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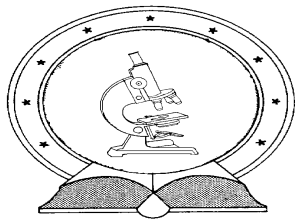

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Taxonomy and systematics of the Eurasian *Craniophora* Snellen, 1867 species (Lepidoptera, Noctuidae, Acronictinae)

Az eurázsiai *Craniophora* Snellen, 1867 fajok taxonómiája és szisztematikája (Lepidoptera, Noctuidae, Acronictinae)

PhD thesis
Egyetemi doktori (PhD) értekezés

Kiss Ádám

Témavezető: Prof. Dr. Varga Zoltán

DEBRECENI EGYETEM
Természettudományi Doktori Tanács
Juhász-Nagy Pál Doktori Iskola
Debrecen, 2017.

Ezen értekezést a Debreceni Egyetem Természettudományi Doktori Tanács **Juhász-Nagy Pál Doktori Iskola Biodiverzitás programja** keretében készítettem a Debreceni Egyetem természettudományi doktori (PhD) fokozatának elnyerése céljából.

Debrecen, 2017.

……
Kiss Ádám

Tanúsítom, hogy **Kiss Ádám** doktorjelölt 2011 – 2014. között a fent megnevezett Doktori Iskola **Biodiverzitás** programjának keretében irányításommal végezte munkáját. Az értekezésben foglalt eredményekhez a jelölt önálló alkotó tevékenységével meghatározóan hozzájárult. Az értekezés elfogadását javasolom.

Debrecen, 2017.

……
Prof. Dr. Varga Zoltán

A doktori értekezés betétlapja

Taxonomy and systematics of the Eurasian *Craniophora* Snellen, 1867 species (Lepidoptera, Noctuidae, Acronictinae)

Értekezés a doktori (Ph.D.) fokozat megszerzése érdekében
a **biológiai** tudományágban

Írta: **Kiss Ádám** okleveles **biológus**

Készült a Debreceni Egyetem **Juhász-Nagy Pál** doktori iskolája
(**Biodiverzitás** programja) keretében

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Contents

Introduction

Lepidoptera is one of the largest orders of insects with approximately more than 150 thousand described species (NIEUKERKEN *et al*. 2011). The first lepidopterans have already appeared in the Late Triassic and most of the main lineages have evolved during the Upper Cretaceous, following the radiation of the flowering plants (GRIMALDI & ENGEL 2005, WAHLBERG *et al*. 2013). Noctuidae is commonly regarded as one of the largest lepidopteran family (FIBIGER & LAFONTAINE 2005, MITCHELL *et al*. 2006, ZAHIRI *et al*. 2010) with more than 11 000 described taxa (NIEUKERKEN *et al*. 2011). Such a high number is resulted from the immense radiation of higher Ditrysian clades as a consequence of the diversification of the vegetation mostly in the Upper Tertiary (GRIMALDI & ENGEL 2005, WAHLBERG *et al*. 2013). The species of the subfamily Acronictinae, one of the phylogenetically basal subfamilies of Noctuidae (ZAHIRI *et al*. 2013), have trifine hindwing venation with reduced or vestigial M_2 vein (FIBIGER & LAFONTAINE 2005, MITCHELL *et al*. 2006, ZAHIRI *et al*. 2013). The Eurasian species of the subfamily are traditionally divided into two main genus groups (*Acronicta* Ochsenheimer, 1816 and its relatives vs. *Craniophora* Snellen, 1867), based on the external morphology and genital characters (FIBIGER *et al*. 2009, KONONENKO 2010). Four genera (*Belciades* Kozhantshikov, 1950, *Gerbathodes* Warren, 1911, *Moma* Hübner, [1820] and *Nacna* Fletcher, 1961), however, have been recently removed from the subfamily (ROTA *et al*. 2016). According to ROTA *et al*. (2016), the genus *Craniophora* s. str. forms a monophyletic group together with *Craniophora jankowskii* (Oberthür, 1880) (in fact this species belongs to the genus *Cranionycta* de Lattin, 1949) and *Chloronycta* Schmidt & Anweiler, 2014, nesting with the rest of basal lineages of the subfamily. On the other hand, these basal groups form the sister-group of the genus *Acronicta* s. l.

The systematic processing of the available material of *Craniophora* species has been started in 2011 with my PhD grant, however the initial phases were time-consuming due to the much dispersed material. That time, the basic concept was that *Acronicta* is a well-defined genus with some subgenera, at least in the Palaearctic Region, while *Craniophora* is probably a collecting genus. On the other hand, only few authors have hitherto dealt with *Craniophora* species systematically (e.g. Han & Kononenko 2010). Nowadays it has been shown that both *Acronicta* and *Craniophora* are generic complexes, and they contain more phylogenetic lineages (see ROTA *et al*. 2016 and KISS 2017).

Taxonomic review

The genus *Craniophora* was established by SNELLEN (1867) for the Palaearctic species *Noctua ligustri* [Denis & Schiffermüller], 1775 by monotypy. CHAPMAN (1890) erected the genus *Bisulcia* also for *N. ligustri* so it is an objective synonym of *Craniophora*. More than 60 years later, BOURSIN (1952) synonymized the genus *Miracopa* Draudt, 1950 with the genus *Cranionycta* (see also SUGI 1959). Twelve years later, BOURSIN (1964) also synonymized the genera *Cranionycta*, *Hampsonia* Kozhantshikov, 1950 and *Hampsonidia* Inoue, 1958 with *Craniophora*, but without any argumentation. POOLE (1989), in his catalogue, probably followed this last work of BOURSIN (1964) and considered *Craniophora* as a common genus and specified 22 species with their synonyms. At this time, but independently, HOLLOWAY (1989) synonymized the genus *Meglonycta* (sic!) Viette, 1965 (correctly *Megalonycta*) with *Craniophora* based on the high external similarity to *Fascionycta fasciata* (Moore, [1884]) and described one new species, raising the species number of the genus to 25. NIELSEN *et al*. (1996) found the genus *Cycloprora* Turner, 1920, with two species identical with *Craniophora*. KONONENKO *et al*. (1998) restituted the status of the genus *Cranionycta*, synonymized the genera *Hampsonia*, *Hampsonidia* and transferred *Craniophora albonigra* (Herz, 1904) to the genus, while *Miracopa* was leaved in *Craniophora*. Thus, the total species number of the genus has become 23. Before the millennium, CHEN (1999) described one new species from China. Recently, HAN & KONONENKO (2010) and KISS & JINBO (2016) described 1-1, while KISS & GYULAI (2013) described two species in the genus raising its species number to 28.

The published references of *Craniophora* species are (1) the original descriptions, (2) the illustrated catalogues at the beginning of the XX century, such as the catalogue of HAMPSON (1909) catalogue and the SEITZ series (WARREN 1909, 1913, GAEDE 1934, DRAUDT 1931), (3) mainly faunistical works with some taxonomic aspect of well-defined geographical regions with some taxonomic aspects (KOZHANTSHIKOV 1950, HOLLOWAY 1979, 1989, SUGI 1982, KOBES 1995, KONONENKO *et al*. 1998, CHEN 1999, FIBIGER *et al*. 2009, KONONENKO 2010, KONONENKO & PINRATANA 2013), (4) checklists (INOUE & SUGI 1958, BOURSIN 1964, NIELSEN *et al*. 1996, KONONENKO 2005, EDA & YANAGITA 2011, DE PRINS & DE PRINS 2016), (5) Poole's catalogue (POOLE 1989).

The authors have made genital dissections from the beginning of the XX century (PIERCE 1909, MCDONNOUGH 1911, CORTI 1925, BOURSIN 1933), the eversion of the vesica was, however, not a routine work (MIKKOLA 2007) though the spatial structure of the vesica is highly important from taxonomic aspects (MIKKOLA 2007) and the correct pairing of the male and female sex of

the same species, the characterization of the species was usually based on external features, however. FIBIGER *et al*. (2009), HAN & KONONENKO (2010) and KONONENKO (2010) have published the first photos about the everted vesica of several *Craniophora* species. The high level of external similarity led to the rather extended interpretation of *Craniophora* s. l. instead of a well-defined taxonomic rank. Recent molecular studies (SCHMIDT *et al*. 2014, ROTA *et al*. 2016) revealed that the similar external appearance of various acronictine species does not signalise their closer relationship (e.g. *Chloronycta tybo* (Barnes, 1904) vs. *Acronicta fallax* (Herrich-Schäffer, [1854])), moreover, species with conspicuously different appearance can be closer to each other than previously thought (e.g. *Acronicta euphorbiae* ([Denis & Schiffermüller], 1775) vs. *Simyra dentinosa* Freyer, 1838; *Acronicta menyanthidis* (Vieweg, 1790) vs. *Simyra nervosa* ([Denis & Schiffermüller], 1775)). This phenomenon is also supported by the structure of the genitalia (KISS unpublished) and also can be observed in *Craniophora* s. l.

Besides the lack of information and illustrations about the well everted vesica in the earlier publications, the other problem is the insufficient information about the androconial apparatuses and the last abdominal segments of both sexes. In Noctuidae, androconial apparatuses can be found on different parts of the body (ZILLI 1997, LÖDL 2000). The trifine brush organ (TBO) and posterior abdominal brush (PAB) are located on the abdomen (KOBAYASHI 1977, ZILLI 1997), while valval androconial apparatus (VAA) on the outer surface of the pocket-like sacculus of the valvae (ZILLI & DI GIULIO 1996, KONONENKO 2010). The structures of these apparatuses were used as taxonomic characters of different qualities in British moths (BIRCH 1972), in Japanese moths (KOBAYASHI 1977), in Mythimnini (ZILLI & DI GIULIO 1996) or in the *Apamea zeta*-group (ZILLI *et al*. 2005, 2009). In Acronictinae, only the TBO was examined by KOBAYASHI (1977) and ROTA *et al*. (2016). ROTA *et al*. (2016) have found that TBO is reduced in *Acronicta* s. l. and represented only in a few early diverging lineages in the subfamily. HOLLOWAY (1989) has found that TBO is reduced, the PAB and VAA are represented in *Craniophora* (in fact, this refers to the *Fascionycta* species) and only the VAA is represented in *Thalathoides* Holloway, 1989 and *Platyprosopa* Warren, 1913, however, the latter genus was treated as Amphipyrinae by POOLE (1989).

The androconial apparatuses are more or less well known in Noctuidae, but the structures of the male 7th, 8th and female 7th abdominal segments (both sternite and tergite) are poorly known, since these parts are frequently damaged, or thrown away during the dissection process in the first decades of the genitalia studies, or just neglected. Only a few specialists preserve the abdomen together with the genitalia, however, these segments can carry extra taxonomical information, as it proved e.g. in *Pseudohadena* Alphéraky, 1889 (Xyleninae) (PEKARSKY 2012), in *Subleuconycta* Kozhantshikov, 1950

(Acronictinae) (KISS *et al*. 2017b) and the *Craniophora pontica*-group (KISS & JINBO 2016).

The most common species of the genus *Craniophora* is the type species, *Craniophora ligustri* ([Denis & Schiffermüller], 1775), which is a polytypic, European-East Asiatic species with disjunct range. It occurs across Europe except for Iceland, Malta, northern Fennoscandia and the eastern part of European Russia (eastward from the Saint Petersburg-Kazan-Volgograd line, KOZHANTSHIKOV 1950, A. MATOV pers. comm.). Outside Europe, the species was found in Turkey, Israel, Caucasus and Transcaucasia, North Iran, Turkmenistan, Russian Far East, Central and Eastern China, Korea, and Japan (DRAUDT 1950, KOZHANTSHIKOV 1950, EBERT & HACKER 2002, KONONENKO 2005, KRAVCHENKO *et al*. 2006, FIBIGER *et al.* 2009). Larvae feed on the leaves of various species of Oleaceae, mainly *Fraxinus*, *Ligustrum*, *Syringa*, but – according to some references – occasionally also on some Aceraceae, Betulaceae, Corylaceae, Elaeagnaceae and Viburnaceae (FIBIGER *et al.* 2009, KONONENKO 2010).

The descriptions of three subspecies from the Western Palaearctic are based on wing patterns and colouration. The nominotypical subspecies *C. l. ligustri* is described from Austria, Vienna region. Since the type specimen has been destroyed (POOLE 1989), reference can only be provided for the specimens of the NHMW from this region (figured e.g. in LÖDL *et al*. 2012: 139, 26-27.). *C. l. carbolucana* Hartig, 1968 (from South Italy, Mt. Vulture), according to the original description, mostly differs from the nominotypical subspecies by its constantly deep blackish colouration of the forewings with finely whitish defined orbicular and only externally lighter marked reniform maculae, with dark fuscous hindwings and underside of wings. The *C. l. hyrcanica* Hacker & Ebert, 2002 (from North Iran, Mt. Elburs) is characterised by its average smaller size, from greyish to dark greyish ground colour with some ochreous shading and less contrasting colouration of the medial field of forewings. However, these external differences should not be overestimated since it is known that external morphology, especially wing colouration and body size could be influenced by environmental factors (SHAPIRO 1974, CESARONI *et al*. 1994, ROSKAM & BRAKEFIELD 1999, DAPPORTO 2008, TÓTH & VARGA 2011, SANZANA *et al.* 2013, MEGA 2014).

Generally, the genital characters are known more stable and informative in taxonomic aspect than the wing patterns (SHAPIRO & PORTER 1989, MUTANEN 2005, DAPPORTO 2008, TÓTH & VARGA 2010, 2011). During the past half of a century, morphometrics has become a widely used method in taxonomy, with a special respect to geometric morphometrics (ROHLF & MARCUS 1993, ADAMS *et al*. 2004, ZELDITCH *et al*. 2004, MUTANEN *et al*. 2007, DAPPORTO 2008, 2010, TÓTH *et al*. 2014). Geometric morphometrics proved to be suitable to uncover and quantify small intra- or interspecific differences (e.g. GARNIER *et al*. 2005, DAPPORTO 2008, TÓTH & VARGA 2011).

Unfortunately, the variability of the genitalia of *C. ligustri* is poorly known. Although the description of the genitalia of *C. ligustri* is detailed by FIBIGER *et al.* (2009), however, the figured vesica and valvae do not belong to the same specimen. Moreover, the vesica belongs to the type specimen of *C. gigantea* Draudt, 1937. HARTIG (1968) described *C. l. carbolucana* based on wing pattern without considering genitalia characters. EBERT & HACKER (2002) also described *C. l. hyrcanica* based on wing pattern elements. However, they have figured the genitalia of the type specimen. To our knowledge, detailed analysis on the genitalia of *C. ligustri* has not been carried out yet.

Objectives

Gathering of all available information about the taxonomy of any Craniophora species and its relatives.

Examination of the type specimens with special reference to the synonym names for the later comparisons and (re-) descriptions and if possible making genital dissection from them.

Systematic reviewing of the institutional and private collections: identification of the specimens and taking photos, making genital dissections and taking photos, describing the new taxa.

Morpho-taxonomic survey of the androconial apparatuses and both male and female last abdominal segments.

Establishment of the infrageneric system based on both external and genital characters with the evaluation of the androconial apparatuses and both male and female last abdominal segments.

Geometric morphometric analysis of geographical variation in the male valvae of Craniophora ligustri in order to uncover the patterns and trends.

Material and methods

The results of the present work are based on the study of the published references, examination of 38 type specimens (24 type specimens were dissected, 6 ones for the first time) and a few thousands of Acronictinae specimens (more than 1200 *Craniophora* s. l. specimens have been dissected), preserved in the institutional and private collections listed below. For the list of the dissected specimens, see “Appendix 5”.

ANHRT – African Natural History Research Trust (Kingsland, United Kingdom)
ANIC – Australian National Insect Collection (Canberra, Australia)
AKPM – Akita Prefectural Museum (Akita, Japan)
BMNH – British Museum of Natural History (London, United Kingdom)

ED – collection of Evgenij Derzhinskij (Vitebsk, Belarus)
EF – collection of Egbert Friedrich (Jena, Germany)
FG – collection of Friedmar Graf (Bautzen, Germany)
GyF – collection of György Fábián (Budapest, Hungary)
GB – collection of Gottfried Behounek (Grafing near Munich, Germany)
GR – collection of Gábor Ronkay (Budapest, Hungary)
HHL – collection of Han Hui-Lin (Harbin, China)
HNHM – Hungarian Natural History Museum (Budapest, Hungary)
IMCA – Insect and Mite Collection of Ahvaz (Ahvaz, Iran)
JLY – collection of José Luis Yela (Toledo, Spain)
KA – collection of Ádám Kiss (Debrecen, Hungary, to be deposited in HNHM)
LR – collection of László Rákosy (Cluj-Napoca, Romania)
LS – collection of Ľubomír Srnka (Lehota pod Vtáčnikom, Slovakia)
MfN – Museum für Naturkunde (Berlin, Germany)
MNHNL – Musée national d'histoire naturelle du Luxembourg (Luxembourg)
MNHN – Muséum national d'Histoire naturelle (Paris, France)
MSMG – Museo Civico di Storia Naturale "Giacomo Doria" Genova (Italy)
MSNM – Museo di Storia Naturale di Milano (Italy)
MNCN – Museo Nacional de Ciencias Naturales (Madrid, Spain)
MNU – Mokpo National University Insect Collection (Jeonnam, Korea)
NHMW – Naturhistorisches Museum Wien (Vienna, Austria)
NMID – National Museum of Ireland (Dublin, Ireland)
NMNHS – National Museum of Natural History (Sofia, Bulgaria)
NML – Natur-Museum Luzern (Switzerland)
NSMT – National Museum of Nature and Science (Tsukuba, Japan)
OP – collection of Oleg Pekarsky (Budapest, Hungary)
PGy – collection of Péter Gyulai (Miskolc, Hungary)
PP – collection of Paolo Parenzan (Bari, Italy)
RB – collection of Rhett Butler (Harare, Zimbabwe)
RMNH – Royal Museum of Natural History (Naturalis Biodiversity Center) (Leiden, Netherlands)
SMC – collection of Seiji Miyake (Okayama, Japan)
SMNK – Staatliches Museum für Naturkunde Karlsruhe (Germany)
SzSz – collection of Szabolcs Szanyi (Velyka Dobron, Ukraine)
TLM – Tiroler Landesmuseen, Ferdinandeum, Naturwissenschaftliche Abteilung (Innsbruck, Austria)
TOEF – Tomakomai Experimental Forest of Hokkaido University (Tomakomai, Japan)
UCC – University College Cork (Ireland)
UD – Zoological Collection of the University of Debrecen (Hungary)
VZ – collection of Zoltán Varga (Debrecen, Hungary, material from Pakistan)
ZMUC – Zoological Museum, University of Copenhagen (Denmark)
ZMUO – Zoological Museum, University of Oulu (Finland)

ZISP – Zoological Museum of the Zoological Institute of the Russian Academy of Sciences (Saint-Petersburg, Russia)
ZSM – Zoologische Staatssammlung München (Germany)
ZFMK – Zoologisches Forschungsinstitut und Museum Alexander Koenig (Bonn, Germany)

Genital dissections

The genital dissections are made by a modified technique published by ROBINSON (1976). 15% potassium hydroxide (KOH) was used to macerate the full abdomen. The cleaned abdominal segments, genital capsule, everted vesica and female copulatory organ were dehydrated in 96% ethanol with eosin dye to stain the weakly sclerotized structures for a night then mounting to Euparal. The photos of the slides were taken by an Olympus DP70 digital microscope camera connected with an Olympus SZX12 zoom stereo microscope.

Terminology of morphological characters

Terminology of morphological traits (Figs I–VI) follows generally the major works on the topic, e.g. KLOTS (1956), HOLLOWAY (1989), ZILLI & DI GIULIO (1996), ZILLI (1997), LÖDL (2000), HEPPNER (2004), KONONENKO (2010) and ZAHIRI *et al*. (2012), certain terms require, however, further discussion in order to adapt them to *Craniophora* s. l. These are as follows:

Palpus (Figs I/A–C) consists of three segments. The 1st segment is short, strongly curved, the 2nd segment long, flattened and the 3rd segment cylindrical, shorter than the 2nd segment of both sexes, except in the *Cycloprora* generic complex, where the 3rd segment of the females is much longer than in males and almost equal length as the 2nd segment. Antennae of both sexes are filiform, cross section oval, basal part and one of the slimmer sides covered with whitish and blackish scales, densely covered with velvety, tiny hairs, but in females with some additional, sparse, stronger hairs in each segments. Patagia (Figs I/D, E) are flexible, paired appendices of prothorax, located between the head and thorax, often of the same colour as thorax, bordered with blackish or lighter scales or zigzagged-shaped line dorsally. Tegulae (Figs I/D, E) are flexible, paired, and laterally positioned appendices of mesothorax, covering the base of the wings, often of the same colour as thorax, bordered with blackish scales.

Apical dash (Figs II/C–E) is located on the M_2 vein on the forewing, from the terminal field via postmedial line to the outer part of medial field. It is often reduced, short or fused with the black spots of the terminal field, looks like a triangle. Basal line or streak or often called as basal dash (Figs II/A, D, E) can be found in the basal field of the forewing, black, short or long, thin or thick, line-like with two point-like protrusions. Tornal line or streak (Figs II/C–E) can be found on the Cu_2 vein on the forewing, thick or thin, relatively long, from

antemedial line or medial line to terminal field (not reaching the outer margin), usually separated from the basal streak or fused with it. The subterminal line (Figs II/A, D, E) is a wavy, zigzagged or indistinct more or less whitish line which is always marked with a white comma-, hook- or "U"-like patch between the tornal patch and tornal streak, next to the Cu_2 vein. Suprabasal patch (Figs II/C, D) is located in the basal field of the forewing above the basal streak, usually not conspicuous, however in species of some genera more prominent. Subbasal patch (Figs II/C–E) is a usually lighter or more colourful patch below the basal streak with short, hair-like scales. Tornal patches (Figs II/A, C) are located in the terminal field on both fore- and hindwing. On the forewing, there is a short, black, line-like patch, looks like as fused with the tornal patch but separated from that by a white patch, next to the Cu_2 vein. On the hindwing, it is a rather "V"-like, small, blackish patch between the Cu_2 vein and terminal line.

Harpe, in many genera, is absent, substituted only by a sclerotized medial sclerite (Figs III/A, C, E). The medial sclerite can be straight, strongly curved or wavy, from weakly to strongly sclerotized. Clavus (Fig. III/E) is a sclerotized, flattened or rounded dorsal part of proximal end of sacculus, however, in majority of the genera it is absent (not distinctly developed). Outer, lateral part of sacculus (Figs III/A, B, D, E), in many genera, is a soft, pocket-like formation, bearing long and soft tuft of dense hairs or strongly sclerotized without extension and hairs.

Carina (Figs IV/A, E–G) is usually represented by a thin, sclerotized rod laterally, gradually entering to vesica or a comb-like, strongly sclerotized, protruding structure, sometimes consists of two rings with sclerotized, separated, small, tooth-like structures or absent. Sometimes the carina is reduced and is substituted by strong cornuti on the basal part of vesica (Figs IV/H–J).

Antrum (Figs V/A, B, D, E) is a simple, weakly sclerotized, dish- or tube-like structure with a slightly more sclerotized dorsal plate or funnel-shaped, more sclerotized, ribbed. Corpus bursae can be fused with appendix bursae (Figs V/A, B, E) forming the appendix-corpus bursae complex, in which the appendix is more pronounced or tiny part of it. In some genera the corpus and appendix bursae are well separated connected with a wide or narrow junction (Figs V/C, D, F). Corpus bursae can be reduced to a small, sac-like part, in this case, appendix bursae well-developed (Fig. V/F).

The trifine brush organ (TBO) is absent in all *Craniophora* s. l. species. The posterior abdominal brush (PAB) (Figs VI/C, F) is formed by tuft of extremely long, soft, and dense hairs, located on the male 8^{th} abdominal sternite in a membranous pocket. The pocket is well-developed or reduced, rather shallow or absent, formed only by a sclerotized, dotted area. In the latter two cases, the tuft of dense hairs can be easily removed with a fine brush during the dissection process. PAB with well-developed pocket has a permanent tuft of very dense

hairs which is also visible *in situ* on the pinned specimens (Figs I/F–I), as well. The valval androconial apparatus (VAA) (Figs III/A, B; Figs I/G–I) is formed by long, soft, tuft of moderately dense hairs on the outer surface of the sac-like sacculus of the valvae. VAA is represented only in those genera, where the sacculus is developed and sac-like. The surface of the sacculus is covered by several, slightly sclerotized, tiny patches. In the *Cycloprora* generic complex, additional androconial apparatuses can be found on the outer, costal surface of valvae (Fig. III/B) and in a small, membranous pocket on the male 8th tergite at the base of the sclerotized rods (Fig. VI/B).

Abdominal segments (Figs VI/A–F) are generally weakly or moderately sclerotized structures in both sexes, however, in some species, the female 7th sternite and tergite are more sclerotized. The male 7th sternite and tergite are more or less uniform, fully sclerotized with some stronger band, but in the *Cycloprora* generic complex they are conspicuously different. The male 8th sternite and tergite are more specialized, armed with two sclerotized rods in the inner section of the two segments. The 8th sternite is trapezoidal or pot-shaped, bar-like structure with big, weakly sclerotized region in the middle ("window"). The pocket of PAB is located in this "window". The 8th tergite is usually triangular, bell- or "Ω"-shaped, bar-like or spatulate, fully sclerotized structure.

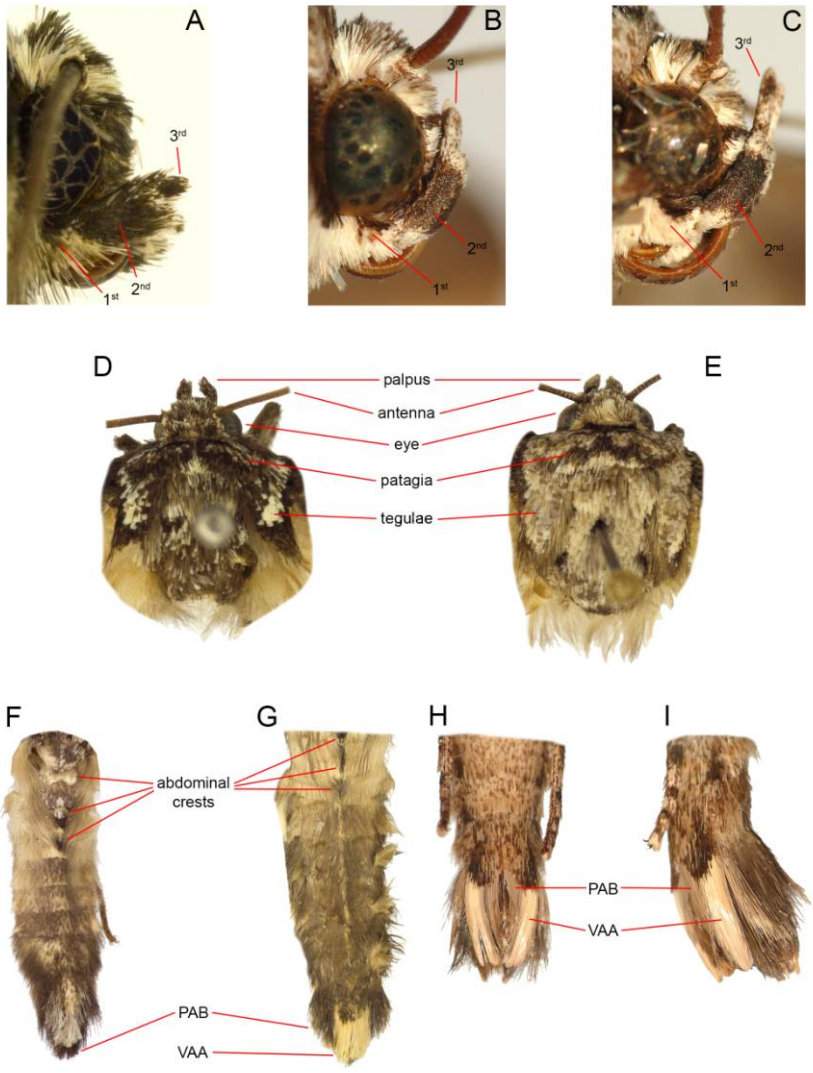


Figure I. Palpus, thorax and abdomen. **A** *Craniophora ligustri*, male, palpus; **B** *Fascionycta fasciata*, male, palpus; **C** *F. fasciata*, female, palpus; **D** *C. ligustri*, thorax; **E** *Harmandicrania harmandi*, thorax; **F** *F. malesiae*, male, abdomen; **G** *F. ardjuna*, male, abdomen; **H** *F. fasciata*, male, distal part of abdomen, ventral view; **I** *F. fasciata*, distal part of abdomen, lateral view. (KISS 2017)

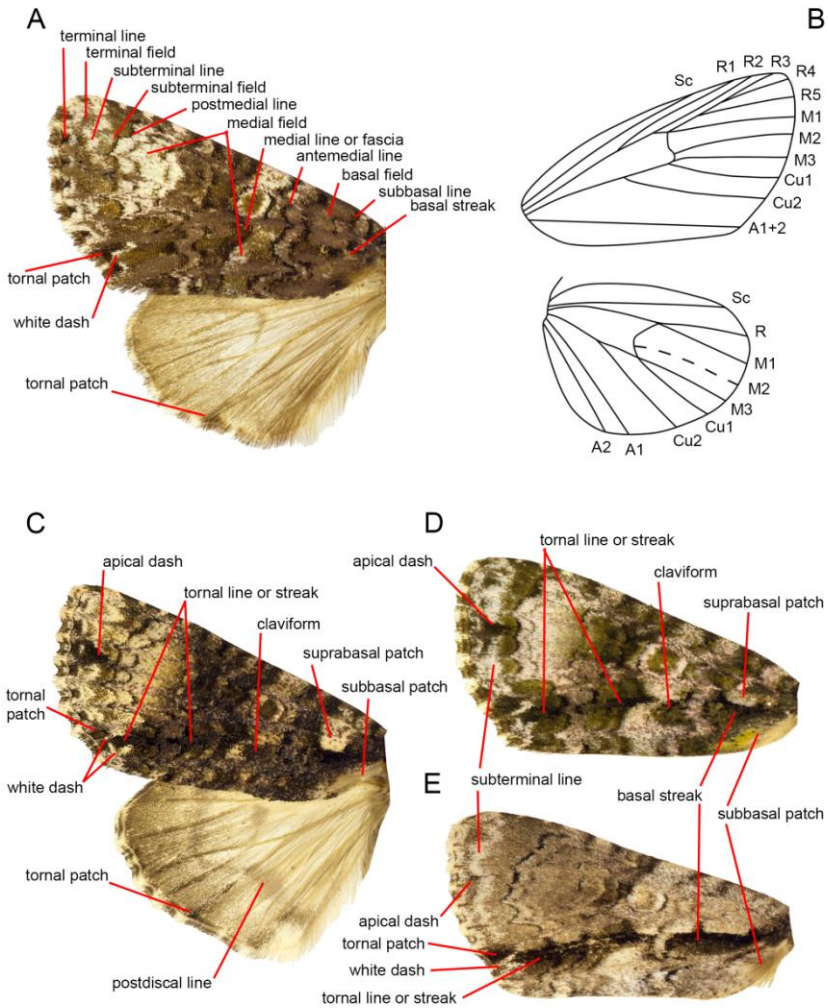


Figure II. Wing patterns and venation. **A** *Craniophora ligustri*, fore- and hindwing; **B** *C. ligustri* fore- and hindwing venation. Reproduced from HAMPSON (1909: fig. 16) and ZAHIRI *et al*. (2012); **C** *Harmandicrania harmandi*, fore- and hindwing; **D** *Graesericrania praeclara*, forewing; **E** *Fascionycta fasciata*, forewing. (KISS 2017)

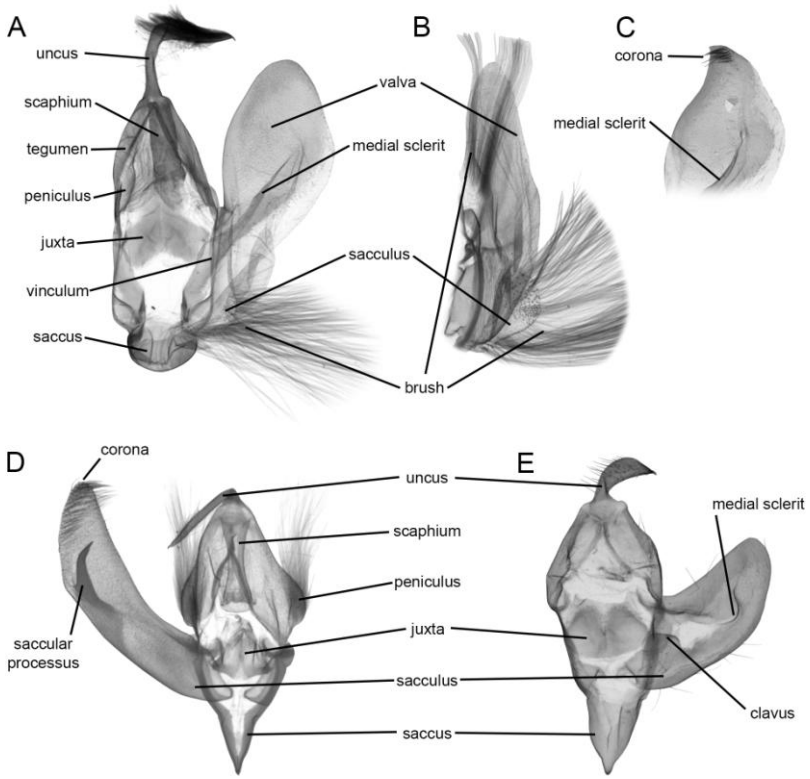


Figure III. Male genital capsule and its appendices. A *Craniophora pacifica*, genital capsule with valva; **B** *Fascionycta fasciata*, valva; **C** *Graesericrania praeclara*, apical part of valva; **D** *Sinonycta fangi*, genital capsule with valva; **E** *Berionycta hemileuca*, genital capsule with valva. (KISS 2017)

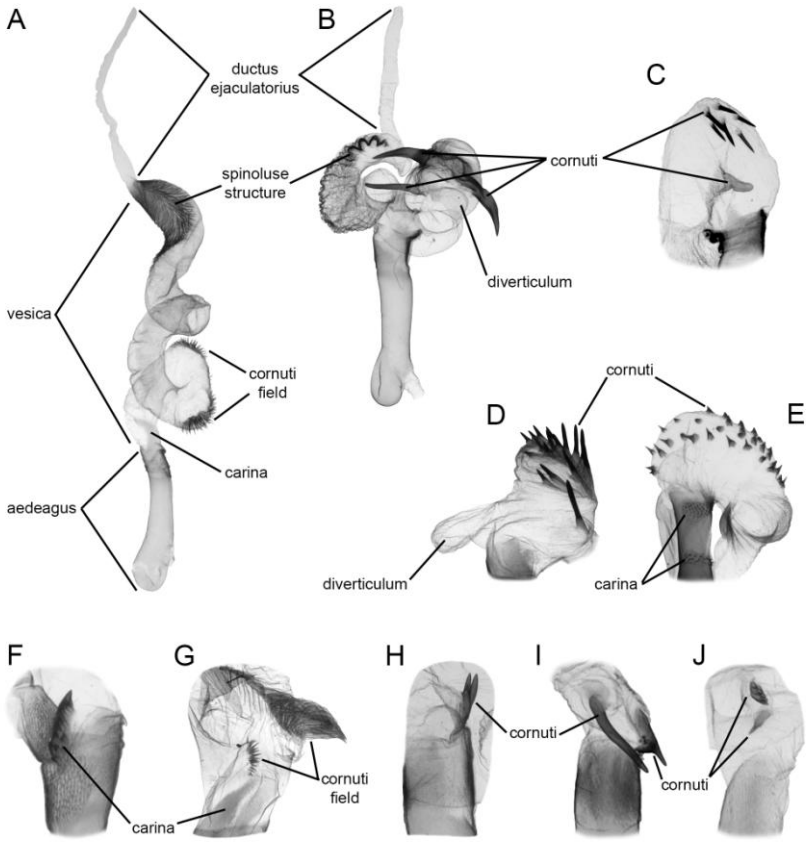


Figure IV. Appendices of male aedeagus and vesica. A *Craniophora pacifica*, aedeagus and vesica; **B** *Harmandicrania harmandi*, aedeagus and vesica; **C** *H. nubilata*, distal part of aedeagus and basal part of vesica; **D** *Sinonycta fangi*, basal part of vesica; **E** *Miracopa prodigiosa*, distal part of aedeagus with vesica; **F** *Berionycta hemileuca*, distal part of aedeagus; **G** *Draudtinycta tigniumbra*, basal part of vesica; **H** *Megalonycta forsteri*, distal part of aedeagus; **I** *Fascionycta malesiae*, distal part of aedeagus; **J** *F. ardjuna*, distal part of aedeagus. (KISS 2017)

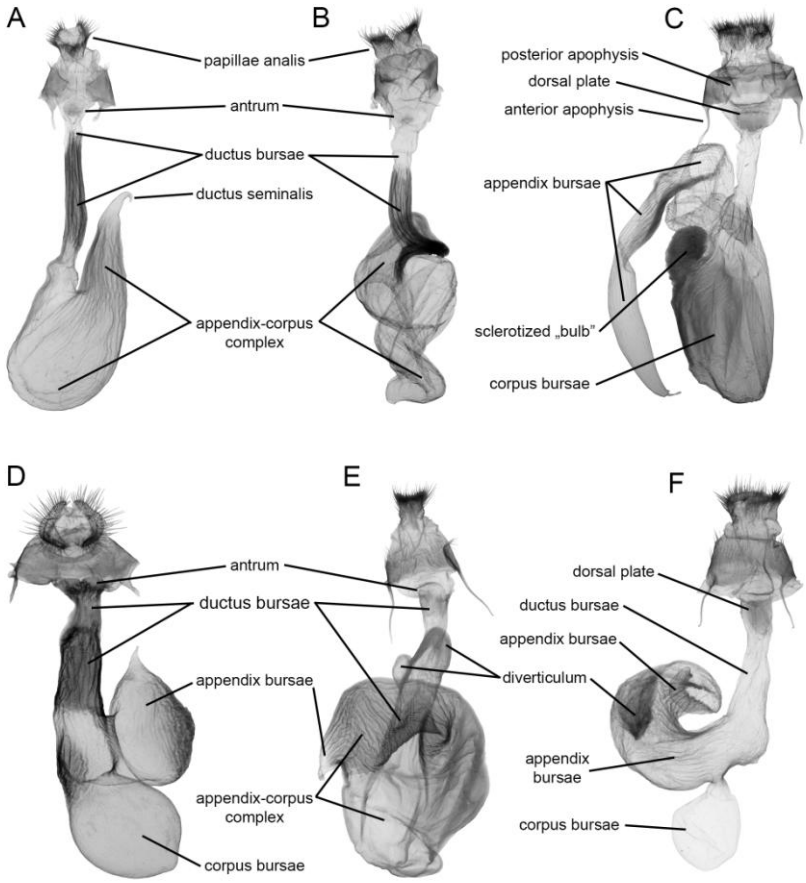


Figure V. Female genitalia. **A** *Craniophora ligustri*; **B** *C. draudti*; **C** *Harmandicrania harmandi*; **D** *Berionycta hemileuca*; **E** *Fascionycta malesiae*; **F** *F. fasciata*. (KISS 2017)

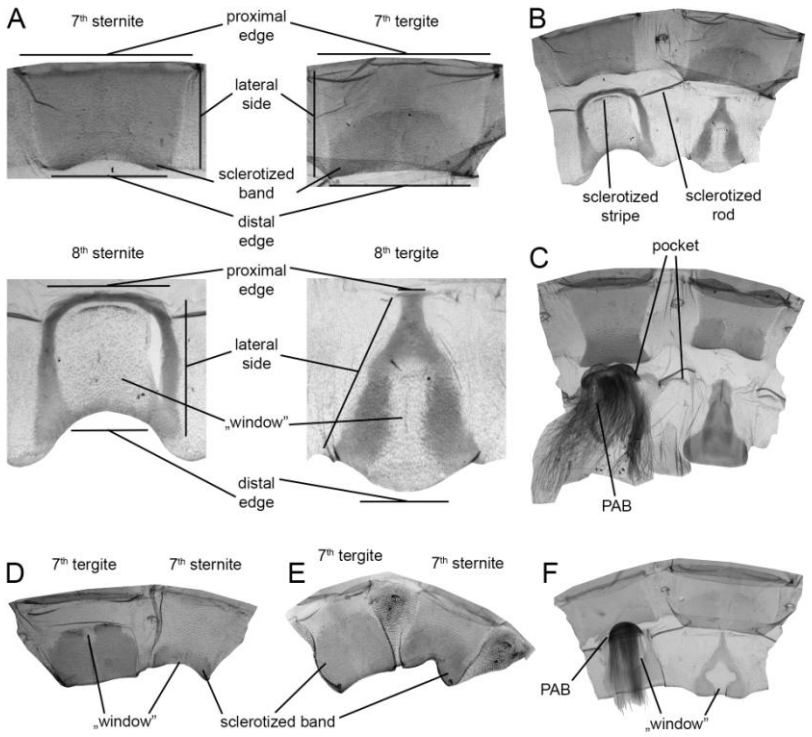


Figure VI. Male and female last abdominal segments. A *Craniophora ligustri*, male, the four segments are separated; **B** *C. ligustri*, male; **C** *Fascionycta malesiae*, male; **D** *C. ligustri*, female; **E** *Sinonycta fangi*, female; **F** *Draudtinycta tigniumbra*, male. (KISS 2017)

Geometric morphometrics

206 male specimens of *Craniophora ligustri*, based on the collecting sites, were classified as follows: South England (Eng, N = 14), Denmark (Den, N = 15), Finland (Fin, N = 15), North Alps (AlpN, N = 14), South Alps (AlpS, N = 15), Spain (Spa, N = 13), South Italy (Italy, N = 16), Croatia (Cro, N = 16), Bulgaria (Bulg, N = 20), Hungary (Hun, N = 14), Ukraine (Ukr, N = 13), Caucasus (Cauc, N = 14), North Iran (Iran, N = 14), Russian Far East (RussE, N = 13). To estimate the level of inter-specific variability of the valvae, *Craniophora pontica* (pont, N = 14) was used as out-group. For the list of the sampled specimens, see "Appendix 5".

A representative sample of the South Italian and North Iranian populations was collected from the type localities and nearby territories of the subspecies *C. l. carbolucana* and *C. l. hyrcanica.* The North Iranian sample included also one of the paratypes of *hyrcanica* from the Talysh Mt.

The outlines of the left valvae (Fig. VII) were digitalised by tpsDig 2.16 (ROHLF 2010). PAST 2.17c (HAMMER *et al*. 2001) software package was used to calculate Hangle Fourier harmonics. Fourier shape analysis use digitalised xy-coordinates from the outline of the given shape to reconstruct the outline using harmonically related trigonometric curves. The produced Fourier coefficients, two per harmonic, describe the size ("amplitude") and angular offset relative to the starting position ("phase angle") of each harmonic curve. In this way, and using some appropriate number of harmonics, it is possible to describe even extremely complex shapes (for more detail see: HAINES & CRAMPTON 2000). The first 11 harmonics capture more than 96% of the total integrated power of the shape. Fourier coefficients were analysed by CVA using the MASS package. Wilks's λ was used to measure the discriminatory power of the CVA model with values ranging from 0 (perfect discrimination) to 1 (no discrimination). To test the statistical significance of the visible pattern obtained by CVA plot and UPGMA trees, MANOVA (Multivariate Analysis of Variance) was used. We also interested the classification success of the main groups, thus Jackknife classification was carried out using PAST. In this test one known specimen is sequentially omitted at a time, and assigned using the discriminant function the calculation of which is based on all cases except that particular individual. The number of correct assignments was used to evaluate the predictive power of the discriminant function of CVA.

Cluster analysis was applied using the "pvclust" package of the R 3.0.3 computing environment (R CORE TEAM 2014). *P*-values (%) for Hierarchical Clustering were computed via multiscale bootstrap resampling (SUZUKI & SHIMODAIRA 2011). The UPGMA tree was built using Mahalanobis distances. The "pvclust" package provides two types of *p*-values: AU (Approximately Unbiased) *p*-value and BP (Bootstrap Probability) value. AU *p*-value, which is

computed by multiscale bootstrap resampling, is a better approximation to unbiased *p*-value than BP value computed by normal bootstrap resampling. The number of bootstrap replications was set to 10 000. To visualise the morphological variability of the genitalia in geographical space, the first CV axis was interpolated using Inverse Distance Weighting (IDW) method in Quantum GIS 2.0.1 (QGIS DEVELOPMENT TEAM 2014).

Measurement error (ME) was computed by using one-way ANOVA (BAILEY & BYRNES 1990, GARNIER *et al*. 2005). All individuals were measured twice and the percentage of ME was defined for each shape variable, independently. The ME values were less than 20% in all cases, 10% on average.

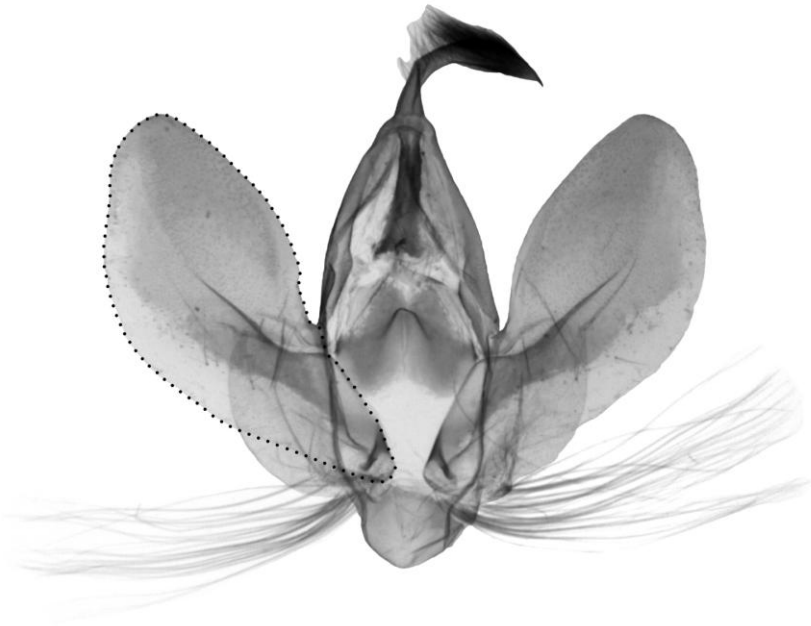


Figure VII. Genital capsule of *Craniophora ligustri* with the 100 semi landmarks (black dots). (KISS *et al*. 2017a)

Results

When I started to study *Craniophora* s. l., there were accepted only 26 valid species. After reviewing several institutional and private collections systematically I have found 17 new species which were described in three papers (KISS & GYULAI 2013, KISS & JINBO 2016, KISS 2017) by traditional morpho-taxonomic methods. The newly proposed generic division (KISS 2017) provided a clearer picture on the taxonomy of the *Craniophora* s. l. with describing 8 new genera and revising 4 formerly described genera, set of 22 new combinations, 11 new reviewed statuses, and designating 8 lectotypes and 4 neotypes. In this strict sense, *Craniophora* s. str. consists only eight species while *Craniophora* s. l. consists additionally three new genera with 13 species.

Craniophora s. l., in the former sense, can be subdivided into two main generic complexes such as the *Craniophora* complex (including *Craniophora*, *Harmandicrania*, *Graesericrania* and *Eurypterocrania*) and the *Cycloprora* complex (including *Cycloprora*, *Turnerinycta*, *Fascionycta* and *Megalonycta*) and three well distant genera (*Berionycta*, *Draudtinycta* and *Sinonycta*). Two species are transferred to the genus *Acronicta*.

In the former broad sense, *Craniophora* was thought being a widely distributed genus, occurring in almost the all major biogeographical regions (except the Nearctic, Neotropical Regions and Antarctica). After the newly proposed generic division, *Craniophora* was became an exclusively Palaearctic genus with two disjunct distributional areas (Western and Eastern Palaearctic). The genus *Graesericrania* can be found only in the Eastern Palaearctic, while *Harmandicrania*, *Eurypterocrania*, partly in the southern part of the Eastern Palaearctic but mainly in the northern part of the Oriental Regions. *Cycloprora* and *Turnerinycta* are distributed only in the Australian Region, while *Fascionycta* species can be found from the southern part of Eastern Palaearctic to the northern part of the Australian Region. The genus *Megalonycta* occurs only in Africa and Madagascar. The genus *Berionycta* is also distributed in Africa and the Arabian Peninsula. The genera *Draudtinycta*, *Miracopa* and *Sinonycta* are located mainly in the southern part of the Eastern Palaearctic.

Taxonomic part

Here, I only present the diagnostic characters of the genera of the *Craniophora* and *Cycloprora* generic complexes and the recently separated genera. In details, only the species of the *Craniophora* generic complex are given.

The *Craniophora* generic complex

The included genera (*Craniophora*, *Harmandicrania*, *Graesericrania* and *Eurypterocrania*, the latter three were described recently) share a number of common features such as almost identical wing pattern; weakly sclerotized, elongated or deltoid valvae with developed sacculus and valval androconial apparatus; absence of harpe, it is substituted by a medial sclerite; and the very similar basic structure of the male last abdominal segments. The configuration of the male vesica and the female genitalia are specific at generic level, while the female last abdominal segments are practically the same in the related genera. Some genera can be divided into more species groups based on the male or/and female genitalia.

Genus ***Craniophora*** Snellen, 1867

(Pls 1–6)

Craniophora Snellen, 1867, *De Vlinders van Nederland, Macrolepidoptera systematisch beschreven*: 262. Type species: *Noctua ligustri* [Denis & Schiffermüller], 1775, *Ankündung eines systematischen Werkes von den Schmetterlingen der Wienergegend*: 70, by monotypy.

Synonymy

Bisulcia Chapman, 1890, *The Entomologist's Record and Journal of Variation* **1**(2): 28. Type species: *Noctua ligustri* [Denis & Schiffermüller], 1775, *Ankündung eines systematischen Werkes von den Schmetterlingen der Wienergegend*: 70, by monotypy.

Notes. The former *pontica* species-group *sensu* Draudt (1950) and Kiss & Jinbo (2016) should be divided, based on the male and female genital characters, into three species-groups, such as the *pontica*-, the *pacifica*- and the *simillima*-groups.

Characterization of the genus. The external characters show a high degree of similarity with the other genera in the generic complex and also with some genera of the *Cycloprora* generic complex and with *Berionycta*, as well. There are, however, some distinctive characters, such as the thin, comma- or hook-like white dash next to the Cu_2 vein; the indistinct or ground coloured suprabasal patch; the always visible tornal patch on the hindwing; the equal length of the 3rd segment of the palpus in both sexes (comparing with the *Cycloprora* generic complex where the females have longer 3rd segment than in males).

Male genitalia. Uncus cylindrical, relatively long, distal part densely haired, apically slightly hooked; scaphium and subscaphium always present, the former moderately, the latter slightly weaker sclerotized; juxta deltoid, with narrow cleft from distal edge to middle part; valvae lobe-shaped, elongate, more or less moderately sclerotized, apically more or less rounded, without corona but in some species represented by one or two setae; harpe and saccular process

absent, the former is substituted by a weakly sclerotized medial sclerite; sacculus developed, weakly sclerotized, bearing a tuft of long, dense hairs. Aedeagus relatively long, slender, dorsally slightly curved; carina appears as a moderately sclerotized, more or less wedge-shaped formation. Vesica short or extremely long, strongly coiled or rather arcuate, its surface covered with numerous, moderately long spine-like cornuti submedially or medially and with numerous, small spinulose structure basally.

Male 7th and 8th abdominal segments. In the genus, the segments are very similar in their basic shape. 7th sternite trapezoidal, more or less as long as wide, widest at the proximal edge, evenly tapering toward the distal edge with slightly convex lateral sides, distal edge concavely curved, the entire segment weakly sclerotized with a narrow, somewhat stronger band distally. 7th tergite similar to 7th sternite, with a somewhat stronger bar proximally, with slightly, concavely curved distal edge and with a semi-circular, slightly stronger part distally with "U"-shaped "window". 8th sternite pot-shaped, higher than wider, proximal edge narrow, bar-like; lateral sides widest at the distal part of the segment, inner section spur-like; distal edge evenly curved; "window" rather oval; posterior abdominal brush reduced, substituted by a dotted, slightly sclerotized streak or absent. 8th tergite bell-shaped, higher than wider, proximal edge relatively broad or narrow and pointed; laterally widening more or less section by section or gradually, distal part stronger, widest at the distal edge; distal edge strongly convex; "window" oval or with widening distal part. Two long, evenly wide, thin, sclerotized rods represented between the proximal edge of 8th sternite and tergite with completely reduced pocket at the base of the rods.

Female genitalia. Antrum dish-like, weakly sclerotized with a somewhat more sclerotized dorsal plate. Ductus bursae long or shorter, anteriorly curved with an additional arch at the junction to corpus bursae or straight, strongly ribbed except the distal part near to antrum with a small, oval slightly sclerotized patch dorsally. Corpus bursae and appendix bursae fused into a partly coiled, recurved, helicoidal or more or less straight structure (appendix-corpus bursae complex); appendix bursae more pronounced than corpus bursae.

Female 7th abdominal segments. 7th sternite trapezoidal, higher than wider, the entire segment weakly sclerotized with a slightly stronger, more or less semi-circular bar distally, in the middle with a semi-circular "window"; lateral sides slightly curved; distal edge concave. 7th tergite similar to those of males, except longer than wider.

The ***ligustri*** species-group

Diagnosis. The most remarkable external differences of *ligustri*-group are, which are separated from the other groups, the short, very narrow basal streak; the strongly reduced or absent tornal streak or in the subterminal field is substituted by a coppery dash; the more contrast, whitish outer part of reniform

spot; the rather faint apical dash on the postmedial line. The males of the *ligustri* species-group have shorter, slightly stouter harpe; submedially and medially strongly "U"-shaped turned vesica with more widened terminal part; numerous, small spinulose structure on the basal part of vesica. Occasionally in some specimens, the corona is also represented by few setae. The "window" on the male 8th tergite is wider, rather oval; the reduced posterior abdominal brush is substituted by slightly more sclerotized stripe. In the female genitalia, ductus bursae is straighter, longer; the appendix-corpus bursae complex is proximally wider, globular; appendix and corpus bursae are more or less equally complicated longer, straighter or curved. In the female 7th abdominal segments there are no significant differences.

Craniophora ligustri ([Denis & Schiffermüller], 1775)
(Pl. 1: 1, 2; Pl. 3: 17; Pl. 4: 25; Pl. 5: 33; Pl. 6: 41)

Noctua ligustri [Denis & Schiffermüller], 1775, *Ankündung eines systematischen Werkes von den Schmetterlingen der Wienergegend*: 70. Type-locality: Austria, Vienna, Hietzing, Promenadeweg. Neotype: male, in coll. NHMW, designated by KISS (2017).

Synonymy.

Noctua litterata Panzer, 1804, *D. Jacobi Christiani Schaefferi Iconum Insectorum Circa Ratisbonam Indigenorum Enumeratio Systematica Opera et Studio, Pars* **2**: 115, pl. 105: figs 3, 4. Type-locality: Germany, Regensburg Ratisbon.

Noctua coronula Haworth, 1809, *Lepidoptera Britannica sistens Digestionem novam Insectorum Lepidopterorum que in Magna Britannia Reperiuntur, Larvarum pabulo, Temporeque Pascendi; Expansione Alarum; Mensibusque Volandi; Synonymis Atque Locis Observationibusque Variis. Part* **2**: 179. Type-locality: England.

Craniophora ligustri ab. *sundevalli* Lampa, 1885, *Entomologisk Tidskrift* **1**–**3**: 50. Type-locality: Sweden, Skåne.

Acronycta ligustri var. *nigra* Tutt, 1890, *The Entomologist's Record and Journal of Variation* **1**(2): 34. Type-locality: England, Wadworth Wood near Doncaster.

Subspecies.

Craniophora ligustri carbolucana Hartig, 1968, *Reichenbachia* **1**(12): 12. Type-locality: Italy, Monte Vulture.

Craniophora ligustri hyrcanica Hacker & Ebert, 2002 in Ebert & Hacker, *Esperiana* **9**: 256, pl. 16: fig. 12. Type-locality: Iran, Mt. Elburs, 10 km S of Chalus, 130 m.

Diagnosis. *Craniophora ligustri* can be distinguished from *C. gigantea* by its average smaller size; the strongly reduced, often almost absent blackish tornal streak; in males, by the fully brown or paler greyish hindwing with strong, brownish-greyish suffusing; the average shorter, distally wider vesica; the somewhat narrower "window" on the 8th tergite; the average shorter appendix-corpus bursae complex with in average straighter appendix bursae.

Notes. FIBIGER *et al*. (2009) figured the male genitalia of *C. ligustri* in their work under gen. fig. 27 with slide No.: CIS 55-Che, however, the vesica and valvae do not belong to the same specimen. Besides of the little differences in the distal part of aedeagus and vesica without any doubt the vesica belongs to the neotype of *C. gigantea* dissected by V.S. Kononenko, slide No.: ZFMK-Nr. 1859.

Distribution. Western Palaearctic (Europe, Asia Minor, Northern Iran) and Eastern Palaearctic (Northeastern China, Japan, Korean Peninsula, Russian Far East).

Craniophora gigantea Draudt, 1937
(Pl. 1: 3, 4; Pl. 3: 18; Pl. 4: 26; Pl. 5: 34; Pl. 6: 42)
Craniophora ligustri gigantea Draudt, 1937, *Entomologische Rundschau* **54**: 375. Type-locality: China, Prov. Shaanxi, Tsinling Mts, Taibaishan, ca. 1700 m. Neotype: male, in coll. ZFMK, designated by KISS (2017).

Diagnosis. *Craniophora gigantea* differs from *C. ligustri* by its average larger size; the coppery tornal streak; in males, by the white hindwing with indistinct greyish-brownish marginal band; the average longer, distally slender vesica; the somewhat wider "window" on the 8th tergite; the average longer appendix-corpus bursae complex with in average more curved appendix bursae.

Notes. The vesica of the neotype, at first time, was figured by FIBIGER *et al*. (2009: gen. fig. 27), but with incorrect slide number (CIS 55-Che) and with other specimen's genital capsule. HAN & KONONENKO (2010: Fig. 26) figured both vesica and genital capsule of the neotype under *C. ligustri*.

Distribution. Eastern Palaearctic (Northeastern China, Korean Peninsula, Russian Far East).

The ***pacifica*** species-group

Diagnosis. The *pacifica*-group is very similar externally to the *simillima* species-group, however, the rosy-tint brilliance of the forewing is conspicuous in this species group. The group can be distinguished from *ligustri*-, *pontica*- and *simillima*-groups by the more remarkable white dash next to the Cu_2 vein; the more reduced reniform spot with darker, greyish coloured inner part; from the *ligustri*-group, by the more prominent basal and tornal streak; the more prominent apical dash. In the male genitalia, the group has longer, medially curved and slender harpe; longer, more coiled vesica with numerous, spine-like cornuti submedially and/or basally. The "window" on the male 8th tergite is narrower, more gap-like; the posterior abdominal brush more reduced,

substituted by a slightly sclerotized stripe. The females of the *pacifica*-group have proximally curved ductus bursae; more coiled appendix-corpus bursae complex with insignificant corpus bursae. In the female abdominal 7th segments there are no mentionable differences.

Craniophora pacifica Filipjev, 1927
(Pl. 1: 5, 6; Pl. 3: 19; Pl. 4: 27; Pl. 5: 35; Pl. 6: 43)
Craniophora pacifica Filipjev, 1927, *Annuaire du Musee Zoologique de l'Academie des Sciences d'l'URSS* **28**: 231, pl. 12: figs 8, 9. Type-locality: Russia, Primorsky Krai, Suchan district, Tigrovoe village. Lectotype: male, in coll. ZISP, designated by KISS (2017).

Synonymy.
Craniophora albonigra Hampson, 1909, *Catalogue of the Lepidoptera Phalaene in the British Museum* **8**: 53, pl. 124: fig. 3, nec Herz, 1904, misidentification.
Craniophora niveosparsa Kozhantshikov, 1950, [*Lepidoptera, Orgyiidae, Fauna SSSR.*], Vol. **12**: 541, fig. 281, nec Matsumura, 1926, misidentification.

Diagnosis. *Craniophora pacifica* can be distinguished from *C. taipaishana*, *C. minuscula* and *C. draudti* by its more brownish ground colour of forewing with less rosy-tint brilliance; the shorter, rather comma-like white dash next to the Cu_2 vein; in males, by the white hindwing with stronger brownish-blackish marginal band ended at the tornal patch and paler discal line. In the male genitalia, *C. pacifica* has longer vesica than *C. minuscula* and *C. draudti*; wider basal coil on the vesica with two patches numerous, small, spine-like cornuti than *C. taipaishana* and *C. draudti*. In the male last abdominal segments, the species differs from *C. draudti* by the sections by section widening bell-shaped 8th tergite; from all other relatives by the narrower, more regular "window" on the 8th tergite. The female genitalia are longer, more coiled than *C. minuscula* and *C. draudti*; proximal part of ductus bursae curved in right angles comparing to *C. taipaishana*.

Distribution. Eastern Palaearctic (Northeastern China, Korean Peninsula, Russian Far East).

Craniophora taipaishana Draudt, 1950
(Pl. 1: 7, 8; Pl. 3: 20; Pl. 4: 28; Pl. 5: 36; Pl. 6: 44)
Craniophora taipaishana Draudt, 1950, *Mitteilungen der Münchner Entomologischen Gesellschaft* **40**: 6, pl. 1: figs 17, 18, pl. 10: fig. 3. Type locality: China, Prov. Shaanxi, Tsinling Mts, Taibaishan. Lectotype: male, in coll. ZFMK, designated by HAN & KONONENKO (2010).

Synonymy.

Craniophora pacifica f. *kalgana* Draudt, 1931, *Die Gross-Schmetterlinge der Erde. Supplementum* **3**: 14, fig. 1l. Type-locality: China, Prov. Tschil [Prov. Hebei], Kalgan [Zhangjiakou City].

Craniophora tapaishana Draudt, 1950, *Mitteilungen der Münchner Entomologischen Gesellschaft* **40**: 6, pl. 1: figs 17, 18 nec Han & Kononenko, 2010, misspelling.

Diagnosis. *Craniophora taipaishana* differs from *C. pacifica*, *C. minuscula* and *C. draudti* by its more greyish ground colour of forewing; the longer, somewhat hooked white dash next to the Cu_2 vein; in males, by the whitish hindwing without marginal band and discal line; in the male genitalia, by the long vesica with strongly reflexed, full loop basally covered with numerous small, spinulose structures on its surface; the distally abruptly widening lateral sides of the male 8^{th} tergite with oval, proximally pointed "window"; in the female genitalia, from *C. minuscula* and *C. draudti* by the more coiled appendix-corpus bursae complex; from *C. pacifica* by the proximally simply curved ductus bursae and simpler distal section of appendix-corpus bursae complex.

Notes. *Craniophora pacifica* f. *kalgana* was only described as a darker form of *C. pacifica* by Draudt (1931), thus this cannot be considered as a valid taxon, according to ICZN.

Distribution. Eastern Palaearctic (Central China).

Craniophora minuscula Kiss & Jinbo, 2016

(Pl. 2: 9, 10; Pl. 3: 21; Pl. 4: 29; Pl. 5: 37; Pl. 6: 45)

Craniophora minuscula Kiss & Jinbo, 2016, *Journal of Asia-Pacific Entomology* **19**: 930, figs 1, 2, 8, 9, 15, 16, 27, 33. Type-locality: Japan, Hokkaido, Hobetsu, Fukuyama, Mukawa Town. Holotype: male, in coll. TOEF.

Synonymy.

Craniophora pacifica Sugi, 1982, *Moths of Japan* **1**: 681, **2**: 347, pl. 197: figs 18, 19, nec Filipjev, 1927.

Craniophora pacifica Eda & Yanagita, 2011, *The Standard of Moths in Japan* **2**: 302, pl. 2-072: figs 22, 23, nec Filipjev, 1927.

Diagnosis. *Craniophora minuscula* can be distinguished from *C. pacifica*, *C. taipaishana* and *C. draudti* by its average smaller size; the typical specimens by much lighter ground colour of forewing and stronger rosy-tint brilliance (the somewhat greenish ground coloured darker form also with rosy-tint brilliance); by the hook-like white dash next to the Cu_2 vein; in males, by the whitish hindwing with evenly narrowing, brownish marginal band reaching the tornal

angle and indistinct discal line; in the male genitalia, by the shorter, basally and terminally coiled vesica with numerous small, spinulose structures on its surface in two patches; the more triangular male 8th tergite with more or less regular, oval "window"; in the female genitalia, by the rather simpler, tubular and recurved appendix-corpus bursae complex with a distal loop.

Notes. Recently, some *C. pacifica*-like specimens, collected in Russian Far East, have been proved *C. minuscula*, thus this species is not endemic to Japan. However, further examination is needed on the different populations.

Distribution. Eastern Palaearctic (Japan, Russian Far East).

Craniophora draudti Han & Kononenko, 2010
(Pl. 2: 11, 12; Pl. 3: 22; Pl. 4: 30; Pl. 5: 38; Pl. 6: 46)
Craniophora draudti Han & Kononenko, 2010, *Zootaxa* **2678**: 62, figs 11, 17, 24. Type-locality: China, Prov. Shaanxi, Tsinling Mts, Taibaishan, ca. 1700 m. Holotype: male, in coll. ZFMK.

Diagnosis. *Craniophora draudti* can be distinguished from *C. pacifica*, *C. taipaishana* and *C. simillima* by its average smaller size (except in *C. minuscula*); by the more darker ground colour of forewing with conspicuously lighter or whitish patch next to the medial line; the shorter, hook or comma-like white dash next to the Cu_2 vein; in males, by the evenly brownish hindwing; the moderately long, basally coiled then rather wavy vesica with one patch of numerous small, spinulose structures on its surface; the triangular male 8th tergite with somewhat wider proximal edge; in the female genitalia, by the moderately short, tubular, strongly coiled appendix-corpus bursae complex.

Notes. *Craniophora draudti* was hidden quite long in the series of *C. taipaishana* and *C. simillima* in the collection of ZFMK, due to the high external similarity to them. When HAN & KONONENKO (2010) described this species, the female was unknown. However, after examining several *Craniophora* specimens originated from the Höne's collection, females of *C. draudti* have been found among *C. simillima* specimens and the female genitalia was described in KISS (2017).

The genital variability in this species is not well understood yet, since it looks like as there are two types of vesica and female genitalia with minor differences, however, these forms externally are practically the same and are very close to *C. simillima* specimens. A more comprehensive study is needed.

Distribution. Eastern Palaearctic (Central China).

The ***simillima*** species-group

Diagnosis. The *simillima*-group is externally close to the *pacifica* species-group without the rosy-tint brilliance. It can be distinguished from *ligustri*- and *pontica*-groups by the more remarkable white dash next to the Cu_2 vein; the more reduced reniform spot with darker, greyish coloured inner part; from the *ligustri*-group, by the more prominent basal and tornal streak and apical dash. In the male genitalia, the *simillima*-group has the shortest vesica with one curve terminally; more extended numerous, spine-like cornuti medially. The "window" on the male 8^{th} tergite is shorter, distally wider; the posterior abdominal brush is more reduced, substituted by a slightly sclerotized stripe. In the female genitalia, the species of this group have short, proximally curved ductus bursae; short, coiled, wider appendix-corpus bursae complex with insignificant corpus bursae. In the female 7^{th} abdominal segments there are no mentionable differences.

Craniophora simillima Draudt, 1950
(Pl. 2: 13, 14; Pl. 4: 23; Pl. 5: 31, 39; Pl. 6: 47)

Craniophora simillima Draudt, 1950, *Mitteilungen der Münchner Entomologischen Gesellschaft* **40**: 7, pl. 1: fig. 21, pl. 10: fig. 2. Type-locality: China, Prov. Yunnan, A-tun-tse, ca. 4000 m. Lectotype: male, in coll. ZFMK, designated by HAN & KONONENKO (2010).

Diagnosis. The diagnosis of *C. simillima* is given in the diagnosis of the *simillima* species-group.

Notes. The genital variability in this species is not well understood yet, since it looks like as there are two types of vesica and female genitalia with minor differences. However, the moths themselves having these two types of vesica are externally practically identical and are very close to *C. draudti* specimens. A more comprehensive study is needed.

Distribution. Eastern Palaearctic (Central China).

The ***pontica*** species-group

Diagnosis. The *pontica*-group can be distinguished externally from all other species groups by the more brownish, rather mottled forewing; the more brownish, contrast reniform spot; from the *ligustri*-group, by the slightly more prominent basal streak; the prominent tornal streak with thinner white dash next to the Cu_2 vein; the more prominent apical dash. In the male genitalia, the *pontica*-group has shorter valvae; moderately long vesica with one full coil medially with a short numerous, spinulose structure basally and numerous, spine-like cornuti on the medial coil. In the male last abdominal segments, the

distal edge of 7th sternite straighter; the "window" on the male 8th sternite more oval, the lateral sides concavely curved; the "window" on the 8th tergite rather rhomboidal, the proximal edge wider; the posterior abdominal brush absent. In the female genitalia, it has moderately long, proximally coiled ductus bursae; appendix-corpus bursae complex distally straighter, proximally more curved and wide. In the female 7th abdominal segments there are no significant differences.

Craniophora pontica (Staudinger, 1878)
(Pl. 2: 15, 16; Pl. 4: 24; Pl. 5: 32, 40; Pl. 6: 48)
Acronycta pontica Staudinger, 1878, *Horae Societatis Entomologicae Rossicae* **14**: 364. Type-locality: Turkey, Amasia, Kerasdere. Holotype: male, in coll. MfN.

Synonymy.
Craniophora pontica f. *illuminata* Rungs, 1972, *Bulletin du Museum National d'Historie Naturelle. Serie* 3. Zoologie **46**: 638, pl. 1: fig. 19. Type-locality: Morocco, Middle Atlas, Ifrane, 1650 m.

Subspecies.
Craniophora pontica navasi Boursin, 1935, *Internationale Entomologische Zeitschrift* **29**(21): 241, figs 7, 11. Type-locality: Spain, Sahún.

Diagnosis. The diagnosis of *C. pontica* is given in the diagnosis of the *pontica* species-group.

Notes. Although Boursin (1935) has found some external and genital differences between *C. p. pontica* and *C. p. navasi*, these differences look like rather individual differences, based on the examined materials. On the other hand, *C. p.* f. *illuminata* is a much lighter form of *C. p. navasi* without any conspicuous differences in the male genitalia, furthermore this form, according to ICZN, cannot be considered as valid (sub)species.

The shape of the valvae, the structure of the vesica and appendix-corpus bursae complex and the male last abdominal segments show a great variability across the entire distribution area of the species. However, the different orientation of the everted vesicas (right-handed vs. left-handed) looks like an artefact since the female copulatory organ does not follow this structure. However, a complex, geometric morphometric based study on the shape of the male valvae could reveal the hidden geographical pattern such as in *C. ligustri* (KISS *et al*. 2017a).

Distribution. Western Palaearctic (Mediterranean, Caucasus, Iran).

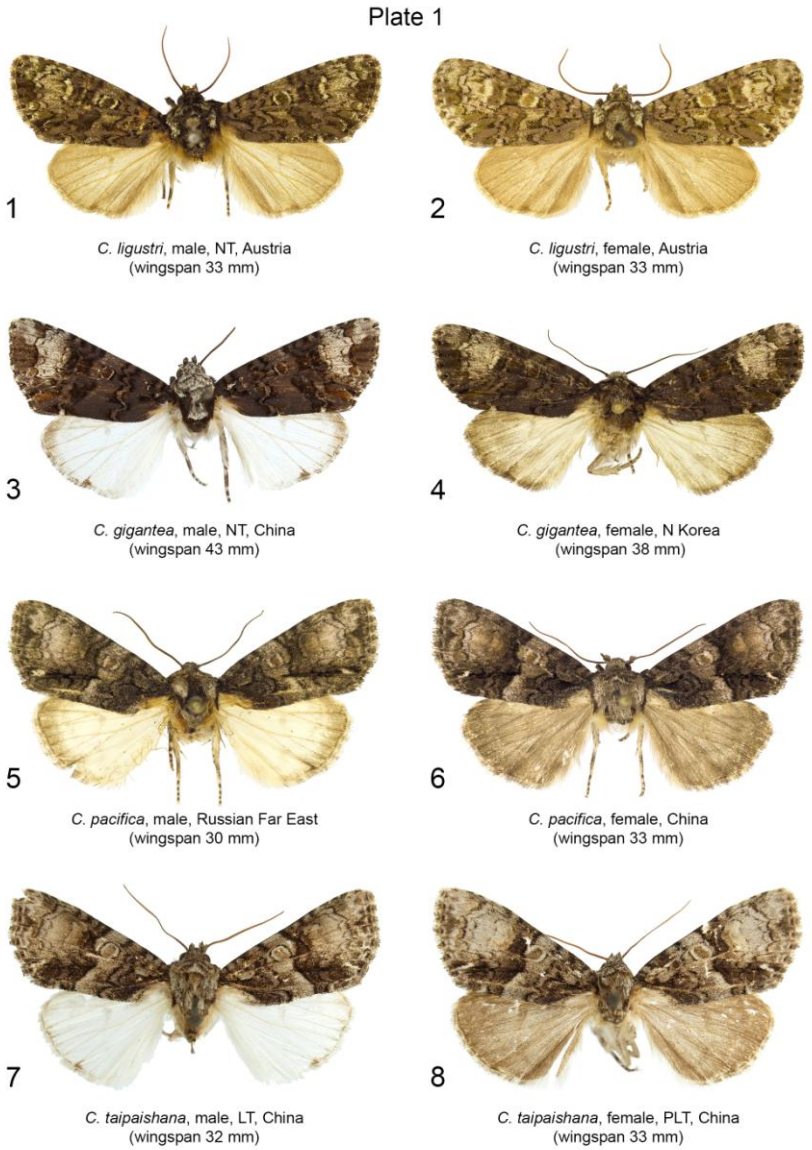


Plate 1. Adults of *Craniophora* spp. 1. *C. ligustri*, male, NT, slide No.: MV 18 909 (coll. NHMW); **2.** *C. ligustri*, female, slide No.: MV 18 905 (coll. NHMW); **3.** *C. gigantea*, male, NT, slide No.: ZFMK-Nr. 1859 (coll. and photo ZFMK); **4.** *C. gigantea*, female, slide No.: KA228f (coll. HNHM); **5.** *C. pacifica*, male, slide No.: KA826m (coll. HNHM); **6.** *C. pacifica*, female, slide No.: KA1048f (coll. HNHM); **7.** *C. taipaishana*, male, LT, slide No.: Hö156 (coll. and photo ZFMK); **8.** *C. taipaishana*, female, PLT, slide No.: ZFMK-Nr. 1867 (coll. and photo ZFMK). Not scaled. (KISS 2017)

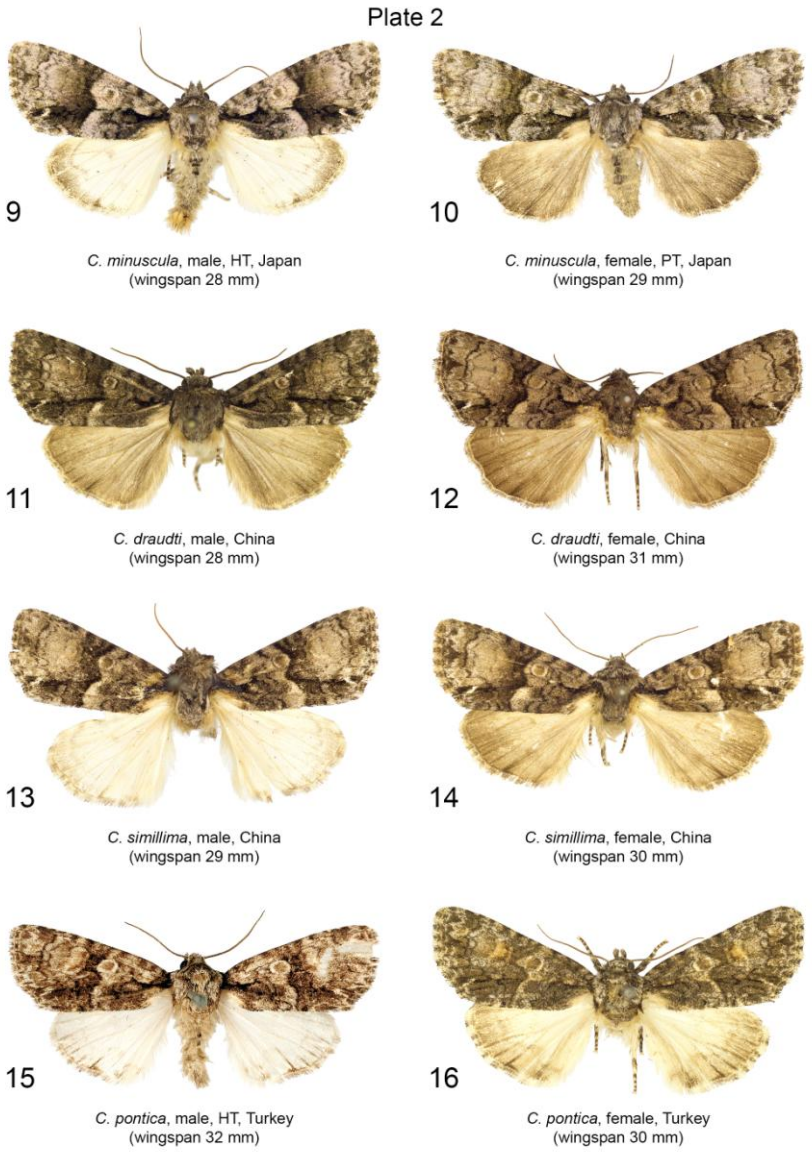


Plate 2. Adults of *Craniophora* spp. 9. *C. minuscula*, male, HT, slide No.: KA1174m (coll. NSMT); **10.** *C. minuscula*, female, PT, slide No.: KA1176f (coll. NSMT); **11.** *C. draudti*, male, slide No.: KA505m (coll. HNHM); **12.** *C. draudti*, female, slide No.: KA415f (coll. ZSM); **13.** *C. simillima*, male, slide No.: KA676m (coll. ZFMK); **14.** *C. simillima*, female, slide No.: KA971f (coll. ZSM); **15.** *C. pontica*, male, HT, slide No.: KA1098m (coll. MfN, photo by G. Ronkay); **16.** *C. pontica*, female, slide No.: MV 18 789 (coll. NHMW). Not scaled. (KISS 2017)

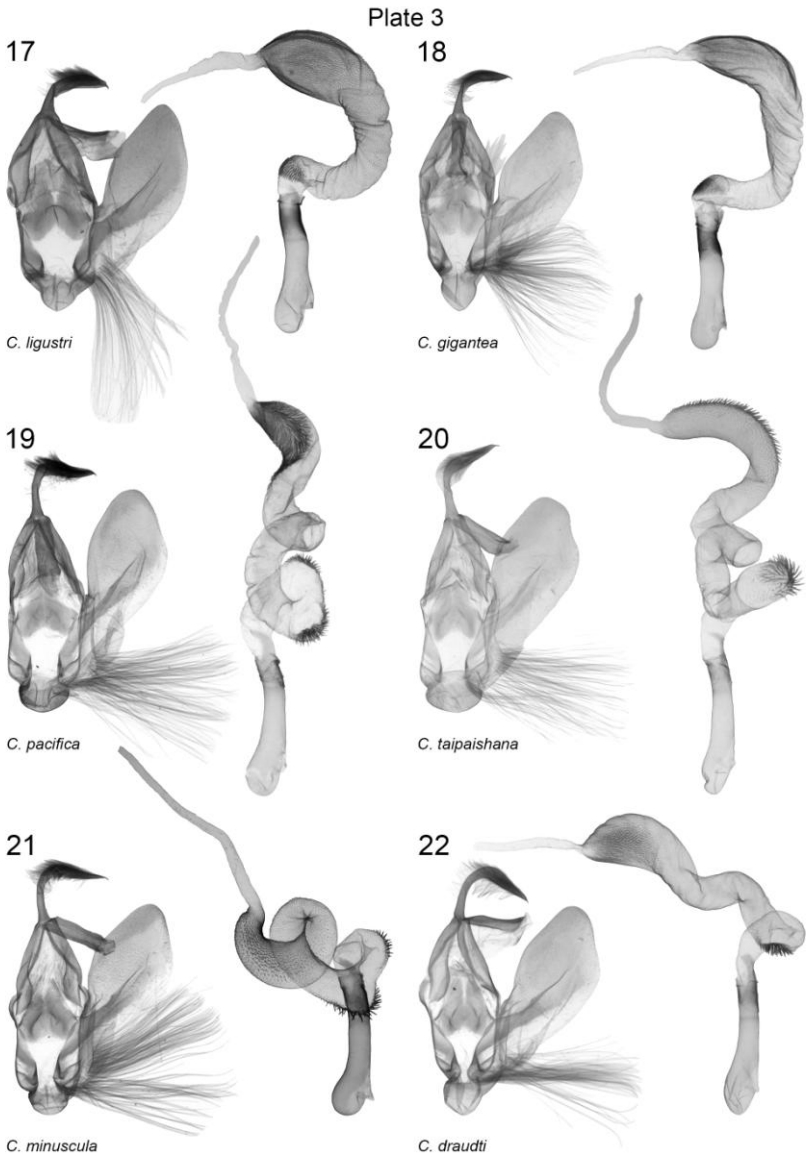


Plate 3. Male genitalia of *Craniophora* spp. 17. *C. ligustri*, NT, valva, vesica, Austria, slide No.: MV 18 909 (coll. NHMW); **18.** *C. gigantea*, valva, vesica, North Korea, slide No.: KA721m (coll. GR); **19.** *C. pacifica*, valva, vesica, Russia, Primorsky Krai, slide No.: KA1020m (coll. SMNK); **20.** *C. taipaishana*, valva, vesica, China, slide No.: KA669m (coll. ZFMK); **21.** *C. minuscula*, valva, PT, Japan, slide No.: KA945m (coll. NSMT); vesica, PT, Japan, slide No.: KA944m (coll. NSMT); **22.** *C. draudti*, valva, vesica, China, slide No.: KA507m (coll. HNHM). Not scaled. (KISS 2017)

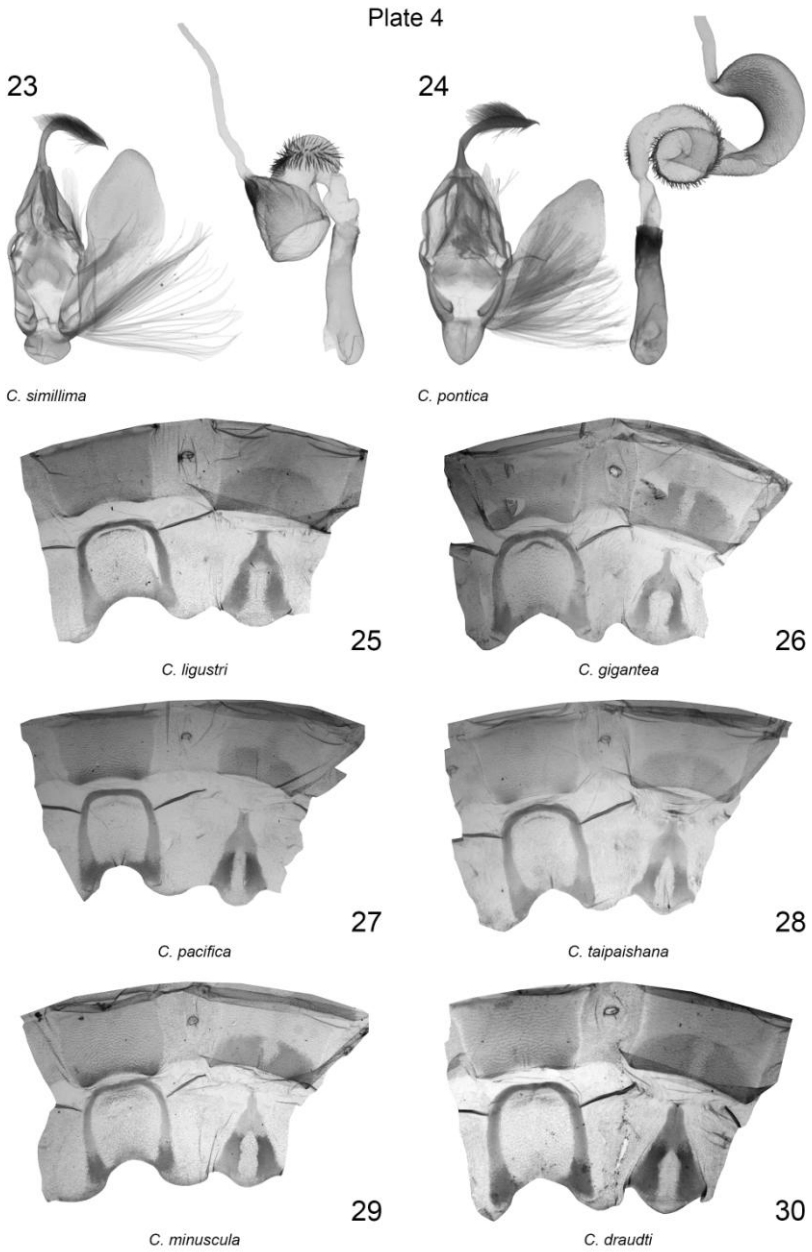


Plate 4. Male genitalia, male 7th, 8th abdominal segments of *Craniophora* spp. 23. *C. simillima*, valva, China, slide No.: KA973m (coll. ZSM); vesica, China, slide No.: KA674m (coll. ZFMK); **24.** *C. pontica*, valva, vesica, HT, Turkey, slide No.: KA1098m (coll. MfN); **25.** *C. ligustri*, Austria, slide No.: KA782m (coll. HNHM); **26.** *C. gigantea*, North Korea, slide No.: KA390m (coll. GR); **27.** *C. pacifica*, Russia, Primorsky Krai, slide No.: KA826m (coll. HNHM); **28.** *C. taipaishana*, China, slide No.: KA669m (coll. ZFMK); **29.** *C. minuscula*, PT, Japan, slide No.: KA943m (coll. NSMT); **30.** *C. draudti*, China, slide No.: KA507m (coll. HNHM). Left side sternite, right side tergite. Not scaled. (KISS 2017)

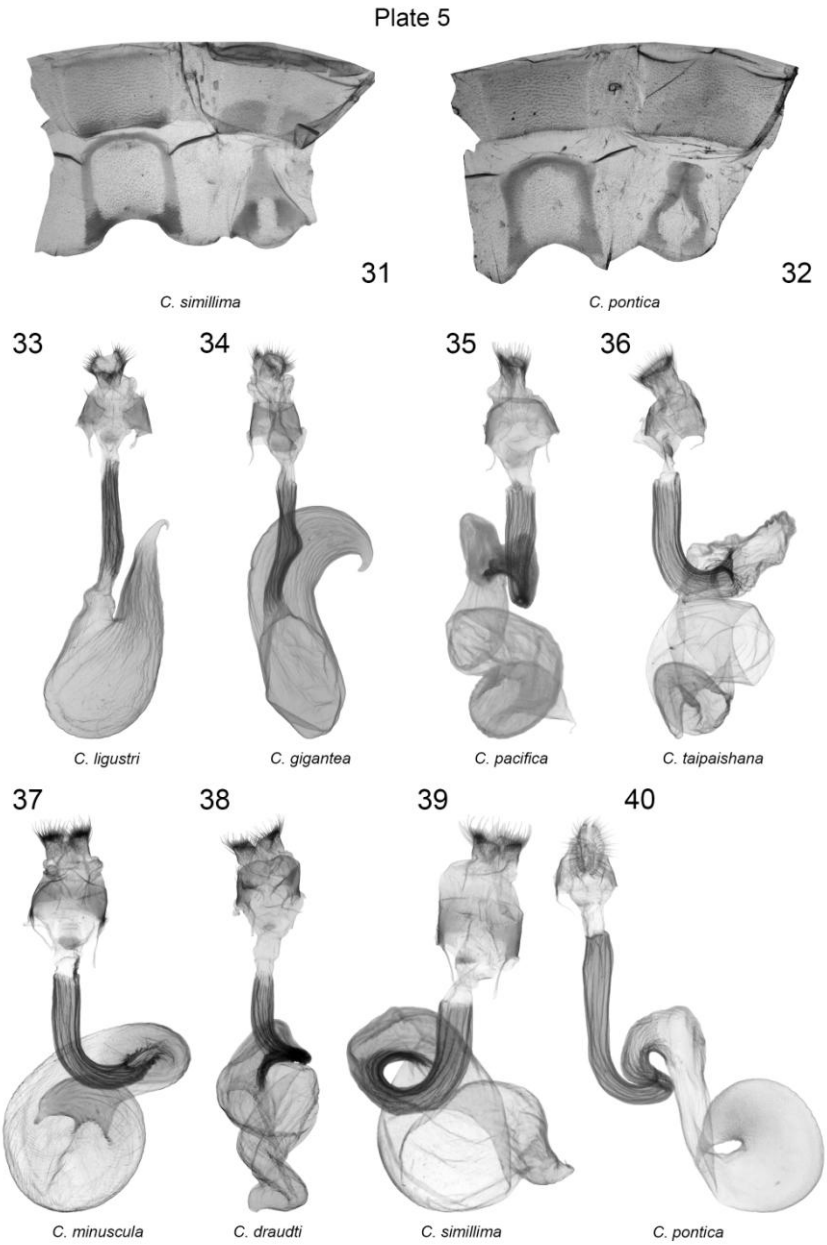


Plate 5. Male 7th, 8th abdominal segments and female genitalia of *Craniophora* spp. 31. *C. simillima*, China, slide No.: KA674m (coll. ZFMK); **32.** *C. pontica*, HT, Turkey, slide No.: KA1098m (coll. MfN); **33.** *C. ligustri*, Spain, slide No.: MV 18 660 (coll. NHMW); **34.** *C. gigantea*, South Korea, slide No.: KA466f (coll. HNHM); **35.** *C. pacifica*, China, slide No.: KA1048f (coll. HNHM); **36.** *C. taipaishana*, China, slide No.: KA670f (coll. ZFMK); **37.** *C. minuscula*, PT, Japan, slide No.: KA946f (coll. NSMT); **38.** *C. draudti*, China, slide No.: KA415f (coll. ZSM); **39.** *C. simillima*, China, slide No.: KA974f (coll. ZSM); **40.** *C. pontica*, Turkey, slide No.: MV 18 669 (coll. NHMW). Left side sternite, right side tergite. Not scaled. (KISS 2017)

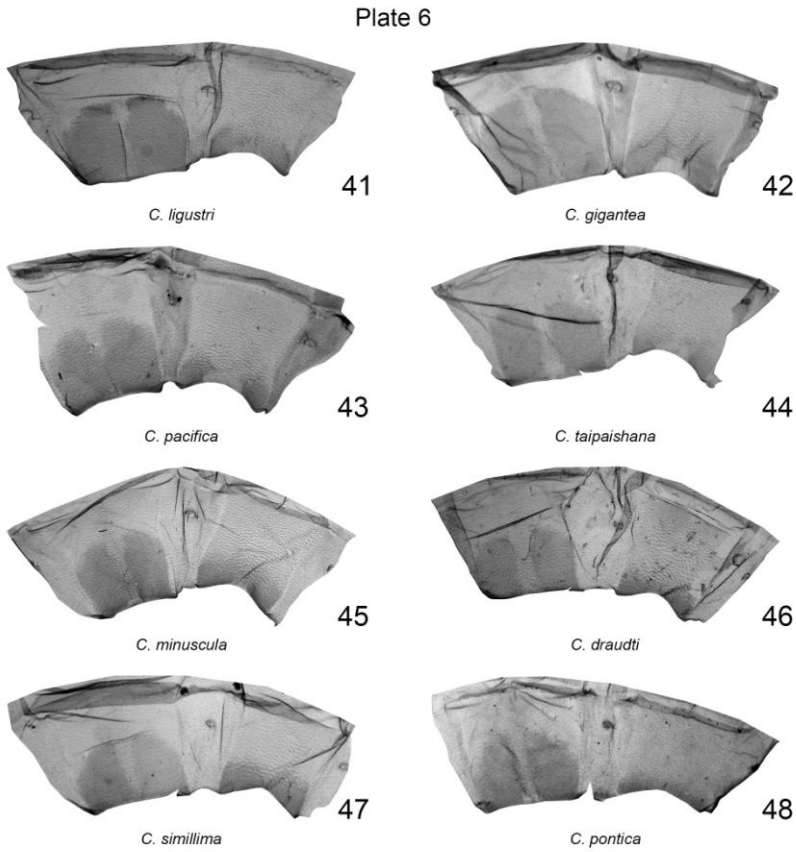


Plate 6. Female 7th abdominal segments of *Craniophora* spp. 41. *C. ligustri*, Greece, slide No.: KA868f (coll. ZMUC); **42.** *C. gigantea*, South Korea, slide No.: KA466f (coll. HNHM); **43.** *C. pacifica*, China, slide No.: KA1048f (coll. HNHM); **44.** *C. taipaishana*, China, slide No.: KA670f (coll. ZFMK); **45.** *C. minuscula*, PT, Japan, slide No.: KA1178f (coll. TOEF); **46.** *C. draudti*, China, slide No.: KA415f (coll. ZSM); **47.** *C. simillima*, China, slide No.: KA974f (coll. ZSM); **48.** *C. pontica*, Morocco, slide No.: MV 18 667 (coll. NHMW). Left side tergite, right side sternite. Not scaled. (KISS 2017)

Genus ***Harmandicrania*** Kiss, 2017

(Pls 7–13)

Harmandicrania Kiss, 2017, *Zootaxa* **4355**(1): 26. Type species: *Acronycta harmandi* Poujade, 1898, *Bulletin de la Société Entomologique de France*: 229, text fig, by original designation.

Diagnosis. The externally rather uniform species of *Harmandicrania* resemble *Craniophora* s. l. and *Cycloprora* s. l. The members of *Harmandicrania* share, however, some unique external features, such as the zigzagged black line with whitish spots on the edge of patagia; the quadrangular, mostly whitish suprabasal patch (except *H. nubilata*); the bigger, whitish subbasal patch occasionally with reddish or greenish scales on its edge; the conspicuous big, whitish or lighter, wide, comma-like patch around the claviform spot; the interrupted, white, "U"-shaped or brownish and longer, comma-like spot next to the Cu_2 vein. *H. brunneocinerea* is externally similar to *Cy. nodyna*, *T. prometopus* and *F. fasciata*, but in the latter species and genus the posterior abdominal brush and the valval androconial apparatuses of the males are well visible even on pinned specimens, as well. The other significant difference, in this genus comparing to *Cycloprora* s. l., is the equal length of the 3rd segment of the palpus in both sexes (comparing with *Cycloprora* s. l., where the females have longer 3rd segment than in males).

The male genitalia of *Harmandicrania* differ from those of the other genera of the generic complex by the much slender uncus; rhomboidal, elongated valvae with well-developed corona or rounded valvae, with obtuse end and a corona consisting of few setae; the long, extremely coiled vesica armed with three, long, strongly sclerotized cornuti submedially or shorter, slightly curved vesica armed with two parallelly directed, stronger or some short, spine-like cornuti with one softer, finger-like cornuti submedially; the wavy distal part of the vesica covered with numerous spinulose structures arranged into one or two stripes.

The male abdominal segments are similar to those of *Craniophora*, but the lateral sides of the 8th sternite are slender, distally bulb-like; the posterior abdominal brush slightly developed with a shallow, wide pocket; 8th tergite more triangular shaped.

The female genitalia differ from the related genera by the long but weakly sclerotized ductus bursae with wider, weakly sclerotized, ribbed region at the junction to corpus bursae; the well separated corpus bursae and appendix bursae; the elongated, angular or rounded corpus bursae with sclerotized bulb-like structure medially; the long, narrow, basally coiled and armed with weakly sclerotized crest basally or wider, basally broken in right angle appendix bursae.

The "window" on the female 7th sternite is more elongated than in the other genera or absent.

The ***harmandi*** species-group

Diagnosis. The *harmandi*-group is very similar externally to the *fujianensis* species-group, however, the basal part of the suprabasal patch is paler, not pure white. It can be distinguished from the *nubilata*-group by the more mottled, greyish-brownish, greyish ground colour of forewing. In the male genitalia, the differences are more conspicuous. The *harmandi*-group has slender uncus; deltoid valvae with shorter corona; more coiled vesica with three, strong, cornuti, two of them opposed and long. In the male last abdominal segments, the distal edge of 7th sternite concavely more curved; in the 8th sternite, the bulb-like end of the lateral sides more rounded; the proximal edge of the 8th tergite pointed, lateral sides straighter, basally wider; posterior abdominal brush reduced, pocket membranous, shallow. In the female genitalia, it has more tube-like ductus bursae; wider corpus bursae; more curved, slenderer and longer appendix bursae. In the female 7th sternite there is an elongated "window".

Harmandicrania harmandi (Poujade, 1898)
(Pl. 7: 49, 50; Pl. 9: 67; Pl. 10: 77; Pl. 11: 85; Pl. 12: 93)

Acronycta harmandi Poujade, 1898, *Bulletin de la Société entomologique de France*: 229, text fig. Type-locality: India, Sikkim. Holotype: male, in coll. MNHN.

Synonymy.

Acronicta nigromaculata Warren, 1912, *Novitates Zoologicae* **19**: 1. Type-locality: India, Khasia Hills.

Craniophora picata Wileman, 1914, *The Entomologist* **47**: 164. Type-locality: Taiwan, Rantaizan [Luan-ta Shan].

Diagnosis. *Harmandicrania harmandi* can be distinguished from its relatives by its more darker, blackish-brownish ground colour of forewing; from *H. barnandi*, *H. tathabayandi* and *H. brunneocinerea* by the more conspicuous claviform spot; the big, whitish comma-like patch between the medial line and claviform spot; the more contrast discal line on the hindwing; from *H. brunneocinerea* by its larger size; from *H. sinoandi*, *H. peninsularis* and *H. nipponica* by the somewhat wider, apically elongated forewing. In the male genitalia, the generotypic species differs from *H. barnandi*, *H. brunneocinerea*, *H. sinoandi*, *H. peninsularis* and *H. nipponica* by the distal position ending vesica; from *H. brunneocinerea* by the larger size of the genital capsule, aedeagus and vesica; from *H. tathabayandi* by the slightly shorter uncus; the slightly more curved junction of the two opposed cornuti. In the male abdominal segments, the 7th sternite is close to *H. barnandi* and *H. sinoandi* but

it has evenly, concave lateral sides. The 7th tergite is wider than *H. tathabayandi* and *H. sinoandi*; longer than *H. brunneocinerea* and *H. peninsularis* and the lateral sides are straight. The lateral sides of the 8th sternite are somewhat straighter; the distal part more triangular; the "window" more regular, slightly narrowing distally; the pocket of the posterior abdominal brush wider than in its relatives. The 8th tergite is more regular and triangular than in its relatives. The female genitalia of *H. harmandi* differ from its relatives by its more oval corpus bursae. In the female 7th abdominal segments, there are no significant differences.

Notes. In this species there are probably more cryptic species, however, the available material is still insufficient to decide this question.

Distribution. Himalaya Mts.

Harmandicrania barnandi Kiss, 2017
(Pl. 7: 51, 52; Pl. 9: 68; Pl. 10: 78; Pl. 11: 86; Pl. 12: 94)
Harmandicrania barnandi Kiss, 2017, *Zootaxa* **4355**(1): 34, figs 49, 50, 67, 77, 85, 93. Type-locality: Pakistan, Himalaya Mts, Kaghan valley, Tathabaya, 2200 m. Holotype: male, in coll. GyF.

Diagnosis. *Harmandicrania barnandi* superficially resembles all the other species in the *harmandi* species-group, however, it differs from *H. brunneocinerea* by its larger size (wingspan of 35–41 mm compared to 26–31 mm in *H. brunneocinerea*); the more brownish ground colour of forewing; the fully brownish hindwing of female; from all other species except *H. tathabayandi* by its more brownish ground colour and more uniform pattern of the forewing; from *H. tathabayandi* by the slightly narrower forewing; the more angular and regular suprabasal spot; the slightly lighter, whitish, shorter, comma-like patch next to the claviform spot; the rather angled (not parallel) antemedial and medial lines in the costal area; and the wider medial field between the antemedial and medial lines.

Harmandicrania barnandi displays closer relationship, based on the male genitalia, with *H. brunneocinerea*, *H. sinoandi*, *H. peninsularis* and *H. nipponica*. The species can be distinguished from *H. brunneocinerea* by the larger size of the genital capsule and aedeagus; from *H. sinoandi*, *H. peninsularis* and *H. nipponica* by the smaller size of the genital capsule and aedeagus; the straighter cornuti; the angled junction of the two opposed cornuti; from *H. tathabayandi* by the angled junction of the two opposed cornuti; from *H. harmandi* and *H. tathabayandi* by the proximal position ending vesica; from *H. tathabayandi* and *H. peninsularis* by the more regular, deltoid valvae.

In the male abdominal segments, the shape of the 7th sternite is most similar to that of *H. tathabayandi*, and the two species differ from their relatives by the convex lateral sides. The 7th tergite differs from *H. brunneocinerea*, *H. sinoandi* and *H. peninsularis* by the higher segment. The lateral sides of the 8th sternite are much more parallel, straighter and longer, the bulb-like distal part is more oval than in its relatives. The lateral sides of 8th tergite are more gradually widening than in *H. brunneocinerea* and *H. peninsularis*.

In the female genitalia, the species differs from *H. harmandi*, *H. sinoandi*, *H. peninsularis* and *H. nipponica* by the smaller size of the entire organ; from *H. brunneocinerea* by the triangular corpus bursae; the shorter appendix bursae; from *H. tathabayandi* by the slightly longer ductus bursae and the triangular corpus bursae; from *H. harmandi* and *H. tathabayandi* by the more coiled basal part of the appendix bursae.

In the female 7th abdominal segments, there are no mentionable differences.

Notes. Some specimens have an intermediate state in the junction of the two opposed cornuti between *H. barnandi* and *H. tathabayandi*. Unfortunately, the available material is insufficient to clarify the taxonomical value of this difference.

Distribution. Himalaya Mts.

Harmandicrania tathabayandi Kiss, 2017
(Pl. 7: 53, 54; Pl. 9: 69; Pl. 10: 79; Pl. 11: 87; Pl. 12: 95)

Harmandicrania tathabayandi Kiss, 2017, *Zootaxa* **4355**(1): 35, figs 53, 54, 69, 79, 87, 95. Type-locality: Pakistan, Himalaya Mts, Kaghan valley, Tathabaya, 2200 m. Holotype: male, in coll. GR.

Diagnosis. *Harmandicrania tathabayandi* superficially resembles all other species of the *harmandi* species-group, especially to *H. barnandi*, the ground colour of the forewing is, however, somewhat more brownish (in a lesser degree to *H. brunneocinerea*). It differs from *H. brunneocinerea* by its larger size (wingspan of 32–37 mm vs. 26–31 mm, respectively) and more brownish ground colour forewing and the entirely brownish hindwing of female; from *H. barnandi* by the slightly wider forewing; the more irregular suprabasal spot; the slightly paler, whitish, longer, comma-like patch next to the claviform spot; the parallel antemedial and medial lines in the costal area and the narrower medial field between the antemedial- and medial lines. The other species in the species group have darker or more colourful ground colour of forewing.

The male genitalia of this species can be distinguished from *H. barnandi*, *H. brunneocinerea*, *H. sinoandi*, *H. peninsularis* and *H. nipponica* by the straighter junction of the two opposed cornuti and the vesica ending in distal position;

from *H. harmandi* by its smaller size of the genital capsule and aedeagus; the slightly narrower valvae, and the slightly longer uncus.

In the male last abdominal segments, *H. tathabayandi* has more convex lateral sides of 7th sternite than in its relatives, except in *H. barnandi*; higher 7th tergite than in *H. brunneocinerea*, *H. sinoandi* and *H. peninsularis*, shorter 8th sternite with gradually widening lateral sides and slightly wider bulb-like sclerotization; more gradually widening lateral sides of 8th tergite than in *H. brunneocinerea* and *H. peninsularis*.

Comparing the female genitalia, *H. tathabayandi* differs from its relatives by the smaller size of the entire organ (except in *H. barnandi*); from *H. harmandi*, *H. barnandi*, *H. brunneocinerea* and *H. peninsularis* by the more quadrangular corpus bursae; from *H. nipponica* by the proximally widening, slightly shorter ductus bursae. In addition, *H. tathabayandi* and *H. harmandi* have less coiled, rather strongly curved basal part of appendix bursae than in the other congeners.

In the female 7th abdominal segments, there are no significant differences.

Distribution. Himalaya Mts, Kaghan valley.

Harmandicrania brunneocinerea Kiss, 2017
(Pl. 7: 55, 56; Pl. 9: 70; Pl. 10: 80; Pl. 11: 88; Pl. 12: 96)
Harmandicrania brunneocinerea Kiss, 2017, *Zootaxa* **4355**(1): 36, figs 55, 56, 70, 80, 88, 96. Type-locality: Pakistan, Himalaya Mts, Indus valley, between Chilas and Dassu, Motel Barseen, 1100 m. Holotype: male, in coll. GR.

Diagnosis. *Harmandicrania brunneocinerea* is very similar externally to *Fascionycta fasciata*, their genital characters are, however, strikingly different. The main distinctive external characters are the weaker basal line and tornal streak; the presence of the "U"-like white patch next to the Cu_2 vein; the rounded hindwing; in male, the absence of posterior abdominal brush of the males; in female, the 3rd segment of the palpus is at least half as long as the 2nd segment, compared to the much longer 3rd segment of the female of *F. fasciata*. *H. brunneocinerea* differs from its relatives by the smaller size (wingspan 26–31 mm, it is 32–42 mm in the related taxa); the greyish ground colour of forewing suffused with brownish; the more extended, more or less irregular shaped suprabasal spot; and the less conspicuous comma-like patch next to the claviform spot. The female has whitish hindwing with indistinct greyish marginal band and discal line.

In the male genitalia, it differs from *H. barnandi*, *H. sinoandi*, *H. peninsularis* and *H. nipponica* by the smaller size of the genital capsule and aedeagus; the slightly shorter uncus; the slightly more angulate valvae (except *H. sinoandi*), the somewhat longer, tubular, basal part of the vesica and the moderately angulate junction of the two opposed cornuti.

In the male last abdominal segments, *H. brunneocinerea* has the shortest and widest 7th sternite and tergite with slightly wavy lateral sides; shorter, proximally slightly curved lateral sides of 8th sternite with shorter, more angled proximal edge on the inner part of the bulb-like sclerotization; section by section widening lateral sides of 8th tergite.

The female genitalia of *H. brunneocinerea* can be distinguished from its relatives by the smaller size of the entire organ; the slightly elongated shape of corpus bursae; the much longer appendix bursae comparing to the length of corpus bursae; from *H. harmandi* and *H. tathabayandi* by the more coiled basal part of the appendix bursae.

In the female 7th abdominal segments, there are no recognisable differences between the related species.

Notes. Two specimens have distal position ending vesica which could indicate specific differentiation; unfortunately, the specimens are much worn to find any distinguishing characters. More material is needed to clarify the situation until then I treat them as irregularly everted *H. brunneocinerea* specimens only. The shape of the valvae looks like also variable since one specimen from Afghanistan (Nuristan) has apically more rounded valvae.

Distribution. Himalaya Mts, Hindukush Mts.

Harmandicrania sinoandi Kiss, 2017
(Pl. 8: 57, 58; Pl. 9: 71; Pl. 11: 81; Pl. 12: 89; Pl. 13: 97)
Harmandicrania sinoandi Kiss, 2017, *Zootaxa* **4355**(1): 37, figs 57, 58, 71, 81, 89, 97. Type-locality: China, Prov. Sichuan, 70 km NW Chengdu, Qingchenghousan Mts, 1400 m. Holotype: male, in coll. GR.

Diagnosis. *Harmandicrania sinoandi* externally differs from its relatives by the more blackish (rather coal black) ground colour of forewing; the average larger, whitish angular base of suprabasal spot suffused with some darker scales and the more expanded, wide, whitish outer part of medial field between the reniform spot and the postmedial line.

The male genitalia of *H. sinoandi* differ from those of all relatives by the tiny, almost fully reduced submedial diverticulum on the vesica; from *H. harmandi* and *H. tathabayandi* by the slightly wider, distal part of the vesica, the more laterally positioned opposed cornuti, and in the proximal position ending vesica; from *H. barnandi* and *H. brunneocinerea* by the larger size of the genital capsule and aedeagus, and the straight junction of the opposed, strong cornuti; from *H. peninsularis* and *H. nipponica* by the slightly more deltoid-shape of the valvae, and the wider basal part of the vesica.

In the male last abdominal segments, the species has as long as wide 7th sternite with slightly curved lateral sides; wider 7th tergite than in *H. harmandi*, *H. barnandi*, *H. tathabayandi* and *H. nipponica*. The 8th sternite has, in comparison with the above-mentioned taxa, slightly curved lateral sides, shorter, evenly widening bulb-like end, and rounded, distally evenly narrowing "window".

The female genitalia of *H. sinoandi* can be distinguished from those of its relatives by the angulate, more or less heart-shaped corpus bursae and shorter appendix bursae; from *H. barnandi* and *H. brunneocinerea* by the larger size of the entire organ; from *H. peninsularis* by the somewhat smaller size of the entire organ; from *H. nipponica* by the shorter and proximally wider ductus bursae, the less pointed corpus bursae, and the shorter appendix bursae; from *H. harmandi* and *H. tathabayandi* by the more coiled basal part of the appendix bursae.

The female 7th abdominal segments show no significant differences comparing with those of the other congeners.

Notes. One male specimen has a rather aberrant vesica since the junction of the two opposed cornuti is longer, more curved and attached to the vesica by a longer base.

Distribution. Central China.

Harmandicrania peninsularis Kiss, 2017
(Pl. 8: 59, 60; Pl. 9: 72; Pl. 11: 82; Pl. 12: 90; Pl. 13: 98)

Harmandicrania peninsularis Kiss, 2017, *Zootaxa* **4355**(1): 37, figs 59, 60, 72, 82, 90, 98. Type-locality: Malaysia, Genting Highlands, 1700 m. Holotype: male, in coll. NSMT.

Diagnosis. *Harmandicrania peninsularis* is externally similar to its relatives, but differs from them by the more colourful forewing with pale purple brilliance; the basally more vivid and pure white suprabasal spot, and the smaller, whitish inner part of medial field between the reniform spot and postmedial line.

The male genitalia of *H. peninsularis* can be distinguished from those of its relatives by the larger genital capsule and aedeagus, the smaller submedial diverticulum; from *H. harmandi* and *H. tathabayandi* by the slightly more rounded valvae; the more laterally positioned opposed cornuti, and in the proximal position ending vesica; from *H. barnandi* and *H. brunneocinerea* by the apically more rounded valvae, and the straight junction of the two opposed cornuti; from *H. nipponica* by the straight junction of the two opposed cornuti without the "S"-like connection; from *H. sinoandi* by the more laterally

positioned cornuti, the more slender distal part of vesica, and the larger diverticulum.

In the male last abdominal segments, *H. peninsularis* has on average larger abdominal segments than the related species; more wavy lateral sides of 7th sternite; wider but shorter 7th tergite than in its relatives, except *H. brunneocinerea*; rather parallel lateral sides of 8th sternite proximally and more distant, more rounded ended, bulb-like sclerotization distally; distally more quadrangular "window" with a slightly developed pocket; gradually widening lateral sides of 8th tergite.

Comparing the female genitalia, *H. peninsularis* differs from its relatives by the larger size of the entire organ; from *H. harmandi*, *H. barnandi*, *H. tathabayandi*, *H. sinoandi* and *H. nipponica* by the globular corpus bursae; from *H. brunneocinerea* by the slightly shorter ductus and appendix bursae, and the proximally wider corpus bursae; from *H. harmandi* and *H. tathabayandi* by the more coiled basal part of the appendix bursae.

In the female 7th abdominal segments, there are no significant differences.

Harmandicrania nipponica Kiss, 2017
(Pl. 8: 61, 62; Pl. 10: 73; Pl. 11: 83; Pl. 12: 91; Pl. 13: 99)
Harmandicrania nipponica Kiss, 2017, *Zootaxa* **4355**(1): 38, figs 61, 62, 73, 83, 91, 99. Type-locality: Japan, Honshu, Wakayama Pref., Shimokawa-Osugi, Mts Oto. Holotype: male, in coll. NSMT.

Diagnosis. *Harmandicrania nipponica* can be distinguished from its relatives by the less angulate forewing, the blackish-brownish ground colour of forewing with more whitish patches, the more contrastingly marked reniform spot filled with blackish-brownish scales, the more or less arrow-like claviform macula, the fully brownish hindwing of the males, and the dark brownish hindwing of the females.

The male genitalia of *H. nipponica* differ from its relatives by the slightly slenderer valvae, and the "S"-like junction of the two opposed cornuti; from *H. harmandi* and *H. tathabayandi* by in the proximal position ending vesica, and the more laterally positioned two opposed cornuti; from *H. barnandi* and *H. brunneocinerea* by the straighter junction of the two opposed cornuti; from *H. sinoandi* and *H. peninsularis* by the "S"-like junction of the two opposed cornuti, and the more developed submedial diverticulum.

The last abdominal segments of the males of *H. nipponica* can be distinguished from those of *H. brunneocinerea*, *H. barnandi* and *H. tathabayandi* by the slightly wavy lateral sides of 7th sternite; from *H. brunneocinerea*, *H. sinoandi* and *H. peninsularis* by the higher 7th tergite; from *H. harmandi*, *H. barnandi*, *H. tathabayandi* and *H. peninsularis* by the shorter 8th sternite with somewhat straighter, rounded ended bulb-like sclerotization

and shorter, proximally rather rounded “window”; from *H. brunneocinerea* and *H. peninsularis* by the gradually widening 8th tergite.

The female genitalia of *H. nipponica* can be distinguished from those of its relatives by the straight, longer, evenly wide ductus bursae, and the more quadrangular corpus bursae; from *H. harmandi*, *H. barnandi*, *H. tathabayandi* and *H. sinoandi* by the longer appendix bursae comparing to corpus bursae; from *H. harmandi* and *H. tathabayandi* by the more coiled basal part of the appendix bursae.

In the female 7th abdominal segments, there are no significant differences between the related taxa.

Distribution. Japan.

The ***fujianensis*** species-group

Diagnosis. The *fujianensis*-group is very similar externally to the *harmandi* species-group, however, the basal part of the suprabasal patch is more contrast, pure white. It can be distinguished from the *nubilata*-group by the mottled, greyish-brownish ground colour of the forewing. In the male genitalia, the *fujianensis*-group can be distinguished from all other species-groups by the longer, wider uncus; the narrower, more elongated, ventrally angled valvae with wider corona; the conspicuous sclerotized and slightly ribbed, longer, wedge-shaped carina formation the less coiled vesica with two, moderately sclerotized, parallel or “V”-like cornuti and softer, finger-like cornuti medially.

Harmandicrania fujianensis (Kiss & Gyulai, 2013)
(Pl. 8: 63; Pl. 10: 74)

Craniophora fujianensis Kiss & Gyulai, 2013, *ZooKeys* **353**: 63, figs 1, 7, 8. Type-locality: China, Fujian, Dai Mao Shan, 20 km NW of Longyan, 1300 m. Holotype: male, in coll. PGy.

Diagnosis. *Harmandicrania fujianensis* can be distinguished from its sister species, *H. hainanensis* by its light brownish-greyish ground colour of forewing; the slightly wider, somewhat more quadrangular suprabasal patch; the somewhat wider medial fascia; the somewhat longer uncus; the more angled ventral costa and distally evenly narrowing valvae; the more elongated, rounded ended carina formation; the parallel moderately sclerotized cornuti on the basal diverticulum; the somewhat longer, soft, finger-like cornuti submedially.

Notes. The female is unknown and the male abdominal segments were not studied (not prepared together with the genitalia).

Distribution. South Central China.

Harmandicrania hainanensis (Kiss & Gyulai, 2013)
(Pl. 8: 64; Pl. 10: 75)
Craniophora fujianensis hainanensis Kiss & Gyulai, 2013, *ZooKeys* **353**: 65, figs 2, 3, 9, 10. Type-locality: China, Prov. Hainan, Wuzhi Shan, 1333 m. Holotype: male, in coll. PGy.

Diagnosis. *Harmandicrania hainanensis* can be distinguished from its sister species, *H. fujianensis* by its whitish-ochreous ground colour of forewing; the slightly narrower, somewhat more elongated suprabasal patch; the more indistinct wing pattern with paler medial fascia; the somewhat shorter uncus; the evenly curved ventral costa and distally wider valvae; the shorter, more wedge-shaped carina formation; the rather "V"-like, moderately sclerotized cornuti on the basal diverticulum; the somewhat shorter, soft, finger-like cornuti submedially.

Notes. The female is unknown and the male abdominal segments were not studied (not prepared together with the genitalia).

Distribution. South Central China (Hainan).

The ***nubilata*** species-group

Diagnosis. The *nubilata* species-group externally is a very unique group in the genus with its chocolate brown ground colour of forewing with greenish-yellowish subbasal patch. The male genitalia are also unique in the genus with shorter uncus; elongated, rounded ended valvae with reduced corona (only few setae); short, weakly sclerotized, wedge-shaped carina field; moderately curved vesica with some shorter, sclerotized cornuti and a softer, finger-like cornuti. In the male last abdominal segments, the distal edge of 7th sternite is slightly concavely curved; in the 8th sternite, the bulb-like end of the lateral sides is more elongated, inner part angled; the proximal edge of the 8th tergite is wider, lateral sides proximally straight, then slightly curved; posterior abdominal brush is completely reduced. In the female genitalia, it has wider ductus bursae; narrow, globular corpus bursae; straighter and wider appendix bursae. In the female 7th sternite the "window" is absent.

Harmandicrania nubilata (Hampson, 1894)
(Pl. 9: 65, 66; Pl. 10: 76; Pl. 11: 84; Pl. 12: 92; Pl. 13: 100)
Euplexia nubilata Hampson, 1894, *The Fauna of British India, including Ceylon and Burma. Moths* **2**: 208. Type-locality: India, Sikkim. Holotype: male, in coll. BMNH.

Diagnosis. The diagnosis of *H. nubilata* is given in the diagnosis of the *nubilata* species-group.

Distribution. Himalaya Mts.

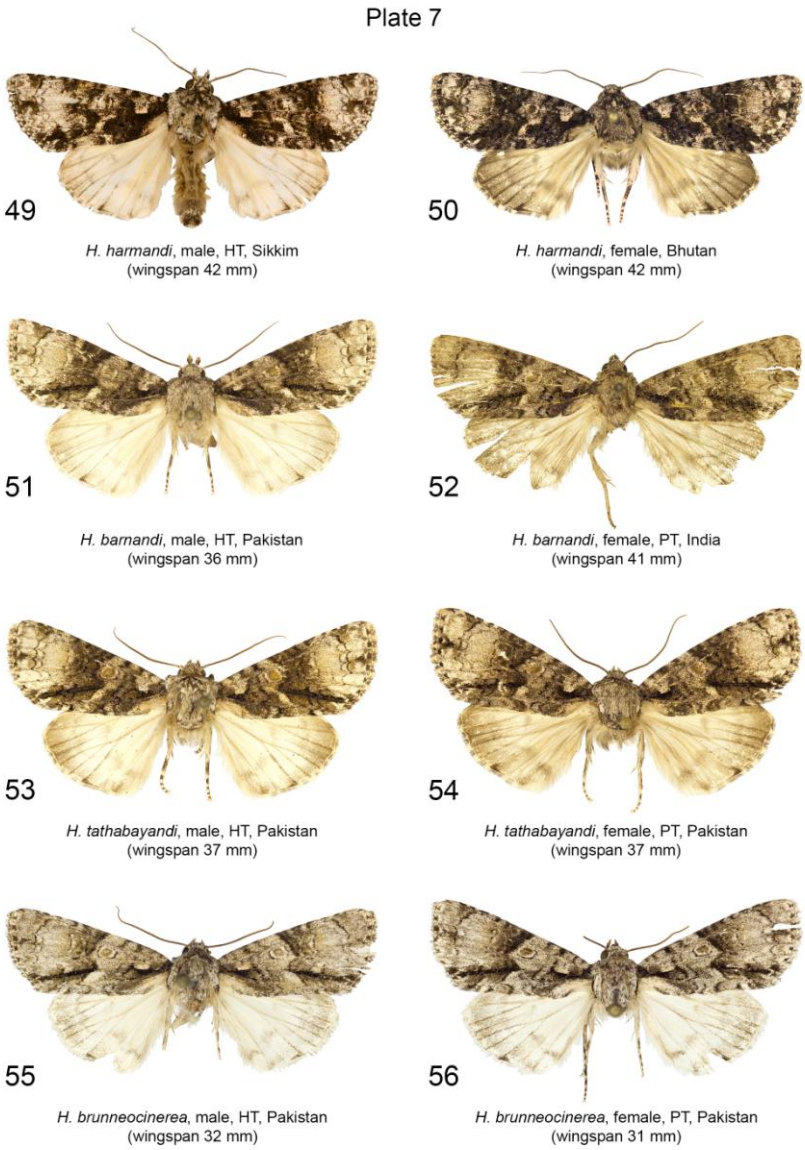


Plate 7. Adults of *Harmandicrania* spp. 49. *H. harmandi*, male, HT (coll. and photo MNHN); **50.** *H. harmandi*, female, slide No.: KA1115f (coll. OP); **51.** *H. barnandi*, male, HT, slide No.: KA1117m (coll. GyF); **52.** *H. barnandi*, female, PT, slide No.: KA495f (coll. HNHM); **53.** *H. tathabayandi*, male, HT, slide No.: KA381m (coll. GR); **54.** *H. tathabayandi*, female, PT, slide No.: KA380f (coll. GR); **55.** *H. brunneocinerea*, male, HT, slide No.: KA1111m (coll. GR); **56.** *H. brunneocinerea*, female, PT, slide No.: KA1022f (coll. HNHM). Not scaled. (KISS 2017)

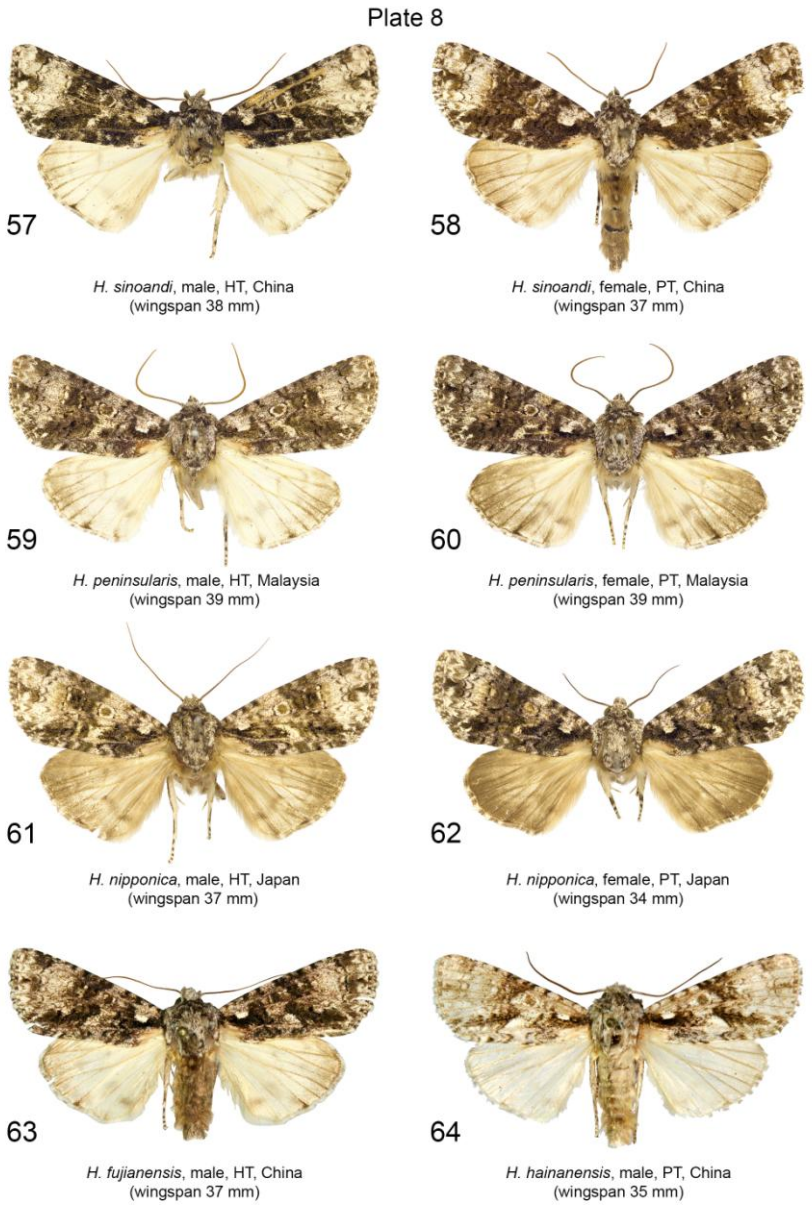


Plate 8. Adults of *Harmandicrania* spp. 57. *H. sinoandi*, male, HT, slide No.: KA386m (coll. GR); **58.** *H. sinoandi*, female, PT, slide No.: KA1218f (coll. ZFMK); **59.** *H. peninsularis*, male, HT, slide No.: KA928m (coll. NSMT); **60.** *H. peninsularis*, female, PT, slide No.: KA929f (coll. NSMT); **61.** *H. nipponica*, male, HT, slide No.: KA927m (coll. NSMT); **62.** *H. nipponica*, female, PT, slide No.: KA924f (coll. NSMT); **63.** *H. fujianensis*, male, HT, slide No.: PGy3207 (coll. and photo PGy); **64.** *H. hainanensis*, male, PT, slide No.: PGy3209 (coll. GR, photo PGy). Not scaled. (KISS 2017)

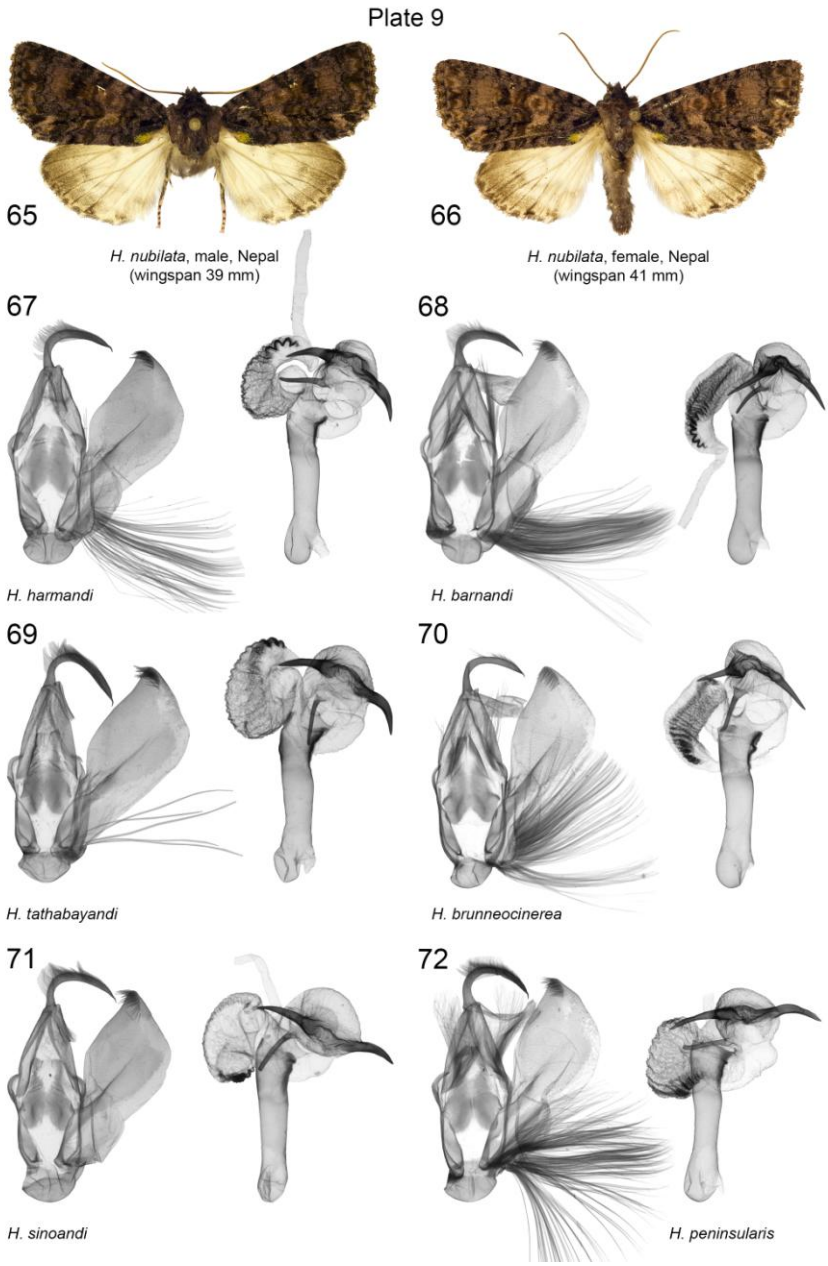


Plate 9. Adults and male genitalia of *Harmandicrania* spp. 65. *H. nubilata*, male, slide No.: KA070m (coll. HNHM); **66.** *H. nubilata*, female, slide No.: KA1455f (coll. ZSM); **67.** *H. harmandi*, valva, Nepal, slide No.: KA138m (coll. HNHM); vesica, Bhutan, slide No.: KA1116m (coll. OP); **68.** *H. barnandi*, valva, vesica, HT, Pakistan, slide No.: KA1117m (coll. GyF); **69.** *H. tathabayandi*, valva, vesica, HT, Pakistan, slide No.: KA381m (coll. GR); **70.** *H. brunneocinerea*, valva, vesica, HT, Pakistan, slide No.: KA1111m (coll. GR); **71.** *H. sinoandi*, valva, vesica, HT, China, slide No.: KA386m (coll. GR); **72.** *H. peninsularis*, valva, vesica, HT, Malaysia, slide No.: KA928m (coll. NSMT). Not scaled. (KISS 2017)

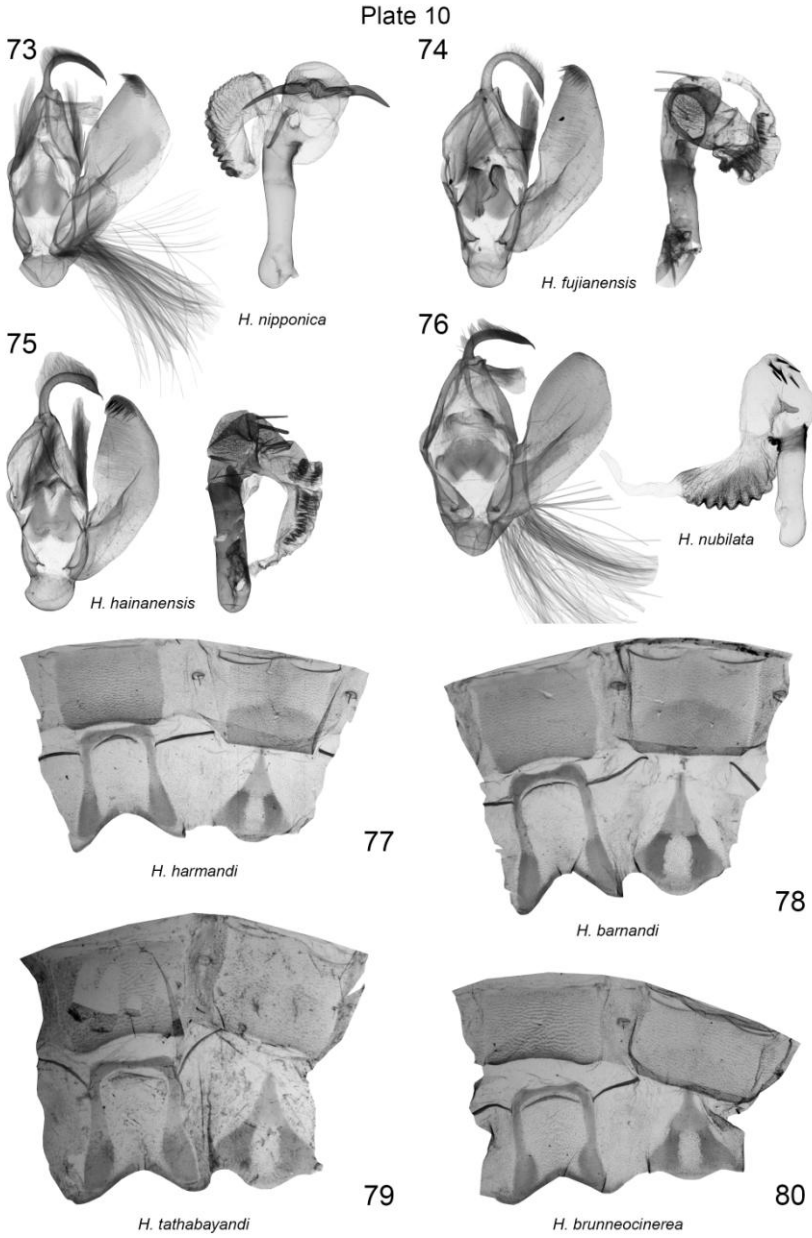


Plate 10. Male genitalia and male 7th, 8th abdominal segments of *Harmandicrania* spp. 73. *H. nipponica*, valva, vesica, HT, Japan, slide No.: KA927m (coll. NSMT); **74.** *H. fujianensis*, valva, vesica, HT, China, slide No.: PGy3207 (coll. PGy); **75.** *H. hainanensis*, valva, vesica, PT, China, slide No.: PGy3209 (coll. GR); **76.** *H. nubilata*, valva, Nepal, slide No.: KA426m (coll. ZSM); vesica, Nepal, slide No.: KA069m (coll. HNHM); **77.** *H. harmandi*, Bhutan, slide No.: KA1116m (coll. OP); **78.** *H. barnandi*, HT, Pakistan, slide No.: KA1117m (coll. GyF); **79.** *H. tathabayandi*, PT, Pakistan, slide No.: KA379m (coll. GR); **80.** *H. brunneocinerea*, PT, Afghanistan, slide No.: KA1442m (coll. ZSM). Left side sternite, right side tergite. Not scaled. (KISS 2017)

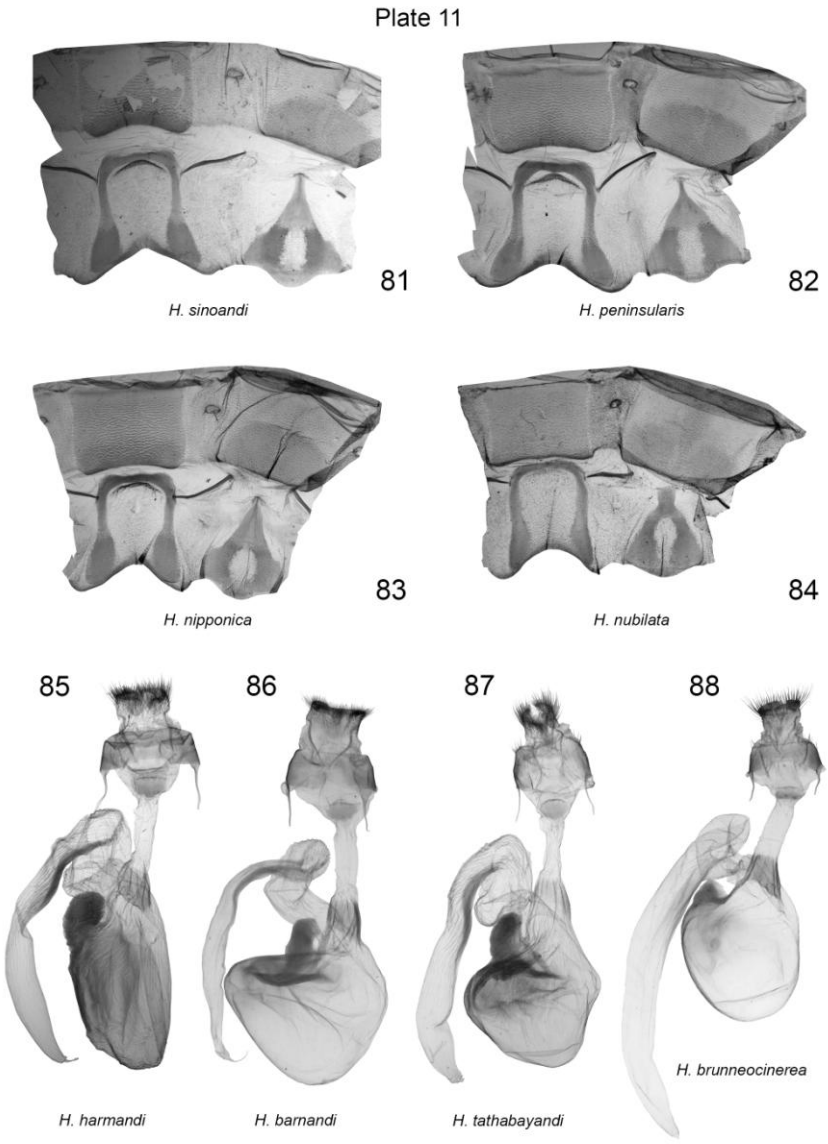


Plate 11. Male 7th, 8th abdominal segments and female genitalia of *Harmandicrania* spp. 81. *H. sinoandi*, HT, China, slide No.: KA386m (coll. GR); **82.** *H. peninsularis*, HT, Malaysia, slide No.: KA928m (coll. NSMT); **83.** *H. nipponica*, HT, Japan, slide No.: KA927m (coll. NSMT); **84.** *H. nubilata*, Nepal, slide No.: KA1457m (coll. ZSM); **85.** *H. harmandi*, Nepal, slide No.: KA139f (coll. HNHM); **86.** *H. barnandi*, PT, India, slide No.: KA495f (coll. HNHM); **87.** *H. tathabayandi*, PT, Pakistan, slide No.: KA380f (coll. GR); **88.** *H. brunneocinerea*, PT, Pakistan, slide No.: KA1022f (coll. HNHM). Left side sternite, right side tergite. Not scaled. (KISS 2017)

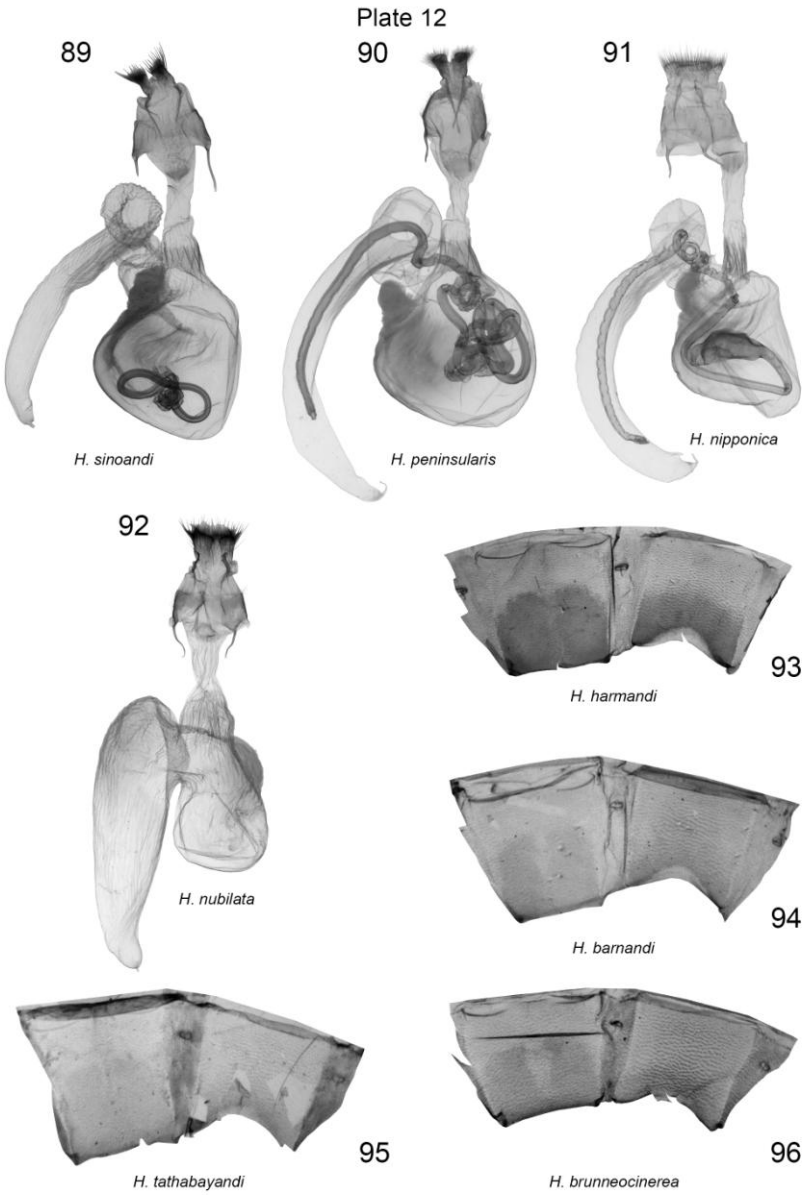


Plate 12. Female genitalia and female 7th abdominal segments of *Harmandicrania* spp. 89. *H. sinoandi*, PT, China, slide No.: KA1218f (coll. ZFMK); **90.** *H. peninsularis*, PT, Malaysia, slide No.: KA929f (coll. NSMT); **91.** *H. nipponica*, PT, Japan, slide No.: KA924f (coll. NSMT); **92.** *H. nubilata*, Nepal, slide No.: KA1455f (coll. ZSM); **93.** *H. harmandi*, Bhutan, slide No.: KA1115f (coll. OP); **94.** *H. barnandi*, PT, India, slide No.: KA495f (coll. HNHM); **95.** *H. tathabayandi*, PT, Pakistan, slide No.: KA380f (coll. GR); **96.** *H. brunneocinerea*, PT, Pakistan, slide No.: KA1022f (coll. HNHM). Left side tergite, right side sternite. Not scaled. (KISS 2017)

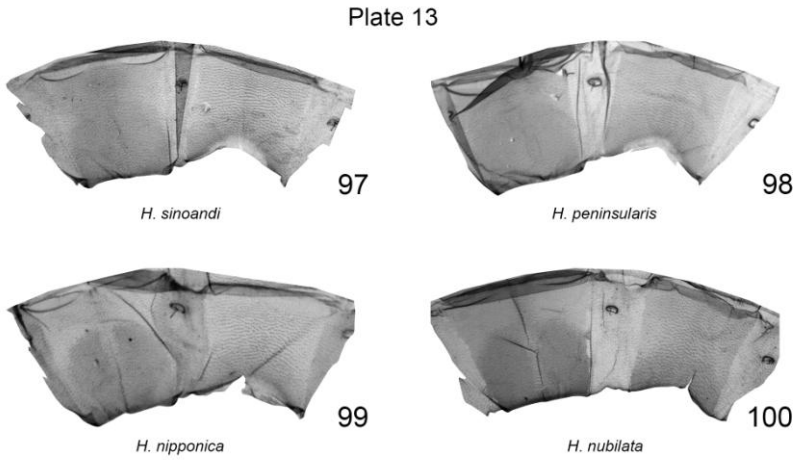


Plate 13. Female 7th abdominal segments of *Harmandicrania* spp. 97. *H. sinoandi*, PT, China, slide No.: KA1218f (coll. ZFMK); **98.** *H. peninsularis*, PT, Malaysia, slide No.: KA929f (coll. NSMT); **99.** *H. nipponica*, PT, Japan, slide No.: KA924f (coll. NSMT); **100.** *H. nubilata*, Nepal, slide No.: KA1455f (coll. ZSM). Left side tergite, right side sternite. Not scaled. (KISS 2017)

Genus ***Graesericrania*** Kiss, 2017
(Pl. 14)

Graesericrania Kiss, 2017, *Zootaxa* **4355**(1): 39. Type species: *Acronycta praeclara* Graeser, 1890, *Berliner Entomologische Zeitschrift* **35**: 74, by original designation by monotypy.

Diagnosis. The genus *Graesericrania* contains only one species which is externally very similar to *Craniophora ligustri* and *Harmandicrania* species. The distinctive external characters are the more contrasting and angular basal streak; the split tornal streak; the rather line-like, greyish suprabasal spot; the much extended subbasal spot with greenish-yellowish scales; the somewhat larger, somewhat pronounced claviform spot; the comma-like white spot, next to the Cu_2 vein and the whitish edge of patagia comparing to *Harmandicrania*; and the conspicuously distinct subterminal field and subterminal line.

In the male genitalia, the uncus of *Graesericrania* is shorter and stronger than in *Harmandicrania*, strongly curved; valvae elongated, more sclerotized and apically pointed, dorsally curved having smaller patch of corona compared to *Harmandicrania*; the medial sclerite is more sclerotized, finely protruded, terminally with a sclerotized bulb; the vesica is rather short, basally globular, terminally tubular, evenly tapering without any cornuti.

The lateral sides of the pot-shaped 8th sternite are slightly divergent from each other, distally slightly bulb-like, more elongated, inner section gradually fading; posterior abdominal brush reduced, the pocket is substituted by a thin, long, dotted stripe. The 8th tergite is more triangular; the shape of the sclerotization of the distal half and around the "window" are "Ω"-like.

The female genitalia of *Graesericrania* differ from those of the other related genera by the funnel-shaped antrum which is connected with the ovipositor by a conspicuous fracture, the long and soft ductus bursae with smaller tubular part distally and a more pronounced sac-like part and the laterally positioned and wider junction of ductus bursae to the simple, elongated appendix-corpus bursae complex. Corpus bursae is more pronounced than appendix bursae.

The female 7th sternite is rather quadrangular; the lateral sides are slightly concave; the distal edge is strongly concave, semi-circular. The 7th tergite is quadrangular, much longer than wider; its lateral sides parallel.

Graesericrania praeclara (Graeser, 1890)
(Pl. 14: 101–106)

Acronycta praeclara Graeser, 1890, *Berliner Entomologische Zeitschrift* **35**: 74. Type-locality: Russia, Primorsky Krai, Sidemi and Raddefka. Syntypes: male and females, in coll. MfN and ZISP.

Diagnosis. The diagnosis of *G. praeclara* is given in detail in the diagnosis of the genus *Graesericrania*.

Distribution. Eastern Palaearctic (Japan, Korean Peninsula, Russian Far East)

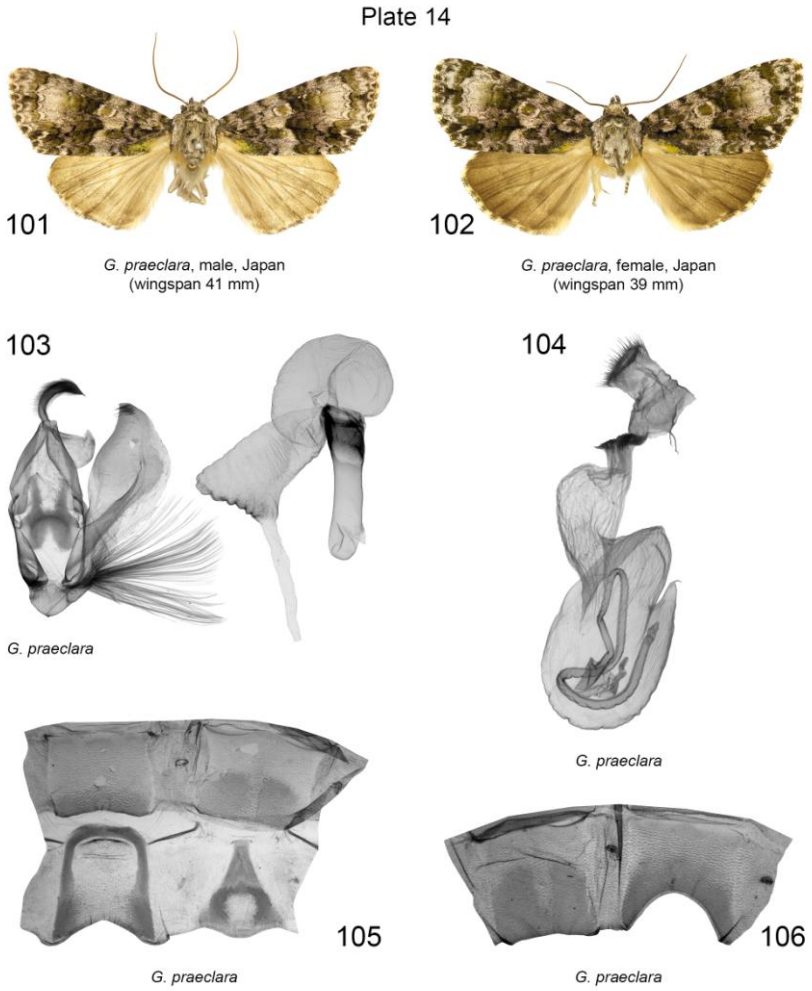


Plate 14. Adults, male and female genitalia, male 7th, 8th and female 7th abdominal segments of *Graesericrania*. 101. *G. praeclara*, male, slide No.: KA930m (coll. NSMT); **102.** *G. praeclara*, female, slide No.: MV 18 793 (coll. NHMW); **103.** *G. praeclara*, valva, Japan, slide No.: KA052m (coll. HNHM); vesica, Russian, Primorsky Krai, slide No.: KA152m (coll. HNHM); **104.** *G. praeclara*, Japan, slide No.: KA934f (coll. NSMT); **105.** *G. praeclara*, Japan, slide No.: KA932m (coll. NSMT); **106.** *G. praeclara*, Japan, slide No.: KA933f (coll. NSMT). Male abdominal segments: left side sternite, right side tergite. Female abdominal segments: left side tergite, right side sternite. Not scaled. (KISS 2017)

Genus ***Eurypterocrania*** Kiss, 2017

(Pls 15, 16)

Eurypterocrania Kiss, 2017, *Zootaxa* **4355**(1): 42. Type species: *Craniophora jactans* Draudt, 1937, *Entomologische Rundschau* **54**: 376, pl. 4: fig. 1d, by original designation.

Diagnosis. *Eurypterocrania* externally is close to the species of the genera *Harmandicrania* and *Graesericrania*, however, they are separable by some unique external characters, such as the shorter but wider forewing; the more or less pure white, thinner suprabasal patch with an irregular line between the subbasal line and basal streak; the wider, whitish subbasal patch; the larger, more regular orbicular spot; the more expressed reniform spot filled with more white scales; the wider, comma-like white dash next to the Cu_2 vein; the rather narrow outer part of medial field; and the slightly triangular hindwing.

The male genitalia of *Eurypterocrania* differ from those of the related genera by the wider, shorter juxta with thin cleft at the distal end; narrow, curved, elongated valvae with concave edge at the tip or more or less rounded tip; short, wide, wedge-shaped carina; tubular, wide, strongly curved vesica with three, strongly sclerotized and one softer cornuti subbasally or without cornuti; distal part of the vesica covered either by numerous, small, spine-like setae in a long and relatively wide stripe or by small, spinulose structures on the surface of the strongly rugulose part.

The male 8^{th} sternite is more quadrangular than in *Harmandicrania* and *Graesericrania*, the lateral sides are parallel; the "window" is more quadrangular with smaller, forked distal end; and the posterior abdominal brush is completely reduced. The 8^{th} tergite is wider, "Ω"-shaped; the "window" is vertically elongated, "Ω"-shaped.

The female genitalia are only known in *E. jactans*. The ductus bursae is evenly weakly sclerotized, proximally widening; the corpus bursae and appendix bursae are fused into a common structure in which the corpus bursae appears as a small, sac-like part, while the structure of appendix bursae is more pronounced, medially wide, distally coiled.

In the female 7^{th} sternite, the lateral sides are convex, in the proximal third of the segment pointed; evenly weakly sclerotized without sclerotized band and "window".

Eurypterocrania jactans (Draudt, 1937)

(Pl. 15: 107, 108, 111, 113; Pl. 16: 115, 116)

Craniophora jactans Draudt, 1937, *Entomologische Rundschau* **54**: 376. Type-locality: China, Prov. Yunnan, Li-kiang. Lectotype: male, in coll. ZFMK, designated by KISS (2017).

Diagnosis. *Eurypterocrania jactans* can be distinguished from *E. sichuanensis* by its average larger size; the more uniform, brown ground colour of forewing; the thin or reduced, whitish suprabasal patch; the wider postmedial line; the larger, brown orbicular spot; the longer, comma-like white dash next to the Cu_2 vein; in male, by the whitish hindwing with indistinct marginal band and discal line. In male genitalia, it has rather "V"-shaped saccus; somewhat shorter and thicker uncus; more curved valvae with concave edge at the tip; shorter, medially slightly coiled vesica then tubular without cornuti, distal half covered with numerous, small, spine-like setae in a long and relatively wide stripe. In the male abdominal segments, *E. jactans* has somewhat straighter lateral sides of 7th tergite; parallel lateral sides of 8th sternite with sclerotized part distally; wider and lower 8th tergite with wider "window". The female genitalia are given in the diagnosis of the genus.

Distribution. Central China.

Eurypterocrania sichuanensis (Kiss, Gyulai & Saldaitis, 2013)
(Pl. 15: 109, 110, 112, 114)

Craniophora sichuanensis Kiss, Gyulai & Saldaitis, 2013 in Kiss & Gyulai, *ZooKeys* **353**: 67, figs 4, 11, 12. Type-locality: China, Prov. Sichuan, road Yaan/Kangding, Erlang Shan Mt., 2200 m, Holotype: male, in coll. PGy.

Diagnosis. *Eurypterocrania sichuanensis* can be distinguished from *E. jactans* by its smaller size; more blackish forewing with whitish inner part of medial field and brownish outer part of medial field; the larger, more irregular whitish suprabasal patch; the more conspicuous, blackish claviform spot; the wider, whitish subterminal field; the somewhat slenderer uncus; the more finely curved valvae with more or less rounded tip; the rather wavy vesica armed with one short, stronger cornutus and two, longer, slimmer cornuti in one patch submedially and a softer cornutus closer to the aedeagus; the slightly wavy lateral sides of the 7th tergite; the evenly narrowing lateral sides of the 8th sternite with slender "window"; higher and narrower 8th tergite with narrower "window".

Notes. The female is still unknown.

Distribution. Central China.

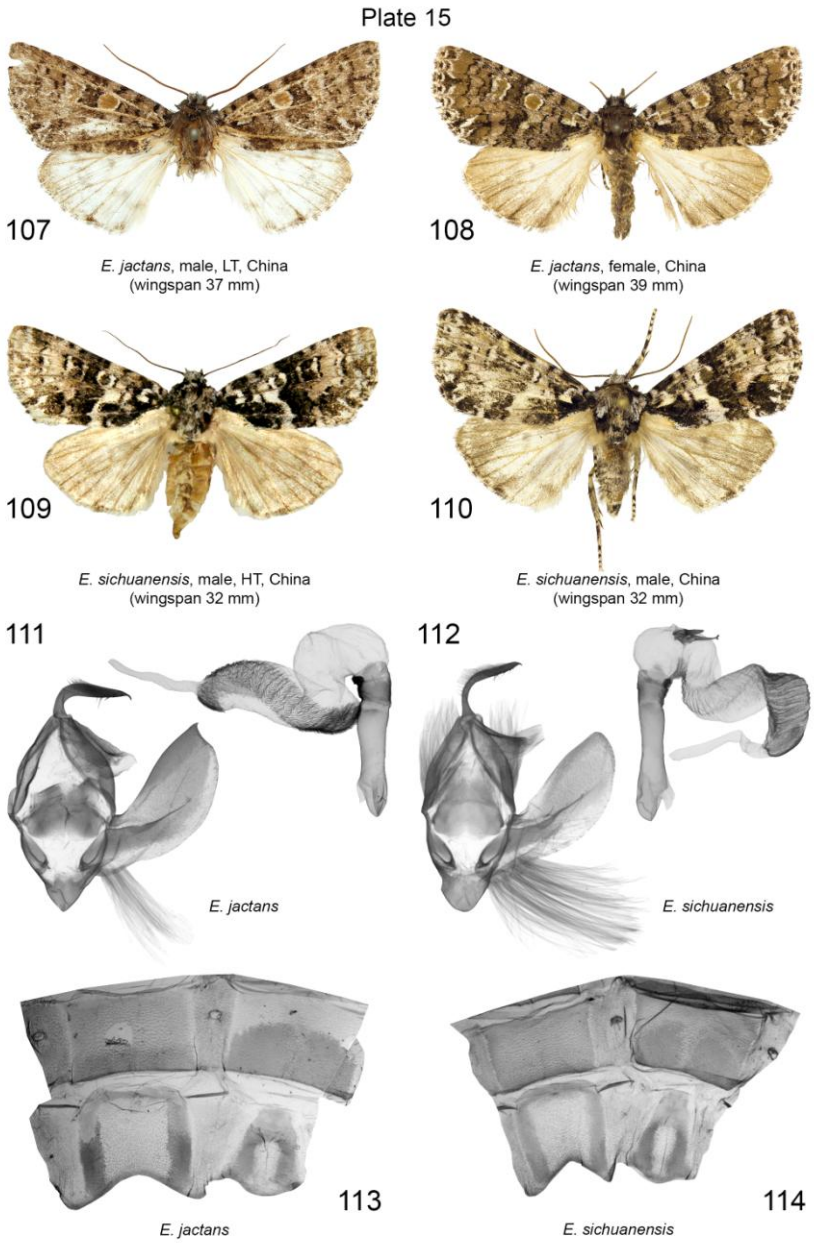


Plate 15. Adults, male genitalia and male 7th, 8th abdominal segments of *Eurypterocrania* spp. 107. *E. jactans*, male, LT, slide No.: ZFMK-Nr. 1860 (coll. and photo ZFMK); **108.** *E. jactans*, female, slide No.: KA1219f (coll. ZFMK); **109.** *E. sichuanensis*, male, HT, slide No.: PGy2883 (coll. and photo PGy); **110.** *E. sichuanensis*, male, slide No.: KA1200m (coll. LS); **111.** *E. jactans*, valva, vesica, China, slide No.: KA365m (coll. PGy); **112.** *E. sichuanensis*, valva, vesica, China, slide No.: KA1200m (coll. LS); **113.** *E. jactans*, China, slide No.: KA365m (coll. PGy); **114.** *E. sichuanensis*, China, slide No.: KA1200m (coll. LS). Left side sternite, right side tergite. Not scaled. (KISS 2017)

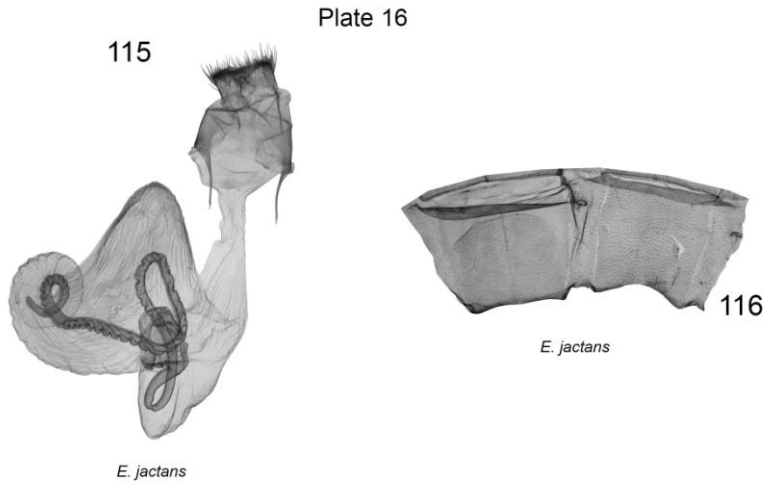


Plate 16. Female genitalia and female 7th abdominal segments of *Eurypterocrania jactans*. 115. *E. jactans*, China, slide No.: KA1219f (coll. ZFMK); **116.** *E. jactans*, China, slide No.: KA1219f (coll. ZFMK). Left side tergite, right side sternite. Not scaled. (KISS 2017)

The *Cycloprora* generic complex

Notes. All genera in this complex can be distinguished from the *Craniophora* generic complex and the other genera by the rather more developed tornal and basal streak; in male genitalia by the apically wider, moderately long uncus; the more weakly sclerotized valvae with two, slightly sclerotized rods and occasionally with some extra androconial apparatus on the outer, costal surface; in the male last abdominal segments, the 7th sternite is slenderer or extremely slender with intended distal edge in the middle; the 7th tergite is more trapezoidal, the distal, stronger part semi-circular or rather quadrangular and angled; the 8th sternite is rather trapezoidal with well-developed, membranous pocket of posterior abdominal brush; the 8th tergite is spatulate; both 8th sternite and tergite are positioned deeply in the weakly sclerotized, membranous intermediate segments.

The sexual dimorphism is manifested in the length of the 3rd segment of the palpus, since in females longer than in males and females have slightly wider forewing. Additionally, in some species, the males have more triangular hindwing with well distinct colouration than in females.

The genus *Megalonycta* has a very similar basic structure of vesica and female genitalia to those of the genus *Berionycta*, although the shape and the sclerotization of the male genital capsule are absolutely different in the two genera. This similarity originates only from the same lock-and-key mechanism of the male vesica during the mating.

Genus ***Cycloprora*** Turner, 1920

(Pl. 17)

Cycloprora Turner, 1920, *Transactions and Proceedings of the Royal Society of South Australia* **44**: 140 [key], 144. Type species: *Prometopus nodyna* Turner, 1904, *Transactions and Proceedings and Report of the Royal Society of South Australia* **28**: 215, by monotypy.

Diagnosis. The type species of this monotypic genus can be distinguished from the externally similar but in genitalia conspicuously different *Draudtinycta tigniumbra* by the shorter, apically obtuse forewing; the curve of the medial line which only reaching the outer edge of the orbicular spot (and not running across); the slightly more rounded hindwing; in females, the 3rd segments of the palpus longer than in males; from *Fascionycta fasciata* by the thinner basal and tornal streak, the more prominent suprabasal patch, the wavy medial line, and the slightly more rounded hindwing; from *Turnerinycta phaeocosma* by the stronger basal streak, the wavy medial line, the tiny, almost absent claviform spot, and the more prominent comma-like white dash next to the Cu_2 vein. The posterior abdominal brush and the valval androconial

apparatus are *in situ* less prominent than in the members of the genera *Fascionycta* and *Turnerinycta*.

The male genitalia differs from its relatives by the shorter uncus; the somewhat more elongated, rounded saccus; the narrower, more rounded ended valvae; the less developed sacculus bearing sparse, thin tuft of long hairs; the moderately long, tubular, medially strongly curved vesica with a tiny diverticulum submedially and a larger medially; the somewhat more rugulose terminal part of vesica with a smaller diverticulum next to the ductus ejaculatorius.

The male 7th sternite differs from that of *Turnerinycta* and *Megalonycta* by its narrower, rather trapezoidal and longer than wide shape of the segment; from *Fascionycta* by the more quadrangular shape of the segment; the less curved lateral sides and slightly curved distal edge. The 7th tergite is more quadrangular; medially the widest than in its relatives. The 8th sternite differs from that of *Fascionycta* and *Megalonycta* by its more trapezoidal shape of the segment; the straighter, distally narrowing and closer lateral sides; from that of *Turnerinycta* by the straighter lateral sides; from all relatives by the single, wide but shallow membranous pocket of posterior abdominal brush. The 8th tergite is more angled, proximally wider than in *Fascionycta* and *Megalonycta* species and less wide than in *Turnerinycta*. The long, thin and sclerotized rods represented between the proximal edge of 8th sternite and tergite somewhat more curved with a tiny, membranous pocket at the end in the tergite.

In the female genitalia, this genus has simpler, proximally gradually widening ductus bursae than in its relatives with slightly ribbed part and a tiny, sac-like diverticulum proximally. The ductus bursae is connected with corpus bursae without sharp distinction. The corpus bursae is a tube-like, slightly widening, weakly sclerotized but the junction to the appendix bursae slightly sclerotized, ribbed structure. The appendix bursae is one and half longer than corpus bursae, tube-like, abruptly narrowing towards the ductus seminalis and ribbed by the junction to the corpus bursae.

The female 7th sternite is more quadrangular than in *Megalonycta* species and slightly more curved than in *Turnerinycta* and *Fascionycta* species. The 7th tergite is slenderer; the lateral sides more curved than in *Fascionycta* and *Turnerinycta*; slightly more curved than in *Megalonycta*.

Distribution. Eastern Australia.

Cycloprora nodyna (Turner, 1904)
(Pl. 17: 117–122)

Prometopus nodyna Turner, 1904, *Transactions of the Royal Society of South Australia* **28**: 215. Type-locality: Australia, Queensland, Brisbane. Holotype: male, in coll. ANIC.

Genus ***Turnerinycta*** Kiss, 2017

(Pl. 18)

Turnerinycta Kiss, 2017, *Zootaxa* **4355**(1): 48. Type species: *Acronycta phaeocosma* Turner, 1920, *Transactions and Proceedings of the Royal Society of South Australia* **44**: 145, by monotypy.

Diagnosis. *Turnerinycta* contains of only one species which is externally very close to *Fascionycta fasciata*, the *Megalonycta* species and, in lesser degree, to *Cycloprora nodyna* and *Draudtinycta tigniumbra*. It can be distinguished from the externally similar relatives by the long, very thin, faint basal streak; the zigzag-shaped medial line, running across or next to the orbicular spot; the tiny, whitish, rounded orbicular spot with blackish, comma-like patch in the outer half; and the greyish-brownish, posterior abdominal brush and valval androconial apparatus less conspicuous.

In the male genitalia, the genital capsule is in general similar to that of the genera *Fascionycta*, *Megalonycta* and especially to *Cycloprora*, the valvae are, however, much more sclerotized; the sacculus is less developed with tuft of very soft, thin, sparse hairs. The aedeagus and the vesica are most similar to those of *Fascionycta malesiae*, but the aedeagus is much shorter, distally tapering; the vesica is more or less tubular, with smaller and larger diverticula medially, the latter is armed with numerous, medium-long cornuti arranged into two fields.

In the male last abdominal segments, *Turnerinycta* has a slightly trapezoidal 7th sternite with proximally convex, then distally concave lateral sides; trapezoidal 7th tergite with rather straight lateral sides; spatulate 8th tergite with widening lateral sides section by section and slightly convex distal edge; a shallower, slightly divided pocket of the posterior abdominal brush which is less developed than in the *Fascionycta* and *Megalonycta* species but is divided comparing to *Cycloprora*.

The female genitalia have a rather unique configuration within the generic complex, being somewhat similar to those of *Fascionycta ardjuna* but while the distal part of the ductus bursae is straight and narrow, the proximal part is gradually widening; the corpus bursae and appendix bursae are fused into a common oval structure without any sharp distinction, in which the appendix bursae appears only as a tiny, curved part.

The female 7th sternite is very similar to those of its relatives, especially to the *Fascionycta* species, but the sclerotized distal part of 7th tergite is slightly more rounded.

Distribution. Eastern Australia

Turnerinycta phaeocosma (Turner, 1920)
(Pl. 18: 123–128)

Acronycta phaeocosma Turner, 1920, *Transactions and Proceedings of the Royal Society of South Australia* **44**: 145. Type-locality: Australia, Queensland, Montville, Blackall Range. Lectotype: male, in coll. ANIC, designated by KISS (2017).

Synonymy.

Euplexia c-album Turner, 1943, *Memoirs of the Queensland Museum* **12**(2): 110. Type-locality: Australia, Queensland, Bunya Mts.

Genus ***Fascionycta*** Kiss, 2017

(Pls 19–21)

Fascionycta Kiss, 2017, *Zootaxa* **4355**(1): 51. Type species: *Hyboma fasciata* Moore, [1884], *The Lepidoptera of Ceylon. Vol.* **3**: 5, pl. 144: fig. 4, by original designation.

Notes. The species externally, in the shape and structure of the male genital capsule are very similar to *Megalonycta* species, however, the basic structure of the male abdominal segments and female genitalia are strikingly different.

Diagnosis. The species of this genus are externally rather homogeneous, except *F. ardjuna* which is externally much closer to *Megalonycta inversa* with its thinner tornal streak and bluish scales in the double postmedial line between M_1 and M_3 veins. The rest of *Fascionycta* species can be distinguished from *Cycloprora* and *Draudtinycta* by the stronger basal- and tornal streak; the zigzag-shaped medial line and the more triangular hindwing of both sexes; from *Megalonycta* and *Turnerinycta* by the stronger basal- and tornal streak connected each other with a short, thinner section; the more triangular, greyish or bone white hindwing of the males, while the females have slightly triangular, brownish hindwing.

The external similarity with *Draudtinycta* is only superficial, the genitalia of the two genera are completely different.

In the male genitalia, the valvae are more weakly sclerotized and sacculus more developed than in *Cycloprora* and *Turnerinycta*; In *F. fasciata* and *F. ardjuna*, there is an additional androconial apparatus on the outer, costal surface of valvae as a tuft of dense hairs, which is absent, however, in the *luteipennis*-group. The vesica is recurved or turned, moderately long, relatively wide or narrow, tubular with two diverticula basally or without them, medially with one small or one or two long, tubular diverticulum armed with two or some strong cornuti basally or/and medially with a few or more longer, finger-like, strong cornuti.

In the male genitalia, the valvae are more weakly sclerotized and sacculus more developed than in *Cycloprora* and *Turnerinycta*; in *F. fasciata* and *F. ardjuna*, there is an additional androconial apparatus on the outer, costal surface of valvae as a tuft of dense hairs, which is absent, however, in the *luteipennis*-group. The vesica is recurved or turned, moderately long, relatively wide or narrow, tubular with two diverticula basally or without them, medially with one small or one or two long, tubular diverticulum, armed with two or some strong cornuti basally or/and medially with a few or more longer, finger-like, strong cornuti.

In the male last abdominal segments, the 7th sternite is the slenderest in the generic complex and the distal edge is indented in the middle. The distal, semi-circular sclerotized part of 7th tergite is stronger, rather separated from the proximal part except in *F. ardjuna* where it is more angular. The lateral sides of 8th sternite are straighter; the pocket of the posterior abdominal brush is split into two parts, well developed. The spatulate proximal part of the 8th tergite is more slender, the distal part is more rounded than in *Cycloprora*, *Turnerinycta* and *Megalonycta*, rather plate-like. The membranous pockets at the base of the two sclerotized rods between the 8th sternite and tergite are more developed in the *luteipennis*- and *ardjuna*-groups than in the other genera of the *Cycloprora* generic complex.

The configuration of the female genitalia is very variable within the genus, but ductus bursae, in average longer with two diverticula or without them. The corpus bursae and appendix bursae are fused into a common structure in which appendix bursae small or larger part of it; or corpus bursae reduced, small, rounded, sac-like structure with short, strait junction to the more pronounced, terminally coiled appendix bursae and possess a diverticulum subterminally; or corpus bursae rather oval, sac-like with a wide transition to the almost equal sized, sac-like appendix bursae.

In the female last abdominal segments, the 7th sternite is similar to that of *Cycloprora* and *Turnerinycta*, and differs from that of *Megalonycta forsteri* by its quadrangular shape and more or less parallel lateral sides.

Distribution. Oriental and Eastern Palaearctic (From Pakistan to Japan and New Guinea).

The ***fasciata*** species-group

Fascionycta fasciata (Moore, [1884])
(Pl. 19: 129, 130; Pl. 20: 137, 141; Pl. 21: 145, 149)
Hyboma fasciata Moore, [1884], *The Lepidoptera of Ceylon. Vol.* **3**: 5, pl. 144: fig. 4. Type-locality: Srí Lanka. Holotype: male, in coll. BMNH.

Synonymy.

Hyboma divisa Moore, 1888, *Proceedings of the Scientific Meetings of the Zoological Society of London*: 409. Type-locality: India, Himachal Pradesh, Kangra district, Dharmsala.

Acronycta nigrostriata Pagenstecher, 1888, *Jahrbücher des Nassauischen Vereins für Naturkunde* **41**: 128. Type-locality: Indonesia, Amboina [Ambon Island].

The ***luteipennis*** species-group

Fascionycta luteipennis (Warren, 1913)

(Pl. 19: 131, 132; Pl. 20: 138, 142; Pl. 21: 146, 150)

Acronicta fasciata ab. *luteipennis* Warren, 1913, *Die Gross-Schmetterlinge der Erde* **2**: 38, fig. 5e, f. Type-locality: India, Assam, Khasia Hills. Lectotype: male, in coll. BMNH, designated by KISS (2017).

Fascionycta malesiae (Holloway, 1989)

(Pl. 19: 133, 134; Pl. 20: 139; Pl. 21: 143, 147, 151)

Craniophora malesiae Holloway, 1989, *The Moths of Borneo, Family Noctuidae, trifine subfamilies: Noctuinae, Heliothina, Hadeninae, Acronictinae, Amphipyrinae, Agaristinae, Part* **12**: 105. Type-locality: Brunei, Ulu Temburong rainforest. Holotype: male, in coll. BMNH.

Synonymy.

Craniophora fasciata Holloway, 1976, *Moths of Borneo with special reference to Mount Kinabalu*: 13 nec Moore [1884], misidentification.

The ***ardjuna*** species-group

Fascionycta ardjuna (Roepke, 1941)

(Pl. 19: 135, 136; Pl. 20: 140; Pl. 21: 144, 148, 152)

Acronycta ardjuna Roepke, 1941, *Zoologische Mededelingen* **23**(2): 13, pl. 2: fig. 5. Type-locality: Indonesia, East-Java, Ardjuna, Djunggo. Lectotype: male, in. coll. RMNH, designated by KISS (2017).

Genus ***Megalonycta*** Viette, 1965

(Pls 22, 23)

Megalonycta Viette, 1965, *Bulletin de la Société entomologique de France* **70**: 86. Type species: *Acronycta mediovitta* Rothschild, 1924, *Annals and Magazine of Natural History* **14**(9): 312; by original designation.

Diagnosis. The species of this genus externally can be distinguished from *Fascionycta* by the more uniformly coloured forewing; the thinner, occasionally almost deleted basal line; the thinner tornal streak; the wider gap between basal and tornal streaks; the less triangular hindwing of males; from *Turnerinycta* by the somewhat thicker basal and tornal streaks; the medial line just reach the orbicular spot. The sexual dimorphism is manifested in the length of the 3rd

segment of the palpus, which is longer in the females than in the males; in addition, the females have slightly wider forewings. The external similarity with *Draudtinycta* is only superficial, the genitalia of the two genera are strikingly different.

In the male genitalia, the species of *Megalonycta* have slightly slenderer uncus; dorsally positioned and longer carina or unspecialised; in average shorter vesica but more complex, with long diverticulum medially, armed with patches and stripes of small, spinulose structures on its surface.

In the male last abdominal segments, the 7th sternite differs from those of *Fascionycta* by the less slenderer shape of the segment; the more or less straighter distal edge; the distal part of 7th tergite is less sclerotized and angled than in *Fascionycta* and *Turnerinycta*, but more trapezoidal than in *Cycloprora* and *Turnerinycta*; the 8th sternite is rather shield-shaped, lateral sides are more wavy than in its relatives; posterior abdominal brush is more developed than in *Cycloprora* and *Turnerinycta*; the distal part of 8th tergite is wider and the distal edge is more protruding in the middle section than in its relatives.

The female genitalia differ from all relatives by the shorter ductus bursae; the proximally more globular corpus bursae with a widening distal part at the junction to ductus bursae; the pronounced, larger, bulb-like and more ribbed appendix bursae.

The female 7th sternite is distally much wider and the semi-circular, distal part is slightly more sclerotized; the 7th tergite is slightly narrower than in its relatives.

Distribution. Africa and Madagascar.

Megalonycta mediovitta (Rothschild, 1924)
(Pl. 22: 153, 159; Pl. 23: 162)

Acronycta mediovitta Rothschild, 1924, *Annals and Magazine of Natural History* **14**(9): 312. Type-locality: Madagascar, Diego Suarez. Lectotype: male, in coll. BMNH, designated by VIETTE (1965).

Synonymy.

Thalatha waterloti Boursin, 1928, *Encyclopèdie entomologique. Series B. Mèmoires et notes. III. Lepidoptera. Recueil d'études biologiques et systématiques sur les lepidoptères du globe* **3**(2): 57, pl. 4: fig. 6. Type-locality: Madagascar Central, Tananarive-Résidence.

Megalonycta adelphica (Prout, 1927)
(Pl. 22: 154)

Craniophora adelphica Prout, 1927, *Transactions of the Royal Entomological Society of London* **75**: 206. Type-locality: São Tomé & Principe, São Tomé. Lectotype: male, in coll. BMNH, designated by KISS (2017).

Megalonycta forsteri Laporte, 1979
(Pl. 22: 155, 156, 160; Pl. 23: 163, 165, 166)
Megalonycta forsteri Laporte, 1979, *Spixiana* **2**(2): 109, fig. 5. Type-locality: Tanzania, Bukoba. Holotype: male, in coll. ZSM.

Megalonycta inversa (Gaede, 1915)
(Pl. 22: 157; Pl. 23: 161, 164)
Craniophora paragrapha var. *inversa* Gaede, 1915, *Deutsche entomologische Zeitschrift Iris herausgegeben vom Entomologischen Verein Iris zu Dresden* **29**: 109. Type-locality: Tanzania, Mtai. Holotype: male, in. coll. MfN.

Megalonycta paragrapha (Felder, 1868)
(Pl. 22: 158)
Acronycta paragrapha Felder R., 1868 in Felder, Felder & Rogenhofer, *Reise der österreichischen Fregatte Novara um die Erde in den Jahren 1857, 1858, 1859. Zoologischer Theil, Zweiter Band, Zweite Abtheilung, Lepidoptera, Atlas*: pl. 100: fig. 8. Type-locality: South Africa, Western Cape, Knysna. Holotype: female, in coll. BMNH.

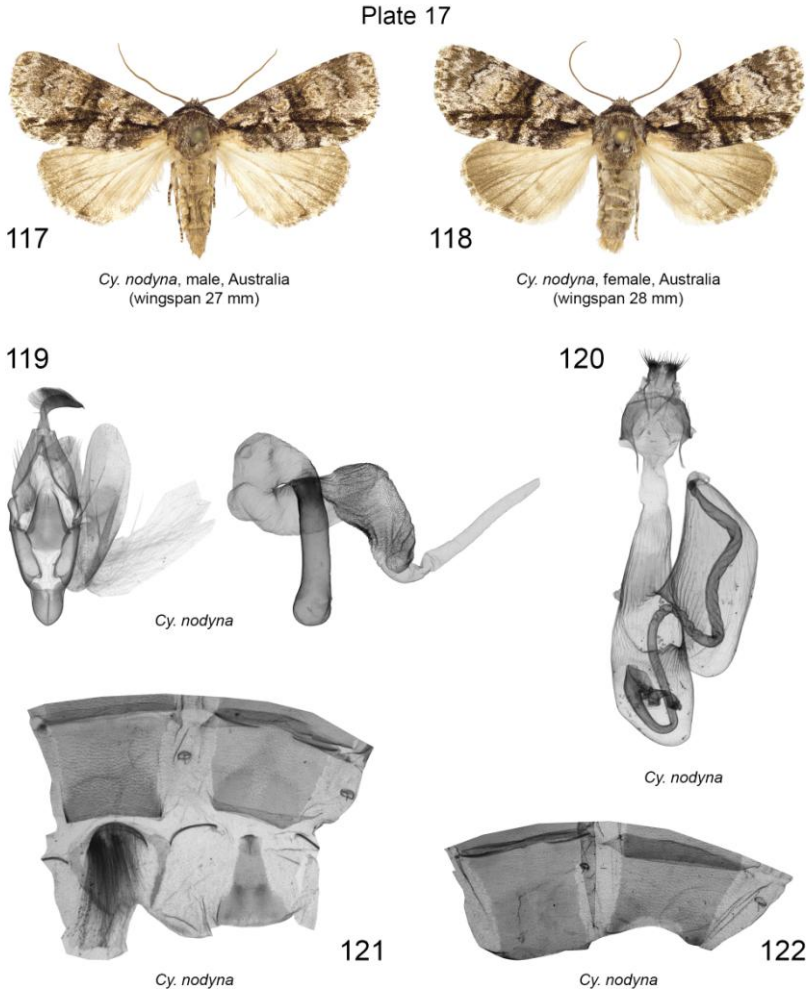


Plate 17. Adults, male and female genitalia, male 7th, 8th and female 7th abdominal segments of *Cycloprora nodyna*. 117. *Cy. nodyna*, male, slide No.: KA1314m (coll. EF); **118.** *Cy. nodyna*, female, slide No.: KA1315f (coll. EF); **119.** *Cy. nodyna*, Australia, slide No.: KA1314m (coll. EF); **120.** *Cy. nodyna*, Australia, slide No.: KA1315f (coll. EF); **121.** *Cy. nodyna*, Australia, slide No.: KA1313m (coll. EF); **122.** *Cy. nodyna*, Australia, slide No.: KA1315f (coll. EF). Male abdominal segments: left side sternite, right side tergite. Female abdominal segments: left side tergite, right side sternite. Not scaled. (KISS 2017)

Plate 18

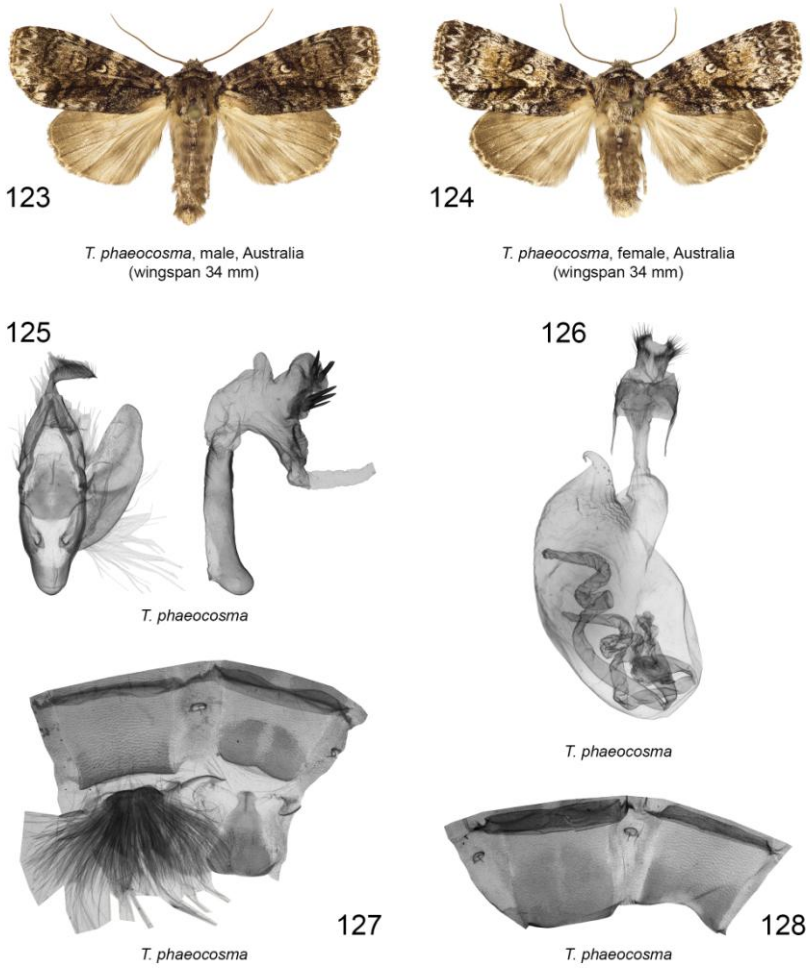


Plate 18. Adults, male and female genitalia, male 7th, 8th and female 7th abdominal segments of *Turnerinycta phaeocosma*. 123. *T. phaeocosma*, male, slide No.: KA1329m (coll. EF); **124.** *T. phaeocosma*, female, slide No.: KA1330f (coll. EF); **125.** *T. phaeocosma*, Australia, slide No.: KA1329m (coll. EF); **126.** *T. phaeocosma*, Australia, slide No.: KA1330f (coll. EF); **127.** *T. phaeocosma*, Australia, slide No.: KA1329m (coll. EF); **128.** *T. phaeocosma*, Australia, slide No.: KA1331f (coll. EF). Male abdominal segments: left side sternite, right side tergite. Female abdominal segments: left side tergite, right side sternite. Not scaled. (KISS 2017)

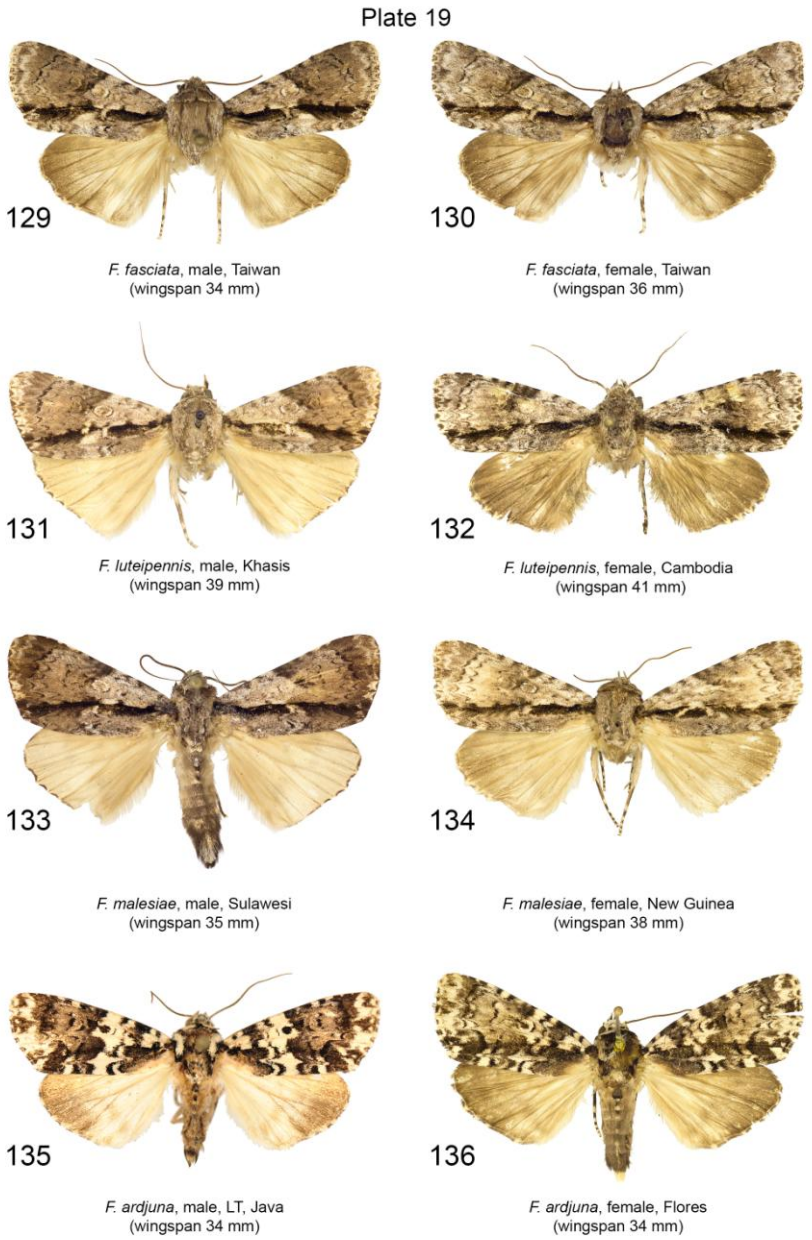


Plate 19. Adults of *Fascionycta* spp. 129. *F. fasciata*, male, slide No.: KA064m (coll. HNHM); **130.** *F. fasciata*, female, slide No.: KA063f (coll. HNHM); **131.** *F. luteipennis*, male, slide No.: KA621m (coll. MSNM); **132.** *F. luteipennis*, female, slide No.: KA1001f (coll. ZSM); **133.** *F. malesiae*, male, slide No.: KA1427m (coll. GB); **134.** *F. malesiae*, female, slide No.: KA1008f (coll. ZSM); **135.** *F. ardjuna*, male, LT, slide No.: INS967307 (coll. and photo RMNH); **136.** *F. ardjuna*, female, slide No.: KA1354f (coll. RMNH). Not scaled. (KISS 2017)

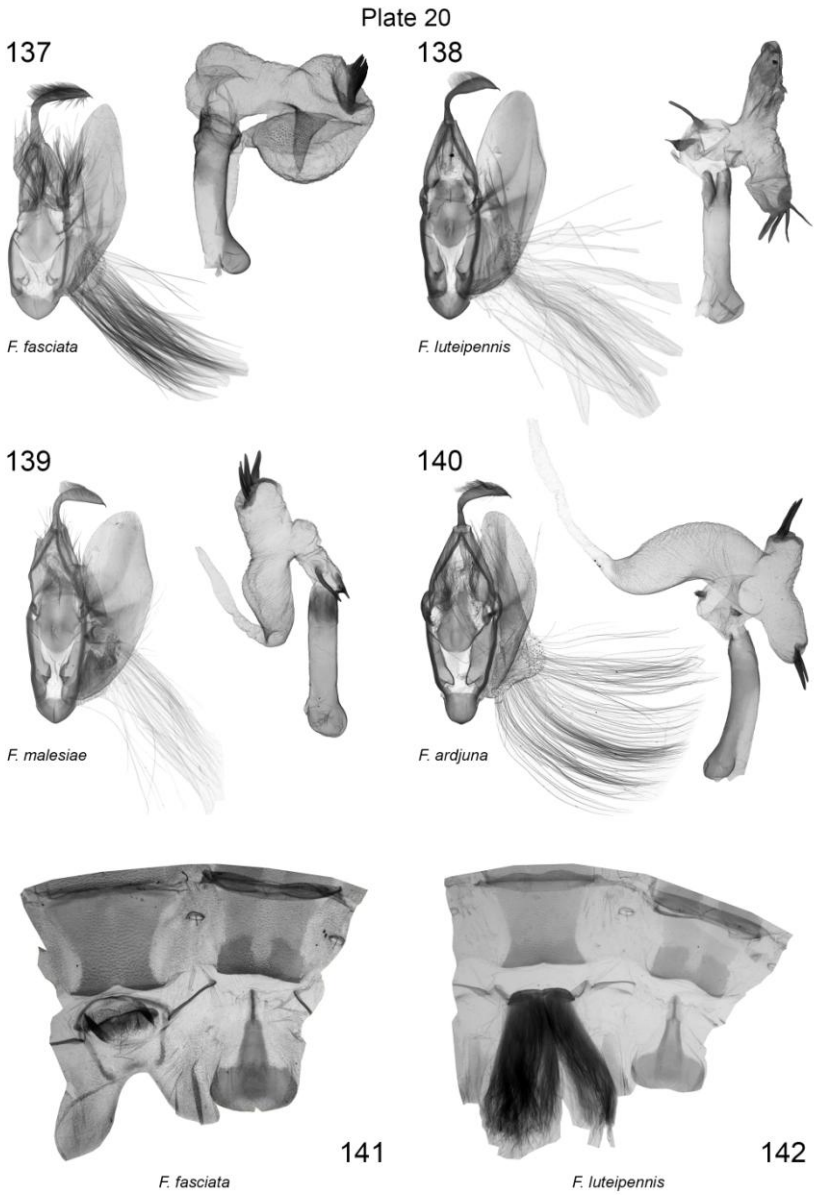


Plate 20. Male genitalia and male 7th, 8th abdominal segments of *Fascionycta* spp. 137. *F. fasciata*, valva, Pakistan, slide No.: KA1033m (coll. HNHM); vesica, Pakistan, slide No.: KA1036m (coll. HNHM); **138.** *F. luteipennis*, valva, vesica, Khasis, slide No.: KA621m (coll. MSNM); **139.** *F. malesiae*, valva, Papua New Guinea, slide No.: KA998m (coll. ZSM); vesica, Philippines, slide No.: KA191m (coll. HNHM); **140.** *F. ardjuna*, valva, vesica, LT, Indonesia, slide No.: INS967307 (coll. and photo RMNH); **141.** *F. fasciata*, Pakistan, slide No.: KA1061m (coll. HNHM); **142.** *F. luteipennis*, Khasis, slide No.: KA621m (coll. MSNM). Left side sternite, right side tergite. Not scaled. (KISS 2017)

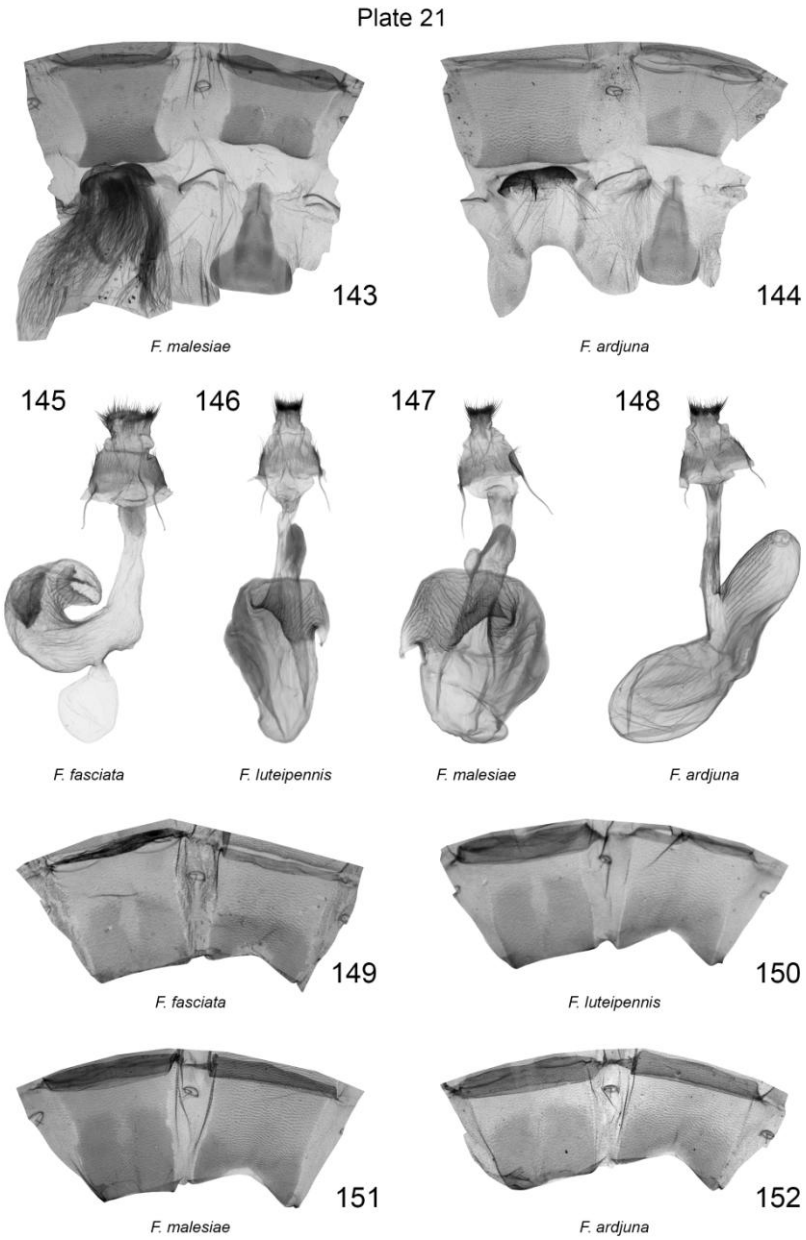


Plate 21. Male 7th, 8th and female 7th abdominal segments and female genitalia of *Fascionycta* spp. 143. *F. malesiae*, Indonesia, slide No.: KA1340m (coll. RMNH); **144.** *F. ardjuna*, Indonesia, slide No.: KA1353m (coll. RMNH); **145.** *F. fasciata*, Pakistan, slide No.: KA1059f (coll. HNHM); **146.** *F. luteipennis*, Cambodia, slide No.: KA1001f (coll. ZSM); **147.** *F. malesiae*, Papua New Guinea, slide No.: KA1008f (coll. ZSM); **148.** *F. ardjuna*, Indonesia, slide No.: KA1354f (coll. RMNH); **149.** *F. fasciata*, Pakistan, slide No.: KA1059f (coll. HNHM); **150.** *F. luteipennis*, Cambodia, slide No.: KA1001f (coll. ZSM); **151.** *F. malesiae*, Indonesia, slide No.: KA1352f (coll. RMNH); **152.** *F. ardjuna*, Indonesia, slide No.: KA1354f

(coll. RMNH). Male abdominal segments: left side sternite, right side tergite. Female abdominal segments: left side tergite, right side sternite. Not scaled. (KISS 2017)

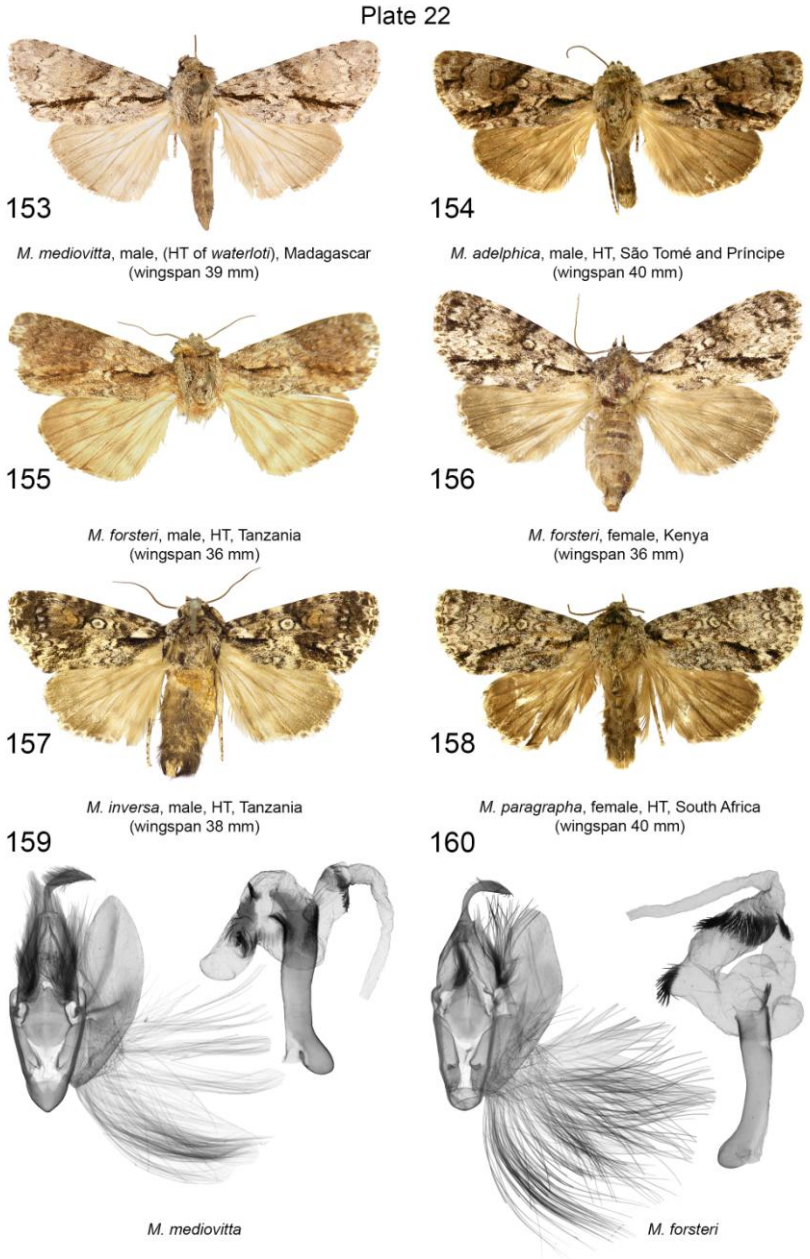


Plate 22. Adults and male genitalia of *Megalonycta* spp. 153. *M. mediovitta*, male, HT of *waterloti* (coll. and photo MNHN); **154.** *M. adelphica*, male, HT (coll. and photo BMNH); **155.** *M. forsteri*, male, HT, slide No.: N1552 (coll. and photo ZSM); **156.** *M. forsteri*, female, slide No.: KA1415f (coll. GB); **157.** *M. inversa*, HT, slide No.: KA1471m (coll. MfN); **158.** *M. paragrapha*, female, HT (coll. and photo BMNH); **159.** *M. mediovitta*, valva, vesica, Madagascar, slide No.: KA1519m (coll. ANHRT); **160.** *M. forsteri*, valva, Ethiopia, slide No.:

KA1416m (coll. GB); vesica, Ethiopia, slide No.: KA895m (coll. ZMUC). Not scaled. (KISS 2017)

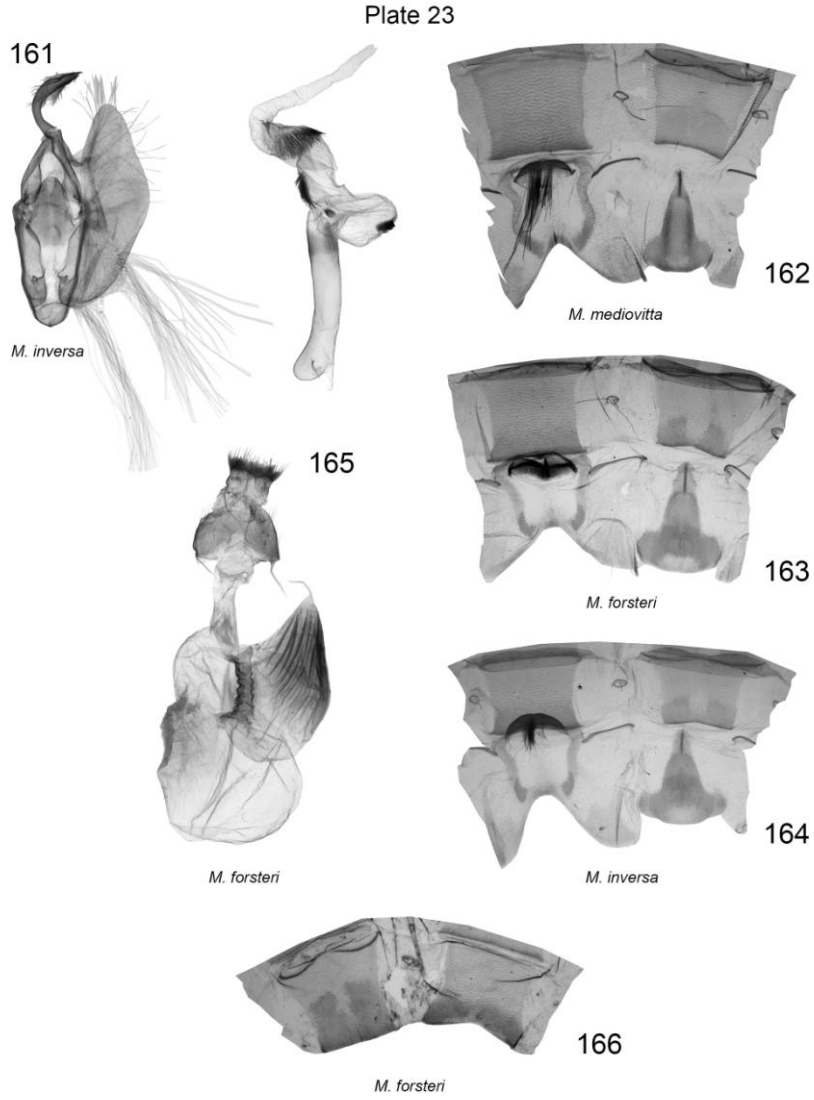


Plate 23. Male and female genitalia, male 7th, 8th and female 7th abdominal segments of *Megalonycta* spp. 161. *M. inversa*, valva, vesica, HT, Tanzania, slide No.: KA1471m (coll. MfN); **162.** *M. mediovitta*, Madagascar, slide No.: KA1519m (coll. ANHRT); **163.** *M. forsteri*, Ethiopia, slide No.: KA1416m (coll. GB); **164.** *M. inversa*, HT, Tanzania, slide No.: KA1471m (coll. MfN); **165.** *M. forsteri*, Kenya, slide No.: KA1415f (coll. GB); **166.** *M. forsteri*, Kenya, slide No.: KA1415f (coll. GB). Male abdominal segments: left side sternite, right side tergite. Female abdominal segments: left side tergite, right side sternite. Not scaled. (KISS 2017)

Genera and species separated from the *Craniophora* and *Cycloprora* generic complex

Notes. The following genera have more certain unique characters, which extend the terms of Acronictinae. The genus *Berionycta* has a very similar basic structure of vesica and female genitalia to the genus *Megalonycta*, this similarity is, however, originated from the same lock-and-key mechanism during the mating. The genera *Draudtinycta*, *Sinonycta*, and *Miracopa* look like closer to the genus *Cranionycta* than any other *Craniophora* s. l., and *Megalonycta* or even *Acronicta*.

Genus ***Berionycta*** Kiss, 2017

(Pls 24–28)

Berionycta Kiss, 2017, *Zootaxa* **4355**(1): 61. Type species: *Craniophora hemileuca* Berio, 1943, *Annali del Museo Civico di Storia Naturale Giacomo Doria* **61**: 186, by original designation.

Diagnosis. The externally rather uniform or melanistic species of this genus have been treated so far as *Craniophora* due to the high external similarity (especially to *C. pontica*). Externally the species of *Berionycta* differ from *Craniophora* by their average smaller size; the slightly wider, and apically somewhat more pointed forewing; the more oval, occasionally more or less reduced orbicular spot with wider whitish circle in the middle; the longer, thinner whitish line (not comma-like) next to the Cu_2 vein; the tornal patch on the hindwing rather spot-like or line-like along terminal line; in female, the 3rd segment of the palpus longer than in those of *Craniophora* and of the congeneric males.

The male genitalia differ from those of *Craniophora* by the shorter, wider, sparsely haired uncus; the elongated, apically pointed saccus; the much shorter, basally wider, strongly sclerotized valvae with wavy or rather straight, strongly sclerotized sclerite; the well-developed clavus; the simple, well sclerotized sacculus with lack of sac-like extension and the dense, tuft of hairs; the distally widening aedeagus with or without strong, comb-like carina, in the latter case a strong cornuti field can be found submedially or basally on the vesica; the shorter, slender, tube-like vesica with or without one strong, finger-like cornuti field basally and one, two or three short, spike-like cornuti fields alongside on the vesica. The basic structure of the vesica is similar to that of *Megalonycta* species; however, this similarity is originated only by the same lock-and-key mechanism.

The male 7th sternite and tergite are similar to those of *Craniophora* but slightly wider with a wide, parallel sclerotized band distally. The 8th sternite is pot-shaped but the lateral sides are more or less straight, parallel and evenly

wide; the posterior abdominal brush is slightly more reduced, the pocket is substituted by a pointed, sclerotized streak; and the "window" is wider. The 8th tergite spatulate, fully sclerotized without "window".

In The female genitalia of the new genus are similar to those of the *Megalonycta* species from Africa, but the ovipositor is shorter, basally wider, the ductus bursae is sclerotized with stronger crests, and the appendix bursae is more globular, laterally sclerotized.

The distal edge of the female 7th sternite is narrower than in *Megalonycta* but wider than in *Craniophora*. The 7th tergite is convex, much wider than in *Megalonycta* and basally slightly wider than in *Craniophora*. Both abdominal segments are as long as wide or one and half longer than wide.

Distribution. Africa (Eritrea, Ethiopia) and Arabian Peninsula.

The ***hemileuca*** species-group

Berionycta hemileuca (Berio, 1943)
(Pl. 24: 167, 168; Pl. 25: 181; Pl. 27: 191, 196; Pl. 28: 200)
Craniophora hemileuca Berio, 1943, *Annali del Museo Civico di Storia Naturale Giacomo Doria* **61**: 186. Type-locality: Eritrea, Dorfù. Neotype: male, in coll. MSNM, designated by KISS (2017).

Berionycta limbata Kiss, 2017
(Pl. 24: 169, 170; Pl. 25: 182; Pl. 27: 192, 197; Pl. 28: 201)
Berionycta limbata Kiss, 2017, *Zootaxa* **4355**(1): 68, figs 169, 170, 182, 192, 197, 201. Type-locality: Eritrea, Dorfù. Holotype: male, in coll. MSNM.

Synonymy.
Craniophora hemileuca ab. *limbata* Berio, 1943, *Annali del Museo Civico di Storia Naturale Giacomo Doria* **61**: 187. Type-locality: Eritrea, Dorfù.

Berionycta ponticamima Kiss, 2017
(Pl. 24: 171; Pl. 26: 183; Pl. 27: 193)
Berionycta ponticamima Kiss, 2017, *Zootaxa* **4355**(1): 69, figs 171, 183, 193. Type-locality: Ethiopia, Ethiopian Highland, Prov. Oromia, Yabello, 15 km E, 1550 m. Holotype: male, in coll. GB.

Berionycta nigra Kiss, 2017
(Pl. 24: 172; Pl. 26: 184; Pl. 27: 194)
Berionycta nigra Kiss, 2017, *Zootaxa* **4355**(1): 70, figs 172, 184, 194. Type-locality: Ethiopia, Ethiopian Highland, Prov. Oromia, Yabello, 15 km E, 1550 m. Holotype: male, in coll. GB.

The ***melanisans*** species-group

Berionycta melanisans (Wiltshire, 1980)
(Pl. 24: 173; Pl. 26: 185)
Craniophora melanisans Wiltshire, 1980, *Journal of Oman Studies, Special Report* **2**: 198, fig. 11. Type-locality: Oman, Dhofar Prov., Khadrafi. Holotype: male, in coll. BMNH.

Berionycta asirensis (Wiltshire, 1986)
(Pl. 24: 174; Pl. 26: 186)
Craniophora melanisans asirensis Wiltshire, 1986, *Fauna of Saudi Arabia* **8**: 297, fig. 121. Type-locality: Saudi Arabia, Asir, Al Foqa. Holotype: male, in coll. BMNH.

The ***orbicularis*** species-group

Berionycta orbicularis Kiss, 2017
(Pl. 25: 175, 176; Pl. 26: 187; Pl. 27: 195, 198; Pl.28: 202)
Berionycta orbicularis Kiss, 2017, *Zootaxa* **4355**(1): 71, figs 175, 176, 187, 195, 198, 202. Type-locality: Ethiopia, Ethiopian Highland, Prov. Oromia, Yabello, 15 km E, 1550 m. Holotype: male, in coll. GB.

Berionycta behouneki Kiss, 2017
(Pl. 25: 177, 178; Pl. 26: 188; Pl. 27: 199)
Berionycta behouneki Kiss, 2017, *Zootaxa* **4355**(1): 72, figs 177, 178, 188, 199. Type-locality: Ethiopia, Ethiopian Highland, Prov. Oromia, Yabello, 13 km W, 1950 m. Holotype: male, in coll. GB.

Berionycta berioi Kiss, 2017
(Pl. 25: 179; Pl. 26: 189)
Berionycta berioi Kiss, 2017, *Zootaxa* **4355**(1): 72, figs 179, 189. Type-locality: Ethiopia, Gamo Gofa, Arba Minch, 12 km NNE, 1620 m. Holotype: male, in coll. GB.

Berionycta beckroberti Kiss, 2017
(Pl. 25: 180; Pl. 26: 190)
Berionycta beckroberti Kiss, 2017, *Zootaxa* **4355**(1): 73, figs 180, 190. Type-locality: Ethiopia, Ethiopian Highland, Prov. Oromia, Yabello, 15 km E, 1550 m. Holotype: male, in coll. GB.

Genus ***Draudtinycta*** Kiss, 2017

(Pl. 29)
Draudtinycta Kiss, 2017, *Zootaxa* **4355**(1): 74. Type species: *Craniophora tigniumbra* Draudt, 1937, *Entomologische Rundschau* **54**: 375, pl. 4: fig. 1c; by monotypy.

Diagnosis. *Draudtinycta tigniumbra*, the type-species of this genus, resembles externally *Cycloprora nodyna* but has more elongated, apically pointed forewing with the outer margin broken at tornal angle, less expressed suprabasal spot, the orbicular spot crossed by the medial line; more angular hindwing with more wavy outer margin and strongly reduced, pale tornal patch.

The male genitalia display several unique characters, such as the long, medially widening uncus covered by long, soft hairs; the extremely wide tegumen and peniculus densely covered by long hairs; the small, basally widest juxta; the sclerotized, long and narrow but medially wide valvae with corona apically and long hairs medially; the long, straight harpe; the rather short, proximally strongly curved aedeagus; the short vesica with a tiny diverticulum subbasally, covered by some small, spine-like cornuti, with a huge, solid, sclerotized medial diverticulum armed by a few cornuti, and an extremely long, straight distal diverticulum covered by several, longer, spine-like cornuti terminally.

The male abdominal segments are similar to those of the *Cranionycta* species (Pl. 33: 227, 228), however, the lateral sides of the trapezoidal 7th sternite proximally abruptly narrowing, directly below the proximal edge; the 7th tergite much wider; the 8th sternite has a reverse, semi-circular "window" with a huge, weakly sclerotized pocket of posterior abdominal brush with one compact tuft of dense hairs; the 8th tergite is more similar to that of *Cr. jankowskii* (Pl. 33: 228) but the edges of the lateral sides are more vivid.

The female genitalia are remarkably weakly sclerotized except the proximal part of ductus and corpus bursae, the bursa copulatrix is sac-like, the appendix bursae is small, insignificant.

The female abdominal segments are unknown.

Distribution. Central China.

Draudtinycta tigniumbra (Draudt, 1937)
(Pl. 29: 203–207)

Craniophora tigniumbra Draudt, 1937, *Entomologische Rundschau* **54**: 375, pl. 4: fig. 1c. Type-locality: China, Prov. Hunan, Jiucai Ling, 1300 m. Neotype: male, in coll. PGy, designated by KISS (2017).

Genus ***Sinonycta*** Kiss, 2017

(Pl. 30)

Sinonycta Kiss, 2017, *Zootaxa* **4355**(1): 76. Type species: *Craniophora fangi* Chen, 1999, *Fauna Sinica: Insecta, Lepidoptera, Noctuidae, Vol*. **16**: 109, fig. 57, by monotypy.

Diagnosis. The external appearance and some genital characters of the type-species of the genus *Sinonycta* strongly resemble the species of the genus

Cranionycta (see KONONENKO 2010: pl. 22, figs 25–32). The diagnostic external characters are the apically more elongated forewing and the reddish patch in the medial field under the orbicular spot.

In the male genitalia, the basic structure of the genital capsule is similar to that of *Cranionycta* species (see KONONENKO 2010: pl. 112, fig. 6; pl. 113, figs 1, 2), but the valvae of *Sinonycta* are wider, with angled ventral edge in the two-third, dorsally slightly curved with narrower corona, the sacculus is longer and wider, with more terminally positioned, basally wider, angularly curved saccular process. Aedeagus shorter, wider and more robust than in *Cranionycta* species. The configuration of the vesica is closest to *Cr. albonigra*, but has a conspicuous, tubular, sac-like basal diverticulum and a large medial diverticulum with slightly more densely arranged and stronger cornuti.

The male abdominal segments are very similar in sclerotization to those of the *Cranionycta* species (Pl. 33: 227, 228), the lateral sides of the 7th sternite are, however, straight, and the distal edge of 7th sternite is more indented in the middle. The 7th tergite has more concavely curved distal edge and in the middle concave, distally convex lateral sides. The shape of 8th sternite is similar to that of *Draudtinycta* and *Cranionycta*, but the pocket of the posterior abdominal brush is more reduced, weakly sclerotized, dotted stripe. The proximal part of the 8th tergite is somewhat more sclerotized, consists of two, "V"-shaped symmetrical bands with two apices.

The female genitalia are most similar to those of *Cranionycta albonigra* (see KONONENKO 2010: pl. 183, fig. 2) but differ from those by their evenly sclerotized ductus bursae with longer, sclerotized crests alongside except the distal part next to the antrum, more globular corpus bursae, wider junction of the appendix bursae to the corpus bursae and evenly sclerotized without crests, and by the longer appendix bursae.

The female 7th abdominal segments are rather similar to those of *Acronicta obscura* than those of *Cranionycta* (Pl. 33: 229–231). However, the 7th sternite is strongly sclerotized, the distal edge is strongly indented in the middle; the 7th tergite is spatulate, more sclerotized in the distal three-fourths; and sclerotized tiny patches can be found in the intermediate parts of the 7th sternite and tergite.

Distribution. South Central China.

Sinonycta fangi (Chen, 1999)
(Pl. 30: 208–213)

Craniophora fangi Chen, 1999, *Fauna Sinica: Insecta, Lepidoptera, Noctuidae, Vol*. **16**: 109, fig. 57. Type-locality: China, Prov. Guangxi, Maoer-shan. Holotype: male, collection unknown.

Genus ***Miracopa*** Draudt, 1950

(Pl. 31)

Miracopa Draudt, 1950, *Mitteilungen der Münchner Entomologischen Gesellschaft* **40**: 119. Type species: *Miracopa prodigiosa* Draudt, 1950, *ibidem*, **40**: 119, pl. 8: fig. 5, by monotypy.

Characterization of the genus. The monotypic genus externally does not look like as a typical acronictine species by its wide, wedge-shaped forewing and simplified pattern, however, both male and female genitalia, the abdominal segments show closer relationship with the other Acronictinae genera.

2nd segment of palpus is two times longer than 3rd segment in both sexes. Forewing evenly widening, ground colour purplish black with some copper coloured patches; outer edge wavy, tornal angle angled; basal streak short, patch-like; tornal streak strongly reduced, very thin; apical dash obsolete, shadow-like; tornal patch tiny, black spot or line; antemedial line double, wavy; outer part of medial field lighter or whitish with copper coloured small patches; medial line double, wavy, outer line occasionally fused with medial fascia, inner line bypassing the orbicular spot; postmedial line strongly crenulate; orbicular spot rounded with indistinct black outline; reniform spot less distinct, outer edge suffused with whitish, lighter brownish scales; subterminal line absent, suspected from the different tone of terminal and subterminal field; hindwing greyish with wide, indistinct marginal band and indistinct discal line and spot; tornal patch pale.

Male genitalia. Uncus strong, short, curved, dorsal edge apically obtuse and somewhat widened, straighter, abruptly ended in a hook; scaphium weakly sclerotized; subscaphium absent; tegumen rather wide; peniculus developed, strongly elongated with tuft of short, moderately dense hairs; juxta rather quadrangular with a weaker sclerotized, handle-like part proximally; saccus wide, extremely elongated with rounded tip; valvae basally asymmetrical, strongly sclerotized and elongated, medially the narrowest, with a tuft of dense hairs at the base of costa, costa apically broken, corona narrow with long setae; harpe substituted by a thin and wide, medial sclerite. Aedeagus thin, dorsally slightly curved, distally tapering with a band of several small, spine-like structures in the three-fourths and a patch of several small, spine-like structures at the end of the aedeagus; carina short, dorsally positioned; vesica tubular, recurved, armed with several, stout, spike-like, strong cornuti dorsally and a small, strongly sclerotized, sac-like terminal diverticulum; junction of ductus ejaculatorius wide.

Male 7th and 8th abdominal segments. The 7th sternite quadrangular, evenly sclerotized; proximal edge slightly curved; lateral sides concave, abruptly widening at the proximal edge; distal edge concavely curved; 7th tergite quadrangular, wider than long with a semi-circular, slightly stronger part

distally with "U"-shaped "window"; proximal edge straight with two curved, slightly stronger rods; lateral sides proximally concave, distally convex; distal edge rather straight. The 8th abdominal segments are similar to those of *Cranionycta* species (Pl. 33: 227, 228), however, the sternite slightly more trapezoidal, somewhat wider than long, lateral sides strongly widening in the distal half; "window" oval, proximally more pronounced, distally fading; the pocket of posterior abdominal brush is shallow and thinner, rather stripe-like, with several sclerotized dots; tergite more trapezoidal, proximal edge longer, wider, lateral sides wider but narrowing in the middle section; "window" oval with irregular edge.

Female genitalia. At first sight, the female genitalia are close to those of *Cranionycta albonigra* (see KONONENKO 2010: pl. 183, fig. 2). They can be distinguished, however, by the more funnel-shaped antrum; the more widened proximal part of ductus bursae; and the more oval shape of corpus bursae with developed, less wide, opposite positioned appendix bursae.

Female 7th abdominal segments. The abdominal segments are rather the same as those of the *Cranionycta* females (Pl. 33: 229–231), only the 7th tergite has a slightly elongated semi-circular distal band with indistinct edge.

Distribution. Central China.

Miracopa prodigiosa Draudt, 1950
(Pl. 31: 214–219)

Miracopa prodigiosa Draudt, 1950, *Mitteilungen der Münchner Entomologischen Gesellschaft* **40**: 119, pl. 8: fig. 5. Type-locality: China, Prov. Shanxi, Mien-shan. Lectotype: male, in coll. ZFMK, designated by KISS (2017).

Genus ***Acronicta*** Ochsenheimer, 1816

(Pls 32, 33)

Acronicta Ochsenheimer, 1816, *Die Schmetterlinge von Europa. Vol.* **4**: 62. Type species: *Phalaena leporina* Linnaeus, 1758, *Systema Naturae* (Edn 10) **1**: 510.

Acronicta* (*Plataplecta*) *obscura (Leech, 1900)
(Pl. 32: 220–225)

Craniophora obscura Leech, 1900, *The Transactions of the Entomological Society of London*: 107. Type-locality: Western China, Ni-tou. Lectotype: male, in coll. BMNH, designated by KISS (2017).

Diagnosis. *Acronicta* (*P.*) *obscura* externally hardly resembles any *Craniophora* s. l. species due to the lack of basal and tornal streak, apical dash,

however the tornal patches are present on both fore- and hindwing and the 3rd segment of the palpus of both sexes are equal length.

In the male genitalia, this species undoubtedly can be separated from *Craniophora* s. l. species by its long, curved, slender, evenly wide, apically tapering uncus; the "U"-shaped, long, distally almost closed juxta; the elongated, apically on both edges tapering valvae; the sclerotized, wide sacculus, extending along the ventral margin; the long, strongly curved, apically retroflexed harpe fused with the long, apically pointed, claw-like saccular processus; the rather short and stout aedeagus; the rather short, tubular vesica with three patches of spike-like structures on its surface and a terminal diverticulum.

The male abdominal segments are rather unique compared to other *Craniophora* s. l. species, however, the 7th sternite and tergite are very similar to those. The 8th sternite pot-shaped but wider than in other *Craniophora* s. l. species and the distal edge is well separated from the lateral sides with a slightly stronger protruding part in the middle section; the 8th tergite is bell-shaped, short, proximal part short, lateral sides widening section by section, distally with bulb-like extension; the "window" is more or less rounded.

The female genitalia differ from any *Craniophora* s. l. species by their moderately long, straight, distally weakly sclerotized but proximally strongly sclerotized, widening and strongly ribbed ductus bursae; the fused corpus and appendix bursae with more pronounced, saccate, weakly sclerotized corpus bursae and a tiny, insignificant appendix bursae.

The female 7th sternite is rather trapezoidal, distally wider with strong sclerotization in the distal half; the lateral sides are strongly convex; distal edge is concavely curved with shallow, elongated "window". The 7th tergite is trapezoidal, much higher than wider with prominent, wide, sclerotized band distally; lateral sides are strongly concavely curved; distal edge is rather straight. In the inner section of both segments there are one-one sclerotized patch between the lateral sides of 7th sternite and stigmata.

Notes. POOLE (1989) treated this species as *Craniophora* following the original description; subsequently, HAN & KONONENKO (2010) placed it into the *Acronicta* subgenus *Hylonycta* Sugi, 1979. Based on certain genital characters this species belongs to the *Acronicta* subgenus *Plataplecta* Butler, 1878 and close to *A. pruinosa* Guenée, 1852. SUGI (1979) erroneously named this species as *A. pulverosa* Hampson, 1909, since HAMPSON (1909: 91) has never described species under this name. The diagnostic features of the male genitalia are the "U"-shaped, long juxta, the extremely curved, long harpe fused with the saccular process, the wide sacculus extending along the ventral margin, the short, tube-like vesica armed in patches with some spike-like cornuti; those of the female genitalia are the strongly sclerotized, ribbed proximal two-thirds of ductus bursae and the sac-like corpus bursae.

Distribution. Central China

Incertae sedis

Acronicta nigrivitta (Hampson, 1891)
(Pl. 33: 226)

Hyboma nigrivitta Hampson, 1891, *Illustrations of Typical Specimens of Lepidoptera Heterocera in the Collection of the British Museum. Vol. 8. The Lepidoptera Heterocera of the Nilgiri District*: 72, pl. 149: fig. 19. Type-locality: India, Nilgiris. Holotype: male, in coll. BMNH.

Diagnosis. *Acronicta nigrivitta* has a light brownish-yellowish ground colour. The orbicular and reniform spots are big, rounded, contrast; the basal line and the tornal streak connected with a thin line; the apical dash very thin; the medial line reduced, only in the costal area visible; the postmedial line wavy with small, arrow-like patches at the veins. Hindwing brownish; terminal band wide with darker scales on the veins without tornal patch.

Notes. The wide and conspicuous marginal band without tornal patch of the hindwing is placed this species out from *Craniophora* s. l. Otherwise, the species externally resembles to an *Acronicta* species, however, some characters are very unique such as the big orbicular and reniform spots; the wavy postmedial line with arrow-like patches; the fused basal line and tornal streak. Although, the holotype is dissected and preserved in one of the thousand mixed vials (A. Zilli pers. comm.) kept in dried conditions by Tams; this stock of genitalia preparates, at this moment, is inappropriate and unavailable for further studies. Until the proper examination is not done, I have placed this species into the genus *Acronicta* but excluded from the subgenus *Hyboma* Hübner, [1820] (the original combination), since the external characters are quite different from those of the *Hyboma* species (the type species is *Acronicta strigosa* ([Denis & Schiffermüller], 1775).

Distribution. Southern India.

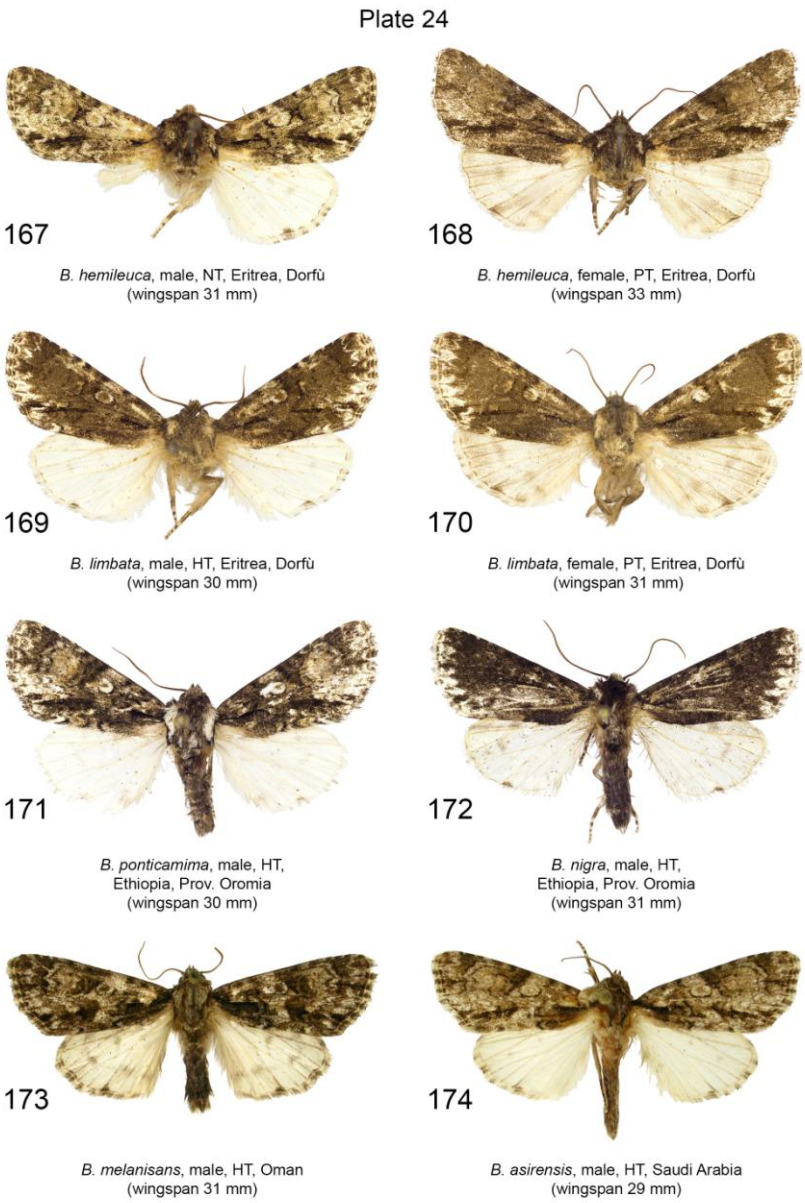


Plate 24. Adults of *Berionycta* spp. 167. *B. hemileuca*, male, PT, slide No.: KA292m (coll. MSNM); **168.** *B. hemileuca*, female, LT, slide No.: KA293f (coll. MSNM); **169.** *B. limbata*, male, HT, slide No.: KA295m (coll. MSNM); **170.** *B. limbata*, female, PT, slide No.: KA294f (coll. MSNM); **171.** *B. ponticamima*, male, HT, slide No.: KA1412m (coll. GB); **172.** *B. nigra*, male, HT, slide No.: KA1414m (coll. GB); **173.** *B. melanisans*, male, HT (coll. and photo BMNH); **174.** *B. asirensis*, male, HT (coll. and photo BMNH). Not scaled. (KISS 2017)

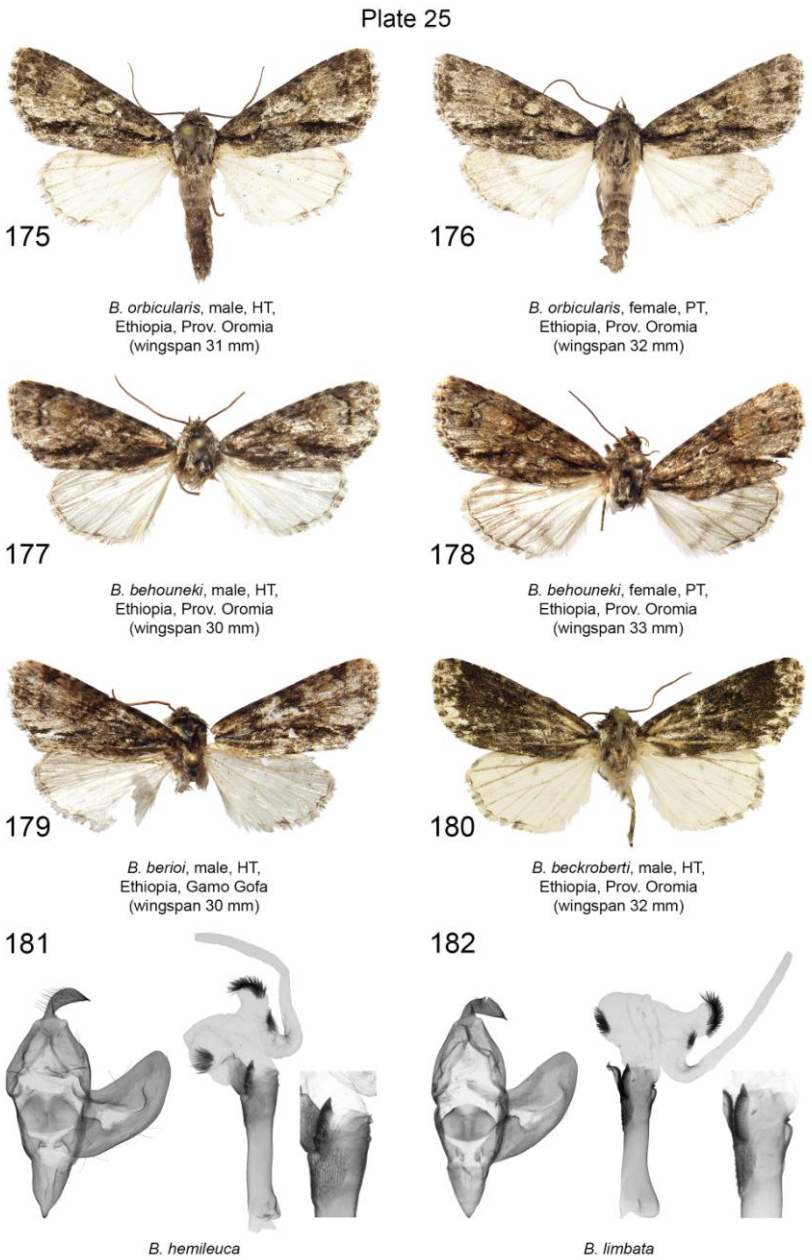


Plate 25. Adults and male genitalia of *Berionycta* spp. 175. *B. orbicularis*, male, HT, slide No.: KA1411m (coll. GB); **176.** *B. orbicularis*, female, PT, slide No.: KA1413f (coll. GB); **177.** *B. behouneki*, male, HT, slide No.: GB7578m (coll. and photo GB); **178.** *B. behouneki*, female, PT, slide No.: GB8148f (coll. and photo GB); **179.** *B. berioi*, male, HT, slide No.: GB8147m (coll. and photo GB); **180.** *B. beckroberti*, male, HT, slide No.: GB8315m (coll. GB); **181.** *B. hemileuca*, valva, vesica, NT, Eritrea, slide No.: KA292m (coll. MSNM); **182.** *B. limbata*, valva, vesica, HT, Eritrea, slide No.: KA295m (coll. MSNM). Not scaled. (KISS 2017)

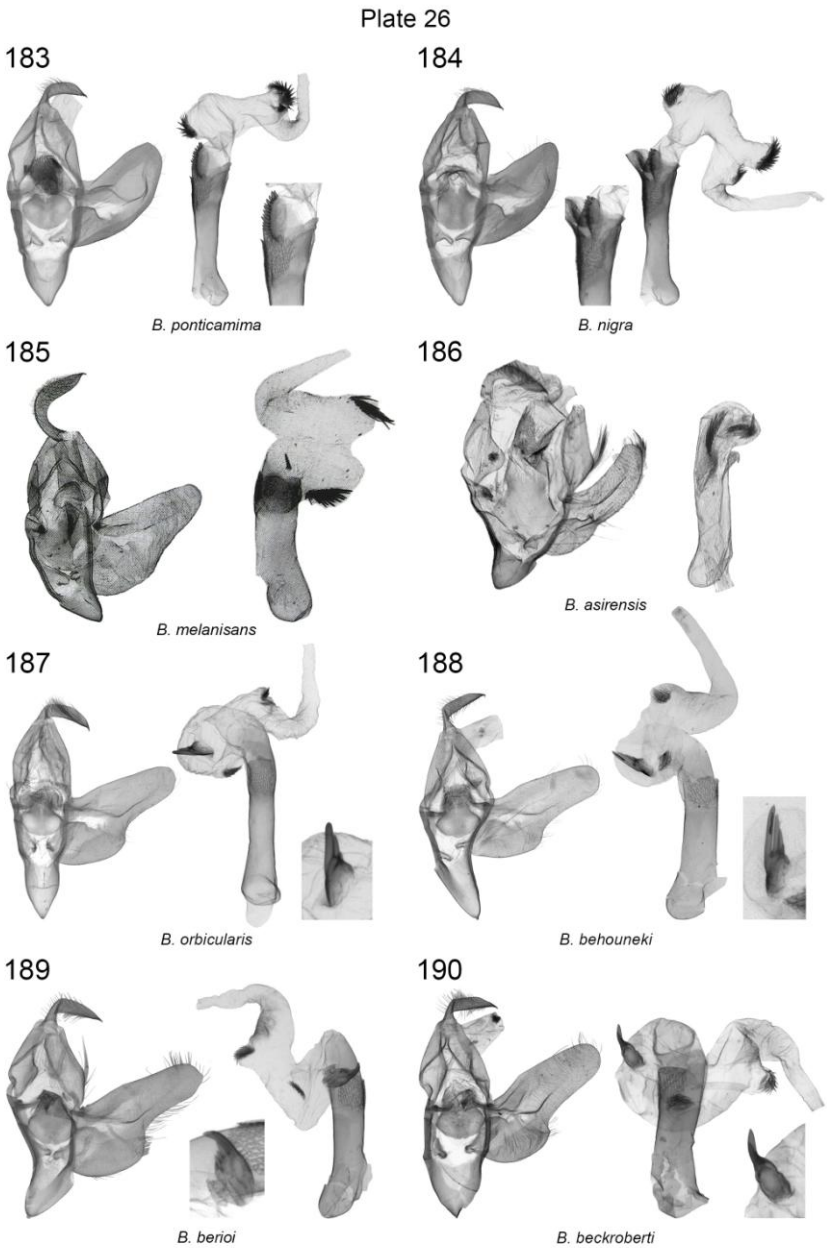


Plate 26. Male 7th, 8th abdominal segments of *Berionycta* spp. 183. *B. ponticamima*, vesica, valva, NT, Ethiopia, slide No.: KA1412m (coll. GB); **184.** *B. nigra*, HT, Ethiopia, slide No.: KA1414m (coll. GB); **185.** *B. melanisans*, valva, vesica, Oman, slide No.: H. Hacker 16089 (ex coll. H. Hacker, ZSM; fig. from HACKER 2016: genitalia plate 134, i); **186.** *B. asirensis*, valva, vesica, PT, Saudi Arabia, slide No.: Wilt2362 (coll. and photo BMNH); **187.** *B. orbicularis*, valva, vesica, HT, Ethiopia, slide No.: KA1411m (coll. GB); **188.** *B. behouneki*, valva, vesica, HT, Ethiopia, slide No.: GB7578m (coll. GB); **189.** *B. berioi*, valva, vesica, HT, Ethiopia, slide No.: GB8147m (coll. GB); **190.** *B. beckroberti*, valva, vesica, HT, Ethiopia, slide No.: GB8315m (coll. GB). Not scaled. (KISS 2017)

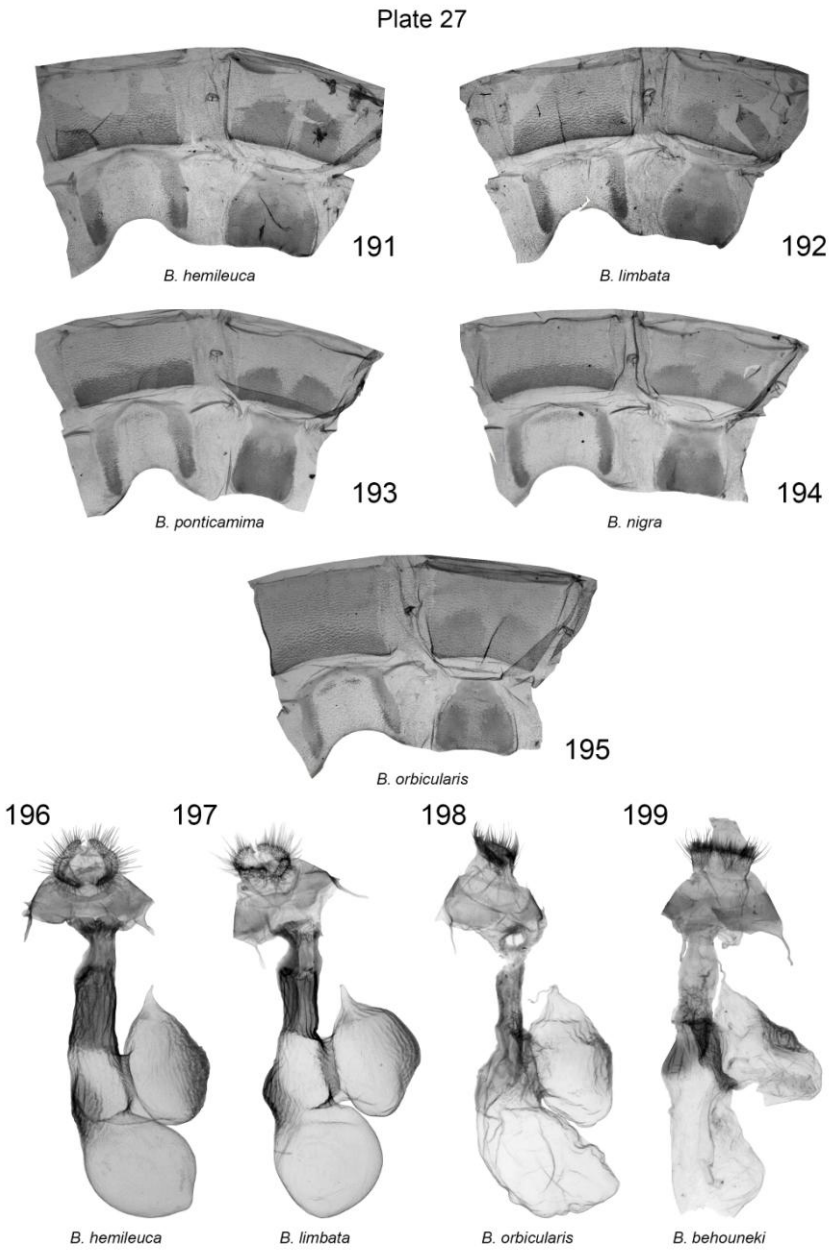


Plate 27. Male 7th, 8th abdominal segments and female genitalia of *Berionycta* spp. 191. *B. hemileuca*, NT, Eritrea, slide No.: KA292m (coll. MSNM); **192.** *B. limbata*, HT, Eritrea, slide No.: KA295m (coll. MSNM); **193.** *B. ponticamima*, HT, Ethiopia, slide No.: KA1412m (coll. GB); **194.** *B. nigra*, HT, Ethiopia, slide No.: KA1414m (coll. GB); **195.** *B. orbicularis*, HT, Ethiopia, slide No.: KA1411m (coll. GB); **196.** *B. hemileuca*, PT, Eritrea, slide No.: KA293f (coll. MSNM); **197.** *B. limbata*, PT, Eritrea, slide No.: KA294f (coll. MSNM); **198.** *B. orbicularis*, PT, Ethiopia, slide No.: KA1413f (coll. GB); **199.** *B. behouneki*, PT, Ethiopia, slide No.: GB8148f (coll. GB). Left side sternite, right side tergite. Not scaled. (KISS 2017)

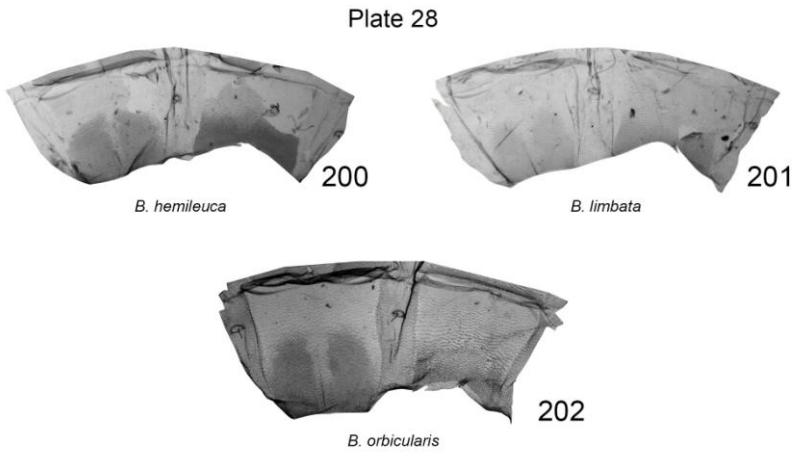


Plate 28. Female 7th abdominal segments of *Berionycta* spp. 200. *B. hemileuca*, PT, Eritrea, slide No.: KA293f (coll. MSNM); **201.** *B. limbata*, PT, Eritrea, slide No.: KA294f (coll. MSNM); **202.** *B. orbicularis*, PT, Ethiopia, slide No.: KA1413f (coll. GB). Left side tergite, right side sternite. Not scaled. (KISS 2017)

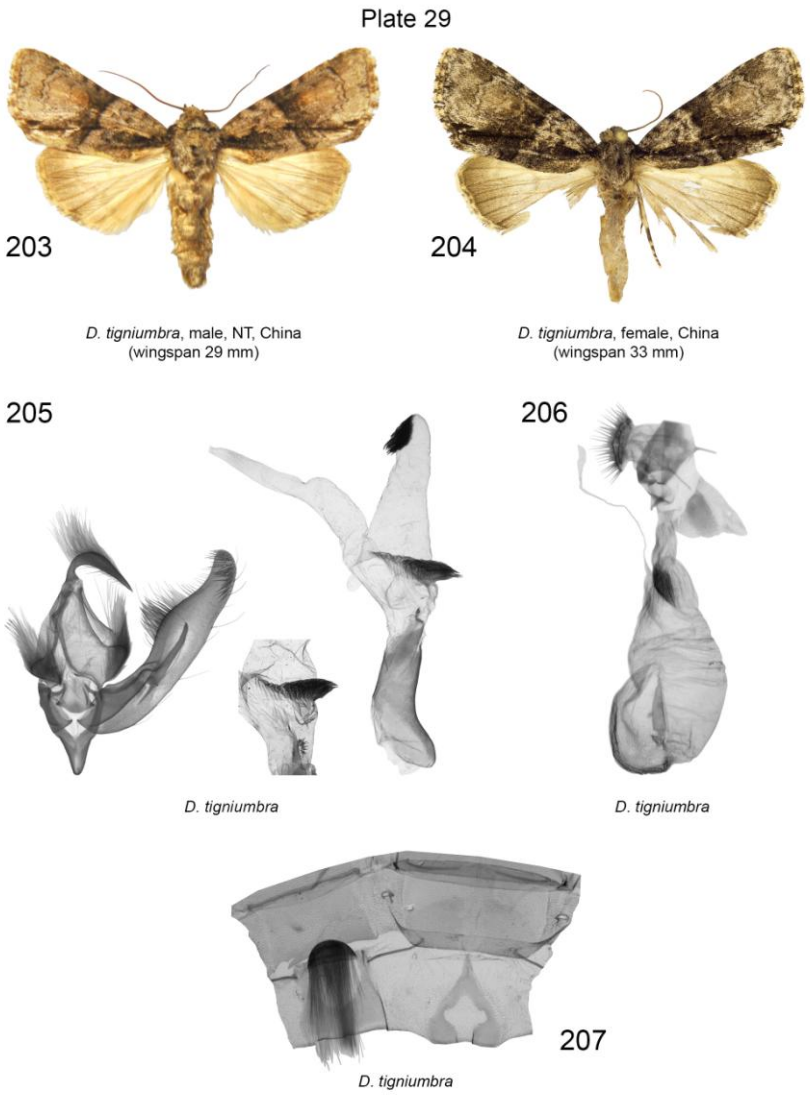


Plate 29. Adults, male and female genitalia, male 7th, 8th abdominal segments of *Draudtinycta tigniumbra*. 203. *D. tigniumbra*, male, NT, slide No.: PGy3990 (coll. and photo PGy); **204.** *D. tigniumbra*, female, slide No.: PGy4488 (coll. PGy); **205.** *D. tigniumbra*, valva, China, slide No.: KA1113m (coll. GR); vesica, China, slide No.: KA1112m (coll. GR); enlargement of vesica, China, slide No.: 3700 Gyulai (coll. PGy). **206.** *D. tigniumbra*, China, slide No.: PGy4488 (coll. and photo PGy); **207.** *D. tigniumbra*, China, slide No.: KA1112m (coll. GR). Left side sternite, right side tergite. Not scaled. (KISS 2017)

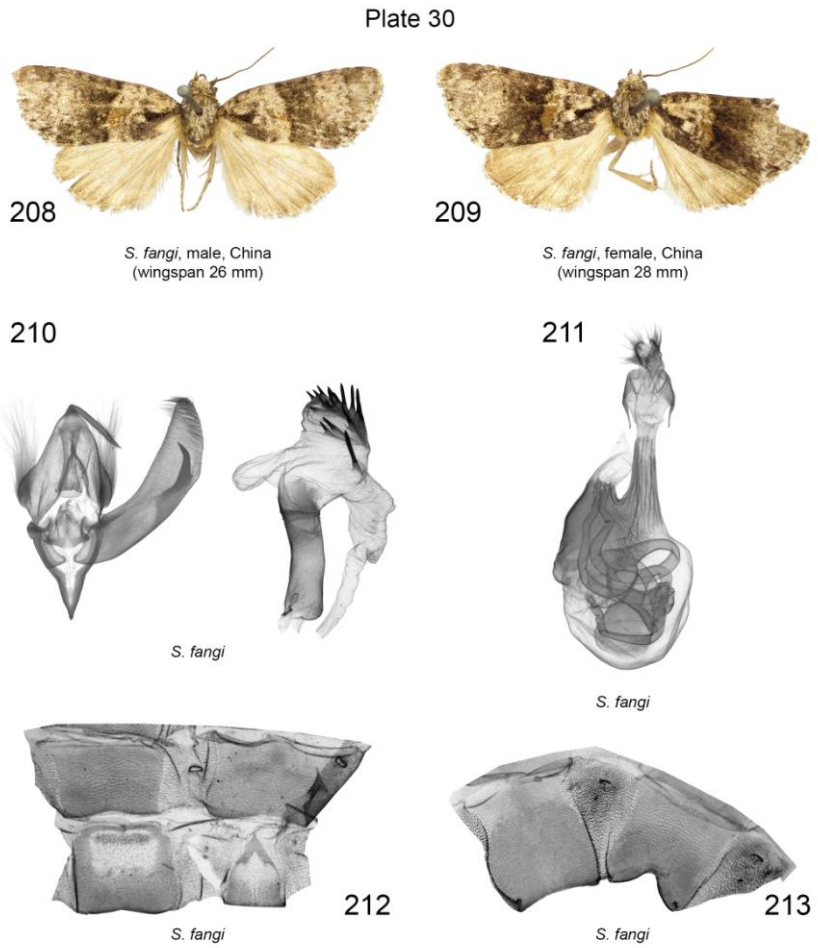


Plate 30. Adults, male and female genitalia, male 7th, 8th and female 7th abdominal segments of *Sinonycta fangi*. 208. *S. fangi*, male, slide No.: KA1094m (coll. MfN); **209.** *S. fangi*, female, slide No.: KA1093f (coll. MfN); **210.** *S. fangi*, valva, vesica, China, slide No.: KA1094m (coll. MfN); **211.** *S. fangi*, China, slide No.: KA1093f (coll. MfN); **212.** *S. fangi*, China, slide No.: KA1094m (coll. MfN); **213.** *S. fangi*, China, slide No.: KA1093f (coll. MfN). Male abdominal segments: left side sternite, right side tergite. Female abdominal segments: left side tergite, right side sternite. Not scaled. (KISS 2017)

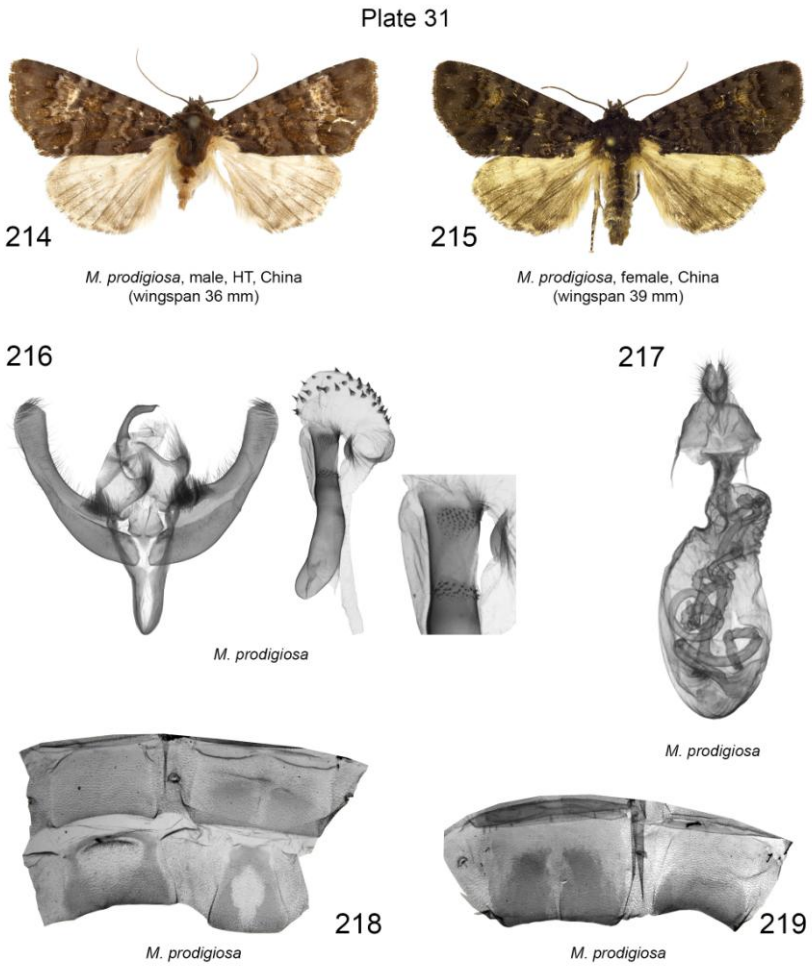


Plate 31. Adults, male and female genitalia, male 7th, 8th and female 7th abdominal segments of *Miracopa prodigiosa*. 214. *M. prodigiosa*, male, HT, slide No.: Hö.144 (coll. and photo ZFMK); **215.** *M. prodigiosa*, female, slide No.: KA1719f (coll. GR); **216.** *M. prodigiosa*, valva, vesica, China, slide No.: KA1718m (coll. GR); **217.** *M. prodigiosa*, China, slide No.: KA1719f (coll. GR); **218.** *M. prodigiosa*, China, slide No.: KA1718m (coll. GR); **219.** *M. prodigiosa*, China, slide No.: KA1719f (coll. GR). Male abdominal segments: left side sternite, right side tergite. Female abdominal segments: left side tergite, right side sternite. Not scaled. (KISS 2017)

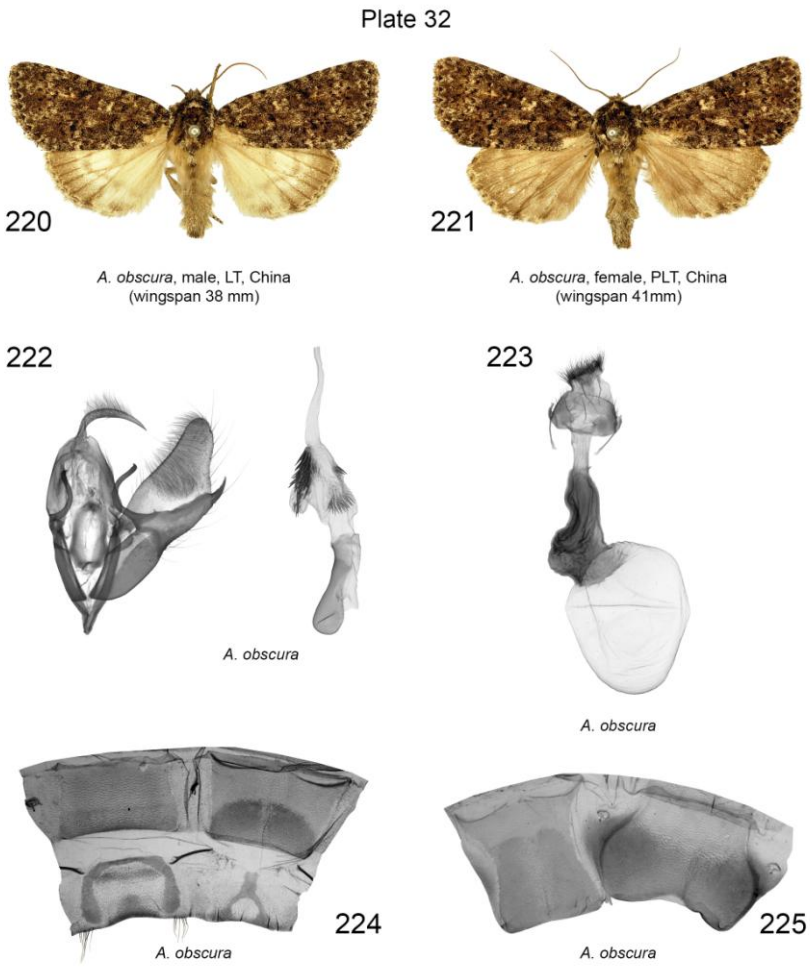


Plate 32. Adults, male and female genitalia, male 7th, 8th and female 7th abdominal segments of *Acronicta* (*Plataplecta*) *obscura*. 220. *A.* (*P.*) *obscura*, male, LT (coll. and photo BMNH); **221.** *A.* (*P.*) *obscura*, female, PLT (coll. and photo BMNH); **222.** *A.* (*P.*) *obscura*, valva, vesica, China, slide No.: KA1664m (coll. HNHM); **223.** *A.* (*P.*) *obscura*, China, slide No.: KA587f (coll. HNHM); **224.** *A.* (*P.*) *obscura*, China, slide No.: KA1664m (coll. HNHM); **225.** *A.* (*P.*) *obscura*, China, slide No.: KA587f (coll. HNHM). Male abdominal segments: left side sternite, right side tergite. Female abdominal segments: left side tergite, right side sternite. Not scaled. (KISS 2017)

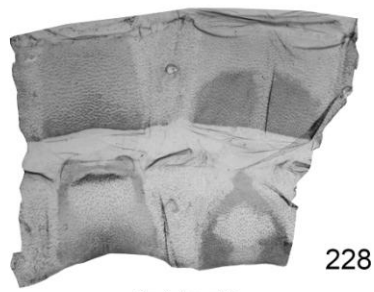
Plate 33

226

A. nigrivitta, male, HT, Nilgiris
(wingspan 29 mm)

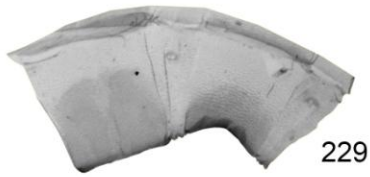
227

Cr. oda



228

Cr. jankowskii

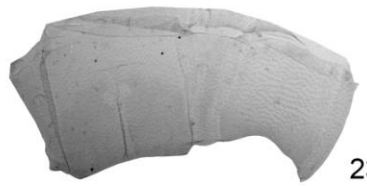


229

Cr. oda

230

Cr. jankowskii



231

Cr. albonigra

Plate 33. Adult of *Acronicta nigrivitta* and male and female last abdominal segments of Cranionycta spp. 226. *A. nigrivitta*, male, HT, slide No.: 1946./381 (coll. and photo BMNH); **227.** *Cr. oda*, male, Russia, Primorsky Krai, slide No.: KA862m (coll. ZMUC); **228.** *Cr. jankowskii*, male, Japan, slide No.: KA920m (coll. NSMT); **229.** *Cr. oda*, female, Russia, Primorsky Krai, slide No.: KA175f (coll. HNHM); **230.** *Cr. jankowskii*, female, North Korea, slide No.: KA268f (coll. HNHM); **231.** *Cr. albonigra*, female, ST, Korea, slide No.: Matov0498 (coll. and photo ZISP). Male abdominal segments: left side sternite, right side tergite. Female abdominal segments: left side tergite, right side sternite. Not scaled. (KISS 2017)

Male genitalia variability in *Craniophora ligustri*

The first 11 harmonics were used as variables in CVA (canonical variate analysis). In the first step, *C. pontica* was set as out-group. In this case, the first CV axis explained 60.64% of the variance and the second CV axis 13.69% of the variance (Wilk's $\lambda = 0.004$, $p<0.05$). When only the groups of *C. ligustri* were tested, the first CV axis explained 40.91 % of the total variance and the second CV axis 15.2 % of the variance (Wilk's $\lambda = 0.02$, $p<0.05$). The pairwise MANOVA showed that *C. pontica* was significantly different from all other groups. The Russian Far East population was also significantly different from all groups of *C. ligustri* except the North Iranian sample.

The centroids of the *C. ligustri* groups are illustrated on Fig. 1. The most separated group is the Russian Far East, as it was expected based on the significance tests. The rest of the *a priori* assemblages were combined into a Northern group and a Southern one. The UPGMA tree (Fig. 2) was constructed on hierarchical clustering via multiscale bootstrap resampling based on Mahalanobis distances. It shows a very similar result to the CVA plot. *C. pontica* is clearly separated from *C. ligustri* and the sample from the Russian Far East is also separated from the remaining groups. The Northern deme of *C. ligustri* includes the English, Danish, Finnish, North Alpine, Spanish and Caucasian samples, while the Southern deme contains the South Alpine, South Italian, Croatian, Bulgarian, Hungarian, Ukrainian and North Iranian samples.

The CVA plot and the UPGMA tree support the three main branches (i.e., the Russian, the Northern and the Southern ones). These groups were set for Jackknife groupings (Table 1). The 84.5% of the specimens were well classified. 13.1% of the specimens of the Northern deme and 16.5% of the specimens of the Southern deme were overlapping. Only one specimen from the Russian Far East group was misclassified (7.7%) to the Southern deme and only two specimens from the Southern deme (1.8 %) to the Russian Far East group are misidentified.

To visualise the morphological variability of the genitalia in geographic space, the first CV axis was interpolated using Inverse Distance Weighting (IDW) method (Fig. 3). The result of the interpolation also suggests that the Western Palaearctic populations of *C. ligustri* are forming two main clades.

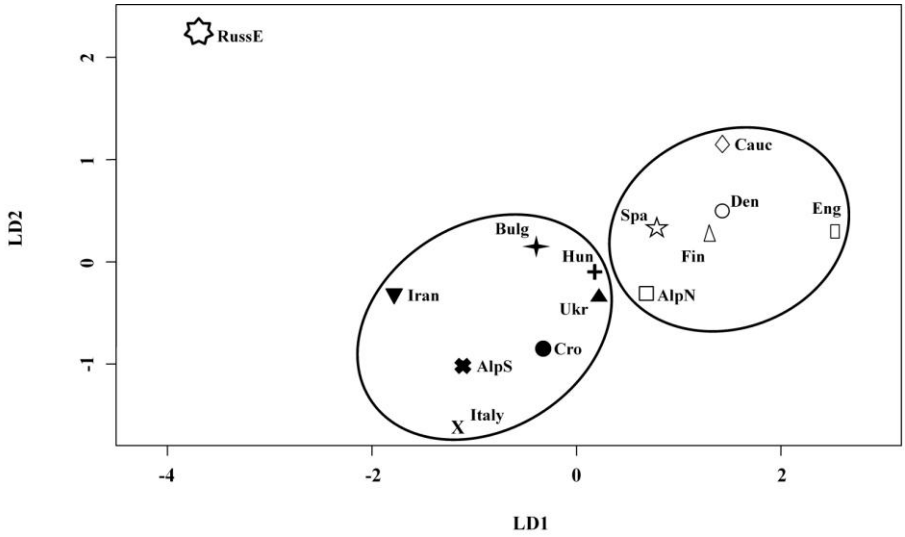


Figure 1. Scatter plot of the group centroids. The filled symbols mark the Southern group, the empty symbols mark the Northern group. Further explanation of the legends, see "Material and methods". (KISS *et al*. 2017a)

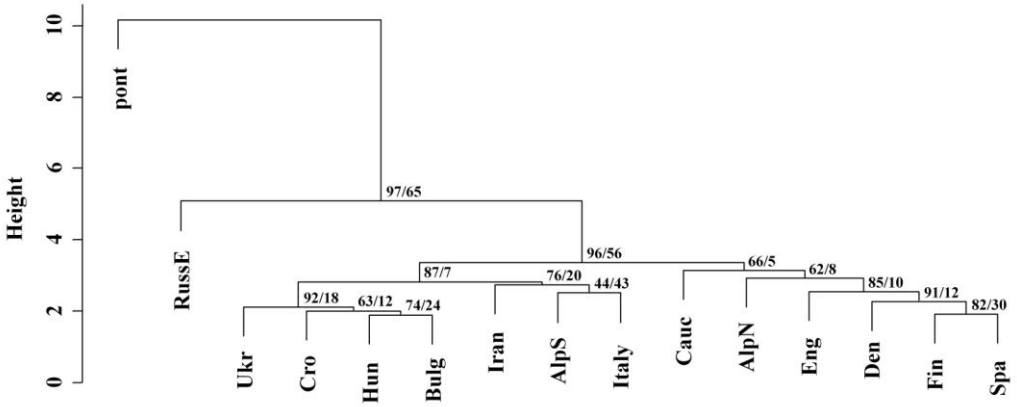


Figure 2. UPGMA tree based on Mahalanobis distances with AU/BP p-value (%). Further explanation of the legends, see "Material and methods". (KISS *et al*. 2017a)

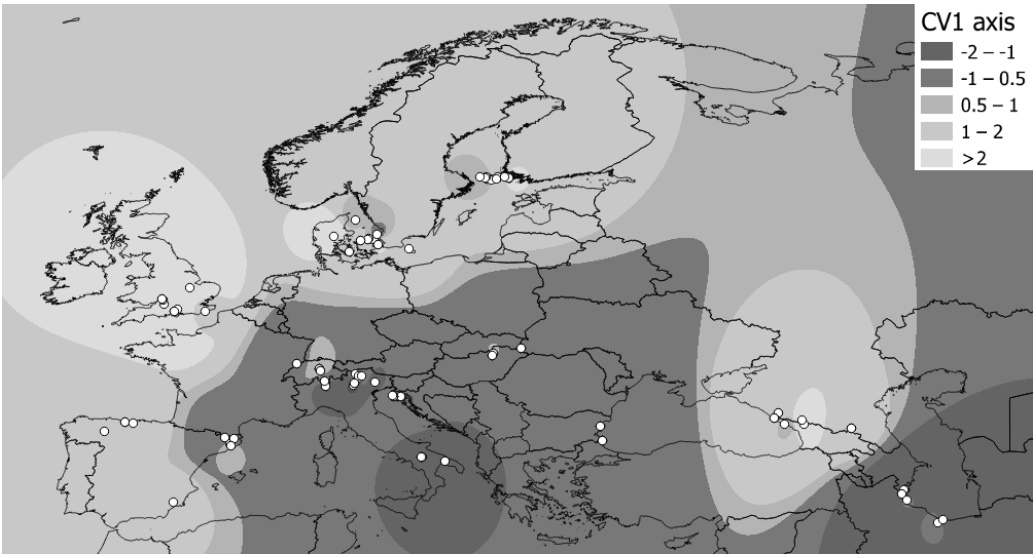


Figure 3. Inverse distance weighting (IDW) interpolation of the first CV axis. The CV1 axis can explain 40.91 % of the total variance between groups. Two main group are visible on the map: Northern group (brighter grey) and Southern group (darker grey). White dots indicate the collecting sites of the examined specimens. (KISS *et al.* 2017a)

	Southern group	Northern group	Russian Far East	Total (specimen)
Southern group	81.7 %	16.5 %	1.8 %	109
Northern group	13.1 %	86.9 %	0	84
Russian Far East	7.7 %	0	92.3 %	13
Total (specimen)	101	91	14	206

Table 1. Results of Jackknife grouping. The groups based on the suggestion of centroids and UPGMA tree. Original groups along rows, CVA groups along columns. (KISS *et al.* 2017a)

Taxonomical and biogeographical considerations

In the former broad sense, *Craniophora* s. l. (28 species) can be subdivided into two main generic complexes such as the *Craniophora* complex (including *Craniophora* [8 species], *Harmandicrania* [10 species], *Graesericrania* [1 species] and *Eurypterocrania* [2 species]) and the *Cycloprora* complex (including *Cycloprora* [1 species], *Turnerinycta* [1 species], *Fascionycta* [4 species] and *Megalonycta* [5 species]) and 3 more distant genera (*Berionycta* [10 species], *Draudtinycta* [1 species] and *Sinonycta* [1 species]). Two species were transferred to the genus *Acronicta*. This subdivision is based on the result of the examination of the morpho-taxonomic characters such as the length of the palpus, the structure and numbers of the androconial apparatuses, the structure of the last abdominal segments and the basic structure of the genitalia of both sexes.

The length of the palpus was proved very useful in the delimitation of the *Craniophora* and *Cycloprora* generic complexes. In the *Craniophora* lineage, both male and female, the 3rd segment of palpus is half of the 2nd segment, while in the *Cycloprora* lineage, the male 3rd segment is half of the 2nd segment but shorter than in females. In the latter case, this difference is well visible on the pinned specimens, as well.

From the three androconial apparatuses, TBO is absent in all described genera. The PAB is well expressed only in the *Cycloprora* lineage and *Draudtinycta*, the pocket is a well-developed, membranous single or divided structure with dense, permanent (at least hardly removable during the dissecting process) tuft of long hairs. In the *Craniophora* lineage and *Berionycta*, *Miracopa*, *Sinonycta*, the PAB is strongly reduced, substituted only by sclerotized dots in a stripe or a small and weak, sac-like structure (e.g. species of the genus *Harmandicrania*) without any residual long, tuft of dense hairs. In some species, the pocket is completely reduced without the sclerotized stripes.

VAA is represented only in the species of the *Craniophora* and *Cycloprora* generic complexes and located on the ventral surface of the well-developed, sac-like sacculus.

In some *Fascionycta* species, there is an extra, small PAB with sparse and weak hairs in a small membranous pocket below each of the two sclerotized rods between the 8th sternite and tergite, directly next to the 8th tergite and also an extra VAA on the outer, costal surface of the valvae. In these species, the presence and absence of these extra androconial apparatuses were proved identical in the species delimitation.

In the delimitation of the genera and major lineages, the male 7th and 8th abdominal segments (both sternite and tergite) were proved very useful. Although the basic structure of the 7th sternite and tergite are basically the same

in the same lineages, among the lineages the differences could be more conspicuous. The structure of the 8th sternite and tergite are very similar in the same genus, sometimes hardly distinguishable the species from each other based on their structures. On the other hand, the given genus in the same lineages (e.g. *Craniophora* or *Cycloprora*) has more distinct shape of 8th sternite and tergite from the other genera. Thus, the structures of the abdominal segments are probably indicating a common ancestral.

The structure of the female 7th sternite and tergite are much homogenous and less variable, weakly sclerotized, even among the different lineages, however, *S. fangi* and *A.* (*P*) *obscura* have more sclerotized segments than the species of the rest genera.

The geometric morphometrics based on the outline of valvae proved to be suitable to separate *Craniophora pontica* from *C. ligustri*, and also to distinguish some different geographical population groups in *C. ligustri*. However, these differences are rather small due to the simplified shape of the valvae. The value of the Wilk's λ is larger by one order of magnitude than for *C. pontica*, indicating that this is a clearly separated species. Within *C. ligustri*, only populations of the Russian Far East could have been separated from the Western Palaearctic population groups. This difference seems to coincide with their disjunct distribution. There are numerous comparable examples in which temperate nemoral species with disjunct distributions show subspecific differentiation (e.g. *Stauropus fagi fagi – S. fagi persimilis, Apamea aquila aquila – A. a. discrepans – A. a. substriata, Brachionycha nubeculosa nubeculosa – B. n. kullbergi – B. n. jezoensis, Orthosia gothica gothica – O. g. jezoensis*) or they are split to vicariant sister-species (e.g. *Spatalia argentina – S. doerriesi, Harpya milhauseri – H. umbrosa, Dicranura ulmi – D. tsvetajevi, Drymonia dodonaea – D. dodonides, Catocala sponsa – C. dula, Jodia croceago – J. sericea*) (VARGA 1963, 1964, SCHINTLMEISTER 1989, RONKAY *et al*. 2001, SCHINTLMEISTER & FANG 2001, GOATER *et al*. 2003, ZILLI *et al*. 2009, RONKAY *et al*. 2011). Most of the examined species in the Russian Far East have paler greyish hindwings suffused with lighter fuscous or greyish scales. It seems that the Russian Far Eastern populations constitute a distinct subspecies. However, it is necessary to compare with other populations from Japan, Korean Peninsula and China.

The results of the morphometric study suggest that the Western Palaearctic populations of *C. ligustri* can be subdivided into two (a Northern and a Southern) main population groups. The transitional zone between these demes is likely broad and continuous.

The grouping of samples on the UPGMA tree does not correspond exactly to their actual geographic distribution with incongruences in relation to the IDW map, see e.g. the Spanish sample. The IDW strongly suggests the duality of the Spanish individuals but the low number of the samples (six-six specimens in each "subgroup") did not allow their separation in the cluster analysis. Thus, we

have to conclude that the IDW provide more information than the UPGMA tree.

The major refugia of temperate nemoral species were in the Mediterranean peninsulas of Iberia, southern Italy and Balkans during the last glaciation (e.g. HEWITT 1996, 1999, 2004, TABERLET *et al*. 1998, SCHMITT 2007). Thus the most probable, relatively large refugia of the Southern strain may have extended from South Italy and the Balkan Peninsula across the Euxinic coast of Asia Minor to the Talysh and Northern Iran (Hyrcanian part of Elburs Mts) from which this strain may have populated south-eastern Central Europe and SE Europe, east of the Carpathians as well as, Transcaucasia and Northern Iran. It seems that the population extending from the South Italian refuge could not leave the peninsula because of the barrier effect of the Alps (BILTON *et al*. 1998, TABERLET *et al*. 1998) but obviously populated the southern Alps since the North Italian (South Alps sample) and South Italian (subspecies *carbolucana*) populations were shown to be identical.

According to the original description, *C. l. carbolucana* differs from *C. l. ligustri* externally by its deep blackish ground colour of the forewings (HARTIG 1968) although this form often appears also in Northern Italy and Balkans samples, and sometimes even in the samples of the Northern groups. *C. l. carbolucana* (South Alps and South Italian samples) externally cannot be clearly differentiated from the other European specimens, and its genital trait suggests that this taxon is rather a darker morphotype than a subspecies. It should be re-examined, however, based on larger materials from the Provence region (France) and Sicily (Italy).

Probably several extra-Mediterranean refugia also existed in some parts of southern Central Europe, Southern Urals, Caucasus, Western Asia from which mostly Central and Northern Europe was colonized (STEWART & LISTER 2001, SURGET-GROBA *et al.* 2001, BABIK *et al.* 2004, URSENBACHER *et al.* 2006, SCHMITT & VARGA 2009, 2012, STEWART *et al.* 2010, VARGA 2010). As the re-colonization might be multidirectional (e.g. FUMAGALLI *et al.* 1996, BILTON *et al.* 1998, DEFFONTAINE *et al.* 2005, KOTLÍK *et al.* 2006, GRATTON *et al.* 2008) the Northern strain may have populated Southern Fennoscandia, the British Isles and possibly also the north-Atlantic part of Iberia from an eastern extra-Mediterranean refugial area in the very early postglacial period, before the Littorina transgression. It seems to be more probable that the slight geographical differentiation of these populations can be considered as the consequence of an early post-glacial splitting due to post-expansive regression than the signal of several extra-Mediterranean refugia, although the latter possibility cannot be excluded. To explain this pattern we hypothesise that *C. ligustri* has populated the British Isles from Iberia, via the "Lusitanian" way, similarly to *Fraxinus excelsior* (HEUERTZ *et al*. 2004, FRAXIGEN 2005), which is probably its most important food plant there. However, no evidence supports the hypothesis that the expansion of *C. ligustri* followed the same track. This

question needs a revision using larger sample sizes, since the Iberian specimens from the North Atlantic coast area and from the Eastern Pyrenees seem to belong to different (Northern vs. Southern) strains.

A few specimens are different from their group average because of the high similarity and simplified shape of the valvae. Unfortunately, our samples are clearly insufficient to decide whether (1) these are individual forms connected to the variation in food plants (distribution of the section *Ornus* vs. *Fraxinus*, see WALLANDER 2008, HINSINGER *et al*. 2013), or (2) the expression of some alleles of the common, ancestral gene pool.

In contrast, *C. l. hyrcanica* (North Iranian sample) has an average smaller size, and a more uniform ground colour varying from pure greyish to dark greyish with ochreous shades. Although specimens with similar colouration were found also in the Caucasus and the Russian Far East, the medial shadow reaches the inner margin by an angle of about 45 degrees only in the North Iranian sample. These external traits seem unique for to the population of Talysh and Hyrcanian part of Elburs Mts

Although our present knowledge about the West Asiatic and Eastern Palaearctic populations (China, Japan, Korean Peninsula) is obviously insufficient to explain completely the distribution of this species, our survey provided, however, useful preliminary information on the matter. A more comprehensive dataset would allow to gain a better understanding of the transitional zone between the two main European demes (Northern and Southern) and to unravel the re-colonization routes of Western Europe (Iberian Peninsula vs. Eastern Europe).

In the former broad sense, *Craniophora* was a widely distributed genus occurs in almost the all major biogeographical regions (except the Nearctic, Neotropical Regions and Antarctica). After the newly proposed generic division, *Craniophora* was became a fully Palaearctic distributed genus with two disjunct distributional areas (Western and Eastern Palaearctic). The genus *Graesericrania* can be found only in the Eastern Palaearctic, while *Harmandicrania*, *Eurypterocrania*, partly in the southern part of the Eastern Palaearctic but mainly in the northern part of the Oriental Regions. The genera *Cycloprora* and *Turnerinycta* are distributed only in the Australian Region. The species of *Fascionycta* can be found from the southern part of Eastern Palaearctic to the northern part of the Australian Region. The genus *Megalonycta* is distributed only in Africa and Madagascar. The genus *Berionycta* is also distributed in Africa and the Arabian Peninsula. The genera *Draudtinycta*, *Miracopa* and *Sinonycta* are located mainly in the southern part of the Eastern Palaearctic.

Summary

Lepidoptera is one of the largest orders of insects with approximately more than 150 thousand described species and Noctuidae is commonly regarded as one of the largest lepidopteran family with more than 11.000 described taxa. The species of the subfamily Acronictinae, one of the phylogenetically basal subfamilies of Noctuidae, have trifine hindwing venation with reduced or vestigial M_2 vein. The Eurasian species of the subfamily are traditionally divided into two main genus groups (*Acronicta* and its relatives vs. *Craniophora*), based on the external morphology and genital characters.

The systematic processing of the available material of *Craniophora* species has been started in 2011 with my PhD grant, however the initial phases were time-consuming due to the much dispersed material. That time, the basic concept was that *Acronicta* is a well-defined genus with some subgenera, at least in the Palaearctic Region, while *Craniophora* is probably a collecting genus. Nowadays it was proved that both *Acronicta* and *Craniophora* are generic complexes, and they contain more phylogenetic lineages.

During the past 6 years, I have examined the Acronictinae material of 29 institutional and 18 private collections (partly or completely) for different acronictine species and specimens. After examination of few thousand specimens and dissecting more than 1200, with special regard on *Craniophora*-like specimens and closely related genera and examined 38 type specimens (24 types were dissected, 6 ones for the first time by me), I have found 17 new species. These new species were described in three papers (KISS & GYULAI 2013, KISS & JINBO 2016, KISS 2017) by traditional morpho-taxonomic methods. The newly proposed generic division (KISS 2017) provided a clearer picture on the taxonomy of the *Craniophora* s. l. with describing 8 new genera and revising 4 formerly described genera, set of 22 new combinations, 11 new reviewed statuses, and designating 8 lectotypes and 4 neotypes. Furthermore, I have given a proper and consistent diagnosis for the genera and species with special reference to the androconial apparatuses and the structures of the last abdominal segments.

In this term, the genus *Craniophora* s. l. has been defined based on the external appearance (including the length of the palpus), the genitalia characters, the number and structures of the androconial apparatuses and the last abdominal segments of both sexes.

This present work also provided an updated and annotated list of the valid species of the revised genera resulting in the following taxon numbers:

Craniophora generic complex

Craniophora Snellen, 1867: 8 species (1 of them own description)

Harmandicrania Kiss, 2017: 10 species (8 of them own description)

Graesericrania Kiss, 2017: 1 species
Eurypterocrania Kiss, 2017: 2 species (1 of them own description)

Cycloprora generic complex
Cycloprora Turner, 1920: 1 species
Turnerinycta Kiss, 2017: 1 species
Fascionycta Kiss, 2017: 4 species
Megalonycta Viette, 1965: 5 species

Genera separated from ***Craniophora*** and ***Cycloprora*** generic complexes
Berionycta Kiss, 2017: 10 species (7 of them own description)
Draudtinycta Kiss, 2017: 1 species
Sinonycta Kiss, 2017: 1 species
Miracopa Draudt, 1950: 1 species

Transferred species to the genus ***Acronicta***
Acronicta* (*Plataplecta*) *obscura (Leech, 1900)
Acronicta nigrivitta (Hampson, 1891)

In *Craniophora ligustri*, geometric morphometric based study was used to survey the shape variation of the male valvae in the Western Palaearctic and Russian Far East population (including subspecies *C. l. carbolucana* and *C. l. hyrcanica* and *C. pontica* as out-group), to reveal the possible geographic pattern, and giving some biogeographical interpretation. From the outline of the valvae, Fourier shape analysis was used to gain Hangle Fourier harmonics. The first 11 harmonics were tested by using CVA plot, UPGMA tree and MANOVA (Multivariate Analysis of Variance). For visualising the morphological variability of the genitalia in geographical space, the first CV axis was interpolated using IDW (Inverse Distance Weighting) method.

The geometric morphometrics based on the outline of valvae proved to be suitable to separate *C. pontica* from *C. ligustri*, and also to distinguish some different geographical population groups in *C. ligustri*. However, these differences are rather small due to the simplified shape of the valvae. Within *C. ligustri*, only populations of the Russian Far East could have been separated from the Western Palaearctic population groups. This difference seems to coincide with their disjunct distribution. On the other hand most of the examined species in the Russian Far East have paler greyish hindwings suffused with lighter fuscous or greyish scales. So, it seems that the Russian Far Eastern populations probably constitute a distinct subspecies. The results also suggested that the Western Palaearctic populations of *C. ligustri* can be subdivided into two (a Northern and a Southern) main population groups. The transitional zone between these demes is likely broad and continuous.

The subspecies of *C. l. carbolucana*, based on the results, seems to a darker morphotype of *C. ligustri* than a separated subspecies, while the subspecies *C. l. hyrcanica* looks like a valid subspecies based on its refugial distribution and its consistent coloured forewing and wing pattern.

In the former broad sense, *Craniophora* was a widely distributed genus occurs in almost the all major biogeographical regions (except the Nearctic, Neotropical Regions and Antarctica). After the newly proposed generic division, *Craniophora* was became a fully Palaearctic distributed genus with two disjunct distributional areas (Western and Eastern Palaearctic). The genus *Graesericrania* can be found only in the Eastern Palaearctic, while *Harmandicrania*, *Eurypterocrania*, partly in the southern part of the Eastern Palaearctic but mainly in the northern part of the Oriental Regions. The genera *Cycloprora* and *Turnerinycta* are distributed only in the Australian Region. The species of *Fascionycta* can be found from the southern part of Eastern Palaearctic to the northern part of the Australian Region. The genus *Megalonycta* is distributed only in Africa and Madagascar. The genus *Berionycta* is also distributed in Africa and the Arabian Peninsula. The genera *Draudtinycta*, *Miracopa* and *Sinonycta* are located mainly in the southern part of the Eastern Palaearctic.

Összefoglalás

A Lepkék rendje (Lepidoptera) több mint 150 000 leírt fajával a négy legnagyobb rovarrend egyike, a bagolylepkék (Noctuidae) családja pedig az egyik legnagyobb fajszámú család, mintegy 11 000 leírt fajjal. Az Acronictinae alcsaládot a bagolylepkéken belül a bazális alcsaládok közé sorolják. Közös jellemzőjük a hátulsó szárny "trifine" erezete (az M_2 ér redukálódott vagy csökevényes). Az alcsalád eurázsiai fajait, hagyományosan, külső és ivarszervi morfológia alapján, két nagy csoportba sorolják: az *Acronicta* génusz és rokonsága vs. a *Craniophora* génusz és rokonsága.

A *Craniophora* fajok szisztematikus feldolgozását 2011-ben, a PhD képzésemmel egyidejűleg, kezdtem el. A kezdeti lépések igen lassan haladtak, mivel a rendelkezésre álló anyag nem volt kellőképpen összerendezve. Ebben az időben az *Acronicta* génuszt jól megalapozott génusznak tartották, néhány leírt szubgénusszal, legalábbis a Palaearktikum területén előfordulók vonatkozásában. Ezzel szemben, a *Craniophora* génuszt inkább gyűjtő névnek tartották, mintsem egy jól definiált génusznak. Mostanra bebizonyosodott, hogy mind az *Acronicta*, mind a *Craniophora* génusz több, különálló filogenetikai rokonságú génuszra tagolódik.

Az elmúlt 6 év alatt 29 múzeumi és 18 magángyűjteményben vizsgáltam meg (részben vagy egészben) az Acronictinae alcsaládba tartozó lepkéket. Pár ezer példány megvizsgálása és több mint 1200 *Craniophora*-szerű példány

ivarszervi preparátumának elkészítése után (38 típus példányt vizsgáltam meg, melyből 24 típus már rendelkezett ivarszervi preparátummal, azonban 6 típus esetében ezeket én készítettem el), a megvizsgált anyagban 17 tudományra új faj egyedeit észleltem, amiket három tanulmányban le is közöltem (KISS & GYULAI 2013, KISS & JINBO 2016, KISS 2017). A fajok leírásához hagyományos morfo-taxonómiai módszereket használtam. A legfrissebb tanulmányban (Kiss 2017) a tágabb értelemben vett *Craniophora* génuszt 8 leíratlan és 4 korábban leírt génuszra bontottam fel, továbbá 22 új kombinációt és 11 új revideált státuszt állapítottam meg, valamint 8 lektotípust és 4 neotípust is kijelöltem. Megadtam az egyes génuszok és fajok pontos és következetes jellemzését, különös tekintettel az androconialis készülékekre és a potrohlemezek szerkezetére is.

Így a tágabb értelemben vett *Craniophora* génusz definiálásához a külső tulajdonságok mellett (beleértve a palpus ízeinek a hosszát is) felhasználtam az ivarszervi, az androconialis készülékek valamint mind a hím, mind a nőstény utolsó potrohlemezeinek sajátosságait is.

Jelen munkában, a revideált génuszok fajszámai a következőképpen alakultak:

Craniophora generikus komplex
- ***Craniophora*** Snellen, 1867: 8 faj (1 faj saját leírású)
- ***Harmandicrania*** Kiss, 2017: 10 faj (8 faj saját leírású)
- ***Graesericrania*** Kiss, 2017: 1 faj
- ***Eurypterocrania*** Kiss, 2017: 2 faj (1 faj saját leírású)

Cycloprora generikus komplex
- ***Cycloprora*** Turner, 1920: 1 faj
- ***Turnerinycta*** Kiss, 2017: 1 faj
- ***Fascionycta*** Kiss, 2017: 4 faj
- ***Megalonycta*** Viette, 1965: 5 faj

A ***Craniophora*** and ***Cycloprora*** generikus komplexektől elkülönített génuszok
- ***Berionycta*** Kiss, 2017: 10 faj (7 faj saját leírású)
- ***Draudtinycta*** Kiss, 2017: 1 faj
- ***Sinonycta*** Kiss, 2017: 1 faj
- ***Miracopa*** Draudt, 1950: 1 faj

Az ***Acronicta*** génuszba áthelyezett fajok
- ***Acronicta* (*Plataplecta*) *obscura*** (Leech, 1900)
- ***Acronicta nigrivitta*** (Hampson, 1891)

A *Craniophora ligustri* esetében morfometriai vizsgálatot végeztünk a hímek valva-jának alakján (külcsoportnak a *C. pontica* fajt használtuk). Kíváncsiak

voltunk a valva alakjának a variabilitására a nyugat-palaearktikus és az orosz távol keleti populációk esetében, valamint arra is, hogy a leírt nyugat-palaearktikus alfajok (*C. l. carbolucana* és *C. l. hyrcanica*) megkülönböztethető-e a valva-k alapján. Tanulmányunkban arra is kerestük a választ, hogy a lehetséges földrajzi mintázatnak milyen biogeográfiai vonatkozásai lehetnek. Ehhez a valva-k körvonalaiból, Fourier körvonal analízist használva, állapítottuk meg a Hangle Fourier harmonikusokat. Az első 11 harmonikust CVA, UPGMA és MANOVA módszerekkel teszteltük. A kapott morfológiai variabilitás térbeli ábrázolásához, az első CV tengelyt interpoláltuk az IDW módszer segítségével.

A *C. pontica* és *C. ligustri* valva alakjának geometriai morfometriai mérése során a két faj jól elkülönült egymástól, és a *C. ligustri* esetében néhány földrajzilag definiált populáció is elkülöníthető, noha az igen egyszerű felépítésű és hasonló alakú valva-k miatt, ezek a különbségek aprók. A vizsgált *C. ligustri* populációkban egyöntetűen csupán az orosz távol-keleti populáció különíthető el a nyugat-palaearktikus populációktól. A kapott eredmények alapján, ez a különbség összhangban van a két populáció csoport diszjunkt elterjedésével. Más részről pedig a legtöbb megvizsgált orosz távol-keleti példány hátulsó szárnya világosszürke, világosabb barnás vagy szürkés behintéssel, ezért ezt a különbséget alfaji differenciálódásnak is tekinthetjük. A morfometriai tanulmány alapján a *C. ligustri* faj nyugat-palaearktikus populációit további két nagy csoportra (északi és déli) oszthatjuk fel, melyek között az átmeneti zóna széles és folytonos.

A kapott eredmények alapján, a *C. l. carbolucana* alfaj inkább tűnik csupán a *C. ligustri* egy sötétebb színű formájának, mintsem valódi alfajnak, ezzel szemben a *C. l. hyrcanica* a refugiális elterjedése, következetes alapszíne és mintázata miatt, valódi alfajnak tekinthető.

Mostanáig a *Craniophora* génuszt egy széles elterjedésű csoportnak tartották, mely a Nearktisz, a Neotropisz és az Antarktisz kivételével minden biogeográfiai régióban előfordul. Jelenlegi ismereteink szerint, a szűkebb értelemben vett *Craniophora* génusz csupán a Palaearktikum területén fordul elő, és azon belül is a Nyugat- és Kelet-Palaearktiszban. két nagy diszjunkcióban. A további génuszok közül, a *Graesericrania* csak a Kelet-Palaearktiszban fordul elő, míg a *Harmandicrania* és *Eurypterocrania* génuszok fajai részben a Kelet-Palaearktisz déli területein, de leginkább az Orientális régióban fordulnak elő. A *Cycloprora* és *Turnerinycta* génusz fajai kizárólag az Ausztráliai régió területén találhatók meg, ezzel szemben a *Fascionycta* fajok a Kelet-Palaearktisz déli területein és az Orientális régióban is megtalálhatók, míg a *Megalonycta* fajok Afrika és Madagaszkár területén. A *Berionycta* génusz fajai szintén előfordulnak Afrikában, de emellett megtalálhatók még az Arab-félszigeten is. A *Draudtinycta*, *Miracopa* és *Sinonycta* génuszok kizárólag a Kelet-Palaearktisz déli területein élnek.

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Appendices

Appendix 1

KISS, Á. & GYULAI, P. (2013) Two new species and one subspecies of *Craniophora* Snellen, 1867 (Lepidoptera, Noctuidae, Acronictinae) from China. *ZooKeys*, **353**: 61–70.
http://dx.doi.org/10.3897/Zookeys.353.5990

Appendix 2

KISS, Á. & JINBO, U. (2016) *Craniophora minuscula* **sp. n.**, a new species of the genus *Craniophora* Snellen, 1867 (Lepidoptera: Noctuidae: Acronictinae) from Japan. *Journal of Asia-Pacific Entomology*, **19**: 929–935.
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Appendix 3

KISS, Á., TÓTH, J.P. & VARGA, Z. (2017) Male genitalia variability in *Craniophora ligustri* (Lepidoptera: Noctuidae: Acronictinae). *Acta Zoologica Academiae Scientiarum Hungaricae*, **63**(1): 1–15.
http://dx.doi.org/10.17109/AZH.63.1.1.2017

Appendix 4

KISS, Á. (2017) Taxonomic review of the *Craniophora* s. l. (Lepidoptera, Noctuidae, Acronictinae) generic complex with description of 8 new genera and 13 new species. *Zootaxa*, (accepted manuscript).

Appendix 5

List of the dissected specimens

Abbreviations for genital slides

adam – slide of H.-L. Han (Harbin, China)
GB – slide of G. Behounek (Grafing near Munich, Germany)
Heinicke – slide of ZFMK by W. Heinicke
Hö – slide of ZFMK by Ch. Boursin
HY – slide of H. Yoshimoto (NSMT)
INS – slide of RMNH by Á. Kiss
KA – slide of Á. Kiss (Debrecen, Hungary)
Matov – slide of A. Matov (ZISP)
MV – slide of NHMW by Á. Kiss
N – slide of ZSM by B. Laporte
No – slide of ZISP by I. V. Kozhantshikov
OP – slide of O. Pekarsky (Budapest, Hungary)
PGy – slide of P. Gyulai (Miskolc, Hungary)

Wilt – slide of BMNH by E. P. Wiltshire
ZFMK-Nr. – slide of ZFMK by V. S. Kononenko
underlined slide numbers – specimens were used in the geometric morphometric study
HT – holotype
LT – lectotype
NT – neotype
PLT – paralectotype
PT – paratype
ST – syntype

Genus ***Craniophora*** Snellen, 1867

Craniophora ligustri ligustri ([Denis & Schiffermüller], 1775) (541)

adam-01, China, Prov. Heilongjiang, Laoyeling, 24-25.07.2008, leg. P. Wang, coll. HHL
adam-02, China, Prov. Heilongjiang, Laoyeling, 24-25.07.2008, leg. P. Wang, coll. HHL
adam-04, China, Prov. Heilongjiang, Mt. Maoer-shan, 01.06.2007, leg. Han; Long; Li; Qi, coll. HHL
adam-08, China, Prov. Jilin, Tianqiaoling, 05.08.2007, leg. Han; Li; Qi; Wang, coll. HHL
KA006m, Hungary, Bükk, Noszvaj, Síkfőkút, 01-15.08.1982, leg. Z. Varga, coll. UD
KA011m, Hungary, Barcsi Ősborókás, 20.07.1987, leg. Z. Varga, coll. UD
KA013m, Hungary, Bükk, Noszvaj, Síkfőkút, 01-10.05.1983, leg. Z. Varga, coll. UD
KA014m, Hungary, Bükk, Noszvaj, Síkfőkút, 01-16.08.1982, leg. Z. Varga, coll. UD
KA017m, Hungary, Bükk, Noszvaj, Síkfőkút, 01-10.05.1983, leg. Z. Varga, coll. UD
KA021m, Hungary, Bükk, Noszvaj, Síkfőkút, 05.1983, leg. Z. Varga, coll. UD
KA022m, Hungary, Aggtelek, Jósvafő, Tohonya valley, 05.1981, leg. Z. Varga, coll. UD
KA023m, Hungary, Bockerek, 08.1981, leg. Z. Varga, coll. UD
KA024m, Hungary, Bükk, Noszvaj, Síkfőkút, 14-17.08.1980, leg. Z. Varga, coll. UD
KA025m, Hungary, Bükk, Noszvaj, Síkfőkút, 10-20.08.1982, leg. Z. Varga, coll. UD
KA026m, Hungary, Bükk, Noszvaj, Síkfőkút, 05.1983, leg. Z. Varga, coll. UD
KA027f, Hungary, Bükk, Bánkút, 04-05.07.1971, leg. Z. Varga, coll. UD
KA072f, Hungary, Aggtelek, Jósvafő, 25.07.1982, leg. Z. Varga, coll. UD
KA073f, Hungary, Bükk, Noszvaj, Síkfőkút, 01-15.08.1982, leg. Z. Varga, coll. UD
KA074m, Hungary, Bükk, Noszvaj, Síkfőkút, 01-15.08.1982, leg. Z. Varga, coll. UD
KA075m, Hungary, Bükk, Noszvaj, Síkfőkút, 10-20.08.1982, leg. Z. Varga, coll. UD
KA076m, Hungary, Bükk, Noszvaj, Síkfőkút, 01-15.08.1982, leg. Z. Varga, coll. UD
KA077m, Hungary, Bükk, Noszvaj, Síkfőkút, 06-07.05.1981, leg. Z. Varga, coll. UD
KA078f, Hungary, Bükk, Noszvaj, Síkfőkút, 05.1983, leg. Z. Varga, coll. UD
KA079f, Hungary, Aggtelek, Jósvafő, 28-31.05.1983, leg. Z. Varga, coll. UD
KA080m, Hungary, Bükk, Noszvaj, Síkfőkút, 05.1982, leg. Z. Varga, coll. UD
KA081m, Hungary, Bükk, Noszvaj, Síkfőkút, 08.1981, leg. Z. Varga, coll. UD
KA082m, Hungary, Bükk, Noszvaj, Síkfőkút, 10-20.08.1982, leg. Z. Varga, coll. UD
KA083f, Hungary, Bükk, Noszvaj, Síkfőkút, 05.1982, leg. Z. Varga, coll. UD
KA084f, Hungary, Bükk, Noszvaj, Síkfőkút, 10-20.05.1983, leg. Z. Varga, coll. UD
KA085f, Hungary, Aggtelek, Jósvafő, 10-15.05.1982, leg. Z. Varga, coll. UD
KA086f, Hungary, Bükk, Noszvaj, Síkfőkút, 05.1982, leg. Z. Varga, coll. UD
KA087m, Hungary, Aggtelek, Jósvafő, 13.08.1981, leg. Z. Varga, coll. UD
KA088f, Hungary, Aggtelek, Jósvafő, Tohonya-völgy, 15-20.08.1974, leg. Z. Varga, coll. UD
KA089m, Hungary, Aggtelek, Jósvafő, Tohonya-völgy, 29.05.1988, leg. Z. Varga, coll. UD
KA090m, Croatia, Labin, 300 m, 02.06.1977, leg. Martini, coll. HNHM
KA091m, Croatia, Rabac, 200 m, 28.05.1976, leg. Martini, coll. HNHM
KA092m, Croatia, Labin, 300 m, 02.06.1977, leg. Martini, coll. HNHM
KA093m, Croatia, Rabac, 100 m, 20.05.1974, leg. Martini, coll. HNHM
KA094m, Croatia, Rabac, 100 m, 20.05.1974, leg. Martini, coll. HNHM
KA095f, Croatia, Labin, 300 m, 02.06.1977, leg. Martini, coll. HNHM
KA096m, Croatia, Rabac, 200 m, 28.05.1976, leg. Martini, coll. HNHM
KA097m, Croatia, Labin, 300 m, 02.06.1977, leg. Martini, coll. HNHM

KA098f, Croatia, Rabac, 200 m, 28.05.1976, leg. Martini, coll. HNHM
KA099f, Croatia, Rabac, 200 m, 28.05.1976, leg. Martini, coll. HNHM
KA100m, Spain, Prov. Gerona, Viladrau, 1000 m, 22.06.1987, coll. HNHM
KA102m, Russia, NE Caucasus, Chechen Republic, Fortanga, 1000 m, 17-18.07.1991, leg. B. Herczig; V. Markó; Z. Mészáros, coll. HNHM
KA103m, Russia, NE Caucasus, Chechen Republic, Fortanga, 1000 m, 17-18.07.1991, leg. B. Herczig; V. Markó; Z. Mészáros, coll. HNHM
KA104m, Russia, NE Caucasus, Chechen Republic, Fortanga, 1000 m, 17-18.07.1991, leg. B. Herczig; V. Markó; Z. Mészáros, coll. HNHM
KA105m, Russia, NE Caucasus, Chechen Republic, Fortanga, 1000 m, 17-18.07.1991, leg. B. Herczig; V. Markó; Z. Mészáros, coll. HNHM
KA106m, Russia, NE Caucasus, Chechen Republic, Fortanga, 1000 m, 17-18.07.1991, leg. B. Herczig; V. Markó; Z. Mészáros, coll. HNHM
KA109f, Russia, NW Caucasus, Republic of Adygea, Guzeripel (Guzeripl'), 1200 m, 03.08.1981, leg. Danilevski, coll. HNHM
KA114m, Russia, NW Caucasus, Republic of Adygea, Guzeripel (Guzeripl'), 1200 m, 03.08.1971, leg. Danilevski, coll. HNHM
KA119m, Russia, NW Caucasus, Republic of Adygea, Guzeripel (Guzeripl'), 1200 m, 03.08.1971, leg. Danilevski, coll. HNHM
KA120m, Russia, Primorsky Krai, Sikhote-Alin Mts, 25 km S Kavalerovo, 17-18.08.1992, leg. Danilevski, coll. HNHM
KA121f, Russia, Primorsky Krai, Sikhote-Alin Mts, 70 km NW Arsenjev [Arszenyev], 18-19.08.1993, leg. Danilevski, coll. HNHM
KA123m, Russia, Primorsky Krai, Sikhote-Alin Mts, 25 km S Kavalerovo, 17-18.08.1992, leg. Danilevski, coll. HNHM
KA124m, Russia, Jewish Autonomous Oblast, Kuldur [Kul'dur], 01-18.07.1989, 49°13'N, 131°38'E, leg. Ogarkov, coll. HNHM
KA125f, Russia, Primorsky Krai, Sikhote-Alin Mts, 14 km NW Lazo, 12.08.1993, leg. Danilevski, coll. HNHM
KA126m, Russia, Primorsky Krai, Razdelnoje, 14.07.1982, leg. Lindt, coll. HNHM
KA127m, Russia, Primorsky Krai, Sikhote-Alin Mts, 14 km NW Lazo, 12.08.1993, leg. Danilevski, coll. HNHM
KA128m, Russia, Primorsky Krai, Sikhote-Alin Mts, 14 km NW Lazo, 12.08.1993, leg. Danilevski, coll. HNHM
KA131f, South Korea, Prov. Cheju, Mt. Halla-san, Yongshil route, 1050 m, 33°21'N, 126°30'E, 30.04.1994, leg. Peregovits; Ronkay; Vojnits, No. 1686, coll. HNHM
KA132f, South Korea, Prov. Cheju, 3 km S from Songpanak, Mt. Hallasan, 650 m, 33°22'N, 126°36'E, 29.04.1994, leg. Peregovits; Ronkay; Vojnits, No. 1684, coll. HNHM
KA133f, South Korea, Prov. Cheju, 3 km S from Songpanak, Mt. Hallasan, 650 m, 33°22'N, 126°36'E, 29.04.1994, leg. Peregovits; Ronkay; Vojnits, No. 1684, coll. HNHM
KA134f, South Korea, Prov. Cheju, Mt. Halla-san, Yongshil route, 1050 m, 27.04.1994, 33°21'N, 126°30'E, leg. Peregovits; Ronkay; Vojnits, No. 1680, coll. HNHM
KA136m, South Korea, Prov. Cheju, 3 km S from Songpanak, Mt. Hallasan, 650 m, 33°22'N, 126°36'E, 29.04.1994, leg. Peregovits; Ronkay; Vojnits, No. 1684, coll. HNHM
KA137f, South Korea, Prov. Cheju, 3 km S from Songpanak, Mt. Hallasan, 650 m, 33°22'N, 126°36'E, 29.04.1994, leg. Peregovits; Ronkay; Vojnits, No. 1684, coll. HNHM
KA212m, South Korea, Prov. Cheju, Mt. Halla-san, Yongshil route, 1050 m, 33°21'N, 126°30'E, 30.04.1994, leg. Peregovits; Ronkay; Vojnits, No. 1686, coll. HNHM
KA213m, South Korea, Prov. Cheju, 3 km S from Songpanak, Mt. Hallasan, 650 m, 33°22'N, 126°36'E, 29.04.1994, leg. Peregovits; Ronkay; Vojnits, No. 1684, coll. HNHM
KA214m, South Korea, Prov. Cheju, 3 km S from Songpanak, Mt. Hallasan, 650 m, 33°22'N, 126°36'E, 29.04.1994, leg. Peregovits; Ronkay; Vojnits, No. 1684, coll. HNHM
KA215m, Abkhazia, Caucasus, Sukhumskaia Oblast, Lujnyi priiut, 1600 m, 10.08.1986, leg. L. Podlussány, coll. HNHM
KA216f, Abkhazia, Caucasus, Sukhumskaia Oblast, Lujnyi priiut, 1600 m, 12.08.1986, leg. L. Podlussány, coll. HNHM
KA217m, Italy, Sardinia, Villacidro, Cucurimannu, 500 m, 29.05.1974, leg. L. Gozmány, coll. HNHM

KA218f, Italy, Sardinia, Perdumelis, Rio Gutturuddu, 300 m, 22.05.1974, leg. L. Gozmány, coll. HNHM
KA219m, Croatia, Rovini, 01.09.1976, leg. A. Vojnits, coll. HNHM
KA220f, Croatia, Rovini, 02.09.1976, leg. A. Vojnits, coll. HNHM
KA221m, Croatia, Rovini, 03.09.1976, leg. A. Vojnits, coll. HNHM
KA222m, Croatia, Rovini, 01.09.1976, leg. A. Vojnits, coll. HNHM
KA223m, Croatia, Rovini, 03.09.1976, leg. A. Vojnits, coll. HNHM
KA224m, Croatia, Rovini, 02.09.1976, leg. A. Vojnits, coll. HNHM
KA225m, Croatia, Rovini, 01.09.1976, leg. A. Vojnits, coll. HNHM
KA226f, Macedonia, Prilep, 02.08.1972, leg. A. Vojnits; Z. Mészáros, coll. HNHM
KA227m, Bulgaria, Melnik, 25.10.1981, leg. Mészáros; Szabóky, coll. HNHM
KA230f, Bulgaria, Kamcsija, Pirin kemping, 30.08.1973, leg. Sin-Holló, coll. HNHM
KA231f, Bulgaria, Melnik, 11-17.05.1984, leg. G. Ronkay, coll. HNHM
KA232m, Bulgaria, Pirin, 19.05.1982, leg. L. Podlussány, coll. HNHM
KA233m, Bulgaria, Melnik, 25.10.1981, leg. Mészáros; Szabóky, coll. HNHM
KA234f, Bulgaria, Kresna, Struma valley, 11-17.05.1984, leg. G. Ronkay; Cs. Szabóky, coll. HNHM
KA235f, Japan, Hokkaido, Jozomkei [Jozenkei], 16.08.1925, leg. Matsumura, coll. HNHM
KA236m, Russia, Primorsky Krai, Razdelnoje, 14.07.1982, leg. Lindt, coll. HNHM
KA237m, Russia, Primorsky Krai, Sikhote-Alin Mts, 70 km NW Arsenjev [Arszenyev], 18-19.08.1993, leg. Danilevski, coll. HNHM
KA238m, Russia, S Kunashir Island, 10 m, 03.06.1985, leg. Danilevski, coll. HNHM
KA240m, Russia, Primorsky Krai, Sikhote-Alin Mts, 14 km NW Lazo, 12.08.1993, leg. Danilevski, coll. HNHM
KA241m, Russia, Primorsky Krai, Sikhote-Alin Mts, 14 km NW Lazo, 12.08.1993, leg. Danilevski, coll. HNHM
KA251m, Russia, S Kunashir Island, 10 m, 07.08.1985, leg. Danilevski, coll. HNHM
KA274m, Spain, Prov. Leon, Rodrigatos de Las Regveras, 1000 m, 12.08.1982, leg. C. Suárez, coll. JLY
KA310m, Ukraine, Velyka Dobron, 11-12.08.2011, leg. Sz. Szanyi, coll. SzSz
KA311m, Ukraine, Velyka Dobron, 11-12.08.2011, leg. Sz. Szanyi, coll. SzSz
KA312m, Ukraine, Velyka Dobron, 11-12.08.2011, leg. Sz. Szanyi, coll. SzSz
KA313m, Ukraine, Velyka Dobron, 11-12.08.2011, leg. Sz. Szanyi, coll. SzSz
KA314m, Bulgaria, Kamchia, Kamchiya-river, 16.07.2012, leg. I. Juhász, coll. KA
KA315m, Bulgaria, Sinemorets, 17-18.07.2012, leg. I. Juhász, coll. KA
KA316m, Bulgaria, Kamchia, Kamchiya-river, 16.07.2012, leg. I. Juhász, coll. KA
KA317f, Bulgaria, Sinemorets, 17-18.07.2012, leg. I. Juhász, coll. KA
KA318f, Switzerland, Kanton Jura, Chenevez, Le Tchâfouè, 490 m, 568.75/249.93, 17.08.2006, leg. L. Rezbanyai-Reser, coll. NML
KA319m, Switzerland, Kanton Jura, Chenevez, Le Tchâfouè, 490 m, 568.75/249.93, 17.08.2006, leg. L. Rezbanyai-Reser, coll. NML
KA320m, Switzerland, Kanton Jura, Chenevez, Le Tchâfouè, 490 m, 568.75/249.93, 17.08.2006, leg. L. Rezbanyai-Reser, coll. NML
KA321m, Switzerland, Kanton Jura, Chenevez, Le Tchâfouè, 490 m, 568.75/249.93, 13.09.2006, leg. L. Rezbanyai-Reser, coll. NML
KA322f, Switzerland, Kanton Jura, Chenevez, Le Tchâfouè, 490 m, 568.75/249.93, 06.08.2007, leg. L. Rezbanyai-Reser, coll. NML
KA323f, Switzerland, Kanton Jura, Chenevez, Le Tchâfouè, 490 m, 568.75/249.93, 26.05.2008, leg. L. Rezbanyai-Reser, coll. NML
KA324m, Switzerland, Kanton Jura, Chevenez, Combe Vallay, 470 m, 568.47/249.46, 05.06.2007, leg. L. Rezbanyai-Reser, coll. NML
KA325f, Switzerland, Kanton Jura, Montfaucon, Montcezez, 860 m, 573.6/236.6, 18.07.2006, leg. L. Rezbanyai-Reser, coll. NML
KA326m, Switzerland, Kanton Ticino, Medeglia, Val d'Iseo, 700 m, 718.5/108.1, 01-10.06.2000, leg. L. Rezbanyai-Reser, coll. NML
KA327m, Switzerland, Kanton Ticino, Medeglia, Val d'Isone, 700 m, 718.5/108.1, 11-20.07.2000, leg. L. Rezbanyai-Reser, coll. NML
KA328m, Switzerland, Kanton Ticino, Medeglia, Val d'Isone, 700 m, 718.5/108.1, 11-20.07.2000, leg. L. Rezbanyai-Reser, coll. NML

KA329f, Switzerland, Kanton Ticino, Pedrinate (Chiasso), Santo Stefano, 480 m, 721.90/76.55, 04.08.2010leg. L. Rezbanyai-Reser, coll. NML
KA330f, Switzerland, Kanton Ticino, Pedrinate (Chiasso), Santo Stefano, 490 m, 721.65/76.60, 06.06.2008, leg. L. Rezbanyai-Reser, coll. NML
KA331m, Switzerland, Kanton Ticino, Pedrinate (Chiasso), Santo Stefano, 490 m, 721.65/76.60, 06.06.2008, leg. L. Rezbanyai-Reser; E. Schäffer, coll. NML
KA332m, Switzerland, Kanton Ticino, Malacarne (Gudo), Casa Romantica, 340 m, 715.2/115.1, 27.07.2008, leg. L. Rezbanyai-Reser; E. Schäffer, coll. NML
KA333m, Switzerland, Kanton Ticino, Malacarne (Gudo), Casa Romantica, 340 m, 715.2/115.1, 27.07.2008, leg. L. Rezbanyai-Reser; E. Schäffer, coll. NML
KA334f, Switzerland, Kanton Schwyz, Gersau, Oberholz, 550 m, 04.08.1981, leg. L. Rezbanyai-Reser, coll. NML
KA335f, Switzerland, Kanton Schwyz, Gersau, Oberholz, 700 m, 07.08.1976, leg. L. Rezbanyai-Reser; H. J. Geiger, coll. NML
KA336m, Switzerland, Kanton Schwyz, Gersau, Oberholz, 550 m, 02.06.1981, leg. L. Rezbanyai-Reser, coll. NML
KA337m, Switzerland, Kanton Schwyz, Gersau, Oberholz, 550 m, 02.06.1981, leg. L. Rezbanyai-Reser, coll. NML
KA338f, Switzerland, Kanton Schwyz, Gersau, Oberholz, 550 m, 21.08.1979, leg. L. Rezbanyai-Reser, coll. NML
KA339m, Switzerland, Kanton Schwyz, Gersau, Oberholz, 550 m, 14.08.1979, leg. L. Rezbanyai-Reser, coll. NML
KA340m, Switzerland, Kanton Schwyz, Gersau, Oberholz, 700 m, 07.08.1976, Dr. Rezbanyai, H. J. Geiger, coll. NML
KA341f, Switzerland, Kanton Ticino, Malacarne (Gudo), Casa Romantica, 340 m, 715.2/115.1, 12.09.2010, leg. L. Rezbanyai-Reser; E. Schäffer, coll. NML
KA342m, Switzerland, Kanton Ticino, Pedrinate (Chiasso), Santo Stefano, 490 m, 721.65/76.60, 07.05.2008, leg. L. Rezbanyai-Reser, coll. NML
KA343m, Switzerland, Kanton Ticino, Malacarne (Gudo), Casa Romantica, 340 m, 715.2/115.1, 15.04.2009, leg. L. Rezbanyai-Reser, coll. NML
KA344m, Switzerland, Kanton Schwyz, Gersau, Oberholz, 550 m, 22.06.1979, leg. L. Rezbanyai-Reser, coll. NML
KA345m, Switzerland, Kanton Schwyz, Gersau, Oberholz, 550 m, 14.05.1981, leg. L. Rezbanyai-Reser, coll. NML
KA346m, Switzerland, Kanton Schwyz, Gersau, Oberholz, 550 m, 04.08.1981, leg. L. Rezbanyai-Reser, coll. NML
KA347m, Bulgaria, Kamchia, Kamchiya-river, 16.07.2012, leg. I. Juhász, coll. KA
KA348m, Bulgaria, Kamchia, Kamchiya-river, 16.07.2012, leg. I. Juhász, coll. KA
KA349m, Bulgaria, Kamchia, Kamchiya-river, 16.07.2012, leg. I. Juhász, coll. KA
KA350m, Bulgaria, Kamchia, Kamchiya-river, 16.07.2012, leg. I. Juhász, coll. KA
KA351m, Bulgaria, Kamchia, Kamchiya-river, 16.07.2012, leg. I. Juhász, coll. KA
KA352m, Bulgaria, Kamchia, Kamchiya-river, 16.07.2012, leg. I. Juhász, coll. KA
KA353m, Bulgaria, Kamchia, Kamchiya-river, 16.07.2012, leg. I. Juhász, coll. KA
KA354m, Bulgaria, Kamchia, Kamchiya-river, 16.07.2012, leg. I. Juhász, coll. KA
KA355f, Bulgaria, Kamchia, Kamchiya-river, 16.07.2012, leg. I. Juhász, coll. KA
KA356m, Bulgaria, Sinemorets, 17-18.07.2012, leg. I. Juhász, coll. KA
KA357m, Bulgaria, Kamchia, Kamchiya-river, 16.07.2012, leg. I. Juhász, coll. KA
KA358m, Bulgaria, Sinemorets, 17-18.07.2012, leg. I. Juhász, coll. KA
KA359m, Bulgaria, Kamchia, Kamchiya-river, 16.07.2012, leg. I. Juhász, coll. KA
KA360m, Bulgaria, Sinemorets, 17-18.07.2012, leg. I. Juhász, coll. KA
KA361m, Bulgaria, Sinemorets, 17-18.07.2012, leg. I. Juhász, coll. KA
KA362m, Bulgaria, Sinemorets, 17-18.07.2012, leg. I. Juhász, coll. KA
KA363m, Bulgaria, Sinemorets, 17-18.07.2012, leg. I. Juhász, coll. KA
KA364m, Bulgaria, Sinemorets, 17-18.07.2012, leg. I. Juhász, coll. KA
KA366m, Spain, Prov. Gerona, Besalu, 300 m, A.06.1983, W. Pavlas, coll. PGy
KA392m, South Korea, Prov. Cheju, 3 km S from Songpanak, Mt. Hallasan, 650 m, 33°22'N, 126°36'E, 29.04.1994, leg. Peregovits; Ronkay; Vojnits, No. 1684, coll. GR

KA393f, South Korea, Prov. Cheju, 3 km S from Songpanak, Mt. Hallasan, 650 m, 33°22'N, 126°36'E, 29.04.1994, leg. Peregovits; Ronkay; Vojnits, No. 1684, coll. GR
KA394f, South Korea, Prov. Cheju, 3 km S from Songpanak, Mt. Hallasan, 650 m, 33°22'N, 126°36'E, 29.04.1994, leg. Peregovits; Ronkay; Vojnits, No. 1684, coll. GR
KA395m, South Korea, Prov. Cheju, 3 km S from Songpanak, Mt. Hallasan, 650 m, 33°22'N, 126°36'E, 29.04.1994, leg. Peregovits; Ronkay; Vojnits, No. 1684, coll. GR
KA396m, Italy, Trentino, Nago S. Garda, A.04.1953, leg. Eisenberger, coll. ZSM
KA397m, Italy, Trentino, Sarche-Limaro, 350 m, 23-25.08.1963, leg. B. Koch; W. Pavlas, coll. ZSM
KA398m, Italy, South Tyrol, Naturns, Vintschgau, 500-700 m, 13-22.07.1959, leg. B. Koch, coll. ZSM
KA399m, Italy, South Tyrol, Überetsch, Altenburger Forest, 600 m, E.04.1957, leg. Daniel; Wolfsberger, coll. ZSM
KA400f, Macedonia, Treska-canyon, Matka, 400-800 m, 19-29.05.1955, leg. F. Daniel, coll. ZSM
KA401m, Macedonia, Treska-canyon, Matka, 400-800 m, 19-29.05.1955, leg. F. Daniel, coll. ZSM
KA402m, Poland, Osterode, Juni 1916, ex. coll. E. Schütze, coll. ZSM
KA403m, Denmark, Hillerød, 10.07.1952, coll. ZSM
KA404m, Latvia, Amata, 1933, leg. W. Brandt, ex. coll. Osthelder, coll. ZSM
KA408f, Russia, Primorsky Krai, Kedrovaya Pad Nature Reserve, 15.08.1965, leg. Shapiro, coll. ZSM
KA409m, Italy, Sardinia, Belvi, 700 m, 28.05.1975, ex. coll. F. Hartig, coll. ZSM
KA410m, Russia, Caucasus, Karachay-Cherkessia, Teberda, 12.07.1968, leg. Alberti, ex. coll. Alberti, coll. ZSM
KA411f, Georgia, Caucasus, Pasanauri, 1-12.07.1966, Alberti, ex. coll. Alberti, coll. ZSM
KA412m, Italy, South Tyrol, Terlan, leg. Franz Dannehl, coll. ZSM
KA416f, Italy, South Tyrol, Bozen, 30.04.????, leg. Dannehl, coll. ZSM
KA433m, Spain, Prov. Asturias, Arenas de Cabrales, 26.04.????, MNCN_ENT 90345, coll. MNCN
KA434f, Spain, Prov. Asturias, Poncebos, 07.1933, Boada, MNCN_ENT 90328, coll. MNCN
KA435m, Spain, Prov. Gerona, Gombreny, 05.09.1951, MNCN_ENT 90349, coll. MNCN
KA436m, Spain, Prov. Asturias, Arenas de Cabrales, 29.07.1949, MNCN_ENT 90340, coll. MNCN
KA437m, Spain, Prov. Gerona, Gualba, 15.09.1951, MNCN_ENT 90353, coll. MNCN
KA438m, Spain, Prov. Gerona, Gombreny, 01.07.1951, MNCN_ENT 90348, coll. MNCN
KA439f, Spain, Prov. Asturias, Poncebos, 07.1933, Boada, MNCN_ENT 90326, coll. MNCN
KA440m, Spain, Prov. Asturias, Arenas de Cabrales, 25.09.1949, MNCN_ENT 90342, coll. MNCN
KA449m, Croatia, Istria, 1 km S of Rovinj, on the big cliff, 31.08.2005, leg. P. Gyulai; A. Garai, coll. PGy
KA450f, Croatia, Istria, 1 km S of Rovinj, on the big cliff, 31.08.2005, leg. P. Gyulai; A. Garai, coll. PGy
KA451m, Croatia, Istria, 1 km S of Rovinj, on the big cliff, 31.08.2005, leg. P. Gyulai; A. Garai, coll. PGy
KA452m, Croatia, Istria, 1 km S of Rovinj, on the big cliff, 31.08.2005, leg. P. Gyulai; A. Garai, coll. PGy
KA453f, South Korea, Prov. Cheju, 3 km S from Songpanak, Mt. Hallasan, 650 m, 33°22'N, 126°36'E, 29.04.1994, leg. Peregovits; Ronkay; Vojnits, No. 1684, coll. GR
KA454f, South Korea, Prov. Cheju, 3 km S from Songpanak, Mt. Hallasan, 650 m, 33°22'N, 126°36'E, 29.04.1994, leg. Peregovits; Ronkay; Vojnits, No. 1684, coll. GR
KA455m, South Korea, Prov. Cheju, 3 km S from Songpanak, Mt. Hallasan, 650 m, 33°22'N, 126°36'E, 29.04.1994, leg. Peregovits; Ronkay; Vojnits, No. 1684, coll. GR
KA456m, South Korea, Prov. Cheju, 3 km S from Songpanak, Mt. Hallasan, 650 m, 33°22'N, 126°36'E, 29.04.1994, leg. Peregovits; Ronkay; Vojnits, No. 1684, coll. GR
KA457m, South Korea, Prov. Cheju, 3 km S from Songpanak, Mt. Hallasan, 650 m, 33°22'N, 126°36'E, 29.04.1994, leg. Peregovits; Ronkay; Vojnits, No. 1684, coll. GR
KA458m, South Korea, Prov. Cheju, 3 km S from Songpanak, Mt. Hallasan, 650 m, 33°22'N, 126°36'E, 29.04.1994, leg. Peregovits; Ronkay; Vojnits, No. 1684, coll. GR
KA459f, South Korea, Prov. Cheju, 3 km S from Songpanak, Mt. Hallasan, 650 m, 33°22'N, 126°36'E, 29.04.1994, leg. Peregovits; Ronkay; Vojnits, No. 1684, coll. GR
KA460f, South Korea, Prov. Cheju, 3 km S from Songpanak, Mt. Hallasan, 650 m, 33°22'N, 126°36'E, 29.04.1994, leg. Peregovits; Ronkay; Vojnits, No. 1684, coll. GR
KA461m, South Korea, Prov. Cheju, 3 km S from Songpanak, Mt. Hallasan, 650 m, 33°22'N, 126°36'E, 29.04.1994, leg. Peregovits; Ronkay; Vojnits, No. 1684, coll. GR

KA462m, South Korea, Prov. Cheju, 3 km S from Songpanak, Mt. Hallasan, 650 m, 33°22'N, 126°36'E, 29.04.1994, leg. Peregovits; Ronkay; Vojnits, No. 1684, coll. GR
KA463f, South Korea, Prov. Cheju, 3 km S from Songpanak, Mt. Hallasan, 650 m, 33°22'N, 126°36'E, 29.04.1994, leg. Peregovits; Ronkay; Vojnits, No. 1684, coll. GR
KA464f, South Korea, Prov. Cheju, 3 km S from Songpanak, Mt. Hallasan, 650 m, 33°22'N, 126°36'E, 29.04.1994, leg. Peregovits; Ronkay; Vojnits, No. 1684, coll. GR
KA465m, South Korea, Prov. Cheju, at the eastern edge of the Halla-san National Park Songpanak, Mt. Hallasan, 750 m, 23.08.1992, leg. Ronkay L; Vojnits A., No 1631-1634, coll. HNHM
KA467m, Russia, Primorsky Krai, Sikhote-Alin Mts, 25 km E Kavalerovo, 17-18.08.1992, leg. Danilevski, coll. HNHM
KA468m, Russia, Primorsky Krai, 38 km W of Kavalerovo, 400 m, 17-18.08.1992, leg. Danilevski, coll. HNHM
KA469m, Russia, Primorsky Krai, 70 km NW of Arsenjev [Arszenyev], 18-19.08.1993, leg. Danilevski, coll. HNHM
KA470f, Russia, Primorsky Krai, 70 km NW of Arsenjev [Arszenyev], 18-19.08.1993, leg. Danilevski, coll. HNHM
KA471m, Russia, Primorsky Krai, 38 km W of Kavalerovo, 400 m, 17-18.08.1992, leg. Danilevski, coll. HNHM
KA472m, Russia, Primorsky Krai, Vladivostok, 02.08.1982, leg. Lindt, coll. HNHM
KA482m, Croatia, Dalmatia, Isla Funtana, 24.08.1982, leg. Mattioni, coll. MSNM
KA484m, Italy, Calabria, Castellacio, 880 m, 10.08.1990, leg. Cerny, coll. HNHM
KA485m, Italy, Sicily, Ragusa, 12.08.1990, leg. Cerny, coll. HNHM
KA486m, Italy, Trentino, Pietramurata, Gardasee, 250 m, E.05.1982, leg. Strohle, coll. HNHM
KA487m, Italy, Sicily, Ragusa, 12.08.1990, leg. Cerny, coll. HNHM
KA488m, Italy, Calabria, Castellacio, 880 m, 10.08.1990, leg. Cerny, coll. HNHM
KA489m, Italy, Sicily, Ragusa, 12.08.1990, leg. Cerny, coll. HNHM
KA490f, Italy, Trentino, Pietramurata, Gardasee, 250 m, E.05.1982, leg. Strohle, coll. HNHM
KA497m, Ukraine, Velyka Dobron, 10.08.2011, leg. Sz. Szanyi, coll. SzSz
KA498m, Ukraine, Velyka Dobron, 25.08.2011, leg. Sz. Szanyi, coll. SzSz
KA499f, Ukraine, Velyka Dobron, 15.08.2011, leg. Sz. Szanyi, coll. SzSz
KA500m, Ukraine, Velyka Dobron, 25.08.2011, leg. Sz. Szanyi, coll. SzSz
KA501m, Ukraine, Velyka Dobron, 25.08.2011, leg. Sz. Szanyi, coll. SzSz
KA502m, Ukraine, Velyka Dobron, 25.08.2011, leg. Sz. Szanyi, coll. SzSz
KA517m, Italy, Toscana, Arezzo, Pieve Maiano, 18.09.1982, leg. N. Grillo, coll. MSNG
KA518m, Italy, Molise, Pesche, 23.05.1982, leg. N. Grillo, coll. MSNG
KA519m, Italy, Toscana, Arezzo, Pieve Maiano, 27.07.1973, leg. N. Grillo, coll. MSNG
KA520m, Italy, Toscana, Arezzo, Pieve Maiano, 25.07.1973, leg. N. Grillo, coll. MSNG
KA521m, Italy, Sicily, Cefalu-Gibilmanna, 600 m, 14.09.1987, leg. N. Grillo, coll. MSNG
KA522m, Italy, Sicily, Cefalu-Gibilmanna, 600 m, 23.08.1987, leg. N. Grillo, coll. MSNG
KA523f, Italy, Sicily, Cefalu-Gibilmanna, 600 m, 14.09.1987, leg. N. Grillo, coll. MSNG
KA524m, Italy, Lazio, Frascati, 16.05.1966, leg. S. Beer, coll. MSNG
KA525f, Italy, South Tyrol, Bressanone, 17.08.1977, leg. S. Beer, coll. MSNG
KA526m, Italy, Trentino, Lago S. Croce, 05.08.1965, coll. MSNG
KA527f, Italy, Vicenza, Arsiero, 03.08.1991, leg. E. Borgo; A. Borgo, coll. MSNG
KA528m, Italy, Lazio, Anticoli Corrado, 23.08.1937, leg. Prola, coll. MSNG
KA531m, Italy, Roma, Castel Porziano, 18.05.1963, leg. Barbera, coll. MSNG
KA532m, Italy, Alpi di Renon, Collalbo, 13.08.1959, leg. Barbera, coll. MSNG
KA537m, Italy, Lazio, Bracciano, 18.04.1957, leg. Barbera, coll. MSNG
KA543m, Denmark, Hillerød, 10.07.1952, coll. MSNM
KA544m, Estonia, Lechts, leg. Fr. V. Nuene, coll. MSNM
KA557m, Ukraine, Velyka Dobron, 02.08.2012, leg. Sz. Szanyi, coll. SzSz
KA558m, Ukraine, Velyka Dobron, 02.08.2012, leg. Sz. Szanyi, coll. SzSz
KA559m, Ukraine, Velyka Dobron, 02.08.2012, leg. Sz. Szanyi, coll. SzSz
KA560m, Ukraine, Velyka Dobron, 02.08.2012, leg. Sz. Szanyi, coll. SzSz
KA561f, Ukraine, Velyka Dobron, 02.08.2012, leg. Sz. Szanyi, coll. SzSz
KA562m, Hungary, Bükk, Bánkút, 22.08.1968, leg. Z. Varga, coll. UD
KA563m, Hungary, Bükk, Noszvaj, Síkfőkút, 17.08.1979, leg. Z. Varga, coll. UD

KA564m, Hungary, Bükk, Noszvaj, Síkfőkút, 06.1978, leg. Z. Varga, coll. UD
KA565m, Hungary, Bükk, Noszvaj, Síkfőkút, 08.1981, leg. Z. Varga, coll. UD
KA566m, Hungary, Bükk, Bánkút, 22.08.1968, leg. Z. Varga, coll. UD
KA567m, Hungary, Bükk, Noszvaj, Síkfőkút, 10-20.08.1982, leg. Z. Varga, coll. UD
KA568m, Denmark, Læsø, 29.07.1971, leg. M. Fibiger, coll. ZMUC
KA569m, Denmark, Amager, Kongelunden, 28.07.1967, leg. H. K. Jensen, coll. ZMUC
KA570m, Denmark, Amager, Kastrup, 21.07.1965, leg. O. Karsholt, coll. ZMUC
KA571m, Denmark, Bornholm, Vang, 18.07.1956, coll. ZMUC
KA572m, Denmark, Virklund, 12.06.1957, coll. ZMUC
KA573f, Denmark, Jylland, Moesgård, 23.06.1940, coll. ZMUC
KA574m, Denmark, Svendborg, 12.07.1950, ex coll. K. Groth, coll. ZMUC
KA575m, Denmark, Sjælland, Kulhuse, 11.07.2005, leg. H. Hendriksen, coll. ZMUC
KA576m, Denmark, Asserbo, 19.07.1972, leg. M. Fibiger, coll. ZMUC
KA577m, Denmark, Sjælland, Kulhuse, 18.07.2004, leg. H. Hendriksen, coll. ZMUC
KA578m, Denmark, Sjælland, Kåruphøj, 26.06.2003, leg. H. Hendriksen, coll. ZMUC
KA579m, Denmark, Sjælland, Kåruphøj, 26.07.2001, leg. H. Hendriksen, coll. ZMUC
KA580m, England, Hampshire, Chendler's Ford, 30.06.1998, leg. B. Goter, coll. ZMUC
KA581m, England, Gloucestershire, Haresfield, 31.06.1952(?), coll. ZMUC
KA582m, England, Gloucestershire, Stroud, 06.1962, R. P. Demuth, coll. ZMUC
KA583m, England, Cambridgeshire, Chippenham, 03.07.1976, B. Goater, coll. ZMUC
KA584m, Sweden, Kullaberg, 10.08.1973, leg. R. Johansson, coll. ZMUC
KA604f, Sweden, Areda, 15 km NE Växjö, 25.06.1945, leg. R. Johansson, coll. ZMUC
KA605f, Greece, Corfu, Agios Gorgios, 21.09.2001, leg. H. Hendriksen, coll. ZMUC
KA606f, France, Corse, Folelli, 40 km S Bastia, sea level, 09-10.05.1999, leg. O. Karsholt, coll. ZMUC
KA608m, Armenia, Prov. Kotayk, Tsaghkadzor, 1870-2350 m, 40°32'N, 44°32'E, 09-11.07.2011, leg. O. Karsholt, coll. ZMUC
KA610f, Armenia, David Bek Water Res, 1300 m, 39°20'N, 46°25'E, 25-26.06.2003, leg. M. Danilevski, coll. PGy
KA611m, Spain, Prov. Gerona, Gombreny, 06.07.1951, MNCN_Ent 90350, coll. MNCN
KA612m, Spain, Prov. Asturias, Arenas de Cabrales, 30.07.1949, MNCN_Ent 90347, coll. MNCN
KA614m, Spain, Prov. Santander, Ucieda, 12.09.1974, leg. G. Pardo, MNCN_Ent 90338, coll. MNCN
KA615m, Spain, Prov. Gerona, Gombreny, 22.06.1951, MNCN_Ent 90351, coll. MNCN
KA616m, Switzerland, Seedorf, Reussdelta, Auenwald, 435 m, 689.5/194.35, 13.05.1998, leg. L. Rezbanyai-Reser; E. Schäffer, coll. NML
KA617m, Switzerland, Seedorf, Reussdelta, Auenwald, 435 m, 689.5/194.35, 13.05.1998, leg. L. Rezbanyai-Reser; E. Schäffer, coll. NML
KA627f, China, Manchuria, Prov. Kirin, Kaulintze, ende Juli, coll. ZFMK, Bonn.
KA628f, Russia, Primorsky Krai, Vladivostok E, Suchansky Rudnik [Partizansk], Juli, coll. ZFMK, Bonn.
KA632m, United Kingdom, Hampshire, Chandlersford, 01.07.1952, leg. B. Goater, coll. ZMUC
KA633m, United Kingdom, Stroud, 06.1960, leg. R. P. Demuth, coll. ZMUC
KA634m, United Kingdom, Hampshire, Chandlersford, 01.07.1952, leg. B. Goater, coll. ZMUC
KA635m, United Kingdom, Hampshire, Chandlersford, 01.07.1952, leg. B. Goater, coll. ZMUC
KA636m, United Kingdom, Sussex, Rye, 26.07.19, leg. B. Goater, coll. ZMUC
KA637m, United Kingdom, Haresfield, 31.06.1952, leg. R. P. Demuth, coll. ZMUC
KA638m, United Kingdom, Haresfield, 11.06.1952, leg. R. P. Demuth, coll. ZMUC
KA639m, United Kingdom, Hampshire, Hants, 22.07.1951, leg. B. Goater, coll. ZMUC
KA640m, United Kingdom, Cambridgeshire, Castor, 08.07.1950, leg. R. P. Demuth, coll. ZMUC
KA641m, United Kingdom, Hampshire, Chandlersford, 01.07.1952, leg. B. Goater, coll. ZMUC
KA642f, Denmark, Skibinge, 25.08.1976, leg. O. Karsholt, coll. ZMUC
KA643m, Denmark, Svendborg, 14.07.1952, ex coll. K. Groth, coll. ZMUC
KA644f, Finland, Åland, Eckerö, 13-20.07.1950, leg. H. Bruun, coll. ZMOU
KA645m, Finland, Korppoo [Korpu], 30.06-16.07.2001, leg. J. Itämies; A. Kallio; M. Soininmäki; P. Välimäki, coll. ZMOU
KA646m, Finland, Åland, Lemland, Nylund, coll. ZMOU
KA647m, Finland, Åland, Lemland, Flako, 06.07.1952, leg. R. Ötler, coll. ZMOU
KA648m, Finland, Åland, Lemland, 16.06.1961, leg. I. Jalas, coll. ZMOU
KA649m, Finland, Åland, Lemland, 27.07.1957, leg. Widén, coll. ZMOU

KA650m, Finland, Åland, Föglö, 20.06.1966, leg. A. Aalto, coll. ZMOU
KA651m, Finland, Åland, Kumlinge, Ingersholm, 05.07.1948, leg. P. Grotenfelt, coll. ZMOU
KA652m, Finland, Åland, Finström, 29.06-02.07.1983, leg. H. Bruun, coll. ZMOU
KA653m, Finland, Åland, Jomala, 22.06.1966, leg. A. Aalto, coll. ZMOU
KA654m, Finland, Åland, Eckerö, 06-12.07.1950, leg. H. Bruun, coll. ZMOU
KA655m, Finland, Åland, Marsö, Apelh, 04.07.1949, leg. H. Bruun, coll. ZMOU
KA656m, Finland, Åboland, Houtskär, 27.06.1961, leg. H. Bruun, coll. ZMOU
KA657m, Finland, Åboland, Houtskär, 01-14.07.1961, leg. H. Bruun, coll. ZMOU
KA658m, Finland, Korppoo [Korpu], bait trap, 30.06-16.07.2001, leg. J. Itämies, A. Kallio; M. Soininmäki; P. Välimäki, coll. ZMOU
KA659m, Finland, Åboland, Houtskär, Hyppeis, 16-30.07.2000, leg. J. Itämies; M. Soininmäki; P. Välimäki; A. Kallio, coll. ZMOU
KA660m, Spain, Prov. Huesca, Panticosa, 1200 m, 11.07.1950, MNCN_Ent 90361, coll. MNCN
KA661m, Spain, Prov. Huesca, Panticosa, 1200 m, 21.07.1950, MNCN_Ent 90375, coll. MNCN
KA662m, Spain, Prov. Huesca, Panticosa, 1200 m, 04.07.1950, leg. W. Marten, MNCN_Ent 90378, coll. MNCN
KA663m, Spain, Prov. Huesca, Panticosa, 1200 m, 04.07.1950, leg. W. Marten, MNCN_Ent 90366, coll. MNCN
KA664m, Spain, Prov. Huesca, Panticosa, 1200 m, 13.07.1950, MNCN_Ent 90363, coll. MNCN
KA665f, Spain, Prov. Huesca, Panticosa, 1200 m, 18.07.1950, leg. W. Marten, MNCN_Ent 90379, coll. MNCN
KA666m, Spain, Prov. Huesca, Panticosa, 1200 m, 08.07.1950, leg. W. Marten, MNCN_Ent 90368, coll. MNCN
KA667f, Spain, Prov. Huesca, Panticosa, 1200 m, 31.07.1950, MNCN_Ent 90364, coll. MNCN
KA702m, Bulgaria, the Black Sea littoral, v. Priseltzi near Obzor, 110 m, 04.08.1987, leg. S. Beshkov, coll. NMNHS
KA703m, Bulgaria, the Black Sea littoral, v. Priseltzi near Obzor, 110 m, 04.08.1987, leg. S. Beshkov, coll. NMNHS
KA704f, Bulgaria, Black Sea coast region, "Pobitite Kaman", near Varna town, 21.08.1997, leg. S. Beshkov; M. & K. Beshkovi, coll. NMNHS
KA712m, Russia, Kranodarsky Reg., Khostinsky distr., Sochi, vill. Kraevsko-Armianskoe, 01.08.2007, leg. Derzhinsky, E. A.; Kotsur V. M.; Solodovnikov I. A., coll. ED
KA713m, Russia, Kranodarsky Reg., Khostinsky distr., Sochi, vill. Kraevsko-Armianskoe, 01.08.2007, leg. Derzhinsky, E. A.; Kotsur V. M.; Solodovnikov I. A., coll. ED
KA714m, Russia, Kranodarsky Reg., Khostinsky distr., Sochi, vill. Kraevsko-Armianskoe, 01.08.2007, leg. Derzhinsky, E. A.; Kotsur V. M.; Solodovnikov I. A., coll. ED
KA715m, Russia, Kranodarsky Reg., Khostinsky distr., Sochi, vill. Kraevsko-Armianskoe, 01.08.2007, leg. Derzhinsky, E. A.; Kotsur V. M.; Solodovnikov I. A., coll. ED
KA716m, Abkhazia, Gudautskyi distr., vill. Otkhara, 185 m, 16-19.07.2011, leg. I. A. Solodovnikov, coll. ED
KA723m, Russia, NE Caucasus, Chechen Republic, Fortanga, 1000 m, 17-18.07.1991, leg. B. Herczig; V. Márkó; Z. Mészáros, coll. GR
KA724m, Japan, Nagano Pref., Azumi vil., Shimashimadani, 02.08.2003, leg. S. Ohshima, coll. GR
KA725m, Estonia, 27.05.1901, leg. Petersen, coll. ZISP
KA726m, Estonia, leg. Schmetzke, coll. ZISP
KA727f, Russia, Saint-Petersburg, ex. coll. N. Filipjev, coll. ZISP
KA728m, Russia, Saint-Petersburg, Lachta [Lakhta], coll. ZISP
KA729f, Russia, Novgorod Region, Torbino, 20.06.1916, leg. N. Filipjev, coll. ZISP
KA730f, Russia, Tula Region, Odoevkij district, Nesterovo village, 26.06.2007, leg. S. A. Rjabon, coll. ZISP
KA731m, Belarus, Gomel Region, 20 km W of Zhitkovichi town, near Station Sluch, 02.08.2006, leg. E. A. Derzhinskij, coll. ZISP
KA732m, Russia, Saint-Petersburg, 12.06.????, coll. ZISP
KA733f, Russia, Saint-Petersburg Region, Jamburg [Kingisepp], leg. V. Schegolev, coll. ZISP
KA734m, Russia, Saint-Petersburg Region, Luga, leg. V. Melioranskij, coll. ZISP
KA735m, Ukraine, Poltava, 28.05.1928, leg. E. Miljanovskij, coll. ZISP
KA736m, Ukraine, Poltava, 18.06.1929, leg. E. Miljanovskij, coll. ZISP

KA737m, Ukraine, Poltava, 26.07.1928, leg. E. Miljanovskij, coll. ZISP
KA738f, Ukraine, Kharkov, 1889, leg. Keler, coll. ZISP
KA739f, Crimea, Yalta District, Loc. Mis. Chor, 16.08.1907, leg. S. Tshetverikov, coll. ZISP
KA740m, Ukraine, Lugansk Region, Stanitsa, Luganskaja 29.06.1928, leg. A. Likhosherstov, coll. ZISP
KA741m, Ukraine, Rostov Region, Taganrog, leg. S. Alpheraky, ex. coll. Gr. Prince Nikolaj Mikhajlovich, coll. ZISP
KA742m, Ukraine, Donbass, Kramatorsk, 24.07.1937, coll. ZISP
KA743m, Ukraine, Donbass, Kramatorsk, 24.07.1937, coll. ZISP
KA744m, Russia, Crimea, Alsu, 30.07.1907, leg. V. Pliginskij, coll. ZISP
KA745f, Russia, Belgorod Region, Borisovka village, 31.07.1998, leg. A. Matov, coll. ZISP
KA746m, Russia, Belgorod Region, Borisovka village, 01.08.1998, leg. A. Matov, coll. ZISP
KA747f, Armenia, Shikakhokh, 01.07.1982, leg. M. Danilevskij, ex. coll. A. V. Nekrasov, coll. ZISP
KA748m, Armenia, Dilizhan, 14.07.1995, leg. Kalashan, ex. coll. A. V. Nekrasov, coll. ZISP
KA752f, Japan, Arhia, ex. coll. Erschov, coll. ZISP
KA767m, Bulgaria, Kresna Gorge, Stara Kresna railway station, 200 m, 28.05.1988, leg. S. Beshkov, coll. NMNHS
KA768m, Bulgaria, Sofia Region, Sarantzi village, 750 m, 12.08.1996, leg. S. Beshkov; J. Nowacki, coll. NMNHS
KA769m, Albania, Ionian Sea coast, Butrinti, 16.04.1994, leg. S. Beshkov, coll. NMNHS
KA770m, Bulgaria, Eastern Rhodopi Mts, Byala Reka, Zhultichalskoto Dere near Meden Buk, 111 m, 41°22’48”N, 026°01’39”E, 03.05.2013, leg. S. Beshkov, coll. NMNHS
KA771m, Bulgaria, Eastern Rhodopi Mts, Sheynovetz, above Mezek village, 453 m, 41°43’16”N, 026°04’03”E, 04.05.2013, leg. S. Beshkov, coll. NMNHS
KA772m, Bulgaria, Eastern Rhodopi Mts, Mechkovetz ridge, between Aida Chalet and Gorno Bryastovo, Haskovski Mineralni Bani Distr., 778 m, 41°54’29”N, 025°18’35”E, 01.05.2013, leg. S. Beshkov, coll. NMNHS
KA773m, Bulgaria, Eastern Rhodopi Mts, Mechkovetz ridge, between Aida Chalet and Gorno Bryastovo, Haskovski Mineralni Bani Distr., 778 m, 41°54’29”N, 025°18’35”E, 01.05.2013, leg. S. Beshkov, coll. NMNHS
KA774m, Bulgaria, Eastern Rhodopi Mts, Sheynovetz, above Mezek village, 453 m, 41°43’16”N, 026°04’03”E, 04.05.2013, leg. S. Beshkov, coll. NMNHS
KA775m, Bulgaria, Eastern Rhodopi Mts, Mechkovetz ridge, between Aida Chalet and Gorno Bryastovo, Haskovski Mineralni Bani Distr., 778 m, 41°54’29”N, 025°18’35”E, 01.05.2013, leg. S. Beshkov, coll. NMNHS
KA776m, Belgium, Prov. Namen, Belvaux, 11.08.1990, leg. W. De Prins, ex. coll. G. De Prins, coll. KA
KA777m, Belgium, Prov. Antwerpen, Merksem, 11.05.2006, leg. G. R. De Prins, ex. coll. G. De Prins, coll. KA
KA778f, Belgium, Prov. Antwerpen, Merksem, 10.06.2006, leg. G. R. De Prins, ex. coll. G. De Prins, coll. KA
KA779f, Belgium, Prov. Namen, Belvaux, 11.08.1990, leg. W. De Prins, ex. coll. G. De Prins, coll. KA
KA780m, Slovakia, Modra near Bratislava, leg. Povolny, coll. HNHM
KA781m, Austria, Jois, 200 m, M.05.1985, leg. Ströhle, coll. HNHM
KA782m, Austria, Jois, 200 m, M.05.1985, leg. Ströhle, coll. HNHM
KA783m, Austria, Jois, 200 m, M.05.1985, leg. Ströhle, coll. HNHM
KA784f, Austria, Vienna, ex larva, 04.1930, coll. HNHM
KA785m, Germany, Bavaria, Ingolstadt, 04.06.1981, coll. HNHM
KA786m, Germany, Bavaria, Samholz, 360 m, 15.06.1981, coll. HNHM
KA787m, Germany, Bavaria, Günding near Docchau, 28.06.1988, L.F., leg. N. Keil, coll. HNHM
KA788m, Germany, Bavaria, Samholz, 360 m, 15.06.1981, coll. HNHM
KA789f, Germany, Nördlingen, Ries, 29.08.1950, coll. HNHM
KA790m, Germany, Bavaria, Samholz, 07.06.1981, coll. HNHM
KA791m, Germany, Bavaria, Samholz, 360 m, 15.06.1981, coll. HNHM
KA792m, Germany, Bavaria, Samholz, 360 m, 15.06.1981, coll. HNHM
KA793m, Germany, Bavaria, Ingolstadt, 360 m, 09.06.1981, coll. HNHM
KA794m, Germany, Bavaria, Ingolstadt, 400 m, 06.07.1987, coll. HNHM
KA795m, Germany, Bavaria, Ingolstadt, 07.1974, coll. HNHM
KA796m, Germany, Bavaria, Samholz, 07.06.1981, coll. HNHM

KA797m, Germany, Bavaria, Samholz, 360 m, 15.06.1981, coll. HNHM
KA798m, Germany, Bavaria, Samholz, 23.05.1981, coll. HNHM
KA799m, Germany, Bavaria, Ingolstadt, 13.05.1960, leg. W. Würl, coll. HNHM
KA830f, France, Corse, 40 km S of Bastia, Folleli, sea level, 09-10.05.1999, leg. O. Karsholt, coll. ZMUC
KA831m, France, Buré d'Orval, 14.06.1972, leg. M. & M., coll. MNHNL
KA832m, Belgium, Ethe, 28.06.1968, leg. V. Laclaireau, coll. MNHNL
KA833m, Belgium, Virton, 03.07.1969, coll. MNHNL
KA834m, Belgium, Huombois, Étalle, 15.08.1967, coll. MNHNL
KA835m, Belgium, Huombois, Étalle, 03.09.1966, coll. MNHNL
KA836m, France, Les Étangs, Moselle, 14.08.1977, leg. L. Perrette, coll. MNHNL
KA837m, France, Gd. Valtin, Vosges, 840 m, 15.07.1983, tourbière, ex. coll. L. Perrette, coll. MNHNL
KA838m, France, Gd. Valtin, Vosges, 829 m, 11.07.1970, leg. L. Perrette, coll. MNHNL
KA839m, France, Jaillon, 22.05.1991, leg. P. Vittemer, coll. MNHNL
KA840m, Luxembourg, Tandel, 07.08.1982, leg. M. Hellers, coll. MNHNL
KA841m, Luxembourg, Tandel, 28.06.1983, leg. M. Hellers, coll. MNHNL
KA842m, Luxembourg, Brandenbourg, "Millebierg", 15.05.1990, LF, leg. M. Hellers, coll. MNHNL
KA843m, Luxembourg, Tandel, 07.08.1982, leg. M. Hellers, coll. MNHNL
KA844m, Luxembourg, Tandel, 08.06.1983, leg. M. Hellers, coll. MNHNL
KA845m, Luxembourg, Stollemburg, "Binnene", 02.07.1986, LF, leg. M. Hellers, coll. MNHNL
KA846m, France, Hautes-Alpes, Valensole, Plateau, 06-12.08.1983, leg. R. Tannert, coll. TLM
KA847m, France, Alpes-Maritimes, Valensole, Bonson, 21.08.1973, leg. Strobino, coll. TLM
KA848m, France, Alpes-Maritimes, Valensole, Bonson, 21.08.1973, leg. Strobino, coll. TLM
KA849m, France, Alpes-Maritimes, Mouans-Sartoux, 10.09.1983, leg. F. Dujardin, coll. TLM
KA850m, France, Alpes-Maritimes, Mouans-Sartoux, 10.09.1983, leg. F. Dujardin, coll. TLM
KA851m, France, Alpes-Maritimes, Saint-Blaise, 06.09.1981, leg. F. Dujardin, coll. TLM
KA852m, France, Alpes-Maritimes, Saint-Blaise, 06.09.1981, leg. F. Dujardin, coll. TLM
KA853m, France, Alpes-Maritimes, Bancairon, 27.08.1978, ex. coll. F. Dujardin, coll. TLM
KA854m, France, Alpes Maritimes, Col de Braus, Saint-Laurent, 600 m, 03.08.1964, ex. coll. F. Dujardin, coll. TLM
KA855m, France, Alpes Maritimes, La Colle-sur-Loup, 02-06.08.1958, ex. coll. J. P. Hébrard, coll. TLM
KA856m, France, Alpes-Maritimes, Saint-Paul-de-Vence, 05.09.1959, ex. coll. F. Dujardin, coll. TLM
KA857m, France, Alpes Maritimes, Nice, Paillon, 19.08.1965, ex. coll. F. Dujardin, coll. TLM
KA858m, France, Alpes Maritimes, Cagnes, 26.08.1932, coll. TLM
KA859m, France, Alpes Maritimes, Nice, Cantaron, 30.08.1963, ex. coll. F. Dujardin, coll. TLM
KA860m, France, Alpes Maritimes, Nice, Cantaron, 15.05.1964, ex. coll. F. Dujardin, coll. TLM
KA861f, Italy, Sicily, San Fratello East River, 400 m, 10-11.09.2002, leg. M. Fibiger; G. Jeppesen, coll. ZMUC
KA866m, Greece, Ag. Paraskevi by Konitsa, 750 m, 28.07.1997, leg. M. Fibiger, coll. ZMUC
KA867m, Greece, Ag. Paraskevi by Konitsa, 750 m, 28.07.1997, leg. M. Fibiger, coll. ZMUC
KA868f, Greece, Dissoron OR., Kentrikon, 500 m, 12.05.1988, leg. F. Schepler, coll. ZMUC
KA869m, Greece, Ioannina, 10 km W Smolikas, at Ag. Paraskevi, 800 m, 09.08.1985, leg. M. Fibiger, coll. ZMUC
KA870m, Ukraine, Lugansk district, Melovoe, Streltsovskaya step, 07.08.2006, leg. Z. Klyuchko, coll. ZMUC
KA874m, Montenegro, Durmitor, Duroeviéa Tara, 700 m, 10.07.1981, leg. Predrag, ex. coll. M. Fibiger, coll. ZMUC
KA875m, Montenegro, Durmitor, Duroeviéa Tara, 700 m, 10.07.1981, leg. Predrag, ex. coll. M. Fibiger, coll. ZMUC
KA902f, Japan, Honshu, Akita Pref., Chokai village, Hottai Falls, 23.07.1979, leg. M. Takahashi, AKPM-I 15283, coll. AKPM
KA903m, Japan, Honshu, Akita Pref., Kisakata town, Nakajimadai, 10.06.1980, leg. M. Takahashi, AKPM-I 15287, coll. AKPM
KA904m, Japan, Honshu, Akita Pref., Yashima town, Uguisugana, 11.06.1980, leg. M. Takahashi, AKPM-I 15288, coll. AKPM
KA905m, Japan, Honshu, Akita Pref., Kazuno city, meeting of Kumatori-river, 04.08.1975, leg. M. Takahashi, AKPM-I 15272, coll. AKPM

KA906m, Japan, Honshu, Akita Pref., Kazuno city, Komatazawa, 19.08.1976, leg. M. Takahashi, AKPM-I 15279, coll. AKPM
KA907m, Japan, Honshu, Akita Pref., Chokai village, Hottai Falls, 20.06.1979, leg. M. Takahashi, AKPM-I 15280, coll. AKPM
KA908m, Japan, Hokkaido, Shibecha, Gojikkoku, 01.08.1978, leg. Y. Kishida, coll. NSMT
KA909m, Japan, Hokkaido, Kamishihoro-cho, Nukabira, 16.08.1975, coll. NSMT
KA910m, Japan, Honshu, Nagano Pref., Lake Aoki-Ko, 820 m, 20-21.08.1977, leg. H. Yoshimoto, coll. NSMT
KA911m, Japan, Honshu, Nagano Pref., Lake Aoki-Ko, 820 m, 20-21.08.1977, leg. H. Yoshimoto, coll. NSMT
KA912m, Japan, Honshu, Yamanashi Pref., Tabayama-mura, Ushiroyama-rindo, Sanjo, 1100 m, 23.04.1977, leg. H. Yoshimoto, coll. NSMT
KA913m, Japan, Honshu, Tochigi Pref., Imaichi, Kobyakugawa, 800m, 13.05.1990, leg. H. Kobayashi, coll. NSMT
KA914m, Japan, Hokkaido, Ashibetsu, 15.08.1993, leg. M. Owada, coll. NSMT
KA915m, Japan, Hokkaido, Niikappu, Hangandate, 40 m, 21.08.1995, leg. M. Owada, coll. NSMT
KA916m, Japan, Hokkaido, Asahi-cho, Mt. Teshio-dake, 1000m, 16.07.1990, leg. H. Kobayashi, coll. NSMT
KA917m, Japan, Honshu, Nagano Pref., Miyota, 07.08.1965, leg. H. Matsuura, coll. NSMT
KA918f, Japan, Honshu, Tochigi Pref., Nikko, Kotoku, 23.08.1962, coll. NSMT
KA919f, Japan, Hokkaido, Sapporo, 19.06.1937, coll. NSMT
KA964m, Ireland, West Galway, Hurney's Point, 27.06.2003, leg. K. G. M. Bond, coll. UCC
KA965m, Ireland, South Tipperary, Cahir, Ballybrado House, 14.07.1986, leg. K. G. M. Bond, coll. UCC
KA966m, Ireland, Clare, Killinaboy, 28.06.1957, leg. E. S. A. Baynes, coll. NMID
KA968m, Spain, Prov. Gerona, salt moore near Rosas, 30 m, 12.08.1988, leg. G. Behounek, coll. GB
KA1063m, Poland, Serniawy, UTM FB69, 05.08.2015, leg. M. Holowiński, coll. KA
KA1064m, Poland, Serniawy, UTM FB69, 05.08.2015, leg. M. Holowiński, coll. KA
KA1065m, Poland, Serniawy, UTM FB69, 05.08.2015, leg. M. Holowiński, coll. KA
KA1066m, Poland, Serniawy, UTM FB69, 05.08.2015, leg. M. Holowiński, coll. KA
KA1067m, Poland, Serniawy, UTM FB69, 05.08.2015, leg. M. Holowiński, coll. KA
KA1068m, Poland, Serniawy, UTM FB69, 05.08.2015, leg. M. Holowiński, coll. KA
KA1069m, Poland, Serniawy, UTM FB69, 05.08.2015, leg. M. Holowiński, coll. KA
KA1070m, Poland, Serniawy, UTM FB69, 05.08.2015, leg. M. Holowiński, coll. KA
KA1071m, Poland, Serniawy, UTM FB69, 05.08.2015, leg. M. Holowiński, coll. KA
KA1072m, Poland, Serniawy, UTM FB69, 05.08.2015, leg. M. Holowiński, coll. KA
KA1073m, Poland, Serniawy, UTM FB69, 05.08.2015, leg. M. Holowiński, coll. KA
KA1074m, Poland, Serniawy, UTM FB69, 05.08.2015, leg. M. Holowiński, coll. KA
KA1075m, Poland, Serniawy, UTM FB69, 05.08.2015, leg. M. Holowiński, coll. KA
KA1076m, Poland, Serniawy, UTM FB69, 05.08.2015, leg. M. Holowiński, coll. KA
KA1077f, China, Charbin, ex. coll. J. Popp, coll. ZSM
KA1078m, Ukraine, Dźwinogród [Dzvenyhorod], coll. ZSM
KA1079m, Poland, Posen [Poznań], coll. ZSM
KA1080f, Azerbaijan, Talysh Mt., Lerkoran [Lankaran], coll. ZSM
KA1120m, Italy, Prov. Lazio, Parco Nazionale del Circeo, Quarto Freddo, 100 m, 13.09.2004, leg. E. M. Leonardi, ex. coll. A. Zilli, coll. KA
KA1121m, Italy, Prov. Lazio, Parco Nazionale del Circeo, Quarto Freddo, 100 m, 13.09.2004, leg. E. M. Leonardi, ex. coll. A. Zilli, coll. KA
KA1122m, Italy, Prov. Lazio, Parco Nazionale del Circeo, Quarto Freddo, 100 m, 13.09.2004, leg. E. M. Leonardi, ex. coll. A. Zilli, coll. KA
KA1123m, Italy, Prov. Lazio, Parco Nazionale del Circeo, Lago di Paola, Loc. Villaggio Marelago, 5 m, 14.09.2004, leg. E. M. Leonardi, ex. coll. A. Zilli, coll. KA
KA1124m, Italy, Prov. Lazio, Parco Nazionale del Circeo, Quarto Freddo, 100 m, 18.05.2004, leg. E. M. Leonardi, ex. coll. A. Zilli, coll. KA
KA1125m, Italy, Prov. Lazio, Parco Nazionale del Circeo, Piscina delle Bagnature, 5 m, 08.04.2005, leg. E. M. Leonardi, ex. coll. A. Zilli, coll. KA
KA1126m, Italy, Prov. Lazio, Parco Nazionale del Circeo, Quarto Freddo, 100 m, 18.05.2004, leg. E. M. Leonardi, ex. coll. A. Zilli, coll. KA

KA1127f, Italy, Prov. Lazio, Parco Nazionale del Circeo, Quarto Freddo, 100 m, 18.05.2004, leg. E. M. Leonardi, ex. coll. A. Zilli, coll. KA
KA1182m, Romania, Dobrogea, Tulcea, Păd Babadag, 150 m, 10.07.1992, leg. L. Rákosy, coll. LR
KA1183m, Romania, Dobrogea, Tulcea, Mt. Măcin, Păd Horia-Atmagea, 230 m, 24-25.07.1998, leg. L. Rákosy, coll. LR
KA1184m, Romania, Dobrogea, Tulcea, Mt. Măcin, Greci, 250-300 m, 21-22.06.1995, leg. L. Rákosy, coll. LR
KA1185m, Romania, Dobrogea, Constanta, Hagieni-Mangalia, 08.08.1981, leg. L. Rákosy, coll. LR
KA1186m, Romania, Dobrogea, Tulcea, Dunavăţu de Jos, 11.07.1992, leg. L. Rákosy, coll. LR
KA1187m, Romania, Dobrogea, Tulcea, Mt. Măcin, Greci, 250-300 m, 22-23.07.1998, leg. L. Rákosy, coll. LR
KA1188m, Romania, Bucuresti, Păd Pasărea, 21-22.07.1998, leg. L. Rákosy, coll. LR
KA1189m, Romania, Dobrogea, Constanta, Hagieni-Mangalia, 08.08.1981, leg. L. Rákosy, coll. LR
KA1202m, Spain, Prov. Guipuzcoa, Aranzazu, 05.07.1973, leg. A. W. Lucas, coll. RMNH
KA1203m, Spain, Prov. Guipuzcoa, Aranzazu, 06.07.1973, leg. A. W. Lucas, coll. RMNH
KA1204m, France, Saint-Martin-de-Ribérac, 16.06.1982, leg. A. Groenendijk, coll. RMNH
KA1205m, France, Tarn-et-Garonne, 3 km S of Puygaillard-de-Quercy, 240 m, 44°00’01.3”N, 01°38’10.6”E, 06-16.09.2002, leg. R. Vis, coll. RMNH
KA1206m, Spain, Prov. Guipuzcoa, Aranzazu, 11.07.1973, leg. A. W. Lucas, coll. RMNH
KA1207m, France, Pennautier, 04.06.1979, coll. RMNH
KA1208f, France, Pennautier, 02.06.1979, leg. Aude; Ichtvangst, coll. RMNH
KA1209m, Andorra, Sant Julià de Lòria, 20.05.1992, leg. P. J. L. Roche, coll. RMNH
KA1210m, Spain, Prov. Gerona, 03.08.1975, coll. RMNH
KA1211m, France, Ariege, Gudas, 29.06.1998, leg. W. J. van Rooijen, coll. RMNH
KA1212f, France, Amélie-les-Bains, 10-25.09.1950, leg. J. R. Caron, coll. RMNH
KA1213m, Russia, Kabardino-Balkaria, 25 km S of Nalchik, “Blue Lakes”, 1000 m, 04.06.1997, leg. Kostjuk; Tikhonov, coll. GB
KA1214m, Spain, San Pedro de Torelló, 06.1957, leg. W. Marten, coll. GB
KA1215m, Spain, San Pedro de Torelló, 06.1957, leg. W. Marten, coll. GB
KA1216m, Spain, Prov. Gerona, Salt Moore near Rosas, 30 m, 12.08.1988, leg. G. Behounek, coll. GB
KA1217m, Spain, Prov. Gerona, Fluvia valley near Besalu, 100 m, 13-14.08.1988, leg. G. Behounek, coll. GB
KA1230m, South Korea, Jeollanam-do, Gurye-gun, Toji-myeon, Mt. Jirisan, 1320 m, 35°18’13”N, 127°33’35”E, 13.08.2009, leg. S.-W. Choi, ex coll. MNU, coll. KA
KA1231f, South Korea, Jeollanam-do, Gurye, Mt. Jirisan, 1330 m, 35°18’N, 127°33’E, 13.08.2006, leg. S.-W. Choi, ex coll. MNU, coll. KA
KA1622m, Spain, Prov. Santander, Camaleño, Fuente Dé, Hayedo, 1112 m, 30.07.1986, leg. J. L. Yela, coll. JLY
KA1623f, Spain, Prov. Santander, Camaleño, Fuente Dé, Hayedo, 1112 m, 30.07.1986, leg. J. L. Yela, coll. JLY
KA1624m, Spain, Prov. Santander, Camaleño, Fuente Dé, Hayedo, 1112 m, 30.07.1986, leg. J. L. Yela, coll. JLY
KA1625f, Spain, Prov. Santander, Camaleño, Fuente Dé, Hayedo, 1112 m, 30.07.1986, leg. J. L. Yela, coll. JLY
KA1626m, Spain, Prov. Santander, Camaleño, Fuente Dé, Hayedo, 1112 m, 30.07.1986, leg. J. L. Yela, coll. JLY
KA1627m, Spain, Prov. Santander, Camaleño, Fuente Dé, Hayedo, 1112 m, 30.07.1986, leg. J. L. Yela, coll. JLY
KA1628m, Spain, Prov. Santander, Camaleño, Fuente Dé, Hayedo, 1112 m, 30.07.1986, leg. J. L. Yela, coll. JLY
KA1629m, Spain, Prov. Santander, Camaleño, Fuente Dé, Hayedo, 1112 m, 30.07.1986, leg. J. L. Yela, coll. JLY
KA1630m, Spain, Prov. Santander, Camaleño, Fuente Dé, Hayedo, 1112 m, 30.07.1986, leg. J. L. Yela, coll. JLY
KA1631m, Spain, Prov. Santander, Camaleño, Fuente Dé, Hayedo, 1112 m, 30.07.1986, leg. J. L. Yela, coll. JLY

KA1632f, Spain, Prov. Santander, Camaleño, Fuente Dé, Hayedo, 1112 m, 30.07.1986, leg. J. L. Yela, coll. JLY
KA1633m, South Korea, Jeollanam-do, Gurye-gun, Sandong-myeon, Mt. Jirisan, 1400 m, 35°17’48”N, 127°32’51”E, 10.08.2012, leg. N.-H. Kim, coll. MNU
KA1634m, South Korea, Jeollanam-do, Gurye-gun, Sandong-myeon, Mt. Jirisan, 1352 m, 35°17’38”N, 127°31’58”E, 19.07.2014, leg. N.-H. Kim, coll. MNU
KA1635f, South Korea, Jeollanam-do, Gurye-gun, Toji-myeon, Mt. Jirisan, 1371 m, 35°18’01”N, 127°33’09”E, 26.05.2007, leg. S.-W. Choi, coll. MNU
KA1636f, South Korea, Jeollanam-do, Gurye, Mt. Jirisan, 1330 m, 35°18’N, 127°33’E, 13.08.2006, leg. J.-S. An, coll. MNU
KA1637m, South Korea, Jeollanam-do, Gurye-gun, Toji-myeon, Mt. Jirisan, 1370 m, 35°18’02”N, 127°33’10”E, 19.07.2010, leg. S.-W. Choi, coll. MNU
KA1638m, South Korea, Jeollanam-do, Gurye-gun, Toji-myeon, Mt. Jirisan, 1320 m, 35°18’13”N, 127°33’35”E, 13.08.2009, leg. S.-W. Choi, coll. MNU
KA1639m, South Korea, Gyeongsangnam-do, Hamyeong-gun, Macheon-myeon, Mt. Jirisan, 760 m, 35°21’18”N, 127°38’08”E, 20.09.2009, leg. S.-D. Na, coll. MNU
KA1640m, South Korea, Jeollanam-do, Gurye, Mt. Jirisan, 1330 m, 35°18’N, 127°33’E, 13.08.2006, leg. Marana; Park, coll. MNU
KA1641m, South Korea, Jeollanam-do, Gurye, Mt. Jirisan, 1330 m, 35°18’N, 127°33’E, 13.08.2006, leg. S.-K. Kim, coll. MNU
KA1642m, South Korea, Jeollanam-do, Gurye-gun, Toji-myeon, Mt. Jirisan, 1371 m, 35°18’01”N, 127°33’09”E, 13.08.2009, leg. S.-D. Na, coll. MNU
KA1643m, South Korea, Jeollanam-do, Gurye-gun, Toji-myeon, Mt. Jirisan, 1403 m, 35°30’447”N, 127° ’562”E, 10.05.2014, leg. N.-H. Kim, coll. MNU
KA1644f, South Korea, Jeollanam-do, Gurye, Mt. Jirisan, 1330 m, 35°18’N, 127°33’E, 13.08.2006, leg. Marana; Park, coll. MNU
KA1645m, South Korea, Jeollanam-do, Gurye-gun, Sandong-myeon, Mt. Jirisan, 1352 m, 35°17’38”N, 127°31’58”E, 04.07.2011, leg. J.-S. An, coll. MNU
KA1646m, South Korea, Jeollanam-do, Gurye-gun, Toji-myeon, Mt. Jirisan, 1371 m, 35°18’01”N, 127°33’09”E, 19.07.2014, leg. N.-H. Kim, coll. MNU
KA1647f, South Korea, Jeollanam-do, Gurye-gun, Sandong-myeon, Mt. Jirisan, 1074 m, 35°18’21”N, 127°30’45”E, 03.06.2011, leg. S.-W. Choi, coll. MNU
KA1703f, Italy, Calabria, Cosenza, Fiego di San Fili, 740 m, 14.09.2015, leg. Scalercio; Infusino, coll. KA
Matov0349(m), Russia, Belgorod Region, Borisovka village, 01.08.1998, leg. A. Matov, coll. ZISP
Matov0350(m), Russia, Belgorod Region, Borisovka village, 26.07.1998, leg. A. Matov, coll. ZISP
Matov0368(m), Georgia, Tiflis, Mtshet, 28.05.1928, leg. L. Bankovskyi, coll. ZISP
Matov0369(m), Georgia, Lagodekhi, 18-29.07.1890, coll. ZISP
MV 18 660(f), Spain, Prov. Murcia, Sierra Espunia, Alhama de Murcia, 30.05.1973, leg. M. Glaser; W. Glaser, coll. NHMW
MV 18 661(m), Spain, Prov. Murcia, Sierra Espunia, Alhama de Murcia, 30.05.1973, leg. M. Glaser; W. Glaser, coll. NHMW
MV 18 794(m), Russia, Stavropol Krai, Pyatigorsk, 550 m, 01.07.1967, leg. Vartian, coll. NHMW
MV 18 795(f), Russia, Walouiki, 15.05.1889, leg. R. M. Velitchkovsky, coll. NHMW
MV 18 796(m), Macedonia, W of Skopje, Treska-canyon, 10.05.1956, leg. F. Kasy, coll. NHMW
MV 18 797(m), Bulgaria, Rilo D. Kyrilowa Pol., 1500 m, 18-28.06.1928, ex. coll. Züllich, coll. NHMW
MV 18 798(m), Bulgaria, Slivno [Sliven], leg. Haberhauer, coll. NHMW
MV 18 904(m), Austria, Vienna, Hietzing, 04.05.1945, leg. Galvagni, coll. NHMW
MV 18 905(f), Austria, Lang Enzersdorf, Donau-Auel, 08.05.1900, leg. Preissecker I., coll. NHMW
MV 18 906(m), Austria, Vienna, Hietzing, coll. NHMW
MV 18 907(m), Austria, Vienna, Hietzing, Promenadew., 27.07.1917, leg. Galvagni, coll. NHMW
MV 18 908(m), Austria, Vienna, Kuchelau, coll. NHMW
MV 18 909(m), **NT**, Austria, Vienna, Hietzing, Promenadew., 07.05.1918, leg. Galvagni, ex. coll. Galvagni, coll. NHMW
MV 18 910(m), Austria, Vienna, 16.08.1979, coll. NHMW
MV 18 911(m), Austria, Vienna, Hietzing, Küniglberg, E.07.1915, coll. NHMW
MV 18 912(m), Austria, Vienna, Hütteldorf, 20.05.1910, leg. Zerny, coll. NHMW

MV 18 913(m), Austria, Vienna, Hietzing, Promenadew., 03.07.1908, leg. Galvagni, ex. coll. Galvagni, coll. NHMW
MV 18 914(m), Austria, Vienna, Pötzleinsdorf, ex. coll. J. Kitt, coll. NHMW
OP2716m, Russia, Rostov region, stanitsa Veshenskaya, 01-05.08.2006, leg. Khachikov, coll. OP

Craniophora ligustri carbolucana Hartig, 1968 (16)

KA406m, Italy, Lucania, Grotticelle, Monte Vulture, 300-500 m, 13.04.1968, ex. coll. F. Hartig, coll. ZSM
KA407m, Italy, Lucania, Dint. Laghi di Monticchio, Monte Vulture, 750 m, 28.04.1968, ex. coll. F. Hartig, coll. ZSM
KA479m, Italy, Taranto, Pianelle, 19.05.1969, ex coll. Hartig, coll. MSNM
KA480m, Italy, Puglie, Taranto, Parco Pianelle, Martina Franca, 400 m, 11.09.1971, ex coll. P. Parenzan, coll. MSNM
KA481m, Italy, Taranto, 19.05.1969, ex coll. Hartig, coll. MSNM
KA529m, Italy, Lucania, Monte Vulture, Grotticelle, 300-500 m, 13.04.1967, leg. Barbera, coll. MSNG
KA530m, Italy, Lucania, Monte Vulture, Grotticelle, 300-500 m, 10.04.1967, leg. Barbera, coll. MSNG
KA533m, Italy, Lucania, Monte Vulture, Grotticelle, 300-500 m, 22.04.1967, leg. Barbera, coll. MSNG
KA534m, Italy, Lucania, Monte Vulture, Grotticelle, 300-500 m, 10.04.1967, leg. Barbera, coll. MSNG
KA535m, Italy, Lucania, Monte Vulture, Grotticelle, 300-500 m, 13.04.1967, leg. Barbera, coll. MSNG
KA536m, Italy, Lucania, Monte Vulture, Grotticelle, 300-500 m, 13.04.1967, leg. Barbera, coll. MSNG
KA538m, Italy, Lucania, Monte Vulture, Grotticelle, 300-500 m, 10.04.1967, leg. Barbera, coll. MSNG
KA539m, Italy, Lucania, Monte Vulture, Grotticelle, 300-500 m, 16.04.1967, leg. Barbera, coll. MSNG
KA540m, Italy, Lucania, Monte Vulture, Grotticelle, 300-500 m, 10.04.1967, leg. Barbera, coll. MSNG
KA541m, Italy, Lucania, dint. Laghi Monticchio, 26.05.1967, leg. Barbera, coll. MSNG
KA542m, Italy, Lucania, Monte Vulture, Grotticelle, 300-500 m, 10.04.1967, leg. Barbera, coll. MSNG

Craniophora ligustri hyrcanica Hacker & Ebert, 2002 (25)

KA108f, Azerbaijan, Mt. Talysh, Aurora, 100 m, 10.06.1980, leg. Danilevski, coll. HNHM
KA110f, Azerbaijan, Mt. Talysh, Aurora, 100 m, 10.06.1980, leg. Danilevski, coll. HNHM
KA111f, Azerbaijan, Mt. Talysh, Aurora, 100 m, 30.05.1980, leg. Danilevski, coll. HNHM
KA112f, Azerbaijan, Mt. Talysh, Aurora, 100 m, 30.05.1980, leg. Danilevski, coll. HNHM
KA113f, Azerbaijan, Mt. Talysh, Aurora, 14.06.1979, leg. M. Danilevski, coll. HNHM
KA115f, Azerbaijan, Mt. Talysh, Aurora, 100 m, 10.06.1980, leg. Danilevski, coll. HNHM
KA116m, Azerbaijan, Mt. Talysh, Aurora, 100 m, 10.06.1980, leg. Danilevski, coll. HNHM
KA117m, Azerbaijan, Mt. Talysh, Aurora, 100 m, 10.06.1980, leg. Danilevski, coll. HNHM
KA118m, Azerbaijan, Mt. Talysh, Aurora, 100 m, 30.05.1980, leg. Danilevski, coll. HNHM
KA122m, Azerbaijan, Mt. Talysh, Aurora, 06.06.1980, leg. M. Danilevski (19), coll. HNHM
KA239m, Azerbaijan, Mt. Talysh, Aurora, 100 m, 30.05.1980, leg. Danilevski, coll. HNHM
KA250m, Azerbaijan, Mt. Talysh, Aurora, 100 m, 30.05.1980, leg. Danilevski, coll. HNHM
KA252m, Azerbaijan, Mt. Talysh, Aurora, 100 m, 30.05.1980, leg. Danilevski, coll. HNHM
KA253f, Azerbaijan, Mt. Talysh, Aurora, 100 m, 30.05.1980, leg. Danilevski, coll. HNHM
KA254m, Azerbaijan, Mt. Talysh, Aurora, 05.05.1979, leg. Danilevski, coll. HNHM
KA367m, **PT**, Azerbaijan, Mt. Talysh, Aurora, 350 m, 26-29.08.1992, leg. V. Siniaev, coll. PGy
KA405m, Iran, Elburs Mts, Tacht i Suleiman, Särdab valley (Vandarban), 1900-2200 m, 10-14.07.1937, leg. E. Pfeiffer; W. Forster, coll. ZSM
KA622m, Iran, Talysh, W of Astara, 1600 m, 07.08.1978, leg. W. Thomas, coll. ZFMK, Bonn.
KA623m, Iran, Talysh, W of Astara, 1600 m, 07.08.1978, leg. W. Thomas, coll. ZFMK, Bonn.
KA717m, **PT**, Turkey, Prov. Ordu, 2 km S of Ügye, 50 m, 41°06'N, 37°18'E, 05.09.1985, leg. H. Hacker, coll. ZSM
KA1744m, Iran, Alborz, Prov. Mazanderan, E Gorgan, S Aliabad, above Shirinabad, 1100 m, 36°47'21"N, 55°01'25"E, 21.05.2005, leg. Trusch; Petschenka; Müller, SMNK E-Lep 215, coll. SMNK
KA1745m, Iran, Alborz, Prov. Mazanderan, E Gorgan, S Aliabad, above Shirinabad, 1100 m, 36°47'21"N, 55°01'25"E, 21.05.2005, leg. Trusch; Petschenka; Müller, SMNK E-Lep 215, coll. SMNK

MV 18 657(f), Iran, Gorgantal, 50 km E from Mindudasht, 450 m, 55°90'L, 37°40'B, 30.05.1971, leg. Vartian, coll. NHMW
MV 18 658(m), Iran, m. v. Lisar, 10.05.1973, leg. Vartian, coll. NHMW
MV 18 659(m), Iran, 10 km S of Chalus, 130 m, 26.05.1969, leg. Vartian, coll. NHMW

Craniophora gigantea Draudt, 1937 (17)

adam-05, China, Prov. Liaoning, Jianchang, 05-08.08.2008, leg. P. Wang; M. J. Qi, coll. HHL
adam-06, China, Prov. Liaoning, Anshan, Qianshan, 30.07-04.08.2008, leg. Y. Q. Hu; P. Wang, coll. HHL
adam-07, China, Prov. Liaoning, Jianchang, 05-08.08.2008, leg. M. J. Qi; Y. Q. Hu, coll. HHL
KA130m, North Korea, Prov. North Pyongan, Mts Myohyang-san at Hotel Myohyang, 23.05.1991, leg. L. Ronkay; A. Vojnits, No. 1390, coll. HNHM
KA135m, North Korea, Prov. North Pyongan, Mt. Myohyang-san, 22.05.1985, leg. A. Vojnits; L. Zombori, No. 939, coll. HNHM
KA228f, North Korea, Prov. North Pyongan, Mt. Myohyang-san, Hwajangam valley, 27.05.1991, leg. L. Ronkay; A. Vojnits, No. 1411, coll. HNHM
KA229m, North Korea, Prov. Kangwon, Mts Kumgang-san, Manmulsang Rocks, 750 m, 12.06.1991, leg. L. Ronkay; A. Vojnits, No. 1463, coll. HNHM
KA390m, North Korea, Prov. North Pyongan, Mt. Myohyang-san, 17-20.08.1989, leg. Dobolyi; Szollát, coll. GR
KA391f, North Korea, Prov. Kangwon, Mts Kumgang-san, Manmulsang Rocks, 750 m, 11.06.1991, leg. L. Ronkay; A. Vojnits, No. 1457, coll. GR
KA466f, South Korea, Prov. Gyeongsangbuk-do, Sangju, Mt. Noak, 170 m, 128°06'24.6 N, 36°25'43.2 E, 03.09.2003, leg. A. Kun; M. Földvári, No. 1746, coll. HNHM
KA609m, China, Beijing, 100 km NW of Mentougou, Xialongmen National Forest Reserve, 1100 m, 39°58'N, 116°00'E, 01.08.2000, leg. A. Schintlmeister, coll. PGy
KA721m, North Korea, Prov. Kangwon, Mts Kumgang-san, Manmulsang Rocks, 750 m, 11.06.1991, leg. L. Ronkay; A. Vojnits, No. 1457, coll. GR
KA722 m, North Korea, Prov. North Pyongan, Mt. Myohyang-san, 17-20.08.1989, leg. Dobolyi; Szollát, coll. GR
KA749m, Russia, Primorsky Krai, Japan Sea, [Peter Great Gulf], Furugelm Island, 42°27'N, 130°55'E, 05-12.08.2013, at light, leg. E. Beljaev, coll. ZISP
KA750m, Russia, Primorsky Krai, Japan Sea, [Peter Great Gulf], Furugelm Island, 42°27'N, 130°55'E, 05-12.08.2013, at light, leg. E. Beljaev, coll. ZISP
KA751m, Russia, Primorsky Krai, Pogranichnyj district, Barabash-Levada, 09.07.1988, leg. D. Obydov, ex. coll. A. V. Nekrasov, coll. ZISP
ZFMK-Nr. 1859, **NT**, China, Prov. Shaanxi, Tsinling Mts, Taibaishan, ca. 1700 m, 13.08.1936, ex. coll. H. Höne, coll. ZFMK

Craniophora pacifica Filipjev, 1927 (22)

KA050m, North Korea, Prov. North Pyongan, Mt. Myohyang-san, Hotel Myohyang-san, 14.07.1982, leg. L. Forró; L. Ronkay, No.793, coll. HNHM
KA051m, North Korea, Prov. Kangwon, Mt. Kumgang-san, 24.07.1982, leg. L. Forró; L. Ronkay, No. 861, coll. HNHM
KA101f, Russia, Jewish Autonomous Oblast, Kuldur [Kul'dur], 01-18.07.1989, 49°13'N, 131°38'E, leg. Ogarkov, coll. HNHM
KA181m, Russia, Khabarovsk Krai, Komsomolsk, 28.06-12.07.1992, leg. Ogarkov, coll. HNHM
KA182m, Russia, Jewish Autonomous Oblast, Kuldur [Kul'dur], 49°13'N, 131°38'E, 01-18.07.1989, leg. Ogarkov, coll. HNHM
KA183m, Russia, Primorsky Krai, Rjazanovka [Ryazanovka], 06.07.1982, leg. Lindt, coll. HNHM
KA184m, Russia, Primorsky Krai, Razdelnoje, 14.07.1982, leg. Lindt, coll. HNHM
KA185m, Russia, Primorsky Krai, Rjazanovka [Ryazanovka], 06.07.1982, leg. Lindt, coll. HNHM
KA210f, Russia, Primorsky Krai, Razdelnoje, 14.07.1982, leg. Lindt, coll. HNHM
KA493f, China, Prov. Shaanxi, Tsinling Mts,South Taibaishan, Houzhenzi, 1900 m, 01-12.08.1999, 33°53'N, 107°49'E, leg. V. Sinaev; A. Plutenko, coll. HNHM

KA503m, Russia, Primorsky Krai, Razdelnoje, 14.07.1982, leg. Lindt, coll. HNHM
KA504f, Russia, Primorsky Krai, Romanovka, 21.07.1982, leg. Lindt, coll. HNHM
KA629m, China, Manchuria, Maoer Shan, 30.05.1950, leg. V. Alin, coll. ZFMK, Bonn.
KA630f, Korea, Choany, 17.08.1928, coll. ZFMK, Bonn.
KA631f, Korea, Choany, 17.08.1928, coll. ZFMK, Bonn.
KA826m, Russia, Primorsky Krai, Pograninchny, 60 km SW of Lake Khanka, 44°25'N, 131°24'E, 10-20.07.1992, ex. coll. A. Schintlmeister, coll. HNHM
KA1020m, Russia, Primorsky Krai, Vladivostok E, Suchansky Rudnik [Partizansk], "August", ex. coll. C. Boursin, coll. SMNK
KA1048f, China, Prov. Liaoning, Kuandian Man Autonom County, Baishilazi Nature Reserve, ca. 500 m, 40°50'N, 124°57'E, 16-19.06.1999, leg. L. Lőkös; B. Papp, coll. HNHM
KA1104f, Russia, Primorsky Krai, Tjutjuje [Sikhote-Alin], 03.1909, ex. coll. Püngeler, coll. MfN
MV 18 762(m), Russia, Primorsky Krai, Vladivostok E, Suchansky Rudnik [Partizansk], coll. NHMW
No 203 (m), **PLT**, Russia, Primorsky Krai, Suchan district, Tigrovoe village, 22.08.1922, leg. A. Kurentzov, coll. ZISP

Craniophora taipaishana Draudt, 1950 (7)

Hö156(m), **LT**, China, Prov. Shaanxi, Tsinling Mts, Taibaishan, 02.07.1935, ex. coll. H. Höne, coll. ZFMK
KA668f, China, Prov. Shanxi, Mien-shan, ca. 2000 m, 30.07.1937, ex. coll. H. Höne, coll. ZFMK
KA669m, China, Prov. Shanxi, Mien-shan, ca. 2000 m, 15.07.1937, ex. coll. H. Höne, coll. ZFMK
KA670f, China, Prov. Shaanxi, Tsinling Mts, Taibaishan, ca. 3000 m, 25.06.1936, ex. coll. H. Höne, coll. ZFMK
KA671m, China, Prov. Shaanxi, Tsinling Mts, Taibaishan, ca. 3000 m, 27.06.1936, ex. coll. H. Höne, coll. ZFMK
KA1273m, China, Prov. Shanxi, Mienshan, ca. 2000 m, 30.07.1937, ex. coll. H. Höne, coll. ZFMK
KA1274m, China, Prov. Shanxi, Mienshan, ca. 2000 m, 30.07.1937, ex. coll. H. Höne, coll. ZFMK

Craniophora pacifica* f. *kalgana Draudt, 1931 (2)

KA975m, China, Prov. Tschil [Prov. Hebei], Kalgan [Zhangjiakou City], coll. ZSM
KA1096m, HT, China, Prov. Tschil [Prov. Hebei], Kalgan [Zhangjiakou City], coll. MfN

Craniophora minuscula Kiss & Jinbo, 2016 (14)

KA942m, **PT**, Japan, Hokkaido, Ashibetsu, 15.08.1993, leg. M. Owada, coll. NSMT
KA943m, **PT**, Japan, Hokkaido, Ashibetsu, 15.08.1993, leg. M. Owada, coll. NSMT
KA944m, **PT**, Japan, Hokkaido, Ashibetsu, 15.08.1993, leg. M. Owada, coll. NSMT
KA945m, **PT**, Japan, Hokkaido, Sharigun, Koshimizucho, 30.07.1978, leg. Y. Kishida, coll. NSMT
KA946f, **PT**, Japan, Hokkaido, Kushiro, Shibecha, Fututsuyama, 12.08.1978, leg. K. Ijima, coll. NSMT
KA1172m, **PT**, Japan, Hokkaido, Rikubetsu town, Kunbetsu, 30.05.1998, leg. H. Kogi, coll. TOEF
KA1173m, **PT**, Japan, Hokkaido, Hamanaka town, Kiritappu, 04.08.1989, coll. TOEF
KA1174m, **HT**, Japan, Hokkaido, Mukawa town, Hobetsu, Fukuyama, 22.06.1997, coll. TOEF
KA1175f, **PT**, Japan, Hokkaido, Nemuro city, Konbumori, 03.08.1989, coll. TOEF
KA1176f, **PT**, Japan, Hokkaido, Kushiro, Shibecha, Fututsuyama, 02.08.1989, leg. K. Ijima, coll. TOEF
KA1177m, **PT**, Japan, Honshu, Okayama Pref., Takahasi city, Bicchuu, Fuka, Iwayakei, 230 m, 30.05.2009, coll. SMC
KA1178f, **PT**, Japan, Honshu, Okayama Pref., Takahasi city, Bicchuu, Fuka, Iwayakei, 230 m, 13.06.2009, coll. SMC
KA1747m, Russia, Primorsky Krai, Vladivostok, Zanadvorovka village, 12-18.08.1991, leg. Berg, coll. PGy
Matov0499, Russia, Primorsky Krai, Kedrovaya Pad Nature Reserve, 15-18.08.1966, ex. coll. A. V. Nekrasov, coll. ZISP

Craniophora draudti Han & Kononenko, 2010 (28)

KA415f, China, Prov. Yunnan, Li-kiang, ca. 3000 m, 25.07.1935, ex. coll. H. Höne, coll. ZSM

KA505m, China, Prov. Hubei, Wudang-shan Mts, 1500 m, 32°16'N, 110°57'E, 08.2000, leg. local collector, coll. HNHM
KA506m, China, Prov. Hubei, Wudang-shan Mts, 1500 m, 32°16'N, 110°57'E, 08.2000, leg. local collector, coll. HNHM
KA507m, China, Prov. Hubei, Wudang-shan Mts, 1500 m, 32°16'N, 110°57'E, 08.2000, leg. local collector, coll. HNHM
KA508m, China, Prov. Hubei, Wudang-shan Mts, 1500 m, 32°16'N, 110°57'E, 08.2000, leg. local collector, coll. HNHM
KA673f, China, Prov. Yunnan, A-tun-tse, Talsohle, ca. 3500 m, 09.07.1936, ex. coll. H. Höne, coll. ZFMK
KA675f, China, Prov. Yunnan, A-tun-tse, Talsohle, ca. 3500 m, 15.07.1936, ex. coll. H. Höne, coll. ZFMK
KA677f, China, Prov. Yunnan, A-tun-tse, Talsohle, ca. 3500 m, 28.06.1936, ex. coll. H. Höne, coll. ZFMK
KA686f, China, Prov. Yunnan, Li-kiang, 01.08.1935, ex. coll. H. Höne, coll. ZFMK
KA687m, **PT**, China, Prov. Shaanxi, Tsinling Mts, Taibaishan, ca. 1700 m, 12.09.1936, ex. coll. H. Höne, coll. ZFMK
KA688m, **PT**, China, Prov. Shaanxi, Tsinling Mts, Taibaishan, ca. 3000 m, 17.06.1936, ex. coll. H. Höne, coll. ZFMK
KA689m, **PT**, China, Prov. Shaanxi, Tsinling Mts, Taibaishan, ca. 1700 m, 11.07.1936, ex. coll. H. Höne, coll. ZFMK
KA1241f, China, Prov. Yunnan, Li-kiang, ca. 3000 m, 25.07.1935, ex. coll. H. Höne, coll. ZFMK
KA1242f, China, Prov. Yunnan, Li-kiang, ca. 3000 m, 17.08.1935, ex. coll. H. Höne, coll. ZFMK
KA1243f, China, Prov. Yunnan, Li-kiang, ca. 3000 m, 31.07.1935, ex. coll. H. Höne, coll. ZFMK
KA1245f, China, Prov. Yunnan, Li-kiang, ca. 3000 m, 01.08.1935, ex. coll. H. Höne, coll. ZFMK
KA1265f, China, Prov. Yunnan, Li-kiang, ca. 3000 m, 03.08.1935, ex. coll. H. Höne, coll. ZFMK
KA1266f, China, Prov. Yunnan, Li-kiang, ca. 3000 m, 11.08.1935, ex. coll. H. Höne, coll. ZFMK
KA1275m, **PT**, China, Prov. Shaanxi, Tapaishan in Tsinling, ca. 3000 m, 16.06.1936, ex. coll. H. Höne, coll. ZFMK
KA1276m, **PT**, China, Prov. Shaanxi, Tapaishan in Tsinling, ca. 3000 m, 16.06.1936, ex. coll. H. Höne, coll. ZFMK
KA1277m, **PT**, China, Prov. Shaanxi, Tapaishan in Tsinling, ca. 3000 m, 17.06.1936, ex. coll. H. Höne, coll. ZFMK
KA1365m, China, Prov. Shaanxi, Lueyang, 04-06.06.2004, leg. E. Kučera, coll. RMNH
KA1366m, China, Prov. Shaanxi, Lueyang, 23-26.06.2004, leg. E. Kučera, coll. RMNH
KA1439f, China, Prov. Yunnan, Li-kiang, ca. 3000 m, 07.09.1935, ex. coll. H. Höne, coll. ZSM
KA1440f, China, Prov. Yunnan, Li-kiang, ca. 3000 m, 15.05.1935, ex. coll. H. Höne, coll. ZSM
ZFMK-Nr 1998, **PT**, China, Prov. Shaanxi, Tsinling Mts, Taibaishan, ca. 1700-3000 m, coll. ZFMK

Craniophora simillima Draudt, 1950 (42)

KA413m, China, Prov. Yunnan, Li-kiang, ca. 3000 m, 02.08.1935, ex. coll. H. Höne, coll. ZSM
KA414m, China, Prov. Yunnan, Li-kiang, ca. 3000 m, 02.06.1934, ex. coll. H. Höne, coll. ZSM
KA672m, China, Prov. Yunnan, A-tun-tse, ca. 4000 m, 19.07.1936, ex. coll. H. Höne, coll. ZFMK
KA674m, China, Prov. Yunnan, A-tun-tse, Talsohle, ca. 3500 m, 10.07.1936, ex. coll. H. Höne, coll. ZFMK
KA676m, China, Prov. Yunnan, Li-kiang, 02.06.1934, ex. coll. H. Höne, coll. ZFMK
KA684m, China, Prov. Yunnan, Li-kiang, ca. 3000 m, 14.08.1935, ex. coll. H. Höne, coll. ZFMK
KA685f, China, Prov. Yunnan, Li-kiang, ca. 3000 m, 14.08.1935, ex. coll. H. Höne, coll. ZFMK
KA971f, China, Prov. Yunnan, Li-kiang, ca. 3000 m, 11.09.1935, ex. coll. H. Höne, coll. ZSM
KA972f, China, Prov. Yunnan, A-tun-tse, Talachte, ca. 3500 m, 04.09.1936, ex. coll. H. Höne, coll. ZSM
KA973m, China, Prov. Yunnan, A-tun-tse, ca. 4000 m, 01.08.1936, ex. coll. H. Höne, coll. ZSM
KA974f, China, Prov. Yunnan, A-tun-tse, Talachte, ca. 3500 m, 27.06.1936, ex. coll. H. Höne, coll. ZSM
KA1236m, China, Prov. Yunnan, Li-kiang, 28.05.1935, ex. coll. H. Höne, coll. ZFMK
KA1237m, China, Prov. Yunnan, Li-kiang, ca. 3000 m, 03.08.1935, ex. coll. H. Höne, coll. ZFMK
KA1238f, China, Prov. Yunnan, Li-kiang, ca. 3000 m, 14.05.1935, ex. coll. H. Höne, coll. ZFMK
KA1239m, China, Prov. Yunnan, Li-kiang, 07.08.1934, ex. coll. H. Höne, coll. ZFMK

KA1240m, China, Prov. Yunnan, Li-kiang, 17.05.1935, ex. coll. H. Höne, coll. ZFMK
KA1244f, China, Prov. Yunnan, Li-kiang, ca. 3000 m, 17.08.1935, ex. coll. H. Höne, coll. ZFMK
KA1246f, China, Prov. Yunnan, Li-kiang, ca. 3000 m, 15.08.1935, ex. coll. H. Höne, coll. ZFMK
KA1247f, China, Prov. Yunnan, Li-kiang, ca. 3000 m, 08.05.1935, ex. coll. H. Höne, coll. ZFMK
KA1248f, China, Prov. Yunnan, Li-kiang, ca. 3000 m, 16.06.1935, ex. coll. H. Höne, coll. ZFMK
KA1249m, China, Prov. Yunnan, Li-kiang, ca. 3000 m, 01.08.1935, ex. coll. H. Höne, coll. ZFMK
KA1250m, China, Prov. Yunnan, Li-kiang, ca. 3000 m, 01.08.1935, ex. coll. H. Höne, coll. ZFMK
KA1251f, China, Prov. Yunnan, Li-kiang, ca. 3000 m, 11.08.1935, ex. coll. H. Höne, coll. ZFMK
KA1252f, China, Prov. Yunnan, Li-kiang, ca. 4000 m, 06.08.1935, ex. coll. H. Höne, coll. ZFMK
KA1253f, China, Prov. Yunnan, Li-kiang, ca. 3000 m, 11.08.1935, ex. coll. H. Höne, coll. ZFMK
KA1254m, China, Prov. Yunnan, A-tun-tse, ca. 4000 m, 16.07.1936, ex. coll. H. Höne, coll. ZFMK
KA1255m, China, Prov. Yunnan, Li-kiang, ca. 4000 m, 23.08.1935, ex. coll. H. Höne, coll. ZFMK
KA1256m, China, Prov. Yunnan, Li-kiang, ca. 3000 m, 26.07.1935, ex. coll. H. Höne, coll. ZFMK
KA1257f, China, Prov. Yunnan, Li-kiang, ca. 3000 m, 15.08.1935, ex. coll. H. Höne, coll. ZFMK
KA1258f, China, Prov. Yunnan, Li-kiang, ca. 3000 m, 16.08.1935, ex. coll. H. Höne, coll. ZFMK
KA1259f, China, Prov. Yunnan, Li-kiang, ca. 3000 m, 23.07.1935, ex. coll. H. Höne, coll. ZFMK
KA1260f, China, Prov. Yunnan, Li-kiang, ca. 3000 m, 02.06.1934, ex. coll. H. Höne, coll. ZFMK
KA1261m, China, Prov. Yunnan, Li-kiang, ca. 3000 m, 11.08.1935, ex. coll. H. Höne, coll. ZFMK
KA1262m, China, Prov. Yunnan, Li-kiang, 27.08.1934, ex. coll. H. Höne, coll. ZFMK
KA1263f, China, Prov. Yunnan, Li-kiang, ca. 3000 m, 03.08.1935, ex. coll. H. Höne, coll. ZFMK
KA1264m, China, Prov. Yunnan, Li-kiang, ca. 3000 m, 15.08.1935, ex. coll. H. Höne, coll. ZFMK
KA1267m, China, Prov. Yunnan, Li-kiang, ca. 3000 m, 15.08.1934, ex. coll. H. Höne, coll. ZFMK
KA1268f, China, Prov. Yunnan, A-tun-tse, Talsohle, ca. 3500 m, 10.06.1936, ex. coll. H. Höne, coll. ZFMK
KA1269m, China, Prov. Yunnan, A-tun-tse, Talsohle, ca. 3500 m, 13.07.1936, ex. coll. H. Höne, coll. ZFMK
KA1270m, China, Prov. Yunnan, A-tun-tse, ca. 4000 m, 26.06.1936, ex. coll. H. Höne, coll. ZFMK
KA1271f, China, Prov. Yunnan, A-tun-tse, Talsohle, ca. 3000 m, 22.05.1937, ex. coll. H. Höne, coll. ZFMK
KA1272m, China, Prov. Yunnan, A-tun-tse, Talsohle, ca. 3500 m, 15.07.1936, ex. coll. H. Höne, coll. ZFMK

Craniophora pontica pontica (Staudinger, 1878) (106)

KA129m, Greece, Stomion [Stomio], 400 m, 10.07.1989, leg. Melser, coll. HNHM
KA368m, Morocco, High Atlas, Aït el Qaq, 1800-2000 m, 28.06-10.07.2012, leg. G. Muller; E. Revay et al., coll. PGy
KA369m, Iran, Prov. Zanjan, Tales Mts, 5 km W of Sorkhed Dizaj, 2000 m, 30.04.2000, leg. Balázs Benedek, coll. PGy
KA370f, Morocco, High Atlas, Aït el Qaq, 1800-2000 m, 28.06-10.07.2012, leg. G. Muller; E. Revay et al., coll. PGy
KA371f, Morocco, High Atlas, Aït el Qaq, 1800-2000 m, 28.06-10.07.2012, leg. G. Muller; E. Revay et al., coll. PGy
KA417m, Morocco, Middle Atlas, Val d'Ifrane, 1600-1700 m, 21.06.1971, leg. R. Bender; E. Bender, coll. ZSM
KA419m, Turkey, Prov. Ankara, Kizilcahamam, 23-24.05.1967, leg. Friedel, coll. ZSM
KA420m, Morocco, High Atlas, Road to Oukaimeden, 1600 m, 11-18.07.1972, leg. G. Friedel, coll. ZSM
KA447m, Morocco, High Atlas, Aït el Qaq, 1800-2000 m, 01-10.08.2012, leg. G. Muller; E. Revay et al., coll. PGy
KA448m, Morocco, High Atlas, Aït el Qaq, 1800-2000 m, 22-31.07.2012, leg. G. Muller; E. Revay et al., coll. PGy
KA477f, Syria, Amanŭs, Yüksek Dagh, VIII. 3L, coll. MSNM
KA478f, Bulgaria, Sakar Mt, V. Dositeevo, 100 m, 07.08.1989, leg. Beshkov, coll. MSNM
KA483f, Crimea, coll. MSNM
KA491f, Crimea, coll. HNHM
KA492f, Crimea, coll. HNHM
KA624m, No labels, coll. ZFMK, Bonn.

KA625m, Turkey, Malatya, coll. ZFMK, Bonn.
KA626f, Crimea, Kerch, coll. ZFMK, Bonn.
KA690m, Bulgaria, Strandzha-S, Black Sea coast, Veleka River, near Sinemoretz village, 10 m, 42°03’35”N, 027°57’37”E, 30.07.2008, leg. S. Beshkov; M. & B. Beshkovi, coll. NMNHS
KA691m, Bulgaria, Strandzha-S, Black Sea coast, Veleka River, near Sinemoretz village, 10 m, 42°03’35”N, 027°57’37”E, 30.07.2008, leg. S. Beshkov; M. & B. Beshkovi, coll. NMNHS
KA692m, Bulgaria, Strandzha-S, Black Sea coast, Veleka River, near Sinemoretz village, 10 m, 42°03’35”N, 027°57’37”E, 30.07.2008, leg. S. Beshkov; M. & B. Beshkovi, coll. NMNHS
KA693m, Bulgaria, Strandzha-S, Black Sea coast, Veleka River, near Sinemoretz village, 10 m, 42°03’35”N, 027°57’37”E, 30.07.2008, leg. S. Beshkov; M. & B. Beshkovi, coll. NMNHS
KA694m, Bulgaria, Strandzha-S, Black Sea coast, Veleka River, near Sinemoretz village, 10 m, 42°03’35”N, 027°57’37”E, 30.07.2008, leg. S. Beshkov; M. & B. Beshkovi, coll. NMNHS
KA695f, Bulgaria, Strandzha-S, Black Sea coast, Veleka River, near Sinemoretz village, 10 m, 42°03’35”N, 027°57’37”E, 30.07.2008, leg. S. Beshkov; M. & B. Beshkovi, coll. NMNHS
KA696m, Bulgaria, Strandzha-S, Black Sea coast, Veleka River, near Sinemoretz village, 10 m, 42°03’35”N, 027°57’37”E, 30.07.2008, leg. S. Beshkov; M. & B. Beshkovi, coll. NMNHS
KA697m, Bulgaria, Eastern Rhodopi Mts, Ada Tepe Hill, Southern of Kroumovgrad town, 315 m, 41°26’35”N, 025°39’39”E, 02.05.2005, leg. S. Beshkov; D. Vassilev, coll. NMNHS
KA698m, Bulgaria, Eastern Rhodopi Mts, Ada Tepe Hill, Southern of Kroumovgrad town, 315 m, 41°26’35”N, 025°39’39”E, 09.05.2005, leg. S. Beshkov; J. Buszko, coll. NMNHS
KA699m, Bulgaria, Eastern Rhodopi Mts, Kroumovgrad distr., Ada Tepe below Svezhest Chalet, 339 m, 41°26’32”N, 025°39’40”E, 21.07.2011, leg. S. Beshkov; M. Beshkova, coll. NMNHS
KA700m, Bulgaria, Eastern Rhodopi Mts, Kroumovgrad distr., Ada Tepe below Svezhest Chalet, 339 m, 41°26’32”N, 025°39’40”E, 21.07.2011, leg. S. Beshkov; M. Beshkova, coll. NMNHS
KA701f, Bulgaria, Eastern Rhodopi Mts, Ada Tepe Hill above Kroumovgrad town, 315 m, 41°26’35”N, 025°39’39”E, 16.08.2005, leg. S. Beshkov, coll. NMNHS
KA705m, Bulgaria, Dobrogea, Hursovska Reka, between Alfatar and Vassil Levsky, 140 m, 43°57’24”N, 027°19’45”E, 27.08.2011, leg. S. Beshkov; M. Beshkova, coll. NMNHS
KA706m, Bulgaria, Thracian lowland, Korten near Nova Zagora, 264 m, 42°33’39”N, 026°00’35”E, 07.05.2012, leg. S. Beshkov; M. Beshkova, coll. NMNHS
KA707f, Bulgaria, Black Sea coast Kamtchiya, sea coast between Shkorpilovtzi and Novo Oryahovo villages, 1 m, 42°59’30”N, 027°53’20”E, 13.08.2009, leg. S. Beshkov; C. Plant; B. Zlatkov, coll. NMNHS
KA708m, Bulgaria, Eastern Rhodopi Mts, Ada Tepe Hill above Kroumovgrad town, 315 m, 41°26’35”N, 025°39’39”E, 16.08.2005, leg. S. Beshkov, coll. NMNHS
KA709f, Bulgaria, Sofia city, the city centre, 555 m, 23.08.2007, leg. S. Beshkov, coll. NMNHS
KA710f, Bulgaria, South Black Sea coast, Ropotamo Hunting Farm near the gate of Velyov vir., 16 m, 42°18’11.8”N, 027°43’18.4”E, 28.07.2011, leg. S. Beshkov; M. Beshkova, coll. NMNHS
KA711f, Bulgaria, Eastern Rhodopi Mts, Byala Reka, Zhultichalskoto Dere near Meden Buk, 111 m, 41°22’48”N, 026°01’39”E, 03.05.2013, leg. S. Beshkov, coll. NMNHS
KA718m, Iran, Prov. Fars, 50 km NW of Ardekan, Tange-Surkh, 2250 m, 12-15.06.1975, leg. G. Ebert; H. Falkner, coll. SMNK
KA719m, Iran, Khusestan, 15 km SE of Yassudi, 2050 m, 15.06.1972, leg. Ebert; Falkner, coll. SMNK
KA720f, Iran, Prov. Fars, Daschte Ardjan, Kotal-Pirehsan, 2000 m, 18.06.1972, leg. Ebert; Falkner, coll. SMNK
KA753m, Crimea, Kerch, leg. Kurulenko, coll. ZISP
KA760m, Crimea, Mukhalatka, leg. N. Kuznetsov, coll. ZISP
KA761m, Azerbaijan, Ordubad, coll. ZISP
KA762m, Russia, Rostoc-on-Don, Botanical Garden of the South Federal University Arboretum, 10.06.2009, leg. A. N. Poltavskij, coll. ZISP
KA763m, South coast of Crimea, Mukhalatka village, 14-27.07.1902, leg. N. Kuznetsov, coll. ZISP
KA764m, Crimea, Kerch, 22.07.1907, leg. E. Kurulenko, coll. ZISP
KA765m, Iran, Shahrud, leg. O. Herz, ex. coll. Gr. Prince Nikolaj Mikhajlovich, coll. ZISP
KA766m, Azerbaijan, Ordubad, coll. ZISP
KA802f, Tajikistan, Pamir, Chorog, 22-25.09.1971, ex. coll. J. Wojtusiak, coll. HNHM
KA888f, Greece, Evros, Kavisos, 100 m, 09.07.1986, leg. M. Fibiger, coll. ZMUC
KA889f, Greece, Thraki, Karisos, 15.07.1985, leg. F. Schepler, coll. ZMUC

KA899m, Tunisia, Aïn Draham, 07-16.07.1911, leg. V. Faroult, coll. ZMUC
KA900m, Turkey, Prov. Ankara, Kizilcahaman, 1250 m, 16.07.1989, leg. Fibiger; Esser, coll. ZMUC
KA901m, Crimea, Karadag Nature Reserve, 28.06.1994, leg. Z. Kljutschko, coll. ZMUC
KA967m, Montenegro, Bozaj Humsko Blato, 10 m, 15.07.2014, leg. F. Graf, coll. FG
KA1017m, Crimea, Kerch, 11.07.1909, ex. coll. C. Boursin, coll. SMNK
KA1018f, Crimea, Kerch, ex. coll. C. Boursin, coll. SMNK
KA1019f, Turkey, Malatya, Tecde, 09.06.????, coll. SMNK
KA1098m, **HT**, Turkey, Prov. Amasya, Amasia [Amasya], ex. coll. Staudinger, coll. MfN
KA1100m, Turkey, Prov. Hatay, Eibes [Akbes], 1894, leg. Phil., ex. coll. Staudinger, coll. MfN
KA1101f, Turkey, Prov. Erzincan, Egin [Kemaliye], 1890, ex. coll. Staudinger, coll. MfN
KA1102f, Turkey, Prov. Konya, Konia [Konya], 1899, leg. Korb, ex. coll. Püngeler, coll. MfN
KA1103f, Algeria, Philippeville [Skikda], 12.05.???? ovo, 03.06.????, leg. K. Dietze, ex. coll. Püngeler, coll. MfN
KA1383m, Morocco, High Atlas, Massif Toubkal, 15 km before Oukaïmeden, 1700 m, 21.07.1977, leg. v. Oorschot; Houkes; Oosterbroek, coll. RMNH
KA1384m, Turkey, Prov. Erzutum, Coruh valley, 11 km NEE of Ispir, 1500 m, 16.08.1996, leg. W. De Prins; D. v. d. Poorten; A. Olivier, coll. RMNH
KA1385m, Turkey, Prov. Van, Edremit, 1750 m, 11-19.06.1990, leg. A. Riemis, coll. RMNH
KA1386m, Morocco, High Atlas, Massif Toubkal, 15 km before Oukaïmeden, 1700 m, 21.07.1977, leg. v. Oorschot; Houkes; Oosterbroek, coll. RMNH
KA1458f, Morocco, High Atlas, road to Oukaïmeden, 1600 m, 11-18.07.1972, leg. G. Friedel, coll. ZSM
KA1459f, Morocco, High Atlas, road to Oukaïmeden, 1600 m, 11-18.07.1972, leg. G. Friedel, coll. ZSM
KA1460f, Morocco, High Atlas, road to Oukaïmeden, 1600 m, 11-18.07.1972, leg. G. Friedel, coll. ZSM
KA1461m, Syria, Taurus Mts, Maras, 600-900 m, 07.1931, leg. local collector, coll. ZSM
KA1720m, Iran, Prov. Fars, Sepidan, Kakun village, 2500 m, 30°32’22”N, 51°49’56”E, 11.08.2011, leg. M. Esfandiari, coll. IMCA
KA1721m, Iran, Prov. Fars, Sepidan, Tangetizab, 2200 m, 30°20’18”N, 51°50’09”E, 28.07.2011, leg. M. Esfandiari, coll. IMCA
KA1722m, Morocco, High Atlas, Aït el Qaq, 1800-2000 m, 11-21.07.2012, leg. G. Müller; E. Revay et al., ex. coll. P. Gyulai, coll. KA
KA1723m, Morocco, High Atlas, Toubkal, Amrouroug, 2400-2800 m, 24-27.07.2012, leg. G. Müller; E. Revay et al., ex. coll. P. Gyulai, coll. KA
KA1724m, Morocco, High Atlas, Aït el Qaq, 1800-2000 m, 11-21.07.2012, leg. G. Müller; E. Revay et al., ex. coll. P. Gyulai, coll. KA
MV 18 665(m), Morocco, Middle Atlas, El-Ksiba, 940 m, 12.06.1973, leg. Vartian, coll. NHMW
MV 18 667(f), Morocco, Middle Atlas, vic. Ifrane, 1600-1700 m, 30.06.1971, leg. R. Bender; E. Bender, coll. NHMW
MV 18 668(m), Turkey, Prov. Ankara, Kizilcahamam, 925 m, 18-29.06.1968, leg. Vartian, coll. NHMW
MV 18 669(f), Turkey, Prov. Ankara, Kizilcahamam, 925 m, 18-29.06.1968, leg. Vartian, coll. NHMW
MV 18 670(m), Russia, Stavropol Krai, Pyatigorsk, 550 m, 01.07.1967, leg. Vartian, coll. NHMW
MV 18 671(m), Russia, Stavropol Krai, Pyatigorsk, 550 m, 01.07.1967, leg. Vartian, coll. NHMW
MV 18 672(m), Russia, Stavropol Krai, Pyatigorsk, 550 m, 01.07.1967, leg. Vartian, coll. NHMW
MV 18 673(m), Russia, Stavropol Krai, Pyatigorsk, 550 m, 01.07.1967, leg. Vartian, coll. NHMW
MV 18 674(m), Armenia, Geghard, 40 km E of Yerevan, 1700 m, 26-27.07.1976, leg. Kasy; Vartian, coll. NHMW
MV 18 675(m), Armenia, Geghard, 40 km E of Yerevan, 1700 m, 03-04.08.1976, leg. Kasy; Vartian, coll. NHMW
MV 18 676(m), Armenia, Geghard, 40 km E of Yerevan, 1700 m, 28-29.07.1976, leg. Kasy; Vartian, coll. NHMW
MV 18 677(m), Armenia, Geghard, 40 km E of Yerevan, 1700 m, 28-29.07.1976, leg. Kasy; Vartian, coll. NHMW
MV 18 775(f), Tunisia, Aïn-Draham, ex. coll. Wagner, coll. NHMW
MV 18 776(m), Algeria, Lambése, June 1912, leg. Harold Powell, coll. NHMW
MV 18 777(m), Romania, Băile Herculane, Partos S. G., 90. 5/6 ?, coll. NHMW
MV 18 778(m), Iran, Miyan Kotal, E of Kazerun, 1900 m, 29°30’N, 51°40’E, 04-07.06.1969, leg. Vartian, coll. NHMW
MV 18 779(f), Iran, Miyan Kotal, E of Kazerun, 1900 m, 29°30’N, 51°40’E, leg. Vartian, coll. NHMW

MV 18 780(m), Russia, Stavropol Krai, Pyatigorsk, 550 m, 01.07.1967, leg. Vartian, coll. NHMW
MV 18 781(m), Russia, Stavropol Krai, Pyatigorsk, 550 m, 01.07.1967, leg. Vartian, coll. NHMW
MV 18 782(m), Russia, Stavropol Krai, Pyatigorsk, 550 m, 01.07.1967, leg. Vartian, coll. NHMW
MV 18 783(f), Russia, Stavropol Krai, Pyatigorsk, 550 m, 01.07.1967, leg. Vartian, coll. NHMW
MV 18 784(m), Armenia, Geghard, 40 km E of Yerevan, 1700 m, 26-27.07.1976, leg. Kasy; Vartian, coll. NHMW
MV 18 785(m), Armenia, Geghard, 40 km E of Yerevan, 1700 m, 30-31.07.1976, leg. Kasy; Vartian, coll. NHMW
MV 18 786(f), Armenia, Geghard, 40 km E of Yerevan, 1700 m, 03-11.09.1975, leg. Vartian, coll. NHMW
MV 18 787(f), Armenia, Geghard, 40 km E of Yerevan, 1700 m, 03-11.09.1975, leg. Vartian, coll. NHMW
MV 18 788(m), Turkey, Malatya, Tecde, 20.05.????, coll. NHMW
MV 18 789(f), Turkey, Malatya, Tecde, 05.06.????, coll. NHMW
MV 18 790(m), Pontus, coll. NHMW
MV 18 791(m), Crimea, Kerch, Stgr. V/1910, coll. NHMW
MV 18 792(m), Iran, Derbend, 25 km N v. Teheran, 2000 m, 07-15.06.1963, leg. Kasy; Vartian, coll. NHMW

Craniophora pontica navasi Boursin, 1935 (24)

KA275m, Spain, Prov. Granada, Sierra-Nevada, Seminario Güéjar, 1300 m, 22.07.1986, leg. J. L. Yela, coll. JLY
KA276m, Spain, Prov. Ávila, Candeleda, Pantano Rosarito, 01.05.1986, leg. J. L. Yela, coll. JLY
KA277f, Spain, Prov. Cáceres, Hervás, 28.06.1986, leg. M. A. M. Jimeno, coll. JLY
KA278f, Spain, Prov. Huesca, Ansó, ex larva, 18.05.1988, leg. C. G. De Aizpúrua, coll. JLY
KA418m, Spain, Prov. Granada, Diezma, 1250 m, 20.07.1962, leg. K. Sattler, coll. ZSM
KA441m, Spain, Prov. Huesca, Panticosa, 1200 m, 22.07.1950, MNCN_ENT 90374, coll. MNCN
KA442m, Spain, Prov. Huesca, Panticosa, 1200 m, 22.07.1950, MNCN_ENT 90362, coll. MNCN
KA443m, Spain, Prov. Huesca, Panticosa, 1200 m, 21.07.1950, MNCN_ENT 90376, coll. MNCN
KA444m, Spain, Prov. Huesca, Panticosa, 1200 m, 13.07.1950, MNCN_ENT 90369, coll. MNCN
KA445m, Spain, Prov. Huesca, Panticosa, 1200 m, 13.07.1950, MNCN_ENT 90358, coll. MNCN
KA446f, Spain, Prov. Huesca, Panticosa, 1200 m, 23.07.1950, MNCN_ENT 90380, coll. MNCN
KA613f, Spain, Prov. Huesca, Panticosa, 1200 m, 20.07.1950, leg. W. Marten, MNCN_Ent 90382, coll. MNCN
KA881m, Spain, Prov. Madrid, Lozoya, 1000 m, 20-21.07.1995, leg. Peder Skou, coll. ZMUC
KA891m, Spain, Prov. Zaragoza, Tosos, 14.06.2004, coll. ZMUC
KA897m, Portugal, Minho, Serra do Geres, Parada de Bouro, 26.08.1990, leg. G. Sircoulomb, coll. ZMUC
KA898m, Spain, Prov. Cadiz, San Roque, 15.05.1979, coll. ZMUC
KA890m, Portugal, Pinzio, 21.06.2008, leg. Z. Laštŭvka, coll. ZMUC
KA1099f, Spain, Prov. Segovia, San Ildefonso, 1886, leg. Vasquez, ex. coll. Staudinger, coll. MfN
KA1387m, Spain, Prov. Cadiz, San Roque, 26.07.1986, leg. C. Gielis, coll. RMNH
KA1388f, Spain, Prov. Segovia, Matabuena, 21.07.1985, leg. C. Gielis, coll. RMNH
KA1389m, Spain, Prov. Segovia, Matabuena, 21.07.1985, leg. C. Gielis, coll. RMNH
KA1502m, Portugal, Serra da Estrêla, Manteigas, ca. 850 m, 12-31.07.1955, leg. H. Noack, ex. coll. E. Urbahn, coll. MfN
KA1503m, Portugal, Serra da Estrêla, Manteigas, ca. 850 m, 25.08-02.09.1955, leg. H. Noack, ex. coll. E. Urbahn, coll. MfN
MV 18 664(m), Spain, Prov. Huesca, Ainsa, 29.07.1930, ex coll. R. Kitschelt, 1936, coll. NHMW

Craniophora pontica* f. *illuminata Rungs, 1972 (1)

MV 18 666(m), Morocco, Middle Atlas, val d'Ifrane, 1600-1700 m, 21.06.1971, leg. R. Bender; E. Bender, coll. NHMW

Genus ***Harmandicrania*** Kiss, 2017

Harmandicrania harmandi (Poujade, 1898) (16)

KA060m, Thailand, Prov. Nan, Ban Pua, Doi Phu Ka, 1600 m, 17-25.02.1993, leg. J. M. Cadiou, coll. HNHM

KA107m, Nepal, Central Nepal, Godavari, Mt. Phulchouki, ca. 30 km S of Kathmandu, 2000 m, III-IV.1991, ex coll. A. Schintlmeister, coll. HNHM

KA138m, Nepal, Langtang, 1,5 km NE Dhunche, 1950 m, 28°06'N, 85°18'E, 24.09.1994, leg. Csorba; Ronkay, coll. HNHM

KA139f, Nepal, Annapurna Himal, near Deorali, 3100 m, 28°24'N, 83°43'E, 05-06.10.1994, leg. Csorba; Ronkay, coll. HNHM

KA141m, Nepal, Annapurna Himal, Ulleri, 1900 m, 28°23'N, 83°43'E, 03.10.1994, leg. Csorba; Ronkay, coll. HNHM

KA142m, Nepal, Annapurna Himal, Ulleri, 1900 m, 28°23'N, 83°43'E, 03.10.1994, leg. Csorba; Ronkay, coll. HNHM

KA143m, Nepal, Annapurna Himal, 2 km N Landrung, 1540 m, 28°23'N, 83°49'E, 08.04.1995, leg. Gy. M. László; G. Ronkay, coll. HNHM

KA261m, Vietnam, Da Lat, Institute of Biology, Hgv-lamp, 10.12.1994, leg. Mahunka S.; Sziráki Gy.; Zombori L., No. 750, coll. HNHM

KA382m, Nepal, Annapurna Himal, Banthanti village, 2420 m, 28°22,5'N, 83°43'E, 01.06.1996, leg. Gy. M. László; G. Ronkay, coll. GR

KA383f, Nepal, Langtang, 9 km S of Dhunche, 2110 m, 28°04'N, 85°14'E, 23.09.1994, leg. Csorba; Ronkay, coll. GR

KA384m, Nepal, Annapurna Himal, Ulleri, 1900 m, 28°23'N, 83°43'E, 03.10.1994, leg. Csorba; Ronkay, coll. GR

KA385m, Nepal, Annapurna Himal, 2 km E of Ghorepani, 2900 m, 28°24'N, 83°43'E, 07.10.1994, leg. Csorba; Ronkay, coll. GR

KA388f, Thailand, Prov. Chiang Mai, Doi Phahompok, 20 km NW of Fang, 2150 m, 22-25.01.2004, leg. A. Szabó, coll. GR

KA389m, Thailand, prov. Chiang Mai, Doi Phahompok, 20 km NW of Fang, 2150 m, 22-25.01.2004, leg. A. Szabó, coll. GR

KA421m, Nepal, Helmut-Gebiet, Gusum Banjyang, 2600 m, 05.09.1967, leg. Dierl, coll. ZSM

KA422f, Nepal, Kyumnu-Khola valley near Gandrung, 2360 m, 24.05.1973, leg. Dierl; Lehmann, coll. ZSM

Craniophora picata Wileman, 1914 (15)

HY-525(f), Taiwan, Prov. Nantou, Hehuan Mt. [Hehuanshan], 3100 m, 08.08.1974, ex. coll. Y. Kishida, coll. NSMT

HY-527(f), Taiwan, Prov. Chiayi, Alishan, 12.08.1974, ex. coll. Y. Kishida, coll. NSMT

KA056f, Taiwan, Prov. Nantou, Tayuling, 2750 m, 09.04.2002, 24°10'N, 121°18'E, leg. Gy. Fábián, coll. HNHM

KA057m, Taiwan, Prov. Taitung, Yakou, Mtn Yu-shan, 2000 m, 29-30.04.1997, leg. S. T. Kovács, coll. HNHM

KA058m, Taiwan, Prov. Nantou, 3 km S of Hoshe, Yu-shan Nat. Park, 1400 m, 16.10.1996, leg. Gy. Fábián; F. Nemes, coll. HNHM

KA059m, Taiwan, Prov. Hua-Lien, Kuanyuan, 2380 m, 11-12.10.1996, leg. Gy. Fábián; F. Nemes, coll. HNHM

KA144f, Taiwan, Prov. Hualien, Hohuan Mts, Hohuan pass, 3000 m, 28.05.1997, leg. Gy. M. László; G. László, coll. HNHM

KA145f, Taiwan, Prov. Nantou, 3 km S Hoshe, Yu-shan Nat. Park, 1400 m, 16.10.1996, leg. Gy. Fábián; F. Nemes, coll. HNHM

KA146m, Taiwan, Prov. Nantou, Tayuling, 2550 m, 07-08.10.1996, leg. Gy. Fábián; F. Nemes, coll. HNHM

KA147f, Taiwan, Prov. Nantou, Tayuling, 2550 m, 07-08.10.1996, leg. Gy. Fábián; F. Nemes, coll. HNHM

KA148m, Taiwan, Prov. Taitung, 2 km S Liyusan, 1760 m, 21.10.1996, leg. Gy. Fábián; F. Nemes, ex. coll. Gy. Fábián, coll. HNHM

KA208f, Taiwan, Prov. Nantou, Taroko N.P., Guanyuan, 2256 m, 24°11'15"N, 121°20'45"E, 10.07.2007, leg. A. Kun, coll. HNHM

KA209f, Taiwan, Prov. Nantou, Taroko N.P., Guanyuan, 2256 m, 24°11'15"N, 121°20'45"E, 10.07.2007, leg. A. Kun, coll. HNHM

KA262f, Taiwan, Hsiangyag, Police Station, 2320 m, 01-03.11.1996, leg. Gy. Fábián; F. Nemes, coll. HNHM

KA263m, Taiwan, Prov. Nantou, 6 km SW of Hohuan Pass, Yuanfeng, 2760 m, 31.05.1997, leg. Gy. M. László; G. László, coll. HNHM

Harmandicrania barnandi Kiss, 2017 (7)

KA495f, **PT**, India, Himachal Pradesh, Kullu valley, Nagar, 1750 m, 28-30.08.1994, leg. P. Kautt; V. Weisz, coll. HNHM

KA801m, **PT**, Pakistan, Himalaya, Kaghan valley, 20 km NE Balakot, Tathabaya, 2400 m, 34°41'N, 73°25'E, 27.07.1994, leg. B. Herczig; Gy. M. László; G. Ronkay, coll. HNHM

KA1117m, **HT**, Pakistan, Himalaya, Kaghan valley, Tathabaya, 2200 m, 34°36'N, 73°26'E, 02.07.1998, leg. Gy. Fábián; L. Ronkay, coll. GyF

KA1118m, **PT**, Pakistan, Himalaya, Kaghan valley, Tathabaya, 2300 m, 34°36'48"N, 73°27'01"E, 22-23.07.1998, leg. G. Csorba; L. Ronkay, coll. GyF

KA1119m, **PT**, Pakistan, Himalaya, Kaghan valley, Tathabaya, 2200 m, 34°36'N, 73°26'E, 23.06.1998, leg. Gy. Fábián; B. Herczig, coll. GyF

KA1704m, **PT**, Pakistan, Himalaya, Kaghan valley, Tathabaya, 23.08.1998, leg. Z. Varga; G. Ronkay, coll. VZ

KA1725m, **PT**, Pakistan, Himalaya, Kaghan valley, Tathabaya, 23.08.1998, leg. Z. Varga; G. Ronkay, coll. VZ

Harmandicrania tathabayandi Kiss, 2017 (6)

KA242m, **PT**, Pakistan, Himalaya, Kaghan valley, Tathabaya, 2200 m, 34°36'N, 73°26'E, 02.07.1998, leg. Gy. Fábián; B. Herczig, coll. GyF

KA243m, **PT**, Pakistan, Himalaya, Kaghan valley, Tathabaya, 2300 m, 34°36'48"N, 73°27'01"E, 07.07.1998, leg. G. Csorba; L. Ronkay, coll. GyF

KA378m, **PT**, Pakistan, Himalaya, Kaghan valley, Tathabaya, 2200 m, 34°38'N, 73°26'E, 28-29.06.1998, leg. Gy. Fábián; B. Herczig, coll. GR

KA379m, **PT**, Pakistan, Himalaya, Kaghan valley, Tathabaya, 2200 m, 34°36'N, 73°26'E, 02.07.1998, leg. Gy. Fábián; B. Herczig, coll. GR

KA380f, **PT**, Pakistan, Himalaya, Kaghan valley, 20 km NE Balakot, Tathabaya, 2400 m, 34°41'N, 73°25'E, 25.07.1994, leg. B. Herczig; Gy. M. László; G. Ronkay, coll. GR

KA381m, **HT**, Pakistan, Himalaya, Kaghan valley, Tathabaya, 2200 m, 34°36'N, 73°26'E, 28-29.06.1998, leg. Gy. Fábián; B. Herczig, coll. GR

Harmandicrania brunneocinerea Kiss, 2017 (9)

MV 18 765(m), **PT**, Afghanistan, S of Khinan, Salang Pass, N side, 2100 m, 09.07.1969, leg. Vartian, coll. NHMW

KA255m, **PT**, Pakistan, Kohistan, Industal, 2 km W Pattan, 1050 m, 35°08'N, 72°56'E, 07.10.1988, leg. Hacker, coll. VZ

KA372f, **PT**, Pakistan, Himalaya, Indus valley, between Chilas and Dassu, Motel Barseen, 1100 m, 10.10.1998, leg. Gy. M. László; G. Ronkay, coll. GR

KA1021m, **PT**, Pakistan, Himalaya, Indus valley, between Chilas and Dassu, Motel Barseen, 850 m, 18.04.1999, leg. B. Benedek; A. Szabó, coll. HNHM

KA1022f, **PT**, Pakistan, Himalaya, Indus valley, between Chilas and Dassu, Motel Barseen, 1100 m, 10.10.1998, leg. Gy. M. László; G. Ronkay, coll. HNHM

KA1023m, **PT**, Pakistan, Hindukush Mts, 3 km W of Pingal, 19.08.2001, leg. B. Benedek; G. Ronkay, coll. HNHM

KA1024f, **PT**, Pakistan, Himalaya, Indus valley, between Chilas and Dassu, Motel Barseen, 1100 m, 10.10.1998, leg. Gy. M. László; G. Ronkay, coll. HNHM

KA1111m, **HT**, Pakistan, Himalaya, Indus valley, between Chilas and Dassu, Motel Barseen, 1100 m, 10.10.1998, leg. Gy. M. László; G. Ronkay, coll. GR
KA1442m, **PT**, Afghanistan, Nuristan, Bashgul valley, 1200 m, 20.04.1953, leg. J. Klapperich, coll. ZSM

Harmandicrania sinoandi Kiss, 2017 (6)

KA386m, **HT**, China, Prov. Sichuan, 70 km NW of Chengdu, Qingchenghousan Mts, 1400 m, 16-25.08.2005, leg. V. Murzin, coll. GR
KA387m, **PT**, China, Prov. Sichuan, 70 km NW of Chengdu, Qingchenghousan Mts, 1400 m, 16-25.08.2005, leg. V. Murzin, coll. GR
KA1218f, **PT**, China, Prov. Yunnan, Li-kiang, ca. 2000 m, 11.10.1934, ex. coll. H. Höne, coll. ZFMK
PGy3498(m), **PT**, China, Prov. Sichuan, Abulandan Shan, Dechang, 27°25'N, 102°06'E, 01-31.07.2005, leg. V. Siniaev & Team, coll. PGy
PGy3500(m), **PT**, China, Prov. Sichuan, Volong Reserve, Siguliang Shan, 31°09'N, 103°20'E, 01.11.-31.12.2004, leg. V. Siniaev & Team, coll. PGy
PGy3503(m), **PT**, China, Prov. Sichuan, Xiling Xue Shan Mts, 90 km W of Chengdu, 1800 m, 25-31.08.2007, leg. S. Murzin, coll. PGy

Harmandicrania peninsularis Kiss, 2017 (2)

KA928m, **HT** Malaysia, Genting Highlands, 1700 m, 06-08.04.1986, leg. K. Yazaki, coll. NSMT
KA929f, **PT** Malaysia, Genting Highlands, 1700 m, 06-08.04.1986, leg. K. Yazaki, coll. NSMT

Harmandicrania nipponica Kiss, 2017 (5)

HY-515(m), **PT**, Japan, Honshu, Kanagawa Pref., Ohdarumi, 350m, 24.09.1977, leg. H. Yoshimoto, coll. NSMT
HY-528(f), **PT**, Japan, Honshu, Tokyo, Takao [Mt. Takao-san], 20.09.1944, leg. Ishikawa, coll. NSMT
KA924f, **PT**, Japan, Honshu, Tokyo, Takao [Mt. Takao-san], 20.09.1944, leg. Ishikawa, coll. NSMT
KA926m, **PT**, Japan, Honshu, Tokyo, Takao [Mt. Takao-san], 11.09.1958, coll. NSMT
KA927m, **HT**, Japan, Honshu, Wakayama Pref., Shimokawa-Osugi, Mts Oto, 23.09.1972, coll. NSMT

Harmandicrania fujianensis (Kiss & Gyulai, 2013) (1)

PGy3207(m), **HT**, China, Prov. Fujian, Dai Mao Shan, 20 km NW of Longyan, 1300 m, 25°32'N, 116°51'E, 21-30.11.2004, leg. V. Siniaev and team, coll. PGy

Harmandicrania hainanensis (Kiss & Gyulai, 2013) (2)

PGy3209(m), **PT**, China, Prov. Hainan, Wuzhi Shan, 1333 m, 03-10.01.2008, leg. local collector, coll. GR
PGy3502(m), **HT**, China, Prov. Hainan, Wuzhi Shan, 1333 m, 03-10.01.2008, leg. local collector, coll. PGy

Harmandicrania nubilata (Hampson, 1894) (10)

KA069m, Nepal, Deorali Danda, 6 km NW of Yamphudin, 2900 m, 20.06.1998, leg. M. Hreblay; B. Benedek, coll. HNHM
KA070m, Nepal, Tinjure Danda, Tinjure phedi, 2650 m, 06.07.1998, leg. M. Hreblay; B. Benedek, coll. HNHM
KA071f, Nepal, Annapurna Himal, between Nangethanti and Ghorepani, 2600 m, 28°23,5'N, 83°42,5'E, 24.07.1995, leg. Gy. M. László; G. Ronkay, coll. HNHM
KA425m, Nepal, Prov. Nr. 1. East, Pultschuk [Phulchouki], 2300-2500 m, 15.06.1967, leg. Dierl; Forster; Schacht, coll. ZSM
KA426m, Nepal, Prov. Nr. 1. East, Pultschuk [Phulchouki], 2300-2500 m, 15.06.1967, leg. Dierl; Forster; Schacht, coll. ZSM
KA1453f, Nepal, Prov. Nr. 3. East, Sete, 2700 m, 01.08.1964, leg. W. Dierl, coll. ZSM
KA1454m, Nepal, Helmu Mt., Gusum Banjyang, 2600 m, 03.09.1967, leg. Dierl, coll. ZSM

KA1455f, Nepal, Prov. Nr. 3. East, Junbesi, 2750 m, 25-31.07.1964, leg. W. Dierl, coll. ZSM
KA1456m, Nepal, Helmu Mt., Gusum Banjyang, 2600 m, 04.09.1967, leg. Dierl, coll. ZSM
KA1457m, Nepal, Prov. Nr. 1. East, Pultschuk [Phulchouki], 2300-2500 m, 13.06.1967, leg. Dierl; Forster; Schacht, coll. ZSM

Genus ***Graesericrania*** Kiss, 2017
Graesericrania praeclara (Graeser, 1890) (26)

MV 18 793(f), Japan, Honshu, Nara Pref., Kozjidake, 1200 m, 02.08.1971, leg. Kobes, coll. NHMW
KA052m, Japan, Akita Pref., Nyuto Onsen, 07.08.1975, leg. K. Ishizuka, coll. HNHM
KA053m, Japan, Niigata Pref., Sasagamine, Myoko Kogen, 30.07.1978, leg. K. Ishizuka, coll. HNHM
KA054m, North Korea, Prov. North Pyongan, Mt. Myohyang-san, Hotel Myohyang-san, 18.07.1982, leg. L. Forró; L. Ronkay, No. 829, coll. HNHM
KA055m, North Korea, Prov. Kangwon, Mts Kumgang-san, Manmulsang Rocks, 750 m, 12.06.1991, leg. L. Ronkay; A. Vojnits, No. 1465, coll. HNHM
KA067m, Japan, Akita-ken, Nyuto Onsen, 04.08.1975, leg. K. Ishizuka, coll. HNHM
KA149m, Russia, Jewish Autonomous Oblast, Kuldur [Kul'dur], 49°13'N, 131°38'E, 01-18.07.1989, leg. Ogarkov, coll. HNHM
KA150m, Russia, Primorsky Krai, Levada, 12.06.1988, leg. Obydov, coll. HNHM
KA151m, Russia, Primorsky Krai, Razdelnoje, 14.07.1982, leg. Lindt, coll. HNHM
KA152m, Russia, Primorsky Krai, Razdelnoje, 14.07.1982, leg. Lindt, coll. HNHM
KA153m, Uzbekistan, Tian-shan, Mt. Chingan, ca. 2000 m, 29.06.1990, leg. Sukarov, coll. HNHM
KA154m, Russia, Jewish Autonomous Oblast, Kuldur [Kul'dur], 49°13'N, 131°38'E, 29.06-20.07.1990, ex coll. A. Schintlmeister, coll. HNHM
KA423m, Japan, Honshu, Nara Pref, Kozjidake, 1200 m, 02.08.1971, leg. Kobes, coll. ZSM
KA424m, Russia, Primorsky Krai, Ussuriysk, 24.07.1966, ex. coll. Heinicke, coll. ZSM
KA473m, Japan, Kyusyu, Hikosan (Buzen), 05-06.09.1943, leg. T. Shirozu, coll. MSNM
KA474m, Russia, Primorsky Krai, Nikolsk, coll. MSNM
KA930m, Japan, Honshu, Yamanashi Pref., Yanagisawa-toge, Saiki-rindo, 1500 m, 09.07.1978, leg. H. Yoshimoto, coll. NSMT
KA931m, Japan, Hokkaido, 1000 m, 16.07.1990, leg. H. Kobayashi, coll. NSMT
KA932m, Japan, Honshu, Yamanashi Pref., Yashajin-Pass, 25.07.1955, leg. Y. Kurosawa; M. Kobayashi, coll. NSMT
KA933f, Japan, Honshu, Nagano Pref., Hakuba Hosono, 27.07.1970, leg. H. Yoshimoto, coll. NSMT
KA934f, Japan, Honshu, Yamanashi Pref., Ushiroyama-rindo, Sanjo, 1100 m, 11.06.1977, leg. H. Yoshimoto, coll. NSMT
KA1085f, North Korea, Seishin-Olto [Chŏngjin], leg. A. Kricheldorff, coll. MfN
KA1232m, South Korea, Jeollanam-do, Gurye-gun, Toji-myeon, Mt. Jirisan, 1318 m, 35°18'12"N, 127°33'34"E, 23.07.2009, leg. S.-W. Choi, ex coll. MNU, coll. KA
KA1233m, South Korea, Gyeongsangnam-do,, Hamyeong, Mt. Jirisan, 745 m, 35°21'N, 127°38'E, 25.07.2006, leg. S.-K. Kim, ex coll. MNU, coll. KA
KA1381m, Japan, Hokkaido, Soounkyo, 600-650 m, 18.07.1971, leg. V. S. v. d. Goot; J. A. W. Lucas, coll. RMNH
KA1382f, Taiwan ???, 18.05.1963, ex. coll. J. M. A. v. Groenendael, coll. RMNH

Genus ***Eurypterocrania*** Kiss, 2017
Eurypterocrania jactans (Draudt, 1937) (4)

KA040f, China, Yunnan, Diqing Tibetan autonomous prefecture, 5 km SE of Deqin Town, Tashi's guesthouse at Rerinkha village, 3356 m, 05-06.06.2008, 28°28.484'N, 098°53.827'E, leg. B. Benedek, coll. HNHM
KA365m, China, Prov. Yunnan, Diqing Tibetan Aut. Pref., 8 km NNE of Shangri La at Nairi village, 3300 m, 21.06.2009, leg. B. Benedek, coll. PGy
KA1219f, China, Prov. Yunnan, A-tun-tse, ca. 4000 m, 16.07.1937, ex. coll. H. Höne, coll. ZFMK
ZFMK-Nr. 1860(m), **LT**, China, Prov. Yunnan, Li-kiang, 02.06.1935, ex. coll. H. Höne, coll. ZFMK

Eurypterocrania sichuanensis (Kiss, Gyulai & Saldaitis, 2013) (2)

KA1200m, China, Prov. Yunnan, Pass 50 km N of Qiaojia, 2850-3000 m, 13-15.07.2010, leg. S. Murzin, coll. LS

PGy2883(m), **HT**, China, Prov. Sichuan, road Yaan/Kangding, Erlang Shan Mt., 2200 m, 29°87.340'N, 102°30.970'E, 02.08.2011, leg. Floriani; Saldaitis, coll. PGy

Genus ***Cycloprora*** Turner, 1920

Cycloprora nodyna (Turner, 1904) (3)

KA1313m, Australia, Queensland, Brisbaine Forest, Camp Mountain, 413 m, 27°24'46"S, 152°52'39"E, 29.12.2005, leg. E. Friedrich, BC EF Lep 00306, coll. EF

KA1314m, Australia, Queensland, Brisbaine Forest, Camp Mountain, 413 m, 27°24'46"S, 152°52'39"E, 29.01.2007, leg. E. Friedrich, BC EF Lep 01271, coll. EF

KA1315f, Australia, Queensland, Dalby-Bunya Mountains N. P., Cherry Plain, 1020 m, 26°51'04"S, 151°33'43"E, 17.01.2006, leg. E. Friedrich, BC EF Lep 00307, coll. EF

Genus ***Turnerinycta*** Kiss, 2017

Turnerinycta phaeocosma (Turner, 1920) (5)

KA1329m, Australia, Queensland, Dalby-Bunya Mountains N. P., West Cott, 1039 m, 26°51'51"S, 151°34'04"E, 22.01.2007, leg. E. Friedrich, BC EF Lep 01273, coll. EF

KA1330f, Australia, Queensland, Dalby-Bunya Mountains N. P., West Cott, 1039 m, 26°51'51"S, 151°34'04"E, 22.01.2007, leg. E. Friedrich, BC EF Lep 01272, coll. EF

KA1331f, Australia, Queensland, Dalby-Bunya Mountains N. P., West Cott, 1039 m, 26°51'51"S, 151°34'04"E, 22.01.2007, leg. E. Friedrich, BC EF Lep 01275, coll. EF

KA1332f, Australia, Queensland, Dalby-Bunya Mountains N. P., Cherry Plain, 1020 m, 26°51'04"S, 151°33'43"E, 20.01.2007, leg. E. Friedrich, BC EF Lep 01274, coll. EF

KA1473f, Australia, Queensland, Brisbane, 1890, leg. Busch., coll. MfN

Genus ***Fascionycta*** Kiss, 2017

Fascionycta fasciata (Moore, [1884]) (84)

KA061f, Vietnam, Prov. Lao Cai, 14 km NW of Sa Pa, Fan-si-pan, 1800 m, 22°20'91,7"N, 103°46'44,5"E, 29-30.08.1998,, leg. A. Kun, coll. HNHM

KA062m, Vietnam, Prov. Lao Cai, Cat Cat, Frontier Base Camp, 1250 m, 09-22°19'36,4"N, 103°49'46,1"E, 10.08.1998, leg. A. Kun, coll. HNHM

KA063f, Taiwan, Prov. Kao-Hsiung, 15 km NE of Taoyuan, 1850 m, 07.07.1996, leg. G. Csorba; L. Németh, coll. HNHM

KA064m, Taiwan, Prov. Taitung, Chihpen Hot Springs, 400 m, 06-09.04.1997, leg. Csorba; Ronkay, coll. HNHM

KA068m, Taiwan, Prov. Pingtung, 10 km SE of Nutan, 470 m, 26.04.1997, leg. S. T. Kovács, coll. HNHM

KA161f, Taiwan, Prov. Taitung, Chihpen Hot Springs, 400 m, 06-09.04.1997, leg. Csorba; Ronkay, coll. HNHM

KA162m, Vietnam, Prov. Lao Cai, 14 km NW Sa Pa, Fan-si-pan Mts, 1900-2000 m, 22°20.9'N, 103°46.06'E, 04-06.12.1997, leg. L. Peregovits; L. Ronkay, coll. HNHM

KA163m, South Korea, Prov. Cheju, Andok valley, 300 m, 33°15'N, 126°22'E, 28.05.1994, leg. Peregovits; Ronkay; Vojnits, No. 1682, coll. HNHM

KA164f, Vietnam, Prov. Lao Cai, Cat Cat, Frontier Base Camp, 1250 m, 22°19'36.4"N, 103°49'46.1"E, 09-10.08.1998, leg. A. Kun, coll. HNHM

KA165m, Taiwan, Prov. Taipei, Pi Hu, 410 m, 22.06.1997, leg. B. Herczig; L. Ronkay, coll. HNHM

KA166m, Taiwan, Prov. Taitung, 5 km W of Chipen, 350 m, 09.03.1996, leg. Gy. Fábián; L. Németh, coll. HNHM

KA186f, Philippines, Mindanao, S Mt. Kitanglad, 1200 m, 15.08-15.09.1993, leg. Siniaev, coll. HNHM

KA187f, Philippines, Luzon, Ifugao, Banaue, 1000 m, 16°55'N, 121°05'E, 10.04.1988, leg. J. Settele, coll. HNHM

KA188m, Philippines, Luzon, Quezon, Quezon Forest Nat. Park, 250 m, 11.10.1988, leg. Cerny; Schintlmeister, coll. HNHM

KA189f, Philippines, Luzon, Ifugao, Banaue, 1000 m, 16°55'N, 121°05'E, 10.04.1988, leg. J. Settele, coll. HNHM

KA190f, Philippines, Mindanao, S Mt. Kitanglad, 1700 m, 15.08-15.09.1993, leg. Siniaev, coll. HNHM

KA192m, Philippines, Luzon, Nueva Vizcaya, Santa Fe, Dalton Pass, 800 m, 21.09-17.10.1988, leg. Cerny; Schintlmeister, coll. HNHM

KA194f, Philippines, Luzon, Nueva Vizcaya, Santa Fe, Dalton Pass, 800 m, 21.09-17.10.1988, leg. Cerny; Schintlmeister, coll. HNHM

KA195m, Philippines, Luzon, Nueva Vizcaya, Santa Fe, Dalton Pass, 800 m, 21.09-17.10.1988, leg. Cerny; Schintlmeister, coll. HNHM

KA196f, Philippines, Luzon, Ifugao, Banaue, 1000 m, 16°55'N, 121°05'E, 10.04.1988, leg. J. Settele, coll. HNHM

KA199f, Philippines, Luzon, Ifugao, Banaue, Vic 20 km N of Laguna, 1200 m, E.10.1988-E.01.1989, leg. I. Vermolen; F. Vermolen, coll. HNHM

KA200m, Philippines, Luzon, Ifugao, Banaue, Vic 20 km N of Laguna, 1200 m, E.10.1988-E.01.1989, leg. I. Vermolen; F. Vermolen, coll. HNHM

KA201f, Philippines, Luzon, Ifugao, Banaue, Vic 20 km N of Laguna, 1200 m, E.10.1988-E.01.1989, leg. I. Vermolen; F. Vermolen, coll. HNHM

KA202m, Philippines, Luzon, Quezon, Quezon Forest Nat. Park, 250 m, 14°01'N, 122°11'E, leg. Cerny; Schintlmeister, coll. HNHM

KA203m, Philippines, Luzon, Ifugao, Banaue, 1000 m, 16°55'N, 121°05'E, 30.03.1988, leg. J. Settele, coll. HNHM

KA258f, Taiwan, Prov. Taitung, 5 km W of Chipen [Zhiben], 350 m, 15-16.05.1997, leg. Gy. M. László; G. László, coll. HNHM

KA259f, Taiwan, Prov. Taitung, 5 km W of Chipen [Zhiben], 350 m, 15-16.05.1997, leg. Gy. M. László; G. László, coll. HNHM

KA260m, Taiwan, Prov. Taitung, 5 km W of Chipen [Zhiben], 350 m, 15-16.05.1997, leg. Gy. M. László; G. László, coll. HNHM

KA264m, Taiwan, Prov. Taitung, 5 km W of Chipen [Zhiben], 350 m, 15-16.05.1997, leg. Gy. M. László; G. László, coll. HNHM

KA265f, Taiwan, Prov. Taitung, 5 km W of Chipen [Zhiben], 350 m, 15-16.05.1997, leg. Gy. M. László; G. László, coll. HNHM

KA266m, Taiwan, Prov. Taitung, 5 km W of Chipen [Zhiben], 350 m, 15-16.05.1997, leg. Gy. M. László; G. László, coll. HNHM

KA279m, Taiwan, Prov. Taitung, 5 km W of Chipen [Zhiben], 350 m, 15-16.05.1997, leg. Gy. M. László; G. László, coll. HNHM

KA280m, Taiwan, Prov. Taitung, 5 km W of Chipen [Zhiben], 350 m, 15-16.05.1997, leg. Gy. M. László; G. László, coll. HNHM

KA281m, Taiwan, Prov. Taitung, 5 km W of Chipen [Zhiben], 350 m, 15-16.05.1997, leg. Gy. M. László; G. László, coll. HNHM

KA282m, Taiwan, Prov. Taitung, 5 km W of Chipen [Zhiben], 350 m, 15-16.05.1997, leg. Gy. M. László; G. László, coll. HNHM

KA283m, Taiwan, Prov. Taitung, 5 km W of Chipen [Zhiben], 350 m, 15-16.05.1997, leg. Gy. M. László; G. László, coll. HNHM

KA284m, Vietnam, Prov. Vinh Phu, Tam Dao, 55 km NNW of Hanoi, 800 m, 17-21.08.1998, leg. A. Napolov, coll. HNHM

KA285m, Taiwan, Prov. Taitung, 5 km W of Chipen [Zhiben], 350 m, 15-16.05.1997, leg. Gy. M. László; G. László, coll. HNHM

KA286f, Taiwan, Prov. Taitung, 5 km W of Chipen [Zhiben], 350 m, 15-16.05.1997, leg. Gy. M. László; G. László, coll. HNHM

KA296m, Taiwan, Prov. Taitung, 5 km W of Chipen [Zhiben], 350 m, 15-16.05.1997, leg. Gy. M. László; G. László, coll. HNHM

KA297f, Thailand, Tham Sakoen National Park Headquarters, 19°23'N, 100°38'E, 29-30.11.2003, leg. L. Peregovits; M. Földvári; Á. Kőrösi, coll. HNHM

KA298m, Vietnam, Da Lat, Institute of Biology, Hgv-lamp, 10.12.1994, leg. Mahunka S.; Sziráki Gy.; Zombori L., No. 765, coll. HNHM

KA299m, Vietnam, Prov. Vinh Phu, Tam Dao, 55 km NNW of Hanoi, 800 m, 17-21.08.1998, leg. A. Napolov, coll. HNHM
KA300m, Taiwan, Prov. Taitung, 5 km W of Chipen [Zhiben], 350 m, 15-16.05.1997, leg. Gy. M. László; G. László, coll. HNHM
KA3001f, Taiwan, Prov. Taitung, 5 km W of Chipen [Zhiben], 350 m, 15-16.05.1997, leg. Gy. M. László; G. László, coll. HNHM
KA302m, Taiwan, Prov. Taitung, 5 km W of Chipen [Zhiben], 350 m, 15-16.05.1997, leg. Gy. M. László; G. László, coll. HNHM
KA303f, Taiwan, Prov. Ilan, Fu-Shan Botanical Garden, 700 m, 24°54'N, 121°45'E, 25-27.09.2000, leg. L. Papp; L. Peregovits; L. Ronkay, coll. HNHM
KA304m, Taiwan, Prov. Taitung, 5 km W of Chipen [Zhiben], 350 m, 15-16.05.1997, leg. Gy. M. László; G. László, coll. HNHM
KA305m, Taiwan, Prov. Taitung, 5 km W of Chipen [Zhiben], 350 m, 15-16.05.1997, leg. Gy. M. László; G. László, coll. HNHM
KA306f, Taiwan, Prov. Taitung, 5 km W of Chipen [Zhiben], 350 m, 15-16.05.1997, leg. Gy. M. László; G. László, coll. HNHM
KA307m, Taiwan, Prov. Taitung, 5 km W of Chipen [Zhiben], 350 m, 15-16.05.1997, leg. Gy. M. László; G. László, coll. HNHM
KA308f, Taiwan, Prov. Taitung, 5 km W of Chipen [Zhiben], 350 m, 15-16.05.1997, leg. Gy. M. László; G. László, coll. HNHM
KA309m, Taiwan, Prov. Taitung, 5 km W of Chipen [Zhiben], 350 m, 15-16.05.1997, leg. Gy. M. László; G. László, coll. HNHM
KA876m, Thailand, Prov. Chieng Mai, Huai Nam Dang, 1500-1700 m, 25-27.10.1984, leg. Karsholt; Lomholdt; Nielsen, coll. ZMUC
KA947f, Japan, Tsushima, Kami-agata, Nita, 08-12.07.1988, leg. M. Owada, coll. NSMT
KA948f, Japan, Tsushima, Kami-agata, Nita, 08-12.07.1988, leg. M. Owada, coll. NSMT
KA949m, Japan, Nagasaki, Goto Is., Fukuejima I., Mt. Nanatsudake, 100 m, 25.06.1996, leg. M. Owada, coll. NSMT
KA950m, Japan, Nagasaki, Goto Is., Fukuejima I., Mt. Nanatsudake, 100 m, 25.06.1996, leg. M. Owada, coll. NSMT
KA951m, Japan, Ryukyus, Tokara Group, Nakanoshima Is., Otake (SE), 330 m, 26.10.1992, leg. M. Owada, coll. NSMT
KA952m, Japan, Ryukyus, Tokara Group, Nakanoshima Is., Otake (SE), 330 m, 14.06.1993, leg. M. Owada, coll. NSMT
KA953m, Japan, Ryukyus, Tokara Group, Nakanoshima Is., Otake (SE), 330 m, 26.10.1992, leg. M. Owada, coll. NSMT
KA954m, Japan, Ryukyus, Amami-Oshima Is., Mt. Yuwan-dake, 470 m, 12-14.10.1988, leg. M. Owada, coll. NSMT
KA955m, Japan, Ryukyus, Amami-Oshima Is., Mt. Yuwan-dake, 470 m, 12-14.10.1988, leg. M. Owada, coll. NSMT
KA956f, Japan, Ryukyus, Kumejima Is., Mt. Ara-dake, 180 m, 28.04.1993, leg. M. Owada, coll. NSMT
KA957f, Japan, Ryukyus, Amami-Oshima Is., Riv. Sumiyou-gawa, 250 m, 30.04-02.05.1993, leg. M. Owada, coll. NSMT
KA958m, Japan, Ishigaki Is., Mt. Banna-dake, 01-06.08.1981, leg. M. Owada, coll. NSMT
KA959f, Japan, Ishigaki Is., Omoto, 30-31.07.1981, leg. M. Owada, coll. NSMT
KA960f, Japan, Ishigaki Is., Mt. Banna-dake, 01-06.08.1981, leg. M. Owada, coll. NSMT
KA961f, Japan, Ishigaki Is., Omoto, 30-31.07.1981, leg. M. Owada, coll. NSMT
KA1108m, Japan, Honshu, Jokohama, coll. MfN
KA1298f, Philippines, Luzon, Ifugao, Banaue, 20 km N of Lagawe, 1200 m, 16°54'N, 121°05'E, 08-11.02.1988, leg. Cerny; Schintlmeister, coll. ZFMK
KA1345f, Indonesia, Java, Ardjoeno [Mt. Arjuno], Djoenggo [Djungga], 1500 m, 09.1937, leg. Kalis, coll. RMNH
KA1348m, Indonesia, Java, Ardjoeno [Mt. Arjuno], Djoenggo [Djungga], 1500 m, 09.1937, leg. Kalis, coll. RMNH
KA1349m, Indonesia, Moluccas, Kei Islands, coll. RMNH
KA1350m, Indonesia, Moluccas, Kei Islands, coll. RMNH
KA1419m, Vietnam, Prov. Lao Cai, Sa Pa, Mt. Fan-si-pan, 1600-1800 m,

KA1423m, Indonesia, Sumatra, Huta Padang, 10.12.1991, leg. E. W. Diehl, coll. GB
KA1424m, Indonesia, Bali, Lake Buyan, 1300 m, 08.02.1997, leg. K. Cerny, coll. GB
KA1426f, Indonesia, Moluccas, Ceram, 06.1998, ex. coll. R. Brechlin, coll. GB
KA1429f, Indonesia, Bali, 1 km N of Lake Buyan, Desa Vanagiri, Pura Tirta Ketipat, 1340 m, 14-16.01.1999, leg. K. Cerny, coll. GB
KA1445f, Indonesia, Sumatra, Kota Pinang, Barumua Ar., 5 m, 12.07.1980, leg. Diehl, ex. coll. Kobes, BC ZSM Lep 38169, coll. ZSM
KA1446f, Indonesia, Sumatra, Pasar Manduge, Pematag Siantar, 30.08.1979, leg. Erber, ex. coll. Kobes, BC ZSM Lep 38168, coll. ZSM
KA1450m, Indonesia, Sumatra, Dairi, 28.02.1982, ex. coll. Kobes, BC ZSM Lep 38172, coll. ZSM
KA1746m, China, Prov. Guangxi, Shivan, Dashan Mts, 30 km SW of Nanping, 900 m, 01-14.04.2003, leg. V. Siniaev; local collector, coll. PGy

Hyboma divisa Moore, 1888 (32)

BMNoct 14623(m), **HT**, India, Himachal Pradesh, Kangra district, Dharmsala, coll. BMNH
KA244f, Pakistan, Himalaya, Kashmir, Nara, 20 km S of Muzaffarabad, 750 m, 34°1'N, 73°29'E, 12.09.1997, leg. Gy. Fábián; G. Ronkay, coll. GyF
KA245f, Pakistan, Islamabad, Margalla Hills, 1000 m, 33°49'N, 73°08'E, 21.08.1997, leg. Gy. Fábián; G. Ronkay, coll. GyF
KA246f, Pakistan, Islamabad, Margalla Hills, 1000 m, 33°49'N, 73°08'E, 21.08.1997, leg. Gy. Fábián; G. Ronkay, coll. GyF
KA247m, Pakistan, Himalaya, Indus valley, between Chilas and Dassu, Motel Barseen, 1100 m, 13.06.1998, leg. Gy. Fábián; B. Herczig, coll. GyF
KA248m, Pakistan, Islamabad, Margalla Hills, 1000 m, 33°49'N, 73°08'E, 21.08.1997, leg. Gy. Fábián; G. Ronkay, coll. GyF
KA249m, Pakistan, Himalaya, Kashmir, Nara, 20 km S of Muzaffarabad, 750 m, 34°1'N, 73°29'E, 12.09.1997, leg. Gy. Fábián; G. Ronkay, coll. GyF
KA429f, Pakistan, Prov. Swat, Madyan, 1400 m, 35°70'N, 71°90'E, 19.06-04.08.1971, leg. Vartian, coll. ZSM
KA430m, Pakistan, Prov. Swat, Madyan, 1400 m, 35°70'N, 71°90'E, 19.06-04.08.1971, leg. Vartian, coll. ZSM
KA431m, Pakistan, Prov. Swat, Madyan, 1400 m, 35°70'N, 71°90'E, 19.06-04.08.1971, leg. Vartian, coll. ZSM
KA432m, Pakistan, Prov. Swat, Madyan, 1400 m, 35°70'N, 71°90'E, 19.06-04.08.1971, leg. Vartian, coll. ZSM
KA1031m, Pakistan, Himalaya, Indus valley, between Chilas and Dassu, Motel Barseen, 1100 m, 11.1998, leg. F. Hussein, coll. HNHM
KA1032m, Pakistan, Himalaya, Kashmir, 20 km S of Muzzaffarabad, Nara, 750 m, 34°01'N, 73°29'E, 12.09.1997, leg. Gy. Fábián; G. Ronkay, coll. HNHM
KA1033m, Pakistan, Himalaya, Kashmir, 30 km N of Murree, Ayubia, 2650 m, 34°01'75"N, 73°24'03"E, 08.2001, leg. local collector, coll. HNHM
KA1034f, Pakistan, Margalla Hills, 20 km N of Islamabad, Pir Sohawa, 600 m, 33°50'N, 72°55'E, 29-31.07.1994, leg. B. Herczig; Gy. M. László; G. Ronkay, coll. HNHM
KA1035f, Pakistan, Himalaya, Kashmir, 30 km N of Murree, Ayubia, 2650 m, 34°01'75"N, 73°24'03"E, 08.2001, leg. local collector, coll. HNHM
KA1036m, Pakistan, Himalaya, Indus valley, between Chilas and Dassu, Motel Barseen, 850 m, 18.04.1999, leg. B. Benedek; A. Szabó, coll. HNHM
KA1037m, Pakistan, Himalaya, Kashmir, 30 km N of Murree, Ayubia, 2650 m, 34°01'75"N, 73°24'03"E, 10.08.2001, leg. B. Benedek; G. Ronkay, coll. HNHM
KA1038f, Pakistan, Himalaya, Kaghan valley, Tathabaya, 2300 m, 34°36'48"N, 73°27'01"E, 07.07.1998, leg. G. Csorba; L. Ronkay, coll. HNHM
KA1039f, Pakistan, Margalla Hills, 20 km N of Islamabad, Pir Sohawa, 600 m, 33°50'N, 72°55'E, 29-31.07.1994, leg. B. Herczig; Gy. M. László; G. Ronkay, coll. HNHM
KA1040m, Pakistan, Himalaya, Kaghan valley, 6 km NW of Balakot, 1200 m, 22.04.1999, leg. B. Benedek; A. Szabó, coll. HNHM

KA1055f, Pakistan, Margalla Hills, 20 km N of Islamabad, Pir Sohawa, 1000 m, 33°49'N, 73°08'E, 29.04.1998, leg. Gy. M. László; G. Ronkay, coll. HNHM
KA1056f, Pakistan, Margalla Hills, 20 km N of Islamabad, Pir Sohawa, 600 m, 33°50'N, 72°55'E, 29-31.07.1994, leg. B. Herczig; Gy. M. László; G. Ronkay, coll. HNHM
KA1057f, Pakistan, Margalla Hills, 20 km N of Islamabad, Pir Sohawa, 600 m, 33°50'N, 72°55'E, 29-31.07.1994, leg. B. Herczig; Gy. M. László; G. Ronkay, coll. HNHM
KA1058f, Pakistan, Margalla Hills, 20 km N of Islamabad, Pir Sohawa, 600 m, 33°50'N, 72°55'E, 29-31.07.1994, leg. B. Herczig; Gy. M. László; G. Ronkay, coll. HNHM
KA1059f, Pakistan, Himalaya, Kashmir, 30 km N of Murree, Ayubia, 2650 m, 34°01'75"N, 73°24'03"E, 10.08.2001, leg. B. Benedek; G. Ronkay, coll. HNHM
KA1060f, Pakistan, Himalaya, Kaghan valley, 6 km NW of Balakot, 1200 m, 04.04.1999, leg. B. Benedek; A. Szabó, coll. HNHM
KA1061m, Pakistan, Himalaya, Kaghan valley, 6 km NW of Balakot, 1200 m, 17.04.1999, leg. B. Benedek; A. Szabó, coll. HNHM
KA1114m, Iran, Prov. Hormozgan, Kuh-e Bakhun, Deh Tidar, 1330 m, 27°58'N, 56°15'E, 25.04.2006, leg. Plössl; Tarmann, coll. GR
KA1687m, Iran, Kerman-Senderk, 11.05.1977, leg. Soják, ex. coll. Krušek, coll. HNHM
MV 18 761(m), Iran, 40 km N of Banden-Abass, 04.04.1974, leg. Vartian, coll. NHMW
MV 18 763(f), Afghanistan, Safed Koh, South side of Kotkai, 2350 m, 21.06-01.07.1974, leg. Vartian, coll. NHMW

Acronycta nigrostriata Pagenstecher, 1888 (5)

KA993m, Nepal, Kathmandu valley, Godavari, 1600-1800 m, 09.06.1967, leg. Dierl; Schacht, coll. ZSM
KA994f, Nepal, Kathmandu, 1400 m, 22.04.1962, leg. G. Ebert; H. Falkner, coll. ZSM
KA996f, Indonesia, Sumatra, 80 km SSW of Medan, Berastagi, 1000 m, 04.06.1973, leg. E. Diehl, coll. ZSM
KA997f, Cambodia, near Pailin, 212°50'N, 102°36'E, 06.1999, leg. Steinke; Lehmann, coll. ZSM
KA999m, Indonesia, Sumatra, Deli, Dolok Merangir, 12.1967-05.1968, leg. E. Diehl, coll. ZSM

Fascionycta luteipennis (Warren, 1912) (4)

KA621m, India, Khasia Hills, ex. coll. Nat. Coll, coll. MSNM
KA1000f, Indonesia, Sumatra, Simalungun, 1050 m, 2°46'N, 98°59'E, 17.08.1995, leg. Stamer, coll. ZSM
KA1001f, Cambodia, near Pailin, 212°50'N, 102°36'E, 06.1999, leg. Steinke; Lehmann, coll. ZSM
KA1293f, Indonesia, Sulawesi, 30 km W of Palopo, 1100 m, 2°57'S, 120°E, 30.12.1993, leg. Z. Weldenhoffer, coll. ZFMK

Fascionycta malesiae (Holloway, 1989) (32)

BMNoct 13961(m), **HT**, Brunei, Ulu Temburong rainforest, 300 m, 30.06.1979, leg. Lt. Col. G. Allen, coll. BMNH
BMNoct 14041(f), **PT**, Brunei, Bukit Retak, Montane forest, 1618 m, leg. Lt. Col. G. Allen, coll. BMNH
KA191m, Philippines, Luzon, Nueva Vizcaya, Santa Fe, Dalton Pass, 800 m, 21.09-17.10.1988, leg. Cerny; Schintlmeister, coll. HNHM
KA193f, Philippines, Luzon, Ifugao, Banaue, Vic 20 km N of Laguna, 1200 m, 22.09-16.10.1988, leg. Cerny; Schintlmeister, coll. HNHM
KA197m, Philippines, Luzon, Ifugao, Banaue, Vic 20 km N of Laguna, 1200 m, E.10.1988-E.01.1989, leg. I. Vermolen; F. Vermolen, coll. HNHM
KA198f, Philippines, Luzon, Banguet, 15 km S of Bagauio, 1600 m, 12.10.1988, leg. Cerny; Schintlmeister, coll. HNHM
KA871f, Philippines, Palawan, Mantalingajan, Pinigisan, 600 m, 08.09.1961, Noona Dan Exp. 61-62., coll. ZMUC
KA877m, Indonesia, Sumatra, Bukittinggi, 980 m, 00°15'30"S, 100°21'13"E, 19-23.02.2002, leg. M. Fibiger; K. Larsen, coll. ZMUC
KA878m, Indonesia, Sumatra, Rimbo Panti, 250 m, 00°20'50"N, 100°04'07"E, 24-25.02.2002, leg. K. Larsen; M. Fibiger, coll. ZMUC
KA998m, Papua New Guinea, Prov. Morobe, Aseki, Oiwa, 1700 m, 21.02.1998, leg. A. Riedel, coll. ZSM

KA1002f, Indonesia, Sumatra, Deli, Dolok Merangir, 180 m, 09.06-11.09.1970, leg. E. Diehl, coll. ZSM
KA1007f, Indonesia, Irian Jaya, Irian-Jaya Highway, 15 km Nabire, 150 m, 25.11.1997, leg. K. Cerny, coll. ZSM
KA1008f, Papua New Guinea, Prov. Morobe, Aseki, Oiwa, 1700 m, 21-22.02.1998, leg. A. Riedel, coll. ZSM
KA1294m, Indonesia, Sulawesi, 30 km W of Palopo, 1100 m, 2°57'S, 120°E, 30.12.1993, leg. Z. Weldenhoffer, coll. ZFMK
KA1296f, Indonesia, Sulawesi, 30 km W of Palopo, 1100 m, 2°57'S, 120°E, 30.12.1993, leg. Z. Weldenhoffer, coll. ZFMK
KA1297m, Philippines, Luzon, Ifugao, Mt. Pulis, 18 km SSE of Bomtoc, 1900 m, 17°02'N, 121°01'E, 09-13.02.1988, leg. Cerny; Schintlmeister, coll. ZFMK
KA1299f, Indonesia, Sulawesi, 30 km W of Palopo, 1100 m, 2°57'S, 120°E, 30.12.1993, leg. Z. Weldenhoffer, coll. ZFMK
KA1337f, Indonesia, Moluccas, Ambon, 30 m, 24.06.1960, leg. Wegner, coll. RMNH
KA1338f, Indonesia, Moluccas, Ambon, 70 m, 21.02.1963, leg. Wegner, coll. RMNH
KA1339m, Indonesia, Sulawesi, Selatan, 30 km W of Paloppo, 1000 m, 07.04.1985, leg. J. P. Duffels; M. J. Duffels, coll. RMNH
KA1340m, Indonesia, Papua, Ifar, 12.1957, leg. G. D. Hoed, coll. RMNH
KA1341f, Indonesia, Sulawesi, Paloe, Sidaonta, 1500 m, 07.1937, leg. Kalis, coll. RMNH
KA1342m, Indonesia, Java, West Java, Sukabumi, 22.07.1924, ex. coll. Walsh, coll. RMNH
KA1346f, Indonesia, Sulawesi, Paloe, Sidaonta, 1500 m, 07.1937, leg. Kalis, coll. RMNH
KA1351f, Indonesia, Sulawesi, Dumoga-Bone N. P., Clark's Camp, 1000-1140 m, 0°37'N, 123°51'E, 09-15.05.1985, leg. R. de Jong, coll. RMNH
KA1352f, Indonesia, Sulawesi, Dumoga-Bone N. P., Clark's Camp, 1000-1140 m, 0°37'N, 123°51'E, 09-15.05.1985, leg. R. de Jong, coll. RMNH
KA1425f, Indonesia, Sulawesi, Puncak, Palopo, 900-1300 m, 09.1997, leg. local collector, ex. coll. R. Brechlin, coll. GB
KA1427m, Indonesia, Sulawesi, Puncak, Palopo, 900-1300 m, 2°55'S, 120°05'E, 01.1997, leg. local collector, ex. coll. R. Brechlin, coll. GB
KA1428f, Indonesia, Sulawesi, Puncak, Palopo, 900-1300 m, 2°55'S, 120°05'E, 01.1997, leg. local collector, ex. coll. R. Brechlin, coll. GB
KA1430f, Philippines, Leyte, Mt. Balocawe, W of Mahaplag, TV station, 600 m, 10°43'N, 124°55'E, 03.12.2005, leg. Lourans; Schintlmeister, coll. GB
KA1447f, Indonesia, Sumatra, Prapat, 11.01.1983, leg. Diehl, ex. coll. Kobes, BC ZSM Lep 38167, coll. ZSM
KA1451m, Indonesia, Sumatra, Deli, Dolok Merangir, 180 m, 1973, leg. E. Diehl, coll. ZSM

Fascionycta ardjuna (Roepke, 1941) (3)

KA1353m, Indonesia, Lombok, Mt. Rinjani, Pos Dua, 1500-1600 m, 14-19.10.1991, leg. Krikken; Huijbregts; de Vries, coll. RMNH
KA1354f, Indonesia, Flores, Beanio, 03.1953, leg. J. M. A. v. Groenendael, coll. RMNH
RMNH.INS 967307(m), **LT**, Indonesia, Java, Ardjoeno [Mt. Arjuno], Djoenggo [Djungga], 1500 m, 11.1937, leg. Kalis, ex. coll. W. K. J. Roepke, coll. RMNH

Genus ***Megalonycta*** Viette, 1965

Megalonycta mediovitta (Rothschild, 1924) (2)

BMNoct 22068(m), PLT, Madagascar, Diego Suarez, 1917, ex. coll. G. Melou, coll. BMNH
KA1519m, Madagascar, Prov. Toliara, Tsimanampetsotsa N. P., Andranovao Camp, 15 m, 24°01.505'S, 43°44.306"E, 14-15.01.2014, leg. M. Trỳzna, ANHRT 01062, coll. ANHRT

Megalonycta forsteri Laporte, 1979 (14)

KA46f, Democratic Republic of Congo, North Kivu, N. Lac Kivu, Rwankwi, 25.03.1951, leg. J. V. Leroy, coll. MSNM
KA892m, Ethiopia, Jimma, 06-11.05.1967, leg. J. Birket-Smith, coll. ZMUC

KA893m, Ethiopia, Jimma, 06-11.05.1967, leg. J. Birket-Smith, coll. ZMUC
KA894m, Ethiopia, Jimma, 06-11.05.1967, leg. J. Birket-Smith, coll. ZMUC
KA895m, Ethiopia, Gibie River, 06.05.1961, coll. ZMUC
KA896f, Uganda, Kabale Distr., Ruhija, 2330 m, 01°03,088'S, 29°46,703'E, 04-07.11.2007, leg. M. Fibiger; L. Aarvik, coll. ZMUC
KA1415f, Kenya, Mt. Kenya, Thego, 23.12.1993, leg. Politzer, coll. GB
KA1416m, Ethiopia, South Nation, Wushwush, 7.4 km W, 1910 m, 16°05'N, 07°18'E, 07.05.2013, leg. R. Beck; R. Wanninger, coll. GB
KA1417m, Ethiopia, South Nation, Wushwush, 7.4 km W, 1910 m, 16°05'N, 07°18'E, 07.05.2013, leg. R. Beck; R. Wanninger, coll. GB
KA1418f, Ethiopia, Ethiopian Highland, Prov. Oromia, Kibre Mengist, 11.5 km S, 1730 m, 05°47.446'N, 38°57.864'E, 15-16.05.2012, leg. M. Dietl; S. Dietl; R. Beck, coll. GB
KA1472m, German East Africa [Tansania, Burundi, Ruanda], leg. G. Knuth, coll. MfN
KA1605f, Zimbabwe, Harare, Fawlty Towers, Broad Grey, 17.11.2013, leg. R. R. Butler, coll. RB
KA1606m – Megalonycta cf. forsteri, Zimbabwe, Harare, Fawlty Towers, 25 Wavell Road, 12.04.2016, leg. R. R. Butler, coll. RB
N1552(m), **HT**, Tanzania, Bukoba, 09-10.1964, leg. J. Scheven, coll. ZSM

Megalonycta inversa (Gaede, 1915) (1)

KA1471m, **HT**, German East Africa [Tanzania], Mtai, leg. S. Meinhof, coll. MfN

Megalonycta paragrapha (Felder, 1874) (1)

KA1470f, no data, coll. MfN

Genus ***Berionycta*** Kiss, 2017

Berionycta hemileuca (Berio, 1943) (2)

KA292m, **PT**, Eritrea, Dorfu, 12.20.1938, leg. F. Vaocaro, coll. MSNM
KA293f, **LT**, Eritrea, Dorfu, 23.08.1938, leg. F. Vacoaro, coll. MSNM

Berionycta limbata Kiss, 2017 (2)

KA294f, **PT**, Eritrea, Dorfu, 23.08.1938, leg. F. Vacoaro, coll. MSNM
KA295m, **HT**, Eritrea, Dorfu, 23.08.1938, leg. F. Vacoaro, coll. MSNM

Berionycta ponticamima Kiss, 2017 (1)

KA1412m, **HT**, Ethiopia, Ethiopian Highland, Prov. Oromia, Yabello, 15 km E, 1550 m, 04°51'N, 38°13'E, 15.05.2013, leg. R. Beck; R. Wanninger, coll. GB

Berionycta nigra Kiss, 2017 (1)

KA1414m, **HT**, Ethiopia, Ethiopian Highland, Prov. Oromia, Yabello, 15 km E, 1550 m, 04°51'N, 38°13'E, 15.05.2013, leg. R. Beck; R. Wanninger, coll. GB

Berionycta melanisans (Wiltshire, 1980) (1)

Hacker 16089(m), Oman, N of Salalah, 680 m, 17°07'N, 54°00'E, 16-23.10.2006, leg. Ströhle, ex coll. H. Hacker, coll. ZSM

Berionycta asirensis (Wiltshire, 1986) (1)

Wilt2362(m), **PT**, Saudi Arabia, Asir, Al Foqa, coll. BMNH

Berionycta orbicularis Kiss, 2017 (2)

KA1411m, **HT**, Ethiopia, Ethiopian Highland, Prov. Oromia, Yabello, 15 km E, 1550 m, 04°51'N, 38°13'E, 15.05.2013, leg. R. Beck; R. Wanninger, coll. GB

KA1413f, **PT**, Ethiopia, Ethiopian Highland, Prov. Oromia, Zone Bale, Bale Mts, Goba, S of Omar, 1640 m, 06°58'N, 40°34'E, 10-12.05.2012, leg. M. Dietl; S. Dietl; R. Beck, BC ZSM Lep 65123, coll. GB

Berionycta behouneki Kiss, 2017 (2)

GB7578m, **HT**, Ethiopia, Ethiopian Highland, Prov. Oromia, Yabello, 13 km W, 1950 m, 04°33.514'N, 38°02.625'E, 11.04.2010, leg. M. Dietl; M. Dietl; R. Beck; H. Bekele, BC ZSM Lep 48690, coll. GB

GB8148f, **PT**, Ethiopia, Ethiopian Highland, Prov. Oromia, Yabello Motel, 17 km ESE, 1580 m, 04°51.010'N, 38°14.733'E, 16.05.2012, leg. M. Dietl; S. Dietl; R. Beck, BC ZSM Lep 65105, coll. GB

Berionycta berioi Kiss, 2017 (1)

GB8147m, **HT**, Ethiopia, Gamo Gofa, Arba Minch, 12 km NNE, 1620 m, 06°06.31'N, 37°34.953'E, 22.05.2012, leg. M. Dietl; S. Dietl; R. Beck, BC ZSM Lep 65104, coll. GB

Berionycta beckroberti Kiss, 2017 (1)

GB7579m, **HT**, Ethiopia, Ethiopian Highland, Prov. Oromia, Yabello, 15 km E, 1550 m, 04°51'N, 38°13'E, 15.05.2013, leg. R. Beck; R. Wanninger, coll. GB

Genus ***Draudtinycta*** Kiss, 2017

Draudtinycta tigniumbra (Draudt, 1937) (3)

KA1112m, China, Prov. Hubei, Wudang-shan Mts, 1500 m, 32°16'N, 110°57'E, 08.2000, leg. local collector, coll. GR

KA1113m, China, Prov. Sichuan, Qingchenghousan Mts, 70 km NW of Chengdu, 1400 m, 16-25.08.2005, leg. V. Murzin, coll. GR

PGy3990, **NT**, China, Prov. Hunan, Jiucai Ling, 1300 m, 25°32'N, 111°22'E, 01-31.07.2006, leg. V. Siniaev and team, coll. PGy

Genus ***Sinonycta*** Kiss, 2017

Sinonycta fangi (Chen, 1999) (2)

KA1093f, China, 230 km N of Canton, Lung-tao-shan, 03.07.1913, coll. MfN

KA1094m, China, 230 km N of Canton, Lung-tao-shan, 02.07.1913, coll. MfN

Genus ***Miracopa*** Draudt, 1950

Miracopa prodigiosa Draudt, 1950 (4)

Hö.144, **LT**, China, Prov. Shanxi, Mienshan, ca. 2000 m, 15.07.1937, ex. coll. H. Höne, coll. ZFMK

KA1717m, China, Prov. Shaanxi, Tsinling Mts, Fopin Mt., 1900 m, 33°45'N, 107°38'E, 01-30.06.2004, leg. V. Siniaev, coll. PGy

KA1718m, China, Prov. Shaanxi, Tsinling Mts, South Taibaishan, Houzhenzi, 1900 m, 33°53'N, 107°49'E, 01-12.08.1999, leg. V. Siniaev; A. Plutenko, coll. GR

KA1719f, China, Prov. Shaanxi, Tsinling Mts, South Taibaishan, Houzhenzi, 1900 m, 33°53'N, 107°49'E, 01-12.08.1999, leg. V. Siniaev; A. Plutenko, coll. GR

Genus ***Acronicta*** Ochsenheimer, 1816

Acronicta* (*Plataplecta*) *obscura (Leech, 1900) (5)

KA587f, China, Prov. Shaanxi, Tsinling Mts, Foping Natural Reserve, 1600 m, 33°51'N, 107°57'E, 20.04-11.05.1999, leg. Siniaev; Plutenko, coll. HNHM

KA588m, China, Prov. Shaanxi, Tsinling Mts, Foping Natural Reserve, 1600 m, 33°51'N, 107°57'E, 20.04-11.05.1999, leg. Siniaev; Plutenko, coll. HNHM

KA1391m, China, Prov. Shaanxi, Lueyang, 04-06.06.2004, leg. E. Kučera, coll. RMNH
KA1664m, China, Prov. Shaanxi, Tsinling Mts, Foping Natural Reserve, 1600 m, 33°51'N, 107°57'E, 20.04-11.05.1999, leg. Siniaev; Plutenko, coll. HNHM
KA1665m, China, Prov. Shaanxi, Tsinling Mts, Foping Natural Reserve, 1600 m, 33°51'N, 107°57'E, 20.04-11.05.1999, leg. Siniaev; Plutenko, coll. HNHM

Genus ***Cranionycta*** de Lattin, 1949

Cranionycta oda de Lattin, 1949 (17)

KA044f, North Korea, Prov. South Hwanghae, Haeju, Mt. Suyong-san, 31.07.1982, leg. L. Forró; L. Ronkay, No. 894, coll. HNHM
KA173m, Russia, Primorsky Krai, Razdelnoje, 14.07.1982, leg. Lindt, coll. HNHM
KA174m, Russia, Primorsky Krai, Razdelnoje, 14.07.1982, leg. Lindt, coll. HNHM
KA175f, Russia, Primorsky Krai, Razdelnoje, 14.07.1982, leg. Lindt, coll. HNHM
KA176m, Russia, Primorsky Krai, Razdelnoje, 14.07.1982, leg. Lindt, coll. HNHM
KA177m, Russia, Primorsky Krai, Razdelnoje, 14.07.1982, leg. Lindt, coll. HNHM
KA178m, Russia, Primorsky Krai, Razdelnoje, 14.07.1982, leg. Lindt, coll. HNHM
KA179f, Russia, Primorsky Krai, Razdelnoje, 14.07.1982, leg. Lindt, coll. HNHM
KA180m, Russia, Primorsky Krai, Razdelnoje, 14.07.1982, leg. Lindt, coll. HNHM
KA211f, North Korea, Prov. Kangwon, Chuncheon-dam, 170 m, 37°57'34.5"N, 127°39'33.1"E, 26.08.2003, leg. A. Kun; M. Földvári, No. 1736, coll. HNHM
KA678m, Korea, Utikongo im Kongosan, 500 m, 27.07.1940, ex. coll. H. Höne, coll. ZFMK
KA757f, no geographic data, maybe Korea, coll. ZISP
KA862m, Russia, Primorsky Krai, Khasanskij Dist., env. Pos. Barabash, 10.07.1989, leg. A. V. Napolov, coll. ZMUC
KA863m, Russia, Primorsky Krai, Ussuriysk Dist., Gornotaezhnaja station, 24.07.1989, leg. A. V. Napolov, coll. ZMUC
KA1107m, Korea, coll. MfN
KA1226f, South Korea, Gyeonggi-do, Gapyeong, Mt. Hwaya, 37°40'N, 127°25'E, 16.06.2004, ex coll. MNU, coll. KA
KA1227f, South Korea, Chungcheongbuk-do, Danyang, Mt. Sobaek, 37°02'N, 128°31'E, 21.08.2005, leg. S.-W. Choi, ex coll. MNU, coll. KA

Cranionycta inquieta (Draudt, 1950) (6)

Heinicke1315/78(f), China, Prov. Chekiang, W Tien-mu-shan, 1600 m, 30.08.1932, ex. coll. H. Höne, coll. ZFMK
KA680f, China, Prov. Chekiang, Mokanshan, 1930, ex. coll. H. Höne, coll. ZFMK
KA754f, China, 100 km W of Beijing, Taihang Mts, 1100 m, 06-08.07.2006, leg. V. A. Krivokhatsky, coll. ZISP
KA755f, China, 100 km W of Beijing, Taihang Mts, 1100 m, 06-08.07.2006, leg. V. A. Krivokhatsky, coll. ZISP
KA756m, China, 100 km W of Beijing, Taihang Mts, Xiao Longmeng Nat. Forest Park, 1100 m, 06-08.07.2006, leg. V. A. Krivokhatsky, coll. ZISP
OP2715f, China, Prov. Shaanxi, Qin Ling Mts, Fopin, 1400 m, 33°35'N, 108°01'E, leg. V. Siniaev and team, coll. OP

Cranionycta jankowskii Oberthür, 1880 (26)

KA046m, North Korea, Prov. Kangwon, Mts Kumgang-san, Hotel Kumgang, 13.06.1991, leg. L. Ronkay; A. Vojnits, No. 1470, coll. HNHM
KA047m, North Korea, Prov. Kangwon, Mts Kumgang-san, Kuryong valley, 14.06.1991, leg. L. Ronkay; A. Vojnits, No. 1476, coll. HNHM
KA048f, North Korea, Prov. Kangwon, Mt. Kumgang-san, Hotel Kumgan-san, 22.07.1982, leg. L. Forró; L. Ronkay, No. 850, coll. HNHM
KA049f, North Korea, Prov. Kangwon, Mts Kumgang-san, Hotel Kumgang, 10.06.1991, leg. L. Ronkay; A. Vojnits, No. 1455, coll. HNHM

KA155m, North Korea, Prov. Kangwon, Mts Kumgang-san, Kuryong valley, 14.06.1991, leg. L. Ronkay; A. Vojnits, No. 1476, coll. HNHM

KA156m, North Korea, Prov. Kangwon, Mts Kumgang-san, Kuryong valley, 14.06.1991, leg. L. Ronkay; A. Vojnits, No. 1476, coll. HNHM

KA157f, North Korea, Prov. Kangwon, Mt. Kumgang-san, 24.07.1982, leg. L. Forró; L. Ronkay, No. 861, coll. HNHM

KA158f, North Korea, Prov. Kangwon, Mt. Kumgang-san, 22.07.1982, leg. L. Forró; L. Ronkay, No. 850, coll. HNHM

KA159f, North Korea, Prov. Kangwon, Mt. Kumgang-san, Hotel Kumgang-san, 25.07.1982, leg. L. Forró; L. Ronkay, No. 865, coll. HNHM

KA160f, North Korea, Prov. Kangwon, Mt. Kumgang-san, 24.07.1982, leg. L. Forró; L. Ronkay, No. 861, coll. HNHM

KA267f, North Korea, Prov. Kangwon, Mt. Kumgang-san, 24.07.1982, leg. L. Forró; L. Ronkay, No. 861, coll. HNHM

KA268f, North Korea, Prov. Kangwon, Mt. Kumgang-san, 22.07.1982, leg. L. Forró; L. Ronkay, No. 850, coll. HNHM

KA269m, North Korea, Prov. South Hwanghae, Haeju, Mt. Suyong-san, 17.10.1987, leg. Korsós; Ronkay, No. 1055, coll. HNHM

KA270f, North Korea, Prov. Kangwon, Mt. Kumgang-san, Hotel Kumgang-san, 22.07.1982, leg. L. Forró; L. Ronkay, No. 850, coll. HNHM

KA271f, North Korea, Prov. Kangwon, Mt. Kumgang-san, Hotel Kumgang-san, 22.07.1982, leg. L. Forró; L. Ronkay, No. 850, coll. HNHM

KA272m, North Korea, Prov. Kangwon, Mt. Kumgang-san, 24.07.1982, leg. L. Forró; L. Ronkay, No. 861, coll. HNHM

KA273m, North Korea, Prov. South Hwanghae, Haeju, Mt. Suyong-san, 31.07.1982, leg. L. Forró; L. Ronkay, No. 894, coll. HNHM

KA758m, Russia, Primorsky Krai, Vladivostok, Sedanka, 06-19.07.1916, leg. Kriger; Vojnovskij, coll. ZISP

KA759f, Russia, Primorsky Krai, Kedrovaya Pad Nature Reserve, 28.06-02.07.1987, leg. V. Kononenko, ex. coll. A. V. Nekrasov, coll. ZISP

KA920m, Japan, Honshu, Yamanashi Pref., Nakakoma Gun, Yashajin-Pass, 15.06.1955, leg. Y. Kurosawa, coll. NSMT

KA921m, Japan, Honshu, Fukuoka, Mt. Hikosan, 28-30.05.1975, leg. M. Owada, coll. NSMT

KA922f, Japan, Honshu, Nara Pref., Mt. Kojin, 14.08.1968, coll. NSMT

KA923f, Japan, Honshu, Yamanashi Pref., Mizugakiyama, Sudama, 1300 m, 21.06.1995, leg. H. Kobayashi, coll. NSMT

KA1106f, Russia, Primorsky Krai, Askold, coll. MfN

KA1228m, South Korea, Gyeongsangnam-do, Hamyeong-gun, Macheon-myeon, Mt. Jirisan, 760 m, 35°21’18”N, 127°38’08”E, 26.06.2008, leg. P. Marana, ex coll. MNU, coll. KA

KA1229f, South Korea, Jeollanam-do, Gurye-gun, Gwangui-myeon, Mt. Jirisan, 295 m, 35°16’36”N, 127°28’41”E, 26.08.2008, leg. J.-S. An, ex coll. MNU, coll. KA

Cranionycta albonigra (Herz, 1904) (1)

Matov0498(f), **ST**, Korea, coll. ZISP