUDEPHYRA Butler, 1886
CALLIPYRIS Meyrick, 1891

AVENTINA Staudinger, 1892
PENISA Warren, 1911
TRICHOGATHA Warren, 1913
obsoleta Marumo, 1932
costimacula (Staudinger, 1892)

ORUZA Walker, 1861
CURVATULA Staudinger, 1892
VITTAPPRESSA Bethune-Baker, 1906
VITTAPRESSA auct., misspell.
mira (Butler, 1879)
pallicostata Staudinger, 1892
yoshinoensis (Wileman, 1911)

TRISATELES Tams, 1939
AETHIA Hübner, 1816, preocc.
SOPHRONIA Duponchel, 1845, preocc.
STANDFUSSIA Spuler, 1907, preocc.
emortualis ([Den. & Schiff.], 1775)
emortuatus: Haworth, 1809, emend.

AVENTIOLA Staudinger, 1892
pusilla (Butler, 1879)
maculifera Staudinger, 1892
nigripalpis Hirayama, 1937

ANATATHA Hampson, 1926
lignea (Butler, 1879)
PARAGONA Staudinger, 1892
multisignata (Christoph, 1881)
cognata (Staudinger, 1892)
nemorata Kononenko & Han, 2010

HOLOCRYPTIS Lucas, 1892
nymphula (Rebel, 1909)
ussuriensis (Rebel, 1901)

DIOMEA Walker, [1858] 1857
CORSA Walker, 1862
ZIGERA Walker, 1862
HETEROSCOTIA Bryk, 1948
cremata (Butler, 1878)
stygia Bryk, 1948
jankowskii (Oberthür, 1880)

POLYSCIERA Hampson, 1926
manleyi (Leech, 1900)

NAGANOELLA Sugi 1982
DIERNA auct.
timandra (Alphéraky, 1897)
pvilcherina [sic] Nagano, 1918

REMMIGABARA Kononenko & Matov 2010
secunda (Remm, 1983)

HYPOSTROTIA Hampson, 1926
CAPNODES auct.
cinerea (Butler, 1878)

Subfamily **PANGRAPTINAE** Grote, 1882

PANGRAPTA Hübner, 1818
MARMORINIA Guenée, 1852
SARACA Walker, [1866] 1865
STENOZETHES Hampson, 1926
ZETHES auct.
costaemacula Staudinger, 1888
trimantesalis auct.
suaveola Staudinger, 1888
vasava (Butler, 1881)
incisa Staudinger, 1888
flavomacula Staudinger, 1888
robiginosa Kardakoff, 1928, infrasubsp., form.
albata Kardakoff, 1928, infrasubsp., form.
turbata Kardakoff, 1928, infrasubsp., form.
lunulata (Sterz, 1915)
pseudalbistigma Yoshimoto, 1993
albistigma auct.
marmorata Staudinger, 1888
obscurata (Butler, 1879)
griseola Staudinger, 1892
umbrosa (Leech, 1900)

Subfamily **PHYTOMETRINAE** Hampson, 1913

PHYTOMETRINI Wiltshire, 1990

PHYTOMETRA Haworth, 1809
ANTARCHAEA Hübner, [1821] 1816
PROTHYMIA Hübner, [1823]
NANTHILDA Blanchard, 1840
PYRALIDESTHES Warren, 1913
viridaria (Clerck, 1759)
aenea Den. & Schiff., 1777
purpurata Linnaeus, 1761
lanceata Scopoli, 1763
latruncula Esper, 1791
olivacea Vieweg, 1790
hoffmanni Stauder, 1915
lutalgira Schawerda, 1924
amata (Butler, 1879)
inamoena Filipjev, 1925

COLOBOCHYLA [1825] 1816
SALIA Hübner, 1806, rejected name
CHOLOBOCHYLA: Hübner, 1816, misspell.
MADOPA Stephens, 1829
COLOBOCHILA Agassiz, 1846, emend.
CALOBOCHILA: Walker, [1859] 1858, misspell.
salicalis ([Den. & Schiff.], 1775)
obliquata Fabricius, 1794
cinerea Butler, 1879
salicatus: Haworth, 1809, emend.
laetalis Staudinger1892, infrasubsp., var.

Subfamily **HERMINIINAE** Leach, [1815]

HERMINIDAE Herrich-Schäffer, [1851] 1845
HERMINITES Duponchel, [1845] 1844
POLYPOGONINAE Hampson, 1918
POLYPOGONINAE Lhomme, 1923

EDESSENA Walker, [1859] 1858
hamada (Felder & Rogenhofer, 1874)

HADENNIA Moore, 1887
WILKARA Swinhoe, 1918
WALKARA: Swinhoe, 1918, emend.
BERTULA auct.
incongruens (Butler, 1879)
amurensis Staudinger, 1888
jutalis auct.

PARACOLAX Hübner, [1825] 1816
CAPNISTIS Warren, 1913
PARAHERMINIA Richards, 1932
CRINISINUS Bryk, 1948
tristalis (Fabricius, 1794)
glaucinatus Fabricius, 1794
derivalis Hübner, 1796
tristis Fabricius, 1798
derivatus Haworth, 1809
glaucinalis auct.
trilinealis (Bremer, 1864)
turbo Bryk, 1948
fascialis (Leech, 1889)
helialis Staudinger, 1892
fentoni (Butler, 1879)
leechi: auct., nec South, 1905
albinotata (Butler, 1879)

IDIA Hübner, [1813]
EPIZEUXIS Hübner, 1818
CAMPTYLOCHILA Stephens, 1834
HELIA Duponchel, 1844
CAMPYLOCHILA: Agassiz, 1847, misspell.
HELIA Guenée, 1854, preocc.
PSEUDAGLOSSA Grote, 1874
ZENOMIA Dognin, 1914
quadra (Graeser, [1889] 1888)
curvipalpis: Herz, 1904, misident.
curvipalpis (Butler, 1879)
lunulata Herz, 1904

GYNAEPHILA Staudinger, 1892
maculifera Staudinger, 1892

HYDRILLODES Guenée, 1854
ECHANA Walker, [1859] 1858
OLYBAMA Walker, [1859] 1858
BIBACTA Moore, 1882
RAGANA Swinhoe, 1900
CELLACRINATA Bethune-Baker, 1908
morosa (Butler, 1879)
funeralis Warren, 1913
obscurans Bryk, 1948
lentalis auct.

BERTULA Walker, 1858
ELYRA Walker, [1859] 1858
NEVIASCA Walker, 1858, preocc.
EORDAEA Walker, [1859]
CARDALENA Walker, 1859 unnecess. repl. name
GABRISA Walker, 1865 unnecess. repl. name
bistrigata (Staudinger, 1888)
chosenana Bryk, 1948

SIMPLICIA Guenée, 1854
LIBISOSA Walker, [1859] 1858
CULICULA Walker, 1864
AGINNA Walker, 1865
NABARTHA Moore, 1887
rectalis (Eversmann, 1842)
sicca Butler, 1879
minoralis Warren, 1913

ZANCLOGNATHA Lederer, 1857
ERPYZON Hübner, 1808, rejected name
CLEPTOMITA Grote, 1873
MEGACHYTA Grote, 1873
PITYOLITA Grote, 1873
MESOPLECTRA Butler, 1879
ADRAPSOIDES Matsumura, 1925
TREITSCHKENDIA Berio, 1989
ZELLERMINIA Beck, 1966
griselda (Butler, 1879)
lilacina Butler, 1879)
celatrix Filipjev, 1927
lunalis (Scopoli, 1763)
tarsiplumalis Hübner, 1796
chosensis Bryk, 1948
fumosa (Butler, 1879)
assimilis Staudinger, 1888
obliqua Staudinger, 1892
tarsipennalis (Treitschke, 1835)
denticornalis Wocke, 1850
subgriselda Sugi, 1959
triplex (Leech, 1900)
sugii Owada, 1980
helva (Butler, 1879)
reticulatis (Leech, 1900)
ruptistigma (Holloway, 1976) (subsp.)
umbrosalis Staudinger, 1892
leechi South, 1905
perfractalis Bryk, 1948
sviridovi Owada, 1992
tristriga W. Kozhantshikov, 1929
tenuialis Rebel, 1899
koreognatha Bryk, 1948
violacealis Staudinger, 1892
stramentacealis auct.

PECHIPOGO Hübner, 1825] 1816
ERPYZON Hübner, 1806, rejected name
PECHIPOGON: Stephens, 1834, misspell.
PECHYPOGON Agassiz, 1846, emend.
HERMINIA auct.
strigilata (Linnaeus, 1758)
barbalis Clerk, 1759
palpalis Fabricius, 1775
pectitalis Hübner, 1796
palpatus Haworth, 1809
barbata Haworth, 1809

POLYPOGON Schrank, 1802
POPYPOGON: Doubleday, 1850, misspell.
HERMINIA auct.
MACROCHILO auct.
tentacularia (Linnaeus, 1758
tentaculalis [Den. & Schiff.], 1775
carpathica Hormuzaki, 1894, infrasubsp., var.
gryphalis (Herrich-Schäffer, 1851)
parallela Wileman, 1911
romana Draudt, 1936, infrasubsp., form
tarsicrinata (Bryk, 1948)
gryphalis auct.

MACROCHILO Hübner, [1825] 1816
cribrumalis (Hübner, 1793)
cribralis Hübner, 1796
modestalis Boldt, 1928

HERMINIA Latreille, 1802
HERMINEA Sodoffsky, 1837, misspell.
POGONITIS Sodoffsky, 1837, unnecess. repl. name
QUARAMIA Berio, 1989
ZANCLOGNATHA auct.
grisealis ([Den. & Schiff.], 1775)
nemoralis Fabricius, 1775
nemorum Fabricius, 1794, emend.
nemoratus Haworth, 1809, emend.
robiginosa (Staudinger, 1888)
assimilata Wileman, 1911
tarsicrinalis (Knoch, 1782)
ventilabris Fabricius, 1787
tarsicrinatus Haworth, 1809
biumbralis Turati & Verity, 1911
balatonalis Osthelder, 1935
arenosa Butler, 1878
heureka Bryk, 1942
stramentacealis Bremer, 1864
violacealis: Remm & Martin, 1979
satakei Owada 1982
dolosa Butler, 1879
tomarinia Bryk, 1942
SINARELLA Bryk, 1948
aegrota (Butler, 1879)
incultalis Leech, 1889
stigmatophora Bryk, 1948
cristulalis Staudinger, 1892
nigrisigna (Leech, 1900)
microlepidopteronis Strand, 1920
sichotensis Kurentzov, 1950
punctalis (Herz, 1904)
nigrobasalis Yamamoto & Sugi, 1955
japonica (Butler, 1881)

Subfamily **HYPENINAE** Herrich-Schäffer, [1851]

ZEKELITA Walker, 1863
TINCTALITA Lödl & Mayerl, 1998, subgenus
CONITA Lödl & Mayerl, 1998, subgenus
PERVULGARITA Lödl & Mayerl, 1998, subgenus
RAVALITA Lödl & Mayerl, 1998, subgenus
RHYCHODONTODES auct.

(RAVALITA Lödl & Mayerl, 1998)
ravulalis (Staudinger, 1879)

HYPENA Schrank, 1802
BOMOLOCHA Hübner, [1825] 1816, subgenus
BADAUSA Walker, [1863] 1864
EUHYPENA Grote, 1873
MACRHYPENA Grote, 1873
MEGHYPENA Grote, 1873
ERICHILA Billberg, 1820
HERPYZON Hübner, 1822
OPHIUCHE Hübner, [1825] 1816, subgenus
DICHROMIA Grote, 1854, subgenus
PELIALA Walker, 1865
PLATHYPENA Grote, 1873, subgenus
APANDA Moore, 1882
MATHURA Moore, 1882
NESAMIPTIS Meyrick, 1899
ANEPISCHETOS Smith, 1900
PLACEROBELA Turner, 1903
ERCHILA: Poole, 1989, misspell.
ROSTHYPENA Beck, 1996
OBESHYPENA Beck, 1996
BIANGULYPENA Lödl, 1994, subgenus
CONSCITALYPENA Lödl, 1994, subgenus
EXTREMYPENA Lödl, 1994, subgenus
LOMANALTES Grote, 1873
OGOAS Druce, 1890
PSEUDODICHROMIA Lödl
TETRASTICTYPENA Lödl, 1994, subgenus
TRICHYPENA Joanis, 1915, subgenus
JUSSALYPENA Lödl, 1994, subgenus
PSEUDODICHROMIA Lödl, 1994, subgenus

(BOMOLOCHA Hübner, [1825] 1816)
stygiana Butler, 1878
zilla Butler, 1879
nikkensis Wileman & West, 1930
crassalis (Fabricius, 1787)
achatalis Hübner, 1796
fontis Thunberg, 1788
crassatus Haworth, 1809, emend.
achatatus Haworth, 1809, emend
squalida Butler, 1878
bicoloralis Graeser, [1889] 1888
rhombalis auct.
fontis auct.
nigrobasalis (Herz, 1904)
bipartita Staudinger, 1892
semialbata Sugi 1982

(HYPENA Schrank, 1802)
proboscidalis (Linnaeus, 1758)
ensalis Fabricius, 1794
proboscidatus Haworth, 1809
deleta Staudinger, 1892, infrasubsp., var.
flexilinea Warren, 1913
tatorhina Butler, 1879
rostralis (Linnaeus, 1758)
radiatalis Hübner, 1796
rostratus Haworth, 1809
vittatus Haworth, 1809
obesalis Treitschke, 1828
crassalis Hübner, 1796, nec Fabricius, 1787
tristalis Lederer, 1853
tripunctalis Bremer, 1864
narratalis Walker, [1859] 1858
urticicola Butler, 1889
kengkalis Bremer, 1864
warreni Bryk, 1948
conspersalis Staudinger, 1888
passerinalis Graeser, 1888
chosenula Bryk, 1948
koreana Bryk
tamsi Filipjev, 1927
claripennis (Butler, 1878)
amica (Butler, 1878)

PROTOSCHRANKIA Sugi, 1979
ijimai Sugi, 1979

GONEPATICA Sugi 1982
ECTOGONIA auct.
opalina (Butler, 1879)

HEPATICA Staudinger, 1892
anceps Staudinger, 1892

LOPHOMILIA Warren, 1913
ATUNTSEA Berio, 1977
BRYOGRAPTA Sugi, 1977
polybapta (Butler, 1879)
flaviplaga (Warren, 1912)
nekrasovi Kononenko & Behounek, 2009
kogii (Sugi, 1977)

STENBERGMANIA Bryk, 1948
albomaculalis (Bremer, 1864)

PARAGABARA Hampson, 1926
flavomacula (Oberthür, 1880)
curvicornuta Kononenko & Matov, 2010
ochreipennis Sugi, 1962

Subfamily **EREBINAE** Leach, [1815]
EREBIDAE Guenée, 1852
EREBINAE Forbes, 1954
EREBINI Forbes, 1954
THYSANIINI Grote, 1895

Tribe **EREBINI** Leach, [1815]

EREBUS Latreille, 1810
BYAS Billberg, 1820
NYCTIPAO Hübner, [1823] 1816
PATULA Guenée, 1852
BOCANA Walker, [1865]
ARGIVA Hübner, [1823] 1816
CORIA Walker, 1866
EUPATULA Ragonot, 1894
CRISHNA Kirby, 1897, unnecess. repl. name
CARIONA Swinhoe, 1918
NYCTIPAON auct.
macrops (Linnaeus, 1768)
bubo Fabricius, 1775
boopis Guenée, 1852
METOPTA Swinhoe, 1900
GIALCA Walker, 1855
rectifasciata (Ménétriés, 1863)
japonica Walker, 1865
interlineata Butler, 1871

Tribe **HYPOPYRINI** Guenée, 1852

SPIRAMA Guenée, 1852
SPIRAMIA Walker, 1858, emend.
helicina (Hübner, [1831] 1825)
japonica Guenée, 1852
aegrota Butler, 1881

ISCHYJA Hubner, [1823], 1816
manlia (Cramer, 1776)

Subfamily **CALPINAE** Boisduval, 1840
CALPIDI Guenée, 1841
CALPIDES Herrich-Schäffer, [1851] 1845
OPHIDERIDAE Guenée, 1852
OTHREINAE Berio, 1955

Tribe **SCOLIOPTERYGINI** Herrich-Schäffer, [1852]
GONOPTERIDAE Herrich-Schäffer, [1850] 1845
GONOPTERIDAE Guenée, 1852
ANOMIINAE Grote, 1882
ANOMIINI Grote, 1890;
ANOMIINI Wiltshire, 1990
ANOMINI Berio, 1992
SCOLIOPTERYGINAE Spuler, 1907
SCOLIOPTERYGINAE Börner, 1932
SCOLIOPTERYGINI Beck, 1960
SCOLIOPTERYGINI Forbes, 1954

ANOMIS Hübner, [1821]1816 (sensu lato)
COSMOPHILA Boisduval, 1833
GONITIS Guenée, 1852
ANOMUS: Agassiz, 1846, emend.
RUSICADA Walker, [1858] 1857
SCOEDISA Walker, [1858] 1857
TIRIDATA Walker, 1865
AMARNA Walker, 1856 [1857]
RISTRA Walker, 1858
DEREMMA Walker, 1865
CAPITARIA Walker, 1869
GONOTIS: Moore, 1882, misspell.
DEINOPALPS Holland, 1894
ALABAMA Grote, 1895
EUALABAMA Grote, 1896, unnecess. repl. name
MOLOPA Swinhoe, 1902
GONOPTERONIA Bethune-Baker, 1906
flava (Fabricius, 1775)
stigmatizans Fabricius, 1775
fimbriago Stephens, 1829
xanthindyma Boisduval, 1833
auragoides Guenée, 1852
indica Guenée, 1852
variolosa Walker, 1857
edentata Walker, 1857
aurantiaca Prittwitz, 1867
serrata Barnes & McDunnough, 1913
mesogona (Walker, 1858)
involuta (Walker, [1858] 1857)
basalis Walker, [1858] 1857
colligata Walker, 1865
vitiensis Butler, 1886
dona Swinhoe, 1919
brima Swinhoe, 1920
privata (Walker, 1865)
commoda Butler, 1878
subfulvida Warren, 1913
griseolineata Warren, 1913
fulvida auct.
leucolopha Prout, 1928
maxima Berio, 1956
longipennis Sugi 1982

SCOLIOPTERYX Germar, 1810
PTERODONTA Reichenbach, Leipzig, 1817
EUPHEMIAS Hübner, [1821] 1816
EUPHAIS Hübner, [1822]
GONOPTERA Berthold, 1827
libatrix (Linnaeus, 1758)
libatricus: Haworth, 1809, emend.

Tribe **CALPINI** Boisduval, 1840

CALPIDI Guenée, 1841
CALPIDES Herrich-Schäffer, [1851] 1845

CALYPTRA Ochsenheimer, 1816
CALPE Treitschke, 1825, unnecess. repl. name
CULASTA Moore, 1881
HYPOCALPE Butler, 1883
PERCALPE Berio, 1956
thalictri (Borkhausen, 1790
capucina Esper, 1789
sodalis Butler, 1878
centralitalica Dannehl, 1925, infrasubsp., var.
pallida Schwingenschuss, 1938
hokkaida (Wileman, 1922)
hoenei Berio, 1956
lata (Butler, 1881)
aureola Graeser, 1889 [1890]

ORAESIA Guenée, 1852
emarginata (Fabricius, 1794)
metallescens Guenée, 1852
tetans Walker, [1858] 1857
allicias Walker, [1858] 1857
excavata (Butler, 1878)

PLUSIODONTA Guenée, 1852
DEVA Walker, [1858] 1857
GADERA Walker, [1858] 1857
TAFALLA Walker, 1869
ODONTINA Guenée, 1862]), preocc.
TINNODOA Nye, 1975 unnecess. repl. name
casta (Butler, 1878)

EUDOCIMA Billberg, 1820
OTHREIS Hübner, [1823], 1816
CORYCIA Hübner, [1823] 1816
ELYGEA Billberg, 1820
LEPTOPHARA Billberg, 1820
ACACALLIS Hübner [1823]
OPHIDERES Boisduval, 1832
OPHIODERES: Agassiz, 1846, emend.
ACACALIS Agassiz, 1846, emend.
OTHRYIS: Agassiz, 1846, emend.
RHYTIA Hübner [1823]
TRISSOPHAES Hübner [1823]
MAENAS Hübner [1823]
MOENAS: Walker, [1858], misspell.
ARGADESA Moore, 1881
KHADIRA Moore, 1881
PURBIA Moore, 1881
VANDANA Moore, 1881
ADRIS Moore, 1888
HALASTUS Butler, 1892
EUMAENAS Hampson, 1924
tyrannus (Guenée, 1852)
amurensis Staudinger, 1892, infrasubsp., var.
falonia (Linnaeus, 1763)
fullonia Clerk, 1764
pomona Cramer, 1775
dioscoriae Fabricius, 1781
princeps Boisduval, 1832
obliterans Walker, [1858] 1857
fullionica Pinhey, 1975 misspell.

Subfamily **CATOCALINAE** Boisduval, [1828]
CATOCALIDES Boisduval, 1840
AUDEINI Wiltshire, 1990
EXOPHYLINI Beck, 1996

Tribe **TOXOCAMPINI** Guenée, 1852
ANUMETINI Wiltshire, 1976
APOPESTINI Beck, 1996
LYGEPHILINI Wiltshire, 1976
LYGEPHILINI Berio, 1992

CHRYSORITHRUM Butler, 1878
PSEUDOPHIA auct.
amata (Bremer & Grey, 1853)
fuscum Butler, 1881
rufescens Butler, 1881
steni Bryk, 1942
amorina Bryk, 1948
separatum Bryk, 1948, infrasubsp., form
flavomaculata (Bremer, 1861)
maximoviczi Bremer, 1864
sericeum Butler, 1878

ANUMETA Walker, 1858
PALPANGULA Staudinger, 1877
EREMONOMA Warreen, 1913
cestis (Ménétriés, 1847)
punctata Ménétriés, 1847
celtis Ménétriés, 1849, emend
fractistrigata (Alphéraky, 1882)

LYGEPHILA Billberg, 1820
ASTICTA Hübner, 1816
TOXOCAMPA Guenée, 1841
ECCRITA Lederer, 1857
CRACCAPHILA Berio, 1996
TATHORHYNHUS Hampson, 1894, subgenus
SINOCAMPA Kononenko & Fibiger, 2008, preocc.
KATYUSHA Kemal & Koçak, 2009, repl. name, subgenus
lusoria (Linnaeus, 1758)
orobi Duponchel, 1842
lubrica (Freyer, 1846)
sublubrica Staudinger, 1897
lubrosa Staudinger, 1901
ludicra (Hübner, 1790)
gracilis Staudinger, 1879, infrasubsp., var.
ichinosawana Matsumura, 1925
major Draudt, 1950, infrasubsp., form
maxima (Bremer, 1861)
enormis Butler, 1878
emaculata (Graeser, 1892)
dubatolovi Fibiger, Kononenko & Nilsson, 2008
vulcanea (Butler, 1881
mirabilis (Bryk, 1948)
craccae ([Den. & Schiff.], 1775)
nigricollis deVillers, 1789
laevigata Warren, 1913
lutosa Warren, 1913
caliginosa Schawerda, 1931, infrasubsp., var.
grisea Warren, 1913
centralasiae Sheljuzko, 1955
riata Rungs, 1951
viciae (Hübner, [1822])
coronillae Herrich-Schäffer, 1855
stigmata Wileman, 1911
violaceogrisea Draudt, 1950 (subsp.)
pastinum (Treitschke, 1826)
astragali Herrich-Schäffer, [1851]
dilutior Staudinger, 1892, infrasubsp., var.
graciocissima Bryk, 1948
procax (Hübner, 1813)
proclivis Hübner, [1823]
limosa Treitschke, 1826
nigricostata Graeser, 1890
recta (Bremer, 1864)
[**lupina** (Graeser, 1890)]

AUTOPHILA Hübner, [1823] 1816
CHEIROPHANES Boursin, 1955, subgenus
glebicolor (Erschoff, 1874)
rasilis (Püngeler, 1900)
asiatica (Staudinger, 1888)
chamaephanes Boursin, 1940
inconspicua (Butler, 1881)
praeligaminosa Staudinger, 1888, infrasubsp., var.
cataphanoides Boursin, 1955 (subsp).
altaica Ronkay, 1989 (subsp).

APOPESTES Hübner, [1823] 1816
SPINTHEROPS Boisduval, 1840
phantasma (Eversmann, 1843)
centralasiae Warren, 1913
indica Moore, 1883
koreana Herz, 1904, infrasubsp., var.

Tribe **ACANTHOLIPINI** Fibiger & Lafontaine, 2005
ACANTHOLIPINI Wiltshire, 1990 nom. nud., unavail.
ACANTHOLIPINI Goater, Ronkay & Fibiger, 2003, unavail.

ACANTHOLIPES Lederer, 1857
regularis (Hübner, [1813])

Tribe **ARYTRURINI** Fibiger & Lafontaine, 2005
ARYTRURINI Goater, Ronkay & Fibiger, 2003, unavail.

ARYTRURA John, 1912
MEGAZETHES Warren, 1913
DIAPOLIA Hampson, 1926
musculus (Ménétriés, 1859)
subfalcata (Ménétriés, 1859)
limbalis Swinhoe, 1917

Tribe **MELIPOTINI** Grote, 1895
SYNEDINI Forbes, 1954
DRASTERIINI Wiltshire, 1976

DRASTERIA Hübner, 1818
SYNEDA Guenée, 1852
LEUCANITIS Guenée, 1852
BOLINA Duponchel, 1845, preocc.
DRASTORIA: Walker, 1858, emend.
PALPANGULA Staudinger, 1877
ALEUCANITIS Warren, 1913
PROTOMELIPOTIS Berio, 2002
pulverosa Wiltshire, 1969
mongoliensis Wiltshire, 1969
caucasica (Kolenati, 1864)
astrida Eversmann, 1857
aksuensis Fuchs, 1903
picta (Christoph, 1877)
radapicta Staudinger, 1901
cailino (Lefebvre, 1827)
rada (Boisduval, 1848)
roda Herrich-Schaffer, 1851
schlumbergeri Fuchs, 1903
beta Kuznetsov, 1908
sibirica Kozhanchikov, 1925
[**saisani** (Staudinger, 1882)]
clara Staudinger, 1884
[**scolopax** (Alphéraky, 1892)]
catocalis (Staudinger, 1882)
grumi Alphéraky, 1889
reducta Fernandez, 1932

Tribe **EUCLIDINI** Guenée, 1852
MOCISINI Berio, 1992
REMIGIIDAE Guenée, 1852
ECTYPINA, Goater, Fibiger, Ronkay, 2005, unavail.

EUCLIDIA Ochsenheimer, 1816
EUCLIDIA Hübner, [1806], rejected name
GONOSPILEIA Hübner, 1816 [1823]
ECTYPA Billberg, 1820
LEUCOMELAS Hampson, 1913
EUCLIDINA McDunnough, 1937
glyphica (Linnaeus, 1758)
dentata Staudinger, 1871
consors Butler, 1878
glyphica auct.
juvenilis (Bremer, 1861)

CALLISTEGE Hübner, [1823]1816
EUCLIDIMERA Hampson, 1913
mi (Clerck, 1759)
literata Cyrillo, 1787
futilis Staudinger, 1897
extrema Bang-Haas, 1912, infrasubsp., var.
elzei de Freina, 1976
fortalitium (Tauscher, 1806)
flexuosa Eversmann, 1832

GONOSPILEIA Hübner, [1823] 1816
triquetra ([Den. & Schiff., 1775])
fortificata Fabricius, 1787
fascialis deVillers, 1789
munita (Hübner, [1813])
angulosa Eversmann, 1832
immunita Millière, 1868

MELAPIA Sugi, 1968
PELAMIA auct.
electaria (Bremer, 1864)
macroelectaria Ogata, 1961

REMIGIA Guenée, 1852
frugalis (Fabricius, 1775)
translata Walker, 1865
lycopodia Geyer, 1837

MOCIS Hübner, [1823] 1816
PELAMIA Guenée, 1852

BARATHA Walker, 1865
CAUNINDA Moore, 1887
PELOMIA: Warren, 1913, misspell.
undata (Fabricius, 1775)
archesia Cramer, 1780
virbia Cramer, 1780
velata Walker, [1863] 1864
bifasciata Walker, 1865
undata gregalis Guenée, 1852
annetta (Butler, 1878
arabesca Bryk, 1948 infrasubsp., form.
ancilla (Warren, 1913)

Tribe **CATEPHIINI** Guenée, 1852

CATEPHIA Ochsenheimer, 1816
INDICARA Walker, 1862
ANOPHIA Guenée, 1841
CATOPHIA: Walker, 1864
ZARIMA Moore, 1882
MAGEUTICA Hampson, 1926
NAGIA Walker, 1858
alchymista ([Den. & Schiff.] 1775)

Tribe **PERICYMINI** Wiltshire, 1976

PERICYMA Herrich-Schäffer, 1845
ALAMIS Guenée, 1852
DUGARIA Walker, [1858] 1857
MOEPA Walker, 1865
albidentaria (Freyer, 1842)

Tribe **OPHIUSINI** Guenée, 1837
OPHIUSIDAE Herrich-Schäffer, [1851] 1845
OPHIUSIDAE Guenée, 1852
OPHIUSINI;Wiltshire, 1990
OMOPTERINI Boisduval, 1833

SERRODES Guenée, 1852
campana Guenée, 1852
nigha Guenée, 1852
callipepla A. E. Prout, 1929

ARTENA (Fabricius, 1794)
dotata (Fabricius, 1794)

THYAS Hübner, 1824
LAGOPTERA Guenée, 1852
DERMALEIPA Saalmüller, 1891
juno (Dalman, 1823)
elegans Heven, 1840
multicolor Guenée, 1852
bella Bremer & Grey, 1853
renalis Bryk, 1948

OPHIUSA Ochsenheimer, 1816
OPHIOGENES Reichenbach, Leipzig, 1817
OPHIUSSA: Hübner, [1823] 1816
MEROPIS Hübner, [1822]
HEMACHRA Sodoffsky, 1837, repl. name
ANUA Walker, 1858
STENOPIS Mabille, 1880
STENOPSIS: Hampson, 1913, misspell.
SUBANUA Berio, 1959
PERANUA Berio, 1959
PEROPHIUSA Berio, 1959
tirhaca (Cramer, 1777)
tirrhaea Fabricius, 1781
vesta Esper, 1789
olivacea deVillers, 1789
auricularis Hübner [1803]
tirrhaca: Treitschke, 1826, misspell.
hottentota Guenée, 1852
separans Walker, 1858
obscura Pinker & Bacallado, 1979 (subsp.)

MINUCIA Moore, 1885
ASCALAPHA Hübner, [1806], suppr.
OPHIODES Guenée, 1841, preocc.
NANTESIA Kirby, 1897
lunaris ([Den. & Schiff.], 1775)
inconspicua Warren, 1913

CLYTIE Hübner, 1823
PSEUDOPHIA Guenée, 1852
gracilis (O. Bang-Haas, 1907)

BASTILLA Swinhoe, 1918
NAXIA Guenée, 1852
XIANA Nye, 1975, repl. name
OPHIUSA auct.
PARALLELIA auct.
DYSGONIA auct.
arctotaenia (Guenée, 1852)
maturata (Walker, 1858)
falcata Moore, 1882
stuposa (Fabricius, 1794)
festinata Walker, 1858
algira japonibia Bryk, 1948
algira sinica Bryk, 1948
algira auct.
analis: Herz, 1904, nec Guenée, 1852

DYSGONIA Hübner, [1823] 1816
NAXIA Guenée, 1852
PASIPEDA Moore, 1882, preocc.
MACALDENIA Moore, [1885], repl. name
CARANILLA Moore, [1887] 1885
OPHIUSA auct.
PARALLELIA auct.
mandschuriana (Staudinger, 1892)
mimula Warren, 1913
mimula postfusca Bryk, 1948
algira auct.
mandschurica auct., misspell.
dulcis (Butler, 1878)
obscura (Bremer & Grey, 1853)
hedemanni Staudinger, 1888
coreana Leech, 1889

GRAMMODES Guenée, 1852
PRODOTIS John, 1910
stolida (Fabricius, 1775)
cingularis Hübner, 1808
stupida (Herrich-Schäffer, 1851
curvilinea Walker, 1869

UNASSOCIATED

BLASTICORHINUS Butler, 1893
CARSINA Hampson, 1924
ussuriensis (Bremer, 1861)
unduligera (Butler, 1878)

Tribe **CATOCALINI** Boisduval, [1828]
CATOCALIDES Boisduval, 1840
AUDEINI Wiltshire, 1990

CATOCALA Schrank, 1802
BLEPHARUM Hübner, [1806], rejected name
BLEPHARUM Hübner, 1808, rejected name
HEMIGEOMETRA Haworth, 1809
CATOCOLA: Oken, 1815, misspell.
BLEPHARA Ochsenheimer, 1816, unavail.
EPHESIA Hübner, 1818
BLEPHARIDIA Hübner, 1828, unavail.
LAMPROSIA Hübner, [1821] 1806
BLEPHARIDIA Hübner, [1822]
CATOCALLA: Hübner, [1823], misspell.
ASTIOTES Hübner, [1823] 1816
CORSICE Hübner, [1823]
EUCORA Hübner, [1823] 1816
EUNETIS Hübner, 1821
MORMONIA Hübner, [1823]
MORMOSIA Walker, [1858] 1857
BLEPHARONIA Hübner, [1823], unavail.
BLEPHARONIA Hübner, [1825]
CORISEE Walker, [1858], misspell.
ANDREWSIA Grote, 1882
ALURA Möschler, 1884
CATABAPTA Hulst, 1884
KORAÏA Herz, 1904, incorrect original spelling
KORAIA: Nye, 1975
ANDREUSIA: Hampson, 1913, emend.
ULOTRICHOPUS Wallengren, 1860, subgenus
SIMPLICALA Beck, 1966
CONVERCALA Beck, 1966
EUCALA Beck, 1966
DIVERCALA Beck, 1966
PUERCALA Beck, 1966
RETICCALA Beck, 1966
OPTOCALA Beck, 1966
METACALA Beck, 1966
PROMONIA Beck, 1966
BIHEMENA Beck, 1966
fulminea (Scopoli, 1763)
maturna Hufnagel, 1766
paranympha Linnaeus, 1767
protonympha Boisduval, 1840
xarippe Butler, 1877 (subsp.)
chekiangensis Mell, 1933 (ssp)
neonympha (Esper, 1805)
conversa (Esper, 1787)
pasythea Hübner, [1809]
agamos Hübner, [1813
carbonaria Staudinger, 1871
obscena Alphéraky, 1879
baihi Ishiizuka, 2003 (subsp.)
abamita Bremer & Grey, 1853
scortum Christoph, 1893
musmi (Hampson, 1913)
doerriesi Staudinger, 1888
honrathi Graeser, 1888 [1889]
hampsoni Leech, 1900
eminens Staudinger, 1892
separans Leech, 1889
hetaera Staudinger, 1892
duplicata Butler, 1885
suzukii Matsumura, 1911
helena Eversmann, 1856
kurenzovi Moltrecht, 1927
beicki Mell, 1936
nymphaeoides Herrich-Schäffer, 1845
nymphula Staudinger, 1892
ella Butler, 1877
nutrix Graeser, 1888 [1899]
deuteronympha Staudinger, 1861
omphale Butler, 1881
greyi Staudinger, 1888
thomsoni Prout, 1924
davidi Obertür, 1881
tschiliensis Bang-Haas, 1927
dahurica Kljuchko 1992
praegnax Walker, 1858
obliterata Ménétriés, 1863
esther Butler, 1877
sakaii Kishida, 1981 (subsp.)
agitatrix Graeser, [1889] 1888
mabella Holland, 1889
bella Butler, 1877
serenides Staudinger, 1888
columbina Leech, 1900
splendens Mell, 1933
enigma Sheljuzhko, 1943
okurai Sugi, 1965 (subsp.)
nubila Butler, 1881
koreana Staudinger, 1892
ussurica Sheljuzhko, 1943
azumiensis Sugi, 1965
hymenaea auct.
proxeneta Alphéraky, 1895
sutshana Sheljuzhko, 1943
streckeri Staudinger, 1888
strecceri: Hampson, 1913, emend.
danilovi (O. Bang-Haas, 1927)
moltrechti O. Bang-Haas, 1927
dissimilis Bremer, 1861
griseata Bryk, 1948
nigricans Mell, 1939
melli Ishizuka, 2001
nagioides Wileman, 1924
sancta Butler, 1885, nec Hulst, 1884
actaea Felder & Rogenhofer, 1874
nigricans Mell, 1939
pirata (Herz, 1904)
bokhaica (Kononenko, 1979)
fraxini (Linnaeus, 1758)
legionensis Gomez-Bustillo & Vega, 1975
latefasciata Warnecke, 1919
jezoensis Matsumura, 1931, infrasubsp., var.
yuennanensis Mell, 1936
gaudens Staudinger, 1901, infrasubsp., var.
lara Bremer, 1861
pallidamajor Mell, 1939
nivea Butler, 1877
kurosawai Owada, 1986 (subsp.)

asahinorum Owada, 1986 (subsp.)
nupta (Linnaeus, 1767)
obscurata Oberthür, 1880, infrasubsp., var.
concubia Walker, [1858] 1857
unicuba Walker, [1858] 1857
nuptialis Staudinger, 1901, infrasubsp., var.
centralasiae Kuznezov, 1903 (subsp).
nozawae Matsumura, 1911
kansuensis Bang-Haas, 1927
clara Osthelder, 1933
japonica Mell, 1936
likiangensis Mell, 1936 (subsp).
alticola Mell, 1942 (subsp).
adultera Ménétriés, 1856
electa (Vieweg, 1790)
zalmunna Butler, 1877
tschiliensis Bang-Haas, 1927
elocata ([Esper, 1787])
marita Hübner, [1813]
nurus Hübner, 1822
gitana Mabille
locata Staudinger, 1892 (subsp.)
deducta Eversmann, 1843
uralensis Spuler, 1908
puerpera (Giorna, 1791)
amasina Esper, 1804
pellex Hübner, [1808-1809]
romana Schultz, 1909
pallida Alphéraky, 1887
tarbagata Schultz, 1909
centralasiae Sheljuzhko, 1943, nec Kkuznetsov, 1903
orientalis Staudinger, 1877, **syn. n.**
pudica Moore, 1879.
sponsa (Linnaeus, 1767)
rejecta Fischer de Waldheim, 1820
laeta Oberthür, 1907
purpurea Oberthür, 1922
dula Bremer, 1861
carminea Mell, 1939
promissa ([Den. & Schiff., 1775])
mneste Hübner, [1813]
hilaris Oberthür, 1907
electra Bang-Haas, 1910
detrita Warren, 1913
lupina Herrich-Schäffer, 1851
pacta (Linnaeus, 1758)
suecica Esper, 1788
deserta Kozhanchikov, 1925
kotshubeji Sheljushko, 1925

Tribe **SYPNINI** Holloway, 2005

HYPERSYPNOIDES Berio, 1958
OTHRESYPNA Berio, 1950
astrigera (Butler, 1885)

SYPNOIDES Hampson, 1913
PYSNOIDES Berio, 1950
HYPOSYPNOIDES Berio, 1958, subgenus
SUPERSYPNOIDES Berio, 1958, subgenus

(SUPERSYPNOIDES Berio, 1958)
hercules (Butler, 1881)
rectifasciata Graeser, 1888 [1889]
albifusa Warren, 1913, infrasubsp., ab.
albimedia Warren, 1913
gigantea Berio, 1958, infrasubsp., ab.
picta (Butler, 1877)
achatina Butler, 1877
fumosa (Butler, 1877)

DADDALA Walker, 1865
ELPIA Walker, 1865
lucilla (Butler, 1881)
obscurata Butler, 1881

Tribe **HYPOCALINI** Guenée, 1852

HYPOCALA Guenée, 1852
deflorata (Fabricius, 1794)
angulipalps s Guenée, 1852
moorei Butler, 1892
australiae Butler, 1892
subsatura Guenée, 1852
aspersa Butler, 1883
limbata Butler, 1889
tungusa Graeser, 1890
violacea Butler, 1879
clarissima Butler, 1892
kebaea Bethune-Baker, 1906

Subfamily **EUTELIINAE** Grote, 1882
EURHIPIDAE Herrich-Schäffer, [1851] 1845

EUTELIA Hübner, [1823] 1816
EUTESIA: Hübner, [1826] 1816, misspell.
EURHIPIA Boisduval, 1829
PHLEGETONIA Guenée, 1852
RIPOGENUS Grote, 1865
ZOBIA Saalmüller, 1891
ALOTSA Swinhoe, 1900
SILACIDA Swinhoe, 1900
ENTELIA: Lower, 1901, misspell.
NOCTASOTA Clench, 1954
ADORARIA Beck, 1996
geyeri (Felder & Rogenhofer, 1874)
inextricata Moore, 1882
adulatricoides (Mell, 1943)

Subfamily **PLUSIINAE** Boisduval, [1828]
PLUSIIDAE Herrich-Schäffer, [1851] 1845
PHYTOMETRINAE Hampson, 1913

Tribe **ABROSTOLINI** Eichlin & Cunningham, 1978

ABROSTOLA Ochsenheimer, 1816
UNCA Oken, 1813, suppr.
HABROSTOLA Sodoffsky, 1837, emend.
UNCA Lhomme [1929]
INGURIDIA Butler, 1879
TRIGEMINOSTOLA
asclepiadis ([Den. & Schiff.], 1775)
asclepiadis Lang, 1789
jagowi Bartel, 1904
triplasia (Linnaeus, 1758)
trigemina Werneburg, 1864, unnecess. repl. name
tripartita (Hufnagel, 1766)
urticae Hübner, 1816
triplasia auct.
ussuriensis Dufay, 1958
korbi Dufay, 1958
pacifica Dufay, 1960
kaszabi Dufay, 1971

Tribe **ARGYROGRAMMATINI** Eichlin & Cunningham, 1978

TRICHOPLUSIA McDunnough, 1944
ni (Hübner, [1803])
extrahens Walker, 1857
significans Walker, 1857
florida Dannehl, 1929
deserticola Rothschild, 1913
brassicae Riley, 1870
humilis Walker, 1857
innata Herrich-Schäffer, 1868
echinocystidis Behr, 1874

THYSANOPLUSIA Ichinose, 1973
intermixta (Warren, 1913)
brachycalcea Hampson, 1913

CTENOPLUSIA Dufay, 1970
ACANTHOPLUSIA Dufay, 1970, subgenus

(CTENOPLUSIA Dufay, 1970)
albostriata (Bremer & Grey, 1853)
subchalybaea Walker, 1865
nubila Moore, 1887
oxygramma Hampson, 1894
transfixa auct.

(ACANTHOPLUSIA Dufay, 1970)
agnata (Staudinger, 1892)
sokutsuna Strand, 1920
chalcytes Hampson, 1913, nec Esper, 1787
ANADEVIDIA Kostrowicki, 1961
PODIOPLUSIA Ichinose, 1962
peponis (Fabricius, 1775)
agramma Guenée, 1852
inchoata Walker, 1865
fumifera Graeser, 1889 [1890]
hebetata (Butler, 1889)

Tribe **PLUSIINI** Boisduval, [1828]
DIACHRISIINA Beck, 1996
PLUSIDIINA Beck, 1996

Subtribe **AUTOPLUSIINA** Kitching, 1987

ERYTHROPLUSIA Ichinose, 1962
PERLOPLUSIA Chou & Lu, 1978
PEROPLUSIA Poole, 1989, misspell.
rutilifrons (Walker, 1858)
adscripta Staudinger, 1888
neorutilifrons Chou & Lu, 1978
pyropia (Butler, 1879)
pseudopyropia Chou & Lu, 1978

MACDUNNOUGHIA Kostrowicki, 1961
SCLEROPLUSIA Ichinose, 1962
PURIPLUSIA Chou & Lu, 1974, subgenus

(MACDUNNOUGHIA Kostrowicky, 1961)
confusa (Stephens, 1850)
gutta Guenée, 1852
circumflexa Esper, 1788;
bigutta Staudinger, 1892
hybrida Ronkay, 1986
crassisigna (Warren, 1913)
rhopalosema Hampson, 1913
xizangensis Chou & Lu, 1976

(PURIPLUSIA Chou & Lu, 1974)
purissima (Butler, 1878)

SCLEROGENIA Ichinose, 1973
jessica (Butler, 1878)
serena Butler, 1879

ANTOCULEORA Ichinose, 1973
CERVIPLUSIA Chou & Lu, 1978
locuples (Oberthür, 1881)
lushanensis Chou & Lu, 1978
ornatissima auct., nec Walker, 1858

DIACHRYSIA Hübner, [1821] 1816
CHRYCHRYSIA Beck, 1996
ZOSICHRYSIA Beck, 1996
chryson (Esper, 1789)
aerifera Sowerby, 1805
pales Mell, 1939
pales (Mell, 1939)
coreae Strand, 1916, infrasubsp., ab.
coreae: Bryk, 1948
coreae: Inoue & Sugi, 1958
leonina (Oberthür, 1884)
humeralis Butler, 1886
witti L. & G. Ronkay, & Behounek, 2008
bieti auct., nec Oberthür, 1884
chrysitis (Linnaeus, 1758)
plesdidior Ferdinandez, 1929
stenochrysis (Warren, 1913)
juncta Tutt, 1892,
multauri Bryk, 1942
tutti Kostrowicki, 1961
nadeja (Oberthür, 1880)
zosimi (Hübner, [1822])

Subtribe **EUCHALCIINA** Chou & Lu, 1979
POLYCHRYSIINA Kljutshko, 1985
PANCHRYSIINA Beck, 1996

EUCHALCIA Hübner, [1821] 1816
ADEVA McDunnough, 1944
PSEUDEUCHALCIA Ichinose, 1985, subgenus
PAREUCHALCIA Beck, [1992] 1991, subgenus
variabilis (Piller & Mitterpacher, 1783)
illustris Fabricius, 1787
cuprea Esper, 1787
uralensis Eversmann, 1842 (subsp.)
fuscolivacea Varga & Ronkay, 1984
mongolica (Staudinger, 1901)
altaica Dufay, 1968
kondarensis Kljuchko, 1989
sergia (Oberthür, 1884)
[**exornata** Ronkay, 1987]
renardi (Eversmann, 1844)
eversmanni Staudinger, 1896
siderifera (Eversmann, 1856)
beckeri Staudinger, 1861

achaiae Dufay, 1968 (subsp.)
modestoides Poole, 1989
modesta Hübner, 1786, nom. praeocc.
cuprea Esper, 1787 auct., part
biezankoi (Alberti, 1965)
defreinae Hacker, 1986 (subsp.)
consona (Fabricius, 1787)

POLYCHRYSIA Hübner, [1823] 1816
POLYCHRISIA: Bethune-Baker, 1906, misspell.
moneta (Fabricius, 1787)
flavago Esper, 1787
napelli deVillers, 1789
argyritis Esper, [1787]
esmeralda (Oberthür, 1880)
marusiki L. & G. Ronkay, Behounek & Mikkola, 2008 (subsp.)
aurata (Staudinger, 1888)
splendida (Butler, 1878)
intractata Staudinger, 1888
intractata Staudinger, 1888
intracta: Poole, 1989: 824, misspell.
sica (Graeser, 1890)

PANCHRYSIA Hübner, [1821] 1816
TETRARGENIA Beck, [1992] 1991
HEXAUREIA Beck, 1991, subgenus

(PANCHRYSIA Hübner, [1821] 1816)
deaurata (Esper, 1787)
chryson Borkhausen, 1792, nec Esper, 1789
aurea Hübner, [1803]
semiargentea Alpheraky, 1889
ornata (Bremer, 1864)
contacta W. Kozhantschikov, 1923

(HEXAUREIA Beck, 1991)
dives (Eversmann, 1844)

LAMPROTES Reichenbach, Leiptzig, 1817
CHRYSOPTERA Berthold, 1827
CUBENA Walker, 1856
c-aureum (Knoch, 1781)
concha Fabricius, 1787
mikadina (Butler, 1878)
micadina Hampson, 1913, emend

PLUSIDIA Butler, 1879
cheiranthi (Tauscher, 1809)
eugenia Eversmann, 1841
abrostoloides Butler, 1879 (subsp.)
separanda Warren, 1913
murensis Warnecke, 1918

Subtribe **PLUSIINA** Boisduval, [1828]
AUTOGRAPHINI Eichlin & Cunningham, 1978
AUTOGRAPHINI Chou & Lu, 1979
CALOPLUSIINI Chou & Lu, 1979

AUTOGRAPHA Hübner, [1821] 1816
gamma (Linnaeus, 1758)
pulchrina Haworth, 1809, nec Haworth, 1802
alepica Nitsche, 1911
gammina Staudinger, 1901
messmeri Schadewald 1993
voelkeri Schadewald 1993
mandarina (Freyer, 1846)
intercalaris Herrich-Schäffer, 1855
interscalaris Eversmann, 1857
typinota Butler, 1878
obscura Oberthür, 1884
lehri Kljuchko, 1984
pulchrina (Haworth, 1802)
interrogationis Esper, [1787]
v-aureum Hübner, [1802]
jota Hübner, [1802]), nec Linnaeus, 1758
v-aureum Guenée, 1852
percontatrix Aurivillius, 1888
buraetica (Staudinger, 1892)
gammoides Speyer, 1875
ternei Kljuchko, 1984
pulchrina auct.
jota (Linnaeus, 1758)
protea Stoll. 1782
inscripta Esper, [1787]
gammaaurina Haworth, 1809
percontationis Oochsenheimer, 1816
aurigutta Hübner, [1821])
ancora Frreyer, 183
bartholomaei Ménetriés, 1859
baltica Speyer, 1875
anatolica Schwingenschuss, 1938
amurica (Staudinger, 1892)
iota auct.
pulchrina auct.
v-minus (Oberthür, 1884)
urupina (Bryk, 1942)
nigrisigna (Walker, 1858)
camptosema (Hampson, 1913)
nekrasovi Klychko 1985
macrogamma (Eversmann, 1842)
sevastina Freyer, 1842
nigroviolacea Rangnow, 1935
bractea ([Den. & Schiff.], 1775)
securis deVillers, 1789
excelsa (Kretschmar, 1862)
metabractea Butler, 1881
parabractea Hampson, 1913
kostjuki Klyuchko, 1986

CORNUTIPLUSIA Kostrowicki, 1961
circumflexa (Linnaeus, 1767)
unata Fabricius, 1787
flexuosa Donovan, 1807
graphica (Herrich-Schäffer, 1851
daubii Freyer, 1838
patefacta Walker, 1857
clarescens Pinker & Bacallado, 1975)

SYNGRAPHA Hübner[18213] 1816
CALOPLUSIA Smith, 1884
PALAEOGRAPHA Kljutshko, 1983
AINGRAPHA Beck, [1992] 1991
PARSYNGRAPHA Beck, [1992] 1991;
parilis (Hübner, 1808)
quadriplaga Walker, 1857
hochenwarthi (Hochenwarth, 1785)
divergens Fabricius, 1787, nec Hübner, 1813
insignata Reuter, 1893
hochesvarthi Hampson, 1913, emend.
lapponaris Schulte, 1952
diasema (Boisduval, 1829)
borea Hampson, 1913, nec Aurivillius, 1890
microgamma (Hübner, 1823)
incompleta Reuter, 1893
v-notata Strand, 1917
arctica Rangnow, 1935
nearctica Fergusson, 1955 (subsp.)
ain (Hochenwarth, 1785)
persibirica L. & G. Ronkay, Behounek & Mikkola 2000 (subsp.)
interrogationis (Linnaeus, 1758)
aemula Fabricius, 1787, nec [Den. & Schiff.], 1775
conscripta Hübner, 1790
aurosignata Donovan, 1808
gamma-argestina Stephens, 1850
borealis Reuter, 1893
transbaikalensis Staudinger, 1892 (subsp.)
rosea Tutt, 1892
epsilon Ottolengui, 1900
flammifera H. Huese, 1901
aureomaculata Vorbodt, 1912
zeta Ottolengui, 1902
pyrenaica Hampson, 1913
simplex Strand, 1917
sachalinensis Matsumura, 1925
herschelensis Benjamin, 1933
magnifica Rangnow, 1936
norrlandica Schulte, 1956
gilarovi Kljuchko, 1983
ottolenguii Dyar, 1903
arctica Ottolengui, 1902, nec Möschler, 1884
nyiwonis Matsumura, 1925 (subsp.)
alpina Ichinose, 1963

PLUSIA Ochsenheimer, 1816
CHRYSAPIDIA Hübner, [1821] 1816
PALAEOPLUSIA Hampson, 1913
festucae (Linnaeus, 1758)
splendida Rangnow, 1935
yokohamensis Bryk, 1948
japonibia Bryk, 1948
kamchadala Bryk, 1948
kurilensis Bryk, 1948
manchurica Lempke, 1966
nichollae auct.
putnami Grote, 1873
festata Graeser, 1889 [1890] (subsp.)
punctistigma Strand, 1917)
barbara Warren, 1913 (subsp.)
gracilis Lempke, 1966 (subsp.)
conjuncta Chou & Lu, 1978
major Warren, 1913 infrasubsp., form.
major Chou & Lu, 1979

Subfamily **EUSTROTIINAE** Grote, 1882
ERASTRIDI Stephens, 1850, inval.
ERASTRIDAE Herrich-Schäffer, [1851] 1845, invalid
CERATHOSIINI Grote, 1890
ERASTRIINAE Tutt, 1896 inval.
ERASTRIINI Forbes, 1954, inval.
LITHACODIINAE Crumb, 1956

PHYLLOPHILA Guenée, 1852
obliterata (Rambur, 1833)
wimmerii Treitschke, 1835
recta Eversmann, 1844
cretacea Butler, 1879
venerica Bryk, 1948

PROTODELTOTE Ueda, 1984
DECEPTRIA Beck, 1996
LITHACODIA auct.
ERASTRIA auct.
JASPIDIA auct.
pygarga (Hufnagel, 1766)
fasciana Linnaeus, 1762
fuscula [Den. & Schiff.], 1775
polygramma Esper, 1790
albilinea Haworth, 1809
guenei Fallou, 1864
coreana Bryk, 1948
distinguenda (Staudinger, 1888)
quadriorbis Berio, 1977
wiscotti (Staudinger, 1888)
viscotti, Hampson, 1910 emend.
jezoensis Sugi, 1959

KOYAGA Ueda, 1984
ERASTRIA auct.
LITHACODIA auct.
JASPIDIA auct.
falsa (Butler, 1885)
numisma (Staudinger, 1888)
olivacea Leech, 1889
magninumisma (Ahn, 1998)
magnumisma, Kononenko *et al*, 1998, emend.

SUGIA Ueda, 1984
stygia (Butler, 1878)

DELTOTE Reichenbah, Leipzig, 1817
ERASTRIA Ochsenheimer, 1816,
LITHACODIA Hübner, 1818
EUSTROTIA Hübner, [1821] 1816
HEMEROPTERA Sodoffsky, 1837, repl. name
HYDRELIA Guenée, 1841, preocc.
HYELA Stephens, 1850
BANKIA Guenée, 1852, preocc.
deceptoria (Scopoli, 1763)
lineodes Hufnagel, 1766
atratula [Den. & Schiff., 1775]
atratula Hübner, [1800-1803]), nec. Den. & Schiff., 1775
uncula (Clerck, 1759)
uncana Linnaeus, 1761
singularis Hufnagel, 1766
unca [Den. & Schiff., 1775]
rufotincta Kolb, 1930
bankiana (Fabricius, 1775)
olivana [Den. & Schiff., 1775]
argentula Hübner, [1787]
olivea Hübner, [1803], emend.
albescens Draudt, 1935
uniformis Draudt, 1935
amurula Staudinger, 1892
nemorum (Oberthür, 1880)
africana Leech, 1889, nec Felder & Rogenhofer, 1874

PSEUDODELTOTE Ueda, 1984

brunnea (Leech, 1889)

PARAPHYLLOPHILA Kononenko, 1985
confusa Kononenko, 1985

MICARDIA Butler, 1878
pulchra Butler, 1878
pulchrargenta Bryk, 1942

ERASTROIDES Hampson, 1893
fentoni (Butler, 1881)
versicolor Oberthür, 1884

NARANGA Moore, 1881
aenescens Moore, 1881
brunnea Hampson, 1910
hebescens Butler, 1879

MALIATTHA Walker, 1863
HYLEOPSIS Hampson, 1894
PROSCHORA Turner, 1945
rosacea (Leech, 1889)
chalcogramma (Bryk, 1948)
khasanica Zolotarenko & Dubatolov, 1996
bella (Staudinger, 1888)

CHORSIA Walker, [1863] 1864
BRYOPHILINA Staudinger, 1892, **syn. n.**
POECILOGRAMMA Butler, 1892, preocc.
AEOLOGRAMMA Strand, 1910, repl. name
PEUDERIOPUS Warren, 1913
NEUSTROTIA Sugi 1982
costimacula (Oberthür, 1880), **comb. n.**
serica Warren, 1912
noloides (Butler, 1879) **comb. n.**
mollicula (Graeser, 1888 [1889]) **comb. n.**
blandula Staudinger, 1892

Subfamily **ACONTIINAE** Guenée, 1841
AGROPHILIDAE Duponchel, [1845]
EMMELIDI Stephens, 1850
TARACHINI Grote, 1890

Tribe **ACONTIINI** Guenée, 1841

ACONTIA Ochsenheimer, 1816
TARACHE Hübner, [1823] 1816
EROTYLA Hübner, 1822
EUSCEPTIS Hübner, 1823, subgenus
DESMORPHA Stephens, 1829
DESMOPHORA Stephens, 1829
EUPHASIA Stephens, 1830
HELIOTHERA Sodoffsky, 1837, repl. name
PORROTHA Gistl, 1846, repl. name
TIMA Walker, [1858], preocc.
PSEUDALYPIA Edwards, 1874
EUGRAPHIA Guenée, 1852
METAPIOPLASTA Wallengren, 1865, subgenus
PONOMETIA Herrich-Schaffer, 1868
SPRAGUEIA Grote, 1875
TRICHOTARACHE Grote, 1875
FRUVA Grote, 1877
HELIODORA Neumoegen, 1891
GRAEPERIA Grote, 1895, unnecess. repl. name
THERASEA Grote, 1895
TARACHIDIA Hampson, 1898
CONACONTIA Smith, 1900
TORNACONTIA Smith, 1900
CONOCHARES Smith, 1905
HOPLOTARACHE Hampson, 1910
PROCRIOSIS Hampson, 1910
CARDIOSACE Hampson, 1910
AULOTARACHE Hampson, 1910
NEPTUNIA Barnes & McDunnough, 1911, prerocc.
CERATOSTROTIA Warren, 1913
EMMELIA Hübner, [1821] 1816, subgenus
EROTYLA Hübner, [1806], suppr. name.
EROTYLA Hübner, 1822
HEMISPARGUEIA Barnes & McDunnough, 1923
ACROPSEROTARACHE Berio, 1937
AGROPHILA Boisduval, 1840
FREDINA Brandt, 1939
UNIPTENA Nye, 1975
ACONTARACHE Berio, 1977, subgenus
ASCOPSEROTARACHE Berio
URACONTIA Beck, 1996 subgenus.
EMMELACONTIA Beck, 2000
OLIVACONTIA Hacker, Legrain & Fibiger 2008, subgenus

(URACONTIA Beck, 1996)
melanura (Tauscher, 1809)
eversmanni Kolenati, 1846
titania sensu auct., nec Esper, [1798]

(ACONTIA Ochsenheimer, 1816)
lucida (Hufnagel, 1766)
solaris [Den. & Schiff.], 1775
albicollis Fabricius, 1781
upicola Borkhausen, 1792
titania Freyer, nec Esper, 1798
insolatrix Hübner, [1819-1822]
triradiata Walker, 1858
triangulum Costa, 1882
martjanovi Tschetverikov, 1904 **comb. n**

(OLIVACONTIA Hacker, Legrain & Fibiger 2008)
olivacea (Hampson, 1891)
umbrosa O. Bang-Haas, 1927

(EMMELIA Hübner, [1821] 1816)
candefacta Hübner, [1831] 1825
trabealis (Scopoli, 1763)
arabica Hufnagel, 1766
sulphuralis Linnaeus, 1767
sulphurea [Den. & Schiff.], 1775
arlequinetta Geoterey, 1785
trabeata Borkhausen, 1790
trabeata Scriba, 1790
lugubris Fabricius, 1793
pardalina Walker, 1865

Subfamily **AEDIINAE** Beck, 1960

AEDIA Hübner, [1823] 1816
ANOPHIA Guenée, 1852
funesta (Esper, 1786)
leucomelas Hübner, [1803], nec Linnaeus, 1758
alchymista Esper, nec [Den. & Schiff.], 1775

Subfamily **NOLINAE** Bruand, 1846
ROESELIIDAE Walker, [1865] 1864
NOLIDAE Stainton, 1859
NOLIDAE Speyer & Speyer, 1862
NOLINAE Hampson, 1894

Tribe **NOLINI** Bruand, 1846

MEGANOLA Dyar, 1898
ANTENNOLA de Freina & Witt, 1984
RHYNCHOPALPUS auct.
ROESELIA auct.
MIMERASTRIA auct.
togatulalis (Hübner, 1796)
togatulana Duponchel, 1845
strigula (Den. & Schiff., [1775])
asperalis Villers, 1789
strigulalis Hübner, 1796
corticosa Vallot, 1802
monachalis Haworth, 1811
strigulana Hübner, 1825
lineolalis Eversmann, 1844
zelleriana Fischer von Waldheim, 1824
albula (Den. & Schiff., 1775)
albulalis Hübner, 1796
albulana Hübner, [1825]
nivalis Caradja, 1934, infrasubsp., var.
formosana Wileman & West, 1928 (subsp.)
pacifica Inoue, 1958 (subsp.)
fumosa (Butler, 1879)
basifascia Inoue, 1958
bryophilalis (Staudinger, 1887)
costalis (Staudinger, 1887)
melanocosta Inoue, 1961
strigulosa Staudinger, 1887
satoi Inoue, 1970
shimekii Inoue, 1970
mikabo (Inoue, 1970)
subgigas Inoue, 1982
gigantula auct, nec Staudinger, 1878
gigas (Butler, 1884)
maculata Staudinger, 1887
nigromaculata Nagano, 1918

EVONIMA Walker, 1865
MIMERASTRIA Butler, 1881
POECILONOLA Hampson, 1900
mandschuriana Oberthür, 1880)

MANOBA Walker, [1863]
RHYNCHOPALPUS Hampson, 1893
ROESELIA sensu Hampson
MEGANOLA auct, nec Dyar, 1898
MIMERASTRIA auct.
banghaasi (West, 1925)
sumi Inoue, 1956 (subsp.)

CASMINOLA Laszlo, G.Ronkay, Witt, 2010
pulchella (Leech, 1889)

NOLATHRIPA Inoue, 1970
lactaria (Graeser, 1892)
korbi Püngeler, 1908
stellata Wileman, 1911

NOLA Leach, 1815
LIRA Billberg, 1820
CHLAMIFERA Hübner, 1822
CHLAMIPHORA Hübner, [1825]
ROESELIA Hübner, [1825]
NECLA Walker, 1865
AUTOMALA Walker, [1863]
CELAMA Walker, 1865
PISARA Walker, 1862
ARADRAPHA Walker, [1866]
LEBENA Walker, 1866
MINNAGARA Walker, 1866
ARGYROPHYES Grote, 1873
EPIZEUCTIS Meyrick, 1889
DELTAPTERUM Hampson, 1894
NEONOLA Hampson, 1900
POLIOTHRIPA Hampson, 1902
CELAMOIDES van Eecke, 1920
IDIOCYTTARA Turner, 1944

cucullatella (Linnaeus, 1758)
ludvigella Müller, 1764
palliola Den. & Schiff., [1775]
pygmaria Fabricius, 1794
palliolalis Hübner, 1796
cucullatalis Haworh, 1811
cucullatana Hübner, 1825
fuliginalis Stephens, 1834
palliolana Duponchel, 184
cucullalis Ddoubleday, 1848
tutulella Zerny, 1927
basigrisea Lempke, 1960
variegata Lempke, 1960
confusalis (Herrich-Schäffer, [1847] 1845)
fumosensis Daniel, 1957 (subsp.)
cicatricalis (Treitschke, 1835)
cicatricana Duponchel [1845], emend.
tuberculalis Mann, 1857
aerugula (Hübner, 1793)
centonalis Hübner, 1796
centonana Hübner, 1825
candidalis Staudinger, 1861
littoralis Paux, 1901
spitzi Schawerda, 1921
contrarialis Heydemann, 1934
trituberculana Heslop, 1959
crambiformis Rebel, 1902
karelica (Tengström, 1869)
arctica Schoeyen, 1888
obsoleta Reuter, 1893
amuricola Warnecke, 1838
[**cristatula** (Hübner, 1793)]
cristulalis Hübner, 1796
cristulana Hübner, [1825]
*cristatula minuali*s auct., nec. Leech, 1888
[**chlamitulalis** (Hübner, [1813])]
chlamydulana Duponchel, [1845]
cristatula auct.
*chlamitulalis minuali*s auct., nec. Leech, 1888
minutalis Leech, 1888
taeniata Snellen, 1875
candida Butler, 1879
fragilis Swinhoe, 1890
mesozona Lucas, 1890
anpingicola Strand, 1917
umetsui Sasaki, 1993
innocua Butler, 1880
costimacula Staudinger, 1887
japonibia Strand, 1920
emi (Inoue, 1956)

neglecta Inoue, 1991
nami (Inoue, 1956)
ebatoi Inoue, 1970

Tribe **CHLOEPHORINI** Stainton, 1859
HALIADEA Snellen, 1867
HYDROPHILINAE Börner, 1932
HYLOPHILINI Mell, 1943
BENINAE Beck, 1960

Subtribe **CHLOEPHORINA** Stainton, 1859

IRAGAODES Matsumura, 1931
nobilis (Staudinger, 1887)

PARHYLOPHILA Hampson, 1912
celsiana (Staudinger, 1887)
buddhae (Alphéraky, 1897)

KERALA Moore, 1881
CERALA: Hampson, 1912, emend.
decipiens (Butler, 1878)
macroptera Oberthür, 1880
fujisana Matsumura, 1909

GELASTOCERA Butler, 1877
ochroleucana Staudinger, 1887
exusta Butler, 1877
designata Bryk, 1948, infrasubsp., form
eminentissima Bryk, 1948
sutshana Obraztsov, 1950, **syn**. **n**.
rubra Kononenko, 1984
kotshubeji Obraztsov, 1943

MACROCHTHONIA Butler, 1881
ECCOPTEROMA Staudinger, 1892
fervens Butler, 1881
falcata Graeser, 1889 [1890]
pyrausta Graeser, 1889 [1890]

PSEUDOIPS Hübner, 1822
HYLOPHILA Hübner, [1825] 1816
CHLOEPHORA Stephens, 1827
HALIAS Treitschke, 1829
CHLOEPHILA Constanti, 1920
CHLOEOPHORA auct.
BENA auct.
prasinana (Linnaeus, 1758)
faganus Fabricius, 1781
fagana, auct
lineata Retz, 1783
viridislienata Retz, 1783
sylvana Fabricius, 1794
milleri Capr, 1883
fiorii Constantini, 1911
japonica Warren, 1913
hongarica Warren, 1913
britannica Warren, 1913
sylpha (Butler, 1879)
kraeffti Graeser, 1888
magnifica Leech, 1890

Subtribe **CAMPTOLOMINA** Mell, 1943

CAMPTOLOMA Felder, 1874
LEUCOPARDUS Hampson, 1894
interiorata (Walker, [1865])
erythrophygum Felder & Rogenhoffer, 1874

Subtribe **CAREINA** Moore, 1883

AITETA Walker, 1856
CAPOTENA Walker, 1857
BRADA Walker, 1858, preocc.
CHALADRA Walker, 1865
PHANACA Walker, 1865
THYROSOSCELIS Meyrik, 1889
PSEUDELYDNA Hampson, 1894
SPHINGIFORMA Bethune-Baker, 1906
[**curvilinea** (Staudinger, 1892)]

Subtribe **ARIOLICINA** Mell, 1943

ARIOLICA Walker, [1863] 1864
CHIONOMERA Butler, 1881
ARTOLICA: Pagenstecher, 1909, misspell.
argentea (Butler, 1881)

SINNA Walker, 1865
TEINOPYGA Felder, 1874
extrema (Walker, 1854)
reticularis Felder & Rogenhofer, 1874
clara Butler, 1881
ornatissima Alphéraky, 1897
koresinna Bryk, 1948

Tribe **SARROTHRIPINI** Hampson, 1894
NYCTEOLAE Hübner, [1826] 1816
NYCTEOLIDES Herrich-Schäffer, [1846] 1845

Subtribe **EARIADINA** Hampson, 1912
EARIINI Beck, 1996

EARIAS Hübner, [1825] 1816
EARIS: Stephens, 1834, misspell.
APHUSIA Walker, [1858] 1857
APHUSA auct., misspell.
DIGBA Walker, 1862
pudicana Staudinger, 1887
pupillana Staudinger, 1887, infrasubsp., var.
paginalis Bryk, 1948
roseifera Butler, 1881
erubescens Staudinger, 1887
jezoensis Sugi 1982
roseoviridis Sugi 1982
clorana (Linnaeus, 1761)
viride Retzius, 1783
afflatana Fuchs, 1900
flavimargo deJoannis, 1908
chlorana auct., nec Linnaeus, 1761
vernana (Fabricius, 1787)
vernana (Hübner, 1793, nec Fabricius, 1787
obliterata Bartel, 1914

Subtribe **SARROTHRIPINA** Hampson, 1894

NYCTEOLA Hübner, 1822
SARROTHRIPUS Curtis, 1824
AXIA Hübner, [1825] 1816
NYCTEOLA Hübner, [1806], suppr.
SARROTHRIPA: Duponchel, 1834, misspell.
SARROTHRIPA: Duponchel, [1845] 1844, emend.
SAROTHRIPUS: Agassiz, 1846, emend.
SUBRITA Walker, 1866
SAROTRICHA: Meyrick, 1888, emend.
ICASMA Turner, 1902
DUFAYELLA Căpuse, 1972
degenerana (Hübner, [1799])
saldolana Fabricius, 1794
achatana deVillers, 1789
eurasiatica Dufay, 1961
hesperica Dufay, 1958 (subsp.)
asiatica (Krulikowsky, 1904)
populana Patočka, 1953
hungarica Kovács, 1954
eremostola Dufay, 1961
kuldzhana Obraztsov, 1954

Tribe **COLLOMENINI** Kitching, 1984
COLLOMENINI Franclemont & Todd, 1983 nom. nud.

NEGRITOTHRIPA
LAMPROTHRIPA auct.
hampsoni (Wileman, 1911)

Tribe **ELIGMINI** Mell, 1943

ELIGMA Hübner, [1819] 1816
HELIGMA Agassiz, 1846, emend.
PANLIGMA Moore, 1858
narcissus (Cramer, 1775)

Subfamily **BAGISARINAE** Crumb, 1956

IMOSCA Sugi, 1984
ALLOCOSMIA Sugi, 1982, preocc.
coreana (Matsumura, 1926)
moltrechti O. Bang-Haas, 1927
sutchana O. Bang-Haas, 1927

SPHRAGIFERA Staudinger, 1892
SPHRAGIDIFERA: Bryk, 1948, emend
sigillata (Ménétriés, 1859)

AMYNA Guenée, 1852
ILATTIA Walker, 1858
BERRESA Walker, [1859]
LOCHIA Walker, 1865
STRIDOVA Walker, 1869
PTERAETHOLIX Grote, 1873
CHYTORYZA Grote, 1876
HESPERIMORPHA Saalmüller, 1880
CHYTIRHISA: Lucas, 1909, misspell.
AMYNODES Warren, 1913
FORMOSAMYNA Strand, 1920
NIPHOSTICTA Turner, 1936, preocc.
TRILOPHIA Turner, 1943
HURWORTHIA Nye, 1975
axis (Guenée, 1852)
octo Guenée, 1852
tecta Grote, 1876
flavigutta Walker, 1858
perfundens Walker, 1858
cephusalis Walker, 1859
colon Guenée, 1862
vexabilis Wallengren, 1863
inornata Walker, 1865
leucospila Walker, 1865
albigutta Walker, 1869
stigmatula Snellen, 1872
orbica Morrison, 1874
bavia Felder & Rogenhofer, 1874
undulifera Butler, 1875
monotretalis Mabille, 1879
supplex Swinhoe, 1885
rufa Bethune-Baker, 1906
punctum (Fabricius, 1794)
annulata Fabricius, 1794
selenampha Guenée, 1852
latipennis Wallengren, 1860
spoliata Walker, [1858]
subtracta Walker, 1862
trivenefica Wallengren, 1863
urba Wallengren, 1863
natalensis Wallengren, 1865
latipennis Walker, 1865
paradoxa Saalmüller, 1880

Subfamily **METOPONIINAE** Herrich-Schaffer, [1851]
TYTINA Beck, 1999, nom. nud. in Beck, 1996

PANEMERIA Hübner, [1823] 1816
GUMNOPA Stephens, 1829
HELIODES Guenée, 1841
HELIACA Herrich-Schäffer, 1845
PANHEMERIA Spuler, 1907, misspell.
tenebrata (Scopoli, 1763)
arbuti Fabricius, 1775
policula Lang, 1789
fasciola Esper, [1791]
heliaca [Den. & Schiff.], 1775

APAUSTIS Hübner, [1823] 1816
rupicola ([Den. & Schiff.], 1775)
palliata Fabricius, 1787
pallium Borkhausen, 1892, nec Fabricius, 1794
theophila Staudinger, 1866

AEGLE Hübner, [1823] 1816
METOPONIA Duponchel, 1844
kaekeritziana (Hübner, 1799)
flava Hübner, [1808-1809]
sulphurifera Tauscher, 1809
flavida auct.
koekeritziana auct
coeceritziana Hampson, 1910, emend

MESOTROSTA Lederer, 1857
signalis (Treitschke, 1829)

MYCTEROPLUS Herrich-Schäffer, 1850
STEPHANIA Guenee, 1852
USBECA Püngeler, 1914
ACROSPHALIA Rebel, 1918
puniceago (Boisduval, 1840)
cornuta (Püngeler, 1914)
kulmburgi Rebel, 1918

TYTA Billberg, 1820
DYSTHYMIA Newman, 1868
luctuosa ([Den. & Schiff., 1775])
italica Fabricius, 1781
latefascia Schawerda, 1938

Subfamily **SINOCHARINAE** Speidel, Fänger & Naumann, 1996

SINOCHARIS Püngeler, 1912
NOSHIMEA Matsumura, 1931
korbae Püngeler, 1912
fulgularis Matsumura, 1931

Subfamily **BALSINAE** Grote, 1896

BALSA Walker, 1860
GARGAZA Walker, 1866
ASISYRA Grote, 1873
NOLAPHANA Grote, 1873
leodura (Staudinger, 1887)
malana auct.

Subfamily **THIACIDINAE** Hacker & Zill, 2007
THIACIDINI Berio, 1992, unavailable name.

THIACIDAS Walker, 1855
PANTHAUMA Staudinger, 1892
AUCHENSIA Hampson, 1905
TRISULANA Bethune-Backer
GALACTOMOIA Fawcett, 1916
PTERONYCTA Fawcett, 1917
egregia (Staudinger, 1892)
koreothauma Bryk, 1948

Subfamily **PANTHEINAE** Smith, 1898
TRICHOSEINI Kobes, 1992

Tribe **PANTHEINI** Smith, 1898

PANTHEA Hübner, [1820] 1816
ELATINA Duponchel, 1845
AUDELA Walker, 1861
PLATYCERURA Packard, 1864
DIPHTHERA: Hampson, 1913, nec Hübner, 1809
coenobita (Esper, 1785)
ussuriensis Warnecke, 1917
latefasciata Rebel, 1910
kotschubeyi Sheljuzhko, 1920
immaculata Sheljuzhko, 1920
idae Bryk, 1948

TRICHOSEA Grote, 1875
MOMA auct.
ludifica (Linnaeus, 1758)
antrotropa Bryk, 1948
azugensis Bryk, 1948, infrasubsp., form
[**champa** (Moore, 1879)]

ANACRONICTA Warren, 1909
ANACRONYCTA: Bryk, 1941, emend
caliginea (Butler, 1881)
nitida: Graeser, 1888 [1889]
nitida (Butler, 1878)
moupiensis Leech, 1900
kurilensis Bryk, 1942

TAMBANA Moore, 1882
plumbea (Butler, 1881)
ripleyi Holland, 1889

XANTHOMANTIS Warren, 1909
TRISULOIDES auct.
cornelia (Staudinger, 1888)
honrathii Graeser, 1888 [1889]
contaminata (Draudt, 1937)
tamsi Park & Lee, 1977

COLOCASIA Ochsenheimer, 1816
LEPTOSTOLA Billberg, 1820
DEMAS Stephens, 1829
PHINECA Walker, 1856
COLOCASOIDES Matsumura, 1931
CALOCASIA: Hampson, 1913, misspell.
coryli (Linnaeus, 1758)
corylus Haworth, 1809
basistriga Walker, 185
medionigra Vobrodt, 1930
uniformis Turati, 1919
tristis Ermolaev, 1937
mus (Oberthür, 1884)
ussuriensis Kardakoff, 1928
grisescens Kardakoff, 1928

Tribe **ARCTEINI** Berio, 1992

ARCTE Kollar, [1844]
COCYTODES Guenée, 1852
ARCTA, misspell.
coerula (Guenée, 1852)
coerulea auct., misspell.

Subfamily **DILOBINAE** Aurivillius, 1889
RAPHIINAE Beck, 1996

DILOBA Boisduval, 1840
EPISEMA auct.
caeruleocephala (Linnaeus, 1758)
armena Staudinger, 1871
coeruleocephala auct.

RAPHIA Hübner, [1821] 1816
ANODONTA Rambur, 1858, preocc. by Lamarck, 1799
CERTILA Walker, 1865
SALIGENA Walker, 1865
RHAPHIA: Agassiz, 1846, emend
peustera Püngeler, 1906
illarioni Filipjev, 1937
peusteria auct.

Subfamily **ACRONICTINAE** Heinemann, 1859
APATELINAE Grote, 1883
MOMINAE Hampson, 1902
CYMATOPHOROPSIINI Mell, 1943
CRANIOPHORINI Beck, 1996

CYMATOPHOROPSIS Hampson, 1894
TRISPILA Houlbert, 1921
THYATIRIDES Kozhantshikov, 1950
trimaculata (Bremer, 1861)
tripunctata Bang-Haas, 1927
tanakai Inoue & Sugi, 1957
[**unca** (Houlbert, 1921)]

NACNA Nye, 1975
CANNA Walker, 1865, preocc.
malachitis (Oberthür, 1881)
splendens Moore, 1881

BELCIADES I. Kozhanchikov, 1950
niveola (Motschulsky, 1866)
virens Butler, 1881
japyx Staudinger, 1892

BELCIANA Walker, 1862
NALCA Walker, 1866, repl. name.
DIPTHEROIDES Bethune-Backer 1906
DIPHTEROIDES: Neave, 1939, misspell.
POLYDESMA auct.
siitanae Remm, 1983
[**staudingeri** (Leech, 1900)]
trinubila Draudt, 1937

EUROMOIA Staudinger, 1892
EUROMOEA: Hampson, 1908, emend
subpulchra (Alphéraky, 1897)
mixta Staudinger, 1892
tienmushani Draudt, 1950

SUBLEUCONYCTA I Kozhanchikov, 1950
palshkovi (Filipjev, 1937)

MOMA Hübner, [1820] 1816
DIPHTHERA Hübner, [1806], suppr.
DIPHTERA Ochsenheimer, 1816, misspell.
DIPTHERA Hübner, [1825], misspell.
DIPHTHERAMOMA Berio, 1961
DIPHTHERA auct.
DASEOCHAETA auct.
alpium (Osbeck, 1778)
orion Sepp, 1762
aprilina [Den. & Schiff.], 1775., nec Linnaeus
orion Esper, [1787]
runica Gmelhaus, 1788
aprilina Linnaeus sensu Hübner, 1803
murrhina Graeser, 1888
designata Turati, 1923
kolthoffi (Bryk, 1948)
fulvicollis de Lattin, 1949
tsushimana Sugi 1982

GERBATHODES Warren, 1911
ACRONICTOIDES Kozhantshikov, 1950
paupera (Staudinger, 1892)
lichenodes Graeser, 1892
connexa Leech, 1900
ruvida Berio, 1977

CRANIOPHORA Snellen, 1867
BISULCIA Chapman, 1890
MIRACOPA Draudt, 1950
ACRONYCTA auct.
ligustri ([Den. & Schiff.], 1775)
litterata Panzer, 1804
coronula Haworth, 1809
gigantea Draudt, 1937
carbolucana Hartig, 1968
praeclara (Graeser, 1890)
pacifica Filipjev, 1927
kalgana Draudt, 1931
niveosparsa: Kozhantschikov, 1950, misident.

CRANIONYCTA de Lattin, 1949
jankowskii (Oberthür, 1880)
albonigra (Herz, 1904)
oda de Lattin, 1949
transversa Kozhantschikov, 1950
inquieta Draudt, 1950

ACRONICTA Ochsenheimer, 1816
APATELE Hübner, [1806], suppr.
APATELE Hübner, [1808], suppr.
ACRONYCTIA Meigen, 1813, misspell.
SEMAPHORA Guenée, 1814
APATELAE Ochsenheimer, 1816, unavail.
APATELE Hübner, [1818], unavail.
TRIAENA Hübner, 1818, subgenus
JOCHEAERA Hübner[1820] 1816, subgenus
PHARETRA Hübner, [1820] 1816, preocc.
APATELE Hübner, 1822
ACRONYCTA Treitschke, 1825, emend.
APATELA Stephens, 1829, misspell.
HYBOMA Hübner, [1829] 1816, subgenus
COMETA Sodoffsky, 1837, repl. name.
SEMATOPHORA Agassiz, [1848], emend.
CUSPIDIA Chapman, 1890
VIMINIA Chapman, 1890, subgenus
CHAMAEPORA Warren, 1909
MOLYBDONYCTA Sugi, 1979, subgenus
HYLONYCTA Sugi, 1979, subgenus
EUVIMINIA Beck, 1966
ANEUVIMINIA Beck, 1966
PARAVIMINIA Beck, 1966
SUBACRONYCTA Kozhantshikov, 1950, subgenus

(ACRONICTA Ochsenheimer, 1816)
aceris (Linnaeus, 1758)
candelisequa Esper, 179
infuscata Haworth, 1809
paradoxa Boisduval, 1840
calceata Dannehl, 1929
cazorlensis Calle, 1982
judaea Staudinger, 1901
aurica Staudinger, 1901
johanna Scawerda, 1940
rita Rungs, 1972
leporina (Linnaeus, 1758)
bicolor Maasen, 1871
bradyporina Treitschke, 1816
leucogaca Stichel, 9181
grisea Chreahe, 1906
vulpina (Grote, 1883)
sancta Edwards, 1888
leporella Staudinger, 1888 (subsp.)
cineracea Graeser, 1888 [1889]
leporina auct., nec Linnaeus, 1758
major (Bremer, 1861)

anaedina Butler, 188
atritaigena Dubatolov & Zolotarenko, 1995

(TRIAENA Hübner, 1818)
tridens ([Den. & Schiff.], 1775)
kargalica Moore, 1878
soltowensis Schultz, 1930
obscurior de Lattin, 1938
cuspis (Hübner, [1813])
belgica Draudt, 1931
intermedia (Warren, 1909)
increta Butler, 1878, nec Morrison, 1875
incretata Hampson, 1909
jezoensis Matsumura, 1925
formosana Matsumura, 1928
leucocuspis (Butler, 1878)
sapporensis Matsumura, 1926
obsuta Draudt, 1933
sugii (Kinoshita, 1990)
psi (Linnaeus, 1758)
perisi Calle, 1974
tridens Hübner, 1803, nec Den. & Schiff. 1775
crassistriga deLattin, 1938
batnana Draudt, 1931
solimana Draudt, 1938
tehrana Wiltshire, 1946
altaica Staudinger, 1901
iliensis Draudt, 1931

(JOCHEAERA Hübner, [1820] 1816)
alni (Linnaeus, 1767)
degener [Den. & Schiff.], 1775
intensiva Draudt, 1937
korealni Bryk, 1948
italica Berio, 1961

(HYBOMA Hübner, [1820] 1816)
adaucta (Warren, 1909)
phaedra Hampson, 1910
strigosa ([Den. & Schiff.], 1775)
favillacea Esper, 1788
terrigena Graeser, 1892
nigrescens Barrington, 1896
bryophiloides Hormuzaki, 1891
casparii Staudinger, 1897
sachalinensis Matsumura, 1925
jozana (Matsumura, 1926)
phaedriola Draudt, 1931

(MOLYBDONYCTA Sugi, 1979)
bellula (Alphéraky, 1895)
cerasi Howarth, 1951
chingana Draudt 1931 (subsp.)
omorii (Matsumura, 1926)

(HYLONYCTA Sugi, 1979)
VIMINIA auct.
PHARETRA auct.
carbonaria (Graeser, [1890] 1889)
catocaloida (Graeser, [1889] 1888)
hercules (Felder & Rogenhofer, 1874)

(VIMINIA Chapman, 1890)
menyanthidis (Esper, [1789])
menyanthidis Vieweg, 1790
suffusa Tutt, 1888
scotica Tutt, 1888
arduenna Gilmer, 1904
fennica deLattin, 1940
auricoma ([Den. & Schiff.], 1775)
lapathi Schrank, 1801
alpina Tutt, 1888, nec Freyer, 1858
similis Haworth, 1809
schwingenschussi Zerny, 1926
dahurica Kononenko & Han, 2008
cinerea (Hufnagel, 1766)
abscondida Treitschke, 1835
myricae Guenée, 1852
glaucoptera Petersen
rumicis (Linnaeus, 1758)
diffusa Walker, 1857
sukriana Gilmer
alsinoides Goest, 1903
meridionalis DanielL, 1925
rumicina Bryk, 1948
alicis Curtis, 1826
euphrasiae Sstephens, 1829, nec. Brahm, 1791
pallida Rotschild, 1920
turanica Staudinger, 1888
oriens Inoue & Sugi, 1958
lutea (Bremer & Grey, 1852)
leucoptera Butler, 1881
suigensis Matsumura, 1926
metaxantha funesta Draudt, 1950
digna (Butler, 1881)
michael Oberthür, 1884
hoenei Matsumura, 1926
agnata Draudt, 1937
metaxantha Hampson, 1909
raphael (Oberthür, 1884)
fixseni Graeser, 1888 [1889]
raphaelis Hampson, 1908
cubitata Warren, 1914

SUBACRONICTA I. Kozhanchikov, 1950
concerpta (Draudt, 1937)
megacephala auct.
megacephala ([Den. & Schiff., 1775])
rumicis Esper, 1786, nec Linnaeus, 1758
schlumbergi Schultz, 1906
warpachowskii Krulikowsky, 190
dungerni Rangnow, 1935
albidior Wagner, 1923
ankarensis Hering, 1933
gdyrensis Teich, 1901

SIMYRA Ochsenheimer, 1816
CNEPHATA Billberg, 1820, repl. name
SYMIRA Hübner, [1822] 1821, misspell.
ASEMA Sodoffsky, 1837, repl. name
NIMYA Guenée, 1841, misspell.
ARSILONCHE Lederer, 1857
ABLEPHARON Grote, 1873
SIYMRA Warren, 1912, misspell.
OMMATOSTOLIDEA Benjamin, 1933
PARASIMYRA Beck, 1996
nervosa ([Den. & Schiff.], 1775)
oxyptera Esper, [1788]

argentacea Herrich-Schäffer, 1848
torosa Guenée, 1852
argentea Spuler, 1901-1908
expressa Bang-Haas, 1912
splendida Staudinger, 1888
niveonitens Graeser 1888 [1889]
alsima Bryk, 1941
albovenosa (Goeze, 1781)
venosa Borkhausen, 1792
degener Hübner, 1808
atomima Haworth, 1809
africana Rungs, 1956
centripuncta Herrich-Schäffer, 1856
cretacea Wagner, 1929
tanaica Alphéraky, 1908
tjurana Draudt, 1936
saepestriata (Alphéraky, 1895), **stat. rev.**
saepistriata, Hampson, 1909, missp.
dentinosa Freyer, 1839
tendinosa Herrich-Schäffer, 1855
leucaspis Fischer de Waldheim, 1840
zeliha Korsonor & Lödl, 199

OXICESTA Hübner, [1819] 1816
geographica (Fabricius, 1787)
sericina Hübner, 1790
austera Esper, [1791]

EOGENA Guenée, 1852
contaminei (Eversmann, 1847)
bombycina Ménétriés, 1859
eogene Freyer, 1852

Subfamily **AGARISTINAE** Herrich-Schäffer, [1858]
AGARISTOIDEA Herrich-Schäffer, [1858] 1850-8
AGARISTIDEN Herrich-Schäffer, [1858] 1850-8
AGARISTIDAE Walker, [1865] 1864

MIMEUSEMIA Butler, 1875
persimilis Butler, 1875

SARBANISSA Walker, 1865
SEUDYRA Stretch, 1875
ZALISSA auct.
subflava (Moore, 1877)
jankowskii Alphéraky, 1897
japonica Bytinsky-Salz, 1939
venusta (Leech, 1889)

ASTEROPETES Hampson, 1901
noctuina (Butler, 1878)

REFERENCES

Ahola, M. 2001. Larva of *Auchensia ceruroides* Hampson, 1916 (Lepidoptera, Noctuidae Acronictinae). *Esperiana* **8**: 562–573.

Ahola, M. & Silvonen K. 2005. *Larvae of Northern European Noctuidae*. I. Otava, Helsinki. 657 pp.

Ahola, M. & Silvonen, K. 2008 *Larvae of Northern European Noctuidae*. 2. Otava, Helsinki. 672 pp.

Aibasov H. A. 1974. Fauna cheshuekrylyh Zapadnogo Kazahstana. *Nasekimye Zapadnogo Kazahstana*. Alma–Ata: 102–150.

Anikin, V., A. Sachkov, V. Zolotuhin & A. Sviridov. 2000. "Fauna lepidopterologica Volgo–Uralensis" 150 years later: changes and additions. Part. 5. Noctuidae. *Atalanta* **31** (1/2): 327–367.

Bänziger, H. 1975. Skin–piercing blood sucking moths I: Ecological and ethological studies on *Calpe eustrigata* (Lepid., Noctuidae). *Acta trop.* **32**. 125–141.

Bänziger, H. 1979. Skin–piercing blood sucking moths II: Studies on a futher three adult *Calyptra* [*Calpe*] sp. (Lepid., Noctuidae). *Acta trop.* **36**. 23–27.

Bänziger, H. 1982. Fruit–piersing moths in Thailand: a general surway and some new perspectives. *Mitt. Schweiz. ent. Ges*. **53**: 127–142.

Bänziger, H. 1983. A taxonomic revision of the fruit and blood–sucking moths genus *Calyptra* Ochsenheimer [=*Calpe* Treitschke] (Lep., Noctuidae). *Entomol. scand*. **14**. 467–491.

Bänziger, H. 1989. Skin–piercing blood sucking moths V: Attack on man by five *Calyptra* spp. (Lepidoptera, Noctuidae) in S and SE Asia. *Mitt. Schweiz. Ent. Ges.* **62**. 215–233.

Beck H. Larvae of European Noctuidae. Revision of the systematics of the Noctuidae. *Herbipoliana*: 1999a , **5**/1: 1–859 (1); 1999b, **5**/2: 1–447 (2); 2000a, **5**/3: 1–336 (3); 2000b, **5**/4: 1–512 (4).

Behounek G. Ronkay, G., Ronkay L., 2010. Witt Catalogue – Plusiinae 2. *A taxonomic atlas of the Eurasian and North African Noctuoidea*. 1. Heterocera Press, Budapest. 320 pp.

Berio, E. 1959. Studi sulla sistematica della cosiddette "Catocalinae" e "Ophiderinae" (Lepidoptera, Noctuidae). *Ann. Mus. Civ. Stor. Nat. Giacomo Doria* **71**: 276–327.

Berio, E. & Fletcher D. S. 1958. Monografia dell'antico genere *Sypna*. *Ann. Mus. Civ. Stor. Nat. Giacomo Doria* . **70**: 323-402.

Boursin Ch. 1940. Neue palärktische Arten und Formen mit besonderer Berüchsichtigung der Gattung *Autophila* Hb. II: Synonymie–Notizen samt verschiedenen Bemerkungen. *Mitt. münch. ent. Ges*. **30**:474–543

Boursin, Ch. 1955. Die *Apopestes* Hb. und *Autophila* Hb. Arten aus Dr. h. c. Höne's China–Ausbeuten. *Z. Wien. ent. Ges.* 40: 164–171.

Börner, C. 1939. Die Grundlagen meines Lepidopteren systems. Weimar. V*II International Kongress für Entomologie*. 2: 1372-1772.

Bubnova, T. V. 1980. Fauna sovok (Lepidoptera, Noctuidae) Zapadnogo Altaya. *Fauna i ekologia rastitel'noyadnych i khischnyh nasekomyh Sibiri*: 52–121. Novosibirsk (in Russian).

Bubnova, T. V. 1982. Novye dannye po faune sovok (Lepidoptera, Noctuidae) of Zapadnogo Altaya. *Poleznye i vrednye nasekomye Sibiri*: 113–116. Novosibirsk (in Russian).

Bidzilya, A. V. & Klyuchko Z. F. 1994. Heterocera of Lazovsky reserve. Kiev. *Zoological museum Kiev University T.G. Shevchenko* : 1-44.

Birch M. 1972. Male abdominal brush-organs in British noctuid moths and their value as taxonomicak character. *The Entomologist* 105: 185-205.

Birch M. 1972. Eversible Structures. In: Heath et al. *The Moths and Butterflies of Geat Britain and England.* Vol. 9: 9-18. London 288 pp.

Buszko, J. 1983. Sovki – Noctuidae. Podrodzini: Acontiinae, Sarrothipinae, Eutheliinae, Plusiinae, Catocalinae, Rivulinae, Hypeninae i Herminiinae. Klucze do oznaczania owadów Polski. Cz. 27. Motyle–Lepidoptera, zesz. 53e. Warszawa; Wrocław. 170 pp.

Butler, A. G. 1878–1889. *Illustration of typical specimens of Lepidoptera heterocera in the collection of the British Museum*. Pt **2**: i–x, 1–62, pls 21–40 (1878); Pt **3**: i–xviii, 1–82, pls. 41–60 (1879); Pt **5**: i–xii, 1–74, pls 78–100 (1881); Pt **6**: o–xv, 1–89, pls 101–120 (1886); Pt **7**: i–iv, 1–124, pls 121–138 (1889).

Chen, Y. 1982. Noctuidae. *Iconographia Insectorum Sinicorum*. Science press, Beijing. **III**: 237–390+1–24, pls 76–118 (in Chinese).

Chen, Y. 1999. Lepidoptera Noctuidae. *Fauna Sinica*. Insecta **16**. Science press, Beijing: i–lxxiii, 1596 pp., pls. 1–68 (in Chinese).

Crumb, S. E. 1956. The larvae of the Phalaenidae. *US Dept. Agr. Tech. Bull*. **1135**: 1–356, pl. 1–11.

Daricheva, M. A. 1965. K faune i ekologii sovok (Lepidoptera, Noctuidae) nizhnego techenija Murgaba. *Nasekomye nizhnego Murgaba*. Ashgabad: 53–73 pp. (in Russian).

Degtjareva, V. I. 1973. Dendrofilnye cheshuekrylye Gissarskogo khrebta i Gissarskoi doliny. Dushanbe. 193 pp. (in Russian).

Dubatolov, V. V. & Dolgikh A. M. 2009. The noctuids (Insecta, Lepidoptera, Noctuidae s. lato) of Bolshekhekhtsyrsky reservation. *Amursky zool. journal* **1**(2): 140–176 (in Russian).

Dubatolov, V. V. & Matov A. Yu. 2009. The noctuids (Insecta, Lepidoptera, Noctuidae s. lato) of the lower Amur. *Amursky zool. journal* **1** (4): 327–373 (in Russian).

Dumont, C. 1920. Notes sur le genre *Anumeta* Walker et description d'une nouvelle espèce. *Bull. Soc. Entomol. Fr.*: 321–325.

Ebato, T. 1971. Larvae of *Edessena hamada*. *J. Heteroc. Soc*. 64: 63 (In Japanese).

Edwards, E. D. 1996. Noctuidae. In E. S. Nielsen, Edwards E. D. & Runsi T. V. (eds). Check list of the Lepidoptera of Australia. *Monogr. Aust. Lepid*. **4**: 291–333.

Eichlin, T. D. & Cunnigham H. B. 1978. The Plusiinae (Lepidoptera; Noctuidae) of America North of Mexico, emphasizing genitalia and larval morphology. *U. S. Dept. Agric. Techn. Bull.* Nr **1567**. 122 pp.

Eggers, F. 1911. Über das thoracale Tympanal-Organ der Noctuiden. – Sitzungsberischen der Naturforscher. *Ges. Univ. Dorpat.* 20: (3-4): 139-146

Eggers, F. 1919. Das thoracale bitympanale Organ einer Gruppe Lepidoptera Heterocera. *Zool. Jahrb.* Abt. 2, 41: 273-376.

Eggers, F. 1928. Die Stiftführender Sinnesorgane. Morphology und Physiology der Chortodonalen und der tympanalen Sinnesapparate der Insecten . *Zool. Bausteine*, 2: 1-345.

Eversmann, E. F. 1855–1857. Les Noctuelites de la Russie. *Bull. Soc. imp. nat. Moscou* **28** (2): 313–427 (1855a); **28** (3): 129–203 (1855b); **29** (2): 161–233 (1856a); **29** (3): 1–120 (1856b); **30** (1): 48–150 (1857a); **30** (4): 355–439.

Falkovich, M. I. 1969. K trofic heskim svyazyam pustynnyh cheshuekrylyh Srednei Azzii. *XXII Annual meeting in memory of N. A. Kholodkovsky*. Leningrad. 53–88 (in Russian).

Fibiger, M. 1990. Noctuinae 1. *Noctuidae Europaeae.* **1**. Entomological Press, Sorø. 208 pp.

Fibiger, M. 1993. Noctuinae 2. *Noctuidae Europaeae.* **2**. Entomological Press, Sorø: 230 pp.

Fibiger, M. 1997. Noctuinae 3. *Noctuidae Europaeae.* **3**. Entomological Press, Sorø. 418 pp.

Fibiger, M. & Hacker H. 2001 The *Araeopteron* genus–group in Yemen, with description of one new genus and 6 new species (Lepidoptera, Noctuidae). *Esperiana* **8**: 575–584.

Fibiger, M. & H. Hacker. 2005. Systematic List of the Noctuoidea of Europe (Notodontidae, Nolidae, Arctiidae, Lymantriidae, Erebidae, Micronoctuidae, and Noctuidae). *Esperiana* **11**: 83–172

Fibiger, M. & Hacker H. 2007. Amphipyrinae, Condicinae, Eriopinae, Xyleninae (Part). *Noctuidae Europae.* **9**. Entomological Press, Sorø. 410 pp

Fibiger, M. & J. D. Lafontaine. 2005. A review of the higher classification of the Noctuoidea (Lepidoptera) – with special reference to the Holarctic fauna. *Esperiana* **11**: 7–82.

Fibiger M. & Kononenko V. S. 2008a. Revision of the Micronoctuidae species occurring in the Russian Far East and neighbouring countries with description of a new species (Lepidoptera, Noctuoidea). *Zootaxa* **1890**: 50–58.

Fibiger, M. & Kononenko V. S. 2008b. A revision of the subfamily Araeopteroninae Fibiger, 2005 in the Russian Far East and neighbouring countries with a description of four new species (Lepidoptera, Noctuidae). *Zootaxa* **1891**: 39–54

Fibiger, M., Kononenko V. S. & Nilsson D. 2008. Description of a new species of *Lygephila* Billberg, 1820 from Russian Far East and North China (Lepidoptera: Noctuidae, Catocalinae). *Zootaxa* **1922**: 62–68.

Fibiger M. Ronkay L., A. Steiner & A. Zilli. A. 2009. Pantheinae, Dilobinae, Acronicitinae, Nolinae, Eustrotiinae, Acontiinae, Metoponiinae, Heliothinae and Bryophilinae. *Noctuidae Europae*. **11**. Entomological press, Sorø. 504 pp.

Fibiger, M., Ronkay L., Zilli A. & J.-L. Yela. 2010. Rivulinae-Eutelinae and Supplement vols 1-11. *Noctuidae Europaea*. 12. Entomological press, Sorø.

Forbes W. T. M. 1939. The muscles of lepidopterous genitalia. *Ann. Entomol. Soc. America*, **32**: 1-10.

Forster, W. & Wolfhart T. 1971. *Die Schmetterlinnge Miteleuropas*. Bd. 4. Eulen Noctuidae. Stuttgart, 317 pp.

Franclemont, G. & E. L. Todd. 1983. Noctuidae 120–159. In: Hodges, R. W. *et al.* (eds). *Check List of the Lepidoptera of America North of Mexico*. London. xxi+ 284 pp.

Goater, B., L. Ronkay & M. Fibiger. 2003. Catocalinae & Plusiinae. *Noctuidae Europaeae*. **10**. Entomological Press, Sorø. 452 pp.

Grote, A. R. 1896. List of North American Eupterotidae, Ptilodontidae, Thyatiridae, Apatelidae and Agrotidae. *Abh. naturw.Ver. Bremen* 14: 43–128.

Hacker, H. 1990a. Die Noctuidae Vorderasiens (Lepidoptera). *Neue Entomol. Nachr.* **27**: 1–700.

Hacker, H. & J. Miatleusky. 2001. Noctuidae from the European part of Kazakhstan with first records of seven species for the Euriopean fauna (Lepidoptera). *Esperiana* **8**: 811–824.

Hacker, H. & A. Zilll. 2007. Revisional notes on the genus *Thiacidas* Walker, 1855, with description of Thiacidinae subfam. nov. and eleven new species (Lepidoptera, Noctuidae). Esperiana Memoirs **3**: 179–264.

Hacker, H., Ronkay L. & Hreblay M. 2005. Hadeninae I. *Noctuidae Europae*. **4**. Entomological press, Sorø. 419 pp.

Hacker, H. Legrain, A & Fibiger M. 2008. Revision of the genus *Acontia* Ochsenheimer. 1816 and tribus Acontiini Guenèe, 1841 (Old World) (Lepidoptera: Nictuidae: Acontiinae). Esperiana. **14**: 7–533

Hampson, G. F. 1903–1913. *Catalogue of the Lepidoptera Phalaenae in the British Museum*. **4**: i–xx, 1–689 (1903); **5**: i–xvi, 1–633 (1905); **6**: i–xiv, 1–532 (1906); **7**: i–xv, 1–709 (1908); **8**: i–xiv, 1–709 (1909); **9**: i–xv, 1–552 (1910); **10**: i–xix, 1–829 (1910); **11**: i–xvii, 1–689 (1912);

12: i–xiii, 1–858 (1913); **13**: i–xiv, 1–609 (1913). Pls 1–239. London, Taylor and Francis.

Hampson, G. F. 1914, 1920. *Catalogue of the Lepidoptera Phalaenae in the British Museum*. Supplement. **1**: i–xxviii, 1–858 (1914); **2**: i–vi, 1–619 (1920). Pls 1–71. London, Taylor and Francis.

Hayashi, E. 2003. Larvae of *Serrodes campana* Guenèe (Noctuidae) found on *Sapindus mukurossi* (Sapindaceae) in Kyushu. *Japan Heteroc. J.* **223**: 449 (in Japanese).

Hayashi, E. 2004a. *Eutelia geyeri* and *E. adulatricoides* (Noctuidae, Euteliinae), their larval hostplants, seasonal occurrence, hibernation and parasitic enemy. *Japan Heteroc. J.* **227**: 27–28 (in Japanese).

Hayashi, E. 2004b. The larva of *Artena dotata* (Fabricius) (Noctuidae, Catocalinae) reared on *Quercus glauca*. *Japan Heteroc. J.* **228**: 50–51 (in Japanese).

Hayashi, E. 2004c. The larva of *Ophiusa tirhaca* (Cramer) (Noctuidae, Catocalinae) found feeding on *Rhus javanica*. *Japan Heteroc. J.* **228**: 51–52 (in Japanese).

Hayashi, E. 2004d. Larva of *Blasticorhinus ussuriensis* (Bremer) (Noctuidae) on *Rumex acetosa*. *Japan Heteroc. J.* **228**: 55 (in Japanese).

Hayashi, E. 2004e. Two new extra–cucurbitaceous hostplants for *Anadevidia peponis* (Fabricius) (Noctuidae, Plusiinae). *Japan Heteroc. J.* **229**: 62–63 (in Japanese).

Herrich–Schäffer, G. A. W. 1843–1855. *Systenatische Bearbeitung des Schmetterlinge von Europa, zugleich als Text, Revision und Supplemant zu Jacob Hübners's Sammlung Europäeischer Schmetterlimg.* Regensburg, G. J. Manz, 450 pp.

Holloway, J. D. 1988. *The moths of Borneo* **6***: family Arctiidae, subfamilies Syntominae, Euchrominae, Arctiinae; Noctuidae misplaced in Arctiidae* (*Camptoloma, Aganainae*). Kuala Lumpur, Southdene. 101 pp.

Holloway, J. D. 1989. The moths of Borneo **12**: family Noctuidae, trifinae subfamilies: Noctuinae, Heliothinae, Hadeninae, Acronictinae, Amphipirynae, Agaristinae. *Malayan Nat. J.* **42** (2–3): 57–288.

Holloway, J. D. 1998. The classification of the Sarrothripinae, Chloephorinae, Camptolominae and Nolinae as Nolidae (Lepidoptera: Noctuoidea). *Quadrifina* **1**: 247–276.

Holloway, J. D. 2003. *The Moths of Borneo* **18**: *Nolidae*, *Nolinae*, *Chloephorinae*, *Westermanniinae*, *Collomeninae, Bleninae, Risobinae.* Kuala Lumpur, Southdene. 279 pp.

Holloway, J. D. 2005. The moths of Borneo **15 & 16**: Noctuidae Catocalinae. *Malayan Nat. J.* **58** (1–4): 1–529.

Holloway, J. D. 2008. The Moths of Borneo Noctuidae **17**: Rivulinae, Phytometrinae, Herminiinae, Hypeninae and Hypenodinae. *Malayan Nat. J.* **60** (1–4): 1–268.

Holloway, J. D. 2009. The Moths of Borneo **13**: family Noctuidae, subfamilies Pantheinae (part), Bagisarinae, Acontiinae, Aediinae, Eustrotiinae, Bryophilinae, Araeopteroninae, Aventiinae, Eublemminae and further miscellaneous genera. *Malayan Nat. J.* **62**(1&2): 1–240.

Holloway, J. D, & Miller, S. E. 2003. The composition, generic placement and host–plant relationship of the *joviana*–group in the *Parallelia* generic complex (Lepidoptera: Noctuidae, Catocalinae). *Invertebrate Syst.* **17**: 111–128.

Ichinose, T. [1963] 1962. Studies on the noctuid subfamily Plusiinae of Japan. *Bull. Fac. Agric. Tokyo Univ. Agric. Techn.* **6**: 1–127.

Ichinose, T. 1973. A revision of some genera of the japanese Plusiinae with descriptions of a new genus and two new subgenera (Lepidoptera, Noctuidae). *Kontyu*. **4**: 135–140.

Inoue, H. 1956. On the genus *Holocryptis* (Lepidoptera, Noctuidae) from Japan. *Tinea*. **3**:145–147.

Inoue, H. 1958. Three new species of the genus *Araeopteron* (Lepidoptera, Noctuidae) from Japan. *Tinea* **4** (1): 229–233.

Inoue, H. 1970. Two new genera of the subfamily Nycteolinae, Noctuidae from East Asia (Lepidoptera). *Bull. Japan Entomol. Acad.*: 37–42.

Inoue, H. 1979. Genera *Schrankia* and *Luceria* (Lepidoptera, Noctuidae) from Japan. *Tinea*. 10: 300–308.

Inoue H. 1982. Nolidae. In Inoue *et al*., *Moths of Japan* **1**: 660–668, **2**: 342–343, 460–461, pls. 154, 229, 349–354. Kodansha, Tokyo.

Inoue, H. 1991. Notes on the Nolinae (Lepidoptera, Noctuidae): Four new species from Japan and two species described by Staudinger from southeast Siberia. *Tyo to Ga* **42**(2): 63–73.

Inoue, H. 2001. On the systematic status of *Nola minutalis* Leech (Noctuidae, Nolinae). *Yugato* 164: 53–60 (in Japanese).

Inoue, H. 2001. On the Nolinae (Noctuidae) from Okinawa Prefecture with description of two new species. *Japan Heteroc. J.* 212: 223–230.

Ito, K. 1984. Discovery of the larva of *Catocala separans* Leech (Noctuidae) feeding on *Quercus variabilis*. *Japan Heteroc. J.* **129**: 51–52 (in Japanese).

Kanter, L. A. 1977. *Aleucanitis scolopax* Alph. (Lepidoptera, Noctuidae) – novyi vid dlja fauny SSSR. *Trudy Buryatskogo Instituta Estestvennych nauk BF SO AN SSSR* **21**: 30–32 (in Russian).

Kiriakoff, S. G. 1963. The tympanic structures of the Lepidoptera and the taxonomy of the order. *J. Lepid. Soc.* **17**, 1–6.

Kiriakoff, S. G. 1977. Lepidoptera Noctuiformes Agaristidae I. Palaearctic and Oriental genera. *Terreich* **97**: i–vi, 1–86.

Kitching, I. J. 1984. An historical review of the higher classification of the Noctuidae. *Bull. Br. Mus. nat. Hist.* (Ent.) **49**: 153–234.

Kitching, I. J. 1987. Spectacles and Silver Ys: a synthesis of the systematics, cladistic and biology of the Plusiinae (Lepidoptera: Noctuidae). *Bull. Br. Mus. nat. Hist.* (Ent.) **54**: 75–261.

Kitching I. J. & J. E. Rawlins. 1999. The Noctuoidea. Kristinsen, N. (Ed.). *Handbook of zoology*. IV Arthropoda: Insecta. Pt. 35. Lepidoptera, Moths and Butterflies. 1. Evolution, systematics, and biogeography. Berlin, New York, I–X+ 491 pp.

Klyuchko, Z. F. 1978. Semeistva Nycteolinae, Hypeninae, Catocalinae, Othreinae, Euteliinae, Pantheinae, Plusiinae, Jaspidiinae. Sovki kvadrifinoidnogo kompleksa. *Fauna Ukrainy.* Tom 19 N 6. Kiev, Naukova dumka.: 414 pp. (in Ukrainen).

Klyuchko, Z. F. 2003. 5. Podsem. Plusiinae. *In:* P. A. Lehr (ed). *Key to insects of Russian Far East*. V. Trichoptera and Lepidoptera. Pt. 4. Vladivostok, Dal'nauka: 187–215(in Russian).

Klyuchko, Z. F. 2006. Sovki Ukrainy. Raevsky Scientific Publishers. Kiev. 248 pp. (in Ukrainen).

Kogi, H. 1982. Larva and foodplant of four species of Lygephila (Noctuidae). *Japan Heteroc. J.* **116**: 247–249 (in Japanese).

Kogi, H. 1985. Larva and foodplant of Z. fumosa (Butler) and *Z. obliqua* Staudinger (Noctuidae) *Japan Heteroc. J.* **132**: 97–98 (in Japanese with english summary).

Kogi, H. 1986. Larva and food–plants of *Diachrysia leonina* (Oberthür) and *D. zosimi* (Hübner) (Noctuidae: Plusiinae). *Japan Heteroc. J.* **135**: 145–146 (in Japanese).

Kogi, H. 1990a. The larva and foodplants of *Euclidia dentata* Staudinger (Noctuidae). *Japan Heteroc. J.* **158**: 129 (in Japanese).

Kogi, H. 1990b. The foodplants of *Erythroplusia* larvae (Noctuidae, Plusiinae) in the field. *Japan Heteroc. J.* **159** 146 (in Japanese).

Kononenko, V. S. 1987.Sovki podsemeistva Agaristinae (Lepidoptera, Noctuidae) fauny SSSR. *Cheshuekrylye Dal'nego Vostoka SSSR*. Vladivostok: 94–101 (in Russian).

Kononenko, V. S. 1990. Synonimic check list of the Noctuidae (Lepidoptera) of the Primorye Territory, the Far East of U.S.S.R. *Tinea* **13**, Suppl. 1: 1– 40.

Kononenko, V. S. 1996c. A revised catalogue of types of the Noctuidae (Lepidoptera) described by F. Bryk (1948) from the Korean Peninsula. *Ins. Koreana* **13**: 1–26.

Kononenko, V. S. 2003. 66. Sem. Noctuidae – sovki ili nochnitsy. Vvedenie; 6. Podsem. Euteliinae; 9. Podsem. Acontiinae; 10. Podsem. Pantheinae; 11. Podsem. Acronictinae; 12. Podsem. Bryophilinae; 13. Podsem. Agaristinae; 14. Podsem. Amphypirinae; 15. Podsem. Cuculliinae; 16. Podsem. Hadeninae; 17. Podsem. Noctuinae; 6. Podsem. Heliothinae. *In*: P. A. Lehr. (ed). *Key to insects of Russian Far East*. V. Trichoptera and Lepidoptera. Pt. 4. Vladivostok, Dal'nauka: 11–33, 215–217, 237–602 (in Russian).

Kononenko, V. S. 2005. *Noctuidae Sibiricae* **1**. An annotated check list of the Noctuidae (s. l.) (Lepidoptera, Noctuoidae: Nolidae, Erebidae, Micronoctuidae, Noctuidae) of the Asian part of Russia and the Ural region. Entomological Press, Sorø. 243 pp.

Kononenko V. S. & Han H. L. 2008. Two new *Acronicta* Ochsenheimer, 1816 from China and Russia (Lepidoptera, Noctuidae, Acronictinae). *Zootaxa* **1910**: 45–52.

Kononenko, V. S. & H. L. Han. 2007. Atlas genitalia of Noctuidae in Korea (Lepidoptera). *In* Park, K. T. (Ed.), *Insects of Korea* **11**. Korean National Arboretum & Center of Insect Systematics, Chunchon, 446 pp.

Kononenko, V. S. & G. Behounek. 2009. A revision of the genus *Lophomilia* Warren, 1913 with description of four new species from East Asia (Lepidoptera: Noctuidae: Hypeninae). *Zootaxa* **1989**: 1–22.

Kononenko V. S. & A. Yu. Matov. 2009. A review of Palaearctic *Metachrostis* Hübner, [1820] 1816 with description of three new species (Lepidoptera: Noctuidae, Eublemminae). *Zootaxa* **2026**: 1–17.

Kononenko, V. S., J. D. Lafontaine & K. Mikkola. 1989. An annotated check list of the Noctuid moths (Lepidoptera, Noctuidae) of Beringia. *Revue d'Entomol. USSR* **68**: 549–567. (A revised English translation published in 1990. *Entomol. Rev.* **69**: 117–138).

Kononenko, V. S., Ahn S. –B. & Ronkay L. 1998. Illustrated catalog of Noctuidae in Korea (Lepidoptera). In K. T. Park (ed.): *Insects of Korea* **3**. Korean Research Institute of bioscience and biotechnology & Center for insect systematics. 509 pp.

Kononenko V. S. 2009. Sem. Sovki Noctuidae. Insect of Lazovsky reserve. Vladivostok, *Dalnauka*: 283-312**.**

Kostrowicki, A. S. 1961. Studies on the palearctic species of the subfamily Plusiinae (Lepidoptera, Phalaenidae). *Acta zool. cracov.* **6** (10): 367–472.

Kozhanchikov, I. V. 1955. 44. Sem. Noctuidae. Vrediteli lesa (spravochnik). Moskow–Leningrad. Tom. 1: 251–280 (in Russian).

Kozhantschikov, I. V. 1950. Fam. Orgiidae. Nasekomye Cheshuekrylye [Insecta, Lepidoptera]. *Fauna SSSR*. **12**. Leningrad. 581 pp. (in Russian).

Kozhantschikov, W. V. 1925. Materialen zur Macrolepidopteren Fauna des Minussinsk Bezirkes. Berichtigungen und Zusätze. *Jarb. Martjanov'schen Staatmuseums in Minussinsk* **3** (1): 68–83.

Kullberg, J., A. Albrecht, L. Kaila & V. Varis. 2001. Checklist of Finnish Lepidoptera. *Sahlbergia* **6**: 45–190.

Kurentzov, A. I. 1939. Babochki – vrediteli derev'ev I kustarnikoiv Ussuriiskogo kraya. *Trudy Gorno–Taezhnoi stantsii*. Vladivostok. 3: 107–210 (in Russian).

Kuroko, H. & A. Lewvanich. 1993. Lepidopterous pests of tropical fruits in Thailand. *Japan International Cooperation Society*. Bangkok. 132 pp. + 34 pls.

Lafontaine, J. D. & R. Poole. 1991. Noctuoidea: Noctuidae (Part), Plusiinae. In Dominik R. B. *et al.* (eds). *The Moths of America North of Mexico* **25. 1**: 1–182.

Lafontaine, J. D. & M. Fibiger. 2006. Revised higher classification of the Noctuoidea. *Can. Entomol.* **138**: 610–635.

Lafontaine J. D. & B. C. Schmidt. 2010. Annotated check list of the Noctuoidea (Insecta, Lepidoptera) of North America north of Mexico. Zoo Keys 40: 1–239

Laszlo, G. M, G. Ronkay, T. Witt. 2006. Investigation on Asian Nolidae III. *Entomofauna* **27**(21): 265–276.

Laszlo, G. M. & G. Ronkay & T. Witt. 2010. Contribution to Nolinae (Lepidoptera, Noctuidae) fauna of North Thailand. *Esperiana* **15**: 7–125.

Laszlo, G. M. & G. Ronkay, T. Witt. 2004. Investigation on Asian Nolidae I. *Entomofauna* **25**(18): 281–296.

Laszlo, G. M. & G. Ronkay, T. Witt. 2005. Investigation on Asian Nolidae II. *Entomofauna* **26**(11): 205–224.

Laszlo, G. M. & G. Ronkay, T. Witt. 2007a. Investigation on Asian Nolidae IV. *Entomofauna* **28**(2): 17–32.

Laszlo, G. M. & G. Ronkay, T. Witt. 2007b. Investigation on Asian Nolidae V. *Entomofauna* **28**(14): 157–172.

Leraut, P. J. A. 1997. *Systematic and synonymic list of the Noctuidae of France, Belgium and Corsica* (second edition). Paris. 526 pp.

Lisetsky, A. S. 1970. Novye dlya fauny SSSR vidy cheshuekrylyh iz Khasanskoho raiona Primorskogo kraya. *Materialy Kharkovskogo otdeleniya Geograficheskogo obschestva Ukrainy*. Kharkov. 7: 119–120 (in Russian).

Lödl, M. 1994. Remarks on the classification of the genera *Hypena*, *Dichromia* and *Harita*. *Nota Lepid.* **16** (3/4): 241–250.

Lödl, M. 1998. First approach on the identity and taxonomic position of *Bleptinodes perumbrosa* (Hampson, 1898) (Lepidoptera, Noctuidae: Herminiinae). *Quadrifina* **1**: 245–246.

Lödl, M. & B. Mayerl. 1996. *Rhinchodontodes* Warren, 1913 – jüngeres subjectives Synonym von *Zekelita* Walker, 1863 (Lepidoptera: Noctuidae, Hypeninae). *Ent. Z., Essen* **107**: 236–254.

Lödl, M. and B. Mayerl. 1998. Revision der Gattung *Zekelita* Walker, 1863 (=*Rhynchodontodes* Warren, 1913) (Lepidoptera: Noctuidae, Hypeninae). *Quadrifina* **1**: 115–230.

Martin, M. 1980. K morfologii genitalii rodov *Mormonia* Hb., *Catocala* Schr. and *Ephesia* Hb. (Lepidoptera, Noctuidae). Materialy po cheshuekrylym i dvukrylym. *Acta et commentationes universitatis Tartuensis* **516**. *Zoologia–Alaseid Töid* 13. Tartu: 36–53 (in Russian).

Masui, T. 1982. *Catocala columbina* Leech (Noctuidae), its larva and food–plant. *Japan Heteroc. J.* **114**: 217–220.

Matov, A. Yu, Kononenko V. S. & Sviridov A. V. 2008. Family Noctuidae. *The Cataloge of Lepidoptera of Russia*. St. –Peterburgh – Moskow. KMK: 239– 296 (in Russian).

Matsui, H. 1984. Full fed larva of *Daddala lucilla* (Butler) (Noctuidae) taken from *Quercus myrsinaefolis* Blume. *Japan Heteroc. J.* 125: 401.

Matsuura, H. 1997. Breeding of the larva of *Mimeusemia persimilis* Butler (Noctuidae, Agaristinae). *Japan Heteroc. J.* 195: 330.

Matthews, M. 1991. Classification of the Heliothinae. *Bull. nat. Resour. Inst*. **44**: i–v, 1–195.

Mayerl, B. & M. Lödl. 1999. Revision der Gattung *Rhynchina* Guenèe, 1854) (Lepidoptera: Noctuidae, Hypeninae). *Quadrifina* **2**: 1–124.

Merzheevskaya, O. I. 1967. Gusenitsy sovok (Noctuidae), ih biologiya i morfologiya (Opredelitel). Nauka i Tekhnika. Minsk. 451 pp.

Merzheevskaya, O. I. 1971. Sovki (Noctuidae) Belorussii. Nauka i Tekhnika. Minsk. 447 pp.

Mikkola, K. & I. Jalas. 1977. Suomen perhoset. Yokkoset 1. [Finnish Lepidoptera. Noctuidae 1]. *Otava*. Helsinki. 256 pp.

Mikkola, K. & I. Jalas. 1979. Suomen perhoset. Yokkoset 2. [Finnish Lepidoptera. Noctuidae 2]. *Otava*. Helsinki. 304 pp.

Mikkola, K., J. D. Lafontaine & V. S. Kononenko. 1991. Zoogeography of the Holarctic species of the Noctuidae (Lepidoptera): importance of the Beringian refuge. *Ent. Fennica* **2**: 157–173.

Miyata, A. 1983. Handbook of the moth ecology. Moths as an indicator of the enviroment. Vols. 1, 2. Isahaya, 1451 pp. (in Japanese).

Moltrecht, A. K. 1929. Uber die geographische Verbreitung der Macrolepidoptera des Ussuri und Amur Gebietes. *Zapiski vladivostokskogo otdeleniya gosudarstvennogo Russkogo geograficheskogo obshchestva* Vladivostok: 1–70 (in Russian and German).

Mori, N. 1996. The larva and hostplant of *Anomis longipennis* Sugi (Noctuidae). *Japan. Heteroc. J.* **188**: 211. (in Japanese).

Mutuura, A., Y. Yamamoto & I. Hattori. In Issiki S. (ed.).1979. *Early stages of Japanese moths in colour*. 1. Hoikusha Publishing CO., LTD. 238 pp. (in Japanese).

Nishio, N. 1987. A review on the life–history of *Lygephila vulcanea* (Butler) (Noctuidae). *Japan Heteroc. J.* **143**: 275–276 (in Japanese).

Nowacky, J. & M. Fibiger: 1998. Noctuidae, Pantheidae, Nolidae. – In O. Karsholt & J. Razovski (eds): The Lepidoptera of Europe: 250–294, 332–339.

Nupponen, K. & M. Fibiger. 2002. Contribution to the fauna of Bombyces, Sphinges and Noctuidae of the Southern Ural Mountains, with description of *Dichagyris lux* Fibiger & K. Nupponen, **sp. n.** (Lepidoptera: Lasiocampidae, Endromidae, Saturniidae, Sphingidae, Notodontidae, Noctuidae, Pantheidae, Lymantriidae, Nolidae, Arctiidae). *Phegeja* 30(4): 121–185.

Nupponen, K. & M. Fibiger. 2006. Addition and correction to the list of of the Southern Ural Mountains. Part I. (Lepidoptera: Lasiocampidae, Endromidae, Saturniidae, Sphingidae, Notodontidae, Noctuidae, Pantheidae, Lymantriidae, Nolidae, Arctiidae). *Esperiana* **12**: 167-195.

Nye, I. W. B. 1975**.** Noctuoidea (Part): Noctuidae, Agaristidae and Nolidae. *The generic names of moths of the World*. **1**. London. 568 pp.

Oh, S. H. 2001. Review of the Subfamily Nolinae (Lepidoptera, Noctuidae) in Korea (1): Genus *Nola* Leech. *Insecta Koreana* **18**(2): 123–137.

Owada, M. 1982. Noctuidae (Herminiinae). In Inoue H., S. Sugi, H. Kuroko, S. Moriuti, and A. Kawabe. *Moths of Japan* **1**: 913–935 ; **2**: 405–408, pls. 224–226, 356, 381–392. Kodansha, Tokyo.

Owada, M. 1987a. A taxonomic study of the subfamily Herminiinae of Japan (Lepidoptera, Noctuidaea). *Natn. Sci. Mus. Tokyo:* ii + 1–208.

Owada, M. 1987b. Noctuidae: Herminiinae. Sugi S. (ed.). *Larvae of larger moths in Japan*. Tokyo: 239–244, pl. 129 (in Japanese).

Owada, M. 1992. Synonymic notes on the herminiine moths (Noctuidae) of Japan, with description of three new species. *Tinea*. **13** (18): 183–203.

Owada, M. 2006. Notes on some type specimens of herminiine moths (Lepidoptera, Noctuidae) described by Felix Bryk. *Japan J. syst. Entom.* 121–126.

Park, K. T, Han, H. L. & Ronkay L. 2006. *Catocala* of Korea (Lepidoptera, Noctuidae). *Insects of Korea*. **10**. 111 pp.

Park, K. T, Sohn J. C. & Han H. L. 2006. Host–plants for larvae of Noctuidae. NIAES, Suwon, Korea. Economic insects of Korea 25. *Insecta Koreana.* Suppl. **32** 1–136.

Poltavsky, A. N. & Liman Yu. B. 2002. Izuchenie fauny Macrolepidoptera Rostovskoi oblasti na primere dvuh faunisticheskih refugiumov. *Metodicheskoe rukovodstvo po entomologii*. Rostov na Donu. 117 pp. (in Russian)

Poltavsky, A. N., Matov A. Yu., Schurov V. I. & Artokhin K. S. 2009. *An annotated catalogue of the noctuids* (*Lepidoptera, Noctuidae*) *of the North Caucasus and neighbouring territories of Russia*. Rostov–na–Donu. **1**. 283 pp. (in Russian)

Poltavsky, A. N., Matov A. Yu., Schurov V. I. & Artokhin K. S. 2009. *An annotated catalogue of the noctuids* (*Lepidoptera, Noctuidae*) *of the North Caucasus and neighbouring territories of Russia*. Rostov–na–Donu. **2**. 330 pp. (in Russian)

Poole, R. W. 1989. Noctuidae. *Lepidopterorum Catalogues* (New Series). Fascicle **118**, pt 1: v–xii + 1–500; pt. 2: 501–1013; pt. 3: 1014–1314. E. J. Brill, Leiden.

Poole, R. W. 1996. Noctuoidea. Noctuidae (part), Cuculliinae, Stiriinae, Psaphidinae (part). In Dominik R. B. et al. *The moths of America North of Mexico*, fasc. **26**.1, 1: 249

Pospelov,S.M. 1969.*Sovki–vrediteliselskohozjaistvennyh rastenii*. Leningrad. 124 pp. (in Russian).

Remm, H. J. & M. Martin. 1979. K morfologii i sistematike podsemeistva Hypeninae (Lepidoptera, Noctuidae). *Materialy po nekotorym gruppam nasekomych fauny SSSR. Acta et commentationes universitatis Tartuensis* **483**. *Zoologia–Alaseid Töid* 12. Tartu: 134–163 (in Russian).

Richards, A. G. 1933. Comparative skeletal morphology of the noctuid tympanum. *Entomol. Amer.* **13**: 1–43, 20 pl.

Robinson, G. S., Ackery, P. R., Kitching, I. J., Beccaloni, G. V. & Hernandez, L. M. 2001. *Hostplants of the moths and butterfly caterpillars of the Oriental region*. Kuala Lumpur: Southedene & The Natural History Museum.

Ronkay, G. & Ronkay L. 1995. Cucullinae II. *Noctuidae Europae* **7**. Entomological press, Sorø. 224 pp.

Ronkay, L. & Yela J. L, Hreblay M. 2001. Hadeninae II. *Noctuidae Europae*. 5. Entomological Press, Sorø. 452 pp.

Ronkay, L. 1986. Taxonomic studies on the genus *Autophila* (Lepidoptera, Noctuidae). *Acta. zool. hung.* **32** (1–2): 141–159.

Ronkay, L. 1989. Taxonomic studies on the genus *Autophila* 2. *Acta. zool. hung.* **35** (1–2): 111–141.

Ronkay, L. 1997. A new species of *Antoculeora* Ichinose (Lepidoptera, Noctuidae, Plusiinae) from Taiwan. *Bull. Natn. Sci. Mus., Tokyo.* Ser. A. **23**: 35–49.

Ronkay, L., Ronkay G. 2009. The Witt catalogue – Cuculliinae I. *A taxonomic atlas of the Eurasian and North African Noctuoidea*. 2. Heterocera Press, Budapest. 365 pp.

Ronkay, L., Ronkay G., & Behounek G. 2008. Witt Catalogue – Plusiinae 1. *A taxonomic atlas of the Eurasian and North African Noctuoidea*. 1. Heterocera Press, Budapest. 342 pp.

Ronkay, L., Sohn J. Ch. 2004. Two new species of the *Maliattha vialis* species group from Asia (Lepidoptera, Noctuidae, Acontiinae). *J. Asia–Pacific entomol*. **7**(3) 269–275

Sedykh, K. F. 1979. Macrolepidoptera of Kamchatka and neighbouring regions. *Revue d'Entomol. USSR* **58** (2): 288–296.

Seitz, A. (Ed.). [1907]–1914. *Die Gross–Schmetterlinge der Erde / Macrolepidoptera of the world*. Die Gross–Schmetterlinge des Palaearctischen Faungebietes. Bd **3**. Eulenartige Nachtfalter. Stuttgart. Alfred Kernen. i–iv, 511 pp, pls 1–75.

Seitz, A. (Ed.). 1931 – 1938. Die Gross–Schmetterlinge der Erde. *Die Gross–Schmetterlinge des Palaearctischen Faungebietes*. Bd **3**. Supplement. Die Eulenartige Nachtfalter. Stuttgart. Alfred Kernen. 333 pp, pls 1–26.

Sëppanen, E. 1970. Suurperhostoukkien ravintocasvit. The foodplants of the larvae of Macrolepidoptera of Finland. *Suomen eläimet* 14: 1-179.

Sohn, J. C., S. & S. W. Cho. 2005 . A new record of *Ischyja manlia* (Cramer) (Lepidoptera: Noctuidae: Catocalinae) from Korea. *Entomol. Res*., **35**(2): 107-110

Speidel, W. & C. M. Naunmann. 2005. A survey of family–group names in noctuoid moths (Insecta: Lepidoptera). *Systematics & Biodiversity* **2**: 191–221.

Speidel, W., G. Fänger & C. M. Naumann. 1996a. The phylogeny of the Noctuidae (Lepidoptera). *Syst. Entomol.* **21**: 219–251.

Speidel, W., G. Fänger & C. M. Naumann. 1996b. The surface structure of the noctuid proboscis (Insecta, Lepidoptera). *Zool. Anzeiger* **234**: 307-315.

Spuler, A. 1908. *Die Schmetterlinge Europas.* Band I. Rhopalocera–Brephidae. XVI. Fam. Noctuidae. Eulen: 133–332 ; Bd. III, Taf. 28–55. Stuttgart E. Schweizerbartsche Verlagsbuchhandlung: 1–424.

Staudinger, O. & H. Rebel. 1901. *Catalog der Lepidopteren des Palaearctischen Faungebietes.* Famil. Papilionidae – Hepialidae. **I**. Theil: i–[xxxi]. Berlin. R. Friedlander and Sohn. 411 pp

Staudinger, O. 1892. Die Macrolepidopteren des Amurgebietes. I. Theil. Rhopalocera, Sphinges, Bombyces, Noctuae. In: Romanoff N. M. (ed.). *Mem Lépid.* 6: 83–658.

Strand, E. 1912. Noctuidae, Agaristinae. Wagner, H. (ed.). *Lepidopterorum Catalogus*. Pt. **3**: 1–82

Sugi, S. 1960. Notes on two Japanese species of *Eutelia*: *blandiatrix* Guenèe and *geyeri* C. & R. Felder (Noctuidae, Euteliinae). *Tinea* 5: 330–333 (in Japanese with English summary).

Sugi, S. 1968. First record of *Dysgonia mandschuriana* (Staudinger) from Japan (Noctuidae, Catocalinae. *Japan Heteroc. J.* **54**: 597–599 (in Japanese with English summary).

Sugi, S. 1969. Larva of *Zanclognatha lilacina*, feeding on *Abies firma*. *Japan Heteroc. J.* **26**: 115–118 (in Japanese).

Sugi, S. 1970. Notes on *Apatele subornata* (Leech), closely allied to and hitherto confused with *A. carbonaria* Graeser (Noctuidae). *Japan Heteroc. J.* **61**: 11–14 (in Japanese).

Sugi, S. 1972. *Sypnoides picta* (Butler) and *S. fumosa* (Butler), two confused species (Noctuidae). *Japan Heteroc. J.* **70**: 152–157 (in Japanese with English summary).

Sugi, S. 1979. A new species of *Acronicta* from Japan, with notes on subgenera (Lepidoptera, Noctuidae). *Tinea* **10**, 24: 245–251 (in Japanese with English summary).

Sugi, S. 1982a. Noctuidae (except Herminiinae). In Inoue H., S. Sugi, H. Kuroko, S. Moriuti, and A. Kawabe. *Moths of Japan* **1**: 669–913, **2**: 334–405, pls. 37, 164–223, 229, 278, 355–280. Kodansha, Tokyo (in Japanese with English synopsis).

Sugi, S. 1982b. Discovery of the larva of *Catocala koreana* Staudinger (Noctuidae) feeding on *Spiraea nipponica*. *Japan Heteroc. J.* 118: 286–288 (in Japanese with English summary).

Sugi, S. 1982c. *Catocala bella* Butler (Noctuidae) found feeding on *Pyrus*. *Japan Heteroc. J.* **118**: 291 (in Japanese with English summary).

Sugi, S. 1986. An observation of serious damage to *Rhus javanicus* by the larva of *Eutelia geyeri* (Noctuidae). *Japan Heteroc. J.* **136**: 170 *(in* Japanese with English summary).

Sugi, S. 1987. Agaristidae. Sugi S. (ed.). *Larvae of larger moths in Japan*. Tokyo: 184–185, pl. 89 (in Japanese).

Sugi, S. 1992. Noctuidae (except Aganainae, Herminiinae and Nolinae). Checklist of the Lepidoptera of Taiwan. In Heppner, J. B. and H. Inoue. [Eds], *Lepidoptera of Taiwan*. **1**. (2): 171–202.

Sugi, S. 1993. *Paraphyllophila confusa* Kononenko (Noctuinae) from Japan. *Japan Heteroc. J.* **175**: 444–445 (in Japanese with English summary).

Sugi, S. 2001. Late autumn larvae of *Trichosea champa* (Moore) (Noctuidae, Pantheinae) on *Rhododendron metternichii*. *Japan Heteroc. J.* 213: 242 (in Japanese with English summary).

Sugi, S. & M. Nakamura. 1989. *Trichosea champa* (Moore) and its allied species (Lepidoptera, Noctuidae). *Gekkan–Mushi* **1989**: 4–12 (in Japanese with English summary).

Sugi, S. & V. S. Kononenko. 1996. On some Far East species of *Pangrapta* Hübner (Noctuidae, Ophiderinae), with description of a new species from Japan and Korea. *Japan Heteroc. J.* **190**: 242–245.

Sugi, S. & A. Sasaki. 2001. Larva of *Imosca coreana* (Matsumura) (Noctuidae) with notes on Bagisarinae in Japan. *Japan Heteroc. J.* **215**: 285–287 (in Japanese with English summary).

Sugi, S. & U. Jinbo. 2004. 'Post–MJ'. Additions of species and changes in names of Japanese moths. Supplement 1. Edn. 2. *Japan Heterocerist's Soc.* Tokyo: i–ii +1–60 (in Japanese).

Sviridov, A. V. 1990. K tipovym materialam sovok, opisannyh F. Brikom iz Korei. *Novosti faunistiki i sistematiki*. Kiev: 97–100 (in Russian).

Sviridov, A. V. 2002. Noctuid moths (Lepidoptera) new for different areas of Russian Federation, 1. Russian Entomol. J. 11 (4): 445–450 (in Russian).

Sviridov, A. V. 2003. 66. Sem. Noctuidae. 1. Podsem. Herminiinae; 2. Podsem. Rivulinae; 3. Podsem. Hypeninae; 4. Podsem. Catocalinae; 7. Podsem. Sarrothripinae; 8. Podsem.; Chloephorinae. *In*: P. A. Lehr (ed). *Key to insects of Russian Far East*. V. Trichoptera and Lepidoptera. Pt. 4. Vladivostok, Dal'nauka: 35–187, 217–236 (in Russian).

Sviridov, A. V., K. F. Sedych. 2005. Noctuid Moths (Lepidoptera) of the Komi Republik. *Russian Entomol. J.* **14**(4): 329–345 (in Russian).

Sviridov, A. V., Trofimova T. A. Uskov M. V., Muhanov A. V., Lobkova L. E., Schurov V. I., Shutova E. V., Kuznetsov V. I., Lovtsova Yu. A. Korzhov P. N., Okulov V. S. & Klepikov M. A. 2006. Noctuid moths (Lepidoptera) new for different areas of Russian Federation, 1. Eversmannia 7: 46–68 (in Russian).

Tikhomirov, A. M. 1979a. The phylogenetic relations in the family Noctuidae (Lepidoptera) on the base of the functional morphology of copulatuve apparatus of males. *Proc. Zool. Inst*. **89**: 75–99 (in Russian).

Tikhomirov, A. M. 1979b. The system and phylogeny of Palaearctic Noctuidae (Lepidoptera) as indicated by the functional morphology of the male genitalia. *Entomol. Review.* 58: 119-133.

Tokgaev, T. (ed). 1983 Fauna i ekologiya nasekomyh doliny srednego techeniya Amydar'i. Ashgabad. 170 pp. (in Russian).

Tshistjakov, Y. A. 2003. 65. Sem. Nolidae. In: *Keys for identification of the insects of the Far East of Russia*. 5. Trichoptera and Lepidoptera. Part 4. Vladivostok, Dal'nauka: 637–652 (in Russian).

Tuxen, S. L. 1970. Taxonomist's glossary of genitalia in insects. (2nd edition 1970). *Munksgaard*, Copenhagen. 359 pp.

Ueda, K. 1984. A revision of the genus *Deltote* R. L. and its allied genera from Japan and Taiwan (Lepidoptera: Noctuidae, Acontiinae). Pt 1. A generic classification of the genus *Deltote* R. L. and its allied genera. *Bull. Kitakyushu nat. Hist. Mus.* **5**: 91–133.

Ueda, K. 1987. A revision of the genus *Deltote* R. L. and its allied genera from Japan and Taiwan (Lepidoptera: Noctuidae, Acontiinae). Pt 2. Systematics of the genus *Deltote* R. L. and its allied genera. *Bull. Kitakyushu nat. Hist. Mus.* **6**: 1–117.

Volynkin, A. V. 2007a. About finds of rare and new noctuid moths for Russian Altai (Lepidoptera, Noctuidae s. l.) species. *Altaisky zool. Zhurnal* **1**: 17–20 (in Russian).

Volynkin, A. V. 2007b About finds of rare and new to Russian Altai noctuid moths species (Lepidoptera, Noctuidae s. l.). Part II. *Altaisky zool. Zhurnal* **2**: 50–59 (in Russian).

Volynkin, A. V. 2008. To the fauna of noctuid moths (Lepidoptera, Noctuidae s. l.) of Uimon hollow (Central Altai). *Altaisky zool. Zhurnal* **2**: 60–66 (in Russian).

Volynkin, A. V. & Perunov, Yu. E. 2007. Towards noctuid fauna (Lepidoptera, Noctuidae of the Tigiretsky nature reserve (North East Altai). *Eversmannia* **10**: 42-49.

Volynkin, A. V. & Nakonechny A. N. 2010. About finds of species rare and new to Russian Altai noctuid moths (Lepidoptera, Noctuidae). Part III. (In print).

Yamamoto, M. & S. Sugi. 1987. Noctuidae (excluding Herminiinae). Sugi S. (ed.). *Larvae of larger moths in Japan*. Tokyo, Kodancha. :185–239. pls 90–119 (in Japanese with English summary).

Yamamura, S., M. Ikarashi, & M. Sasaki M. 2008. Foogplant , larval bionomics and diagnosis of the Alpinesiver–Y, *Syngrapha ottolengui* (Lepidoptera, Plusiinae). *J. Asia–Pacific Entomol.* **11**: 111–116.

Yamamura, S., M. Ikarashi & M. Sasaki. M. 2008. Dual photoperiodic regulation to enable univoltine life cycle in alpine silver–Y moth, *Syngrapha ottolenguii* (Noctuidae: Plusiinae) without obligatory diapause. *Appl. Entomol. Zool*. **43**: 105–112.

Yoshimatsu, Sh.–I. & Nakata Y. 2003. *Diomea cremata* (Lepidoptera: Noctuidae) as a pest of shiitake mushroom, Lentinula edodes (Agaricaceae). *Jpn. J. Ent*. New Ser. **6**, 2: 101–102.

Yoshimatsu, Sh.–I. & Nishioka. 1995. *Schrankia costaestrigalis* (Stephens) (Lepidoptera, Noctuyidae) utilizing underground spaces. *Jpn. J. Ent*. **63**(3): 541–550.

Zaspel, J. M, Branham M. A. 2008. World Checklist of tribe Calpini (Lepidoptera: Noctuidae: Calpinae). *Insecta Mundi* (A journal of World Insect Systematics) **0047**: 1–15.

Zaspel, J. M., Kononenko V. S. & Goldstein P. Z. 2007. Another blood feeder? Experimental feeding of a Fruit–Piercing Moth species on human blood in Primorye territory of Far Eastern Russia (Lepidoptera: Noctuidae: Calpinae). *J. Insect Behav.* **5**: 437–451. DOI 10. 1007/ s10905–007–9090–3.

Zilli, A. & Hogenes, W. 2002. An annotated list of the fruit–piercing moth genus *Eudocima* Billberg, 1820 (sensu Poole, 1989) with description of four new species (Lepidoptera: Noctuidae, Catocalinae). *Quadrifina* **5**: 153–207.

Zilli, A., Ronkay L. & Fibiger M. 2005. Apameini. *Noctuidae Europae*. 8. Entomological Press, Sorø. 323 pp.

Zilli, A., Varga, Z., Ronkay, G. & Ronkay, L. 2009. The Witt catalogue – Apameini 1. *A Taxonomic atlas of the Eurasian and North African Noctuoidea*. Volume 3. Heterocera Press, Budapest. 393 pp.

Zolotarenko, G. S. & V. V. Dubatolov. 2000. A checklist of the Noctuidae (Lepidoptera) of the Russian part of the West Siberian plane. *Far Eastern Entomol*. **94**: 1–23 (in Russian).

INDEX

The page of main entry marked by asterisk (*), number of plates indicated by bold, number of figurs are given after colon by regular font; plates of imago, male genitalia and female genitalia are separated by stroke; map pages marked by italic digits. Families, subfamilies, tribes and subtribes marked by bold. Synonyms are italicized.

A

abamita, Catocala 101*, **11**:4/**65**:5/**150**:5, *408*, 435
Ablepharon 190, 446
Abrostola 112*, 436
Abrostolini 112*, 436
abrostoloides, Plusidia 125*, 438
abscondida, Acronicta 188, 446
Acacalis 81, 432
Acantholipes 87*, 433
Acantholipini 87*, 433
Acanthoplusia 114, 437
Acanthoplusia 1 15*, 437
aceris, Acronicta 183*, **22**:37/**113**:3/**183**:4, *423*, 445
achaiae, Euchalcia 122, 438
achatalis, Hypena 69, 430
achatana, Nycteola 163, 443
achatatus, Hypena 69, 430
achatina, Sypnoides 108, 436
Acidaliodes 17
Acontarache 140, 440
Acontia 140*, 440
Acontiinae 19, 139*, 440
Acontiini 140*, 440
Acronicta 183*, 445
Acronictinae 177*, 444
Acronictoides 181, 445
Acronyctia 183, 445
Acropserotarache 140, 440
Acrosphalia 168, 443
actaea, Catocala 104*, 11/**70**:2/**153**:2, *410*, 435
adaucta, Acronicta 186*, **23**:13/**115**:4/**185**:1, *423*, 446
Adeva 121, 437
Adoraria 110, 436
Adrapsoides 60, 429
Adris 81, 432
adscripta, Erythroplusia 116, 437
adulatricoides, Eutelia 111*, **14**:25–27/**76**:5/**156**:8, *411*, 436
adultera, Catocala 28, 33, 105*, **13**:7/**71**:4/**154**:2, *410*, 436
Aedia 19, 142*, 440
Aediinae 19, 142*, 440
Aegle 168*, 443
aegrota, Sinarella 29, 66*, **4**:37,38/**42**:6/**133**:3, *401*, 430
aegrota, Spirama 76, 431
aemula, Syngrapha 131, 439
aenea, Phytometra 56, 428
aenescens, Naranga 137*, **18**:34,35/**92**:3/**167**:5, *416*, 440
Aeologramma 139, 440
aerata, Capsula 33
aerifera, Diachrysia 119, 437
aerugula, Nola 150*, **19**:19–21/**98**:2/**171**:6, *418*, 441
aestivalis, Eublemma 44, 427
Aethia 49, 428
afflatana, Earias 162, 442
africana, Deltote 136, 439
africana, Simyra 191, 447
agamos, Catocala 101, 435
Agaristidae 192, 447
Agaristiden 192, 447
Agaristinae 20, 192*, 447
Agaristoidea 192, 447
Aginna 60, 429
agitatrix, Catocala 102*, **11**:16,17/**68**:1/**151**:7, *409*, 435
agnata, Acronicta 189, 446
agnata, Ctenoplusia 115*, **15**:13/**78**:4/**158**:2, *412*, 437
agramma, Anadevidia 115, 437
Agrophila 140, 440
Agrophilidae 139, 440
Agrotis 29
ain, Syngrapha 29, 131*, **17**:28,29/**88**:6/**165**:2, *415*, 439
Aingrapha 130, 438
Aiteta 159*, 442
aksuensis, Drasteria 89, 433
Alabama 77, 431
Alamis 94, 434
albata, Pangrapta 54, 428
albescens, Deltote 136, 439
albicollis, Acontia 141, 440
albidentaria, Pericyma 94*, **10**:15–17/**62**:2/**147**:4, *407*, 434
albidior, Acronicta 190, 446
albifusa, Sypnoides 108, 436
albigutta, Amyna 166, 443
albilinea, Protodeltote 133, 439
albimedia, Sypnoides 108, 436
albinotata, Paracolax 58*, **3**:13,14/**37**:3/**129**:3, *400*, 429
albistigma, Pangrapta 55, 428
albomaculalis, Stenbergmania 74*, **5**:48/**48**:2/**137**:3, *403*, 431
albonigra, Cranionycta 182*, **24**:28,29/**113**:1/**183**:2, *423*, 445
albonigra, Xestia 28
albosignata, Enispa 48*, **2**:3,4/**30**:6/**125**:1, *398*, 427
albostriata, Ctenoplusia 115*, **15**:12/**78**:3/**158**:1, *412*, 437
albovenosa, Simyra 11, 191*, **24**:17,18/**119**:3/**187**:5, *424*, 447
albula, Meganola 144*, **18**:68,69/**95**:3/**169**:6, *417*, 441
albulalis, Meganola 144, 441
albulana, Meganola 144, 441
alchymista, Aedia 142, 440
alchymista, Catephia 94*, **10**:14/**62**:1/**147**:3, *407*, 434
alepica, Autographa 126, 438
Aleucanitis 88, 433
algira japonibia, Bastilla 98, 434
algira sinica, Bastilla 98, 434
algira, Bastilla 98, 434
algira, Dysgonia 98, 434
alicis, Acronicta 189, 446
Alikangiana 38, 426
allicias, Oraesia 80, 432
Allocosmia 165, 443
alni, Acronicta 186*, **23**:12/**115**:3/**184**:7, *423*, 446
Alotsa 110, 436
alpina, Acronicta 188, 446
alpina, Syngrapha 131, 439
alpium, Moma 180*, **22**:14,15/**111**:5/**182**:2, *422*, 445
alsima, Simyra 191, 447
alsinoides, Acronicta 189, 446
altaica, Acronicta 185, 446
altaica, Autophila 87, 433
altaica, Euchalcia 121*, **16**:3,4/**82**:1/**160**:7, *413*, 437
alticola, Catocala 105, 436
Alura 100, 435
Amarna 77, 431
amasina, Catocala 106, 436
amasina, Eublemma 44*, **1**:57,58/**28**:6/**123**:6, *397*, 427
amata, Chrysorithrum 82*, **7**:20,21/**53**:2/**140**:4, *404*, 432
amata, Phytometra 56*, **2**:62–64/**35**:6/**128**:4, *399*, 428
amica, Blepharita 29
amica, Hypena 71*, **5**:29/**46**:4/**136**:1, *403*, 430
amoena, Araeopteron 10, 41*, **1**:22–24/**26**:6/**122**:3, *396*, 426
amoena, Eublemma 45*, **1**:63,64/**29**:3/**124**:1, *397*, 427
amorina, Chrysorithrum 82, 432
amurensis, Eudocima 81, 432
amurensis, Hadennia 57, 429
amurica, Autographa 31, 127*, **17**:5,6/**86**:2/**163**:4, *414*, 438
amuricola, Nola 151, 441
amurula, Deltote 136, 439
Amyna 19, 166*, 443
Amynodes 166, 443
Anachrostis 17
Anacronicta 173*, 444
Anacronycta 173, 444
Anadevidia 115*, 437
anaedina, Acronicta 184, 446
analis, Bastilla 98, 434
Anatatha 17, 50*, 428
anatolica, Autographa 127, 438
anatolica, Egyra 10
anceps, Hepatica 72*, **5**:39,40/**47**:3/**136**:6, *403*, 431
ancilla, Mocis 93*, **9**:30/**61**:3/**147**:2, *407*, 434
ancora, Autographa 127, 438
Andreusia 100, 435
Anepischetos 68, 430
Aneuviminia 183, 445
angulipalps, Hypocala 109, 436
angulosa, Gonospileia 92, 433
ankarensis, Acronicta 190, 446
annetta, Mocis 93*, **9**:29/**61**:2/**147**:1, *407*, 434
annulata, Amyna 166, 443
Anodonta 176, 444
Anomiinae 77, 431
Anomiini 77, 431
Anomis 18, 77*, 431
Anomus 77, 431
Anophia 142*, 440
Anophia 94, 434
anpingicola, Nola 152, 441
Antarchaea 56, 428
Antennola 143, 441
Anterastria 19
Anthophila 43, 427
Anthophilae 43, 427
Anthophilidae 42, 426
Anthophya 43, 427
Antoculeora 118*, 437
antrotropa, Trichosea 172, 444
Anua 96, 434
Anumeta 82*, 432
Anumetini 82, 432
Apanda 68, 430
Apatela 183, 445
Apatelae 183, 445
Apatele 183, 445
Apatelinae 177, 444
Apaustis 167*, 443
Aphusa 161, 442
Aphusia 161, 442
Apopestes 87*, 433
Apopestini 82, 432
aprilina, Moma 180, 445
arabesca, Mocis 93, 434
arabica, Acontia 142, 440
Aradrapha 149, 441
Araeoptera 41, 426
Araeopterella 41, 426
Araeopteron 41*, 426
Araeopteroninae 17, 41*, 426
Araeopterum 41, 426
arbuti, Panemeria 167, 443
archesia, Mocis 93, 434
Arcta 175, 444
Arcte 20, 175*, 444
Arcteini 175*, 444
arctica, Nola 151, 441
arctica, Syngrapha 130, 439
arctotaenia, Bastilla 97*, **10**:4/**63**:2/**148**:4, *408*, 434
arcuata, Bastilla 29
arcuinna, Odice 43*, **1**:49–51/**27**:5/**122**:8, *396*, 426
arduenna, Acronicta 188, 446
arenosa, Herminia 66*, **4**:31,32/**42**:3/**132**:8, *401*, 430
Argadesa 81, 432
argentacea, Simyra 190, 447
argentea, Ariolica 160*, **20**:11,12/**102**:4/**175**:4, *420*, 442
argentea, Simyra 190, 447
argentula, Deltote 136, 439
argillacea, Eublemma 45, 427
argillacea, Odice 43, 426
Argiva 75, 431
argyritis, Polychrysia 123, 438
Argyrogrammatini 113*, 437
Argyrophyes 149, 441
Ariolica 159*, 442
Ariolicina 159*, 442
arlequinetta, Acontia 142, 440
armena, Diloba 176, 444
armigera, Heliotis 29
Arsilonche 190, 446
Artena 95*, 434
Artolica 159, 442
Arytrura 88*, 433
Arytrurini 88*, 433
Arytrurini 88, 433
asahinorum, Catocala 105, 436
Ascalapha 96, 434
asclepiadis, Abrostola 112*, **15**:1/**77**:1/**157**:1, *411*, 436
Ascopserotarache 140, 440
Asema 190, 446
asiatica, Autophila 10, 86*, **8**:23/**56**:4/**188**:8, *406*, 433
asiatica, Nycteola 163*, **20**:36,37/**104**:1/**176**:5, *420*, 443
Asisyra 170, 444
asperalis, Meganola 144, 441
aspersa, Hypocala 110, 436
assimilata, Herminia 65, 430

assimilis, Zanclognatha 61, 429
Asteropetes 193*, 447
Asticta 83, 432
Astiotes 100, 435
astragali, Lygephila 85, 433
astrida, Drasteria 89, 433
astrigera, Hypersypnoides 107*, **14**:7/**75**:1/**155**:7, *411*, 436
atomima, Simyra 191, 447
atossa, Polymixis 10
atratula, Deltote 135, 439
atratula, Deltote 135, 439
atritaigena, Acronicta 184*, 446
Atuntsea 10, 73, 431
Auchensia 171, 444
Audeini 81, 100, 432, 435
Audela 172, 444
Aulotarache 140, 440
auragoides, Anomis 77, 431
aurantiaca, Anomis 77, 431
aurata, Polychrysia 123*, **16**:22/**84**:1/**161**:9, *413*, 438
aurea, Panchrysia 124, 438
aureola, Calyptra 80, 432
aureomaculata, Syngrapha 131, 439
aurica, Acronicta 183, 445
auricoma, Acronicta 188*, **23**:27,28/**117**:4/**186**:4, *424*, 446
auricularis, Ophiusa 96, 434
aurigutta, Autographa 127, 438
aurosignata, Syngrapha 131, 439
Ausinza 48, 427
austera, Oxicesta 191, 447
australiae, Hypocala 109, 436
Autoba 43, 427
Autographa 126*, 438
Autographini 126, 438
Automala 149, 441
Autophila 85*, 433
Autoplusiina 116*, 437
Aventia 47, 427
Aventiinae 17, 46*, 427
Aventina 48, 428
Aventiola 17, 49*, 428
Axia 162, 442
axis, Amyna 166*, **20**:48,49/**104**:6/**177**:4, *420*, 443
azugensis, Trichosea 172, 444
azumiensis, Catocala 103, 435

B

Badausa 68, 430
Bagisarinae 19,165*, 443
baihi, Catocala 101, 435
balatonalis, Herminia 66, 430
balneorum, Schrankia 41*, **1**:20,21/**26**:5/**122**:2, *396*, 426
Balsa 19, 170*, 444
Balsinae 19, 170*, 444
baltica, Autographa 127, 438
banghaasi, Manoba 148*, **19**:8–9/**97**:2/**170**:8, *418*, 441
Bankia 135, 439
bankiana, Deltote 136*, **18**:21,22/**91**:6/**166**:8, *416*, 439
Baratha 93, 434
barbalis, Pechipogo 64, 429
barbara, Plusia 132, 439
barbata, Pechipogo 64, 429
bartholomaei, Autographa 127, 438
basalis, Anomis 78, 431
basifascia, Meganola 145*, **18**:73/**95**:5/–, *417*, 441
basigrisea, Nola 149, 441
basistriga, Colocasia 174, 444
Bastilla 18, 97, 434
batnana, Acronicta 185, 446
bavia, Amyna 166, 443
beckeri, Euchalcia 122, 437
beicki, Catocala 102, 435
Belciades 179*, 445
Belciana 20, 179*, 445
belgica, Acronicta 184, 446
bella, Catocala 103*, **11**:18/**68**:2/**151**:8, *409*, 435
bella, Maliattha 138*, **18**:42,43/**93**:1/**167**:9, *416*, 440
bella, Thyas 96, 434
bellula, Acronicta 187*, **23**:17,18/**116**:1/**185**:4, *424*, 446
Bena 158, 442
Beninae 155, 442
Berresa 166, 443
Bertula 57, 428
Bertula 60*, 429
beta, Drasteria 89, 433
Biangulypena 68, 430
Bibacta 59, 429
bicolor, Acronicta 183, 445
bicoloralis, Hypena 69*, **5**:1,2/**44**:4/**134**:5, *402*, 430
bieti, Diachrysia 11, 119, 437
biezankoi, Euchalcia 122*, **16**:16/**82**:6/**161**:5, *413*, 438
bifasciata, Mocis 93, 434
biformis, Belciana 20
bigutta, Erythroplusia 117, 437
Bihemena 100, 435
bimaculata, Enispa 48*, **2**:5,6/**31**:1/**125**:2, *398*, 427
bipartita, Hypena 69*, **5**:6–8/**44**:6/**134**:7, *402*, 430
bistrigata, Bertula 60*, **3**:23–25/**38**:2/**129**:8, *400*, 429
Bisulcia 181, 445
biumbralis, Herminia 66, 430
blandula, Chorisa 139, 440
Blasticorhinus 18, 99*, 435
Blephara 100, 435
Blepharidia 100, 435
Blepharonia 100, 435
Blepharum 100, 435
Bocana 75, 431
bokhaica, Catocala 104*, **12**:14,15/**70**:4/**153**:4, *410*, 435
Boletobia 39, 426
Boletobiinae 17, 38*, 426
Bolina 88, 433
Bolitobia 39, 426
bombycina, Eogena 192, 447
Bomolocha 68*, 430
boopis, Erebus 75, 431
borea, Syngrapha 130, 439
borealis, Syngrapha 131, 439
brachycalcea, Trichoplusia 114, 437
bractea, Autographa 129*, **17**:13,14/**87**:4/**164**:2, *415*, 438
Brada 159, 442
bradyporina, Acronicta 183, 445
brassicae, Trichoplusia 114, 437
Brevipecten 19
brima, Anomis 78, 431
britannica, Pseudoips 158, 442
brunescens, Apamea 31
brunnea, Naranga 137, 440
brunnea, Pseudodeltote 136*, **18**:25–27/**91**:8 **167**:1, *416*, 440
Bryograpta 73, 431
bryophilalis, Meganola 33, 145*, **18**:74–76/**95**:5/**169**:8, *417*, 441
Bryophilina 11, 19, 139, 440
bryophiloides, Acronicta 186, 446
bubo, Erebus 75, 431
buddhae, Parhylophila 156*, **19**:53,54/**100**:6/**173**:7, *419*, 442
buraetica, Autographa 11, 127*, **16**:35/**85**:5/**163**:2, *414*, 438
Byas 75, 431
bythynica, Eublemma 45, 427

C

caeruleocephala, Diloba 176*, **21**:22,23/**103**:3/**180**:6, *422*, 444
cailino, Drasteria 89*, **9**:9/**58**:5/**144**:8, *406*, 433
calceata, Acronicta 183, 445
caliginea, Anacronicta 173*, **21**:9,10/**108**:1/**179**:5, *421*, 444
caliginosa, Lygephila 85, 432
callipepla, Serrodes 95, 434
Callipyris 48, 427
Callistege 91*, 433
Calobochila 56, 428
Calocasia 174, 444
Caloplusia 129, 438
Caloplusiini 126, 438
Calpe 79, 432
Calpides 79, 432
Calpidi 79, 432
Calpinae 18, 76*, 431
Calpini 79*, 431
Calyptra 79*, 432
campana, Serrodes 95*, **9**:36/**61**:4/**147**:5, *407*, 434
Camptoloma 159*, 442
Camptolomina 158*, 442
camptosema, Autographa 11, 128*, **17**:3,4/**87**:2/**163**:8, *414*, 438
Camptylochila 58, 429
candefacta, Acontia 141*, **18**:58,59/**94**:3/**169**:1, *417*, 440
candelisequa, Acronicta 183, 445
candida, Nola 152, 441
candidalis, Nola 150, 441
candidana, Eublemma 44, 427
Canna 178, 445
Capitaria 77, 431
Capnistis 58, 429
Capnodes 53, 428
Capotena 159, 442
capsincola, Hadena 33
capucina, Calyptra 79, 432
Caranilla 98, 434
carbolucana, Craniophora 181, 445
carbonaria, Acronicta 187*, **23**:20,21/**116**:5/**185**:8, *424*, 446
carbonaria, Catocala 101, 435
carbonaria, Parascotia 39, 426
Cardalena 60, 429
Cardiosace 140, 440
Careina 159*, 442
Cariona 75, 431
carminea, Catocala 106, 436
carpathica, Polypogon 64, 429
Carsina 99, 435
carthami, Eublemma 44, 427
Casminola 148*, 441
casparii, Acronicta 186, 446
casta, Plusiodonta 80*, **7**:17,18/**53**:1/**140**:1, *404*, 432
Catabapta 100, 435
cataphanoides, Autophila 87, 433
Catephia 94*, 434
Catephiini 93*, 434
Catocala 100*, 435
Catocalides 100, 435
Catocalides 81, 432
Catocalinae 18, 81*, 432
Catocalini 100*, 435
catocalis, Drasteria 90*, **9**:13,14/**59**:3/**145**:4, *406*, 433
Catocalla 100, 435
catocaloida, Acronicta 187*, **23**:22/**117**:1/**186**:1, *424*, 446
Catocola 100, 435
Catophia 94, 434
caucasica, Drasteria 89*, **9**:7/**58**:3/**144**:6, *406*, 433
Cauninda 93, 434
c-aureum, Lamprotes 125*, **16**:29/**84**:5/**162**:5, *414*, 438
cazorlensis, Acronicta 183, 445
Celama 149, 441
Celamoides 149, 441
celatrix, Zanclognatha 61, 429
Celeopsyche 48, 427
Cellacrinata 59, 429
celsiana, Parhylophila 156*, **19**:51,52/**100**:5/**173**:6, *419*, 442
celtis, Anumeta 83, 432
centonalis, Nola 150, 441
centralasiae, Apopestes 87, 433
centralasiae, Catocala 105,106, 436
centralasiae, Lygephila 85, 432
centralis, Euxoa 33
centralitalica, Calyptra 79, 432
centripuncta, Simyra 191, 447
cephusalis, Amyna 166, 443
Cerala 156, 442
cerasi, Acronicta 187, 446
Cerathosiini 132, 439
Ceratostrotia 140, 440
Certila 176, 444
Cerviplusia 118, 437
cestis, Anumeta 83*, **7**:23/**53**:4/**140**:6, *405*, 432
Chaladra 159, 442
chalcogramma, Maliattha 138*, **18**:38,39/**92**:5/**167**:7, *416*, 440
chalcytes, Ctenoplusia 115, 437
chamaephanes, Autophila 86*, **8**:24,25/**56**:5/**143**:3, *406*, 433
Chamaepora 183, 445
champa, Trichosea 172*, **21**:8/**107**:4/**179**:4, *421*, 444
Chara 47, 427
Chasminia 19
cheiranthi, Plusidia 125*, **16**:31,32/**85**:1/**162**:7, *414*, 438
Cheirophanes 85, 433
chekiangensis, Catocala 100, 435
chingana, Acronicta 187*, 446
Chionomera 159, 442
Chlamifera 149, 441
Chlamiphora 149, 441
chlamitulalis minualis, Nola 152, 441
chlamitulalis, Nola 11, 152*, **19**:28,29/**99**:6/**172**:2, *418*, 441
chlamydulana, Nola 152, 441
Chloeophora 158, 442
Chloephora 158, 442
Chloephorina **155*, 442**
Chloephorini 155*, 442
chlorana, Earias 162, 442
Cholimma 38, 426

Cholobochyla 56, 428
Chorsia 11, 19, 139*, 440
chosenana, Bertula 60, 429
chosensis, Zanclognatha 61, 429
chosenula, Hypena 71, 430
Chrychrysia 118, 437
Chrysapidia 131, 439
chrysitis, Diachrysia 119*, **15**:28,29/**81**:1/**160**:1, *413*, 437
chryson, Diachrysia 119*, **15**:24/**80**:3/**159**:5, *412*, 437
chryson, Panchrysia 124, 438
Chrysoptera 125, 438
Chrysorithrum 82*, 432
Chytirhisa 166, 443
Chytoryza 166, 443
cicatricalis, Nola 150*, **19**:16–18/**98**:1/**171**:5, *418*, 441
cicatricana, Nola 150, 441
cineracea, Acronicta 184, 445
cinerea, Acronicta 188*, **23**:33–37/**118**:1,2/**186**:6, *424*, 446
cinerea, Colobochyla 56, 428
cinerea, Hypostrotia 53*, **2**:38,39/**34**:1/**127**:1, *399*, 428
cingularis, Grammodes 99, 434
circumflexa, Cornutiplusia 129*, **17**:17/**88**:1/**164**:4, *415*, 438
circumflexa, Erythroplusia 117, 437
clara, Catocala 105, 436
clara, Drasteria 90, 433
clara, Sinna 160, 442
clarescens, Cornutiplusia 129, 438
claripennis, Hypena 71*, **5**:28/**46**:3/**135**:8, *403*, 430
clarissima, Hypocala 110, 436
clavis, Agrotis 27
Cleptomita 60, 429
clorana, Earias 162*, **20**:25–27/**103**:4/**176**:2, *420*, 442
Clytie 97*, 434
Cnephata 190, 446
c-nigrum, Xestia 32
Coarica 18
Coccidiphaga 43, 427
Cocytodes 175, 444
coeceritziana, Aegle 168, 443
coenobita, Panthea 172*, **21**:3–5/**107**:2/**179**:2, *421*, 444
coerula, Arcte 26, 175*, **21**:21/**50**:1/**138**:4, *422*, 444
coerulea, Arcte 175, 444
coeruleocephala, Diloba 176, 444
cognata, Paragona 50*, **2**:24,25/**32**:4/**126**:1, *398*, 428
colligata, Anomis 78, 431
Collomenini 163*, 443
Collomenini 164, 443
Colobochila 56, 428
Colobochyla 17, 56*, 428
Colocasia 174*, 444
Colocasoides 174, 444
colon, Amyna 166, 443
Colposia 47, 427
columbina, Catocala 103*, **11**:19/**68**:4/**152**:1, *409*, 435
Cometa 183, 445
commoda, Anomis 78, 431
Conacontia 140, 440
concerpta, Acronicta 190*, **24**:9,10/**116**:3/**185**:7, *424*, 446
concha, Lamprotes 125, 438
concinnula, Eublemma 45, 427
concubia, Catocala 105, 436
confusa, Erythroplusia 34, 117*, **15**:18/**79**:3/**158**:7, *412*, 437
confusa, Paraphyllophila 137*, **18**:28,29/**92**:1/**167**:2, *416*, 440
confusalis, Nola 149*, **19**:14,15/**97**:6/**171**:4, *418*, 441
conigera, Mythimna 28
Conita 68, 430
conjuncta, Plusia 132, 439
connexa, Gerbathodes 181, 445
Conochares 140, 440
Conscitalypena 68, 430
conscripta, Syngrapha 131, 439
consona, Euchalcia 123*, **16**:17/**83**:1/**161**:6, *413*, 438
consors, Euclidia 91, 433
conspersalis, Hypena 71*, **5**:26,27/**46**:2/**135**:7, *403*, 430
contacta, Panchrysia 124, 438
contaminata, Xanthomantis 174*, **21**:16/**108**:5/**180**:3, *421*, 444
contaminei, Eogena 192*, **24**:25,26/**120**:2/**188**:2, *425*, 447
contrarialis, Nola 150, 441
Convercala 100, 435
conversa, Catocala 101*, **10**:22/**65**:3/**150**:3, *408*, 435
coreae, Diachrysia 11, 119, 437
coreana, Dysgonia 10, 98, 434
coreana, Imosca 165*, **20**:46/**105**:2/**177**: 2, *420*, 443
coreana, Protodeltote 133, 439
Corgatha 17, 48*, 427
Coria 75, 431
Corisee 100, 435
cornelia, Xanthomantis 174*, **21**:15/**108**:4/**180**:2, *421*, 444
cornuta, Mycteroplus 169*, **20**:59/**106**:3/**178**:5, *421*, 443
Cornutiplusia 129*, 438
coronillae, Lygephila 85, 433
coronula, Craniophora 181, 445
Corsa 51, 428
Corsice 100, 435
corticosa, Meganola 144, 441
Corycia 81, 432
coryli, Colocasia 174*, **21**:17,18/**109**:1/**180**:4, *421*, 444
corylus, Colocasia 174, 444
Cosmophila 77, 431
costaemacula, Pangrapta 54*, **2**:40,41/**34**:2/**127**:2, *399*, 428
costaestrigalis, Schrankia 40*, **1**:12–15/**26**:2/**121**:8, *396*, 426
costalis, Meganola 145*, **18**:77,78/**96**:1/**170**:1, *417*, 441
Costankia 40, 426
costimacula, Chorisa 11, 139*, **18**:44,45/**93**:2/**168**:1, *416*, 440
costimacula, Corgatha 48*, **2**:9,10/**31**:3/**125**:4, *398*, 428
costimacula, Nola 153, 441
craccae, Lygephila 84*, **8**:8–10/**55**:3/**142**:3, *405*, 432
Craccaphila 83, 432
crambiformis, Nola 150*, **19**:22,23/**99**:3/**171**:7, *418*, 441
Cranionycta 182*, 445
Craniophora 181*, 445
Craniophorini 177, 444
crassalis, Hypena 69*, **4**:54–56/**44**:2/**134**:3, *402*, 430
crassalis, Hypena 70, 430
crassatus, Hypena 69, 430
crassisigna, Erythroplusia 117*, **15**:20/**79**:5/**159**:1, *412*, 437
crassistriga, Acronicta 185, 446
cremata, Diomea 52*, **3**:30,31/**33**:2/**126**:5, *398*, 428
cretacea, Phyllophila 133, 439
cretacea, Simyra 191, 447
cribralis, Macrochilo 65, 430
cribrumalis, Macrochilo 65*, **4**:23,24/**41**:5/**132**:4, *401*, 430
Crinisinus 58, 429
Crishna 75, 431
cristatula minualis, Nola 151, 441
cristatula, Nola 11, 151*, **19**:26,27/**98**:5/**172**:1, *418*, 441
cristatula, Nola 152, 441
cristulalis, Nola 151, 441
cristulalis, Sinarella 67*, **4**:39–41/**43**:1/**133**:4, *402*, 430
cristulana, Nola 151, 441
Ctenoplusia 114*, 437
Cubena 125, 438
cubitata, Acronicta 189, 446
cucullalis, Nola 149, 441
cucullatalis, Nola 149, 441
cucullatana, Nola 149, 441
cucullatella, Nola 149*, **19**:12,13/**97**:5/**171**:3, *418*, 441
Cucullia 27
Culasta 79, 432
Culicula 60, 429
cuprea, Euchalcia 121, 122, 437, 438
Curvatula 48, 428
curvicornuta, Paragabara 10, 74*, **5**:51,52/**48**:4,5/**137**:4, *403*, 431
curvilinea, Aiteta 159*, **20**:10/–/**175**:3, *419*, 442
curvilinea, Grammodes 99, 434
curvipalpis, Idia 59*, **3**:19,20/**37**:5/**129**:5, *400*, 429
curvipalpis, Idia 59, 429
Cuspidia 183, 445
cuspis, Acronicta 184*, **23**:3,4/**114**:3/**184**:2, *423*, 446
Cymatophoropsiini 177, 444
Cymatophoropsis 177*, 444

D

Daddala 18, 109*, 436
dahurica, Acronicta 10, 188*, **23**:29–32/**117**:5/**186**:5, *424*, 446
dahurica, Catocala 102, 435
danilovi, Catocala 103*, **12**:7,8/**69**:2/**152**:6, *409*, 435
Daona 17
Daseochaeta 180, 445
daubii, Cornutiplusia 129, 438
davidi, Catocala 102, 435
deaurata, Panchrysia 124*, **16**:25/**84**:2/**162**:2, *414*, 438
deceptoria, Deltote 135*, **18**:17,18/**91**:4/**166**:6, *416*, 439
Deceptria 133, 439
decipiens, Kerala 27, 156*, **19**:55,56/**101**:1/**173**:8, *419*, 442
decolorata, Eublemma 45, 427
deducta, Catocala 31, 105*, **12**:17–19/**72**:4/**154**:5, *410*, 436
deflorata, Hypocala 109*, **14**:19,20/**76**:1/**156**:4, *411*, 436
defreinae, Euchalcia 122, 438
degener, Acronicta 186, 446
degener, Simyra 191, 447
degenerana, Nycteola 162*, **20**:31–35/**103**:6/**176**:4, *420*, 443
Deinopalps 77, 431
deleta, Hypena 70, 430
Deltapterum 149, 441
Deltote 19, 135*, 439
Demas 174, 444
densata, Eublemma 45, 427
dentata, Euclidia 91*, **9**:16,17/**59**:5/**145**:6, *407*, 433
denticornalis, Zanclognatha 62, 429
dentinosa, Simyra 191*, **24**:21,22/**119**:5/**187**:7, *425*, 447
Deremma 77, 431
derivatus, Paracolax 58, 429
Dermaleipa 95, 434
deserta, Catocala 107, 436
deserticola, Trichoplusia 114, 437
designata, Gelastocera 157, 442
designata, Moma 180, 445
Desmophora 140, 440
Desmorpha 140, 440
detersina, Auchmis 10
detrita, Catocala 106*, **14**:1,2/**74**:1/**155**:3, *410*, 436
deuteronympha, Catocala 102*, **11**:12,13/**67**:3/**151**:5, *409*, 435
Deva 80, 432
Diachrisiina 116, 437
Diachrysia 118*, 437
Diapolia 88, 433
diasema, Syngrapha 28, 130*, **17**:23–25/**88**:4/**164**:7, *415*, 439
Diasyngrapha 130, 438
Dichromia 68, 430
Dierna 52, 428
diffusa, Acronicta 189, 446
Digba 161, 442
digna, Acronicta 189*, **24**:5,6/**118**:4/**187**:1, *424*, 446
Diloba 176*, 444
Dilobinae 10, 20, 176*, 444
dilutior, Lygephila 85, 433
Diomea 17, 51*, 428
dioscoriae, Eudocima 81, 432
Diphtera 180, 445
Diphteroides 179, 445
Diphthera 172, 444
Diphtheramoma 180, 445
Dipthera 180, 445
Diptheroides 179, 445
dissimilis, Catocala 104*, **12**:9/**69**:4/**152**:8, *409*, 435
distincta, Rivula 38, 426
distinguenda, Protodeltote 134*, **18**:5,6/**90**:3/**165**:9, *415*, 439
Divercala 100, 435
divergens, Syngrapha 130, 438
dives, Panchrysia 124*, **16**:28/**84**:4/**162**:4, *414*, 438
doerriesi, Catocala 101*, **10**:24/**66**:1/**150**:6, *408*, 435
dolosa, Herminia 66*, **4**:35,36/**42**:5/**133**:2, *401*, 430
dona, Anomis 78, 431
dotata, Artena 95*, **9**:37/**61**:5/**147**:6, *407*, 434
Drasteria 88*, 433
Drasteriini 88, 433
Drastoria 88, 433
dubatolovi, Lygephila 10, 84*, **8**:4,5/**54**:6/**141**:6, *405*, 432
dubitatrix, Rivula 38, 426
Dufayella 162, 443
Dugaria 94, 434
dula, Catocala 106*, **13**:10/**73**:4/**155**:1, *410*, 436
dulcis, Dysgonia 98*, **10**:9/**64**:1/**149**:2, *408*, 434
dungerni, Acronicta 190, 446
duplicata, Catocala 10, 101*, **11**:8/**66**:5/**151**:1, *409*, 435
Dysgonia 18, 98*, 434
Dysthymia 169, 444

E

Eariadina 161*, 442
Earias 161*, 442
Eariini 161, 442
Earis 161, 442
ebatoi, Nola 10, 154*, **19**:45/**100**:3/**173**:4, *419*, 442
Eccopteroma 157, 442
Eccrita 83, 432
Echana 59, 429
echinocystidis, Trichoplusia 114, 437
Ecpatia 19
Ecthetis 43, 427
Ectogonia 72, 431
Ectypa 90, 433
Ectypina 90, 433

edentata, Anomis 77, 431
Edessena 57*, 428
egregia, Thiacidas 11, 19, 171*, **21**:1,2/**107**:1/**179**:1, *421*, 444
Elatina 172, 444
electa, Catocala 105*, **13**:8/**72**:2/**154**:3, *410*, 436
electaria, Melapia 92*, **9**:26/**60**:5/**146**:4, *407*, 433
electra, Catocala 106, 436
elegans, Thyas 96, 434
Eligma 164*, 443
Eligmini 164*, 443
ella, Catocala 102*, **11**:14/**67**:2/**151**:4, *409*, 435
elocata, Catocala 105*, **12**:16/**72**:3/**154**:4, *410*, 436
Elpia 109, 436
Elygea 81, 432
Elyra 60, 429
elzei, Callistege 91, 433
emaculata, Lygephila 84*, **8**:2,3/**54**:5/**141**:5, *405*, 432
emarginata, Oraesia 80*, **7**:14,15/**52**:1/**139**:7, *404*, 432
emi, Nola 154*, **19**:41,42/**99**:6/**173**:1, *419*, 441
eminens, Catocala 101*, **11**:5/**66**:3/**150**:7, *409*, 435
eminentissima, Gelastocera 11, 157*, **19**:64–66/**101**:4/**174**:4, *419*, 442
Emmelacontia 140, 440
Emmelia 140, 440
Emmelia 141*, 440
Emmelidi 139, 440
emortualis, Trisateles 49*, **2**:15,16/**31**:6/**125**:7, *398*, 428
emortuatus, Trisateles 49, 428
enigma, Catocala 103, 435
Enispa 17, 47*, 427
enormis, Lygephila 84, 432
ensalis, Hypena 70, 430
Entelia 110, 436
Eogena 192*, 447
eogene, Eogena 192, 447
Eordaea 60, 429
Ephesia 100, 435
Episema 176, 444
Epizeuctis 149, 441
Epizeuxis 58, 429
epsilon, Syngrapha 131, 439
Erastria 133, 134, 135, 439
Erastridae 132, 439
Erastridi 132, 439
Erastriinae 132, 439
Erastriini 132, 439
Erastroides 137*, 440
Erchila 68, 430
Erebidae 10, 75, 431
Erebinae 18, 75*, 431
Erebinae 75, 431
Erebini 75*, 431
Erebus 75*, 431
Eremonoma 82, 432
eremostola, Nycteola 11, 163*, **20**:38–41/**104**:2/**176**:6, *420*, 443
Erichila 68, 430
Eromene 43, 427
Erotyla 140, 440
Erpyzon 60, 429
erubescens, Earias 161, 442
erythrophygum, Camptoloma 159, 442
Erythroplusia 116*, 437
esmeralda, Polychrysia 123*, **16**:19–21/**83**:4/**161**:8, *413*, 438
Essonistis 41, 426
esther, Catocala 102, 435
Eualabama 77, 431
Eublemma 43*, 427
Eublemminae 17, 42*, 426
Eublemmini 42, 426
Eublemmoides 43, 427
Eucala 100, 435
Euchalcia 121*, 437
Euchalciina 120*, 437
Euclidia 10, 90*, 433
Euclidimera 91, 433
Euclidina 90, 433
Euclidini 90*, 433
Eucora 100, 435
Eudocima 81*, 432
eugenia, Plusidia 125, 438
Eugraphia 140, 440
Euhypena 68, 430
Eumaenas 81, 432
Eumestleta 43, 427
Eumicremma 43, 427
Eunetis 100, 435
Eupatula 75, 431
Euphais 78, 431
Euphasia 140, 440
Euphemias 78, 431
euphrasiae, Acronicta 189, 446
Eupsoropsis 43, 427
eurasiatica, Nycteola 163, 443
Eurhipia 110, 436
Eurhipidae 110, 436
Euromoea 179, 445
Euromoia 179*, 445
Eusceptis 140, 440
eustrigata, Calyptra 26
Eustrotia 135, 439
Eustrotiinae 18, 132*, 439
Euteles 47, 427
Eutelia 110*, 436
Euteliinae 18, 110*, 436
Eutesia 110, 436
Euviminia 183, 445
Euxoa 29
eversmanni, Acontia 141, 440
eversmanni, Euchalcia 122, 437
Evonima 147*, 441
excavata, Oraesia 80*, **7**:16,17/**52**:2/**139**:8, *404*, 432
excelsa, Autographa 129*, **17**:15,16/**87**:5/**164**:3, *415*, 438
Exophylini 81, 432
exornata, Euchalcia 122*, **16**:9/**89**:6/**161**:1, *413*, 437
expressa, Simyra 190, 447
extrahens, Trichoplusia 114, 437
extrema, Callistege 91, 433
extrema, Sinna 160*, **20**:13,14/**102**:5/**175**:5, *420*, 442
Extremypena 68, 430
exusta, Gelastocera 30, 34, 157*, **19**:61–63/**101**:3/**174**:2,3, *419*, 442

F

fagana, Pseudoips 158, 442
faganus, Pseudoips 158, 442
falcata, Bastilla 98, 434
falcata, Macrochthonia 158, 442
falonia, Eudocima 26, 81*, **6**:6,7/**52**:4/**140**:3, *404*, 432
falsa, Koyaga 134*, **18**:9,10/**90**:6/**166**:2, *415*, 439
fascialis, Gonospileia 92, 433
fascialis, Paracolax 58*, **3**:9,10/**37**:1/**129**:1, *400*, 429
fasciana, Protodeltote 133, 439
fasciata, Mimachrostia 26, 35*, **1**:1–3/**25**:1/**121**:1, *396*, 426
fasciola, Panemeria 167, 443
favillacea, Acronicta 186, 446
fennica, Acronicta 188, 446
fentoni, Erastroides 137*, **18**:32,33/**90**:5/**167**:4, *416*, 440
fentoni, Paracolax 58*, **3**:11,12/**37**:2/**129**:2, *400*, 429
fervens, Macrochthonia 158*, **19**:69,70/**101**:6/**174**:6, *419*, 442
festata, Plusia 132*, 439
festinata, Bastilla 98, 434
festucae, Plusia 132*, **17**:36,37/**89**:3,4/**165**:5, *415*, 439
fimbriago, Anomis 77, 431
fiorii, Pseudoips 158, 442
fixseni, Acronicta 189, 446
flammifera, Syngrapha 131, 439
flava, Aegle 168, 443
flava, Anomis 77*, **7**:1,2/**50**:2/**138**:5, *404*, 431
flavago, Polychrysia 123, 438
flavida, Aegle 168, 443
flavigutta, Amyna 166, 443
flavimargo, Earias 162, 442
flaviplaga, Lophomilia 26, 73*, **5**:43,44/**47**:5/**136**:8, *403*, 431
flavipuncta, Hyperstrotia 19
flavomacula, Pangrapta 54*, **2**:46,47/**34**:5/**127**:5, *399*, 428
flavomacula, Paragabara 74*, **5**:49,50/**48**:3/**137**:5,6, *403*, 431
flavomaculata, Chrysorithrum 82*, **7**:22/**53**:3/**140**:6, *405*, 432
flexilinea, Hypena 70, 430
flexula, Laspeyria 47*, **1**:72,73/**30**:3/**124**:7, *397*, 427
flexularia, Laspeyria 47, 427
flexuosa, Callistege 91, 433
flexuosa, Cornutiplusia 129, 438
florida, Trichoplusia 114, 437
fontis, Hypena 69, 430
formosa, Xylena 10
Formosamyna 166, 443
formosana, Acronicta 185, 446
formosana, Meganola 144, 441
fortalitium, Callistege 91*, **9**:21/**60**:2/**146**:1, *407*, 433
fortificata, Gonospileia 92, 433
fractistrigata, Anumeta 83*, **7**:24/**53**:5/**140**:7, *405*, 432
fragilis, Nola 152, 441
fragmenta, Araeopteron 10, 42*, **1**:25–26/**27**:1/**122**:4, *396*, 426
frater, Agrotis 10
fraxini, Catocala 27, 29, 104*, **13**:1,2/**71**:1/**153**:5, *410*, 435
Fredina 140, 440
frugalis, Remigia 92*, **9**:27/**60**:6/**146**:5, *407*, 433
Fruva 140, 440
fujisana, Kerala 156, 442
fulgularis, Sinocharis 170, 444
fuliginalis, Nola 149, 441
fuliginaria, Parascotia 39*, **1**:47,48/**25**:5/**121**:5, *396*, 426
fuliginosa, Condica 10
fullionica, Eudocima 81, 432
fullonia, Eudocima 81, 432
fulminea, Catocala 100*, **10**:20,21/**65**:1/**150**:1, *408*, 435
fulvicollis, Moma 180, 445
fulvida, Anomis 78, 431
fumifera, Anadevidia 115, 437
fumosa, Meganola 144*, **18**:70–72/**95**:4/**169**:7, *417*, 441
fumosa, Sypnoides 108*, **14**:13–15/**75**:4/**156**:2, *411*, 436
fumosa, Zanclognatha 61*, **3**:35–37/**39**:1/**130**:4, *400*, 429
fumosensis, Nola 149, 441
funeralis, Hydrillodes 27, 60, 429
funesta, Acronicta 189, 446
funesta, Aedia 142*, **18**:61/**94**:5/**169**:3, *417*, 440
fuscolivacea, Euchalcia 121, 437
fuscula, Protodeltote 133, 439
fuscum, Chrysorithrum 82, 432
futilis, Callistege 91, 433

G

Gabrisa 60, 429
Gadera 80, 432
Galactomoia 171, 444
gamma, Autographa 27, 126*, **16**:33/**85**:2/**162**:8, *414*, 438
gamma-argestina, Syngrapha 131, 439
gammaaurina, Autographa 127, 438
gammina, Autographa 126, 438
gammoides, Autographa 127, 438
Gargaza 170, 444
gaudens, Catocala 104, 435
gdyrensis, Acronicta 190, 446
Gelastocera 156*, 442
geographica, Oxicesta 191*, **24**:23,24/**120**:1/**188**:1, *425*, 447
Gerbathodes 181*, 445
geyeri, Eutelia 111*, **14**:23,24/**76**:4/**156**:7, *411*, 436
Gialca 76, 431
gifuensis, Laspeyria 47, 427
gigantea, Craniophora 181, 445
gigantea, Sypnoides 108, 436
gigantula, Meganola 11, 146, 441
gigas, Meganola 147*, **19**:4/**96**:6/**170**:6, *418*, 441
gilarovi, Syngrapha 11, 131, 439
gitana, Catocala 105, 436
Glaphyra 43, 427
glaucinalis, Paracolax 58, 429
glaucinatus, Paracolax 58, 429
glaucoptera, Acronicta 188, 446
glebicolor, Autophila 86*, **8**:20,21/**56**:2/**143**:2, *405*, 433
Glossodice 43, 426
glyphica, Euclidia 90*, **9**:15/**59**:4/**145**:5, *407*, 433
Gonepatica 17, 18, 72*, 431
Gonitis 77, 431
Gonoptera 78, 431
Gonopteridae 77, 431
Gonopteronia 77, 431
Gonospileia 90, 433
Gonospileia 91*, 433
Gonotis 77, 431
gracilis, Clytie 97*, **10**:18,19/**63**:1/**148**:3, *408*, 434
gracilis, Lygephila 84, 432
gracilis, Plusia 132, 439
graciocissima, Lygephila 85, 433
Graeperia 140, 440
Grammodes 99*, 434
graphica, Cornutiplusia 129, 438
greyi, Catocala 102, 435
grisea, Acronicta 183, 445
grisea, Lygephila 85, 432
grisealis, Herminia 65*, **4**:25,26/**41**:6/**132**:5, *401*, 430
griseata, Catocala 104, 435
griselda, Zanclognatha 61*, **3**:28,29/**38**:4/**130**:1, *400*, 429
griseola, Pangrapta 55*, **2**:54,55/**35**:3/**128**:1, *399*, 428
griseolineata, Anomis 78, 431
grisescens, Colocasia 175, 444

grisescens, Conistra 27
grumi, Drasteria 90, 433
gryphalis, Polypogon 64*, **4**:19,20/**41**:3/**132**:2, *401*, 429
guenei, Protodeltote 133, 439
Gumnopa 167, 443
Guriauna 48, 427
gutta, Erythroplusia 117, 437
Gynaephila 18, 59*, 429
Gyophora 43, 427

H

Habrostola 112, 436
Hadennia 57*, 428
Halastus 81, 432
Haliadea 155, 442
Halias 158, 442
hamada, Edessena 28, 57*, **3**:1,2/**36**:2/**128**:6, *399*, 428
hampsoni, Catocala 101, 435
hampsoni, Negritothripa 164*, **19**:47,48/**104**:4/**176**:8, *420*, 443
hebescens, Naranga 137, 440
hebetata, Anadevidia 115*, **15**:17/**78**:6/**158**:4, *412*, 437
hedemanni, Dysgonia 98, 434
hedeni, Resapamea 10
helena, Catocala 34, 102*, **11**:15/**66**:2/**151**:2, *409*, 435
Helia 58, 429
Heliaca 167, 443
heliaca, Panemeria 167, 443
helialis, Paracolax 58, 429
helicina, Spirama 76*, **6**:3,4/**49**:3/**138**:3, *404*, 431
Heligma 164, 443
Heliodes 167, 443
Heliodora 140, 440
Heliomanes 43, 427
Heliothera 140, 440
helva, Zanclognatha 62*, **3**:47,48/**39**:6/**131**:1, *400*, 429
Hemachra 96, 434
Hemeroptera 135, 439
Hemigeometra 100, 435
Hemispargueia 140, 440
Hepatica 17, 18, 72*, 431
Heraema 11
herbacea, Isochlora 10
hercules, Acronicta 188*, **23**:23,24/**117**:2/**186**:2, *424*, 446
hercules, Sypnoides 108*, **14**:8,9/**75**:2/**155**:8, *411*, 436
Herminea 65, 430
Herminia 18, 63, 64, 65*, 430
Herminidae 56, 428
Herminiinae 18, 56*, 428
Herminites 56, 428
Herpyzon 68, 430
herschelensis, Syngrapha 131, 439
hesperica, Nycteola 163, 443
Hesperimorpha 166, 443
hetaera, Catocala 101, 435
Heteroscotia 51, 428
heureka, Herminia 66, 430
Hexaureia 124*, 438
Hexaureia 124, 438
hilaris, Catocala 106, 436
hochenwarthi, Syngrapha 130*, **17**:20–22/**88**:3/**164**:6, *415*, 438
hochesvarthi, Syngrapha 130, 438
hoenei, Acronicta 189, 446
hoenei, Calyptra 79, 432
hoffmanni, Phytometra 56, 428
hokkaida, Calyptra 79*, **7**:12/**51**:3/**139**:5, *404*, 432
Holocryptis 17, 51*, 428
Honeyania 43, 427
hongarica, Pseudoips 158, 442
honrathi, Catocala 101, 435
honrathii, Xanthomantis 174, 444
Hoplotarache 140, 440
hottentota, Ophiusa 96, 434
humeralis, Diachrysia 119, 437
humidalis, Hypenodes 40*, **1**:7,8/**25**:6/**121**:6, *396*, 426
humilis, Trichoplusia 114, 437
hungarica, Nycteola 163, 443
Hurworthia 166, 443
Hyboma 183, 445
Hyboma 186*, 446
hybrida, Erythroplusia 117*, **15**:19/**79**:4/**158**:8, *412*, 437
Hydrelia 135, 439
Hydrillodes 59*, 429
Hydrophilinae 155, 442
Hyela 135, 439
Hyleopsis 138, 440
Hylonycta 183, 445
Hylonycta 187*, 446
Hylophila 158, 442
Hylophilini 155, 442
hymenaea, Catocala 103, 435
Hypena 68*, 70*, 430
Hypeninae 18, 67*, 430
Hypenodes 17, 40*, 426
Hypenodes 40, 426
Hypenodinae 17, 39*, 426
Hypersypnoides 18, 107*, 436
Hypocala 109*, 436
Hypocalini 109*, 436
Hypocalpe 79, 432
Hypopyrini 76*, 431
Hypostrotia 17, 53*, 428
Hyposypnoides 108, 436
Hyriodes 17

I

Icasma 162, 443
ichinosawana, Lygephila 84, 432
icteritia, Xanthia 33
idae, Panthea 172, 444
Idia 58*, 429
Idiocyttara 149, 441
ijimai, Protoschrankia 72*, **5**:35,36/**47**:1/**136**:4, *403*, 430
Ilattia 166, 443
iliensis, Acronicta 185, 446
illarioni, Raphia 177, 444
illustris, Euchalcia 121, 437
immaculata, Panthea 172, 444
immunita, Gonospileia 92, 433
Imosca 19,165*, 443
inamoena, Odice 43, 426
inamoena, Phytometra 56, 428
inchoata, Anadevidia 115, 437
incisa, Pangrapta 54, 428
incompleta, Syngrapha 130, 439
incongruens, Hadennia 57*, **3**:3,4/**36**:3/**128**:7, *399*, 428
inconspicua, Autophila 86*, **8**:26/**56**:6/**143**:4, *406*, 433
inconspicua, Minucia 97, 434
increta, Acronicta 185, 446
incretata, Acronicta 185, 446
incultalis, Sinarella 66, 430
indica, Anomis 77, 431
indica, Apopestes 87*, **8**:28/**57**:2/**143**:6, *406*, 433
Indicara 94, 434
inextricata, Eutelia 111, 436
infuscata, Acronicta 183, 445
infuscata, Cucullia 11
Inguridia 112, 436
innata, Trichoplusia 114, 437
innocua, Nola 153*, **19**:37,38/**99**:4/**172**:6, *418*, 441
inornata, Amyna 166, 443
inquieta, Cranionycta 182, 445
inscripta, Autographa 127, 438
insignata, Syngrapha 130, 438
insolatrix, Acontia 141, 440
intensiva, Acronicta 186, 446
intercalaris, Autographa 126, 438
interiorata, Camptoloma 159*, **20**:9/**102**:3/**174**:7, *419*, 442
interlineata, Metopta 76, 431
intermedia, Acronicta 185*, **23**:5,6/**114**:4/**184**:3, *423*, 446
intermixta, Trichoplusia 114*, **15**:11/**78**:2/**157**:9, *412*, 437
interrogationis, Autographa 127, 438
interrogationis, Syngrapha 131*, **17**:30,31/**89**:1/**165**:3, *415*, 439
interscalaris, Autographa 126, 438
intracta, Polychrysia 124, 438
intractata, Polychrysia 124, 438
inuata, Eublemma 45, 427
involuta, Anomis 78*, **7**:4,5/**50**:4/**138**:7, *404*, 431
iota, Autographa 127, 438
Iragaodes 155*, 442
Ischyja 425
italica, Acronicta 186, 446
italica, Tyta 169, 444

J

jagowi, Abrostola 112, 436
jankowskii, Cranionycta 182*, **24**:25–27/**112**:6/**183**:1, *423*, 445
jankowskii, Diomea 52*, **2**:32/**33**:3/**126**:6, *398*, 428
jankowskii, Simyra 193, 447
japonibia, Nola 153*, **19**:39,40/**99**:5/**172**:7,8, *419*, 441
japonibia, Plusia 132, 439
japonica, Catocala 105, 436
japonica, Metopta 76, 431
japonica, Pseudoips 158, 442
japonica, Simyra 193, 447
japonica, Sinarella 67*, **4**:45/**43**:4/**133**:7, *402*, 430
japonica, Spirama 76, 431
japyx, Belciades 179, 445
Jaspidia 133, 439
jessica, Sclerogenia 118*, **15**:22/**80**:1/**159**:3, *412*, 437
jezoensis, Acronicta 185, 446
jezoensis, Catocala 104, 435
jezoensis, Earias 161, 442
jezoensis, Protodeltote 134, 439
Jocheaera 183, 445
Jocheaera 185*, 446
johanna, Acronicta 183, 445
jota, Autographa 127*, **17**:34/**86**:1/**163**:3, *414*, 438
jozana, Acronicta 186*, **23**:16/**115**:6/**185**:3, *423*, 446
judaea, Acronicta 183, 445
juncta, Diachrysia 120, 437
juno, Thyas 26, 96*, **10**:1/**62**:3/**147**:7, *407*, 434
Jussalypena 68, 430
jutalis, Hadennia 57, 429
juvenilis, Euclidia 91*, **9**:18/**59**:6/**145**:7, *407*, 433

K

kaekeritziana, Aegle 168*, **20**:56,57/**105**:6/**178**:2, *421*, 443
kalgana, Craniophora 182, 445
kamchadala, Plusia 132, 439
kansuensis, Catocala 105, 436
Kara 39, 426
karelica, Nola 151*, **19**:24,25/**98**:4/**171**:8, *418*, 441
kargalica, Acronicta 184, 446
kaszabi, Abrostola 113*, **15**:8,9/**77**:6/**157**:6, *411*, 437
Katyusha 83, 432
kebaea, Hypocala 110, 436
kengkalis, Hypena 71*, **5**:25/**46**:1/**135**:6, *403*, 430
Kerala 156*, 442
Khadira 81, 432
khasanica, Maliattha 138*, **18**:40,41/**92**:6/**167**:8, *416*, 440
kindermannii, Eublemma 44, 427
koekeritziana, Aegle 168, 443
kogii, Lophomilia 73*, **5**:47/**48**:1/**137**:2, *403*, 431
kogii, Schrankia 41*, **1**:19/**26**:4/**122**:1, *396*, 426
kolthoffi, Moma 180*, **22**:16/**112**:1/**182**:3, *422*, 445
kondarensis, Euchalcia 121*, **16**:5,6/**82**:2/**160**:8, *413*, 437
KoraÏa 100, 435
Koraia 100, 435
korbae, Sinocharis 170*, **20**:61/**106**:5/**178**:7, *421*, 444
korbi, Abrostola 11, 113*, **15**:7/**77**:5/**157**:5,7, *411*, 437
korbi, Nolathripa 149, 441
korealni, Acronicta 186, 446
koreana, Apopestes 87, 433
koreana, Catocala 103*, **12**:1,2/**68**:3/**152**:3, *409*, 435
koreana, Hypena 71, 430
koreognatha, Zanclognatha 63, 429
koreothauma, Thiacidas 171, 444
koresinna, Sinna 160, 442
kostjuki, Autographa 129, 438
kotschubeyi, Panthea 172, 444
kotshubeji, Catocala 107*, **14**:6/**74**:4/**155**:6, *411*, 436
kotshubeji, Gelastocera 157*, **19**:67,68/**101**:5/**174**:5, *419*, 442
Koyaga 134*, 439
kraeffti, Pseudoips 158, 442
kuldzhana, Nycteola 163*, **20**:42–45/**104**:3/**176**:7, *420*, 443
kulmburgi, Mycteroplus 169, 443
kurenzovi, Catocala 102, 435
kurilensis, Anacronicta 173, 444
kurilensis, Plusia 132, 439
kurilullia, Cucullia 29
kurosawai, Catocala 105, 435

L

lactaria, Nolathripa 149*, **19**:46/**97**:4/**171**:2, *418*, 441
laeta, Catocala 106, 436
laetalis, Colobochyla 56, 428
laevigata, Lygephila 85, 432
Lagoptera 95, 434
Lamprosia 100, 435
Lamprotes 125*, 438
Lamprothripa 164, 443
lanceata, Phytometra 56, 428
lapathi, Acronicta 188, 446

lapponaris, Syngrapha 130, 438
lara, Catocala 104*, **13**:3,4/**71**:2/**153**:6, *410*, 435
Laspeyresia 47, 427
Laspeyria 17, 47*, 427
lata, Calyptra 79*, **7**:13/**51**:4/**139**:6, *404*, 432
latefascia, Tyta 169, 444
latefasciata, Catocala 104, 435
latefasciata, Panthea 172, 444
latipennis, Amyna 166, 443
latruncula, Phytometra 56, 428
Lebena 149, 441
leechi, Paracolax 58, 429
leechi, Zanclognatha 62, 429
legionensis, Catocala 104, 435
lehri, Autographa 11, 126, 438
lenis, Eublemma 44, 427
lentalis, Hydrillodes 60, 429
leodura, Balsa 170*, **20**:62/**106**:6/**178**:8, *421*, 444
leonina, Diachrysia 119*, **15**:26/**80**:5/**159**:7, *412*, 437
leporella, Acronicta 184*, 445
leporina, Acronicta 183*, **22**:33,34/**113**:4/**183**:5, *423*, 445
Leptophara 81, 432
Leptosia 46, 427
Leptostola 174, 444
Leucanitis 88, 433
leucaspis, Simyra 191, 447
leucocuspis, Acronicta 185*, **23**:7/**115**:1/**184**:4, *423*, 446
leucogaca, Acronicta 183, 445
leucolopha, Anomis 78*, **7**:8,9/**50**:6/**139**:2, *404*, 431
Leucomelas 10, 90, 433
leucomelas, Aedia 142, 440
Leucopardus 159, 442
leucoptera, Acronicta 189, 446
leucospila, Amyna 166, 443
leucosticta, Enispa 48, 427
libatricus, Scoliopteryx 78, 431
libatrix, Scoliopteryx 78*, **7**:10/**51**:1/**140**:3, *404*, 431
Libisosa 60, 429
lichenodes, Gerbathodes 181, 445
lignaria, Parascotia 39, 426
lignea, Anatatha 50*, **2**:20,21/**32**:2/**125**:9, *398*, 428
ligustri, Craniophora 181*, **24**:19,20/**112**:3/**182**:6, *422*, 445
likiangensis, Catocala 105, 436
lilacina, Zanclognatha 61*, **3**:31–32/**37**:5/**130**:2, *400*, 429
limbalis, Arytrura 88, 433
limbata, Hypocala 110, 436
limosa, Lygephila 85, 433
lineata, Pseudoips 158, 442
lineodes, Deltote 135, 439
lineolalis, Meganola 144, 441
Lira 149, 441
literata, Callistege 91, 433
Lithacodia 133, 134, 135, 439
Lithacodiinae 132, 439
Litoprosopus 18
litterata, Craniophora 181, 445
littoralis, Nola 150, 441
locata, Catocala 105, 436
Lochia 166, 443
locuples, Antoculeora 118*, **15**:23/**80**:2/**159**:4, *412*, 437
Lomanaltes 68, 430
longipennis, Anomis 78, 431
Lophomilia 10, 17, 18, 73*, 431
lubrica, Lygephila 83*, **7**:26–28/**54**:2/**141**:2, *405*, 432
lubrosa, Lygephila 83, 432
lucida, Acontia 141*, **18**:52/**93**:6/**168**:5, *417*, 440
lucilla, Daddala 109*, **14**:16,17/**75**:5/**156**:3, *411*, 436
luctuosa, Tyta 169*, **20**:60/**106**:4/**178**:6, *421*, 444
ludicra, Lygephila 84*, **7**:30,31/**54**:3/**141**:3, *405*, 432
ludifica, Trichosea 172*, **21**:6,7/**107**:3/**179**:3, *421*, 444
ludvigella, Nola 149, 441
lugubris, Acontia 142, 440
lugubris, Schrankia 40, 426
lunalis, Zanclognatha 29, 61*, **3**:33,34/**38**:6/**130**:3, *400*, 429
lunaris, Minucia 97*, **10**:3/**62**:5/**148**:2, *408*, 434
lunulata, Idia 59, 429
lunulata, Pangrapta 54 55*, **2**:48,49/**34**:6/**127**:6, *399*, 428
lunulata, Parascotia 39, 426
lupina, Catocala 107*, **14**:3,4/**74**:2/**155**:4, *410*, 436
lupina, Lygephila 85*, 433
lushanensis, Antoculeora 118, 437
lusoria, Lygephila 83*, **7**:25/**54**:1/**141**:1, *405*, 432
lutalgira, Phytometra 56, 428
lutea, Acronicta 189*, **24**:3,4/**118**:3/**186**:8, *424*, 446
lutefascialis, Enispa 47*, **2**:1,2/**30**:5/**124**:9, *397*, 427
lutosa, Lygephila 85, 432
lycopodia, Remigia 92, 433
Lygephila 83*, 432
Lygephilini 82, 432

M

mabella, Catocala 102, 435
Macaldenia 98, 434
Macdunnoughia 116*, 437
Macrhypena 68, 430
Macrochilo 18, 64, 65*, 429, 430
Macrochthonia 157*, 442
macroelectaria, Melapia 92, 433
macrogamma, Autographa 128*, **17**:11,12/**87**:3/**164**:1, *415*, 438
macrops, Erebus 75*, **6**:1/**49**:1/**138**:1, *403*, 431
macroptera, Kerala 156, 442
maculata, Meganola 147, 441
maculifera, Aventiola 49, 428
maculifera, Gynaephila 59*, **3**:15,16/**37**:6/**129**:6, *400*, 429
Madopa 56, 428
Maenas 81, 432
Mageutica 94, 434
magnifica, Pseudoips 158, 442
magnifica, Syngrapha 131, 439
magninumisma, Koyaga 10, 134*, **18**:13,14/**91**:2/**166**:4, *416*, 439
magnumisma, Koyaga 134, 439
major, Acronicta 184*, **22**:38,39/**114**:1/**183**:7, *423*, 445
major, Lygephila 84, 432
major, Plusia 132, 439
makikoae, Araeopteron 10, 42*, **1**:29–30/**27**:4/**122**:6, *396*, 426
malachitis, Nacna 178*, **22**:3/**110**:2/**181**:3, *422*, 445
malana, Balsa 170, 444
Maliattha 138*, 440
manchurica, Plusia 132, 439
mandarina, Autographa 11, 126*, **17**:1,2/**85**:3/**162**:9, *414*, 438
mandschuriana, Dysgonia 98*, **10**:7,8/**63**:5/**149**:1, *408*, 434
mandschuriana, Evonima 147*, **19**:5–6/**97**:1/**170**:7, *418*, 441
mandschurica, Dysgonia 98, 434
mandschurica, Trachea 11
manleyi, Polysciera 52*, **2**:33,34/**33**:4/**126**:7, *398*, 428
Manoba 11, 147*, 441
manlia, Ischyja 204*, **6**:4/**189**:1/**189**:2, *425,* 431
marita, Catocala 105, 436
marmorata, Pangrapta 55*, **2**:50,51/**35**:1/**127**:7, *399*, 428
Marmorinia 54, 428
martjanovi, Acontia 11, 19, 141*, **18**:55–57/**94**:4/**168**:7, *417*, 440
marusiki, Polychrysia 123*, 438
Mataeomaera 17
Mathura 68, 430
maturata, Bastilla 97*, **10**:5/**63**:3/**148**:5, *408*, 434
maturna, Catocala 100, 435
maxima, Anomis 78, 431
maxima, Lygephila 28, 84*, **8**:1/**54**:4/**141**:4, *405*, 432
maximoviczi, Chrysorithrum 82, 432
medionigra, Colocasia 174, 444
megacephala, Acronicta 190*, **24**:11,12/**116**:4/**185**:8, *424*, 446
Megachyta 60, 429
Meganola 11, 143*, 147, 441
Megazethes 88, 433
Meghypena 68, 430
melanocosta, Meganola 145, 441
melanura, Acontia 141*, **18**:50,51/**93**:5/**168**:4, *417*, 440
Melapia 92*, 433
Melipotini 88*, 433
melli, Catocala 104, 435
Menopsimus 40, 426
menyanthidis, Acronicta 188*, **23**:25,26/**117**:3/**186**:3, *424*, 446
meridionalis, Acronicta 189, 446
Meropis 96, 434
Mescosopis 17
mesogona, Anomis 78*, **7**:3/**50**:3/**138**:6, *404*, 431
Mesoplectra 60, 429
Mesotrosta 168*, 443
mesozona, Nola 152, 441
messmeri, Autographa 126, 438
Mestleta 43, 427
metabractea, Autographa 129, 438
Metacala 100, 435
Metachrostis 46*, 427
metallescens, Oraesia 80, 432
Metapioplasta 140, 440
metaxantha, Acronicta 189, 446
Metoponia 168, 443
Metoponiinae 19, 167*, 443
Metopta 76*, 431
mi, Euclidia 28, 91, **9**:19,20/**60**:1/**145**:8, *407**, 433
micadina, Lamprotes 125, 438
Micardia 137*, 440
michael, Acronicta 189, 446
Micra 43, 427
Micradi 42, 426
Micraeschus 47, 427
Micreremites 17
microgamma, Syngrapha 130*, **17**:26,27/**88**:5/**165**:1, *415*, 439
microlepidopteronis, Sinarella 67, 430
Micronoctua 17, 36*, 426
Micronoctuidae 17, 35*, 426
Microphisa 43, 427
Microphysa 43, 427
Microsyngrapha 130, 438
mikabo, Meganola 146*, **19**:2/**96**:4/**170**:4, *417*, 441
mikadina, Lamprotes 125*, **16**:30/**84**:6/**162**:6, *414*, 438
milleri, Pseudoips 158, 442
Mimachrostia 17, 35*, 426
Mimerastria 143, 147, 441
Mimeusemia 192*, 447
mimula, Dysgonia 98, 434
mimulapostfusca, Dysgonia 98, 434
mineta, Parascotia *39,* 426
Minnagara 149, 441
minoralis, Simplicia 60, 429
Minucia 96*, 434
minuta, Eublemma 44, 427
minutalis, Nola 11, 152*, **19**:30–32/**99**:1/**172**:3, *418*, 441
minutata, Eublemma 44*, **1**:37,38/**27**:6/**122**:**98**, *397*, 427
mira, Oruza 49*, **2**:11,12/**31**:4/**125**:5, *398*, 428
mirabilis, Lygephila 84*, **8**:7/**55**:2/**142**:2, *405*, 432
Miracopa 181, 445
Mixocharis 43, 427
mixta, Euromoia 179*, **22**:11–13/**111**:3/**181**:8, *422*, 445
mneste, Catocala 106, 436
Mocis 93*, 433
Mocisini 90, 433
modesta, Euchalcia 122, 438
modestalis, Macrochilo 65, 430
modestoides, Euchalcia 122*, **16**:14,15/**82**:5/**161**:4, *413*, 438
Moenas 81, 432
Moepa 94, 434
mollicula, Chorisa 11, 139*, **18**:48,49/**93**:4/**168**:3, *417*, 440
Molopa 77, 431
moltrechti, Catocala 103*, **12**:3,4/**69**:3/**152**:7, *409*, 435
moltrechti, Imosca 165, 443
Molybdonycta 186*, 446
Moma 180*, 445
Mominae 177, 444
monachalis, Meganola 144, 441
moneta, Polychrysia 123*, **16**:18/**83**:3/**161**:7, *413*, 438
mongolica, Euchalcia 11, 121*, **16**:1,2/**81**:6/**160**:6, *413*, 437
mongoliensis, Drasteria 89*, **9**:6/**58**:2/**144**:5, *406*, 433
monotretalis, Amyna 166, 443
moorei, Hypocala 109, 436
Mormonia 100, 435
Mormosia 100, 435
morosa, Hydrillodes 60*, **3**:21,22/**38**:1/**129**:7, *400*, 429
Mosara 19
Motina 38, 426
moupiensis, Anacronicta 173, 444
multauri, Diachrysia 120, 437
multicolor, Thyas 96, 434
multisignata, Paragona 50*, **2**:22,23/**32**:3/**125**:10, *398*, 428
munda, Rivula 38, 426
munita, Gonospileia 92*, **9**:23–25/**60**:4/**146**:3, *407*, 433
murensis, Plusidia 125, 438
murrhina, Moma 180, 445
mus, Colocasia 175*, **21**:19,20/**109**:2/**180**:5, *421*, 444
musculus, Arytrura 88*, **9**:1/**57**:4/**144**:2, *406*, 433
musmi, Catocala 10, 101*, **11**:9/–/–, *408*, 435
Mycteroplus 168*, 443
myricae, Acronicta 188, 446

N

Nabartha 60, 429
Nacerasa 47, 427
Nacna 178*, 445
nadeja, Diachrysia 120*, **15**:32,33/**81**:3/**160**:3, *413*, 437
Naganoella 17, 52*, 428
Nagia 94, 434
nagioides, Catocala 104*, **12**:10/**70**:1/**153**:1, *410*, 435
Nalca 179, 445
nami, Nola 154*, **19**:44/**100**:2/**173**:3, *419*, 442

Nantesia 96, 434
Nanthilda 56, 428
napelli, Polychrysia 123, 438
Naranga 19, 137*, 440
narcissus, Eligma 164*, **20**:16/**104**:5/**177**:1, *420*, 443
narratalis, Hypena 70*, **5**:23,24/**45**:6/**135**:5, *402*, 430
natalensis, Amyna 166, 443
nawai, Laspeyria 47, 427
Naxia 97, 434
nearctica, Syngrapha 130, 439
nebulosa, Araeopteron 31, 42*, **1**:31–33/**27**:2/**122**:5, *396*, 426
Necla 149, 441
neglecta, Nola 154*, **19**:43/**100**:1/**173**:2, *419*, 442
Negritothripa 164*, 443
nekrasovi, Autographa 11, 438
nekrasovi, Lophomilia 10, 73*, **5**:45,46/**47**:6/**137**:1, *403*, 431
nemoralis, Herminia 65, 430
nemorata, Paragona 10, 51*, **2**:26,27/**32**:5/**126**:2, *398*, 428
nemoratus, Herminia 65, 430
nemorum, Deltote 136*, **18**:23,24/**91**:7/**166**:9, *416*, 439
nemorum, Herminia 65, 430
Neonola 149, 441
neonympha, Catocala 100*, **11**:1/**65**:2/**150**:2, *408*, 435
neorutilifrons, Erythroplusia 116, 437
Neptunia 140, 440
nervosa, Simyra 190*, **24**:13– 15/**119**:1/**187**:3, *424*, 446
Nesamiptis 68, 430
Neustrotia 11, 19, 139, 440
Neviasca 60, 429
ni, Trichoplusia 114*, **15**:10/**78**:1/**157**:8, *412*, 437
Niaccaba 17
nichollae, Plusia 132, 439
nigha, Serrodes 95, 434
nigrescens, Acronicta 186, 446
nigricans, Catocala 104, 435
nigricollis, Lygephila 85, 432
nigricostata, Lygephila 10, 85, 433
nigripalpis, Aventiola 49, 428
nigrisigna, Autographa 128*, **17**:9,10/**87**:1/**163**:7, *414*, 438
nigrisigna, Sinarella 67*, **4**:42/**43**:2/**133**:5, *402*, 430
nigrobasalis, Hypena 69*, **5**:3–5/**44**:5/**134**:6, *402*, 430
nigrobasalis, Sinarella 67, 430
nigromaculata, Meganola 147, 441
nigroviolacea, Autographa 438
nikkensis, Hypena 68, 430
Nimya 190, 446
Niphosticta 166, 443
nitida, Anacronicta 173*, **21**:11,12/**108**:2/**179**:6, *421*, 444
nitida, Anacronicta 173, 444
nivalis, Meganola 144, 441
nivea, Catocala 105*, **13**:5/**71**:3/**153**:7, *410*, 435
niveola, Belciades 179*, **22**:6/**110**:1/**181**:4, *422*, 445
niveonitens, Simyra 191, 447
niveosparsa, Craniophora 182, 445
nobilis, Iragaodes 155*, **19**:49,50/**100**:4/**173**:5, *419*, 442
Noctasota 110, 436
noctualis, Eublemma 44, 427
Noctuidae 17, 36*, 426
noctuina, Asteropetes 193*, **24**:33,34/**120**:6/**188**:6, *425*, 447
Nola 149*, 441
Nolaphana 170, 444
Nolathripa 148*, 441
Nolidae 10, 142, 441
Nolinae 19, 142*, 440, 441, 142
Nolini 143*, 441
noloides, Chorisa 11, 139*, **18**:46,47/**93**:3/**168**:2, *416*, 440
norrlandica, Syngrapha 131, 439
Noshimea 169, 444
nozawae, Catocala 105, 436
nubeculosa, Brachiobycha 29
nubila, Catocala 103*, **11**:20/**68**:5/**152**:2, *409*, 435
nubila, Ctenoplusia 115, 437
nuda, Eublemma 45, 427
numida, Eublemma 44, 427
numisma, Koyaga 134*, **18**:11,12/**91**:1/**166**:3, *416*, 439
nupta, Catocala 105*, **13**:6/**72**:1/**154**:1, *410*, 436
nuptialis, Catocala 105, 436
nurus, Catocala 105, 436
nutrix, Catocala 102, 435
Nycteola 162*, 442
Nycteolae 160, 442
Nycteolides 160, 442
Nyctipao 75, 431
Nyctipaon 75, 431
nyiwonis, Syngrapha 131*, 439
nymphaeoides, Catocala 102*, **11**:10,11/**67**:1/**151**:3, *409*, 435
nymphula, Catocala 102, 435
nymphula, Holocryptis 51*, **1**:35,36/**32**:6/**126**:3, *398*, 428

O

obesalis, Hypena 34, 70*, **5**:18–20/**45**:4/**135**:3, *402*, 430
Obeshypena 68, 430
obliqua, Zanclognatha 61*, **3**:38–40/**39**:2/**130**:5, *400*, 429
obliquata, Colobochyla 56, 428
obliterans, Eudocima 81, 432
obliterata, Catocala 102, 435
obliterata, Earias 162, 442
obliterata, Phyllophila 133*, **18**:1,2/**90**:1/**165**:7, *415*, 439
obscena, Catocala 101*, **10**:23/**65**:4/**150**:4, *408*, 435
obscura, Autographa 126, 438
obscura, Dysgonia 10, 98*, **10**:10–12/**64**:2/**149**:3, *408*, 434
obscura, Ophiusa 96, 434
obscurans, Hydrillodes 60, 429
obscurata, Catocala 105, 436
obscurata, Daddala 109, 436
obscurata, Pangrapta 55*, **2**:52/**53**/**35**:2/**127**:8, *399*, 428
obscurior, Acronicta 184, 446
obsoleta, Corgatha 48*, **2**:7,8/**31**:2/**125**:3, *398*, 428
obsoleta, Nola 151, 441
obsuta, Acronicta 185, 446
occi, Micronoctua 10, 36*, **1**:4–6/**25**:2/**121**:2, *396*, 426
ochracea, Rivula 38, 426
ochreipennis, Paragabara 74*, **5**:53/**48**:6/**137**:7,8, *403*, 431
ochroleucana, Gelastocera 156*, **19**:57–60/**101**:2/**174**,1, *419*, 442
octo, Amyna 166, 443
oda, Cranionycta 182*, **24**:30–32/**113**:2/**183**:3, *423*, 445
Odice 43*, 426
Odontina 80, 432
Ogoas 68, 430
okurai, Catocala 103, 435
olivacea, Acontia 141*, **18**:53,54/**94**:1/**168**:6, *417*, 440
olivacea, Koyaga 134, 439
olivacea, Ophiusa 96, 434
olivacea, Phytometra 56, 428
Olivacontia 140, 141*, 440
olivana, Deltote 136, 439
olivea, Deltote 136, 439

Olybama 59, 429
Ommatostolidea 190, 446
Omopterini 94, 434
omorii, Acronicta 187*, **23**:19/**116**:2/**185**:5, *424*, 446
omphale, Catocala 102, 435
opalina, Gonepatica 72*, **5**:37,38/**47**:2/**136**:5, *403*, 431
Ophideres 81, 432
Ophideridae 76, 431
Ophioderes 81, 432
Ophiodes 96, 434
Ophiogenes 96, 434
Ophiuche 68, 430
Ophiusa 96*, 97, 98, 434
Ophiusidae 94, 434
Ophiusini 94*, 434
Ophiussa 96, 434
Optocala 100, 435
Oraesia 80*, 432
orbica, Amyna 166, 443
oriens, Acronicta 189, 446
orientalis 106, 436
orientalis, Coenobia 10
orion, Moma 180, 445
ornata, Panchrysia 124*, 438
ornatissima, Antoculeora 118, 437
ornatissima, Sinna 160, 442
orobi, Lygephila 83, 432
Oruza 17, 48*, 428
ostrina, Eublemma 44*, **1**:52,53/**28**:2/**123**:2, *397*, 427
Othreinae 76, 431
Othreis 81, 432
Othresypna 107, 436
Othryis 81, 432
ottolenguii, Syngrapha 131*, **17**:32–35/**89**:2/**165**:4, *415*, 439
Oxicesta 191*, 447
oxygramma, Ctenoplusia 115, 437
oxyptera, Simyra 190, 446

P

pacifica, Abrostola 11, 113, 437
pacifica, Craniophora 182*, **24**:22,23/**112**:5/**182**:8, *423*, 445
pacifica, Meganola 144*, 441
pacta, Catocala 107*, **14**:5/**74**:3/**155**:5, *411*, 436
paginalis, Earias 161, 442
Palaeographa 129, 438
Palaeoplusia 131, 439
pales, Diachrysia 11, 119*, **15**:25/**80**:4/**159**:6, *412*, 437
palliata, Apaustis 167, 443
pallicostata, Oruza 49, 428
pallida, Catocala 106, 436
pallida, Acronicta 189, 446
pallida, Calyptra 79, 432
pallidamajor, Catocala 104, 435
pallidula, Eublemma 45*, **1**:65/**29**:4/**124**:2, *397*, 427
palliola, Nola 149, 441
palliolalis, Nola 149, 441
palliolana, Nola 149, 441
pallium, Apaustis 167, 443
palpalis, Pechipogo 64, 429
Palpangula 82, 432
Palpangula 88, 433
palpatus, Pechipogo 64, 429
palshkovi, Subleuconycta 180*, **22**:4/**111**:1/**182**:1, *422*, 445
Palura 48, 427
Panchrysia 124*, 438
Panchrysiina 120, 437
Panemeria 167*, 443
Pangrapta 17, 54*, 428
Pangraptinae 53*, 428
Panhemeria 167, 443
Panligma 164, 443
pannonica, Eublemma 44, 427
Panoblemma 43, 427
panonica, Eublemma 44*, **1**:55,56/**28**:5/**123**:5, *397*, 427
Panthauma 11, 171, 444
Panthea 172*, 444
Pantheinae 20, 171*, 444
Pantheini 172*, 444
parabractea, Autographa 129, 438
Paracolax 58*, 429
paradisea, Eublemma 44, 427
paradoxa, Acronicta 183, 445
paradoxa, Amyna 166, 443
Paragabara 17, 18, 74*, 431
Paragona 17, 50*, 428
Paraherminia 58, 429
parallela, Eublemma 45*, **1**:66/**29**:5/**124**:3, *397*, 427
parallela, Polypogon 64, 429
Parallelia 18, 97, 98,434
paranympha, Catocala 100, 435
Paraphyllophila 136*, 440
Parascotia 39*, 426
Parasimyra 190, 446
Paraviminia 183, 445
pardalina, Acontia 142, 440
Pareuchalcia 121, 437
Parhylophila 155*, 442
parilis, Syngrapha 130*, **17**:18,19/**88**:2/**164**:5, *415*, 438
Parsyngrapha 130, 438
parva, Eublemma 3 4, 44*, **1**:41,42/**28**:4/**123**:4, *397*, 427
Parvablemma 43, 427
Pasipeda 98, 434
Pasira 38, 426
passerinalis, Hypena 71, 430
pastinum, Lygephila 85*, **8**:14,15/**55**:5/**142**:5, *405*, 433
pasythea, Catocala 101, 435
patefacta, Cornutiplusia 129, 438
patella, Araeopteron 10, 42*, **1**:34/–/**122**:7, *396*, 426
Patula 75, 431
paula, Eublemma 44, 427
paupera, Gerbathodes 181*, **22**:5/**111**:2/**182**:5, *422*, 445
Paurosceles 38, 426
Pechipogo 18, 63*, 429
Pechipogon 63, 429
pectitalis, Pechipogo 64, 429
Pelamia 92, 433
Peliala 68, 430
pellex 106, 436
Pelomia 93, 434
Penisa 48, 428
penthima, Xestia 29
peponis, Anadevidia 115*, **15**:16/**78**:5/**158**:3, *412*, 437
Peranua 96, 434
Percalpe 79, 432
Perciana 18
percontationis, Autographa 127, 438
perfractalis, Zanclognatha 62*, **4**:5,6/**40**:3/**131**:4, *401*, 429

perfundens, Amyna 166, 443
pergrata, Odice 43, 426
Pericyma 94*, 434
Pericymini 94*, 434
perisi, Acronicta 185, 446
perlana, Eublemma 44, 427
Perloplusia 116, 437
Perophiusa 96, 434
Peroplusia 116, 437
persibirica, Syngrapha 131*, 439
persimilis, Mimeusemia 31, 193*, **24**:27,28/**120**:3/**188**:3, *425*, 447
perturbans, Pangrapta 33
Pervulgarita 68, 430
Perynea 47, 427
petasitis, Hydraecia 33
Peuderiopus 139, 440
peustera, Raphia 177*, **21**:24,25/**109**:4/**180**:7, *422*, 444
peusteria, Raphia 177, 444
phaedra, Acronicta 186, 446
phaedriola, Acronicta 186, 446
Phanaca 159, 442
phantasma, Apopestes 87*, **8**:27/**57**:1/**143**:5, *406*, 433
Pharetrab 183, 445
Pharetra 187, 446
Phineca 174, 444
Phlegetonia 110, 436
Phyllophila 133*, 439
Phytometra 17, 56*, 428
Phytometrinae 111, 436
Phytometrinae 17, 55*, 428
Phytometrini 55, 428
picta, Drasteria 89*, **9**:8/**58**:4/**144**:7, *406*, 433
picta, Sypnoides 108*, **14**:10–12/**75**:3/**156**:1, *411*, 436
pirata, Catocala 104*, **12**:12,13/**70**:3/**153**:3, *410*, 435
Pisara 149, 441
Pityolita 60, 429
Placerobela 68, 430
Plathypena 68, 430
Platycerura 172, 444
plesdidior, Diachrysia 119, 437
Ploteia 38, 426
plumbea, Tambana 173*, **21**:13,14/**108**:3/**180**:1, *421*, 444
Plusia 131*, 439
Plusidia 125*, 438
Plusidiina 116, 437
Plusiidae 111, 436
Plusiina 126*, 438
Plusiinae 18, 111*, 436
Plusiini 116*, 437
Plusiodonta 80*, 432
Podioplusia 115, 437
Poecilogramma 139, 440
Poecilonola 147, 441
Pogonitis 65, 430
policula, Panemeria 167, 443
Poliothripa 149, 441
polybapta, Lophomilia 10, 73*, **5**:41,42/**47**:4/**136**:7, *403*, 431
Polychrysia 123*, 438
Polychrysiina 120, 437
Polydesma 179, 445
polygramma, Eublemma 45*, **1**:69/**30**:1/**124**:5, *397*, 427
polygramma, Protodeltote 133, 439
Polyorycta 43, 427
Polypogon 18, 64*, 429
Polypogoninae 56, 428
Polysciera 17, 52*, 428
pomona, Eudocima 81, 432
Ponometia 140, 440
populana, Nycteola 163, 443
Popypogon 64, 429
porphyrina, Eublemma 44*, **1**:54/**28**:3/**123**:3, *397*, 427
Porphyrinia 43, 427
Porrotha 140, 440
postica, Thiacidas 19
praeclara, Craniophora 182*, **24**:21,22/**112**:4/**182**:7, *422*, 445
praegnax, Catocala 102*, **11**:3/**67**:4/**151**:6, *409*, 435
praeligaminosa, Autophila 86, 433
prasinana, Pseudoips 158*, **20**:1–4/**102**:1/**175**:1, *419*, 442
princeps, Eudocima 81, 432
privata, Anomis 78*, **7**:6,7/**50**:5/**139**:1, *404*, 431
proboscidalis, Hypena 70*, **5**:11–13/**45**:2/**135**:1, *402*, 430
proboscidatus, Hypena 70, 430
procax, Lygephila 10, 85*, **8**:16,17/**55**:6/**142**:6, *405*, 433
proclivis, Lygephila 85, 433
Procriosis 140, 440
Prodotis 99, 434
promissa, Catocala 106*, **13**:11/**73**:5/**155**:2, *410*, 436
Promonia 100, 435
Proschora 138, 440
protea, Autographa 127, 438
Prothymia 56, 428
Protodeltote 133*, 439
Protomelipotis 88, 433
protonympha, Catocala 100, 435
Protoschrankia 71*, 430
proxeneta, Catocala 103*, **11**:5,6/**69**:1/**152**:4, *409*, 435
proxima, Eublemma 45, 427
pryeri, Dryobotodes 29
Pseudaglossa 58, 429
pseudalbistigma, Pangrapta 55, 428
Pseudalypia 140, 440
Pseudelydna 159, 442
Pseudephyra 48, 427
Pseudeuchalcia 121, 437
Pseudodeltote 136*, 439
Pseudodichromia 68, 430
Pseudoips 158*, 442
Pseudophia 82, 432
Pseudophia 97, 434
pseudopyropia, Erythroplusia 116, 437
pseudostrina, Eublemma 44, 427
psi, Acronicta 185*, **23**:9–11/**114**:3/**184**:6, *423*, 446
Pteraetholix 166, 443
Pterodonta 78, 431
Pteronycta 171, 444
pudica, Catocala 106, 436
pudicana, Earias 161*, **20**:16–18/**103**:1/**175**:6, *420*, 442
pudorina, Mythimna 33
puengeleri, Nonagria 33
Puercala 100, 435
puerpera, Catocala 106*, **12**:20–22/**73**:1/**154**:7, *410*, 436
pulchella, Casminola 11, 148*, **19**:10,11/**97**:3/**171**:1, *418*, 441
pulchra, Micardia 137*, **18**:30,31/**92**:2/**167**:3, *416*, 440
pulchralis, Eublemma 44*, **1**:39,40/**28**:1/**123**:1, *397*, 427
pulchrargenta, Micardia 137, 440
pulchrina, Autographa 126, 127, 438
pulchrina, Autographa 127*, **16**:36/**85**:4/**163**:1, *414*, 438
pulverosa, Drasteria 89*, **9**:5/**58**:1/**144**:4, *406*, 433

punctalis, Sinarella 67*, **4**:43,44/**43**:3/**133**:6, *402*, 430
punctata, Anumeta 83, 432
punctistigma, Plusia 132, 439
punctum, Amyna 166*, **20**:50/**105**:1/**177**:5, *420*, 443
puniceago, Mycteroplus 168*, **20**:58/**106**:2/**178**:4, *421*, 443
pupillana, Earias 161, 442
Purbia 81, 432
Puriplusia 117*, 437
purissima, Macdunnoughia 118*, **15**:21/**79**:6/**159**:2, *412*, 437
purpurata, Phytometra 5 6, 428
purpurea, Catocala 106, 436
purpurina, Eublemma 45*, **1**:61,62/**29**:2/**123**:8, *397*, 427
pusilla, Aventiola 49*, **2**:17–19/**32**:1/**125**:8, *398*, 428
pusilla, Eublemma 45*, **1**:67,68/**29**:6/**124**:4, *397*, 427
fraterna, Cucullia 11
pustulata, Cucullia 11
putnami, Plusia 132*, **17**:38–40/**89**:5/**165**:6, *415*, 439
pvilcherina , Naganoella 52, 428
pygarga, Protodeltote 133*, **18**:3,4/**90**:2/**165**:8, *415*, 439
pygmaria, Nola 149, 441
Pyralidesthes 56, 428
pyrausta, Macrochthonia 158, 442
pyrenaica, Syngrapha 131, 439
pyropia, Erythroplusia 116*, **15**:15/**79**:2/**158**:6, *412*, 437
Pysnoides 108, 436

Q

quadra, Idia 59*, **3**:17,18/**37**:4/**129**:4, *400*, 429
quadriorbis, Protodeltote 134, 439
quadriplaga, Syngrapha 130, 438
Quaramia 65, 430

R

rada, Drasteria 89*, **9**:10/**58**:6/**145**:1, *406*, 433
radapicta, Drasteria 89, 433
radiatalis, Hypena 70, 430
Ragana 59, 429
Raparna 17
raphael, Acronicta 189*, **24**:7,8/**118**:5/**187**:2, *424*, 446
raphaelis, Acronicta 189, 446
Raphia 176*, 444
Raphiinae 10, 20, 176, 444
rasilis, Autophila 10, 86*, **8**:22/**56**:3/**188**:7, *406*, 433
rata, Eublemma 45, 427
Ravalita 68*, 430
ravulalis, Zekelita 68*, **4**:46–48/**43**:5/**133**:8, *402*, 430
recta, Lygephila 85*, **8**:18,19/**56**:1/**143**:1, *405*, 433
recta, Phyllophila 133, 439
rectalis, Simplicia 60*, **3**:26,27/**38**:3/**129**:9, *400*, 429
rectifascia, Eublemma 44, 427
rectifascia, Hypenodes 26, 40*, **1**:9–11/**26**:1/**121**:7, *396*, 426
rectifasciata, Metopta 76*, **6**:2/**49**:2/**138**:2, *404*, 431
rectifasciata, Sypnoides 108, 436
reducta, Drasteria 90, 433
regularis, Apopestes 87*, **9**:4/**57**:3/**144**:1, *406*, 433
rejecta, Catocala 106, 436
Remigia 92*, 433
Remigiidae 90, 433
Remmigabara 10, 17, 53*, 428
renalis, Thyas 96, 434
renardi, Euchalcia 122*, **16**:10–12/**83**:2/**161**:2, *413*, 437
respersa, Eublemma 45, 427
Reticcala 100, 435
reticularis, Sinna 160, 442
reticulatis, Zanclognatha 62*, **4**:1,2/**40**:1/**131**:2, *401*, 429
Rhaphia 176, 444
Rhazunda 38, 426
Rhesala 17
rhombalis, Hypena 69, 430
rhopalosema, Erythroplusia 117, 437
Rhychodontodes 68, 430
Rhynchopalpus 11, 143, 147, 441
Rhyplaga 43, 427
Rhytia 81, 432
riata, Lygephila 85, 432
ripleyi, Tambana 173, 444
Ripogenus 110, 436
Ristra 77, 431
rita, Acronicta 183, 445
Rivula 38*, 426
Rivulana 38, 426
Rivulinae 17, 37*, 426
robiginosa, Herminia 65*, **4**:27,28/**42**:1/**132**:6, *401*, 430
robiginosa, Pangrapta 54, 428
roda, Drasteria 89, **9**:11/**59**:1/**145**:2, *406*, 433
Roeselia 143, 147, 149, 441
Roeseliidae 142, 440
romana, Catocala 106, 436
romana, Pechipogo 64, 429
rosacea, Maliattha 138*, **18**:36,37/**92**:4/**167**:6, *416*, 440
rosea, Eublemma 45*, **1**:59,60/**29**:1/**123**:7, *397*, 427
rosea, Syngrapha 131, 439
roseifera, Earias 161*, **20**:19–21/**103**:2/**175**:7, *420*, 442
Roseoblemma 43, 427
roseoviridis, Earias 161*, **20**:22–24/**103**:3/**176**:1, *420*, 442
rosina, Eublemma 45, 427
rosinae, Polymixis 10
Rosthypena 68, 430
rostralis, Hypena 70*, **5**:14–17/**45**:3/**135**:2, *402*, 430
rostratus, Hypena 70, 430
rubra, Gelastocera 157, 442
rufa, Amyna 166, 443
rufescens, Chrysorithrum 82, 432
rufotincta, Deltote 136, 439
rumicina, Acronicta 189, 446
rumicis, Acronicta 189*, **24**:1,2/**118**:2/**186**:7, *424*, 446
rumicis, Acronicta 190, 446
runica, Moma 180, 445
rupicola, Apaustis 167*, **20**:53,54/**105**:5/**178**:1, *421*, 443
ruptistigma, Zanclognatha 62, 429
Rusicada 77, 431
rutilifrons, Erythroplusia 116*, **15**:14/**79**:1/**158**:5, *412*, 437
ruvida, Gerbathodes 181, 445

S

sachalinensis, Acronicta 186, 446
sachalinensis, Parascotia 39, 426
sachalinensis, Syngrapha 131, 439
saepestriata, Simyra 11, 191*, **24**:19,20/**119**:4/**187**:6, *425*, 447
saepistriata, Simyra 191, 447
saisani, Drasteria 90*, **9**:12/**59**:2/**145**:3, *406*, 433
sakaii, Catocala 102, 435
saldolana, Nycteola 163, 443
Salia 56, 428
salicalis, Colobochyla 56*, **2**:65,66/**36**:1/**128**:5, *399*, 428
salicatus, Colobochyla 56, 428

Saligena 176, 444
sancta, Acronicta 184, 445
sancta, Catocala 104, 435
sapporensis, Acronicta 185, 446
Saraca 54, 428
Sarbanissa 193*, 447
Sarothripus 162, 443
Sarotricha 162, 443
Sarrothripa 162, 443
Sarrothripina 162*, 442
Sarrothripini 160*, 442
Sarrothripus 162, 442
satakei, Herminia 66, 430
satoi, Meganola 145, 441
schernhammer, Eublemma 45, 427
schlumbergeri, Drasteria 89, 433
schlumbergi, Acronicta 190, 446
Schranckia 40, 426
Schrankia 17, 40*, 426
schwingenschussi, Acronicta 188, 446
Sclerogenia 118*, 437
Scleroplusia 116, 437
Scoedisa 77, 431
Scoliopteryginae 77, 431
Scoliopterygini 18, 77*, 431
Scoliopteryx 18, 78*, 431
scolopax, Drasteria 90*, 433
scortum, Catocala 101, 435
scotica, Acronicta 188, 446
secunda, Eublemma 45, 427
secunda, Remmigabara 53*, **2**:36,37/**33**:6/**126**:9, *399*, 428
securis, Autographa 129, 438
selenampha, Amyna 166, 443
Semaphora 183, 445
Sematophora 183, 445
semialbata, Hypena 10, 70*, **5**:9,10/**45**:1/**134**:8, *402*, 430
semiargentea, Panchrysia 124, 438
senica, Oncocnemis 29
separanda, Plusidia 125, 438
separans, Catocala 101*, **11**:6,7/**66**:4/**150**:8, *409*, 435
separans, Ophiusa 96, 434
separatalis, Schrankia 40*, **1**:16–18/**26**:3/**121**:9, *396*, 426
separatum, Chrysorithrum 82, 432
serena, Sclerogenia 118, 437
serenides, Catocala 103, 435
sergia, Euchalcia 122*, **16**:7,8/**82**:3/**161**:9, *413*, 437
serica, Chorisa 139, 440
sericealis, Rivula 27, 38*, **1**:43,44/**25**:3/**121**:3, *396*, 426
sericeum, Chrysorithrum 82, 432
sericina, Oxicesta 191, 447
serrata, Anomis 77, 431
Serrodes 95*, 434
Seudyra 193, 447
sevastina, Autographa 128, 438
shimekii, Meganola 146*, **19**:1/**96**:3/**170**:3, *417*, 441
sibirica, Drasteria 89, 433
sica, Polychrysia 124*, **16**:24/**83**:6/**162**:1, *414*, 438
sicca, Simplicia 60, 429
sichotensis, Sinarella 67, 430
siculana 11, 443
siderifera, Euchalcia 122*, **16**:13/**82**:4/**161**:3, *413*, 437
Sigela 17
sigillata, Sphragifera 29, 166*, **20**:47/**105**:3/**177**: 3, *420*, 443
signalis, Mesotrosta 168*, **20**:55/**106**:1/**178**:3, *421*, 443
significans, Trichoplusia 114, 437
siitanae Belciana 179*, **22**:7/**110**:3/**181**:5, *422*, 445
Silacida 110, 436
Silda 43, 427
similis, Acronicta 188, 446
simplex, Syngrapha 131, 439
Simplicala 100, 435
Simplicia 60*, 429
Simyra 190*, 446
Sinarella 66*, 430
sinevi 10, 46*, **1**:70,71/**30**:2/**124**:6, *397*, 427
singularis, Deltote 136, 439
Sinna 160*, 442
Sinocampa 83, 432
Sinocharinae 19, 169*, 444
Sinocharis 19, 169*, 444
sinuata, Laspeyria 47, 427
Siymra 190, 446
Smicroloba 43, 427
sodalis, Calyptra 79, 432
sokutsuna, Ctenoplusia 115, 437
solaris, Acontia 141, 440
solimana, Acronicta 185, 446
solitaria, Enispa 47, 427
soltowensis, Acronicta 184, 446
Sophronia 49, 428
Sophta 17, 47, 427
Sphingiforma 159, 442
Sphragidifera 165, 443
Sphragifera 19, 165*, 443
Spintherops 87, 433
Spirama 76*, 431
Spiramia 76, 431
spitzi, Nola 150, 441
splendens, Catocala 103, 435
splendens, Nacna 178, 445
splendida, Plusia 132, 439
splendida, Polychrysia 124*, **16**:23/**83**:5/**161**:10, *414*, 438
splendida, Simyra 191*, **24**:16/**119**:2/**187**:4, *424*, 447
spoliata, Amyna 166, 443
sponsa, Catocala 106*, **13**:9/**73**:3/**154**:8, *410*, 436
Spragueia 140, 440
squalida, Hypena 69*, **4**:57,58/**44**:3 **134**:4, *402*, 430
squalida, Schrankia 40, 426
Standfussia 49, 428
staudingeri Belciana 179*, **22**:8/**110**:4/**181**:6, *422*, 445
stellata, Nolathripa 149, 441
Stenbergmania 18, 73*, 431
steni, Chrysorithrum 82, 432
stenochrysis, Diachrysia 120*, **15**:30,31/**81**:2/**160**:2, *413*, 437
Stenopis 96, 434
Stenopsis 96, 434
Stenozethes 54, 428
Stephania 168, 443
stigmata, Lygephila 85, 433
stigmatizans, Anomis 77, 431
stigmatophora, Sinarella 66, 430
stigmatula, Amyna 166, 443
stolida, Grammodes 99*, **10**:13/**64**:3/**149**:4, *408*, 434
stramentacealis, Herminia 66*, **4**:33,34/**42**:4/**133**:1, *401*, 430
strecceri, Catocala 103, 435
streckeri, Catocala 103*, **11**:2/**69**:5/**152**:5, *409*, 435
Stridova 166, 443
strigilata, Pechipogo 26, 64*, **4**:15,16/**41**:1/**131**:8, *401*, 429
strigosa, Acronicta 186*, **23**:14,15/**115**:5/**185**:2, *423*, 446
strigula, Meganola 144*, **18**:64–67/**95**:2/**169**:5, *417*, 441
strigulalis, Meganola 144, 441
strigulana, Meganola 144, 441
strigulosa, Meganola 145*, **18**:79/**96**:2/**170**:2, *417*, 441
stupida, Grammodes 99, 434
stuposa, Bastilla 98*, **10**:6/**63**:4/**148**:6, *408*, 434
stygia, Diomea 52, 428
stygia, Sugia 135*, **18**:15,16/**91**:3/**166**:5, *416*, 439
stygiana, Hypena 68*, **4**:49,50/**43**:6/**134**:1, *402*, 430
suaveola, Pangrapta 54*, **2**:42,43/**34**:3/**127**:3, *399*, 428
Subacronicta 190*, 446
Subacronycta 183, 445
subalbonotata, Chitonyx 10
Subanua 96, 434
subchalybaea, Ctenoplusia 115, 437
subfalcata, Arytrura 88*, **9**:2,3/**57**:5/**144**:3, *406*, 433
subflava, Simyra 193*, **24**:29,30/**120**:4/**188**:4, *425*, 447
subfulvida, Anomis 78, 431
subgigas, Meganola 11, 146*, **19**:3/**96**:5/**170**:5, *418*, 441
subgriselda, Zanclognatha 62*, **3**:43,44/**39**:4/**130**:7, *400*, 429
Subleuconycta 180*, 445
sublubrica, Lygephila 83, 432
subpulchra, Euromoia 179*, **22**:9,10/**111**:4/**181**:7, *422*, 445
Subrita 162, 443
subrosea, Laspeyria 47*, **1**:74,75/**30**:4/**124**:8, *397*, 427
subsatura, Hypocala 26, 109*, **14**:21,22/**76**:2/**156**:5, *411*, 436
subtracta, Amyna 166, 443
suecica, Catocala 107, 436
suffusa, Acronicta 188, 446
Sugia 135*, 439
sugii, Acronicta 185*, **23**:8/**115**:2/**184**:5, *423*, 446
sugii, Zanclognatha 62, 429
suigensis, Acronicta 189, 446
sukriana, Acronicta 189, 446
sulphuralis, Acontia 142, 440
sulphurea, Acontia 142, 440
sulphurifera, Aegle 168, 443
sumi, Manoba 148, 441
Supersypnoides 108*, 436
supplex, Amyna 166, 443
suspecta, Parastichtis 33
sutchana, Imosca 165, 443
sutshana, Catocala 103, 435
sutshana, Gelastocera 11, 157, 442
suzukii, Catocala 101, 435
sviridovi, Zanclognatha 63, 429
sylpha, Pseudoips 158*, **20**:5–8/**102**:2/**175**:2, *419*, 442
sylvana, Pseudoips 158, 442
Symira 190, 446
Syneda 88, 433
Synedini 88, 433
Syngrapha 129*, 438
Sypna 18
Sypnini 107*, 436
Sypnoides 18, 108*, 436
syriaca, Hadena 10

T

taeniata, Nola 152*, **19**:33–35/**99**:2/**172**:4, *418*, 441
Tafalla 80, 432
Tambana 173*, 444
tamsi, Hypena 71*, **5**:32–34/**46**:6/**136**:3, *403*, 430
tamsi, Xanthomantis 174, 444
tanaica, Simyra 191, 447
tanakai, Acronictinae 178, 445
Tarache 140, 440
Tarachidia 140, 440
Tarachini 139, 440
tarbagata 106, 436
tarsicrinalis, Herminia 66*, **4**:29,30/**42**:2/**132**:7, *401*, 430
tarsicrinata, Polypogon 11, 64*, **4**:21,22/**41**:4/**132**:3, *401*, 429
tarsicrinatus, Herminia 66, 430
tarsipennalis, Zanclognatha 62*, **3**:41,42/**39**:3/**130**:6, *400*, 429
tarsiplumalis, Zanclognatha 61, 429
Tathorhynhus 83, 432
tatorhina, Hypena 70*, **5**:30,31/**46**:5/**136**:2, *402*, 430
tecta, Amyna 166, 443
tehrana, Acronicta 185, 446
Teinopyga 160, 442
tendinosa, Simyra 191, 447
tenebrata, Panemeria 167*, **20**:51,52/**105**:4/**177**:6, *420*, 443
tentaculalis, Polypogon 64, 429
tentacularia, Polypogon 64*, **4**:17,18/**41**:2/**132**:1, *401*, 429
tenuialis, Zanclognatha 63*, **4**:10–12/**40**:5/**131**:6, *401*, 429
ternei, Autographa 11, 127, 438
terrigena, Acronicta 186, 446
tetans, Oraesia 80, 432
Tetrargenia 124, 438
Tetrastictypena 68, 430
thalictri, Calyptra 31, 79*, **7**:11/**51**:2/**139**:4, *404*, 432
Thalomicra 43, 427
Thalpochares 43, 427
thasia, Eublemma 44, 427
Thelxinoa 41, 426
theophila, Apaustis 167, 443
Therasea 140, 440
Thiacidas 11, 19, 171*, 444
Thiacidinae 10, 19, 170*, 444
Thiacidini 170, 444
Tholomiges 40, 426
thomsoni, Catocala 102, 435
Thopelia 38, 426
Thyas 95*, 434
Thyatirides 177, 445
Thyrososcelis 159, 442
Thysaniini 75, 431
Thysanoplusia 114*, 437
tienmushani, Euromoia 179, 445
Tima 140, 440
timandra, Naganoella 52*, **2**:35/**33**:5/**126**:8, *398*, 428
timoi, Dasypolia 10
Tinctalita 68, 430
Tinnodoa 80, 432
tirhaca, Ophiusa 96*, **10**:2/**62**:4/**148**:1, *407*, 434
Tiridata 77, 431
tirrhaca, Ophiusa 96, 434
tirrhaea, Ophiusa 96, 434
titania, Acontia 141, 440
tjurana, Simyra 191, 447
togatulalis, Meganola 144*, **18**:62,63/**95**:1/**169**:4, *417*, 441
togatulana, Meganola 144, 441
tomarinia, Herminia 66, 430
Tornacontia 140, 440
torosa, Simyra 190, 447
Toxocampa 83, 432
Toxocampini 82*, 432

trabealis, Acontia 142*, **18**:60/**94**:4/**169**:2, *417*, 440
trabeata, Acontia 142, 440
Trachea 11
transbaikalensis, Syngrapha 11, 131*, 439
transfixa, Ctenoplusia 115, 437
translata, Remigia 92, 433
transversa, Cranionycta 182, 445
trapezina, Cosmia 33
Treitschkendia 60, 429
Triaena 183, 184*, 445, 446
triangulum, Acontia 141, 440
Trichogatha 48, 428
Trichoplusia 114*, 437
Trichosea 172*, 444
Trichoseini 171, 444
Trichotarache 140, 440
Trichypena 68, 430
tridens, Acronicta 184*, **23**:1,2/**114**:2/**184**:1, *423*, 446
trigemina, Abrostola 112, 436
Trigeminostola 112, 436
trilinealis, Paracolax 58*, **3**:7,8/**36**:5/**128**:9, *399*, 429
Trilophia 166, 443
trimaculata, Acronictinae 64, 178*, **22**:1/**109**:5/**181**:3, *422*, 445
trimantesalis, Pangrapta 54, 428
trinubila Belciana 179, 445
tripartita, Abrostola 112*, **15**:3,4/**77**:3/**157**:3, *411*, 436
triplasia, Abrostola 112*, **15**:2/**77**:2/**157**:3, *411*, 436
triplex, Zanclognatha 62*, **3**:45,46/**39**:5/**130**:8, *400*, 429
tripunctalis, Hypena 70, 430
tripunctata, Acronictinae 178, 445
triquetra, Gonospileia 92*, **9**:22/**60**:3/**146**:2, *407*, 433
triradiata, Acontia 141, 440
Trisateles 17, 49*, 428
Trisatelini 46, 427
Trispila 177, 444
Trissophaes 81, 432
tristalis, Hypena 70*, **5**:21,22/**45**:5/**135**:4, *402*, 430
tristalis, Paracolax 58*, **3**:5,6/**36**:4/**128**:8, *399*, 429
tristis, Colocasia 174, 444
tristis, Paracolax 58, 429
tristriga, Zanclognatha 63*, **4**:7–9/**40**:4/**131**:5, *401*, 429
Trisulana 171, 444
Trisuloides 174, 444
trituberculana, Nola 150, 441
trivenefica, Amyna 166, 443
Trogacontia 47, 427
Trogatha 47, 427
Trothisa 43, 427
tschiliensis, Catocala 102, 435
tschiliensis, Catocala 105, 436
tsushimana, Moma 181*, **22**:17,18/**112**:2/**182**:4, *422*, 445
tuberculalis, Nola 150, 441
tungusa, Hypocala 110, 436
turanica, Acronicta 189, 446
turbata, Pangrapta 54, 428
turbo, Paracolax 58, 429
turfosalis, Hypenodes 40, 426
tutti, Diachrysia 120, 437
tutulella, Nola 149, 441
typinota, Autographa 126, 438
tyrannus, Eudocima 27, 81*, **6**:5/**52**:3/**140**:2, *404*, 432
Tyta 169*, 444

U

Ulotrichopus 100, 435
umbristriga, Cucullia 10
umbrosa, Acontia 141, 440
umbrosa, Pangrapta 55*, **2**:56,57/**35**:4/**128**:2, *399*, 428
umbrosalis, Zanclognatha 62*, **4**:3,4/**40**:2/**131**:3, *401*, 429
umetsui, Nola 153*, **19**:36/**99**:3/**172**:5, *418*, 441
unata, Cornutiplusia 129, 438
Unca 112, 436
unca, Acronictinae 10, 178*, **22**:2/**109**:6/**181**:2, *422*, 445
unca, Deltote 136, 439
uncana, Deltote 136, 439
unctalis, Rivula 26, 38*, **1**:45,46/**25**:4/**121**:4, *396*, 426
uncula, Deltote 136*, **18**:19,20/**91**:5/**166**:7, *416*, 439
undata, Mocis 93*, **9**:28/**61**:1/**146**:6, *407*, 434
undatagregalis, Mocis 93, 434
undulifera, Amyna 166, 443
unduligera, Blasticorhinus 10, 11, 99*, **9**:34,35/**64**:5/**149**:6, *408*, 435
unicuba, Catocala 105, 436
uniformis, Colocasia 174, 444
uniformis, Deltote 136, 439
Uniptena 140, 440
upicola, Acontia 141, 440
Uracontia 140*, 440
uralensis, Catocala 105, 436
uralensis, Euchalcia 121*, 437
urba, Amyna 166, 443
urticae, Abrostola 112, 436
urticicola, Hypena 70, 430
urupina, Autographa 128*, **17**:7,8/**86**:4/**163**:6, *414*, 438
Usbeca 168, 443
ussurica, Araeopteron 10, 42*, **1**:27,28/**27**:3, *396*, 426
ussurica, Catocala 103, 435
ussuriensis, Abrostola 113*, **15**:5,6/**77**:4/**157**:4, *411*, 437
ussuriensis, Blasticorhinus 99*, **9**:31–33/**64**:4/**149**:5, *408*, 435
ussuriensis, Colocasia 175, 444
ussuriensis, Holocryptis 51*, **2**:28,29/**33**:1/**126**:4, *398*, 428
ussuriensis, Panthea 172, 444

V

Vandana 81, 432
variabilis, Euchalcia 121*, **15**:36–39/**81**:5/**160**:5, *413*, 437
variegata, Nola 149, 441
variolosa, Anomis 77, 431
vasava, Pangrapta 26, 27, 54*, **2**:44,45/**34**:4/**127**:4, *399*, 428
v-aureum, Autographa 127, 438
velata, Mocis 93, 434
venerica, Phyllophila 133, 439
venosa, Simyra 191, 447
ventilabris, Herminia 66, 430
venusta, Simyra 193*, **24**:31,32/**120**:5/**188**:5, *425*, 447
venustula, Elaphria 19
vernana, Earias 162*, **20**:28–30/**103**:5/**176**:3, *420*, 442
versicolor, Erastroides 137, 440
Vescisa 43, 427
vesta, Ophiusa 96, 434
vexabilis, Amyna 166, 443
viciae, Lygephila 85*, **8**:11–13/**55**:4/**142**:4, *405*, 432
Viminia 183, 187, 188* 445, 446
violacea, Hypocala 10, 110*, **14**:18/**76**:3/**156**:6, *411*, 436
violacealis, Herminia 66, 430
violacealis, Zanclognatha 63*, **4**:13,14/**40**:6/**131**:7, *401*, 429
violaceogrisea, Lygephila 85, 433
violetta, Eublemma 45, 427
virbia, Mocis 93, 434
virens, Belciades 179, 445
viridaria, Phytometra 56*, **2**:58–61/**35**:5/**128**:3, *399*, 428
viride, Earias 162, 442
viridislienata, Pseudoips 158, 442
viscotti, Protodeltote 134, 439
vitiensis, Anomis 78, 431
Vittappressa 48, 428
Vittapressa 48, 428
vittatus, Hypena 70, 430
v-minus, Autographa 128*, **16**:37,38/**86**:3/**163**:5, *414*, 438
v-notata, Syngrapha 130, 439
voelkeri, Autographa 126, 438
vulcanea, Lygephila 84*, **8**:6/**55**:1/**142**:1, *405*, 432
vulpecula, Resapamea 10
vulpina, Acronicta 184*, **22**:35,36/**113**:5/**183**:6, *423*, 445

W

Walkara 57, 428
warpachowskii, Acronicta 190, 446
warreni, Hypena 71, 430
Wilkara 57, 428
wimmerii, Phyllophila 133, 439
wiscotti, Protodeltote 134*, **18**:7,8/**90**:4/**166**:1, *415*, 439
witti, Diachrysia 10, 11, 119*, **15**:27/**80**:6/**159**:8, *412*, 437

X

xanthindyma, Anomis 77, 431
Xanthodes 19
Xanthomantis 174*, 444
xarippe, Catocala 100, 435
Xiana 97, 434
xizangensis, Erythroplusia 117, 437

Y

yokohamensis, Plusia 132, 439
yoshinoensis, Oruza 49*, **2**:13,14/**31**:5/**125**:6, *398*, 428
yuennanensis, Catocala 104, 435

Z

Zalaca 43, 427
Zalissa 193, 447
zalmunna, Catocala 105, 436
Zanclognatha 18, 60*, 429
Zarima 94, 434
Zekelita 18, 67*, 430
zeliha, Simyra 191, 447
zelleriana, Meganola 144, 441
Zellerminia 60, 429
Zenomia 58, 429
zeta, Syngrapha 131, 439
Zethes 54, 428
Zigera 51, 428
zilla, Hypena 68*, **4**:51–53/**44**:1/**134**:2, *402*, 430
Zitna 48, 427
Zobia 110, 436
Zonesthiousa 43, 427
Zosichrysia 118, 437
zosimi, Diachrysia 120*, **16**:34,35/**81**:4/**160**:4, *413*, 437