Trogossitidae: A review of the beetle family, with a catalogue and keys

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Abstract
The family Trogossitidae (Coleoptera: Cleroidea) is reviewed to species level. Keys to its genera, tribes and subfamilies are presented for the first time. All known species and subspecies are listed, together with complete taxonomic references back to 1910, the date of issue of the last catalogue of Trogossitidae. Higher taxa reviews are accompanied by remarks on phylogeny, distribution and biology as well as a brief description of adults and larvae. All known fossil records of Trogossitidae are reviewed and discussed. The work includes maps of distribution, colour photographs of generic representatives, morphological illustrations, SEM photographs and phylogenetic trees.

Keywords
Coleoptera, Cleroidea, Trogossitidae, key, catalogue
Contents

Introduction............................................................................................................................................. 5
New taxonomic acts .................................................................................................................................. 5
Brief review of classification...................................................................................................................... 6
Annotations to the catalogue, keys and illustrations .................................................................................. 6

Family Trogossitidae Latreille, 1802 ........................................................................................................ 8
Subfamily Trogossitinae Latreille, 1802 ...................................................................................................... 15
Tribe Calityini Reitter, 1922 ..................................................................................................................... 15
Genus Calitys Thomson, 1859 .................................................................................................................. 16
Tribe Larinotini Ślipiński, 1992 ................................................................................................................ 19
Genus Larinotus Carter & Zeck, 1937 ........................................................................................................ 20
Tribe Egoliini Lacordaire, 1854 ................................................................................................................. 22
Genus Acalanthis Erichson, 1844 ............................................................................................................. 23
Genus Calanthosoma Reitter, 1876 .......................................................................................................... 24
Genus Egolia Erichson, 1842 ..................................................................................................................... 26
Genus Necrobiopsis Crowson, 1964 .......................................................................................................... 27
Genus Paracalanthis Crowson, 1970 ........................................................................................................ 28
Tribe Gymnochilini Lacordaire, 1854 ......................................................................................................... 28
Genus Anacypta Illiger, 1807 .................................................................................................................... 30
Genus Gymnocheilis Dejean, 1835 .......................................................................................................... 33
Genus Kolibacia Leschen & Lackner, 2013 ............................................................................................... 34
Genus Leperina Erichson, 1844 ................................................................................................................ 36
Genus Narcisa Pascoe, 1863 ..................................................................................................................... 40
Genus Phanodesta Reitter, 1876 .............................................................................................................. 41
Genus Seidlitzella Jakobson, 1915 ............................................................................................................. 44
Genus Xenoglena Reitter, 1876 ............................................................................................................... 46
Tribe Trogossitini Latreille, 1802 .............................................................................................................. 47
Genus Airora Reitter, 1876 ....................................................................................................................... 49
Genus Alindria Erichson, 1844 ................................................................................................................. 53
Genus Corticotomus Sharp, 1891 ............................................................................................................. 55
† Genus Cretocateres Ponomarenko, 1986 ................................................................................................. 57
Genus Dupontiella Spinola, 1844 .............................................................................................................. 57
Genus Elestora Pascoe, 1868 .................................................................................................................... 58
† Genus Eotenebroides Ren, 1995 ................................................................................................................. 59
Genus Eupycnus Sharp, 1891 .................................................................................................................... 60
Genus Euschaefferia Leng, 1920 ............................................................................................................... 60
Genus Leipaspis Wollaston, 1862 ............................................................................................................. 62
Genus Melambia Erichson, 1844 ............................................................................................................... 63
Genus Nemozoma Latreille, 1804 ........................................................................................................... 65
Genus Parallelodera Fairmaire, 1881 ....................................................................................................... 69
Genus Temnoscheila Westwood, 1830 ..................................................................................................... 70
Genus Tenebroides Piller & Mitterpacher, 1783 ....................................................................................... 78
† Genus *Thoracotes* Handlirsch, 1906 ................................................................. 89
† Tribe Lithostomatini Kolibáč & Huang, 2008 .................................................. 90
† Genus *Lithostoma* Martynov, 1926 ......................................................... 91
Subfamily Peltinae Latreille, 1806 .................................................................. 92
Peltinae *incertae sedis* .................................................................................. 93
† Genus *Juralthinus* Kireichuk & Ponomarenko, 1990 ................ 93
† Genus *Sinopeltis* Yu, Leschen, Ślipiński, Ren & Pang, 2012 ........ 94
Tribe Peltini Latreille, 1806 ........................................................................ 95
Genus *Peltis* O. F. Müller, 1764 ................................................................... 96
Tribe Colydiopeltini Kolibáč, 2006 .................................................................. 100
Genus *Colydiopeltis* Ślipiński, 1992 .......................................................... 101
Genus *Parapeltis* Ślipiński, 1992 .................................................................. 102
Tribe *Phloiophilini* Kiesenwetter, 1863 ...................................................... 103
Genus *Phloiophilus* Stephens, 1830 ............................................................ 104
Tribe Thymalini Léveillé, 1888 ...................................................................... 107
Genus *Australiodes* Endrödy-Younga, 1960 ................................................ 108
Genus *Globorentonium* Lawrence & Ślipiński, 2013 ................................ 110
Genus *Parentonium* Crowson, 1970 .......................................................... 110
Genus *Protopeltis* Crowson, 1964 .............................................................. 111
Genus *Rentonellum* Crowson, 1966 ........................................................... 112
Genus *Rentonidium* Crowson, 1966 ............................................................ 113
Genus *Rentonium* Crowson, 1966 .............................................................. 114
Genus *Thymalus* Latreille, 1802 ................................................................... 115
Subfamily Lophocaterinae Crowson, 1964 .................................................... 117
† Genus *Cretamerus* Peris, Kolibáč & Delclòs ............................................. 119
Tribe Decamerini Crowson, 1964 ................................................................. 119
Genus *Antixoon* Gorham, 1886 .................................................................. 120
Genus *Decamerus* Solier, 1849 .................................................................... 121
Genus *Diontolobus* Solier, 1849 .................................................................. 122
Tribe *Ancyronini* Kolibáč, 2006 ................................................................... 124
Genus *Afrocyrona* Kolibáč, 2007 ................................................................. 125
Genus *Ancyrona* Reitter, 1876 .................................................................... 126
Species groups .............................................................................................. 127
lewisii species-group .................................................................................... 128
gabonica species-group ................................................................................ 128
japonica species-group .................................................................................. 128
colobicoides species-group ......................................................................... 128
endroedyi species-group .............................................................................. 129
Genus *Grynoma* Sharp, 1877 .................................................................... 132
Genus *Leptonyxa* Reitter, 1876 .................................................................. 133
Genus *Neaspis* Pascoe, 1872 .................................................................... 135
† Genus *Sinosoronia* Zhang, 1992 ................................................................. 137
Tribe Lophocaterini Crowson, 1964 ............................................................ 138
Genus *Eronyxa* Reitter, 1876................................................................. 140
Genus *Grynocharina* Reitter, 1877 ......................................................... 142
Genus *Grynocharis* Thomson, 1862....................................................... 144
Genus *Indopeltis* Crowson, 1966.......................................................... 148
Genus *Lophocateres* Olliff, 1883 ............................................................. 149
Genus *Lycoptis* Casey, 1890 ................................................................ 153
Genus *Peltonyxa* Reitter, 1876.............................................................. 153
Genus *Promanus* Sharp, 1877 ............................................................... 156
† Genus *Promanodes* Kolibáč, Schmied, Wappler & Kubisz, 2010 ...... 158
Genus *Trichocateres* Kolibáč, 2010 ..................................................... 158
Species *incertae sedis*................................................................................ 159

Taxa occasionally or temporarily classified within Trogossitidae............. 160
Coleoptera *incertae sedis* ......................................................................... 160
† Genus *Anhuistoma* Lin, 1985 ............................................................. 160
† Genus *Peltocoleops* Ponomarenko, 1990 .............................................. 165
Superfamily Cucuoidea *incertae sedis* .................................................. 166
† Subfamily Meligethiellinae Kireichuk & Ponomarenko, 1990 .............. 166
† Genus *Meligethiella* Medvedev, 1969 .................................................. 166
† Genus *Ostomalynus* Kireichuk & Ponomarenko, 1990 ...................... 167
Superfamily Cucuoidea *incertae sedis* .................................................. 168
† Genus *Palaeoendomychus* Zhang, 1992............................................. 168
Family Salpingiidae ................................................................................. 169
Family Chrysomelidae ............................................................................. 169
Family Derodontidae ............................................................................... 169
Family Helotidae ..................................................................................... 170
Family Monotomidae ............................................................................... 170
Family Synteliidae ................................................................................... 170
Family Zopheridae .................................................................................. 171
Phylogeny of the family Trogossitidae..................................................... 171
Acknowledgements ...................................................................................... 174
References ............................................................................................... 175
Introduction

The main purpose of the work is to introduce some modern order into current knowledge of the family Trogossitidae and extend knowledge of this relatively small but fascinating group of beetles, especially to both amateur entomologists and professional “non-cleroid” workers. It is deliberately written as a “compilation” of papers on the topic to date, especially because some of them were published in journals and books that are not easily accessible to all, and to bring various fragmented sources together.

Because of the character and purpose of the work, I have tried to avoid introducing any new thoughts and systematic changes, apart from a few minor ones mentioned in the “New taxonomic acts” section. A catalogue of species lies at the core of the work. I have not repeated references included in Coleopterorum Catalogus of Temnochilidae by Léveillé (1910); however, Léveillé’s reference always takes first place in any particular reference list. Taxonomic references follow, just as they have been excerpted from Zoological Records after 1910. The catalogues for some species are, without doubt, incomplete. Some references for biology and local distribution must also, perforce, be lacking – I beg, therefore, the kind reader’s patience and leniency.

The systematics of Trogossitidae is still in its infancy. There remains a great deal of work to be done in the higher taxonomy, as well as with regard to generic limits, especially in widespread, species-rich genera. Ancyrona is a good example of such a genus, distributed from tropical Africa, the Palaeartic, south-eastern Asia to Australia. Tenebroides and Temnoscheila are further complex taxa, each with more than a hundred described species distributed in both North and South America. On the other hand, there also exists a relatively rich modern material of trogossitids to be collected in various parts of the world, certainly containing plenty of new species. Unfortunately, only a few people are seriously interested in the family and only a few of them, in turn, try to gather and publish further information. Therefore, another purpose of the book is to encourage interest in this highly interesting group of beetles.

Keys to higher taxa may be considered a further major element of this contribution. With the exception of those for subfamilies, these have not been published to date. Although it is not always easy to recognize some species-rich and variable trogossitid genera, I have done my best to use simple and easily-visible features in the keys.

New taxonomic acts

† Meligethiellinae Kireichuk & Ponomarenko, 1990 is resurrected. The subfamily is removed from synonymy with Peltinae: Thymalini and shifted from Cleroidea to Cucujoidea sensu lato (including genera †Meligethiella Medvedev, 1969 and †Ostomalynus Kireichuk & Ponomarenko, 1990; genus †Juralithinus Kireichuk & Ponomarenko, 1990 is classified within Trogossitidae: Peltinae incertae sedis).
† *Meligethiella* Medvedev, 1969 is removed from Trogossitidae and Cleroidea (species †*M. glabra* Kireichuk & Ponomarenko, 1990, †*M. kovalevi* Kireichuk & Ponomarenko, 1990, †*M. soroniiformis* Medvedev, 1969).

† *Oстomalynus* Kireichuk & Ponomarenko, 1990 is removed from Trogossitidae and Cleroidea (species †*O. ovalis* Kireichuk & Ponomarenko, 1990).

† *Peltocoleops* Ponomarenko, 1990 is removed from Trogossitidae and Cleroidea and classified as Coleoptera incertae sedis (species †*Peltocoleops onokhojensis* Ponomarenko, 1990).

*Tenebroides bipustulatus* (Fabricius, 1801) (var. *impressifrons* Reitter, 1875 syn. n.).

*Tenebroides bonvouloiri* Léveillé, 1889 (var. *chontalensis* Sharp, 1891 syn. n.).

*Tenebroides maroccanus* Reitter, 1884 (var. *baillioti* Léveillé, 1903 syn. n.).

**Brief review of classification**

The superfamily Cleroidea was established by Böving and Craighead (1931). Until that time, Trogossitidae had been classified within Clavicornia together with Nitidulidae (usually as Ostomidae but also as Ostomatidae, Peltidae and Temnochilidae). The names Trogositidae (from Trogositae Fabricius, 1801) and the correct spelling Trogossitidae (from Trogossitarii Latreille, 1802) are the most modern forms of the name (see Kolibáč and Leschen 2010 for details). The family Phloiophilidae is mentioned in Pic’s (1926) catalogue of Melyridae sensu lato (the family is sometimes referred to as Phloeophilidae as well). Crowson (1964a) discussed the classification of its only species in detail and classified it within modern Cleroidea. I have suggested a classification of Phloiophilidae as a tribe in Peltinae (Kolibáč 2008) but this has not found wide acceptance.

Reitter (1876) published an excellent world-wide review that is basic to the study of Trogossitidae. Similarly, the world catalogue by Léveillé (1910) is among the classic works. The number of genera and species has only slightly increased since the publication of the latter list, even on a world scale. Crowson (1964a, 1966, 1970) has changed the rank or status of subfamilies and families classified within Trogossitidae sensu lato several times. Subsequently, Barron (1971) and later Ślipiński (1992) integrated Crowson’s families into the single family Trogossitidae. Several years ago, I established tribes in all trogossitid subfamilies on the basis of the morphological characters of adults and larvae (Kolibáč 2006, 2008). The 2008 system is employed throughout this work.

**Annotations to the catalogue, keys and illustrations**

Léveillé (1910) is always the first reference in catalogues. Reitter (1876), as the most important reference in some taxa, is also listed. The note “synonymized by author” refers to the author of the preceding reference.

Distribution abbreviations: AD = author of description, AL = A. Léveillé, JK = J. Kolibáč, JRB = J. R. Barron, RAC = R. A. Crowson, varA= other authors.
More than seven years have passed since I formulated theses on the higher classification of Trogossitidae. Although some opinions about the phylogeny have changed and the systematic placement of some genera has recently been called into question, the main purpose of the keys is confined to identification of the trogossitid genera. The keys are given for extant subfamilies, tribes and genera. Extinct taxa are listed in relevant sections, together with their descriptions and remarks on their classification. Generic names in parentheses in particular descriptions denote a similar character state occurring in another genus or genera.

The morphological descriptions of particular genera are largely based on several hundred detailed ink-drawings that have already been published by myself (Kolibáč 2005, 2006). PDF files of the papers that include them, as well as all other relevant publications since 2000, are available on request (see author’s address).
All scale bars in plates (Figs 1–12) express one millimetre. Beetles in colour plates (Figs 3–12) are pictured in approximate proportion (“large species” are larger than “small species”). White arrows in SEM photographs (Figs 13–18) denote important characters further mentioned in relevant captions. Numbers in parentheses in maps of distribution (Maps 1–13) denote the number of species within the given genus.

**Family Trogossitidae Latreille, 1802**

http://species-id.net/wiki/Trogossitidae

Latreille, P. A. 1802: 110.

Hallan, J. 2007–2012: http://insects.tamu.edu/research/collection/hallan/test/Arthropoda/Insects/Coleoptera/Family/Trogossitidae.txt (check-list). Barron, J. R. 1971: 14. Boosten, G. 1983: 290 (biology). Bouchard, P. et al. 2011: 56 (review of higher taxa). Burakowski, B. et al. 1986: 116. Chûjô, M. & Lee, C. E. 1994: 187 (Korean species). Crowson, R. A. 1955: 82. Crowson, R. A. 1967: 211. Gourves, J. 2006: 56 (biology). Gray, D. W. 2002: 1583 (systematics). Hayes, J. L. J. et al. 2008: 206 (biology). Hieke, F. & Pietrzeniuk, E. 1984: 315 (Baltic amber). Hunt et al. 2007: 1915 (molecular phylogeny). Kireichuk, A. G. & Ponomarenko, A. G. 1990: 79 (Mesozoic fossils). Klimaszewski, J. & Watt, J. C. 1997: 43 (key). Kohnle, U. & Vite, J. P. 1984: 504 (biology). Kolibáč, J. 1993a: 20. Kolibáč, J. 1993b: 89. Kolibáč, J. 2004: (phylogeny). Kolibáč, J. 2005: 39 (morphology of adults). Kolibáč, J. 2006: 117 (morphology of larvae, phylogeny). Kolibáč, J. 2007a: 363 (Palaeartic beetles catalogue). Kolibáč, J. 2009: 127 (nomenclatory). Kolibáč, J. et al. 2005: 25, 129 (Central Europe, key). Kolibáč, J. & Leschen, R. A. B. 2010: 241 (review). Larsson, S. G. 1978: 150 (Baltic amber). Lawrence, J. F. 1982: 519. Lawrence, J. F. et al. 2011: 72 (phylogeny). Lawrence, J. F. & Britton, E. B. 1994: 118. Lawrence, J. F. & Newton, A. F., Jr. 1982: 281 (phylogeny). Lawrence, J. F. & Newton, A. E., Jr. 1995: 867 (review of higher taxa). Lawrence, J. F. et al. 1993: CD ROM (identification of larvae). Lawrence, J. F. et al. 1999a: CD ROM (identification of adults). Lawrence, J. F. et al. 1999b: CD ROM (identification of larvae). Lawrence, J. F. in Stehr F. W. 1991: 448 (larval morphology). Leschen R. A. B. 2002: 263 (review, USA). Léveillé, A. 1910: 1. Lucht, W. 1981: 35. Luna de Carvalho, E. 1979: 80 (key). Majer, K. 1994: 384 (phylogeny, morphology). Merkl, O. 1993: 7 (key). Mitter, H. 1983: 52 (distribution). Nikitsky, N. B. 1980: 43 (key), 92 (larvae). Nikitsky, N. B. 1992: 80 (key). Ponomarenko, A. G. & Kireichuk, A. G. 2004–2008: http://zin.ru/animalia/Coleoptera/rus/paleosy2.htm (list of fossils). Paulian, R. 1998: 120 (key). Reitter, E. 1876: 3 (review, key). Reitter, E. 1922 (key). Schmied, H. et al. 2009: 23 (list of fossil taxa). Ślipiński, S. A. 1992: 440 (key to subfamilies, review of classification). Spahr, U. 1981: 74 (Ostomidae, list of fossils). Stresemann, E. et al. 1989: 270 (key). Tsinkevich, V. A. 1997: 27 (review). Valcarcel, J. P. & Prieto Pilona, F. 2001: 109. Waltz, R. D. 2002: 177. Weidner, H. 1993: 126 (key). Winkler, A. 1927: (Palaeartic beetles catalogue). Zherichin, V. V. 1978: 29 (Mesozoic fossils, Baysa).
Morphology (Figs 1, 2). Adults (Fig. 1) (according to Kolibáč and Leschen 2010). Body size: 1.0–35.0 mm. Body wide, flattened in most Peltinae; elongate in most Trogossitinae; small and broadly oval in Larinotini and Decamerini; convex in Thymalini. Body mostly bare or sparsely pubescent but sometimes also with tufts of setae, scales, dense pubescence or long hairs. Head usually not declined, although many members of Thymalini are moderately to strongly conglobate (the Rentonium group). Anterior margin of frons straight to very deeply emarginate (Nemozoma). Gular sutures widely or narrowly separated or strongly convergent. Posterior edge of epicranium with two incisions or evenly rounded. Frontoclypeal suture present or absent. Antennal insertions partly covered by edge of frons or visible in dorsal view. Subantennal groove conspicuous (receiving from one to three antennomeres), reduced or absent. Eyes not emarginate or (rarely) posteriorly emarginate, flat to elevated; sometimes divided by canthus into dorsal and ventral eyes (as in Gyrinidae and some Cerambycidae). Labrum broadly oval to oblong, mostly slightly emarginate; epipharynx consisting mainly of a cordate sclerite; tormae connected, or not, at centre by normal bridge. Antennae 8- to 11-segmented, with conspicuous 1- to 3-segmented club or with widened distal antennomeres that may be asymmetrical. Three to five apical antennomeres often bear sensorial fields. Mandible with one or two, rarely three, apical teeth; usually with ventral ciliate furrow; prostheca well-developed (brush of setae), reduced to absent; mola present, reduced or absent. Maxilla with distinct galea and lacinia; galea sometimes with ciliate or denticulate setae; lacinia with one to three apical hooks or with spine-like setae or with dense soft pubescence; basistipes more or less coalescent with lacinia or free; palpifer denticulate along outer margin (in Trogossitinae); apical palpmere conical or cylindrical. Male submentum with tuft of setae in some Trogossitinae; ligula membranous, rigid or coalescent with prementum; apex of ligula deeply or shallowly emarginate, often with ciliate setae; palpi conical or cylindrical, rarely weakly secundiform. Tentorial arms connected by bridge or bridge reduced. Cervical sclerites present. Pronotum usually transverse; elongate only in some Trogossitinae. Lateral carinae almost always present, often denticulate; reduced only in some Trogossitinae (Corticotomus). Prosternal process apically dilated or narrowed. Procoxa slightly to strongly transverse. Coxal cavities internally open and externally closed or widely open. Notosternal suture complete. Trochantin elongate, exposed. Mesonotum distinct, with transverse scutum and well-developed scutellar shield. Elytra usually regularly punctate, with or without conspicuous carinae; epipleura well-developed or reduced in posterior half; elytra of Trogossitinae with interlocking mechanism along apical part of suture. Mesoventrite wide, with distinct prepectus. Mesocoxae usually projecting. Mesanepisternum triangular, not extending to mesocoxal cavity. Mesepimeron triangular, usually reaching coxal cavities, so that these are laterally open (cavities closed by meeting of mesoventrite and metaventrite in Egoliini). Metaventrite more or less flattened, with distinct discrinen and transverse katepisternal suture; subcoxal lines present in Colydiopeltis, Larinotus, and Thymalus. Metanepisternum longitudinal, often with carina at centre. Metacoxae extending laterally to meet elytral epipleura, often with longitudinal furrow at centre.
Figure 1. Adult morphology: A Alindria sp. from Laos, ventral surface B Leipaspis lauricola, labium C Airona cylindrica, antennal club D Corticotomus cylindricus, mandible dorsally E A. cylindrica, mandible ventrally F Acalanthis quadrisignata, labium G A. quadrisignata, maxilla H A. quadrisignata, wing I Peltonyxa deyrollei, tegmen composed of 3 parts J A. cylindrica, tegmen composed of 2 parts.
Metendosternite with conspicuous lateral arms. Wings usually present, but missing in some species. Apical field sometimes with one or more small sclerites just beyond radial cell; RP2 sometimes present. Radial cell as long as wide or shorter than wide, sometimes very reduced or absent; cross-vein r3 usually absent. Basal portion of RP short or sometimes absent. Medial field with as many as four free veins, a wedge cell and no medial fleck (fewer veins and no wedge cell in smaller species); anal embayment usually notch-like, absent in some Trogossitini. Trochanters triangular. Femora sometimes clavate. Tibiae often with row of spines along outer side; apex of tibia with row of spines and two hooked spurs or only one spur hooked or spurs reduced (spines reduced in smaller taxa); tibial spurs pattern varies from 2-2-2 to 0-0-0. Tarsi 5-5-5; tarsomere 1 sometimes partially fused with 2 but always with conspicuous suture between them or very small and tarsal pattern seemingly 4-4-4 or 4-4-5; tarsomeres 1-4 never with membranous lobes; apical tarsomere usually as long as combined length of tarsomeres 1-4; claws large, without denticles (with the exception of some Decamerinae); empodium bisetose, strongly projecting. Abdomen with five or six ventrites. Ventrites I–III fused. Intercoxal process small, narrow. Spiculum of ventrite VIII sometimes present in males and always in females. Segment IX well-developed or reduced to “spicular fork”. Aedeagus sheath-like cucujiform type, with fixed or articulated parameres that may be partly or entirely fused together or absent. Tegmen usually with anterior ventral strut and two opposing dorsal struts (“double tegmen” of Crowson 1964a), but usually inverted (rarely uninverted or placed laterally) and often composed of two or three parts (undivided in some members of the Rentonium group). Penis with two anterior struts. Ovipositor lightly sclerotized, except for baculi, moderate in size with sparsely pubescent coxites and styli. Bursa copulatrix large, spherical. Spermatheca elongate or oval, with gland. Vagina without sclerites. Six malpighian tubules present in Tenebroides and Lophocateres.

**Larvae** (Fig. 2) (according to Kolibáč and Leschen 2010). Five to seven larval instars observed in Trogossitinae (Temnoscheila, Tenebroides), four instars in Lophocaterinae (Lophocateres), all beetles reared in laboratory conditions. Body elongate, only weakly flattened. Colour white or pale, but sclerotised areas distinctly pigmented (head capsule, thoracic and abdominal terga, and urogomphi). Vestiture consisting of setae; rarely with bristles or expanded setae; sometimes body with short and sparse pubescence or only with setae on the last segment. Head protracted. Posterior edge of capsule slightly emarginate. Epicranial stem absent or present and of variable length. Median endocarina usually present, of variable length and usually extending between frontal arms (absent in Thymalus and/or coincident with epicranial stem and frontal arms in Peltinae); paired endocarinae present or absent. Frontal arms V-shaped, straight or curved (nearly S-shaped). Five stemmata usually present and arranged in a pattern with two anteriorly and three in a posterior row; sometimes reduced to four, three, two or none. Frontoclypeal suture usually absent (distinct in the Rentonium group and Thymalus). Labrum free; epipharynx membranous; shape of tormae variable and lacking posterior extensions. Antennae 3-segmented, with short sensorium present at apex of segment 2. Mandibles with
Figure 2. Larval morphology: A Tenebroides “fuscus”, dorsal surface B T. “fuscus”, mandible ventrally C Lophocateres pusillus, mandible ventrally D T. “fuscus”, head ventrally E–F Peltis ferruginea, head capsule (E dorsally F ventrally) G Ancyrona diversa (1 dorsally 2 ventrally) H Peltis ferruginea (1 dorsally 2 ventrally).
one or two apical teeth (serrate in the *Rentonium* group); mola absent or present; mesal edge of mandibular base with brush of hairs or rigid denticulate processes that may be hylaline. Ventral mouthparts retracted. Maxillary articulating area present or absent. Cardo typically undivided (divided in *Calyx*). Mala with apex usually simple, with large pedunculate setae in predatory species (Trogossitini and Egoliini); inner apical angle usually lacking small teeth (present in *Protopeltus* and Larinotini); palps with four, three (e.g., *Anycrona* and *Lophocateres*), or two (Rentonitini group) palpomeres. Labium consisting of prementum, mentum, and submentum, or pre- and postmentum (*Thymalus* and *Parapeltis*); mentum or postmentum free or con-nate with base of maxillae; prementum sclerotized and elongate; mentum mostly unsclerotized in some taxa; ligula absent or present; if present apex emarginate or not, or divided apically; palps usually 2-segmented (1-segmented in the Rentonitini group). Gular region longer than wide, or wider than long; fused to labium or not. Hypostomal rods present, reduced or absent; sometimes extending to posterior edge of head; subparallel or diverging posteriorly. Ventral epicranial ridges present or absent. Prothorax usually with one large sclerite dorsally and one elongate sclerite ventrally. Protergum with or without sclerotized plate with a longitudinal median ecdysial line. Meso- and metathorax usually with pair of sclerites dorsally (absent in some taxa) and one weakly sclerotised, pale plate ventrally. Sometimes all thoracic sclerites indistinct. Coxae widely separated. Thoracic legs 5-segmented, including claw-like pretarsus with single seta. Nine abdominal segments visible from above. Abdominal ampullae present or absent. Segment IX shorter than or subequal to VIII. Segment X almost always concealed by segment IX (visible from above only in *Larinotus*). Urogomphi usually well-developed (sometimes reduced) and dorsally or posteriorly oriented; large, hook-shaped or nearly straight; strongly sclerotized and pigmented; often with spines or secondary processes; apically bifurcate or not; pit present between urogomphi in *Parapeltis*; median process present between uro-gomphi in Lophocaterini and urogomphi located at apex of median process in some members of the Rentonitini group. Anal region posteriorly or posterioventrally ori-ented; paired pygopods on segment X absent. Six malpighian tubules in *Tenebroides*; four in *Lophocateres*.

**Key to subfamilies**

Identification of the trogossitid subfamilies using the various determination keys published by a range of authors tends to be a complicated and frustrating process. Unfortunately, my “lumping” of nine former subfamilies (e.g., Ślipiński 1992) in two (Kolibáč 2006) rather complicated the identification of the individual specimen. In the traditional system for the trogossitids used in the 19th century (e.g. Erichson, Reitter, Léveillé), Peltinae were flat and fungivorous whereas Trogossitinae were cylindric-al and predatory. Further study of such modified taxa as the rentoniins, decameronis or colydiopeltins revealed huge morphological and biological diversity within Peltinae (*sensu* Kolibáč 2006). The same situation holds in Trogossitinae, in which
superficially different taxa (such as Calitis, Larinotus, the gymnochilins and egoliins) are classified together in one subfamily. The subfamily Lophocaterinae was established by Crowson (1964a) and synonymized with Peltinae by Kolibáč (2006) because of possible paraphyly of the latter subfamily. Later, in response to new observations, we suggested (Kolibáč 2008, Kolibáč and Zaitsev 2010) that Peltinae be split once more into Lophocaterinae and Peltinae. The latter is the system used in this book.

Similar ways of life (members of the both subfamilies tend to be predatory), reductions of morphological structures common to the whole order Coleoptera (e.g. wing venation, lateral edge of pronotum, mola), mosaic character patterns and probably some underlying synapomorphies complicate the definition of subfamilies even other higher taxa in Trogossitidae, in much the same way as they do in the related family Cleridae. The key that follows is therefore not based on absolutely inclusive synapomorphies. The most important, clearly-visible characters appear in **bold type**.

1. Adult: labium with rigid ligula; epipharynx mostly with cordate sclerite along apex of labrum; **antennal club mostly conspicuously asymmetrical**, terminal antennomeres (antennal club) mostly with sensorial fields; **front coxal cavities externally closed**; body cylindrical or oval but not conglobate; end of elytral suture with distinct interlocking mechanism (“elytral lock”). Larva: **head capsule with distinct endocarina**, gular sutures and hypostomal rods; frontal arms mostly straight; **gular region mostly with paragular sclerites**. Mainly predatory, rarely fungivorous or phytophagous (e.g. feeding on grains) ....................................................................................*Trogossitinae*

   – Adult: labium with membranous ligula; epipharynx without cordate sclerite; **antennal club weakly asymmetrical or symmetrical**, terminal antennomeres (antennal club) without distinct sensorial fields; **front coxal cavities mostly externally open** (except for Lophocaterinae: Decamerini); body often oval and flat (but sometimes also convex or conglobate); elytral suture without distinct interlocking mechanism. Larva: **head capsule mostly without endocarina**; gular sutures and hypostomal rods reduced; frontal arms often curved; **gular region without paragular sclerites** ...........................................2

2. Adult: **frontoclypeal suture absent or inconspicuous**; gular sutures wide, subparallel; eyes moderate, not distinctly elevate; antennal club symmetrical; radial cell oblong, moderate; tibial spines along sides mostly reduced; body flat, convex or conglobate. Larva: **lacinia mandibulae tridentate, absent or minute**. Fungivorous or phytophagous..................................................*Peltinae*

   – Adult: **frontoclypeal suture present, sometimes distinctly emarginate** (or concave); gular sutures wide, convergent at apex; eyes almost elevate, laterally situated; antennal club weakly asymmetrical; radial cell moved downwards, towards wing centre, sometimes small or reduced; tibial spines along sides present; body always flat. Larva: **lacinia mandibulae plumose, always distinct**. Primitive members fungivorous or phytophagous, advanced ones floricolous or predatory...............................................................*Lophocaterinae*
Subfamily Trogossitinae Latreille, 1802

Latreille, P. A. 1802: 110.
See “Family Trogossitidae” section for further references.

A key to the extant tribes of Trogossitinae

1 Elytral interlocking mechanism absent or weak; antennal club loose, symmetrical; dorsal surface flat, with tufts of setae and tubercles. Fungivorous .................................................Calityini
   – Elytral interlocking mechanism present; antennal club asymmetrical (or compact and symmetrical); dorsal surface convex, with scales or regularly pubescent or bare. Predatory, rarely phytophagous ........................................2

2 Middle coxal cavities closed; dorsal surface mostly with very long hairs ......3
   – Middle coxal cavities open; dorsal surface bare, with sparse pubescence or with scales .................................................................4

3 Antennal club compact and symmetrical; tibiae with reduced apical spurs; gular sutures wide, convergent at apex. Larva without paragular sclerites..........Larinotini
   – Antennal club asymmetrical; tibiae with conspicuous apical spurs; gular sutures narrow, subparallel at apex. Known larvae with paragular sclerites.......Egoliini

4 Eyes more/less dorsally situated, some genera with 2 pairs of eyes; body surface distinctly regularly sculptured or covered with scales or with short, thick setae; elytra with distinct carinae; anterior margin of pronotum always deeply emarginate .................................................................Gymnochilini
   – Eyes laterally situated, rather flat, always only single pair of eyes present; body surface finely punctate or wrinkled, without scales or thick setae; elytra without carinae or with weak carinae; anterior margin of pronotum emarginate or not .................................................Trogossitini

Tribe Calityini Reitter, 1922

Reitter, E. 1922: 66.

Type genus. Calitys Thomson, 1859

Bouchard, P. et al. 2011: 57. Crowson, R. A. 1970: 13 (referred as Calitinae sub-fam.nov.). Ślipiński, S. A. 1992: 442 (Calitinae). Lawrence, J. F. & Newton, A. F., Jr. 1995: 869 (Calitinae). Kolibáč, J. 2006: 117 (Calityni Winkler, 1922; sic!) (diagnosis, new status). Kolibáč, J. 2007a: 364. Kolibáč, J. & Leschen, R. A. B. 2010: 242.

Remarks. The position of the single genus Calitys within the trogossitid system has changed many times over the past century or so. It has been classified within either Peltinae or Trogossitinae (compare, for example, Barron 1971 and Crowson 1964a vs. Crowson 1970), then treated as a separate subfamily (Crowson 1970 in Trogossitidae s.str.)
without Peltidae, Ślipiński 1992 in Trogossitidae s.lat.). Reitter’s early idea (1876) that it might be classified within the former Leperini or Leperinae (i.e. Gymnochilini herein) is also interesting and worthy of review. *Calitys* belongs among the primitive fungivorous groups and has several features shared with Peltinae, for example: robust mandibles with mola, flat body, wide pronotum, weakly asymmetrical antennal club, and absence of elytral interlocking mechanism. However, it also has bizarre sculptures on dorsal surface of body, wax scales, and tufts of rigid setae that together differentiate the genus from all other trogossitids. Its basal position in the trogossitine branch is based chiefly on procoxal cavities perfectly externally closed, presence of paragular sclerites in larval cranium and concave larval tergite IX. Wax scales and tufts of setae on head, antennae, elytra, and pronotum make it resemble Gymnochilini. Nonetheless, it remains possible to imagine *Calitys* also as a derived member of Peltinae or even Lophocaterinae.

**Genus *Calitys* Thomson, 1859**

http://species-id.net/wiki/Calitys

*Figs 3, 13; Map 1*

*Calitys* Thomson, C. G. 1859: 71.

**Type species.** *Hispa scabra* Thunberg, 1784 [by original designation and monotypy]

Barron, J. R. 1971: 18. Crowson, R. A. 1964a: 296. Kolibáč, J. 2005: 49 (redescription). Kolibáč, J. 2006: 111 (phylogeny). Kolibáč, J. 2007a: 364. Kolibáč, J. 2008: 118–119 (phylogeny). Kolibáč, J. et al. 2005: 129 (key). Léveillé, A. 1910: 24. Reitter, E. 1911: 6, 7 (*Calytis* Thomson, 1859: misspelling; see Barron, J. R. 1971: 19). Reitter, E. 1922: 66. Spahr, U. 1981: 74 (amber and copal fossils).

**Nosodes** LeConte, 1861 [type species: no species included; see Barron 1971]

Barron, J. R. 1971: 19. Reitter, E. 1876: 43.

**Peltidea** Motchulsky, 1858 [type species: *Peltidea dentata* Fabricius, 1787]

Barron, J. R. 1971: 18. (*nomen oblitum*)

**Description** (*C. scabra*). Body size: about 10.0 mm. Adult: Body shape flat. Gular sutures wide, convergent at apex. Frontoclypeal suture present. Frons: longitudinal groove or depression absent. Cranium ventrally: tufts of long setae at sides absent. Submentum: ctenidium absent. Antennal groove present. Eyes: size moderate. Eyes number: two. Epicranial acumination deep. Lacinial hooks: two. Galea: shape sub-clavate. Galea: ciliate setae absent. Mediostipes-Lacinia partially fused. Palpifer: outer edge even. Mandibular apical teeth number: two, horizontally situated. Mola present. Pencillus (at base) present (fine, often membranous). Pubescence above mola or cutting edge absent. Ventral furrow present. Basal notch shallow or absent. Labrum-Cranium not fused. Epipharyngial sclerite absent. Lateral tormal process: projection curved downwards, processes with bridge (*Peltis*). Ligula: ciliate setae absent. Ligula rigid, strongly retroflexed, weakly emarginate. Hypopharyngeal sclerite H-shaped. Antenna 11-segmented. Antennal club symmetrical, sensorial fields absent. Front coxal cavi-
Figure 3. A Calitis scabra B Larinotus umblicatus C Acalanthis quadrisignata D Calanthosoma flavomaculata E Calanthosoma (syn. Marnia) sipolisi F Egolia variegata G Necrobiopsis tasmanicus.
ties externally closed, internally open. Pronotum transverse. Prepectus present. Middle coxal cavities open. Elytra: long hairs absent. Epipleuron wide. Elytral interlocking mechanism absent, carinae conspicuous. Elytral punctuation regular, scales present. Wing: radial cell oblong (or reduced), wedge cell small (*Peltis*), cross vein MP3–4 present, cross vein AA1+2–3+4 absent. Front tibiae: spines along side moderate. Hooked spur present. Claws: denticle absent. Parasternites number along ventrites III–VII: two. Spiculum gastrale present. Tegmen composed of three parts.

Larva: Frontal arms weakly curved. Epicrocranial stem absent. Endocarina present. Gular sutures conspicuous, parallel. Gula: anterior apodemes absent. Paragular sclerites present. Hypostomal rods absent. Stemmata number: five. Mandibular apical teeth number: two, horizontally situated. Lacinia mandibulatae absent. Mola reduced. Maxillary palpi 3–segmented. Cardo–Stipes not fused. Cardo: size much smaller than stipes. Ligula present. Labial palpi 2–segmented. Antennal joints 1 and 2 elongate. Sensory appendix very small. Thoracic sclerites pattern (dorsally) 1–2–2. Thoracic sclerites pattern (ventrally) 0+0+0. Trochanter oblong. Abdominal segment IX not divided. Tergite IX flat. Urogomphi present, hooked; median process absent.

Biology. Fungivorous. Live under bark of old coniferous trees (fir, pine) and on tree fungi. *Calyx scabra* was observed together with its larvae, for example, in the old stump of a fir *Abies alba* in Slovakia (J. Vávra, pers. observ.). Brustel (2009) recorded it from *Antrodia* sp. polypore fungi in Pyrenées Mts.

Distribution. Two species Holarctic. Two more species also reported from South Africa, of which *C. spinifera* is unknown to me. I studied a single *C. africana* non–type specimen in the Musée d’Histoire Naturelle in Geneva in 2003. It does not belong to Cleroidea.
Species:

*africana* Boheman, 1848; Caffraria (AL)

Léveillé, A. 1910: 24. Kolibáč, J., 2003: unpublished observation of non-type specimen in MHN Geneve: not Cleroidea. Reitter, E. 1876: 44. (*Nosodes africana*)

*minor* Hatch, 1962; USA, Canada (JRB)

Barron, J. R. 1971: 23. Hatch, M. H. 1962: 189

*scabra* Thunberg, 1784; Europe, Siberia to Far East, North Africa(?), USA, Canada (varA)

Léveillé, A. 1910: 24. Barron, J. R. 1971: 19. Barron, J. R. 1971: 20 (syn. *Bolitophagus silphides* Newman, 1838, synonymized by whom?). Barron, J. R. 1971: 20 (syn. *Peltis serrata* LeConte, 1859, synonymized by whom?). Barron, J. R. 1971: 20 (syn. *Silpha dentata* Fabricius, 1787, synonymized by whom?). Borowiec, L. 1983: 11. Brustel, H. 2009: 227–232 (biology). Burakowski, B. et al. 1986: 118. Dajoz, R. 1997: 44 (ecology). Hansen, S. O. & Borgersen, B. 1991: 40 (distribution in Norway). Klausnitzer, B. 1976: 5. Klausnitzer, B. 1996: 155 (larva). Klausnitzer, B. 1978: 176. Kolibáč, J. 1993a: 20 (key). Kolibáč, J. 1993b: 90. Kolibáč, J. 2005: 49 (redescription). Kolibáč, J. 2006: 106 (larva). Kolibáč, J. 2007a: 364. Kolibáč, J. et al. 2005: 132 (key). Mitter, H. 1998: 560. Pileckis, S. & V. Monsevičius 1995: 273. Reitter, E. 1876: 44 (*Nosodes*). Vogt, H. 1967: 16

*spinifera* Reitter, 1877; Cap (AL)

Léveillé, A. 1910: 24

*Calitis* sp

Beutel, R. G. & Pollock, D. A. 2000: 826 (larva, morphology). Beutel, R. G. & Ślipiński, S. A. 2001: 219

†“*Calitis*” sp

Larsson, S. G. 1978: 150 (fossil, Baltic amber)

Tribe Larinotini Ślipiński, 1992

Larinotini Ślipiński, S. A. 1992: 443 (Larinotinae)

Type genus. *Larinotus* Carter & Zeck, 1937

Bouchard, P. et al. 2011: 57. Lawrence, J. F. & Newton, A. F., Jr. 1995: 868 (Larinotinae). Kolibáč, J. 2006: 118 (Larinotini) (diagnosis, stat. n.). Kolibáč, J. 2008: 118–119 (phylogeny). Kolibáč, J. & Leschen, R. A. B. 2010: 242.

Remarks. The subfamily Larinotinae was originally established for the genera *Colydiopeltis*, *Parapeltis* and *Larinotus* (Ślipiński 1992). I removed the first two genera into the separate tribe Colydiopeltini under Peltinae (Kolibáč 2006), leaving Larinotini monotypic. Ślipiński (*l.c.*) remarked upon the similarity of the adult *Larinotus* and *Necrobiopsis* (Trogossitinae: Egoliini) but, on the other hand, he also pointed out common features of the *Larinotus* larva and some Peltinae (Rentoniinae, *Protopeltis* in his original text). Crowson (1970) also classified *Larinotus* (described as *Nebophilus hirsutus*) within Egoliini. All the opinions of the both these authors are in perfect
agreement with my observations (Kolibáč 2006, 2008). Finally, character analyses (l.c.) also resulted in a close relationship between Larinotini and Egoliini. The relationship of adults appears to be so close that one might speculate about the paraphyly of Larinotini; it is, however, hard to justify such a hypothesis if one considers the monotypy of the latter (all derived features found in Larinotus are only autapomorphies).

The closed mesocoxal cavities are the single apomorphy distinguishing Larinotini from adult Egoliini. Larval characters connecting Larinotus with Peltinae are: (1) cranium with median endocarina, (2) gula with anterior apodemes, (3) strongly reduced urogomphi (minute, apices downturned). However, character states 1 and 2 are considered plesiomorphies while the third character state (reduction of urogomphi) could be a tendency observed in various cleroids living in tightly-confined surroundings (e.g. Peltis, Cleridae: Dermestoides).

Genus Larinotus Carter & Zeck, 1937
http://species-id.net/wiki/Larinotus
Fig. 3; Map 2

Carter, H. J. & Zeck, E. H. 1937: 186. (sub Colydidae)

Type species. Larinotus umblicatus Carter & Zeck, 1937 [by monotypy]
Kolibáč, J. 2005: 62 (redescription). Kolibáč, J. 2006: 111 (phylogeny). Ślipiński, S. A. 1992: 455 (redescription).

Nebophilus Crowson, 1970 [type species: Nebophilus hirsutus Crowson, 1970; designated by author]
Crowson, R. A. 1970: 14. Lawrence, J. F. 1980: 307 (synonymized with L. umblicatus)

Description (see also Crowson 1970, Ślipiński 1992). Body size: 3.5 mm. Body shape convex (not conglobate). Gular sutures wide, convergent at apex. Frontoclypeal suture present. Frons: longitudinal groove or depression absent. Cranium ventrally: tufts of long setae at sides absent. Submentum: ctenidium absent. Antennal groove present. Eyes: size moderate. Eyes number: two. Epicranial acumination moderate. Lacinial hooks: two. Galea: shape elongate. Galea: ciliate setae absent. Mediostipes-Lacinia not fused. Palpifer: outer edge even. Mandibular apical teeth number: two, horizontally situated. Mola present. Penicillus (at base) absent. Pubescence above mola or cutting edge absent. Ventral furrow absent. Basal notch shallow or absent. Labrum-Cranium not fused. Epipharyngial sclerite absent. Lateral tormal process: projection curved downwards, processes with bridge (Peltis). Ligula: ciliate setae absent. Ligula rigid, not retroflex, weakly emarginate. Hypopharyngeal sclerite consisting of two separate parts. Antenna 9-segmented. Antennal club symmetrical, sensorial fields absent. Front coxal cavities externally closed, internally open. Pronotum transverse. Prepectus absent. Middle coxal cavities closed. Elytra long hairs present. Epipleuron moderate. Elytral interlocking mechanism present, carinae reduced. Elytral punctuation regular, scales absent. Wing: radial cell triangular, wedge cell present, cross vein MP3-4 absent, cross
vein AA1+2-3+4 present. Front tibiae: spines along side reduced, hooked spur present. Claws: denticle absent. Spiculum gastrale absent. Tegmen composed of two parts.

   Larva: Frontal arms weakly curved. Epicranial stem reduced. Endocarina present. Gular sutures conspicuous, parallel. Gula: anterior apodemes present. Paragular sclerites absent. Hypostomal rods absent. Stemmata number: five. Mandible apical teeth number: two, horizontally situated. Lacinia mandibulae with several small spines. Mola absent. Maxillary palpi 3-segmented. Palpifer present. Pedunculate seta absent. Mala simple. Mala: bidentate protrusion absent. Cardo-Stripes not fused. Cardo: size much smaller than stipes. Ligula absent. Labial palpi 2-segmented. Premementum in single part, anterior margin projecting. Torma: two separate lateral sclerites. Antennal joints 1, 2 transverse. Sensory appendix larger than half of joint 3. Thoracic sclerites pattern (dorsally) 0+0+0. Thoracic sclerites pattern (ventrally) 0+0+0. Trochanter triangular. Abdominal segment IX not divided. Tergite IX depressed. Urogomphi minute; median process absent.

   **Biology.** The larvae and adults were found together by J. Doyen “in rotten wood beneath resupinate fungi” (Ślipiński 1992).

   **Distribution.** Australia: Northern Queensland.

   **Species:**

   *umblicatus* Carter & Zeck, 1937; Australia: Queensland (varA)

   Carter, H. J. & Zeck, E. H. 1937: 186. Crowson, R. A. 1970: 16 (*Nebophilus hirsutus*). Lawrence, J. F. 1980: 307 (syn. *Nebophilus hirsutus* Crowson, 1970; synonymized by author). Ślipiński, S. A. 1992: 455 (redescription adult, description larva). Kolibáč, J. 2005: 62
Tribe Egoliini Lacordaire, 1854

Lacordaire, J. T. 1854: 334.

**Type genus.** *Egolia* Erichson, 1842

Arias, E. et al. 2009: 37. Bouchard, P. et al. 2011: 57. Crowson, R. A. 1964a: 287 (Egoliinae). Lawrence, J. F. & Newton, A. F., Jr. 1995: 869 (Egoliinae). Ślipiński, S. A. 1992: 442 (Egoliinae). Kolibáč, J. 2006: 106, 119 (larval morphology; stat. n.; phylogeny). Kolibáč, J. 2008: 118–119 (phylogeny).

**Remarks.** This tribe exhibits several primitive features (for example, mandibles with distinct mola) and belongs among the basal groups of Trogossitinae. While earlier entomologists always classified *Acalanthis*, *Egolia* and *Calanthosoma* together with *Nemozoma* and allied genera (for example, in the “Nemozomini” of Reitter 1876 and “Nemosomatinae” of Léveillé 1910), i.e. they always associated the present tribe with Trogossitinae, Crowson (1964a, 1966) was convinced of a relationship to Peltidae. His main reason was perhaps the relative primitiveness of adult egoliins with respect to trogossitids *s.lat.* Later, Crowson (1970) transferred it to Trogossitidae *s.str.*, together with his newly-established subfamily Calitinae (in fact, only a change of status for Calityini Reitter, 1922). Having examined larvae of Egoliinae (*Acalanthis*, *Paracalanthis*) I consider its classification with modern trogossitins undeniable.

**Key to genera**

1. Pronotum distinctly elongate; antennae 11-segmented, club 3-segmented with sensorial fields; elytra bare, long hairs at elytral apex only...........*Calanthosoma*
   - Pronotum cordate or transverse; antennae 8- or 10-segmented, club 1- or 2-segmented without sensorial fields; elytra and pronotum with long hairs or, rarely, perfectly bare..................................................................................................................2

2. Pronotum transverse; frontoclypeal suture present; antennae 8-segmented, club 1-segmented (composed of 3 united segments) .................*Necrobiopsis*
   - Pronotum cordate; frontoclypeal suture absent; antennae 10-segmented, club 2-segmented ..................................................................................................................3

3. Dorsal surface bare.................................................................................................................*Egolia*
   - Dorsal surface with long, pale hairs...............................................................................4

4. Head, pronotum and elytra black or elytral apex dark blue; each elytron with two orange spots or with two transverse bands composed of light pubescence.................................................................*Acalanthis*
   - Head, pronotum and elytra brown; elytra with X-shaped yellowish spot in anterior half and transverse yellowish stripe in apical half...........*Paracalanthis*
**Genus Acalanthis Erichson, 1844**  
http://species-id.net/wiki/Acalanthis  
Figs 1, 3, 13; Map 3

Erichson, W. F. 1844: 446.

**Type species.** *Acalanthis quadrisignata* Erichson, 1844 [by monotypy]

Léveillé, A. 1910: 4. Arias, E. et al. 2009: 39. Crowson, R. A. 1964a: 299 (larva, described as *Phanodesta*). Crowson, R. A. 1970: 13. Kolibáč, J. 2005: 40. Kolibáč, J. 2006: 106 (larva; see Crowson 1964a).

**Remarks.** An antennal apex I figured (Kolibáč 2005: 89, Pl. 1-Fig. 5) was associated with *Acalanthis quadrisignata* in error, as correctly noted by Arias et al. (2009). The drawing probably belongs to *Calanthosoma flavomaculata*.

**Description.** Body size: 6.0–9.0 mm. Body shape elongate. Gular sutures narrow, subparallel at apex. Frontoclypeal suture absent. Frons: longitudinal groove or depression absent. Cranium ventrally: tufts of long setae at sides present. Submentum: ctenidium absent. Antennal groove present. Eyes: size moderate Eyes number: two. Epicranial acummation moderate. Lacinial hooks: two. Galea: shape sub-clavate. Galea: ciliate setae absent. Mediostipes-Lacinia partially fused. Palpifer: outer edge even. Mandibular apical teeth number: two, horizontally situated. Mola reduced but present. Penicillus (at base) present (fine, often membranous). Pubescence above mola or cutting edge present. Ventral furrow present. Basal notch moderate. Labrum-Crani um not fused. Epipharyngial sclerite present. Lateral tormal process: projection curved downwards, processes not connected (*Airora*). Ligula: ciliate setae absent. Ligula rigid, weakly retroflex, deeply emarginate. Hypopharyngeal sclerite H-shaped. Antenna 10-segmented, Antennal club asymmetrical, sensorial fields present. Front coxal cavities externally closed, internally open. Pronotum cordate. Prepectus absent. Middle coxal cavities closed. Elytra: long hairs present. Epipleuron moderate. Elytral interlocking mechanism present, carinae reduced. Elytral punctuation regular, scales absent. Wing: radial cell triangular, wedge cell present, cross vein MP3-4 present, cross vein AA1+2-3+4 absent. Front tibiae: spines along side moderate. Hooked spur present. Claws: denticle absent. Parasternites number along ventrites III–VII: one. Spiculum gastrale absent. Tegmen composed of three parts. Coxitae undivided.

Larva: Frontal arms V-shaped. Epicranial stem reduced. Endocarina present. Antennal joints 1 and 2 elongate. Thoracic sclerites pattern (dorsally) 1-2-2. Tergite IX depressed. Urogomphi present, hooked; median process absent.

**Biology.** Predatory. Crowson (1964a) remarked “numerous insect fragments in gut” of an assumed *Phanodesta* larva but, as he noted later (1970: 1), the larva probably belongs to some species of *Acalanthis*. Its brief description in his key (1964a: 299) in fact agrees perfectly with the larval characters of Egoliini. The adult gut contents of *A. quadrisignata* included insect fragments (Crowson 1964a). Elizabeth Arias and colleagues (Arias et al. 2009) caught numerous *Acalanthis* specimens by canopy fogging.
and beating vegetation in forests, yielding a range of species including some *Nothophagus*, *Araucaria*, *Schinus*, and *Rhaphitamus*.

**Distribution.** Temperate forests of central Chile and Argentina (Arias et al. 2009).

**Species:**

- **mirabilis** Reitter, 1876; Chile (AL, varA)
  
  Léveillé, A. 1910: 4. Arias, E. et al. 2009: 40

- **quadrisignata** Erichson, 1844; Chile (AL, varA)
  
  Léveillé, A. 1910: 4. Arias, E. et al. 2009: 39. Kolibáč, J. 1999b: 12. Kolibáč, J. 2005: 40 (redescription)

- **semimetallica** Fairmaire, 1861 (Clerus); Chile (AL, varA)
  
  Léveillé, A. 1910: 4. Arias, E. et al. 2009: 41

**Genus Calanthosoma Reitter, 1876**

http://species-id.net/wiki/Calanthosoma

Fig. 3; Map 3

Reitter, E. 1876: 10.

**Type species.** *Calanthosoma flavomaculatum* Reitter, 1876 [by monotypy]

Léveillé, A. 1910: 4. Arias, E. et al. 2009: 37. Kolibáč, J. 2005: 47 (redescription). Kolibáč, J. 2006: 111 (phylogeny).
**Marnia** Léveille, 1889 [Type species: **Marnia sipolisi** Léveillé, 1889; designated by Kolibáč 2005]

Léveillé, A. 1910: 14. Kolibáč, J. 2005: 47 (synonymized with *Calanthosoma*).

**Remarks.** A single genus, it lives in tropical South America beyond the temperate “Gondwanan” distribution of the other egoliine genera. *Calanthosoma* shows a character set intermediate between Egoliini and Trogossitini. Longitudinal wrinkles on the dorsal surface of head and pronotum, long hairs at apex of elytra, mandibles with mola, and lacinia with distinct hooked spine at apex are typical of the egoliins; however, the genus shares ciliate labial setae and terminal antennomeres with sensorial fields with most of trogossitins. Nevertheless, most of apomorphic characters are clearly egoline and I have no doubts about its classification within that tribe. Common trogossitine features of *Calanthosoma* may provide evidence of a common ancestor for Egoliini and Trogossitini.

The synonymization of *Marnia* with *Calanthosoma* is beyond doubt; the representatives of the genera are very similar.

**Description.** Body size: about 9.0 mm. Body shape elongate. Gular sutures narrow, subparallel at apex. Frontoclypeal suture absent. Frons: longitudinal groove or depression absent. Cranium ventrally: tufts of long setae at sides present. Submentum of males: ctenidium present. Antennal groove present. Eyes: size moderate. Eyes number: two. Epicranial acumination moderate. Lacinial hooks: one. Galea: shape clavate. Galea: ciliate setae present. Mediostipes-Lacinia partially fused. Palpifer: outer edge even. Mandibular apical teeth number: two, vertically situated. Mola present. Penicillus (at base) present (fine, often membranous). Pubescence above mola or cutting edge absent. Ventral furrow not ciliate. Basal notch moderate. Labrum-Cranium not fused. Epipharyngial sclerite present. Lateral tormal process: projection curved downwards, processes not connected (*Airora*). Ligula: ciliate setae absent. Ligula rigid, weakly retroflex, weakly emarginate. Hypopharyngeal sclerite consisting of two separate parts. Antenna 11-segmented. Antennal club asymmetrical, sensorial fields present. Front coxal cavities externally closed, internally open. Pronotum cordate. Prepectus absent. Middle coxal cavities closed. Elytra: long hairs present. Epipleuron moderate. Elytral interlocking mechanism present, carinae conspicuous. Elytral punctation regular, scales absent. Wing: radial cell oblong (or reduced), wedge cell present, cross vein MP3-4 present, cross vein AA1+2-3+4 absent. Front tibiae: spines along side moderate. Hooked spur present. Claws: denticle absent. Parasternites number along ventrites III–VII: one. Spiculum gastrale absent. Tegmen composed of three parts. Coxitae undivided.

**Biology.** Unknown, probably predatory.

**Distribution.** Only a few specimens is known to date: Venezuela, Brazil, Antilles.

**Species:**

*flavomaculatum* Reitter, 1876; Antillae, Venezuela (AL, JK)

Léveillé, A. 1910: 4. Kolibáč, J. 2005: 47 (redescription). Reitter, E. 1876: 11

grouvellei Léveille, 1899 (*Marnia*); Brazil (AL)

Léveillé, A. 1910: 14
**sallei** Léveillé, 1889 *(Marnia)*; Venezuela (AL)

(J. Kolibáč, unpublished note: maybe synonymous with *C. flavomaculatum*)

**sipolisi** Léveillé, 1889 *(Marnia)*; Brazil: Minas Geraes (AL)

Léveillé, A. 1910: 14. Kolibáč, J. 2005: 47

**Genus Egolia** Erichson, 1842

http://species-id.net/wiki/Egolia

Fig. 3; Map 3

Erichson, W. F. 1842: 150.

**Type species.** *Egolia variegata* Erichson, 1842 [by monotypy]

Léveillé, A. 1910: 4. Crowson, R. A. 1970: 13. Kolibáč, J. 2005: 54. Kolibáč, J. 2006: 111 (phylogeny). Reitter, E. 1876: 8.

**Description.** Body size: about 9.0 mm. Body shape elongate. Gular sutures narrow, subparallel at apex. Frontoclypeal suture absent. Frons: longitudinal groove or depression absent. Submentum: ctenidium absent. Antennal groove present. Eyes: size moderate. Eyes number: two. Epicranial acumination moderate. Lacinial hooks: two. Galea: shape sub-clavate. Galea: ciliate setae absent. Mediostipes-Lacinia partially fused. Palpifer: outer edge even. Mandibular apical teeth number: two, horizontally situated. Mola present. Penicillus (at base) present (fine, often membranous). Pubescence above mola or cutting edge present. Ventral furrow present. Basal notch moderate. Labrum-Cranium not fused. Epipharyngial sclerite present. Lateral tormal process: projection curved downwards, processes not connected (*Airora*). Ligula: ciliate setae absent. Ligula rigid, weakly retroflexed, deeply emarginate. Hypopharyngeal sclerite H-shaped. Antenna 10-segmented. Antennal club asymmetrical, sensorial fields present. Front coxal cavities externally closed, internally open. Pronotum cordate. Prepectus absent. Middle coxal cavities closed. Elytra: long hairs absent. Epipleuron moderate. Elytral interlocking mechanism present, carinae reduced. Elytral punctuation regular, scales absent. Wing: radial cell triangular, wedge cell present, cross vein MP3-4 present, cross vein AA1+2-3+4 absent. Front tibiae: spines along side reduced. Hooked spur absent, apical spurs not hooked or weakly hooked. Claws: denticle absent. Parasternites number along ventrites III–VII: one. Spiculum gastrale absent. Tegmen composed of three parts.

Larva: Frontal arms V-shaped. Epicranial stem absent. Endocarina present. Gular sutures conspicuous, parallel. Gula: anterior apodemes absent. Paragular sclerites present. Hypostomal rods absent. Stemmata number: 3. Mandibular apical teeth number: two, horizontally situated. Lacinia mandibulæ absent. Mola absent. Maxillary palpi 3-segmented. Palpifer present. Pedunculate seta absent. Mala bilobed. Mala: bidentate protrusion absent. Cardo-Stipes not fused. Cardo: size much smaller than stipes. Ligula absent. Labial palpi 2-segmented. Prementum consists of two parts. Torma: single compact plate. Antennal joints 1 and 2 elongate. Sensory appendix medium-sized (reaching half-way along joint 3). Thoracic sclerites pattern (dorsally) 1-2-2. Tro-
chanter triangular. Abdominal segment IX not divided. Tergite IX depressed. Urogomphi present, hooked; median process absent.

**Biology.** Probably predatory.

**Distribution.** Australia: Tasmania; Tahiti?

**Species:**

*variegata* Erichson, 1842; Tasmania, Tahiti (AL)

Léveillé, A. 1910: 4. Kolibáč, J. 2005: 54 (redescription). Reitter, E. 1876: 8

**Genus Necrobiopsis Crowson, 1964**

http://species-id.net/wiki/Necrobiopsis

Fig. 3; Map 3

Crowson, R. A. 1964a: 293.

**Type species.** *Necrobiopsis tasmanicus* Crowson, 1964 [by original designation and monotypy]

Arias, E. et al. 2009: 39. Crowson, R. A. 1970: 14. Kolibáč, J. 2005: 71 (redescription). Kolibáč, J. 2006: 111 (phylogeny).

**Description.** Body size: 3.0–4.5 mm. Body shape convex (not conglobate). Gular sutures narrow, subparallel at apex. Frontoclypeal suture present. Frons: longitudinal groove or depression absent. Submentum: ctenidium absent. Antennal groove present. Eyes: size large, lateral. Eyes number: two. Epicranial acumination moderate. Lacinial hooks: two. Galea: shape elongate. Galea: ciliate setae absent. Mediostipes-Lacinia not fused. Palpifer: outer edge even. Mandibular apical teeth number: two, vertically situated. Mola reduced but present. Penicillus (at base) present (fine, often membranous). Pubescence above mola or cutting edge absent. Ventral furrow present. Basal notch shallow or absent. Labrum-Cranium not fused. Epipharyngial sclerite present. Lateral tormal process: projection curved downwards, processes not connected (*Airora*). Ligula: ciliate setae absent. Ligula membranous, not retroflexed, weakly emarginate. Hypopharyngeal sclerite H-shaped. Antenna 8-segmented, sensorial fields present. Front coxal cavities externally closed, internally open. Pronotum transverse. Prepectus present. Middle coxal cavities closed. Elytra: long hairs present. Epipleuron thin. Elytral interlocking mechanism present, carinae conspicuous. Elytral punctuation regular, scales absent. Wing: radial cell triangular, wedge cell absent, cross vein MP3-4 present, cross vein AA1+2-3+4 absent. Front tibiae: spines along side reduced. Hooked spur absent, apical spurs not hooked or weakly hooked. Claws: denticle absent. Parasternites number along ventrites III–VII: two. Spiculum gastrale present. Tegmen composed of two parts.

**Biology.** Unknown in *N. tasmanicus*. The recently described Chilean species *Necrobiopsis shangrila* was collected by canopy fogging in *Nothophagus* forests, including fogging of *Cyttaria* fungi on *Nothophagus* (Arias et al. 2009).

**Distribution.** Tasmania, central Chile (Region VIII, Biobío).

**Species:**

*tasmanicus* Crowson, 1964; Tasmania (RAC)
Crowson, R. A. 1964a: 293. Arias, E. et al. 2009: 38. Kolibáč, J. 2005: 71 (redescription) shangrila Arias, Ślipiński, Lawrence & Elgueta, 2009; Chile (AD)
Arias, E. et al. 2009: 39.

**Genus Paracalanthis Crowson, 1970**
http://species-id.net/wiki/Paracalanthis

Map 3

Crowson, R. A. 1970: 14.

**Type species:** *Paracalanthis binnaburrense* Crowson, 1970 [by original designation and monotypy]

Kolibáč, J. 2005: 74. Kolibáč, J. 2006: 116 (phylogeny).

**Description.** Body size: about 12.0 mm. Body shape elongate. Frontoclypeal suture absent. Frons: longitudinal groove or depression absent. Antennal groove present. Eyes: size moderate. Eyes number: two. Antenna 10-segmented. Front coxal cavities externally closed, internally open. Pronotum cordate. Middle coxal cavities closed. Elytra: long hairs present. Epipleuron thin, carinae reduced. Elytral punctation regular, scales absent. Front tibiae: spines along side moderate. Hooked spur absent in middle and hind tibiae. Claws: denticle absent.

**Biology.** Unknown. Collected “from decayed log” (Crowson 1970).

**Distribution.** Australia: Queensland.

**Species:**
binnaburrense Crowson, 1970; Australia: Queensland (RAC)
Crowson, R. A. 1970: 14, 16 (larva). Kolibáč, J. 2005: 74. Kolibáč, J. 2006: 108 (larva).

**Tribe Gymnochilini Lacordaire, 1854**

Lacordaire, J. T. 1854: 344.

**Type genus.** Gymnochila Erichson, 1844 (= Gymnocheilis Dejean, 1835)

Bouchard, P. et al. 2011: 57. Burakowski, B. et al. 1986: 118 (Gymnochilinae). Kolibáč, J. 2006: 119 (diagnosis, stat. n.). Kolibáč, J. 2007a: 364. Kolibáč, J. 2008: 118–119 (phylogeny). Leschen, R. A. B. & Lackner, T. 2013: 283.

**Remarks.** Five genera of Gymnochilini (namely Anacypta, Gymnocheilis, Narcisa, Xenoglena, Leperina) form, beyond doubt, a monophyletic group. Gymnochilins constitute an advanced group of Trogossitinae, adapted to a predatory way of life. They are rapid flyers, dwelling on fallen logs and hunting for bostrichids, scolytids and other insects, strongly resembling the jewel beetles (Buprestidae) in their body shape and movement. Two distinctly separated pairs of eyes in most of them and their ability to jump (Anacypta) characterize the tribe as one of the most advanced of all trogossitids.
Some remarks about the independent status of the tribe Gymnochilini with regard to Trogossitini are made below, in the section relating the latter tribe.

The inclusion of *Phanodesta* from Juan Fernandez Isl. was more or less confirmed by two separate character analyses (Kolibáč 2006, 2008). However, the phylogeny of the genus was rendered unclear by the number of autapomorphies (e.g. winglessness, characteristic elytral structure) and separated distribution. I postulated a sister group of *Leperina* with a “Gondwanan” distribution (Australia-Chile). Recently, a phylogeny and distribution of *Phanodesta*, together with descriptions and combinations of some more species from New Zealand and its vicinity have been addressed by Leschen and Lackner (2013) in detail. Two more genera occured in the gymnochiline clade in my second analysis (Kolibáč 2008): *Seidlitzella* and *Melambia*. The first genus, *Seidlitzella*, was considered related to the Palaearctic species of *Leperina*, as also pointed out by Schawaller (1993). However, his formal synonymization of *Seidlitzella* was not confirmed in a recent study by Leschen and Lackner (2013) who established the new genus *Kolibacia* for *Leperina tibialis* and *L. squamulata* instead.

In both analyses by Kolibáč (2006, 2008), the genera *Seidlitzella* and *Melambia* were considered primitive or basal among the Gymnochilini or Trogossitini. They were included in the trogossitins in my original tribe definition (Kolibáč 2006). A comparison made specifically for the current shows the heterogeneity of *Melambia* species and the need for revision of the genus with respect to the systematic position of particular species. It cannot be excluded that there are some species of *Melambia* congeneric with *Alindria*.

**Key to genera**

1  Head with 1 pair of eyes. Ventral part of cranium with long setae at sides. Radial cell triangular and moved down, or reduced. Elytra with conspicuous carinae...  
2  – Head with 2 pairs of eyes. Ventral part of cranium without long setae at sides. Radial cell mostly oblong. Elytral carinae reduced or inconspicuous ................  
5  2  Body bare, without setae. Window punctures absent. Unicolorous, black species .................................................................................................................. *Seidlitzella*  
3  – Body surface with vestiture consisting of scales or setae or both. Window punctures absent or present. Dorsal side brown or black-brown, with colour patterns formed by vestiture....................................................................  
3  3  Dorsal vestiture consisting of scales. Elytral carinae not beaded; intercarinal space punctate; window punctures present. Mucro absent ..........................  
4  – Dorsal vestiture consisting of setae, scales or both. Elytral carinae usually beaded; intercarinal space apunctate; window punctures absent. Mucro absent or weakly developed ................................................................. *Phanodesta*  
4  Elytral intercarinal space bipunctate; window punctures simple. Protibial edge smooth. Mandibles with mola .................................................. *Kolibacia*  
– Elytral intercarinal space multipunctate; window punctures tuberculate. Protibial edge spinate. Mandibles without mola.......................... *Leperina*
Body rather flat, compact; smaller species (about 4–8 mm) .........................6
– Body rather cylindrical, elongate; larger species (about 6–20 mm) ..............7
6 Body perfectly covered with large scales ................................................. Narcisa
– Body without scales or pubescence, with metallic lustre ....................... Anacypta
7 Body with colour pattern composed of scales and short thick setae; antennal club large ................................................................. Gymnocheilis
– Body without scales, spots on pronotum and elytra formed by short setae; antennal club smaller ..................................................... Xenoglena

Genus Anacypta Illiger, 1807
http://species-id.net/wiki/Anacypta
Figs 4, 14; Map 4
Illiger, J. K. W. 1807: 301.

Type species. Nitidula punctata Fabricius, 1801 [designated by Kolibáč 2005]
Kolibáč, J. 2005: 44 (redescription). Kolibáč, J. 2006: 111 (phylogeny). Kolibáč, J. 2007a: 364.
Acrops Dalman, 1824 [Type species: Acrops metallica Dalman, 1824 (= Nitidula punctata Fabricius, 1801)]
Léveillé, A. 1910: 23.

Description. Body size: about 4.5–7.0 mm. Body shape flat. Gular sutures wide, convergent at apex. Frontoclypeal suture absent. Frons: longitudinal groove or depression absent. Cranium ventrally: tufts of long setae at sides absent. Submentum: ctenidium present. Antennal groove present. Eyes: size large, dorsal. Eyes number: four. Epicranial acumination moderate. Lacinial hooks absent. Galea: shape clavate. Galea: ciliate setae absent. Mediostipes-Lacinia partially fused. Palpifer: outer edge denticulate. Mandibular apical teeth number: two, horizontally situated. Mola absent. Penicillus (at base) present (fine, often membranous). Pubescence above mola or cutting edge absent. Ventral furrow absent. Basal notch shallow or absent. Labrum-Cranium not fused. Epipharyngial sclerite absent. Lateral tormal process: projection projection not developed (all remaining). Ligula: ciliate setae absent. Ligula rigid, weakly retroflexed, weakly emarginate. Hypopharyngeal sclerite consisting of two separate parts. Antenna 10-segmented. Antennal club asymmetrical, sensorial fields present. Front coxal cavities externally closed, internally open. Pronotum transverse. Prepectus absent. Middle coxal cavities open. Elytra: long hairs absent. Epipleuron thin. Elytral interlocking mechanism present, carinae reduced. Elytral punctuation regular, scales absent. Wing: radial cell oblong (or reduced), wedge cell absent, cross vein MP3-4 absent, cross vein AA1+2-3+4 present. Front tibiae: spines along side reduced. Hooked spur present. Claws: denticle absent. Parasternites number along ventrites III–VII: one. Spiculum gastrale absent. Tegmen composed of three parts. Coxitae undivided.

Biology. Predatory. Adults run rapidly on logs and branches of fallen trees, hunting for prey. If disturbed, they fly very quickly. Some beetle collectors remark (P. Pacholátko,
Figure 4. A Anacypta sp., Vietnam B Anacypta punctata C Anacypta sp., Laos D Gymnocheilis subfasciata E Gymnocheilis sp., Ghana F Gymnocheilis varia G Kolibacia regularis H Kolibacia squamulata I Leperina cirrosa.
pers. comm.; experience from southern India) that some species can even jump(!) before they fly off.

**Distribution.** South-eastern Asia including Indonesia, Laos, Vietnam (numerous modern unpublished records). Often recorded together with species of *Xenoglena*.

**Species:**

*birmanica* Léveillé, 1888; Burma (AL)

Léveillé, A. 1910: 23 (*Acrops*)

citicricosa* Reitter, 1880; „Himalaya“(AL)

Léveillé, A. 1910: 23 (*Acrops*). Léveillé, A. 1910: 23 (*A. citricosa var. rugosa* Léveillé, 1899). Kolibáč, J. 2007a: 364 (syn. *Anacypta rugosa* Léveillé, 1899)

cyanea* Léveillé, 1899; Perak (AL)

Léveillé, A. 1910: 23 (*Acrops*)

*feit* Léveillé, 1888; Tenasserim (AL)

Léveillé, A. 1910: 23 (*Acrops*)

*gambeyi* Léveillé, 1890; “Cochinchina” (AL)

Léveillé, A. 1910: 23 (*Acrops*)

*higonia* Lewis, 1888; Japan (AL, varA)

Léveillé, A. 1910: 23 (*Acrops*). Kolibáč, J. 2007a: 364. Nakane, T. et al. 1963: 181 (*Acrops*)

*perraudierei* Léveillé, 1905; Tonkin (AL)

Léveillé, A. 1910: 23 (*Acrops*)

*punctata* Fabricius, 1801; Sumatra, Moluccae, Borneo (AL)

Léveillé, A. 1910: 23

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**Map 4.** A distribution of the tribe Gymnochilini.
Léveillé, A. 1910: 23 (syn. buprestoides Weber, 1801); (Sumatra, Moluccae) (AL)
Léveillé, A. 1910: 23 (syn. metallica Dalman, 1824); (Borneo) (AL)
Léveillé, A. 1910: 23 (syn. punctata var. dohrni Reitter, 1876). Kolibáč, J. 2005: 44 (redescription)

*weyersi* Léveillé, 1900; Sumatra (AL)
Léveillé, A. 1910: 23 (Acrops)

**Genus Gymnocheilis** Dejean, 1835

http://species-id.net/wiki/Gymnocheilis
Figs 4, 13, 14; Map 4

Dejean, P. F. M. A. 1835: 314

**Type species.** [Type species: *Peltis squamosa* Gray in Griffith and Pidgeon 1832; by monotypy]
Léveillé, A. 1910: 22 (Gymnochila). Kolibáč, J. 2005: 60 (Gymnochila, redescription). Kolibáč, J. 2006: 111 (Gymnochila, phylogeny). Reitter, E. 1876: 37 (Gymnochila). Leschen, R. A. B. & Lackner, T. 2013: 279, 289.

*Lepidopteryx* Hope, 1840 [Type species: *Peltis squamosa* Gray in Griffith and Pidgeon 1832; not *L. squamosa* Hope, 1840] See below for explanation of this synonymy.

*Gymnochila* Erichson, 1844 [Type species: *Trogosita vestita* Griffith, 1832 (= Gymnochila varia Fabricius, 1801); by monotypy]

**Remarks.** Yves Bousquet (pers. comm., 2010) kindly checked the nomenclatorial problem of *Leperina* that also bears upon the name of *Gymnocheilis*: “... the type species of Lepidopteryx is Trogosita squamosa Gray, 1832 described from ‘Melville’s Island’, not Lepidopteryx squamosa Hope, 1840. In his second and third catalogues, Dejean proposed the genus Gymnocheilis for squamosa Gray. So Lepidopteryx Hope, 1840 is a senior synonym of Gymnochila Erichson, 1844, which in turn is a junior synonym of Gymnocheilis Dejean, 1835.” The correct name Gymnocheilis has already been used by Leschen and Lackner (2013).

**Description.** Body size: about 9.0–14.0 mm. Body shape elongate. Gular sutures reduced. Frontoclypeal suture absent. Frons: longitudinal groove or depression absent. Cranium ventrally: tufts of long setae at sides absent. Submentum of males: ctenidium present. Submentum: ctenidium present. Antennal groove present. Eyes: size large, dorsal. Eyes number: four. Epicranial acumination deep. Lacinial hooks absent. Galea: shape clavate. Galea: ciliate setae absent. Mediostipes-Lacinia fused together. Palpifer: outer edge denticulate. Mandibular apical teeth number: one. Mola present. Penicillus (at base) present (fine, often membranous). Pubescence above mola or cutting edge absent. Ventral furrow absent. Basal notch deep. Labrum-Cranium not fused. Lateral tormal process: projection projection not developed (all remaining). Ligula: ciliate setae absent. Ligula rigid, not retroflexed, weakly emarginate. Hypopharyngeal sclerite absent. Antenna 11-segmented. Antennal club
asymmetrical, sensorial fields present. Front coxal cavities externally closed, internally open. Pronotum transverse. Prepectus absent. Middle coxal cavities closed. Elytra: long hairs absent. Epipleuron thin. Elytral interlocking mechanism present, carinae reduced. Elytral punctation regular, scales present. Wing: radial cell oblong (or reduced), wedge cell present, cross vein MP3-4 present, cross vein AA1+2-3+4 present. Front tibiae: spines along side moderate. Hooked spur present. Claws: denticle absent. Parasternites number along ventrites III–VII: one. Spiculum gastrale absent. Tegmen composed of three parts.

**Biology.** Probably predatory. Sometimes collected at light.

**Distribution.** Africa south of the equator.

**Species:**

*lepidoptera* Reitter, 1876; Abyssinia (AL)

Léveillé, A. 1910: 22. Reitter, E. 1876: 39

† *obesa* Heer, 1862; Germany: Öhningen; Tertiary: Middle Eocene (varA)

Ponomarenko, A. G. & Kireichuk, A. G. 2005–2008: http://zin.ru/animalia/Coleoptera/rus/paleosy2.htm. Schmied, H. et al. 2009: 23

*rugosa* Thunberg, 1808; Guinea (AL)

*sparsuta* J. Thomson, 1858; Gabon (AL)

Léveillé, A. 1910: 22. (syn. *Gymnochila angulicollis* J. Thomson, 1858). Kolibáč, J. 2005: 60 (redescription). Reitter, E. 1876: 38

*subfasciata* J. Thomson, 1858; Gabon (AL)

Léveillé, A. 1910: 22. Reitter, E. 1876: 39

*varia* Fabricius, 1801; South Africa (AL)

Léveillé, A. 1910: 22 (syn. *Gymnochila adspersa* Boheman, 1848) (Caffraria)

Léveillé, A. 1910: 22 (syn. *Gymnochila laticollis* Boheman, 1848) (Caffraria)

Léveillé, A. 1910: 22 (syn. *Gymnochila squamosa* Gray in Griffith 1832) (Cap)

Kolibáč, J. 2005: 60 (redescription). Reitter, E. 1876: 38

**Genus Kolibacia Leschen & Lackner, 2013**

http://species-id.net/wiki/Kolibacia

Fig. 4; Map 4

Leschen, R. A. B. & Lackner, T. 2013: 288.

**Type species.** *Leperina tibialis* Reitter, 1889 [designated by Leschen and Lackner 2013]

Schawaller, W. 1993: 4 (*Leperina* and *Seidlitzella*, Palaearctic species). Yoshitomi, H. & Lee, C.-F. (in press).

**Description** (according to Leschen and Lackner 2013). Body size: 7.2–9.1 mm. Colour of body black. Dorsal vestiture consisting of scales. Head extending beyond anterior angles of pronotum. Frons more or less horizontal with mandibles visible from above. Median lobe of clypeus absent. Edge of labrum straight. Eyes entire. Gena acute.
Supraocular scales present. Antenna 11-segmented with a loose club; lengths of antennomere II and III equal; antennomere XI circular, about as long as wide. Prothorax with lateral carinae unevenly crenulate; anterior angles projecting or acute; posterior angles angulate. Surface of pronotal disc even; punctuation uniform and bearing scales. Procoxae visible in lateral view. Hypomeron bearing scales; anterior portion rugose. Length of elytra 4× as long as pronotum or even longer; seven elytral carinae present, not beaded and not rising significantly above surface of elytral disc; sublateral keel absent; intercalaral space bipunctate; window punctures present and simple; intercalaral scales never countersunk within punctures; lateral carina simple; epipleuron visible in lateral view. Hind wings present, fully developed; MP3 spur absent. Aedeagus (Kolibáč 2005) with parameres apically angulate; inner outline between parameres weakly sinuate or straight; length of parameres longer than base of tegmen. Protibial edge smooth, mucro absent; protibial spurs longer than tarsomere 2, anteriormost protibial spur greatly enlarged.

Larva (according to Kolibáč 2005): Frontal arms V-shaped. Epicranial stem reduced. Endocarina present. Mandibular apical teeth number: two, horizontally situated. Lacinia mandibulae with several small spines. Mola absent. Maxillary palp 3-segmented. Mala: bidentate protrusion absent. Cardo: size much smaller than stipes. Ligula absent. Labial palpi 2-segmented. Prementum in single part. Antennal joints 1 and 2 elongate. Thoracic sclerites pattern (dorsally) 1-2-2. Abdominal segment IX not divided. Tergite IX flat. Urogomphi present, hooked; median process absent.

**Biology.** The adults and larvae are probably predatory. An adult *K. squamulata* was, for example, found in rotten birch (Schawaller 1993). Mamaev (1976) remarked that *K. squamulata* develops under bark and sometimes within the trunks of various deciduous trees infested with the larvae of *Melandrya*, *Tremex fuscicornis*, *Mesosa*, *Plagionotus* and others. On the other hand, Leschen and Lackner (2013) consider both species mycophagous, citing Kryzhanovskij (1965) and Nikitsky (1992). The former source is unknown to me, but the latter author considers *K. squamulata* predatory. However, *K. squamulata* differs from *Leperina* in the presence of the mandibular mola which is definitely a feature of mycophagous cleroids, although it may also be considered a primitive (rudimentary) character, a trait seen in similar fashion in certain Gymnocheilis species (see figures in Kolibáč 2005).

**Distribution.** Russian Far East, Mongolia, North Korea, North-eastern China, Japan: Hokkaido, Tsushima.

**Species:**

*okinawana* Yoshitomi & Lee (in press); Japan: Okinawa, Amami-Ōshima (AD)

Yoshitomi, H. & Lee, C.-F. (in press)

*regularis* Grouvelle, 1913; Taiwan, Vietnam (varA)

Grouvelle, A. 1913: 46 (*Leperina*). Yoshitomi, H. & Lee, C.-F. (in press; comb. Kolibacia, key)

*squamulata* Gebler, 1830 (*Peltis*); Russian Far East, Mongolia, North Korea, North-eastern China (varA, JK)

Léveillé, A. 1910: 22. Esaki, T. et al. 1951: 1061 (*L. squamulosa*). Kolibáč, J. 2006: 107 (*L. squamulosa*). Kolibáč, J. 2007a: 364. Löbl & Smetana 2010: 26
(Lepidopteryx). Mamaev, B. M. 1976: 1652 (larva, Lepidopteryx). Nakane, T. et al. 1963: 181 (L. squamulosa). Nikitsky, N. B. 1992: 81 (L. squamulosa). Leschen, R. A. B. & Lackner, T. 2013: 288. (comb. Kolibacia). Schawaller, W. 1993: 3 (key, Leperina). Yoshitomi, H. & Lee, C.-F. (in press; key)

tsushimana Nakane, 1985; Japan: Tsushima (var A)
Nakane, T. 1985: 162 (Lepidopteryx squamulata tsushimana). Kolibáč, J. 2009: 128 (Lepidopteryx squamulata tsushimana). Miyatake, M. 1985: 148 (Leperina tsushima). Leschen, R. A. B. & Lackner, T. 2013: 288. (comb. Kolibacia squamulata tsushimana). Yoshitomi, H. & Lee, C.-F. (in press; K. tsushimana; key)
tibialis Reitter, 1889 (Leperina); Japan: Hokkaido (var A)
Léveillé, A. 1910: 22. Esaki, T. et al. 1951: 1061. Kolibáč, J. 2007a: 364. Löbl & Smetana 2010: 26 (Lepidopteryx). Nakane, T. et al. 1963: 181. Nikitsky, N. B. 1992: 81. Leschen, R. A. B. & Lackner, T. 2013: 288. (comb. Kolibacia). Yoshitomi, H. & Lee, C.-F. (in press; key)

Genus Leperina Erichson, 1844
http://species-id.net/wiki/Leperina
Figs 4, 5; Map 4

Erichson, W. F. 1844: 453.

Type species. Trogosita decorata Erichson, 1842 [designated by Kolibáč 2005]
Léveillé, A. 1910: 21. Crowson, R. A. 1964a: 299. Kolibáč, J. 2005: 65 (redescrip-
tion). Kolibáč, J. 2006: 111 (phylogeny). Kolibáč, J. 2007a: 364. Kolibáč, J. 2009: 127 (Lepidopteryx). Leschen, R. A. B. & Lackner, T. 2013: 289. Matthews, E. G. 1992: 3 (key, Lepidopteryx). Reitter, E. 1876: 35.

Onyschomorpha Arrow, 1900 [Type species: Onyschomorpha marmorata Arrow, 1900; synonymized by Kolibáč, J. 2005: 65]
Léveillé, A. 1910: 23 (Onyschomorpha). Kolibáč, J. 2007a: 364 (Onyschomorpha, as a synonym)

Remarks. There has been a lack of clarity about the names Leperina and Lepidop-
teryx in the last decade or so. Leperina tended to be used by European authors while their overseas, mainly antipodean, colleagues preferred Lepidopteryx. I referred – cor-
rectly – to the genus as Leperina in 2005, 2006 and in Catalogue of Palaearctic Beetles edited by I. Löbl and A. Smetana (Kolibáč 2007a). Unfortunately, swayed by various sources, I mistakenly changed the name Leperina to Lepidopteryx in the Errata to Volume 4 of the “Catalogue” (Kolibáč 2009, Löbl and Smetana 2010).

Schawaller (1993: 2) considered Lepidopteryx a synonym of Leperina because of “invalid description” of the genus.
Most recently, Leschen and Lackner (2013: 289) justified the name Leperina in their review of the Pacific Gymnochilini thus: “[...] Gymnocheilis Dejean, 1835 and
Figure 5. **A** Xenoglena sp.1, Vietnam **B** Xenoglena sp.2, Vietnam **C** Xenoglena quadrisignata (cf. yunnanensis) **D** Leperina (syn. Onychomorpha) marmorata **E** Leperina decorata **F** Narcisa decidua **G** Narcisa sp., Seram **H** Phanodesta cribraria, “Chili” **I** Phanodesta sp., Juan Fernandez Isl. **J** Seidlitzella procera.
Lepidopteryx Hope, 1840, are objective synonyms because they share type species (Dejean, 1835: 314 listed three species under his genus, but two are nomina nuda). The type species of Lepidopteryx and Gymnocheilis (Trogo\(s\)ita squamosa Gray in Griffith & Pidgeon, 1832 a synonym of Trogo\(s\)ita varia Fabricius, 1801: 151) was described from 'Melville’s Island', but the figure of this species matches African species of Gymnocheilis Dejean with split-eyes and, therefore, the taxa contained within Gymnocheilis are not relevant phylogenetically to true Leperina nor Phanodesta (all with normal eyes). Gymnocheilis Dejean, 1835 has priority of the later name Gymnochila Erichson, 1844 (type species: Trogo\(s\)ita vestita Griffith, 1832, by monotypy, a synonym of Gymnochila varia (Fabricius, 1801) according to Léveillé, 1910: 22), although Reitter (1876: 37) placed Lepidopteryx as a synonym of Gymnochila. Note that White (1846) misspelled Gymnocheilis as Gymnocheila and wrongly attributed the name to Gray.

**Description** (according to Leschen and Lackner 2013). Body size: 5.5–15.6 mm. Colour of body black and red-brown, unicolorous to multicoloured. Dorsal vestiture consisting of scales. Head extending beyond anterior angles of pronotum. Frons more or less horizontal with mandibles visible dorsally. Median lobe of clypeus absent. Edge of labrum weakly emarginate or straight. Eyes entire. Gena acute. Supraocular scales present or absent. Antenna 11-segmented with loose antennal club, lengths of antennomeres II and III equal or not; antennomere XI distinctly longer than wide and circular, about as long as wide. Prothorax with lateral carinae simple, weakly or unevenly crenulate; anterior angles projecting or acute; posterior angles of prothorax angulate. Pronotal surface generally uneven, punctuation uniform or not with or without median glabrous areas; centre of disc usually bearing scales. Procoxae visible in lateral view. Hypomeron with or without scales, setose or glabrous; anterior portion rugose. Length of elytra 2.5–4× as long as pronotum or greater; disc with three simple carinae that are not beaded; sublateral keel absent; intercarinal space multipunctate; window punctures present and tuberculate; intercarinal scales of elytral disc variable, from very short and oval that may be countersunk within punctures to elongate with lengths at least 2.5× longer than wide; lateral carina simple; epipleuron hidden in lateral view. Hind wings present, fully developed; MP3 spur present (Kukalová-Peck and Lawrence 1993). Aedeagus (Kolibáč 2005) with parameres apically rounded to acute, inner outline between parameres bisinuate, weakly sinuate, or straight, length of parameres variable, median strut acute. Protibial edge spinate, mucro absent or weakly developed, spurs longer than tarsomere 2 with anteriormost spur greatly enlarged.

A description by Kolibáč (2005) based on *L. decorata*: Body shape elongate. Gular sutures wide, convergent at apex. Fronto\(c\)lypeal suture absent. Frons: longitudinal groove or depression absent. Cranium ventrally: tufts of long setae at sides present. Submentum: ctenidium present. Antennal groove present. Eyes: size large, dorsal. Eyes number: two. Epicranial acumination deep. Lacinial hooks absent. Galea: shape clavate. Galea: ciliate setae absent. Mediostipes-Lacinia fused together. Palpifer: outer edge even. Mandibular apical teeth number: two, horizontally situated. Mola reduced but present. Penicillus (at base) present (fine, often membranous). Pubescence above mola or cutting edge absent. Ventral furrow absent. Basal notch shallow or absent. Labrum-
Cranium not fused. Epipharyngial sclerite present. Lateral tormal process: projection curved downwards, processes not connected (Airora). Ligula: ciliate setae absent. Ligula rigid, not retroflexed, weakly emarginate. Hypopharyngeal sclerite consisting of two separate parts. Antenna 11-segmented. Antennal club asymmetrical, sensorial fields present. Front coxal cavities externally closed, internally open. Pronotum transverse. Prepectus present. Middle coxal cavities open. Elytra: long hairs absent. Epipleuron moderate. Elytral interlocking mechanism present, carinae conspicuous. Elytral punctuation regular, scales present. Wing: radial cell triangular, wedge cell present, cross vein MP3-4 present, cross vein AA1+2-3+4 present. Front tibiae: spines along side moderate. Hooked spur present. Claws: denticle absent. Parasternites number along ventrites III–VII: two. Spiculum gastrale absent. Tegmen composed of three parts.

**Biology.** Both larva and adult are predatory. *L. decorata* and *L. monilata* were found in stems of *Eucalyptus obliqua*, where they were preying on larvae of *Epithora dorsalis* (Bashford 1994). The latter author notes a single-year life-cycle for the *Lepierina* species (referred as *Lepidopteryx*). Adults have also been reared on *Acacia dealbata* (Bashford 1991).

**Distribution.** Australia incl. Tasmania, New Zealand, New Caledonia, New Guinea.

**Species:**

*adusta* Pascoe, 1860; Melbourne (AL)
  Léveillé, A. 1910: 21

*burnettensis* MacLeay, 1871; Gayndah (AL)
  Léveillé, A. 1910: 21

*cincta* Léveillé, 1889; New Zealand (AL)
  Léveillé, A. 1910: 21

*cirrosa* Pascoe, 1860; Moreton Bay (AL)
  Léveillé, A. 1910: 21. Hawkeswood, T. J. 1991: 159 (biology, Lepidopteryx).
  Hawkeswood, T. J. 1992: 229 (biology, Lepidopteryx)

*conspicua* Olliff, 1885; Australia (AL)
  Léveillé, A. 1910: 21

*decorata* Erichson, 1842; Tasmania (AL)
  Léveillé, A. 1910: 21. Kolibáč, J. 2005: 65 (redescription)
  Léveillé, A. 1910: 21 (syn. Leperina gayndahensis MacLeay, 1871); (Gayndah)

*fraterna* Olliff, 1885; Australia (AL)
  Léveillé, A. 1910: 21

*lacera* Pascoe, 1860; Viti Isl. (AL)
  Léveillé, A. 1910: 21. Léveillé, A. 1910: 21 (syn. Leperina signoreti Reitter, 1876).
  Kukalová-Peck, J. & Lawrence, J. F. 1993: 243 (morphology of wing)

*lichenea* Fauvel, 1866; New Caledonia (AL)
  Léveillé, A. 1910: 21

*lifuana* Fauvel, 1903; Lifu Isl. (AL)
  Léveillé, A. 1910: 21

*loriae* Léveillé, 1893; New Guinea (AL)
  Léveillé, A. 1910: 21
marmorata Arrow, 1900 (Onyschomorpha); Christmas Isl. (AL)
  Léveillé, A. 1910: 23 (Onyschomorpha Arrow, 1900)
mastersi MacLeay, 1869; Gayndah (AL)
  Léveillé, A. 1910: 21
monilata Pascoe, 1872 (= moniliata Blackburn, 1902); Australia (AL)
  Léveillé, A. 1910: 22. Reitter, E. 1876: 31 (Peltis)
opatrooides Léveillé, 1884; New Guinea (AL)
  Léveillé, A. 1910: 22
seposita Olliff, 1885; Australia (AL)
  Léveillé, A. 1910: 22
spercheoides Léveillé, 1878; New Caledonia (AL)
  Léveillé, A. 1910: 22
turbata Pascoe, 1863; Australia (AL)
  Léveillé, A. 1910: 22. Léveillé, A. 1910: 22 (syn. Leperina fasciculata Redttenbacher, 1868)

Genus Narcisa Pascoe, 1863
http://species-id.net/wiki/Narcisa

Fig. 5; Map 4

Pascoe, F. P. 1863: 28.

Type species. Narcisa decidua Pascoe, 1863 [by monotypy]
  Léveillé, A. 1910: 23. Kolibáč, J. 2005: 69 (redescription). Kolibáč, J. 2006: 111 (phylogeny). Reitter, E. 1876: 43.

Remarks. The genus is apparently related to Anacypta and Xenoglena. The body is larger than in Anacypta but not so slender as in Xenoglena, moreover perfectly covered in scales. Further to the three species described, I have also encountered some undescribed species, all of them distributed in the Indonesian islands.

Description. Body size: about 7.0–9.0 mm. Body shape flat. Gular sutures narrow, subparallel at apex. Frontoclypeal suture absent. Frons: longitudinal groove or depression absent. Cranium ventrally: tufts of long setae at sides absent. Submentum: ctenidium present. Antennal groove present. Eyes: size large, dorsal. Eyes number: four. Epicranial acumination absent. Lacinial hooks absent. Galea: shape clavate. Galea: ciliate setae absent. Mediostipes-Lacinia fused together. Palpifer: outer edge even. Mandibular apical teeth number: two, vertically situated. Mola absent. Penicillus (at base) long setae. Pubescence above mola or cutting edge absent. Ventral furrow absent. Basal notch shallow or absent. Labrum-Cranium not fused. Epipharyngial sclerite present. Lateral tormal process: projection curved downwards, processes not connected (Airora). Ligula: ciliate setae absent. Ligula rigid, not retroflexed, weakly emarginate. Hypopharyngeal sclerite absent. Antenna 11-segmented. Antennal club asymmetrical, sensorial fields present. Front coxal cavities externally closed, internally
open. Pronotum transverse. Prepectus absent. Middle coxal cavities open. Elytra: long hairs absent. Epipleuron moderate. Elytral interlocking mechanism present, carinae reduced. Elytral punctuation regular, scales present. Wing: radial cell oblong (or reduced), wedge cell present, cross vein MP3-4 present, cross vein AA1+2-3+4 present. Front tibiae: spines along side reduced. Hooked spur present. Claws: denticle absent. Parasternites number along ventrites III–VII: one. Spiculum gastrale absent. Tegmen composed of three parts.

**Biology.** Unknown, probably predatory like *Anacypta.*

**Distribution.** Indonesia (species that remain formally undescribed are known from Sulawesi and other islands).

**Species:**

*bimaculata* Gestro, 1879; Sumatra (AL)

*Léveillé, A. 1910: 23*

*decidua* Pascoe, 1863; Batchian (AL)

*Léveillé, A. 1910: 23. Kolibáč, J. 2005: 69 (redescription). Reitter, E. 1876: 43*

*lynceus* Olliff, 1883; Borneo (AL)

*Léveillé, A. 1910: 23*

**Genus Phanodesta Reitter, 1876**

[http://species-id.net/wiki/Phanodesta](http://species-id.net/wiki/Phanodesta) Fig. 5; Map 4

Reitter, E. 1876: 31.

**Type species.** *Phanodesta cordaticollis* Reitter, 1876 [designated by Kolibáč 2005]

*Léveillé, A. 1910: 20. Crowson, R. A. 1964a: 299. Kolibáč, J. 2005: 77 (redescription). Kolibáč, J. 2006: 111 (phylogeny). Leschen, R. A. B. & Lackner, T. 2013: 290.

**Remarks.** As mentioned previously, six *Phanodesta* species from Juan Fernandez Island have been considered peculiar wingless beetles, with a form of elytral sculpture that is unknown in other trogossitids. Two analyses have shown a relationship for the genus within Gymnochilini, perhaps as a strongly-derived descendent of Australian *Leperina* (Kolibáč 2006, 2008). Most recently, Leschen and Lackner (2013) revised and redescribed the genus, established several new species from New Zealand, and combined some *Leperina* with *Phanodesta* species. They also discovered an uncommon distribution pattern comprising New Zealand (and adjacent islands) and Juan Fernandez Island.

**Description** (according to Leschen and Lackner 2013). Body size: 5.4–11.5 mm. Colour of body black or red-brown. Dorsal vestiture consisting of setae, scales or both. Head extending beyond anterior angles of pronotum. Frons more or less horizontal with mandibles visible in dorsal view. Median lobe of clypeus absent. Edge of labrum weakly to strongly emarginate or straight. Eyes entire. Gena acute. Supra-ocular scales present or absent. Antenna 11-segmented with loose club; rela-
tive lengths antennomeres II and III variable; antennomere XI distinctly longer than wide and circular, about as long as wide or shorter. Prothorax with lateral carinae simple, or weakly to strongly and evenly or unevenly crenulate; anterior angles projecting or acute; posterior angles angulate. Pronotal surface even or uneven with impressions or shallow grooves; punctuation uniform or not, with or without median area glabrous. Procoxae visible in lateral view. Hypomeron setose, glabrous, or bearing scales; anterior portion of hypomeron weakly to strongly rugose. Length of elytra 2.5–4× or less than 2.5× as long as pronotum; carinae present and usually beaded, with punctures located centrally within it, or adjacent and contacting carina; number of carinae variable, but usually 7–9; sublateral keel absent or present; intercarinal space apunctate; window punctures absent; intercarinal scales of disc never countersunk within puncture, elongate with lengths 2.5× longer than wide or ovate to circular with lengths less than 2.5× longer than wide; scales erect or not overlapping to strongly overlapping and adpressed; lateral carina simple; epipleuron visible or hidden in lateral view. Hind wings present and fully developed with MP3 spur present or vestigial and in the form of small buds, or absent. Aedeagus with parameres apically angulate, rounded or acute; inner outline between parameres bisinuate, weakly sinuate or straight; length of parameres and shape of median strut variable. Protibial edge smooth or crenulate; mucro absent or weakly developed; spurs longer than tarsomere 2 with anteriormost protibial spur greatly enlarged. Bursa and spermatheca bulbous, spermatheca about one fifth the size of the bursa and bearing a small tubulate spermathecal gland.

A description by Kolibáč (2005) based on *P. cribraria*: Body shape elongate. Gular sutures reduced. Frontoclypeal suture absent. Frons: longitudinal groove or depression absent. Cranium ventrally: tufts of long setae at sides present. Submentum: ctenidium absent. Antennal groove present. Eyes: size flat. Eyes number: two. Epicranial acumenation deep. Lacinial hooks absent. Galea: shape clavate. Galea: ciliate setae absent. Mediostipes-Lacinia fused together. Palpifer: outer edge even. Mandibular apical teeth number: two, vertically situated. Mola reduced but present. Penicillus (at base) present (fine, often membranous). Pubescence above mola or cutting edge absent. Ventral furrow ciliate. Basal notch shallow or absent. Labrum-Cranium not fused. Epipharyngeal sclerite present. Lateral tormal process: projection curved downwards, processes not connected (*Airora*). Ligula: ciliate setae absent. Ligula rigid, strongly retroflexed, weakly emarginate. Hypopharyngeal sclerite absent. Antenna 11-segmented. Antennal club asymmetrical, sensorial fields present. Front coxal cavities externally closed, internally open. Pronotum transverse. Prepectus absent. Middle coxal cavities open. Elytra: long hairs absent. Epipleuron moderate. Elytral interlocking mechanism present, carinae reduced. Elytral punctuation regular, scales absent. Wings – present or absent. Front tibiae: spines along side moderate. Hooked spur present. Claws: denticle absent. Parasternites number along ventrites III–VII: two. Spiculum gastrale absent. Coxitae divided.

**Biology.** Probably predatory. Adults may be collected at night on fungi and on the trunks of dead, dying and live trees, or on the ground (Leschen and Lackner 2013).
Larvae of *Phanodesta* have been found in association with adults and are thought to be predatory beneath the bark of dead trees (Klimaszewski and Watt 1997). *Phanodesta nigrosparsa* is restricted to the *Phyllocladus trichomanoides* and *Agathis australis* trees, while *P. brounii* is a generalist (Kuschel 1990).

**Distribution.** Chile: Juan Fernandez Island; New Caledonia, New Zealand mainland and offshore islands, Lord Howe Island.

**Species:**

*argentea* Montrouzier, 1860 (*Nitidula*); New Caledonia (AL)
Léveillé, A. 1910: 21 (*Leperina*). Leschen, R. A. B. & Lackner, T. 2013: 300 (comb. from *Leperina*; maybe conspecific with *L. spercheoides*)

*brevipennis* Reitter, 1876; Chile: Juan Fernandez Island (AL)
Léveillé, A. 1910: 20. Reitter, E. 1876: 33. Leschen, R. A. B. & Lackner, T. 2013: 300

*brounii* Pascoe, 1880; New Zealand (AL)
Léveillé, A. 1910: 21 (*Leperina*). Leschen, R. A. B. & Lackner, T. 2013: 291 (comb. from *Leperina*)

*carinata* Leschen & Lackner, 2013; New Zealand (AD)
Leschen, R. A. B. & Lackner, T. 2013: 292

*cribraria* Blanchard, 1851 (*Toxicum*); Chile: Juan Fernandez Island (AL)
Léveillé, A. 1910: 20 (syn. *Phanodesta cordaticollis* Reitter, 1876). Léveillé, A. 1910: 21 (syn. *Phanodesta picea* Germain, 1855). Kolibáč, J. 2005: 77 (redescription).
Leschen, R. A. B. & Lackner, T. 2013: 300. Reitter, E. 1876: 32 (*Phanodesta cordaticollis* Reitter, 1876)

*cribrata* Germain, 1855; Chile: Juan Fernandez Island (AL)
Léveillé, A. 1910: 21 (syn. *Phanodesta angulata* Reitter, 1876). Leschen, R. A. B. & Lackner, T. 2013: 300. Reitter, E. 1876: 33 (*P. angulata*)

*francoisi* Léveillé, 1909; New Caledonia (AL)
Léveillé, A. 1910: 21 (*Leperina*). Leschen, R. A. B. & Lackner, T. 2013: 300 (comb. from *Leperina*; combination based on an image of the type)

*guerini* Montrouzier, 1860 (*Nitidula*); New Caledonia (AL)
Léveillé, A. 1910: 21 (*Leperina*). Leschen, R. A. B. & Lackner, T. 2013: 300 (comb. from *Leperina*). Reitter, E. 1876: 35 (*Phanodesta*)

*iohowi* Germain, 1898; Chile: Juan Fernandez Island (AL)
Léveillé, A. 1910: 21 (*P. johowi*). Leschen, R. A. B. & Lackner, T. 2013: 300

*manawatawhi* Leschen & Lackner, 2013; New Zealand (AD)
Leschen, R. A. B. & Lackner, T. 2013: 293

*oculata* Leschen & Lackner, 2013; New Zealand (AD)
Leschen, R. A. B. & Lackner, T. 2013: 295

*nigrosparsa* White, 1846 (*Gymnocheila*); New Zealand (AL)
Léveillé, A. 1910: 22 (*Leperina*). Klimaszewski, J. & Watt, J. C. 1997: 43 (*Lepidopteryx*). Leschen, R. A. B. & Lackner, T. 2013: 294 (comb. from *Leperina*). Reitter, E. 1876: 35 (*Phanodesta*)

*pubescens* Germain, 1898; Chile: Juan Fernandez Island (AL)
Léveillé, A. 1910: 21. Leschen, R. A. B. & Lackner, T. 2013: 300
pudica Olliff, 1889 (*Ostoma*); Lord Howe Island (varA)
Léveillé, A. 1910: 32 (*Ostoma incertae sedis*). Leschen, R. A. B. & Lackner, T. 2013: 299 (comb. from *Ostoma*)

**robusta** Pic, 1924; Chile: Juan Fernandez Island (varA)
Pic, M. 1924: 378

**shandi** Broun, 1909; New Zealand (varA)
Broun, 1909: 307 (*Leperina*). Leschen, R. A. B. & Lackner, T. 2013: 296 (comb. from *Leperina*)

**signoreti** Montrouzier, 1860 (*Leperina*); New Caledonia (AL)
Léveillé, A. 1910: 22 (*Leperina*). Leschen, R. A. B. & Lackner, T. 2013: 300 (comb. from *Leperina*)

**sobrina** White, 1846 (*Gymnocheila*); New Zealand (AL)
Léveillé, A. 1910: 22 (*Leperina*). Brookes, A. 1932: 28 (*Leperina interrupta*; syn. by Leschen, R. A. B. & Lackner, T. 2013: 296). Léveillé, A. 1910: 22 (syn. *Leperina fasciolata* Blanchard, 1853). Léveillé, A. 1910: 22 (syn. *Leperina nigro-sparsa* Blanchard, 1853; homonym with *L. nigrosparsa* White, 1846). Leschen, R. A. B. & Lackner, T. 2013: 296 (comb. from *Leperina*). Reitter, 1876: 35 (*Phanodesta*). Sharp, 1877: 266 (*Leperina farinosa*; syn. by Leschen, R. A. B. & Lackner, T. 2013: 296)

**tepaki** Leschen & Lackner, 2013; New Zealand (AD)
Leschen, R. A. B. & Lackner, T. 2013: 297

**variegata** Germain, 1855; Chile: Juan Fernandez Island (AL)
Léveillé, A. 1910: 21. Léveillé, A. 1910: 21. (syn. *Phanodesta costipennis* Reitter, 1876).
Leschen, R. A. B. & Lackner, T. 2013: 300. Reitter, E. 1876: 34 (*P. costipennis*)

**wakefieldi** Sharp, 1877 (*Leperina*); New Zealand (AL)
Léveillé, A. 1910: 22 (*Leperina*). Leschen, R. A. B. & Lackner, T. 2013: 298 (comb. from *Leperina*)

Genus *Seidlitzella* Jakobson, 1915
http://species-id.net/wiki/Seidlitzella
Fig. 5; Map 4

Jakobson, G. G. 1915: 893.

Type species. *Peltis procera* Kraatz, 1858 [by monotypy]
Kolibáč, J. 2005: 82 (redescription). Kolibáč, J. 2006: 111 (phylogeny). Kolibáč, J. 2007a: 365. Schawaller, W. 1993: 2 (synonymized with *Leperina*). Leschen, R. A. B. & Lackner, T. 2013: 279, 289.

*Cymba* Seidlitz, 1875 (homonym) [type species: *Peltis procera* Kraatz, 1858; by original designation and monotypy]
Léveillé, A. 1910: 20. Kolibáč, J. 2007a: 365. Reitter, E. 1876: 30. Schawaller, W. 1993: 2.
Peltocymba Reitter, 1920 [type species: Peltis procera Kraatz, 1858; by original designation and monotypy]

Kolibáč, J. 2007a: 365. Schawaller, W. 1993: 2.

Remarks. Schawaller (1993) synonymized Seidlitzella with Leperina. However, he based his observations on a comparison between Seidlitzella procera and two Palaearctic Leperina species, L. squamosa and L. tibialis. Australian species are often very different, although some of their morphological details may also be similar (L. decorata is the type species of Leperina). Recently, Leschen and Lackner (2013) have established the new genus Kolibacia for the Palaearctic Leperina squamosa and L. tibialis. However, as their paper centred chiefly on Phanodesta, a differential diagnosis between Seidlitzella and Kolibacia was not addressed in detail. The main differences are explained in “A key to the species” of Gymnochilini, below.

Description. Body size: 11.0–19.0 mm. Body shape elongate. Gular sutures wide, convergent at apex. Frontoclypeal suture absent. Frons: longitudinal groove or depression absent. Cranium ventrally: tufts of long setae at sides present. Submentum of males: ctenidium present. Antennal groove present. Eyes: size flat. Eyes number: two. Epicranial acumination moderate. Lacinial hooks absent. Galea: shape clavate. Galea: ciliate setae absent. Mediostipes-Lacinia not fused. Palpifer: outer edge denticate. Mandibular apical teeth number: two, vertically situated. Mola absent. Penicillus (at base) present (fine, often membranous). Pubescence above mola or cutting edge absent. Ventral furrow absent. Basal notch shallow or absent. Labrum-Cranium not fused. Epipharyngial sclerite present. Lateral tormal process: projection curved downwards, processes not connected (Airora). Ligula: ciliate setae absent. Ligula rigid, weakly retroflexed, weakly emarginate. Hypopharyngeal sclerite absent. Antenna 11-segmented. Antennal club asymmetrical, sensorial fields present. Front coxal cavities externally closed, internally open. Pronotum transverse. Prepectus absent. Middle coxal cavities open. Elytra: long hairs absent. Epipleuron moderate. Elytral interlocking mechanism present, carinae conspicuous. Elytral punctuation regular, scales absent. Wing: radial cell oblong (or reduced), wedge cell present or absent, cross vein MP3-4 present, cross vein AA1+2-3+4 absent. Front tibiae: spines along side moderate. Hooked spur present. Claws: denticle absent. Parasternites number along ventrites III–VII: one. Spiculum gastrale absent. Tegmen composed of two parts. Coxitae undivided.

Biology. Predatory. Adults found on logs of various trees (e.g. the fir Abies cilicia), larvae found under pine bark (Schawaller 1993).

Distribution. Greece, Cyprus, Turkey.

Species:

procera Kraatz, 1858; Greece, Cyprus, Turkey (JK)

Léveillé, A. 1910: 20 (Cymba). Kolibáč, J. 2005: 82 (redescription). Kolibáč, J. 2007a: 365. Reitter, E. 1876: 31 (Cymba). Schawaller, W. 1993: 4 (larva)
Genus *Xenoglena* Reitter, 1876
http://species-id.net/wiki/Xenoglena
Fig. 5; Map 4

Reitter, E. 1876: 40.

**Type species.** *Xenoglena deyrollei* Reitter, 1876 [by monotypy]

Léveillé, A. 1910: 23. Kolibáč, J. 2005: 85 (redescription). Kolibáč, J. 2006: 111 (phylogeny). Kolibáč, J. 2007a: 364. Nikitsky, N. B. 1992: 81.

**Remarks.** Outer habitus resembles the jewel beetles (Buprestidae), especially those of the genus *Chrysobothris*. *Anacypta asahinai* Kono, 1938 was combined with *Xenoglena* by Kolibáč (2009). The combination is in accord with the opinion of Nikitsky (1992) and also my own independent study of the species. Nikitsky (*l.c.*) moreover suggested its synonymization with *Xenoglena quadrisignata*.

**Description.** Body size: about 7.0–10.0 mm. Body shape elongate. Gular sutures narrow, subparallel at apex. Frontoclypeal suture absent. Frons: longitudinal groove or depression absent. Cranium ventrally: tufts of long setae at sides absent. Submentum: ctenidium present. Antennal groove present. Eyes: size large, dorsal. Eyes number: four. Epicranial acumination absent. Lacinial hooks absent. Galea: shape clavate. Galea: ciliate setae absent. Medistipes-Lacinia fused together. Palpifer: outer edge even. Mandibular apical teeth number: two, vertically situated. Mola reduced but present. Penicillus (at base) long setae. Pubescence above mola or cutting edge absent. Ventral furrow absent. Basal notch shallow or absent. Labrum-Cranium not fused. Epipharyngeal sclerite present. Lateral temporal process: projection curved downwards, processes not connected (*Airora*). Ligula: ciliate setae absent. Ligula rigid, not retroflexed, weakly emarginate. Hypopharyngeal sclerite absent. Antenna 11-segmented. Antennal club asymmetrical, sensorial fields present. Front coxal cavities externally closed, internally open. Pronotum transverse. Prepectus absent. Middle coxal cavities open. Elytra: long hairs absent. Epipleuron thin. Elytral interlocking mechanism present, carinae reduced. Elytral punctuation regular, scales present. Wing: radial cell oblong (or reduced), wedge cell absent, cross vein MP3-4 present, cross vein AA1+2-3+4 absent. Front tibiae: spines along side reduced. Hooked spur present. Claws: denticle absent. Parasternites number along ventrites III–VII: one. Spiculum gastrale absent. Coxitae undivided.

**Biology.** Predatory. Adults dwell on fallen trees and dry branches, hunting for xylophagous insects. They fly and run at great speed and appear very like some jewel beetles in body shape.

**Distribution.** Indonesia, Malayan Peninsula, Russian Far East, Japan, northern China. A large body of material of perhaps-undescribed species is known to me from northern Laos.

**Species:**

*asahinai* Kono, 1938: 227 (*Acrops*); Japan (varA)
Nakane, T. et al. 1963: 181 (*Acrops*). Kolibáč, J. 2009: 128 (comb. with *Xenoglena*)

Note: maybe synonym of *X. quadrisignata*; opinion by Nikitsky 1992: 81
**Trogossitidae: A review of the beetle family, with a catalogue and keys**

*chrysobothroides* Léveillé, 1897; Malacca (AL)

Léveillé, A. 1910: 23

*deyrollei* Reitter, 1876; Java (AL)

Léveillé, A. 1910: 23. Kolibač, J. 2005: 87 (redescription). Reitter, E. 1876: 41

*fryi* Léveillé, 1899; Perak (AL)

Léveillé, A. 1910: 23

*quadrisignata* Mannerheim, 1852; Siberia, Mongolia, Far East, Japan, North Korea, China: Northeast Territory (varA)

Léveillé, A. 1910: 22 (*Gymnochila*). Kolibač, J. 2005: 86 (redescription). Kolibač, J. 2007a: 364. Nikitsky, N. B. 1992: 81. Reitter, E. 1876: 40 (*Gymnochila*)

*tetrasigma* Léveillé, 1878; Malacca (AL)

Léveillé, A. 1910: 23

*vicina* Léveillé, 1897; Malacca (AL)

Léveillé, A. 1910: 23

*yunnanensis* Léveillé, 1907; China: Yunnan (AL)

Léveillé, A. 1910: 23. Kolibač, J. 2007a: 364

**Tribe Trogossitini Latreille, 1802**

Latreille, P. A. 1802: 110.

**Type genus:** *Trogossita* Olivier, 1790 (= *Temnoscheila* Westwood, 1830)

Burakowski, B. et al. 1986: 115 (Nemosomatinae). Kolibač, J. 2006: 120 (diagnosis, stat. n.). Kolibač, J. 2007a: 364 (phylogeny). Kolibač, J. 2008: 118–119 (phylogeny).

**Remarks.** Two character analyses of Trogossitini (Kolibač 2006, 2008) separate off a monophyletic group composed of the genera *Temnoscheila*, *Nemozoma*, *Tenebroides*, *Corticotomus*, and *Leipaspis*. The other two genera analyzed, *Airora* and *Alindria*, are more primitive. Their position in the cladogram of 2008 (p. 119) makes Trogossitini paraphyletic with reference to Gymnochilini but the original analysis (2006) unambiguously set the two groups apart as distinct monophyletic clades. A classification of *Seidlitzella* has been discussed above, in the “Remarks” section of the Gymnochilini entry.

There are also some genera that are not included in the two character analyses because of insufficient data sets, namely *Dupontiella*, *Elestora*, *Eupycnus*, *Euschaefferia*, and *Parallelodera*. The classification of all these rather advanced genera within Trogossitini is undeniable, apart from the monotypic *Elestora* which is obviously related to *Melambia*, for which the systematics are quite complicated and in need of revision.

Most of the members of Trogossitini lead the kind of life typical of predatory Cleridae, especially of the subfamilies Clerinae and Tillinae. Adults hunt for xylophagous insects (e.g. Curculionidae: Scolytinae, Bostrichidae) on branches and logs while larvae dwell and hunt under bark or in galleries. However, some trogossitine adults live in insect galleries together with their larvae (e.g. *Nemozoma*). The trogossitins are not as efficient in the air as the gymnochilins, and neither do they move so swiftly on the ground.
Key to the recent genera

1 Frons with conspicuous sharp longitudinal groove ........................................2
   – Frons without groove, with shallow depression at most ..........................3
2 Anterior part of cranium (frons) with two large horn-like processes; body extremely elongate, small (about 3–6 mm) .........................Nemozoma
   – Anterior part of cranium (frons) without distinct processes; body not extremely elongate, larger (about 7–25 mm) .......................Temnoscheila
3 Pronotum conspicuously elongate, weakly narrowed at base; body elongate and cylindrical .................................................................4
   – Pronotum transverse or quadrate or narrowed at base; elytra widest in apical third and somewhat flattened ........................................8
4 Pronotum somewhat cordate; elytra with carinae; large species (about 10–35 mm) .................................................................Alindria
   – Sides of pronotum nearly parallel; elytra without carinae; smaller species (about 2–15 mm) .........................................................5
5 Outer margins of all tibiae with large spines; antennae reach backwards anterior margin of pronotum; larger species (about 7–15 mm) ..........Airora
   – Outer margin of tibiae with 2–3 spines at apex at most; antennae reach back to beyond anterior margin of pronotum; smaller species (about 2–5 mm) ..6
6 Pronotum conspicuously narrowed (constricted) at base ......................Dupontiella
   – Pronotum not narrowed at base, oblong ..................................................7
7 Pronotum with distinctly raised lateral margins; submentum distinctly separated from gula in front, outer angles not prominent; at least front tibiae with spines at apex ........................................................Corticotomus
   – Pronotum without distinctly raised lateral margins, apical angles obliterated; submentum not distinctly separated from gula in front, outer angles prominent and produced apically at least to base of mandibles; tibiae without spines ..................................................................................Euschaefferia
8 Elytra with conspicuous carinae and regular punctation .........................9
   – Elytra without carinae, with regular sculpture only ................................10
9 Dorsal body surface distinctly flattened; very wide, black species, elytra with four striking orange spots; mesonotum with long orange hairs ......Elestora
   – Dorsal body surface not distinctly flattened, almost cylindrical; elongate, almost cylindrical, unicolorous (black or brown) species without colour pattern ..................................................................................Melambia
10 Body including head and pronotum distinctly elongate; pronotum constricted at base .................................................................Leipaspis
   – Body not so elongate; sides of pronotum subparallel or cordate ...........11
11 Tarsal pattern 4-4-4: 1st tarsomere coalescent with 2nd tarsomere in all pairs of legs; elytra rather convex ..............................................Parallelodera
   – Tarsal pattern 5-5-5; elytra rather flattened ............................................12
Genus *Airora* Reitter, 1876

http://species-id.net/wiki/Airora

Figs 1, 6; Map 5

Reitter, E. 1876: 18.

**Type species.** *Trogossita cylindrica* Serville, 1828 [designated by Barron 1971]

Léveillé, A. 1910: 7. Barron, J. R. 1971: 64. Kolibáč, J. 2005: 41 (redescription).

Kolibáč, J. 2006: 111 (phylogeny).

*Temnochilodes* Léveillé, 1890 [type species: *Temnochilodes dugesi* Léveillé, 1890]

Léveillé, A. 1910: 9. Kolibáč, J. 2005: 41 (synonymized)

**Description.** Body size: about 7.0–16.0 mm. Body shape elongate. Gular sutures narrow, subparallel at apex. Frontoclypeal suture absent. Frons: longitudinal groove or depression absent. Cranium ventrally: tufts of long setae at sides present. Submentum: ctenidium absent. Antennal groove present. Eyes: size flat. Eyes number: two. Epicranial acumination deep. Lacinial hooks absent. Galea: shape elongate. Galea: ciliate setae absent. Medioptipes-Lacinia not fused. Palpifer: outer edge denticulate. Mandibular apical teeth number: two, vertically situated. Mola reduced but present. Penicillus (at base) present (fine, often membranous). Pubescence above mola or cutting edge absent. Ventral furrow present. Basal notch moderate. Labrum-Cranium not fused. Epipharyngial sclerite present. Lateral tormal process: projection curved downwards, processes not connected (*Airora*). Ligula: ciliate setae absent. Ligula rigid, strongly retroflexed, deeply emarginate. Hypopharyngeal sclerite consisting of two separate parts. Antenna 11-segmented. Antennal club asymmetrical, sensorial fields present. Front coxal cavities externally closed, internally open. Pronotum elongate. Prepectus absent. Middle coxal cavities open. Elytra: long hairs absent. Epipleuron moderate. Elytral interlocking mechanism present, carinae reduced. Elytral punctuation regular, scales absent. Wing: radial cell oblong (or reduced), wedge cell present, cross vein MP3–4 present, cross vein AA1+2–3+4 absent. Front tibiae: spines along side large. Hooked spur present. Claws: denticle absent. Parasternites number along ventrites III–VII: one. Spiculum gastrale absent. Tegmen composed of two parts. Coxitae undivided.

Larva: Frontal arms V-shaped. Epicranial stem reduced. Endocarina present. Gular sutures conspicuous, parallel. Gula: anterior apodemes absent. Paragular sclerites present. Hypostomal rods absent. Stemmata number: five. Mandibular apical teeth number: two,
Figure 6. A *Alindria spectabilis* B *Alindria elongata* C *Alindria* sp., Thailand D *Airora cylindrica* E *Airora* (syn. *Temnochilodes*) *dugesi* F *Corticatomus* (syn. *Colydobius*) *divisus* G *Elestora fulgurata*. 
horizontally situated. Lacinia mandibulae absent. Mola absent. Maxillary palpi 3-segmented. Cardo: size much smaller than stipes. Labial palpi 2-segmented. Prementum in single part. Antennal joints 1 and 2 elongate. Sensory appendix very small. Thoracic sclerites pattern (dorsally) 1-2-2. Thoracic sclerites pattern (ventrally) 3+1+1. Abdominal segment IX not divided. Tergite IX flat. Urogomphi present, hooked; median process absent.

**Biology.** Predatory. In USA, adults dwell mostly on branches and logs of various species of pine. Some specimens were also collected from the bush *Cercidium correa-num* and some emerged from the fungus *Fomes applanatus*. *Airora minuta* adults were observed preying on the bark beetle *Hylocurus*. (All Barron 1971.)

**Distribution.** From Brazil to Canada.

**Species:**

*aequalis* Reitter, 1876; Canada, USA, Mexico (JRB)  
Barron, J. R. 1971: 65 (syn. *Airora bicolor* Casey, 1916; synonymized by Schaeffer 1920: 193?). Barron, J. R. 1971: 67 (syn. *Airora polita* Casey, 1916; synonymized by author).

Barron, J. R. 1971: 67 (syn. *Airora punctiventris* Casey, 1916; synonymized by author)

*apicalis* Reitter, 1876; Colombia (AL)  
Léveillé, A. 1910: 7

*bituberculata* Léveillé, 1905; Brazil (AL)  
Léveillé, A. 1910: 7

*canescens* Reitter, 1876; Central America (AL)  
Léveillé, A. 1910: 7
centralis Sharp, 1891; Mexico, Guatemala, Panama (AL)
  Léveillé, A. 1910: 7

cylindrica Serville, 1828; Canada, USA, Mexico (JRB)
  Léveillé, A. 1910: 7. Barron, J. R. 1971: 65 (syn. Airora nigellus Melsheimer, 1846; synonymized by whom?). Barron, J. R. 1971: 65 (syn. Airora teres Melsheimer, 1846; synonymized by author). Böving, A. G. & Craighead, F. C. 1931: 273 (larva). Léveillé, A. 1910: 7 (Airora teres Melsheimer, 1846 = syn. Airora aequalis Reitter, 1877; synonymized by Léveillé 1910: 7). Kolibáč, J. 2005: 42 (redescription). Reitter, E. 1876: 21 (syn. Hypophloeus teres Melsheimer, 1846)

decipiens Léveillé, 1899; Mexico (AL)
  Léveillé, A. 1910: 7

dugesi Léveillé, 1890; Mexico (AL)
  Léveillé, A. 1910: 9 (Temnochilodes). Kolibáč, J. 2005: 43 (redescription, combination)

ferruginea Léveillé, 1905; Venezuela (AL)
  Léveillé, A. 1910: 7

grouvellei Léveillé, 1889; Colombia (AL)
  Léveillé, A. 1910: 7

humeralis Léveillé, 1894; Brazil (AL)
  Léveillé, A. 1910: 7

longicollis Guérin, 1846; Central and South America (AL)
  Léveillé, A. 1910: 7 (syn. Airora clivinoides Reitter, 1876; synonymized by author?)

mathani Léveillé, 1878; Bolivia (AL)
  Léveillé, A. 1910: 7

minuta Schaeffer, 1918; USA: Arizona, California (JRB)
  Barron, J. R. 1971: 69

modesta Léveillé, 1907; Venezuela (AL)
  Léveillé, A. 1910: 7

parallelicollis Léveillé, 1894; Brazil, Venezuela (AL)
  Léveillé, A. 1910: 7

pollens Sharp, 1891; Mexico (AL)
  Léveillé, A. 1910: 7

procera Reitter, 1876; Bolivia, Paraguay (AL)
  Léveillé, A. 1910: 7

striatopunctata Reitter, 1876; West Indies, Brazil (AL)
  Léveillé, A. 1910: 7

sutorata Léveillé, 1894; Brazil (AL)
  Léveillé, A. 1910: 7

vicina Léveillé, 1903; Brazil (AL)
  Léveillé, A. 1910: 7

wagneri Léveillé, 1907; Argentina (AL)
  Léveillé, A. 1910: 8

yucatanica Sharp, 1891; Mexico (AL)
  Léveillé, A. 1910: 8
Genus *Alindria* Erichson, 1844
http://species-id.net/wiki/Alindria
Figs 1, 6; Map 5

Erichson, W. F. 1844: 451.

**Type species.** *Trogossa grandis* Serville, 1828 [designated by Kolibáč 2005]

Léveillé, A. 1910: 8. Kolibáč, J. 2005: 43 (redescription). Kolibáč, J. 2006: 111 (phylogeny). Kolibáč, J. 2007a: 364.

**Description.** Body size: about 11.0–34.0 mm. Body shape elongate. Gular sutures reduced. Frontoclypeal suture absent. Frons: longitudinal groove or depression absent. Cranium ventrally: tufts of long setae at sides present. Submentum of males: ctenidium present. Antennal groove present. Eyes: size flat. Eyes number: two. Epicranial acumination deep. Lacinial hooks absent. Galea: shape elongate. Galea: ciliate setae absent. Medistipes-Lacinia not fused. Palpifer: outer edge denticulate. Mandibular apical teeth number: two, horizontally situated. Mola reduced but present. Penicillus (at base) present (fine, often membranous). Pubescence above mola or cutting edge absent. Ventral furrow present. Basal notch shallow or absent. Labrum-Cranium not fused. Epipharyngeal sclerite present. Lateral tormal process: projection curved downwards, processes not connected (*Airora*). Ligula: ciliate setae absent. Ligula rigid, strongly retroflexed, deeply emarginate. Hypopharyngeal sclerite consisting of two separate parts. Antenna 11-segmented. Antennal club asymmetrical, sensorial fields present. Front coxal cavities externally closed, internally open. Pronotum transverse. Prepectus absent. Middle coxal cavities open. Elytra: long hairs absent. Epipleuron moderate. Elytral interlocking mechanism present, carinae reduced. Elytral punctuation regular, scales absent. Wing: radial cell triangular, wedge cell present, cross vein MP3-4 present, cross vein AA1+2-3+4 present. Front tibiae: spines along side large. Hooked spur present. Claws: denticle absent. Parasterntes number along ventrites III–VII: two. Spiculum gastrale absent. Tegmen composed of two parts. Coxitae undivided.

**Biology.** Predatory. Biology unknown; adults are sometimes collected at light.

**Distribution.** Disjunctive distribution: most species distributed in tropical Africa and Madagascar; about four south-eastern Asian species are also congeneric. Two unidentified specimens from Argentina (Természettudományi Múzeum Budapest) may be mislabelled.

**Species:**

*alhuaudi* Léveillé, 1894; Madagascar (AL)

Léveillé, A. 1910: 8

*alutacea* Murray, 1867; Old Calabar (AL)

Léveillé, A. 1910: 8

*angusta* Léveillé, 1898; Madagascar (AL)

Léveillé, A. 1910: 8

*auberti* Léveillé, 1905; China: Sichuan (AL)

Léveillé, A. 1910: 8. Kolibáč, J. 2007a: 364
australis Péringuey, 1885; South Africa: Cap, Transvaal (AL)
  Léveillé, A. 1910: 8
bicolor Basilewsky, 1956; Rwanda (AD)
  Basilewsky, P. 1956: 392
bouvieri Léveillé, 1898; Madagascar (AL)
  Léveillé, A. 1910: 8
chevrolati Reitter, 1876; Senegal (AL)
  Léveillé, A. 1910: 8
cribrosicollis Léveillé, 1888; Tenasserim (AL)
  Léveillé, A. 1910: 8
cyaneicornis Fairmaire, 1887; Madagascar (AL)
  Léveillé, A. 1910: 8
docorsei Léveillé, 1901; Madagascar (AL)
  Léveillé, A. 1910: 8
elongata Guérin, 1846; Guinea (AL)
  Léveillé, A. 1910: 8
grandis Serville, 1825; Senegal, Cap (varA)
  Léveillé, A. 1910: 8 (syn. Alindria cylindrica Olivier, 1792; synonymized by author?). Kolibáč, J. 2005: 43 (redescription). Léveillé, A. 1910: 8 (syn. Alindria ingenicula Gistl & Bromme, 1850; synonymized by author?). Léveillé, A. 1910: 8 (syn. Alindria major Guérin, 1825; syn. by author?)
lesnei Léveillé, 1907; East Africa (AL)
  Léveillé, A. 1910: 8
orientalis Redtenbacher, 1844; India: Kashmir (AL)
  Léveillé, A. 1910: 8
  Léveillé, A. 1910: 8 (syn. Alindria parallela Léveillé, 1889; synonymized by Kolibáč 2007a); Andamans (AL)
  Kolibáč, J. 2007a: 364 (syn. Alindria parallela Léveillé, 1889; synonymized by author)
ornata Léveillé, 1898; Congo (AL)
  Léveillé, A. 1910: 8
ruandana Basilewsky, 1956; Rwanda (AD)
  Basilewsky, P. 1956: 390
sedilloti Léveillé, 1881; Madagascar (AL)
  Léveillé, A. 1910: 8. Léveillé, A. 1910: 8 (syn. Alindria sikorai Kuwert, 1891; synonymized by author?)
sericea Léveillé, 1898; Madagascar (AL)
  Léveillé, A. 1910: 8
spectabilis Klug, 1833; Madagascar (AL)
  Léveillé, A. 1910: 8
virescens Léveillé, 1907; “India” (varA)
  Léveillé, A. 1910: 9. Kolibáč, J. 2007a: 364
Genus *Corticotomus* Sharp, 1891

http://species-id.net/wiki/Corticotomus

Figs 1, 6; Map 5

Sharp, D. 1891: 390.

**Type species.** *Corticotomus basalis* Sharp, 1891 [designated by Barron 1971]

Léveillé, A. 1910: 7. Downie, N. M. & Arnett, R. H. Jr. 1996: 936 (key). Kolibáč, J. 2005: 50 (redescription). Kolibáč, J. 2006: 111 (phylogeny). Lopesme, P. & Paulian, R. 1944: 138 (*Colydobius* Sharp, 1891) (key). Léveillé, A. 1910: 20 (*Colydobius* Sharp, 1891). *Colydobius* Sharp, 1891 [type species: *Colydobius divisus* Sharp, 1891; designated by Kolibáč 2005]

Léveillé, A. 1910: 20. Kolibáč, J. 2005: 50 (synonymized)

*Leveillesoma* Lopesme & Paulian, 1944 [type species: *Nemosomia fulva* Léveillé, 1905; by original designation]

Lopesme, P. & Paulian, R. 1944: 139. Kolibáč, J. 2005: 50 (synonymized)

*Parafilemis* Casey, 1916 [type species: *Parafilemis estriata* Casey, 1916; by original designation and monotypy]

Barron, J. R. 1971: 53 (synonymized).

**Description.** Body size: about 3.0–5.0 mm. Body shape elongate. Gular sutures narrow, subparallel at apex. Frontoclypeal suture absent. Frons: longitudinal groove or depression absent. Cranium ventrally: tufts of long setae at sides absent. Submentum: ctenidium absent. Antennal groove present. Eyes: size moderate. Eyes number: two. Epipharyngeal sclerite sickle shaped. Antenna 11-segmented. Antennal club asymmetrical, sensorial fields present. Front coxal cavities externally closed, internally open. Pronotum elongate. Prepectus absent. Middle coxal cavities open. Elytra: long hairs absent. Epipleuron moderate. Elytral interlocking mechanism present, carinae reduced. Elytral punctuation regular, scales absent. Wing: radial cell open (outer vein present), wedge cell absent, cross vein MP3-4 absent, cross vein AA1+2-3+4 absent. Front tibiae: spines along side large. Hooked spur present. Claws: denticle absent. Spiculum gastrale absent. Tegmen composed of two parts. Coxitae undivided.

**Biology.** Predatory. North American species have been both reared and collected from various species of pine and willow, also from *Rhus, Pseudotsuga*, and other trees (Barron 1971, Dajoz 1997). The *Corticotomus* species were mostly found under bark but also in the burrows of *Cryphalus* (Scolytinae) (Barron 1971). Dajoz (1997) noted *C. apicalis* associated with the bark beetle *Chaetophloeus parkinsoniae*. The way of life of *Corticotomus* is probably similar to that of *Nemozoma*. 
**Distribution.** Distributed from Brazil to Canada. One species, unknown to me, is described from Chile.

**Species:**

`apicalis` Van Dyke, 1944; Western USA (JRB)
  Barron, J. R. 1971: 60. Dajoz, R. 1997: 42 (biology). Van Dyke, E. C. 1944: 151.

`basalis` Sharp, 1891; Guatemala (AL)
  Léveillé, A. 1910: 7. Kolibáč, J. 2005: 50.

`bicolor` Léveillé, 1895; Chile (AL)
  Léveillé, A. 1910: 7.

`californicus` Van Dyke, 1915; Western USA (JRB)
  Barron, J. R. 1971: 60 (syn. *Parafilumis striata* Casey, T. L. 1916: 207, 283; synonymized by whom?). Van Dyke, E. C. 1915: 28. Schaeffer, C. F. A. 1920: 193.

`caviceps` Fall, 1910; Western Canada and USA (JRB, varA)
  Barron, J. R. 1971: 58. Dajoz, R. 1997: 41 (diagnosis). Barron, J. R. 1971: 58 (syn. *Corticotomus laeviventris* Casey, 1916; synonymized by whom?). Fall, H. C. 1910: Lepesme, P. & Paulian, R. 1944: 140 (*Nemosoma s.str. caviceps* Fall, 1910)

`cylidricus` LeConte, 1863; Eastern USA: Iowa (JRB)
  Léveillé, A. 1910: 5 (*Nemosoma*). Barron, J. R. 1971: 57 (syn. *Corticotomus cylindricus* var. *texanus* Schaeffer, 1918). Schaeffer, C. F. A. 1920: 193 (*Corticotomus cylindricus* subsp. *texanus* Schaeffer, C. F. A. 1918: 192). Barron, J. R. 1971: 56. Van Dyke, E. C. 1915: 26. Kolibáč, J. 2005: 51 (redescription). Böving, A. G. & F. C. Craighead, 1931: 273 (larva). Reitter, E. 1876: 14 (*Nemosoma*). Lepesme, P. & Paulian, R. 1944: 140 (*Nemosoma s.str.*)

`depressus` Schaeffer, 1918; Eastern USA (JRB)
  Barron, J. R. 1971: 54. Schaeffer, C. F. A. 1918: 192.

`divisus` Sharp, 1891; Panama (AL)
  Léveillé, A. 1910: 20 (*Colydobius*). Kolibáč, J. 2005: 51 (combination).

`dufaui` Léveillé, 1907; Guadeloupe (AL)
  Léveillé, A. 1910: 20. Kolibáč, J. 2005: 52 (redescription).

`fulva` Léveillé, 1905; Brazil (AL)
  Léveillé, A. 1910: 4 (*Nemosomia*). Kolibáč, J. 2005: 50 (combination). Lepesme, P. & Paulian, R. 1944: 139 (*Nemosomia*) (combined with *Leveillesoma*).

`parallelum` Melsheimer, 1844; Eastern USA (JRB)
  Léveillé, A. 1910: 6 (*Nemosoma*). Barron, J. R. 1971: 55. Lepesme, P. & Paulian, R. 1944: 140 (*Nemosoma*). Reitter, E. 1876: 14 (*Nemosoma*)

`quadrirrimaculatus` Léveillé, 1894; Brazil (AL)
  Léveillé, A. 1910: 7.

`sharpi` Léveillé, 1905; Mexico (AL)
  Léveillé, A. 1910: 7.

`signatus` Sharp, 1891; Guatemala (AL)
  Léveillé, A. 1910: 20.

`testaceus` Dajoz, 1997; USA: Arizona (AD)
  Dajoz, R. 1997: 40.
† **Genus Cretocateres** Ponomarenko, 1986

http://species-id.net/wiki/Cretocateres

Fig. 19; Map 5

Ponomarenko, A. G. 1986: iii (1–101).

**Type species.** *Cretocateres mongolicus* Ponomarenko, 1986 [by monotypy and author’s designation]

Kolibáč, J. 2006: 116 (classification). Ponomarenko, A. G. 1986: iii (1–101) (Lophocateridae). Ponomarenko, A. G. 1990: 73, 74. Kolibáč, J. 2006: 116 (Trogossitidae: Trogossitini). Ponomarenko, A. G. & Kireichuk, A. G. (2005–2008): http://zin.ru/animalia/Coleoptera/rus/paleosy2.htm (Peltidae). Schmied, H. et al. 2009: 24.

**Diagnosis.** Body size: probably about 3.0 mm (no scale provided). Body elongate, terminal antennomeres conspicuously asymmetrical. Very similar to Siberian *Thoracotes* (see Ponomarenko 1990). Differences between the two genera are not known to me. Structure of coxae in combination with characteristic antennae allow a classification within *Trogossitidae*: *Trogossitinae*; shape of pronotum is closer to *Trogossitini* than *Gymnochilini*. See a reproduction of the original table in Fig. 19.

**Distribution.** Mesozoic: Lower Cretaceous; West Mongolia.

**Species:**

† *mongolicus* Ponomarenko, 1986; W Mongolia; Lower Cretaceous (varA)

Ponomarenko, A. G. 1986: iii (1–101) (Lophocateridae). Ponomarenko, A. G. 1990: 73, 74. Kolibáč, J. 2006: 116 (Trogossitidae: Trogossitini). Ponomarenko, A. G. & Kireichuk, A. G. (2005–2008): http://zin.ru/animalia/Coleoptera/rus/paleosy2.htm (Peltidae). Schmied, H. et al. 2009: 24

**Genus Dupontiella** Spinola, 1844

http://species-id.net/wiki/Dupontiella

Figs 20–23; Map 5

Spinola, M. 1844 (II): 168.

**Type species.** *Dupontiella ichneumonoides* Spinola, 1844 [designated by Kolibáč 2005]

Léveillé, A. 1910: 6. Kolibáč, J. 2005: 54. Kolibáč, J. 2006: 116 (phylogeny). Reitter, E. 1876: 15.

**Remarks.** Body size: about 4.0–5.0 mm. The genus was originally described in Cleridae. Lacordaire (1857: 493) transferred *Dupontiella* to *Trogossitidae*. Neither species was pinned in Cleridae in Spinola’s original collection and I found none in “collectio Chevrolat” (MNHN Paris) where *D. ichneumonoides* could have been placed. Figures 20–23 show a facsimile of Spinola’s (1844) original descriptions with figures as well as Reitter’s (1876) remarks on the genus.

The 11-segmented antennae with distinct 3-segmented asymmetrical club, as well as perhaps a tri-sinuate anterior margin to the frons, probably indicate proper classifi-
cation within Trogossitinae, perhaps related to *Nemozoma* and allied genera. Spinola’s note “[...] les mandibles de la forme ordinaire, la face antérieurement arrondie et non tri-échancrée [...]” could mean that the mandibles are unidentate. Some species, possibly only specimens of *Corticotomus*, are the only known trogossitids with mandibles that may be unidentate (Kolibáč 2005: 51). On the other hand, the body shape and the complex colour pattern on the dorsal surface of of the body also resemble *Calanthosoma* (Egoliini). Because species of the latter genus are far larger, I tend to support a relationship to *Nemozoma* and *Corticotomus*. Hence the classification of *Dupontiella* within Trogossitini herein.

**Distribution.** Venezuela.

**Species:**

*fasciatella* Spinola, 1844; Venezuela: Caracas (AL)  
Léveillé, A. 1910: 6. Reitter, E. 1876: 16

*ichneumonoides* Spinola, 1844; Venezuela: Caracas (AL)  
Léveillé, A. 1910: 6. Kolibáč, J. 2005: 54. Reitter, E. 1876: 15

**Genus Elestora Pascoe, 1868**

http://species-id.net/wiki/Elestora

Fig. 6; Map 5

Pascoe, F. P. 1868: XI.

**Type species.** *Elestora fulgurata* Pascoe, 1868 [by monotypy]  
Léveillé, A. 1910: 20. Kolibáč, J. 2005: 55. Kolibáč, J. 2006: 116 (phylogeny). Reitter, E. 1876: 30.

**Remarks.** The phylogeny of the genus is unclear and in need of revision, together with *Melambia*. *Elestora* could be related to some species of the latter genus (see “Remarks” on *Melambia*). I presume a classification of *Elestora* within the trogossitins rather than with the gymnochilins.

**Description.** Body size: 15.0 mm. Body shape flat. Gular sutures wide, convergent at apex. Frontoclypeal suture absent. Frons: longitudinal groove or depression absent. Cranium ventrally: tufts of long setae at sides absent. Submentum of males: ctenidium present. Antennal groove present. Eyes: size flat. Eyes number: two. Mandibular apical teeth number: one. Labrum-Cranium not fused. Antenna 11-segmented. Antennal club asymmetrical, sensorial fields present. Front coxal cavities externally closed, internally open. Pronotum transverse. Prepectus absent. Middle coxal cavities open. Elytra: long hairs absent. Epipleuron moderate. Elytral interlocking mechanism present, carinae conspicuous. Elytral punctuation regular, scales absent. Wing: radial cell oblong (or reduced), wedge cell present, cross vein MP3-4 present, cross vein AA1+2-3+4 present. Front tibiae: spines along side moderate. Hooked spur absent in middle and hind tibiae. Claws: denticle absent.
**Biology.** Probably predatory. A specimen was observed on a smouldering log at the margin of a tropical forest clearing in Laos. Its light orange spots on the elytra (much duller in a few museum specimens) perfectly imitate wood embers. Very rapid flier.

**Distribution.** Distributed from Malaysia to northern Laos but perhaps very rare.

**Species:**

*fulgurata* Pascoe, 1868; Malaysia: Penang, Laos (varA)

Léveillé, A. 1910: 20. Kolibáč, J. 2005: 55. Kolibáč, J. 2006: 152. Reitter, E. 1876: 30

† **Genus Eotenebroides Ren, 1995**

http://species-id.net/wiki/Eotenebroides

Map 5

Ren, D. 1995: 88 [in Chinese], 189 [in English] (Tenebroidinae, =Trogossitidae, Trogossitinae).

**Type species.** *Eotenebroides tumoculus* Ren, 1995

Ren, D. 1995: 89 [species description in Chinese only]. Kolibáč, J. & Huang, D.-Y. 2008: 141 (Trogossitini).

**English description of the genus.** “Head triangular, longer than wide. Eyes distinct, larger, situated laterally at median. Last 3 segments of antennae not thickened. Basal part of lateral margin of pronotum not narrowed. Scutellum larger. Coxal of middle and hind legs very close. Elytra not longer than abdomen, surface with 5 visible longitudinal streaks. Length 6.1 mm, width 2.4 mm.” (Ren 1995: 189)

**Translation of Chinese description of the species.** “Head: head slightly longer than wide; mandible robust, slightly curved; antenna with 11 segments, scapus a littler longer than others, length of other segments similar to one another, last three segments not thickened; eyes large, around 1/3 as long as head (excluding mandible), not projecting, clearly separated from front edge of pronotum. Thorax: pronotum longer than wide, anterior edge concave, antero-lateral angles projecting, sharp, posterio-lateral angles rounded, posterior edge straight, as long as anterior edge; connection of pronotum with elytra forming a neck; scutellum large, triangular; metepisternum visible, not making contact with mid-coxa; front coxae transverse, well-separated, femur thick; middle coxae rounded, close to one another, femur thicker than tibia; hind coxae nearly rounded, close to one another, hind femur as wide as middle femur. Elytra: elytra does not reach end of abdomen, its base as wide as pronotum, equipped with 5 longitudinal ridges. Abdomen: 6 sternites visible.” (Ren 1995: 89)

**Distribution.** China: SW of Beijing, Chongqing reservoir; Mesozoic: Lower Cretaceous, Lushangfen formation.

**Species:**

† *tumoculus* Ren, 1995; China: SW of Beijing; Lower Cretaceous (AD)

Ren, D. 1995: 88 [species description in Chinese only]. Kolibáč, J. & Huang, D.-Y. 2008: 141.
Genus *Eupycnus* Sharp, 1891
http://species-id.net/wiki/Eupycnus
Fig. 7; Map 5

Sharp, D. 1891: 415.

**Type species.** *Eupycnus lentus* Sharp, 1891 [by monotypy]

Léveillé, A. 1910: 14. Kolibáč, J. 2005: 56 (redescription). Kolibáč, J. 2006: 116 (phylogeny).

**Description.** Body size: about 7.5 mm. Body shape elongate. Gular sutures wide, convergent at apex. Frons: longitudinal groove or depression absent. Cranium ventrally: tufts of long setae at sides present. Antennal groove present. Eyes: size flat. Eyes number: two. Epicranial acumination moderate. Mandibular apical teeth number: two, vertically situated. Labrum-Cranium not fused. Ligula: ciliate setae present. Ligula rigid, not retroflexed, weakly emarginate. Hypopharyngeal sclerite consisting of two separate parts. Antenna 11-segmented. Antennal club asymmetrical, sensorial fields present. Front coxal cavities externally closed, internally open. Pronotum subquadrate. Prepectus absent. Middle coxal cavities open. Elytra: long hairs absent. Epipleuron moderate. Elytral interlocking mechanism present, carinae reduced. Elytral punctuation regular, scales absent. Wing: radial cell open (outer vein present), wedge cell absent, cross vein MP3-4 absent, cross vein AA1+2-3+4 absent. Front tibiae: spines along side large. Hooked spur present in all tibiae. Claws: denticle absent. Parasternites number along ventrites III–VII: one. Spiculum gastrale present. Tegmen composed of three parts.

**Biology.** Predatory. The single described species probably has the same way of life as *Tenebroides* species.

**Distribution.** Mexico. One undescribed species is known to me from Cuba.

**Species:**

*lentus* Sharp, 1891; Mexico (AL)

Léveillé, A. 1910: 14. Kolibáč, J. 2005: 56 (redescription)

Genus *Euschaefferia* Leng, 1920
http://species-id.net/wiki/Euschaefferia
Map 5

Leng, C. W. 1920: 193.

**Type species.** *Stenodema hicoriae* Schaeffer, 1918 [by original designation and monotypy]

Barron, J. R. 1971: 62. Kolibáč, J. 2005: 57. Kolibáč, J. 2006: 116 (phylogeny).

*Pseudocotomus* Van Dyke, 1944 [type species: *Pseudocotomus mclayi* Van Dyke, 1944; by original designation]

Van Dyke, E. C. 1944: 153. Barron, J. R. 1971: 62 (synonymized).
Figure 7. A Eupycnus lentus B Melambia crenicollis C Melambia striata D Leipaspis lauricola E Nemozoma cornutum F Nemozoma elongatum G Nemozoma caucasicum H Parallelodera quadraticollis I Tennescheila pini.
**Stenodema** Schaeffer, 1918 (preoccupied) [type species: *Stenodema hicoriae* Schaeffer, 1918; by original designation]

Barron, J. R. 1971: 62. Leng, C. W. 1920: 193. Schaeffer, C. F. A. 1918: 193.

**Description.** Body size: 2.0–3.0 mm. Body shape elongate. Frons: longitudinal groove or depression absent. Labrum-Cranium not fused. Antenna 11-segmented. Antennal club asymmetrical. Pronotum elongate. Elytra: long hairs absent, carinae reduced. Elytral punctation irregular, scales absent. Front tibiae: spines along side reduced. Hooked spur absent in middle and hind tibiae. Claws: denticle absent.

**Biology.** Predatory. It was recorded from the galleries of the bark beetle *Pseudothysanoe burtoni* and has also been reared on the plant *Vachellia farnesiana* (Barron 1971).

**Distribution.** Belt of the southern states of the USA.

**Species:**

*Stenodema hicoriae* Schaeffer, 1918; USA: Texas, North Carolina (JRB)

Barron, J. R. 1971: 63. Kolibáč, J. 2005: 57. Schaeffer, C. F. A. 1918: 193

*mclayi* Van Dyke, 1944; USA: California (JRB)

Barron, J. R. 1971: 63 (comb). Van Dyke, E. C. 1944: 153. (*Pseudocotomus*)

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**Genus Leipaspis** Wollaston, 1862

[http://species-id.net/wiki/Leipaspis](http://species-id.net/wiki/Leipaspis)

Figs 1, 7; Map 5

Wollaston, T. V. 1862: 140.

**Type species.** *Leipaspis lauricola* Wollaston, 1862 [designated by Kolibáč 2005].

Léveillé, A. 1910: 14 (*Lipaspis*). Kolibáč, J. 2005: 63 (redescription). Kolibáč, J. 2006: 111 (phylogeny). Kolibáč, J. 2007a: 364. Reitter, E. 1876: 27 (*Lipaspis*).

**Description.** Body size: about 8.5–9.5 mm. Body shape elongate. Gular sutures wide, convergent at apex. Frontoclypeal suture absent. Frons: longitudinal groove or depression absent. Cranium ventrally: tufts of long setae at sides absent. Submentum: ctenidium absent. Antennal groove present. Eyes: size flat. Eyes number: two. Epicranial acumination moderate. Lacinial hooks absent. Galea: shape elongate. Galea: ciliate setae present. Medistipes-Lacinia not fused. Palpifer: outer edge denticulate. Mandibular apical teeth number: two, horizontally situated. Mola absent. Penicillus (at base) present (fine, often membranous). Pubescence above mola or cutting edge absent. Ventral furrow present. Basal notch shallow or absent. Labrum-Cranium not fused. Epipharyngial sclerite present. Lateral tormal process: projection curved downwards, processes not connected (*Airora*). Ligula: ciliate setae present. Ligula rigid, not retroflexed, deeply emarginate. Hypopharyngeal sclerite sickle shaped. Antenna 11-segmented. Antennal club asymmetrical, sensorial fields present. Front coxal cavities externally closed, internally open. Pronotum elongate. Prepectus absent. Middle coxal cavities open. Elytra: long hairs absent. Epipleuron moderate. Elytral interlocking mechanism present, carinae reduced. Elytral punctation regular, scales absent. Front tibiae: spines along side reduced. Hooked spur absent, apical spurs not
hooked or weakly hooked. Claws: denticle absent. Parasternites number along ventrites III–VII: one. Spiculum gastrale absent. Coxitae divided.

**Biology.** Predatory. The species was collected on the stems of various plants, such as *Euphorbia* sp., *Pinus* sp., *Suadea vermiculata*, *Arthrocnemum fruticosum*, *Laurus nobilis*, and *Nicotiana glauca*, probably preying on anobiids (*Xestobium*) or other xylophagous insects.

**Distribution.** Canary Islands.

**Species:**

*caulicola* Wollaston, 1862;

Léveillé, A. 1910: 14 (*Lipaspis*). Plata-Negrache, P. & Prendes-Ayala, C. 1981: 227. Reitter, E. 1876: 27 (*Lipaspis*)

*caulicola caulis* Wollaston, 1862; Canary Islands (varA)

Kolibáč, J. 2007a: 364

*caulicola oceanica* Wollaston, 1865; Madeira: Selvagens (varA)

Erber, D. & Wheater, C. P. 1987: 166 (*Leipaspis caulicola var. oceanica* Wollaston, 1865). Kolibáč, J. 2007a: 364 (subspecies)

*lauricola* Wollaston, 1862; Canary Islands (varA)

Léveillé, A. 1910: 14 (*Lipaspis*). Kolibáč, J. 2005: 63. Reitter, E. 1876: 27 (*Lipaspis*)

*lauricola lauricola* Wollaston, 1862; Canary Isl: La Palma, Tenerife (varA)

Plata-Negrache, P. & C. Prendes-Ayala 1981: 229. Kolibáč, J. 2007a: 364

*lauricola gomerensis* Plata & Prendes, 1981 Canary Isl.: La Gomera, El Hierro (varA)

Kolibáč, J. 2007a: 364. Machado, A. & Oromí, P. 2000: ii. Plata-Negrache, P. & Prendes-Ayala, C. 1981: 229

*pinicola* Wollaston, 1862; Canary Islands (varA)

Léveillé, A. 1910: 14 (*Lipaspis*). Kolibáč, J. 2007a: 364. Plata-Negrache, P. & Prendes-Ayala, C. 1981: 229. Reitter, E. 1876: 27

**Genus Melambia Erichson, 1844**

http://species-id.net/wiki/Melambia

Fig. 7; Map 5

Erichson, W. F. 1844: 450.

**Type species.** *Trogossita gigas* Fabricius, 1798 [designated by Kolibáč 2005]

Léveillé, A. 1910: 9. Kolibáč, J. 2005: 68 (redescription). Kolibáč, J. 2006: 111 (phylogeny). Kolibáč, J. 2007a: 364. Mamaev, B. M. 1976: 1652 (larva). Reitter, E. 1876: 24.

**Remarks.** The placement of the genus in Trogossitini should be revised because my analysis of 2008 disclosed a possible relationship of some its species with Gymnochilini. There are distinct differences in the body shape among the numerous species of *Melambia*, for example between *M. grandis* (a robust species with a cordate pronotum) and *M. orientalis* (an elongate species with pronotum shaped somewhat like that of *Tenebroides*). Consideration of a re-classification of *Seidlitzella* within Gymnochilini,
similar in habitus to *Melambia*, needs species revision and new phylogenetic analysis with reference to Trogossitini and Gymnochilini, including special attention to the related trogossitine genus *Alindria*. As a preliminary opinion, I assume that both genera, *Melambia* and *Alindria*, form a basal group of Trogossitini.

**Description.** Body size: about 20.0–30.0 mm. Body shape elongate. Gular sutures reduced. Frontoclypeal suture absent. Frons: longitudinal groove or depression absent. Cranium ventrally: tufts of long setae at sides absent. Submentum of males: ctenidium present. Antennal groove present. Eyes: size flat. Eyes number: two. Epicranial acumination moderate. Lacinial hooks absent. Galea: shape clavate. Galea: ciliate setae absent. Mediostipes-Lacinia fused together. Palpifer: outer edge denticulate. Mandibular apical teeth number: two, vertically situated. Mola absent. Penicillus (at base) present (fine, often membranous). Pubescence above mola or cutting edge absent. Ventral furrow present. Basal notch moderate. Labrum-Cranium not fused. Epipharyngeal sclerite present. Lateral tormal process: projection curved downwards, processes not connected (*Airora*). Ligula: ciliate setae absent. Ligula rigid, weakly retroflexed, deeply emarginate. Hypopharyngeal sclerite absent. Antenna 11-segmented. Antennal club asymmetrical, sensorial fields present. Front coxal cavities externally closed, internally open. Pronotum transverse. Prepectus absent. Middle coxal cavities open. Elytra: long hairs absent. Epipleuron thin. Elytral interlocking mechanism present, carinae conspicuous. Elytral punctuation regular, scales absent. Wing: radial cell oblong (or reduced), wedge cell present, cross vein MP3-4 present, cross vein AA1+2-3+4 absent. Front tibiae: spines along side moderate. Hooked spur present. Claws: denticle absent. Parasternites number along ventrites III–VII: two. Spiculum gastrale absent. Tegmen composed of two or three parts.

*Larva:* Frontal arms V-shaped. Epicranial stem present. Endocarina present. Stemmata number: five. Maxillary palpi 3-segmented. Palpifer absent. Mala simple. Mala: bidentate protrusion absent. Cardo-Stipes not fused. Cardo: size much smaller than stipes. Ligula absent. Labial palp 2-segmented. Prementum in single part, anterior margin with notch. Thoracic sclerites pattern (dorsally) 2-0-0. Abdominal segment IX not divided. Tergite IX flat. Urogomphi minute; median process absent.

**Biology.** Predatory. According to Mamaev (1976), *M. tekkensis* and *M. cardoni* larvae prey on larvae of jewel beetles and longhorn beetles (under the bark of, for example, apricot trees or *Grewia*).

**Distribution.** South-eastern, southern and central Asia; also several species in Africa from Egypt to South Africa. Such a disjunctive distribution is possible, but the African species need to be checked because of possible confusion with the similar genus *Alindria*.

**Species:**

*cardoni* Léveillé, 1908; India: “Bengalia” (AL)

Léveillé, A. 1910: 9

*cordingollis* Reitter, 1876; Philippines (AL)

Léveillé, A. 1910: 9. Reitter, E. 1876: 25

*crenicollis* Guérin, 1846; India: “Bengalia” (AL)

Léveillé, A. 1910: 9
funebris Pascoe, 1862; Cambodia (AL)
Léveillé, A. 1910: 9. Reitter, E. 1876: 25

gautardi Tournier, 1872; Egypt (AL)
Léveillé, A. 1910: 9. Kolibáč, J. 2007a: 364. Reitter, E. 1876: 26

gigas Fabricius, 1798; Guinea, Senegal (AL)
Léveillé, A. 1910: 9. Kolibáč, J. 2005: 68 (redescription). Reitter, E. 1876: 25

maura Pascoe, 1862; South Africa: “N’gami”, Mauritania (varA)
Léveillé, A. 1910: 9. Mateu, J. 1972: 547

memnonia Pascoe, 1862; Sri Lanka (AL)
Léveillé, A. 1910: 9

opaca Reitter, 1876; South Africa: Cap (AL)
Léveillé, A. 1910: 9. Reitter, E. 1876: 25

pumila Léveillé, 1885; Burma (AL)
Léveillé, A. 1910: 9

striata Olivier, 1790; Senegal (varA)
Léveillé, A. 1910: 9. Mateu, J. 1972: 547. Reitter, E. 1876: 24

subcyaenea Gerstaeker, 1871; Zanzibar (AL)
Léveillé, A. 1910: 9. Reitter, E. 1876: 26

Léveillé, A. 1910: 9 (syn. Melambia coeruleata Fairmaire, 1882) Somalia (AL)
tekkensis Koenig, 1889; „Transcaspia“, Turkmenistan (varA)
Léveillé, A. 1910: 9. Kolibáč, J. 2007a: 364. Mamaev, B. M. 1976: 1650 (larva)

Genus Nemozoma Latreille, 1804
http://species-id.net/wiki/Nemozoma
Figs 7, 15; Map 5

Latreille, P. A. 1804: 239.

Type species. Dermestes elongatus Linnaeus, 1760 [by monotopy]
Léveillé, A. 1910: 5. Barron, J. R. 1971: 45. Crowdson, R. A. 1964a: 299. Kolibáč, J. 2005: 72 (redescription). Kolibáč, J. 2006: 111 (phylogeny). Kolibáč, J. 2007a: 364.

Aponemosoma Lepesme & Paulian, 1944 (subgenus) [type species: Nemosoma caucasicum Ménétries, 1832; by original designation]
Barron, J. R. 1971: 45 (synonymized). Kolibáč, J. 2007a: 364. Lepesme, P. & Paulian, R. 1944: 139 (subgen. Nemosoma s.str.). Lucht, W. 1998: 207 (key). Mamaev, B. M. 1976: 1652 (larvae).

Cylidrella Sharp, 1891 [type species: Cylidrella mollis Sharp, 1891; by monotopy]
Léveillé, A. 1910: 6. Barron, J. R. 1971: 52. Kolibáč, J. 2005: 72 (synonymized). Kolibáč, J. 2007a: 364.
**Monesoma** Léveillé, 1894 (subgenus) [type species: *Nemosoma cornutum* Sturm, 1826; by original designation]

Léveillé, A. 1910: 6 (subgenus). Barron, J. R. 1971: 45 (=*Sturmia* Ragusa, 1892). Kolibáč, J. 2007a: 364. Lepesme, P. & Paulian, R. 1944: 139 (synonymized).

**Nemosomia** Reitter, 1876 [type species: *Nemosoma vorax* Reitter, 1876; by original designation]

Léveillé, A. 1910: 4. Barron, J. R. 1971: 45. Kolibáč, J. 2007a: 364. Lepesme, P. & Paulian, R. 1944: 139 (synonymized).

**Paranemosoma** Lepesme & Paulian, 1944 (subgenus) [type species: *Nemosoma punctatum* Léveillé, 1886; by original designation]

Lepesme, P. & Paulian, R. 1944: 139. Kolibáč, J. 2007a: 364.

**Sturmia** Ragusa, 1892 [type species: *Nemosoma cornutum* Sturm, 1826; by original designation]

Barron, J. R. 1971: 45 (preoccupied, synonymized with *Monesoma*). Kolibáč, J. 2007a: 364.

**Pseudalindria** Fall, 1910 [type species: *Pseudalindria fissiceps* Fall, 1910; by original designation]

Barron, J. R. 1971: 45. Fall, H. C. 1910: 126. Kolibáč, J. 2007a: 364.

**Description.** Body size: about 2.5–5.0 mm. Body shape elongate. Gular sutures wide, convergent at apex. Frontoclypeal suture absent. Frons: longitudinal groove or depression present. Cranium ventrally: tufts of long setae at sides present. Submentum: ctenidium absent. Antennal groove present. Eyes: size flat. Eyes number: two. Epicranial acumination moderate. Lacinial hooks absent. Galea: shape elongate. Galea: ciliate setae present. Mediostipes-Lacinia fused together. Palpifer: outer edge even. Mandibular apical teeth number: two, vertically situated. Mola absent. Penicillus (at base) absent. Pubescence above mola or cutting edge absent. Ventral furrow present. Basal notch moderate. Labrum-Cranium not fused. Epipharyngial sclerite present. Lateral tormal process: projection projection not developed (all remaining). Ligula: ciliate setae present. Ligula membranous, not retroflexed, deeply emarginate. Hypopharyngial sclerite absent. Antenna 11-segmented or 10-segmented. Antennal club asymmetrical, sensorial fields present. Front coxal cavities externally closed, internally open. Pronotum elongate. Prepectus absent. Middle coxal cavities open. Elytra: long hairs absent. Epipleuron thin. Elytral interlocking mechanism present, carinae reduced. Elytral punctation regular, scales absent. Wing: radial cell open (outer vein present), wedge cell absent, cross vein MP3-4 present, cross vein AA1+2-3+4 absent. Front tibiae: spines along side large. Hooked spur present. Claws: denticle absent. Parasternites number along ventrites III–VII: one. Spiculum gastrale absent. Tegmen composed of three parts . Coxitae undivided.

Larva: Frontal arms V-shaped. Epicranial stem reduced. Endocarina present. Gular sutures conspicuous, parallel. Gula: anterior apodemes absent. Paragular sclerites present. Stemmata number: five. Mandibular apical teeth number: one tooth. Lacinia mandibulae with several small spines. Mola absent. Maxillary palpi 3-segmented. Palpifer absent. Pedunculate seta present. Mala simple. Mala: bidentate protrusion absent. Cardo: size
much smaller than stipes. Ligula absent. Labial palpi 2-segmented. Prementum in single part, anterior margin with notch. Antennal joints 1 and 2 elongate. Sensory appendix medium sized (to half of joint 3). Thoracic sclerites pattern (dorsally) 1-2-2. Thoracic sclerites pattern (ventrally) 3+1+1. Trochanter triangular. Abdominal segment IX not divided. Tergite IX flat. Urogomphi present, hooked; median process absent.

**Biology.** Predatory. Adults live together with larvae under the bark of deciduous and coniferous trees and shrubs, hunting especially for bark beetles.

**Distribution.** From Brazil to Canada, Europe including European part of Russia, Near East (Turkey, Syria), North Africa. No records are known from Asia east of Caucasus.

**Species:**

*alasanicum* Fursov, 1930; Georgia (var A)

Fursov, N. I. 1930: 183. Lepesme, P. & Paulian, R. 1944: 140 (subgen. *Nemosoma* s. str.)

*attenuatum* Van Dyke, 1915; USA: California, Washington (JRB)

Barron, J. R. 1971: 47. Lepesme, P. & Paulian, R. 1944: 140 (*Nemosoma* s.str.).

Sakamoto, J. M. 2007: 342 (distribution). Van Dyke, 1915: 26

*brasiliense* Léveillé, 1900; Brazil: Jatahy (var A)

Lepesme, P. & Paulian, R. 1944: 138 (combined from *Monesoma*

*breviatum* Peyerimhoff, 1918; Algeria (var A)

Peyerimhoff, P. M., de 1918: 329. Hallan, J. 2007–2012: http://insects.tamu.edu (syn. of *N. elongatum*?). Kolibáč, J. 2009: 128

Note: Brustel, H. (pers. comm., 2011) newly recorded 15 specimens from North Africa; he compared Palaearctic species and found *N. breviatrum* valid

*caucasicum* Ménétriers, 1832; Austria, Poland, SW Russia, Slovakia, Ukraine, „Caucasus” (var A)

Léveillé, A. 1910: 6 (*Monesoma*). Hilszczanski, J. 2006: 29. Klausnitzer, B. 1996: 148 (larva). Kolibáč, J. 1993b: 90. Kolibáč, J. 1993a: 19. Kolibáč, J. 2007a: 364 (syn. *Nemozoma fasciicole* Hampe, 1864). Lepesme, P. & Paulian, R. 1944: 141 (*Aponemosoma*). Mamaev, B. M. 1976: 1653 (larva). Milkowski, M. & Wojas, T. 2008: 172 (distribution). Nikitsky, N. B. 1974: 566 (larva). Pankow, W. 2010: 87 (distribution). Reitter, E. 1876: 13

Kolosov, ? 1931: 116 (syn. *Nemosoma curtulum* Fursov, 1930); „Chernyi les“ (var A)

Fursov, N. I. 1930: 182 (*Nemosoma* curtulum Fursov, 1930; synonymized by Kolosov 1931: 116 after Hallan 2007–2012; reference not found)

*championi* Wickham, 1916; Western USA: Colorado, New Mexico (JRB)

Barron, J. R. 1971: 52 (*Cylidrella*). Wickham, 1916: 147

*cornutum* Sturm, 1826; SW Russia, Ukraine, „Caucasus” (var A)

Léveillé, A. 1910: 6. Klausnitzer, B. 1996: 148 (larva). Kolibáč, J. 2007a: 364. Lepesme, P. & Paulian, R. 1944: 140 (*Nemosoma* s.str.). Mamaev, B. M. 1976: 1654 (larva). Moragues, G. 1981: 262–263 (distribution). Nikitsky, N. B. 1974: 566 (larva). Reitter, E. 1876: 14. Sarikaya, O. & Avci, M. 2009: 253–264 (biology)

*cupressi* Van Dyke, 1944; USA: Northern coast of California (JRB)

Barron, J. R. 1971: 51. Van Dyke, E. C. 1944: 147, 149
cylindricolle Fursov, 1930; Georgia (varA)
Fursov, N. I. 1930: 182. Lepesme, P. & Paulian, R. 1944: 140 (Nemosoma s.str.)
elongatum Linnaeus, 1761; Europe, Syria, Turkey, Tunisia (JK)
Léveillé, A. 1910: 5. Baader, E. J. 1989: 1 (biology). Bahillo de la Puebla P. & López-Colón, J. I. 2004: 129. Baier, P. 1994: 51 (biology). Baier, P. 1991: 421 (biology). Borowiec, L. 1983: 8. Burakowski, B., Mroczkowski, M. & Stefan- ska, J. 1986: 115. Conrad, R. 1995: 190–195 (contribution). Cunev, J. 1999: 76. Dippel, C. 1991: 473 (biology). Dippel, C. 1995: 67 (biology). Dippel, C. 1996: 391 (biology). Dippel, C. et al 1997: 161 (biology). Gobbi, G. 1983: 52. Gueorguiev, B. et al. 2003: 107 (distribution). Heuer, H. & Vite, J. P. 1984a: 214 (biology). Heuer, H. & Vite, J. P. 1984b: 586 (biology). Hallan, J. 2007–2012: 4 (syn. Nemosoma breviatum Peyrimhoff, 1918?). Klausnitzer, B. 1976: 5. Klausnitzer, B. 1978: 176. Klausnitzer, B. 1996: 146 (larva). Kolibáč, J. 1993a: 21. Kolibáč, J. 1993b: 90. Kolibáč, J. 1996: 473. Kolibáč, J. 2005: 72 (redescription). Kolibáč, J. 2007a: 365 (syn. Nemozoma fasciatum Panzer, 1796; in Colydiun). Kolibáč, J. 2007a: 364 (syn. Nemozoma corsicum Reitter, 1876). Kolibáč, J. 2007a: 365 (syn. Nemosoma siculum Ragusa, 1891). Kolibáč, J. 2007a: 365 (syn. Nemosoma syriacum Pic, 1901). Kolibáč, J. 2007a: 365 (syn. Nemosoma elongatum var. tuniseum Pic, 1900). Lepesme, P. & Paulian, R. 1944: 140 (Nemosoma s.str.). Mamaev, B. M. 1976: 1654 (larva). Mitter, H. 1998: 559. Nikitsky, N. B. 1974: 566 (larva). Peyrimhoff, 1918: 329 (Nemozoma breviatum; valid species: H. Brustel, pers. comm. 2011). Pileckis, S. & V. Monsevičius 1995: 271. Reitter, E. 1876: 13 (syn. Nemosoma corsicum Ratti, E. 1997: 179. Reitter, 1876; synonymized by Léveillé 1889: 8). Skatulla, U. & Feicht, E. 1992: 4 (biology). Szafraniec, S. 1997: 207 (distribution). Vogt, H. 1967: 15. Wigger, H. 1993: 68 (biology). Wigger, H. 1994: 8 (biology). Wig- ger, H. 1996: 55 (biology)
fissiceps Fall, 1910; USA: California, Oregon (JRB)
Barron, J. R. 1971: 49. Fall, H. C. 1910: 127
gounellei Léveillé, 1894; Brazil (AL)
Léveillé, A. 1910: 6
landesi Léveillé, 1901; Martinica (AL)
Léveillé, A. 1910: 4. Lepesme, P. & Paulian, R. 1944: 139 (subgen. Nemosomia)
maculata Dajoz, 1991; USA (AD)
Dajoz, R. 1991: 245 (Cylidrella)
mollis Sharp, 1891; Guatemala (AL)
Léveillé, A. 1910: 6 (Cylidrella). Kolibáč, J. 2005: 73 (redescription, combination)
picta Léveillé, 1889; Brazil (AL)
Léveillé, A. 1910: 4 (Nemosomia)
pujoli Léveillé, 1902; Brazil (AL)
Léveillé, A. 1910: 4
punctatum Léveillé, 1888; Brazil (AL)
Léveillé, A. 1910: 6. Lepesme, P. & Paulian, R. 1944: 140
punctulata Van Dyke, 1920; Canada: British Columbia to USA: California (JRB)
Barron, J. R. 1971: 49. Lepesme, P. & Paulian, R. 1944: 140. Van Dyke, E. C. 1916: 71, 72 (described as punctatum). Van Dyke, E. C. 1920: 85 (jun. homonym; renamed)

schwartz Schaeffer, 1918; USA: Arizona, California (JRB)
Barron, J. R. 1971: 48. Lepesme, P. & Paulian, R. 1944: 140 (Nemosoma s.str.).
Schaeffer, C. F. A. 1918: 191 (subgen. Mnesoma)

signatum Sharp, 1891; Guatemala (AL)
Léveillé, A. 1910: 6

simoni Léveillé, 1889; Venezuela (AL)
Léveillé, A. 1910: 4 (Nemosomia). Lepesme, P. & Paulian, R. 1944: 140

vorax Reitter, 1876; Columbia (AL)
Léveillé, A. 1910: 4 (Nemosomia). Lepesme, P. & Paulian, R. 1944: 141. Reitter, E. 1876: 12 (Nemosomia)

Genus Parallelodera Fairmaire, 1881
http://species-id.net/wiki/Parallelodera
Fig. 7; Map 5

Fairmaire, L. 1881: 256.

Type species. Parallelodera quadraticollis Fairmaire, 1881 [by monotypy]
Léveillé, A. 1910: 8. Kolibác, J. 2005: 74 (redescription). Kolibác, J. 2006: 116 (phylogeny).

Description. Body size: about 11.0–12.0 mm. Body shape elongate. Gular sutures wide, convergent at apex. Frontoclypeal suture present. Frons: longitudinal groove or depression present. Cranium ventrally: tufts of long setae at sides present. Submentum of males: ctenidium absent. Antennal groove present. Eyes: size flat. Eyes number: two. Mandibular apical teeth number: two, vertically situated. Antenna 11-segmented. Antennal club asymmetrical, sensorial fields present. Front coxal cavities externally closed, internally open. Pronotum subquadrato. Prepectus absent. Middle coxal cavities open. Elytra: long hairs absent. Epipleuron thin. Elytral interlocking mechanism present, carinae reduced. Elytral punctuation regular, scales absent. Wing: radial cell open (outer vein present), wedge cell absent, cross vein MP3-4 absent, cross vein AA1+2-3+4 absent. Front tibiae: spines along side large. Hooked spur present in all tibiae. Claws: denticle absent.

Biology. In the light of a presumable relationship with Airora and Temnoscheila, I suggest a predatory way of life.

Distribution. Pacific islands as listed with the particular species.

Species:
luteicornis Fairmaire, 1881; Fiji, Viti Isl. (AL)
Léveillé, A. 1910: 8. Kolibác, J. 2005: 75
**parallelus** Fairmaire, 1850; New Caledonia, Madera, Nuka-Hiva, Tahiti (JK)

Léveillé, A. 1910: 18 (Tenebroides). Léveillé, A. 1910: 18 (syn. Tenebroides serratus Wollaston, 1854). Kolibáč, J. 2005: 75 (combination)

**quadraticollis** Fairmaire, 1881; Fiji, Viti Isl. (AL)

Léveillé, A. 1910: 8. Kolibáč, J. 2005: 74 (redescription)

**Genus Temnoscheila** Westwood, 1830

http://species-id.net/wiki/Temnoscheila

Figs 7, 8; Map 5

Westwood, J. O. 1830: 231.

**Type species.** *Trogossita caerulea* Olivier, 1790 [by monotypy]

Downie, N. M. & Arnett, R. H., Jr. 1996: 937 (key). Kolibáč, J. 2005: 83 (redescription). Kolibáč, J. 2006: 109 (review of larvae), 111 (phylogeny). Kolibáč, J. 2007a: 365. Spahr, U. 1981: 74 (amber and copal fossils).

*Temnochila* Erichson, 1844 (unjustified emendation by Erichson 1844: 449)

Léveillé, A. 1910: 9. Barron, J. R. 1971: 70. Kolibáč, J. 2007a: 365 (unjustified emendation). Nikitsky, N. B. 1992: 80.

*Trogossita* Olivier, 1790 [type species: *Trogossita caerulea* Olivier, 1790]

Barron, J. R. 1971: 70. Crowson, R. A. 1964a: 299. Mamaev, B. M. 1976: 1652 (larva). Matthews, E. G. 1992: 3. Reitter, E. 1876: 26 (*Trogosita*).

**Description.** Body size: about 9.0–26.0 mm. Body shape elongate. Gular sutures reduced. Frontoclypeal suture absent. Frons: longitudinal groove or depression present. Cranium ventrally: tufts of long setae at sides present. Submentum of males: ctenidium present. Antennal groove present. Eyes: size flat. Eyes number: two. Epicranial acumination deep. Lacinial hooks absent. Galea: shape elongate. Galea: ciliate setae present. Medistipes-Lacinia not fused. Palpi: outer edge denticulate. Mandibular apical teeth number: two, vertically situated. Mola absent. Penicillus (at base) present (fine, often membranous). Pubescence above mola or cutting edge absent. Ventral furrow present. Basal notch shallow or absent. Labrum-Cranium not fused. Epipharyngial sclerite present. Lateral tormal process: projection curved downwards, processes not connected (*Airora*). Ligula: ciliate setae absent. Ligula rigid, weakly retroflexed, deeply emarginate. Hypopharyngeal sclerite sickle shaped. Antenna 11-segmented. Antennal club asymmetrical, sensorial fields present. Front coxal cavities externally closed, internally open. Pronotum elongate. Prepectus absent. Middle coxal cavities open. Elytra: long hairs absent. Epipleuron moderate. Elytral interlocking mechanism present, carinae reduced. Elytral punctuation regular, scales absent. Wing: radial cell triangular, wedge cell present, cross vein MP3-4 present, cross vein AA1+2-3+4 absent. Front tibiae: spines along side moderate. Hooked spur present. Claws: denticle absent. Parasternites number along ventrites III–VII: one. Coxitae undivided.
Figure 8. A *Temnoscheila smaragdina* B *Temnoscheila caerulea* C *Temnoscheila punctatissima* D *Tenebroides mauritanicus* E *Tenebroides ruber* F *Tenebroides bipustulatus* G *Tenebroides fossulatus*. 
Larva: Frontal arms V-shaped. Epicranial stem reduced. Endocarina present. Gular sutures conspicuous, parallel. Gula: anterior apodemes absent. Paragular sclerites present. Hypostomal rods present. Stemmata number: five. Mandibular apical teeth number: two, horizontally even, vertically situated. Lacinia mandibulae with several small spines. Mola absent. Maxillary palpi 3-segmented. Palpifer absent. Pedunculate seta present. Mala simple. Mala: bidentate protrusion absent. Cardo-Stipes partially fused. Cardo: size much smaller than stipes. Ligula present. Labial palpi 2-segmented. Prementum in single part, anterior margin projecting. Torma: two separate lateral sclerites. Antennal joints 1 and 2 elongate. Sensory appendix very small. Thoracic sclerites pattern (dorsally) 1-2-2. Thoracic sclerites pattern (ventrally) 3+1+1. Trochanter oblong. Abdominal segment IX not divided. Tergite IX flat. Urogomphi present, hooked; median process absent.

**Biology.** Predatory. Adults hunt for xylophagous beetles on logs and branches of various trees and shrubs. Larvae live mostly under bark but sometimes dwell on the surface of wood as well.

**Distribution.** The bulk of species are distributed in the two Americas. Only a few species spread through to the Palaearctic region. Several species tend to cosmopolitanism (*T. caerulea, T. virescens*).

**Species:**

*acuta* LeConte, 1858; Texas (JRB)
- Léveillé, A. 1910: 10 (*Temnochila*). Barron, J. R. 1971: 85 (*Temnochila*)

*aenea* Olivier, 1790; Brazil, Porto Rico (AL)
- Léveillé, A. 1910: 10 (*Temnochila*)

*aerea* LeConte, 1858; Guatemala (JRB)
- Léveillé, A. 1910: 10 (*Temnochila*). Barron, J. R. 1971: 78 (*Temnochila*). Barron, J. R. 1971: 78 (syn. *Temnochila virescens* var. *nyentia* Dow, 1912). Dow, R. P. 1912: 70

*alticola* Sharp, 1891
- Léveillé, A. 1910: 10 (*Temnochila*)

*aureola* Reitter, 1875; Mexico (AL)
- Léveillé, A. 1910: 10

*aurora* Reitter, 1875; Brazil (AL)
- Léveillé, A. 1910: 10 (*Temnochila*)

*barbata* LeConte, 1863; “Cap S. Lucas” (JRB)
- Léveillé, A. 1910: 10 (*Temnochila*). Barron, J. R. 1971: 73 (*Temnochila*)

*bedeli* Léveillé, 1889; Venezuela (AL)
- Léveillé, A. 1910: 10 (*Temnochila*)

*belti* Sharp, 1891; Nicaragua (AL)
- Léveillé, A. 1910: 10 (*Temnochila*)

*bioleyi* Léveillé, 1903; Costa Rica (AL)
- Léveillé, A. 1910: 10 (*Temnochila*)

*boboensis* Sharp, 1891; Mexico (AL)
- Léveillé, A. 1910: 10

*boliviensis* Léveillé, 1903; Bolivia (AL)
- Léveillé, A. 1910: 10 (*Temnochila*)
Trogossitinae: A review of the beetle family, with a catalogue and keys

borrei Reitter, 1875; Antilles, Colombia (AL)
Léveillé, A. 1910: 10 (Temnochila)

brevior Léveillé, 1889; Colombia (AL)
Léveillé, A. 1910: 10 (Temnochila)

caelerella Olivier, 1790; South Europe, Southwestern Asia, North Africa, China (JK)
Léveillé, A. 1910: 10. Bahillo de la Puebla P. & López-Colón, J. I. 1999: 13. Bahillo de la Puebla P. & López-Colón, J. I. 2004: 129. Burakowski et al. 1986: 116. Crowson, R. A. 1972: 339 (Trogossita). Gobbi, G. 1983: 51 (Temnochila). Klausnitzer, B. 1976: 5 (Temnochila). Kolibáč, J. 1993a: 21 (Temnochila). Kolibáč, J. 1993b: 90 (Temnochila). Mitter, H. 1998: 560 (Temnochila). Kolibáč, J. 2005: 83 (redescription)
Kolibáč, J. 2007a: 36 (syn. Temnoscheila gemella Bedel, 1900; described as species; synonymized by Kolibáč 2007a); Algeria (JK)
Kolibáč, J. 2007a: 365 (syn. Temnoscheila pini Brullé, 1838); Canary Isl. (JK)
Kolibáč, J. 2007a: 365 (syn. Temnoscheila rogenhoferi Reitter, 1875) „India or.“ (JK)
Klausnitzer, B. 1978: 176 (Temnochila). Léveillé, A. 1910: 11 (Temnochila caerulea var. asiatica Léveillé, 1908); Yunnan (AL)
Léveillé, A. 1910: 10 (syn. Temnochila rogenhoferi Reitter, 1875)
Léveillé, A. 1910: 11 (Temnochila var. gemella Bedel, 1900) Algeria (AL)
Mamaev, B. M. 1976: 1655 (Trogossita) (larva). Pajares, J. A. et al. 2004: 633 (biology). Whitehouse, N. J. 1997: 293 (biology). Vogt, H. 1967: 15 (Temnochila)

caerulea pini Brullé, 1838; Canary Isl. (varA)
Plata-Negrache, P. & C. Prendes-Ayala 1981: 226

chalcea Kirsch, 1873; Peru, America centr. (AL)
Léveillé, A. 1910: 10

championi Sharp, 1891; America centr. (AL)
Léveillé, A. 1910: 10

chevrolati Reitter, 1875; Brazil: „Cayenna“, America centr. (AL)
Léveillé, A. 1910: 10

chiriquensis Sharp, 1891; Panama (AL)
Léveillé, A. 1910: 10

chlorodia Mannerheim, 1843; Western USA, Western Canada (JRB)
Barron, J. R. 1971: 82 (syn. Temnochila prosternalis Schaeffer, 1918; synonymized by Barron 1971). Barron, J. R. 1971: 82 (syn. Temnochila virescens chlorodia ab. melanea Hatch, 1962). Barron, J. R. 1971: 82 (syn. Temnochila viridicyanea Mannerheim, 1843; synonymized by whom, Reitter 1875?). Barron, J. R. 1971: 82 (syn. Temnochila virescens chlorodia Mannerheim, 1843: Schaeffer 1918, 1920; Hatch 1962; Struble and Carpelan 1941)
Boone, C. K. S. et al. 2008: 411 (biology). Dahlsten, D. L. et al. 2004: 1554 (biology). DeMars, C. J. Jr. et al. 1986: 881 (biology). Dominguez-Sanchez, B. et al. 2008: 175 (biology). Gaylord, M. L. W. et al. 2008: 57 (biology). Goheen, D. J. et al. 1985: 1535 (biology). Fettig, Ch. J. & Dabney, Ch. P. 2006: 75 (biology). Fettig, Ch. J. et al. 2004: 490 (biology). Fettig, Ch. J. et al. 2005: 748 (biology).
Fettig, Ch. J. et al. 2007: 141 (biology). Léveillé, A. 1910: 13 (T. virescens). Marsden, M. A. et al. 1981: 1 (biology). Miller, D. R. et al. 1997: 2013 (biology). Ross, D. W. & Daterman, G. E. 1998: 500 (biology). Swezey, S. L. & Dahlsen, D. L. 1982: 142 (biology). Williams, K. K. et al. 2009: 351 (biology). Zhou, J. et al. 2001: 993 (biology)

*chrysosterna* Reitter, 1875; Brazil: „Cayenna“ (AL)
Léveillé, A. 1910: 10

*colossus* Serville, 1828; Colombia, Brazil: „Cayenna“ (AL)
Léveillé, A. 1910: 11

*corinthia* Reitter, 1875; Mexico (AL)
Léveillé, A. 1910: 11

*costaricensis* Sharp, 1891; Costarica (AL)
Léveillé, A. 1910: 11

*curta* Léveillé, 1889; Cayenna (AL)
Léveillé, A. 1910: 11

*davidi* Léveillé, 1898; Ecuador (AL)
Léveillé, A. 1910: 11

*dendrobia* Gistl & Bromme, 1850; Colombia (AL)
Léveillé, A. 1910: 11

*derasa* Sharp, 1891; Mexico, Guatemala (AL)
Léveillé, A. 1910: 11

*diffinis* Sharp, 1891; Mexico (AL)
Léveillé, A. 1910: 11

*digitata* Sharp, 1891; America centr. (AL)
Léveillé, A. 1910: 11

*domerici* Serville, 1828; Brazil: „Cayenna“ (AL)
Léveillé, A. 1910: 11

*dryadis* Reitter, 1875; Mexico (AL)
Léveillé, A. 1910: 11

*ebenina* Blanchard, 1875; Bolivia, Uruguay (AL)
Léveillé, A. 1910: 11

*edendata* Schaeffer, 1918; USA: Arizona, California, Mexico: Baja (JRB)
Barron, J. R. 1971: 76 (syn. *Temnochila sonorana* Barrett, 1932: 171; synonymized by Barron 1971)
Schaeffer, C. F. A. 1918: 194

*exarata* Sharp, 1891; Mexico (AL)
Léveillé, A. 1910: 11

*festiva* Serville, 1828; Brazil (AL)
Léveillé, A. 1910: 11 (syn. *Temnochila splendens* Gray in Griffith 1832 (*Temnoscheila*); synonymized by whom?)

*foveicollis* Reitter, 1875; Brazil: „Cayenna“, „Para“ (AL)
Léveillé, A. 1910: 11

*fraudulenta* Sharp, 1891; Mexico (AL)
Léveillé, A. 1910: 11
fulgidovittata Blanchard, 1875; Bolivia (AL)
Léveillé, A. 1910: 11

geminata Sharp, 1891; Panama (AL)
Léveillé, A. 1910: 11

gigantea Reitter, 1875; Brazil (AL)
Léveillé, A. 1910: 11

gloriosa Reitter, 1875; Colombia (AL)
Léveillé, A. 1910: 11

grandis Sharp, 1891; Guatemala (AL)
Léveillé, A. 1910: 11

grilloi Léveillé, 1905; Brazil: „Paraná“ (AL)
Léveillé, A. 1910: 11

grouvellei Léveillé, 1889; America centr. (AL)
Léveillé, A. 1910: 12

guatemalana Sharp, 1891; America centr. (AL)
Léveillé, A. 1910: 12

hubbardi Léveillé, 1889; USA: Florida (JRB)
Léveillé, A. 1910: 12. Barron, J. R. 1971: 75

insignis Reitter, 1875; Colombia (AL)
Léveillé, A. 1910: 12. Reitter, E. 1875: 10 (homonym with Temnoscheila insignis Heer, 1868)

†insignis Heer, 1868 (Trogosita); Tertiary: Eocene; Greenland (JRB)
Barron, J. R. 1971: 120

iris Reitter, 1875; America centr. (AL)
Léveillé, A. 1910: 12

jansoni Léveillé, 1889; Brazil: „Minas Geraes“ (AL)
Léveillé, A. 1910: 12

japonica Reitter, 1875; Japan, North Korea, Russian Far East, Northeastern China (JK)
Léveillé, A. 1910: 12. Esaki, T. et al. 1951: 1060. Inouye, M. & Nobuchi, A. 1957: 194 (Temnochila) (larva). Klausnitzer, B. 1996: 146 (larva). Kolibáč, J. 2007a: 365. Mamaev, B. M. 1976: 1655 (Trogosita) (larva). Nakane, T. K. et al. 1963: 181. Nikitsky, N. B. 1992: 80

jekeli Reitter, 1875; Colombia (AL)
Léveillé, A. 1910: 12 (syn. Temnochila sennevillei Léveillé, 1878)

kirschi Reitter, 1875; Colombia: Bogota (AL)
Léveillé, A. 1910: 12

laevicollis Reitter, 1875; Brazil: „Cayenna“ (AL)
Léveillé, A. 1910: 12

laticollis Reitter, 1875; Mexico (AL)
Léveillé, A. 1910: 12

lebasi Reitter, 1875; Colombia (AL)
Léveillé, A. 1910: 12

leveillei Sharp, 1891; Panama (AL)
Léveillé, A. 1910: 12
lucens  Reitter, 1875; Brazil (AL)  
Léveillé, A. 1910: 12

metallica  Percheron, 1835?; Mexico (AL)  
Léveillé, A. 1910: 12 (syn. Temnochila mexicana Reitter, 1875; synonymized by Salle 1877)

mirabilis  Reitter, 1875; Colombia (AL)  
Léveillé, A. 1910: 12

miranda  Sharp, 1891; Mexico (AL)  
Léveillé, A. 1910: 12

nigrirasis  Léveillé, 1889; Brazil (AL)  
Léveillé, A. 1910: 12

obscura  Reitter, 1875; North America? (AL)  
Léveillé, A. 1910: 12

obsoleta  Reitter, 1875; Mexico (AL)  
Léveillé, A. 1910: 12

obtusicollis  Reitter, 1875; Venezuela (AL)  
Léveillé, A. 1910: 12

olivacea  Reitter, 1875; Colombia (AL)  
Léveillé, A. 1910: 12

olivicolor  Léveillé, 1889; Ecuador (AL)  
Léveillé, A. 1910: 12

omolopa  Barron, 1971; USA: Arizona, New Mexico (JRB)  
Barron, J. R. 1971: 77

parva  Léveillé, 1889; Santo Domingo (AL)  
Léveillé, A. 1910: 12

patricioi  Kirsch, 1881; „S. Thomé Isl.“ (AL)  
Léveillé, A. 1910: 12

peruviana  Léveillé, 1907; Peru (AL)  
Léveillé, A. 1910: 12

planicollis  Sharp, 1891; Guatemala (AL)  
Léveillé, A. 1910: 12

planipennis  Léveillé, 1889; Mexico (AL)  
Léveillé, A. 1910: 12 (syn. Temnochila metallica Reitter, 1875; synonymized by whom?)

polita  Chevrolat, 1833; America centr. (AL)  
Léveillé, A. 1910: 12

pollens  Sharp, 1891; Mexico (AL)  
Léveillé, A. 1910: 12

polygonalis  Léveillé, 1899; Brazil (AL)  
Léveillé, A. 1910: 12

portoricensis  Léveillé, 1907; Porto Rico (AL)  
Léveillé, A. 1910: 12

praeterita  Sharp, 1891; Mexico (AL)  
Léveillé, A. 1910: 12
*punctatissima* Reitter, 1875; Brazil (AL)
Léveillé, A. 1910: 12

*punicea* Reitter, 1875; Brazil (AL)
Léveillé, A. 1910: 12

*quadricollis* Reitter, 1875; America centr. (AL)
Léveillé, A. 1910: 13

*querula* Sharp, 1891; America centr. (AL)
Léveillé, A. 1910: 13

*reitteri* Kirsch, 1885; Colombia (AL)
Léveillé, A. 1910: 13

*reversa* Sharp, 1891; Mexico (AL)
Léveillé, A. 1910: 13

*rhyssa* Barron, 1971; USA: California, Idaho (JRB)
Barron, J. R. 1971: 77

*rugulosa* Kirsch, 1873; Peru (AL)
Léveillé, A. 1910: 13

*sallei* Léveillé, 1889; Guatemala, Yucatan (AL)
Léveillé, A. 1910: 13

*salvini* Sharp, 1891; Panama (AL)
Léveillé, A. 1910: 13

*sculpturata* Reitter, 1875; Colombia (AL)
Léveillé, A. 1910: 13

*sharpi* Léveillé, 1894; Bogota (AL)
Léveillé, A. 1910: 13

*smitii* Sharp, 1891; Mexico (AL)
Léveillé, A. 1910: 13

*splendida* Gory, 1831; Brazil: Cayenna (AL)
Léveillé, A. 1910: 13

*steinheili* Reitter, 1875; Colombia (AL)
Léveillé, A. 1910: 13

*stipes* Sharp, 1891; Mexico (AL)
Léveillé, A. 1910: 13

*subcylindrica* Léveillé, 1907; Brazil (AL)
Léveillé, A. 1910: 13

*sulcifrons* Sharp, 1891; America centr. (AL)
Léveillé, A. 1910: 13

*sulcisternum* Léveillé, 1889; Jamaica (AL)
Léveillé, A. 1910: 13

*suturata* Reitter, 1875; Mexico, Brazil (AL)
Léveillé, A. 1910: 13

*telemanensis* Sharp, 1891; Guatemala (AL)
Léveillé, A. 1910: 13
tristis Mulsant & Rey, 1853; Italia, Argentina, Colombia, Brazil (JK)
   Léveillé, A. 1910: 13 (syn. Temnochila cribricollis Reitter, 1875; synonymized by whom?). Kolibáč, J. 2007a: 365
urbensis Sharp, 1891; Mexico (AL)
   Léveillé, A. 1910: 13
varians Guérin, 1846; Brazil: Cayenna (AL)
   Léveillé, A. 1910: 13
variicolor Léveillé, 1889; Colombia (AL)
   Léveillé, A. 1910: 13
virescens Fabricius, 1775; Guayana, Central America, USA, introduced to Australia (varA)
   Léveillé, A. 1910: 13. Abbott, I. 1993: 35 (biology). Barron, J. R. 1971: 79. Barron, J. R. 1971: 80 (syn. Temnochila cyanea Reitter, 1875; syn. by Léveillé, 1888).
   Barron, J. R. 1971: 80 (syn. Temnochila cyanea Reitter, 1875; may be synonym of T. chlorodia). Note Barron 1971). Billings, R. F. 1985: 483 (biology). Billings, R. F. & Cameron, R. S. 1984: 1542 (biology). Böving, A. G. & Craighead, F. C. 1931: 273 (larva). Klausnitzer, B. 1978: 176. Klausnitzer, B. 1996: 146 (larva).
   Lawson, S. A. & Morgan, F. D. 1992: 225 (biology). Lawson, S. A. & Morgan, F. D. 1993: 139 (biology). Massey, C. L. et al. 1977: 1 (biology). Matthews, E. G. 1992: 3. McCravy, K. W. et al. 2000: 77 (biology). Page, J. M. 1981: 217 (biology). Reeve, J. D. S. et al. 2009: 183 (biology)
yuccae Crotch, 1874; USA: California, Nevada; Mexico: Baja (JRB)
   Léveillé, A. 1910: 13. Barron, J. R. 1971: 74
Temnoscheila sp
   Beutel, R. G. & Ślipiński, S. A. 2001: 219 (phylogeny, morphology). Costa, C. et al. 1988: 177 (larva)

**Genus Tenebroides Piller & Mitterpacher, 1783**

http://species-id.net/wiki/Tenebroides

Figs 2, 8; Map 5

Piller, M. & Mitterpacher, L. 1783: 87.

**Type species.** Tenebrio mauritanicus Linnaeus, 1758 [designated by Westwood 1838]
   Léveillé, A. 1910: 14. Barron, J. R. 1971: 88. Crowson, R. A. 1964a: 299. Downie, N. M. & Arnett, R. H. Jr. 1996: 937 (key). Kobayashi, K. 1980: 1–6 (ecology). Kolibáč, J. 2005: 84 (redescription). Kolibáč, J. 2006: 111 (phylogeny). Kolibáč, J. et al. 2005: 30 + 134 (key). Mamaev, B. M. 1976: 1652 (larva). Matthews, E. G. 1992: 3. Merkl, O. 1993: 12 (key). Nikitsky, N. B. 1992: 80. Ratti, E. 1997: 178 (Tenebroides sp.). Reitter, E. 1876: 28. Spahr, U. 1981: 74 (amber and copal fossils). Uchida, A. 1980: 61–73 (biology).

Trogossita Olivier, 1790 [type species: Trogossita caerulea Olivier, 1790]
   Barron, J. R. 1971: 88 (list of references).
**Description.** Body size: about 3.5–12.0 mm. Body shape elongate. Gular sutures wide, convergent at apex. Frontoclypeal suture absent. Frons: longitudinal groove or depression absent. Cranium ventrally: tufts of long setae at sides present. Submentum: ctenidium absent. Antennal groove present. Eyes: size flat. Eyes number: two. Epicranial acumination moderate. Lacinial hooks absent. Galea: shape elongate. Galea: ciliate setae present. Mediostipes-Lacinia fused together. Palpifer: outer edge denticulate. Mandibular apical teeth number: two, horizontally situated. Mola absent. Penicillus (at base) present (fine, often membranous). Pubescence above mola or cutting edge absent. Ventral furrow present. Basal notch moderate. Labrum-Cranium not fused. Epipharyngeal sclerite present. Lateral tormal process: projection curved downwards, processes not connected (*Airora*). Ligula: ciliate setae present. Ligula rigid, weakly retroflexed, weakly emarginate. Hypopharyngeal sclerite consisting of two separate parts. Antenna 11-segmented. Antennal club asymmetrical, sensorial fields present. Front coxal cavities externally closed, internally open. Pronotum transverse. Prepectus absent. Middle coxal cavities open. Elytra: long hairs absent. Epipleuron moderate. Elytral interlocking mechanism present, carinae reduced. Elytral punctuation regular, scales absent. Wing: radial cell open (outer vein present), wedge cell absent, cross vein MP3-4 absent, cross vein AA1+2-3+4 absent. Front tibiae: spines along side moderate. Hooked spur present. Claws: denticle absent. Spiculum gastrale absent. Tegmen composed of three parts. Coxitae undivided.

**Larva:** Frontal arms V-shaped. Epicranial stem reduced. Endocarina present. Gular sutures conspicuous, parallel. Gula: anterior apodemes absent. Paragular sclerites present. Hypostomal rods absent. Stemmata number: five. Mandibular apical teeth number: two, horizontally situated. Lacinia mandibulae with several small spines. Mola absent. Maxillary palpi 3-segmented. Palpifer absent. Pedunculate seta present. Mala simple. Mala: bidentate protrusion absent. Cardo-Stipes partially fused. Cardo: size much smaller than stipes. Ligula present. Labial palpi 2-segmented. Prementum in single part, anterior margin with notch. Torma: two separate lateral sclerites. Antennal joints 1 and 2 elongate. Sensory appendix medium sized (to half of joint 3). Thoracic sclerites pattern (dorsally) 1-2-2. Thoracic sclerites pattern (ventrally) 3+1+1. Trochanter oblong. Abdominal segment IX not divided. Tergite IX flat. Urogomphi present, hooked; median process absent.

**Biology.** The species of the genus are mostly predatory, occasionally feeding on grains (e.g. the cadelle beetle, *Tenebroides mauritanicus*, which is adapted to a synanthropic way of life and is a serious pest of stored grain). It is probably originally European. The wild population, sometimes designated as the separate species *T. fuscus* Goeze, 1777, lives in forests and its adults and larvae may be found under the bark of deciduous trees, where they feed on other insects. Supposed differences between adults of the both species can be summarized as follows: (1) *T. fuscus* – antennae dilated from antennomere 6; elytra weakly glabrous, densely transversely wrinkled; frons narrower than that in the following species. (2) *T. mauritanicus* – antennae dilated from antennomere 8; elytra rather dull, sparsely transversely wrinkled; frons wider than that in *T. fuscus*. 
Distribution. The bulk of species is distributed in the two Americas. Only a few species live in the Palaearctic region. Synanthropic *T. mauritanicus* is cosmopolitan.

Species:

*aenelpennis* Reitter, 1875; Brazil (AL)
Léveillé, A. 1910: 14

*aeneus* Reitter, 1875; Colombia (AL)
Léveillé, A. 1910: 14

*albomaculatus* Reitter, 1875; Colombia, America centr. (AL)
Léveillé, A. 1910: 14

*albonotatus* Reitter, 1875; Brazil: Cayenna (AL)
Léveillé, A. 1910: 15

*alticola* Sharp, 1891; Guatemala (AL)
Léveillé, A. 1910: 15

*alutaceus* Léveillé, 1905; Brazil (AL)
Léveillé, A. 1910: 15

*americanus* Kirby, 1837; USA, Canada (JRB)
Léveillé, A. 1910: 15 (syn. *Tenebroides castaneus* Melsheimer, 1844; synonymized by LeConte 1863). Barron, J. R. 1971: 103 (syn. *Trogosita castanea* Melsheimer, 1844). Barron, J. R. 1971: 103 (syn. *Trogosita nigrita* Horn, 1862; synonymized by LeConte 1863)

*anceps* Léveillé, 1889; America centr. (AL)
Léveillé, A. 1910: 15

*antennalis* Reitter, 1875; Colombia (AL)
Léveillé, A. 1910: 15

*auriculatus* Sharp, 1891; Guatemala (AL)
Léveillé, A. 1910: 15

*australis* Boisduval, 1835; Tasmania (?) (AL)
Léveillé, A. 1910: 15

*bimaculatus* Melsheimer, 1844; USA, „Pennsylvania“(JRB)
Léveillé, A. 1910: 15. Barron, J. R. 1971: 102

*bipustulatus* Fabricius, 1801; Brazil: Cayenna (AL)
Léveillé, A. 1910: 15 (syn. var. *impressifrons* Reitter, 1875: “Amer. mer.”; syn. n.)

*boggianii* Léveillé, 1905; Paraguay (AL)
Léveillé, A. 1910: 15

*bonvouloiri* Léveillé, 1889; Mexico (AL)
Léveillé, A. 1910: 15 (var. *chontalensis* Sharp, 1891: Nicaragua; syn. n.)

*brevis* Léveillé, 1889; Brazil (AL)
Léveillé, A. 1910: 15

*breviusculus* Reitter, 1875; America centr., Brazil (AL)
Léveillé, A. 1910: 15

*brunneovittatus* Léveillé, 1894; America centr., Brazil (AL)
Léveillé, A. 1910: 15
brunneus Léveillé, 1889; Brazil: Cayenna (AL)
Léveillé, A. 1910: 15
bugnioni Léveillé, 1903; Colombia (AL)
Léveillé, A. 1910: 15
carbonarius Léveillé, 1889; Brazil: Cayenna (AL)
Léveillé, A. 1910: 15
carinatus Léveillé, 1894; Brazil (AL)
Léveillé, A. 1910: 15
celatus Sharp, 1891; America centr. (AL)
Léveillé, A. 1910: 15
chevrolati Reitter, 1875; Mexico (AL)
Léveillé, A. 1910: 15
circumcinctus Léveillé, 1889; America centr. (AL)
Léveillé, A. 1910: 15
collaris Sturm, 1807; Canada: Ontario, E USA to Michigan and E Texas (JRB)
Léveillé, A. 1910: 15 (syn. Tenebroides nigripennis Sturm, 1826). Barron, J. R. 1971: 97 (Trogosita nigripennis Sturm, 1826; nomen nudum). Barron, J. R. 1971: 97 (Trogosita nigripennis Dejean, 1836; nomen nudum)
complicatus Sharp, 1891; America centr. (AL)
Léveillé, A. 1910: 15
cordicollis Léveillé, 1889; Brazil (AL)
Léveillé, A. 1910: 15
† corrugata Wickham, 1913; USA: Colorado, Flotissant; Early Oligocene (JRB)
Barron, J. R. 1971: 120. Ponomarenko, A. G. & Kireichuk, A. G. 2005–2008: http://zin.ru/animalia/Coleoptera/rus/paleosy2.htm. Schmied, H. et al. 2009: 23. Wickham, H. F. 1913: 291
corticalis Melsheimer, 1844; Guatemala, Mexico, USA, Canada to Alaska (JRB)
Léveillé, A. 1910: 15 (syn. Tenebroides dubius Melsheimer, 1844; synonymized by Barron 1971). Léveillé, A. 1910: 16 (syn. Tenebroides intermedius Horn, 1862; synonymized by Barron 1971). Léveillé, A. 1910: 17 (syn. Tenebroides limbalis Melsheimer, 1844; synonymized by Barron 1971). Barron, J. R. 1971: 115 (syn. Trogosita limbalis Melsheimer, 1844; synonymized by LeConte 1863). Barron, J. R. 1971: 115 (syn. Trogosita dubia Melsheimer, 1844; synonymized by LeConte 1863). Barron, J. R. 1971: 115 (syn. Trogosita intermedia Horn, 1862; synonymized by LeConte 1863)
crassicornis Horn, 1862; Western states of Canada, USA (JRB)
Léveillé, A. 1910: 15. Barron, J. R. 1971: 95 (syn. Trogosita californica Horn, 1862; synonymized by LeConte 1863). Barron, J. R. 1971: 95 (syn. Trogosita pleuralis Horn, 1862; synonymized by LeConte 1863). Léveillé, A. 1910: 18. (Tenebroides pleuralis Horn, 1862: California)
cribratus Léveillé, 1894; Mexico (AL)
Léveillé, A. 1910: 15
cucujoides Reitter, 1875; Colombia (AL)
Léveillé, A. 1910: 15

delicatus Léveillé, 1899; Brazil (AL)
Léveillé, A. 1910: 16

depressior Palisot de Beauvois, 1811 (Trogossita) incertae sedis; N America (JRB)
Léveillé, A. 1910: 16. Barron, J. R. 1971: 119 (Trogossita depressior Palisot de
Beauvois, 1811; incertae sedis)
depressus Guérin, 1846; Brazil, America centr. (AL)
Léveillé, A. 1910: 16
difficilis Léveillé, 1889; Honduras (AL)
Léveillé, A. 1910: 16
dilatatus Erichson, 1847; Peru (AL)
Léveillé, A. 1910: 16
donckieri Léveillé, 1902; Brazil (AL)
Léveillé, A. 1910: 16
elongatulus Jacqueline du Val, 1857; Cuba (AL)
Léveillé, A. 1910: 16
† emortua Germar, 1849; Germany: Orsberg; Tertiary: Upper Oligocene (varA)
Mörs, T. 1995: ii. Ponomarenko, A. G. & Kireichuk, A. G. 2005–2008: http://
zin.ru/animalia/Coleoptera/rus/paleosy2.htm. Schmied, H. et al. 2009: 23
† eocenica Meunier, 1921; Germany: Messel; Tertiary: middle Eocene (varA)
Meunier, F. 1921: ii. Ponomarenko, A. G. & Kireichuk, A. G. 2005–2008: http://
zin.ru/animalia/Coleoptera/rus/paleosy2.htm. Schmied, H. et al. 2009: 23
excellens Sharp, 1891; Panama (AL)
Léveillé, A. 1910: 16
explanatus Reitter, 1875; Colombia (AL)
Léveillé, A. 1910: 16
facilis Sharp, 1891; Mexico (AL)
Léveillé, A. 1910: 16
farmairei Léveillé, 1889; Tonga-Tabu (AL)
Léveillé, A. 1910: 16
fenestratus Léveillé, 1889; Mexico (AL)
Léveillé, A. 1910: 16
flaviclavus Reitter, 1875; Cuba (AL)
Léveillé, A. 1910: 16
floridanus Schaeffer, 1918; USA: Florida, Louisiana, centr. America (JRB)
Barron, J. R. 1971: 111. Schaeffer, C. F. A. 1918: 199
fossulatus Léveillé, 1899; Bolivia (AL)
Léveillé, A. 1910: 16
fry Léveillé, 1898; Brazil (AL)
Léveillé, A. 1910: 16
fulgens Sharp, 1891; Panama (AL)
Léveillé, A. 1910: 16
fulvolineatus Léveillé, 1889; Brazil (AL)
  Léveillé, A. 1910: 16

germaini Léveillé, 1895; Bolivia (AL)
  Léveillé, A. 1910: 16

godmani Sharp, 1891; Panama (AL)
  Léveillé, A. 1910: 16

gounellei Léveillé, 1889; Brazil: “Minas Geraes” (AL)
  Léveillé, A. 1910: 16

gracilipes Sharp, 1891; Panama (AL)
  Léveillé, A. 1910: 16

harpaloides Léveillé, 1889; Mexico (AL)
  Léveillé, A. 1910: 16

helophorus Sharp, 1891; Mexico (AL)
  Léveillé, A. 1910: 16

humeralis Léveillé, 1889; Colombia (AL)
  Léveillé, A. 1910: 16

importunus Léveillé, 1905; Brazil (AL)
  Léveillé, A. 1910: 16

incertus Léveillé, 1889; Mexico (AL)
  Léveillé, A. 1910: 16

†insignis Heer, 1883; Greenland: Atarnerdruk; Mesozoic: Upper Cretaceous, Maastrichtian (varA)
  Ponomarenko, A. G. & Kireichuk, A. G. 2005–2008: http://zin.ru/animalia/Coleoptera/rus/paleosy2.htm. Schmied, H. et al. 2009: 23

insinuans Walker, 1858; Ceylon (?) (AL)
  Léveillé, A. 1910: 16

instabilis Sharp, 1891; Mexico (AL)
  Léveillé, A. 1910: 16

iteratus Sharp, 1891; Mexico (AL)
  Léveillé, A. 1910: 16

jatahyensis Léveillé, 1902; Brazil (AL)
  Léveillé, A. 1910: 16

latens Wollaston, 1862; Canary Isl: Teneriffa (JK)
  Léveillé, A. 1910: 16. Kolibáč, J. 2007a: 365. Plata-Negrache, P. & Prendes-Ayala, C. 1981: 230

laticollis Horn, 1862; Eastern USA, Canada (JRB)
  Léveillé, A. 1910: 16. Barron, J. R. 1971: 105 (syn. Trogosita obscura Horn, 1862; synonymized by LeConte 1863)

latus Léveillé, 1889; Mexico (AL)
  Léveillé, A. 1910: 17

lineolatus Reitter, 1877; Colombia (AL)
  Léveillé, A. 1910: 17
litigiosus Reitter, 1875; Brazil (AL)
   Léveillé, A. 1910: 17
longicornis Léveillé, 1889 – Brazil (AL)
   Léveillé, A. 1910: 17
longulus Sharp, 1891; Guatemala (AL)
   Léveillé, A. 1910: 17
lucidus Sharp, 1891; Panama (AL)
   Léveillé, A. 1910: 17
marginatus Palisot de Beauvois, 1811; S and middle E USA (JRB)
   Léveillé, A. 1910: 17. Barron, J. R. 1971: 99 (syn. Tenebroides cucujiformis Horn, 1862; synonymized by LeConte 1863). Barron, J. R. 1971: 99. Léveillé, A. 1910: 15 (Tenebroides cucujiformis Horn, 1862). Léveillé, A. 1910: 16 (homonym T. marginatus Latreille, 1833 replaced by T. latreillei Léveillé, 1889; “Amer. aequin.”; synonymized by Barron 1971!)
marginicollis Sharp, 1891; Guatemala (AL)
   Léveillé, A. 1910: 17
maroccanus Reitter, 1884; N Africa, Azores, Corsica, Spain (JK)
   Léveillé, A. 1910: 17 (var. baillioti Léveillé, 1903: Madrid; syn. n.). Audisio, P. et al. 1995: 14. Kolibáč, J. 2007a: 365. Villemant, C. & Ramzi, H. 1997: 441 (biology)
marsoeli Reitter, 1875; St. Catharina (AL)
   Léveillé, A. 1910: 17
mauritanicus Linnaeus, 1758 (Tenebrio); cosmopolitan; type locality: “Algiriae” (var A) (syn. Lucanus dubius Scriba, 1790; Carabus bucephalus Herbst, 1783; Lucanus fuscus Goeze, 1777; Lucanus fuscus Prewysler, 1790; Platycerus fuscus Geoffroy, 1762; Platycerus striatus Fourcroy, 1785; Tenebrio caraboides Linnaeus, 1758; type locality: “Europa”; Tenebrio piceus Schaller, 1783; Tenebrio planus Quensel, 1790; Tenebroides complanatus Piller & Mitterpacher, 1783; Tenebrio piceus Schaller, 1783; Trogosita affinis White, 1846)
   Léveillé, A. 1910: 17 (syn. Tenebroides fuscus Goeze, 1777). Léveillé, A. 1910: 17 (var. nitidus Horn, 1862: 83 synonymized by Kolibáč 2007). Arbogast, R. T. & Byrd, R. V. 1982: 61 (biology). Audisio, P. et al. 1995: 14 (Tenebroides fuscus Goeze, 1777). Bahillo de la Puebla P. & López-Colón, J. I. 1999: 13. Bahillo de la Puebla P. & López-Colón, J. I. 2004: 129. Bahillo de la Puebla P. & López-Colón, J. I. 2004: 129 (Tenebroides fuscus Goeze, 1777). Barron, J. R. 1971: 92–93. Barron, J. R. 1971: 93 (syn. Trogosita nitida Horn, 1862; synonymized by LeConte 1863). Borowiec, L. 1983: 11. Borowiec, L. 1983: 11 (Tenebroides fuscus Goeze, 1777). Burakowski, B. et al. 1986: 117. Burakowski, B. et al. 1986: 117 (Tenebroides fuscus Goeze, 1777). Dziadik-Turner, C. et al. 1981: 546 (biology). Esaki, T. et al. 1951: 1061. Faustini, D. I. & D. G. H. Halstead 1982: 45. Gollikowski, V. 1988: 42. Herger, P. 1998: 105 (Tenebroides fuscus Goeze, 1777; distribution). Holzer, E. 1995: 30. Huber, Ch. & Kobel, E. 1994: 1. Kampsu, G. 2005: 17 (biology). Klausnitzer, B. 1976: 8. Klausnitzer, B. 1976: 8 (Tenebrio-
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ides fuscus Goeze, 1777). Klausnitzer, B. 1978: 176. Klausnitzer, B. 1996: 146. Klausnitzer, B. 1996: 151 (Tenebroides fuscus Goeze, 1777). Kolibáč, J. 1993a: 21. Kolibáč, J. 1993a: 21 (Tenebroides fuscus Goeze, 1777). Kolibáč, J. 1993b: 90. Kolibáč, J. 1993b: 90 (syn. Tenebroides fuscus Goeze, 1777). Kolibáč, J. 1996b: 473. Kolibáč, J. 1999b: 12. Kolibáč, J. 2005: 84 (redescription). Kolibáč, J. 2006: 109 (Tenebroides fuscus Goeze, 1777; larva). Kolibáč, J. 2007a: 365 (Tenebroides fuscus Goeze, 1777). Kolibáč, J. 2007a: 365 (syn. Tenebroides nitidus Horn, 1862). Kolibáč, J. 2007a: 365. Kolibáč, J. 2007a: 365 (syn. Tenebroides piceus Dalla Torre, 1879). Mamaev, B. M. 1976: 1654. Matthews, E. G. 1992: 3. Mitter, H. 1998: 560. Mitter, H. 1998: 560 (Tenebroides fuscus Goeze, 1777). Nakane, T. et al. 1963: 181. Nikitsky, N. B. 1992: 80. Pileckis, S. & V. Monsevičius 1995: 272. Plata-Negrache, P. & Prendes-Ayala, C. 1981: 230. Pospischil, R. 2003: 4 (biology). Purrini, K. & Ormieres, R. 1979: 437. Ratti, E. 1997: 178. Šefrová, H. & Laštůvka, Z. 2005: 162. Szwalko, P. & Kubisz, D. 1994: 46 (Tenebroides fuscus Goeze, 1777; distribution). Teson, A. & Dagoberto, E. L. 1979: 127 (biology). Vogt, H. 1967: 16. Vogt, H. 1967: 16 (Tenebroides fuscus Preyssler, 1790). Leschen, R. A. B. & Lackner, T. 2013: 301 (syn. Trogosita affinis White, 1846; New Zealand)

metallescens Reitter, 1875
Léveillé, A. 1910: 18; Brazil (AL)

moerens Sharp, 1891; Panama (AL)
Léveillé, A. 1910: 18

mordax Sharp, 1891; Costarica (AL)
Léveillé, A. 1910: 18

murinus Reitter, 1875; Colombia (AL)
Léveillé, A. 1910: 18

muticus Palisot de Beauvois, 1811 (incertae sedis); N America (JRB)
Léveillé, A. 1910: 18. Léveillé, A. 1888: 439 (syn. Trogosita punctata Dejean, 1836). Barron, J. R. 1971: 120 (Trogosita punctata Dejean, 1836; nomen nudum). Barron, J. R. 1971: 119. (incertae sedis, syn. with T. nanus Melsheimer, 1844 by Horn 1862)
nanus Melsheimer, 1844; E USA, Mexico (JRB)
Léveillé, A. 1910: 18. Barron, J. R. 1971: 98. Barron, J. R. 1971: 119. (syn. T. muticus Palisot de Beauvois, 1811 syn. by Horn 1862). Klausnitzer, B. 1996: 150. Kolibáč, J. 2006: 109

nemosomiaeformis Léveillé, 1905; Brazil (AL)
Léveillé, A. 1910: 18

nigrocyaneus Léveillé, 1905; Paraguay (AL)
Léveillé, A. 1910: 18

nigroviridis Léveillé, 1889; Mexico (AL)
Léveillé, A. 1910: 18

oblongus Sharp, 1891; Mexico, Panama (AL)
Léveillé, A. 1910: 18
*obtusus* Horn, 1862; Eastern coastal states of USA (JRB)

Léveillé, A. 1910: 18. Barron, J. R. 1971: 108

*occidentalis* Fall, 1910; W Canada and USA, Mexico (JRB)

Barron, J. R. 1971: 117. Fall, H. C. 1910: 128

*ocularis* Lewis, 1894; Japan (AL)

Léveillé, A. 1910: 18

*opacus* Reitter, 1875 (incertae sedis); N America (?), Colombia (JRB)

Léveillé, A. 1910: 18. Barron, J. R. 1971: 120 (incertae sedis)

*ornatus* Léveillé, 1889; Brazil (AL)

Léveillé, A. 1910: 18

*passeti* Léveillé, 1905; Brazil (AL)

Léveillé, A. 1910: 18

*patruelis* Reitter, 1875 (incertae sedis); Brazil, “Carol. mer.” (JRB)

Léveillé, A. 1910: 18. Barron, J. R. 1971: 120 (incertae sedis)

*politus* Sharp, 1891; Guatemala (AL)

Léveillé, A. 1910: 18

*pollens* Sharp, 1891; America centr. (AL)

Léveillé, A. 1910: 18

*pulchellus* Reitter, 1875; “Nov. Grenada” (AL)

Léveillé, A. 1910: 18

*pumilus* Léveillé, 1889; Colombia (AL)

Léveillé, A. 1910: 18

*punctatolineatus* Fairmaire, 1850; Polynesia (?) (AL)

Léveillé, A. 1910: 18

*punctulatus* Reitter, 1875; Cuba, Portorico (AL)

Léveillé, A. 1910: 18

*pusillimus* Mannerheim, 1843 (incertae sedis); USA: Alaska (JRB)

Léveillé, A. 1910: 18. Barron, J. R. 1971: 120 (incertae sedis)

*quadridens* Palisot de Beauvois, 1811; “Oware” (?) (AL)

Léveillé, A. 1910: 18

*quadriguttatus* Reitter, 1875; Brazil, Argentina (AL)

Léveillé, A. 1910: 18

*rectus* Wollaston, 1862; Canary Isl.: Lanzarote (JK)

Léveillé, A. 1910: 18. Kolibáč, J. 2007a: 365. Plata-Negrache, P. & Prendes-Ayala, C. 1981: 230

*reflexus* Reitter, 1875; Colombia (AL)

Léveillé, A. 1910: 18

*reitteri* Léveillé, 1889; Panama, Brazil (AL)

Léveillé, A. 1910: 18

*repetitus* Sharp, 1891; Mexico, Guatemala (AL)

Léveillé, A. 1910: 19

*ritsemae* Léveillé, 1889; Colombia, Costarica (AL)

Léveillé, A. 1910: 19
ruber Reitter, 1875; America centr., Brazil (AL)  
Léveillé, A. 1910: 19

rubromarginatus Reitter, 1875; Brazil (AL)  
Léveillé, A. 1910: 19

ruficollis Reitter, 1875; Bogota (AL)  
Léveillé, A. 1910: 19

rufipes Léveillé, 1889; Brazil (AL)  
Léveillé, A. 1910: 19

rufiventris Reitter, 1875; Colombia, Argentina (AL)  
Léveillé, A. 1910: 19

rugosipennis Horn, 1862; E USA to Arizona (JRB)  
Léveillé, A. 1910: 19. Barron, J. R. 1971: 108 (syn. Tenebroides arizonensis Schaeffer, 1918; synonymized by Barron 1971)

sallei Sharp, 1891; Mexico (AL)  
Léveillé, A. 1910: 19

scaberrimus Léveillé, 1905; Brazil (AL)  
Léveillé, A. 1910: 19

schaufussi Reitter, 1875; Venezuela: Caracas (AL)  
Léveillé, A. 1910: 19

sculpturatus Reitter, 1875; Brazil (AL)  
Léveillé, A. 1910: 19

semicylindricus Horn, 1862; Eastern coast of USA to Mexico (JRB)  
Barron, J. R. 1971: 109 (syn. Tenebrioides subaenea Reitter, 1875; synonymized by whom?). Barron, J. R. 1971: 109 (syn. Tenebroides foveatus Blatchley, 1917; synonymized by Barron 1971). Barron, J. R. 1971: 110 (syn. Tenebroides helophorus Sharp, 1891; synonymized by Schaeffer 1918; syn. uncertain)

semicylindricus Horn, 1862  
Léveillé, A. 1910: 19

sennevillei Léveillé, 1889; America centr. (AL)  
Léveillé, A. 1910: 19

sericatus Sharp, 1891; Guatemala (AL)  
Léveillé, A. 1910: 19

serraticollis Léveillé, 1907; Argentina (AL)  
Léveillé, A. 1910: 19

sharpi Léveillé, 1891; Panama (AL)  
Léveillé, A. 1910: 19

Léveillé, A. 1910: 19 (syn. Tenebroides bimaculatus Sharp, 1891; syn by Léveillé 1910?) (AL)

similis Léveillé, 1905; Brazil  
Léveillé, A. 1910: 19
sinuatus LeConte, 1861; W USA, Canada; to Kansas, Montana, Texas (JRB)
Léveillé, A. 1910: 19 (syn. Tenebroides sinuatus var. californicus Horn, 1862; synonymized by Barron 1971?). Barron, J. R. 1971: 91

sonorensis Sharp, 1891; SW USA, Mexico, Cuba (?) (JRB)
Léveillé, A. 1910: 19 (distribution in Cuba). Barron, J. R. 1971: 112 (syn. Tenebroides debilis Fall, 1910; synonymized by whom?). Dajoz, R. 1997: 42 (ecology)
soror Jacquelin du Val, 1857; USA: Florida, Bahamas, N Cuba (JRB)
Léveillé, A. 1910: 19. Barron, J. R. 1971: 101

spectator Sharp, 1891; Guatemala (AL)
Léveillé, A. 1910: 19

steinheili Reitter, 1875; Colombia (AL)
Léveillé, A. 1910: 19

stultus Léveillé, 1907; Argentina (AL)
Léveillé, A. 1910: 19

sublaevis Palisot de Beauvois, 1811; ‘Oware’ (AL)
Léveillé, A. 1910: 19
Note: species not mentioned by Barron (1971)

subnigra Palisot de Beauvois, 1811 (incertae sedis); USA: Pennsylvania (JRB)
Léveillé, A. 1910: 19 (Tenebroides subniger; misspelling). Barron, J. R. 1971: 119 (incertae sedis)

subplanus Reitter, 1875; Mexico (AL)
Léveillé, A. 1910: 19

subruber Léveillé, 1899; Brazil (AL)
Léveillé, A. 1910: 19

subvirescens Léveillé, 1889; Brazil (AL)
Léveillé, A. 1910: 19

tsulcifrons Jacquelin du Val, 1857; Cuba (AL)
Léveillé, A. 1910: 19

†tenebrioides Germain, 1837; Germany: Rott, Siebengebirge; Tertiary: Upper Oligocene (var A)
Léveillé, A. 1910: 19. Ponomarenko, A. G. & Kireichuk, A. G. 2005–2008: http://zin.ru/animalia/Coleoptera/rus/paleosy2.htm. Schmied, H. et al. 2009: 23
tenuistriatus Fall, 1910; USA: Colorado, New Mexico, Arizona; Mexico (JRB)
Barron, J. R. 1971: 114

transversicollis Jacquelin du Val, 1857; Cuba (AL)
Léveillé, A. 1910: 20

turkestanicus Ballion, 1870; Central Asia (JK)
Léveillé, A. 1910: 20. Kolibáč, J. 2006: 109. Kolibáč, J. 2007a: 365. Mamaev, B. M. 1976: 1654 (larva)

undulatus Sharp, 1891; Guatemala (AL)
Léveillé, A. 1910: 20

viridescent Léveillé, 1889; Brazil (AL)
Léveillé, A. 1910: 20
yucatanicus Léveillé, 1889; Yucatan, Honduras (AL)
Léveillé, A. 1910: 20
zapotensis Sharp, 1891; Guatemala (AL)
Léveillé, A. 1910: 20
zunilensis Sharp, 1891; Guatemala (AL)
Léveillé, A. 1910: 20

† Genus Thoracotes Handlirsch, 1906
http://species-id.net/wiki/Thoracotes
Figs 24, 25; Map 5

Handlirsch, A. 1906–1908: 438–439, Taf. XLI-9 (1906).

Type species. Thoracotes dubius Handlirsch, 1906 [by monotypy]
Kolibáč, J. 2006: 121 (classification). Ponomarenko, A. G. 1985: 68. Ponomarenko, A. G. 1990: 74. Ponomarenko, A. G. & Kireichuk, A. G. 2005–2008: http://zin.ru/animalia/Coleoptera/rus/paleosy2.htm. Schmied, H. et al. 2009: 24.

Description (T. dubius): “Ein 8 mm langer Käfer von ähnlicher Gestalt wie Parnidium Geinitzi. Der Prothorax is aber anders geformt un nähert sich mehr der Kreisform, Auch der Kopf scheint anders gewesen zu sein. Flügeldecken punktiert, 3,5 mal so lang als breit. Geinitz vergleicht diese Form mit Latridiites Schaumi, mit dem sie allerdings auch einige Ähnlichkeit hat.”

This is potentially the oldest fossil record of Trogossitidae. Unfortunately, its description is inadequate and the illustration very poor. It is unclear to me why two more Mesozoic species from Russia were assigned to this dubious genus. It was not indicated in the original papers describing the two new species if the type of T. dubius was studied in situ (Ponomarenko 1985, 1990). The specimen appears to be housed in Ernst Moritz Arndt University of Greifswald, Germany. (A facsimile of the original description and illustration in Figs 24, 25.)

Description (T. glabrus, translation from Russian). “Head slightly longer than wide, narrowed in front of eyes; eyes relatively large, situated at sides of head; cheeks [genae] short; temples [tempora] slightly shorter than eyes. The first antennomere large, second transverse, third 1.5 times longer than second, fourth to seventh as long as wide, eighth longer than wide, ninth to eleventh asymmetric. Pronotum with lateral margins rounded, its corners not acute, 1.5 times longer than wide. Front coxae not large, spherical, with exposed trochantins. Prosternal process short and blunt. Middle coxae transverse, nearly touching each other. Metathorax trapezoidal, narrowed anteriad, its length 1.8 times lesser than wide at hind [basal] margin. Hind coxae touch each other, transverse, not concave posteriorly [sic] and without coxal plates, at lateral sides shorter than at mid-point. Last abdominal sternite distinctly longer than penultimate one. Ovipositor long, with sclerotized palpifers [sic] and pairs of appendages [coxitae] with pubescent cerci [styli]. Legs relatively long, tibiae and tarsi thin. Elytra smooth. Length of beetle 3.6, width 1.6; length of elytra 2.3 mm.” “The beetle of Pavlovka distinctly smaller (length 3.0, width 1.0 mm).” (Ponomarenko 1990: 74.)
**Distribution.** Germany: Dobbertin in Mecklenburg, Russia: central Siberia; Transbaikalia: Pavlovka, Onokhoy; Mesozoic: from Lower to Upper Jurassic.

**Species:**
† *dubius* Handlirsch, 1906; Germany; Lower Jurassic: Upper Lias (varA)
  Kolibáč, J. 2006: 121 (classification). Schmied, H. et al. 2009: 24
† *glabrus* Ponomarenko, A., 1990; Russia: Transbaikalia; Upper Jurassic (varA)
  Ponomarenko, A. G. 1990: 74. Kolibáč, J. 2006: 121. Ponomarenko, A. G. & Kireichuk, A. G. 2005–2008: http://zin.ru/animalia/Coleoptera/rus/paleosy2.htm. Schmied, H. et al. 2009: 24
† *sibiricus* Ponomarenko, 1985; Russia: Siberia; Middle Jurassic (varA)
  Ponomarenko, A. G. 1985: 68. Kolibáč, J. 2006: 121. Ponomarenko, A. G. & Kireichuk, A. G. 2005–2008: http://zin.ru/animalia/Coleoptera/rus/paleosy2.htm. Schmied, H. et al. 2009: 24

† Tribe Lithostomatini Kolibáč & Huang, 2008

Kolibáč, J. & Huang, D.-Y. 2008: 142 (as Lithostomini). Bouchard, P. et al. 2011: 57 (emendation to Lithostomatini)

**Type genus.** *Lithostoma* Martynov, 1926 [by monotypy and author’s designation]
  Kolibáč, J. & Huang, D.-Y. 2008: 142. Yu, Y. et al. 2012: 250.

**Remarks.** This fossil differs from all other Mesozoic Trogossitidae described to date. If Martynov (1926) interpreted the shapes of the head and antennal segments well, it is the first known member of Trogossitidae without a distinct antennal club and with the head narrowed towards its base. The following features of Trogossitidae appear in the fossil: (1) general shape and size of body, (2) distinctly flattened sides of pronotum and elytra, (3) double rows of punctures/tubercles among elytral carinae, (4) robust bidentate mandibles, (5) extremely large scapus, and (6) dilated antennal segments with what are perhaps sensorial fields in the enlarged parts of each segment. The classification within Trogossitinae is based on the presence of the sensorial fields in the enlarged parts of the antennomeres alone. Small tubercles occurring in pronotum and elytra are known in trogossitine genera *Calitys* and *Phanodesta* only; no peltine representative possesses such structures. The tribe differs from the recent and fossil members of Trogossitinae in broadly oval body (this occurs in some Gymnochilini only), pronotum narrowed anteriad, antennae without conspicuous club and asymmetrical segments in flagellum, head narrowed towards base. The shape of antennal segments 10 and 11 is unknown because they are missing (only a trace of segment 10 is visible). The antennae may be only 10-segmented with the last segment enlarged (as in e.g. Egoliini). The new tribe is probably isolated from other tribes of Trogossitinae and may be considered a sister group to them. The ventral part of the fossil is unfortunately unknown, so a classification of *Lithostoma* remains uncertain, chiefly based on the distinctly enlarged scapus.
On the other hand, the concept of Lithostomatini was justifiably called into question by Yu et al. (2012) who argued that insufficient morphological information existed for the establishment of a higher taxon.

† Genus Lithostoma Martynov, 1926
http://species-id.net/wiki/Lithostoma
Map 6

Martynov, A. V. 1926: 13 (in Russian), 32 (in English)

Type species. Lithostoma expansum Martynov, 1926 [by monotypy]

Kolibáč, J. & Huang, D.-Y. 2008: 142 (Remarks, English description and translation of Russian description). Ponomarenko, A. G. & Kireichuk, A. G. 2005–2008: http://zin.ru/animalia/Coleoptera/rus/paleosy2.htm. Schmied, H. et al. 2009: 26.

Original description of the genus (translation from Russian). “Head free, dilated between the eyes [Russ.: and narrowed backwards]; mandibulae strong, sharply bent inwards, with perhaps two teeth at the apices; antennae resembling those in living Ostomatinae [Russ.: in Ostoma and other genera]; basal joint large, bulbous anteriorly, second much smaller, third still smaller, short, fourth joint of the same width but elongated, 5–7th joints elongated but becoming gradually thicker towards the tip [Russ.: joints 10 and 11 not preserved], last 8–11 joints only slightly thicker, without distinct apical club (clavus). Pronotum broadening posteriorly, apparently furnished with marginal dilatations [Russ.: as in Ostoma]; covered all over with numerous point-like pits. Elytra broad, rounded at postero-lateral margins [Russ.: as in Ostoma], with perhaps 8 longitudinal stripes, each containing two rows of raised black points; intermediate narrow stripes barely elevated; both marginal dilatations also with pits and points [Russ.: Body size about 6 mm.].” (Martynov 1926: 32.)

Original description of the species. English text: “Head and antennae as in generic description; sides of pronotum convex, points distinct; elytra broad, rounded at the postero-lateral margins; marginal dilatations rather broad; the dividing stripes not elevated. Length of the body 6 mm.” (Martynov 1926: 32)

Translation of Russian text: “Head free, strongly projecting anteriorly (partly artificial condition in compressed specimen). Mandibles robust, left mandible bidentate (right inconspicuous). Antennae as described above, each joint weakly dilated at apex; each dilated area with thin [sic], dark, round rim. Final two joints torn off, only a trace of joint 10 present. Pronotum widened towards base, with shallow punctures interspersed with small tubercles. Elytra wide, rounded apically and dorsally [sic]; flattened sides well-developed and probably lighter than dark brown convex portion of elytra. Elytra, including flattened sides, with rows of well-developed small, black tubercles [orig.: “convex punctures”]; carinae among them not higher than tubercles. Length of body from anterior margin of labrum to apex of elytra – 6 mm.” (Martynov 1926: 13.)
Note: The Russian and English texts vary somewhat from one another; the Russian is more comprehensive.

Distribution. Southern Kazakhstan: paper-shales near Galkino (approximately 42.15N, 70.02E), Chimkentskaya oblast district. Mesozoic: Upper Jurassic, probably Oxfordian.

Species:
† expansum Martynov, 1926; Kazakhstan; Upper Jurassic (varA)
Martynov, A. V. 1926: 13 (in Russian), 32 (in English). Kolibáč, J. & Huang, D.-Y. 2008: 143 (Remarks, English description and translation of Russian description). Ponomarenko, A. G. & Kireichuk, A. G. 2005–2008: http://zin.ru/animalia/Coleoptera/rus/paleosy2.htm. Schmied, H. et al. 2009: 26

Subfamily Peltinae Latreille, 1806

Latreille, P. A. 1806: 8, 1825.
Crowson, R. A. 1955: 82. Zherichin, V. V. 1978: 78 (unidentified remnants of two fossils, Turon; Kazachstan: Kzyl-Dzhar). Burakowski, B., Mroczkowski, M. & Stefanska, J. 1986: 121. Lawrence, J. F. & Newton, A. F., Jr. 1995: 868 (Kirby, W. 1837: 104 is considered the author of the family rank name). Klausnitzer, B. 1996: 145. Kolibáč, J. 2006: 125 (diagnosis). Barron, J. R. 1971: 11.
Key to tribes of Peltinae

1  Antenna 8-segmented; body surface with stout scale-like setae; wingless species with convex body ...................................................... Colydiopeltini
   – Antenna 10- or 11-segmented; body surface without scales or scale-like setae; winged or wingless species with flat or convex or conglobate body...........2
2  Body flat, relatively large (more than 8 mm). Larva without distinct urogomphi ................................................................................. Peltini
   – Body convex or conglobate, smaller (mostly less than 7 mm). Larva with distinct urogomphi .................................................................3
3  Adult: mandible without mola, with membranous penicillus; front coxae distinctly projecting. Larva: mandible without mola, with tridentate lacinia mobilis .................................................................................. Phloiophilini
   – Adult: mandible with mola, membranous penicillus absent; front coxae indistinctly projecting. Larva: mandible with mola, without distinct lacinia mobilis .................................................................................. Thymalini

Peltinae incertae sedis

† Genus Juralithinus Kireichuk & Ponomarenko, 1990
http://species-id.net/wiki/Juralithinus
Map 6

Kireichuk, A. G. & Ponomarenko, A. G. 1990: 79 (Peltidae: Meligethiellinae).

Type species. Juralithinus gracilidorsum Kireichuk & Ponomarenko, 1990 [by monotypy and original designation]

Kolibáč, J. 2006: 126 (Thymalini). Ponomarenko, A. G. & Kireichuk, A. G. 2005–2008: http://zin.ru/animalia/Coleoptera/rus/paleosy2.htm. Schmied, H. et al. 2009: 24.

Remarks. The genus was originally described in Peltidae and classified within the extinct subfamily Meligethiellinae along with Meligethiella and Ostomalynus (Kireichuk and Ponomarenko 1990). I accepted the classification within Trogossitidae: Peltinae. However, I synonymized Meligethiellinae and moved all three genera into the extant Thymalini (Kolibáč 2006). Features of Juralithinus agree with a general definition of Peltinae, although after re-examination of its description and illustrations, I found the evidence too weak to classify the genus within any of the extant tribes. Therefore, it is listed herein as Peltinae incertae sedis. It may be considered an ancestor of Thymalini or Peltini or of both tribes.

Original description of the genus (translation from Russian). “Diagnosis: Body conspicuously longitudinal, with prothorax relatively elongate and narrow, coxae narrowly separated in all pairs of legs; metathorax without femoral lines [paracoxal sutures? – they
are drawn in l.c., Fig. 1a; elytra distinctly wider than pronotum; first visible abdominal sternite approximately as large as the second to fourth, the last sternite longer.”

**Original description of the species** (translation from Russian). “Elongate-oval beetle [sic]. Head with moderately protruded bidentate mandibles, very small transverse mentum and developed gular sutures. Pronotum with anterior margin deeply emarginate and widely rounded anterior corners. Transverse front coxae strongly [distinctly] narrowly separated, process between them not observed. Mesothorax convex at centre, middle coxae narrowly separated. Mesonotum wide, with widely rounded scutellum. Metathorax with conspicuous discrimen and paracoxal sutures, outer apices of metepisterna strongly anteriorly projecting. Hind coxae oval, very narrowly separated and obliquely situated towards centre. Elytra, with medium sized epipleurons, seem not to cover abdomen perfectly; their apices possibly artificially [sic] broken off. Femora medium-dilated, all with oval outlines. Tibiae weakly dilated towards apices, in middle, strangely enough, relatively thin with elongate apodemes [orig.: arrows] at apex. Hind tarsi relatively long, comprised of simple segments [i.e., without lobes]. Length – 9.3; width – 4.6; length of elytra – 2.3 [mm].”

**Distribution.** Kazakhstan: Chimkentskaya obl., Mikhailovka; Mesozoic: Upper Jurassic, Karabastayskaya formation.

**Species:**
† _gracilidorsum_ Kireichuk & Ponomarenko, 1990; Kazakhstan; Upper Jurassic (varA)
Kireichuk, A. G. & Ponomarenko, A. G. 1990: 80. Kolibáč, J. 2006: 126. Ponomarenko, A. G. & Kireichuk, A. G. 2005–2008: http://zin.ru/animalia/Coleoptera/rus/paleosy2.htm. Schmied, H. et al. 2009: 24

† **Genus Sinopeltis** Yu, Leschen, Ślipiński, Ren & Pang, 2012
http://species-id.net/wiki/Sinopeltis
Map 6

Yu, Y., Leschen, R. A. B., Ślipiński, A., Ren, D. & Pang, H. 2012: 246.

**Type genus.** _Sinopeltis jurassica_ Yu, Leschen, Ślipiński, Ren & Pang, 2012

**Remarks.** This genus, containing two species, has only recently been established. The fossils are well preserved, with both part and counterpart. The species are relatively large, body shape perfectly appropriate to Peltinae or Lophocaterinae. The eyes are distinctly elevate, much more so than those in extant Ancyronini. The 3-segmented antennal club of _S. jurassica_ is “weakly asymmetrical” (quite symmetrical in the original picture), that of _S. amoena_ is “strongly asymmetrical” (inconspicuously so in the picture). The mesocoxae appear contiguous (unknown state in Trogossitidae) in _S. jurassica_, whereas they are narrowly separated in _S. amoena_. Both discrepancies mentioned may be the results of different positions of body parts (coxae, antennae) assumed during fossilization. Unfortunately, neither the ends of the tibiae nor the tarsi and mouthparts are described in either species, which leads to a lack of direct evidence
Trogossitidae: A review of the beetle family, with a catalogue and keys

for classification. Both S. jurassica and S. amoena are about 165 million years old and belong, if their classification is correct, together with species of Thoracotes, among the oldest known fossil members of Trogossitidae.

Description. “Body broadly ovoid and parallel-sided. Antenna distinctly clubbed with antennomeres symmetrical [S. jurassica: “weakly asymmetrical”; S. amoena: “strongly asymmetrical”]; antennal insertions visible in dorsal view. Eyes convex. Frontoclypeal suture present. Antennal grooves present and parallel. Anterior pronotal angles well developed and sub-rounded. Mesoventrite not vaulted. Mesocoxae widely separated [see “note” in Remarks]. Metaventrite lacking axillary space and metakatepisternal suture. Metacoxae not excavate and narrowly separated. Elytra with seriate punctation (in one fossil). Abdominal ventrite 1 about as long as 2, intercoxal process narrow. Body length 7.5–7.6 mm, width 4.5–4.8 mm.” (Diagnosis of the genus according to Yu, Leschen, Ślipiński, Ren & Pang 2012.)

Distribution. China: Inner Mongolia, Daohugou. Middle Jurassic, Jiulongshan formation.

Species:
† jurassica Yu, Leschen, Ślipiński, Ren & Pang, 2012; China: Inner Mongolia; Middle Jurassic (AD)
  Yu, Y., Leschen, R. A. B., Ślipiński, A., Ren, D. & Pang, H. 2012: 247
† amoena Yu, Leschen, Ślipiński, Ren & Pang, 2012; China: Inner Mongolia; Middle Jurassic (AD)
  Yu, Y., Leschen, R. A. B., Ślipiński, A., Ren, D. & Pang, H. 2012: 247

Tribe Peltini Latreille, 1806

Latreille, P. A. 1806: 8, 1825.

Type genus. Peltis O. F. Müller, 1764
  Hunt, T. et al. 2007: 1915 (Peltinae) (molecular phylogeny). Kolibáč, J. 2006: 125 (diagnosis, phylogeny). Kolibáč, J. 2007a: 366. Lawrence, J. F. & Newton, A. F., Jr. 1995: 868 (Kirby, W. 1837: 104 is considered the author of the family rank name). Ślipiński, S. A. 1992: 442 (Peltinae).

Remarks. The single genus Peltis exhibits a noteworthy mixture of the both advanced and primitive morphological features. However, some of the derived, especially larval, character states may considered as various kinds of reduction. A few species of Peltis are highly adapted to a hidden way of life under tree bark or in rotten wood: they are flattened and slow-moving, their robust mandibles have distinct mola, and the larval urogomphi are strongly reduced. The outer appearance is similar to that in Calitys, while some details of both adult and larval morphology (for example the gular appendages in the larval cranium) resemble Thymalus. The synonymization of Zimioma with Peltis is undeniable. Apart from body size, there is no morphological character to distinguish between the two genera.
Genus *Peltis* O. F. Müller, 1764

http://species-id.net/wiki/Peltis

Figs 2, 9, 15; Map 7

Müller, O. F. 1764: 13.

**Type species.** *Silpha grossa* Linnaeus, 1758 [designated by Hope 1840]

Bacianskas, V. 2009: 30 (biology). Barron, J. R. 1971: 24. Barron, J. R. 1996: 193 (Nearctic species). Kolibáč, J. 2005: 76. Kolibáč, J. 2006: 111. Kolibáč, J. 2007a: 366. Noreika, N. 2009: 68 (distribution). Spahr, U. 1981: 74 (amber and copal fossils).

**Gaurambe** C. G. Thomson, 1862 [type species: *Silpha ferruginea* Linnaeus, 1758]  
Barron, J. R. 1971: 24. Kolibáč, J. 2007a: 366. Lafer, G. Sh. 1992: 83. Silfverberg, H. 1978: 117.

**Ostoma** Laicharting, 1781 [type species: *Silpha ferruginea* Linnaeus, 1758]  
Léveillé, A. 1910: 30. Downie, N. M. & Arnett, R. H. Jr. 1996: 935 (key). Barron, J. R. 1971: 23. Crowson, R. A. 1964a: 295 (*Peltis* Kugel, 1791). Kolibáč, J. 2005: 76 (synonymized). Kolibáč, J. 2007a: 366. Larsson, S. G. 1978: 150 (fossil, Baltic amber). Lafer, G. Sh. 1992: 83. Reitter, E. 1876: 61.

**Zimioma** Gozis, 1886 [type species: *Silpha grossa* Linnaeus, 1758]  
Léveillé, A. 1910: 29 [*Ostoma (Zimioma)* Gozis, 1886]. Kolibáč, J. 2007a: 366.

**Description.** Body size: about 7.5–23.0 mm. Body shape flat. Gular sutures wide, subparallel. Frontoclypeal suture broadly emarginate. Frons: longitudinal groove or depression absent. Cranium ventrally: tufts of long setae at sides absent. Submentum: ctenidium absent. Antennal groove present. Eyes: size moderate. Eyes number: two. Epicranial acumination moderate. Lacinial hooks: one. Galea: shape elongate. Galea: ciliate setae absent. Medioptipes-Lacinia partially fused. Palpi-fer: outer edge even. Mandibular apical teeth number: two, horizontally situated. Mola present. Penicillus (at base) absent. Pubescence above mola or cutting edge absent. Ventral furrow absent. Basal notch moderate. Labrum-Cranium not fused. Epipharyngial sclerite absent. Lateral tormal process: projection curved downwards, processes with bridge (*Peltis*). Ligula: ciliate setae absent. Ligula membranous, not retroflexed, deeply emarginate. Hypopharyngeal sclerite consisting of two separate parts. Antenna 11-segmented. Antennal club symmetrical, sensorial fields absent. Front coxal cavities externally open, internally open. Pronotum transverse. Prepec-tus present. Middle coxal cavities open. Elytra: long hairs absent. Epipleuron moderate. Elytral interlocking mechanism absent, carinae conspicuous. Elytral punctuation regular, scales absent. Wing: radial cell oblong (or reduced), wedge cell small (*Peltis*), cross vein MP3-4 present, cross vein AA1+2-3+4 absent. Front tibiae: spines along side moderate. Hooked spur present. Claws: denticle absent. Spiculum gastrale abs-ent. Tegmen composed of three parts. Coxitae divided.

Larva: Frontal arms Y-shaped. Epicranial stem present. Endocarina absent. Gular sutures inconspicuous. Gula: anterior apodemes present. Paragular sclerites absent.
Figure 9. **A** *Peltis* (syn. *Zimioma*, *Ostoma*) *grosa* **B** *Peltis* (syn. *Ostoma*) *ferruginea* **C** *Colydiopeltis loebli*  
**D** *Colydiopeltis compactum* **E** *Colydiopeltis burckhardtii* **F** *Parapeltis australicum* **G** *Protopeltis viridescens*  
**H** *cf. Globorentonium plaumani*, Brazil (1–3: three different specimens from the same locality).
Hypostomal rods present. Stemmata number: 3. Mandibular apical teeth number: two, horizontally situated. Lacinia mandibulae absent. Mola reduced. Maxillary palpi 3-segmented. Palpiifer present. Pedunculate seta absent. Mala simple. Mala: bidentate protrusion present. Cardo-Stipes not fused. Cardo: size much smaller than stipes. Ligula present. Labial palpi 2-segmented. Prementum in two parts, anterior margin even. Torma: two separate lateral sclerites. Antennal joints 1 and 2 elongate. Sensory appendix very small. Thoracic sclerites pattern (dorsally) 0+0+0. Thoracic sclerites pattern (ventrally) 0+0+0. Trochanter oblong. Abdominal segment IX not divided. Tergite IX flat. Urogomphi minute; median process absent.

**Biology.** Fungivorous. The adults live under the bark of dead or dying deciduous and coniferous trees and feed on fungi. Larvae can be found in rotten or decaying wood, for example at the base of old trees or inside stumps.

**Distribution.** Holarctic temperate zones: North America from Arizona to Alaska, Europe including British Isles and Scandinavia, Siberia, Korea, Japan.

**Species:**

* columbiana* Casey, 1924; widespread USA, Canada (from Alaska) (JRB)

Barron, J. R. 1971: 30

† *constulata* Heyden, 1862; Germany: Rott, Siebengebirge; Tertiary: Upper Oligocene (varA)

Ponomarenko, A. G. & Kireichuk A. G. 2005–2008: http://zin.ru/animalia/Coleoptera/rus/paleosy2.htm. Schmied, H. et al. 2009: 24
ferruginea Linnaeus, 1758; Europe, Siberia, Japan, North Korea, USA, Canada (JK)
Léveillé, A. 1910: 30 (Ostoma). Bahillo de la Puebla P. & López-Colón, J. I. 1999: 13 (Ostoma). Bahillo de la Puebla P. & López-Colón, J. I. 2004: 129 (Ostoma)
Barron, J. R. 1971: 28 (syn. Ostoma cassidoides Lepechin, 1774); Russia (JRB)
Barron, J. R. 1971: 28 (syn. Ostoma cimicoides DeGeer, 1774; not binominal). Barron, J. R. 1971: 28 (Ostoma)
Barron, J. R. 1971: 28 (syn. Ostoma fraternus Randall, 1838); USA: Maine (JRB)
Barron, J. R. 1971: 28 (syn. Ostoma nigricans Dalla Torre, 1879); Oberösterreich (JRB)
Barron, J. R. 1971: 28 (syn. Ostoma nigrina Casey, 1916); Canada: British Columbia (JRB)
Barron, J. R. 1971: 28 (syn. Ostoma septentrionalis Randall, 1838); USA: Maine (JRB)
Borowiec, L. 1983: 13 (Ostoma). Burakowski, B. et al. 1986: 122 (Ostoma)
Klausnitzer, B. 1976: 7 (Ostoma). Klausnitzer, B. 1996: 155 (Ostoma, larva). Kolibáč, J. 1993a: 21 (Ostoma). Kolibáč, J. 1993b: 90 (Ostoma). Kolibáč, J. 1999b: 12 (Ostoma). Kolibáč, J. 2006: 108 (larva). Kolibáč, J. 2007a: 366 (syn. Peltis cimicoides DeGeer, 1774). Kolibáč, J. 2007a: 366 (syn. Peltis fraterna Randall, 1838). Kolibáč, J. 2007a: 366 (syn. Peltis nigricans Dalla Torre, 1879). Kolibáč, J. 2007a: 366 (syn. Peltis nigrina Casey, 1916). Kolibáč, J. 2007a: 366. Lafer, G. Sh. 1992: 84 (Ostoma). Mitter, H. 1998: 561 (Ostoma). Nakane, T. et al. 1963: 181 (Ostoma). Pileckis, S. & V. Monsevičius 1995: 272 (Ostoma). Reitter, E. 1876: 62 (Ostoma). Vogt, H. 1967: 17 (Ostoma)
gigantea Reitter, 1882; East Siberia, Far East, Japan, China: Northeast Territory (JK)
Léveillé, A. 1910: 29 (Ostoma subgen. Zimioma). Esaki, T. et al. 1951: 1062 (Ostoma). Kolibáč, J. 2007a: 366. Lafer, G. Sh. 1992: 84 (Zimioma). Nakane, T. et al. 1963: 181 (Zimioma)
grosa Linnaeus, 1758; Europe (JK)
Léveillé, A. 1910: 29 (Ostoma subgen. Zimioma)
Léveillé, A. 1910: 30 (syn. Ostoma (Zimioma) lunata Fabricius, 1787); Europe (AL)
Bahillo de la Puebla P. & López-Colón, J. I. 1999: 13 (Zimioma). Bahillo de la Puebla P. & López-Colón, J. I. 2004: 129 (Ostoma). Borowiec, L. 1983: 12. Burakowski, B. et al. 1986: 121 (Zimioma). Cunev, J. 1999: 76. Fjellberg, A. & Hansen, S. O. 1997: 77 (biology). Karalius, S. & Monsevičius, V. 1992: 5 (distribution). Klausnitzer, B. 1976: 7 (Zimioma). Klausnitzer, B. 1978: 176. Klausnitzer, B. 1996: 156 (larva). Kolibáč, J. 1993a: 21. Kolibáč, J. 1993b: 90. Kolibáč, J. 2005: 139 (redescription). Kolibáč, J. 2007a: 366. Krasutskii, B. V. 2006: 763 (biology). Mamaev, B. M. 1976: 1656 (larva). Mitter, H. 1998: 560 (Zimioma). Pileckis, S. & Monsevičius, V. 1995: 272. Ratti, E. 1997: 178. Reitter, E. 1876: 62 (Ostoma). Šablevičius, B. & Ferenca, R. 1995: 146. Svitra, G. & Aliukonis, A. 2009: 72 (distribution, biology). Vogt, H. 1967: 17 (Zimioma)
jakowlewi Semenov, 1898; Russia: South European Territory (JK)
Léveillé, A. 1910: 30 (Ostoma subgen. Zimioma). Kolibáč, J. 2007a: 366
† laminata Wickham, 1910; USA: Colorado, Florissant; Tertiary: Lower Oligocene (JRB, varA)
Barron, J. R. 1971: 120. Ponomarenko, A. G. & Kireichuk, A. G. 2005–2008: http://zin.ru/animalia/Coleoptera/rus/paleosy2.htm. Schmied, H. et al. 2009: 24. Wickham, H. F. 1910: 48
† minuscula Pilton, 1935; France: Cantal; Tertiary: Upper Miocene, Messinian (varA)
Deuve, P. 1988: ii (exact reference unknown). Ponomarenko, A. G. & Kireichuk, A. G. 2005–2008: http://zin.ru/animalia/Coleoptera/rus/paleosy2.htm. Pilton, 1935: ii (exact reference unknown). Schmied, H. et al. 2009: 24
pippingskoeldi Mannerheim, 1852; western states of USA, Canada: British Columbia (JRB)
Léveillé, A. 1910: 31 (Ostoma). Barron, J. R. 1971: 25 (Ostoma). Dajoz, R. 1997: 44 (Ostoma) (biology). Reitter, E. 1876: 62 (Ostoma)
valida Lewis, 1894; Japan (JK)
Léveillé, A. 1910: 30 (Ostoma subgen. Zimioma). Kolibáč, J. 2007a: 366

Tribe Colydiopeltini Kolibáč, 2006

Type genus. Colydiopeltis Ślipiński, 1992
Kolibáč, J. 2006: 126.
Remarks. A record by Ivan Löbl and Daniel Burckhardt (Muséum d’Histoire Naturelle Genève) of three minute wingless Colydiopeltis species from a forest litter in Thailand, together with their scientific processing (Ślipiński 1992), was one of the most surprising discoveries within Cleroidea to occur in recent decades, rather like the discovery of the rentoniins in the 1960s. The latter author also added a second genus, Parapeltis, extracted from litter in Queensland, and he originally classified the two genera together with Larinotus within Larinotini (Ślipiński 1992). In a 2006 paper, I split the latter tribe into the monotypic Larinotini related to Egoliini and the newly-established Colydiopeltini. While the nominotypical Colydiopeltis shares basic thoracic and mouthpart characters with other trogossitids, Parapeltis shows several unusual features: (1) extended clypeus, (2) maxillary lacinia without hooked spine(s), (3) procoxal cavities externally closed, (4) all coxae (especially pro- and metacoxae) short and small (metacoxae do not reach elytral margin), (5) metepisterna extremely wide (see excellent drawings and description by Ślipiński l.c.). Labrum, aedeagus and tarsi are of common “trogossitid” structure, although some of these features may be shared with certain non-cleroid Cucujiformia. On the other hand, it should be noted that aptery can have a profound influence on thoracic morphology. I have never studied P. australicum, the single species, first-hand, so the classification here follows that by Ślipiński (1992).
Key to genera

1 Rather elongate species, pronotum narrower than elytra; front coxal cavities externally closed; mandible with two apical teeth......................\textit{Parapeltis} 
– More compact species, pronotum at base as wide as elytra; front coxal cavities externally open; mandible with one apical tooth ......................\textit{Colydiopeltis} 

\textbf{Genus \textit{Colydiopeltis} Ślipiński, 1992}  
http://species-id.net/wiki/Colydiopeltis  
Figs 9, 16; Map 8

Ślipiński, S. A. 1992: 444.

\textbf{Type species.} \textit{Colydiopeltis burckhardti} Ślipiński, 1992 [by original designation]  
Kolibáč, J. 2005: 50. Kolibáč, J. 2006: 111 (phylogeny).

\textbf{Description.} Body size: 1.5–2.0 mm. Body shape convex (not conglobate). Gular sutures wide, convergent at apex. Frontoclypeal suture absent. Frons: longitudinal groove or depression absent. Cranium ventrally: tufts of long setae at sides absent. Submentum: ctenidium absent. Antennal groove present. Eyes: size moderate. Eyes number: two. Epicranial acumination moderate. Lacinial hooks: two or 1. Galea: shape very small. Galea: ciliate setae absent. Mediostipes-Lacinia fused together. Palpifer: outer edge even. Mandibular apical teeth number: one. Mola present. Penicillus (at base) present (fine, often membranous). Pubescence above mola or cutting edge present. Ventral furrow absent. Basal notch shallow or absent. Labrum-Cranium not fused. Epipharyngial sclerite absent. Lateral tormal process: projection curved upwards (\textit{Colydiopeltis}). Ligula: ciliate setae absent. Ligula membranous, not retroflexed, weakly emarginate. Hypopharyngeal sclerite absent. Antenna 8-segmented, sensorial fields absent. Front coxal cavities externally open, internally open. Pronotum transverse. Prepectus present. Middle coxal cavities open. Elytra: long hairs absent. Epipleuron wide. Elytral interlocking mechanism absent, carinae reduced. Elytral punctation regular, scales present. Front tibiae: spines along side reduced. Hooked spur absent, apical spurs not hooked or weakly hooked. Claws: denticle absent. Parasternites number along ventrites III–VII: two. Spiculum gastrale present. Tegmen composed of three parts. Coxitae undivided.

\textbf{Biology.} Unknown. Species of the genus were collected from forest litter by mass-sampling methods in the dry season.

\textbf{Distribution.} Thailand.

\textbf{Species:}
\begin{itemize}
  \item \textit{burckhardti} Ślipiński, 1992; Thailand: Chiang Mai (AD)  
    Ślipiński, S. A. 1992: 449. Kolibáč, J. 2005: 49
  \item \textit{compactum} Ślipiński, 1992; Thailand: NE of Bangkok (AD)  
    Ślipiński, S. A. 1992: 450
  \item \textit{loebli} Ślipiński, 1992; Thailand: Phetchaburi, Kanchanburi (AD)  
    Ślipiński, S. A. 1992: 451
\end{itemize}
Genus *Parapeltis* Ślipiński, 1992
http://species-id.net/wiki/Parapeltis
Fig. 9; Map 8

Ślipiński, S. A. 1992: 451.

**Type species.** *Parapeltis australicum* Ślipiński, 1992 [by original designation and monotypy]

Kolibáč, J. 2005: 75. Kolibáč, J. 2006: 111 (phylogeny).

**Description.** Body size: 1.2 mm. Body shape convex (not conglobate). Gular sutures wide, convergent at apex. Frontoclypeal suture absent. Frons: longitudinal groove or depression absent. Cranium ventrally: tufts of long setae at sides absent. Submentum: ctenidium absent. Antennal groove present. Eyes: size moderate. Eyes number: two. Epicranial acumination moderate. Lacinial hooks absent. Galea: shape elongate. Galea: ciliate setae absent. Mediostipes-Lacinia fused together. Palpifer: outer edge even. Mandibular apical teeth number: two, horizontally situated. Mola present. Pubescence above mola or cutting edge present. Ventral furrow absent. Basal notch moderate. Labrum-Cranium not fused. Epipharyngeal sclerite absent. Lateral tormal process: projection projection curved upwards (*Colydiopeltis*). Ligula: ciliate setae absent. Ligula membranous, not retroflexed, weakly emarginate. Hypopharyngeal sclerite absent. Antenna 8-segmented, sensorial fields absent. Front coxal cavities externally closed, internally open. Pronotum transverse. Prepectus present. Middle coxal cavities open. Elytra:
long hairs absent. Epipleuron moderate. Elytral interlocking mechanism absent, carinae conspicuous. Elytral punctuation regular, scales present. Front tibiae: spines along side reduced. Hooked spur absent, apical spurs not hooked or weakly hooked. Claws: denticle absent. Spiculum gastrale present. Tegmen composed of three parts.

**Biology.** Unknown. Collected from leaf litter in *Eucalyptus* woodland.

**Distribution.** Australia: Queensland.

**Species:**
*australicum* Ślipiński, 1992; Australia: Queensland
Ślipiński, S. A. 1992: 454. Kolibáč, J. 2005: 75

**Tribe Phloiophilini** Kiesenwetter, 1863

Kiesenwetter, E. A. H. von 1863: 666 (Phloeophilidae).

**Type genus:** *Phloiophilus* Stephens, 1830

Bouchard, P. et al. 2011: 56 (as Phloiophilidae). Klausnitzer, B. 1996: 145. Kolibáč, J. 1987: 110. Kolibáč, J. 2004a: 242. Kolibáč, J. 2008: 123 (phylogeny; stat. n. *sub* Trogossitidae). Lohse, G. A. 1979: 83 (as Phloeophilinae; *sub* Melyridae). Lawrence, J. F. 1982: 519 (morphology, systematics). Lawrence et al. 1993: CD-ROM (morphology of larvae). Lawrence et al. 1999a: CD-ROM (morphology of larvae). Lawrence et al. 1999b: CD-ROM (morphology of larvae). Majer 1994. Lawrence, J. F. & Newton, A. F., Jr. 1995: 867 (phylogeny). Mayor, A. 2007: 363 (distribution). Pic, M. 1926: 2.

**Remarks.** *Phloiophilus* has been classified within Dasytidae or Melyridae *sensu lato* (Reitter 1911, Lohse 1979) or as a part of an independent family, i.e. Phloeophilidae (= Phloeophilidae), formerly in conjunction with the genera *Xerasia* Lewis (now Byturidae) and *Acanthocnemus* Perris (Pic 1926). The latter genus is now classified in the monotypic family Acanthocnemidae Crowson, 1970 within the melyrid branch of Cleroidea or as a sister group of the rest of Cleroidea, whereas Phloeophilidae is generally considered a relative of Trogossitidae (Crowson 1964a, Gunter et al. 2013, Kolibáč 2004, Klausnitzer 1996, Lawrence et al. 1993, 1999a, b, Majer 1994). Recently, Hunt et al. (2007) published a comprehensive study based exclusively on molecular data, according to which *Phloiophilus edwardsi* is related to Biphyllidae and Byturidae. Both the families are situated in a basal position of Cleroidea, near to Trogossitidae. On the other hand, preliminary outcomes of work by the Tree of Life team (McKenna et al. 2012) as well as by Gunter et al. (2013), which are also based on molecular data, show a close relationship between *Phloiophilus* and Trogossitidae as well. Also believing in this relationship from a morphological point of view, I attempted to put its morphological characters into the trogossitid character matrix of 2006 (Kolibáč 2008). A computer analysis within the NONA program indicated a relationship between *Phloiophilus* and basal Peltinae but, to be honest, a detailed analysis of character states shows that the supposed relationship is at least partly based on shared plesiomorphies as well as “reductions” common in all Cleroidea. Thus, the position and status of the single genus
of Phloiophilidae/Phoiophilini remains uncertain. It is included herein at the rank of tribe but, in the light of future discoveries, it may also be shifted from Cleroidea to a group within traditional “Cucujoida”. The genus *Phloiophilus* was unfortunately not included in the most modern morphological analysis by Lawrence et al. (2011).

**Genus Phloiophilus Stephens, 1830**

http://species-id.net/wiki/Phloiophilus

Figs 10, 15; Map 9

Stephens, J. F. 1830: 81.

**Type species.** *Phloiophilus edwardsii* Stephens, 1830 [by monotypy]

Lohse, G. A. 1979: 83 (*Phloeophilus*, sub Melyridae). Majer, K. 1986: 114. Kolibáč, J. 2008: 105.

**Description.** Body size: about 3.0 mm. Body shape convex (not conglobate). Gular sutures wide, subparallel. Frontoclypeal suture absent. Frons: longitudinal groove or depression absent. Cranium ventrally: tufts of long setae at sides absent. Submentum: ctenidium absent. Antennal groove absent. Eyes: size moderate. Eyes number: two. Epicranial acumination absent. Lacinia: two. Galea: shape sub-clavate. Galea: ciliate setae absent. Mediostipes-Lacinia fused together. Palpi: outer edge even. Mandibular apical teeth number: two, horizontally situated. Mola absent. Penicillus (at base) present (fine, often membranous). Pubescence above mola or cutting edge present. Ventral furrow absent. Basal notch shallow or absent. Labrum-Cranium not fused. Epipharyngial sclerite absent. Lateral tormal process: projection not developed (all remaining). Ligula: ciliate setae absent. Ligula membranous, not retroflexed, deeply emarginate. Hypopharyngeal sclerite absent. Antenna 11-segmented. Antennal club symmetrical, sensorial fields absent. Front coxal cavities externally open, internally open. Pronotum transverse. Prepectus present. Middle coxal cavities open. Elytra: long hairs absent. Epipleuron thin. Elytral interlocking mechanism absent, carinae reduced. Elytral punctuation irregular, scales absent. Wing: radial cell oblong (or reduced), wedge cell present, cross vein MP3-4 present, cross vein AA1+2-3+4 absent. Front tibiae: spines along side reduced. Hooked spur absent, apical spurs not hooked or weakly hooked. Claws: denticle absent. Tegmen composed of only one part. Coxitae divided.

Larva: Frontal arms curved (cucujoid). Epicranial stem reduced. Endocarina present. Gular sutures inconspicuous. Gula: anterior apodemes present. Paragular sclerites absent. Hypostomal rods absent. Stemmata number: five. Mandibular apical teeth number: two, horizontally even, vertically situated. Lacinia mandibulae tridentate. Mola absent. Maxillary palpi 3-segmented. Pedunculate seta absent. Mala simple. Mala: bidentate protrusion present. Ligula present. Labial palpi 2-segmented. Antennal joints 1, 2 transverse. Sensory appendix larger than half of joint 3. Thoracic sclerites pattern
Figure 10. A Thymalus limbatus B Phloiophilus edwardsi C Eronyxa marginicollis D Decamerus haemorrhoidalis E Diontolobus punctatipennis F Afrocyrona ciskeiensis G Afrocyrona duvaeae H Grynoma sp., New Zealand I Grynoma diluta.
(dorsally) 1-0-0. Thoracic sclerites pattern (ventrally) 1+1+1. Abdominal segment IX not divided. Tergite IX flat. Urogomphi present, hooked; median process absent.

**Biology.** Fungivorous. Crowson (1964b) noted adults and larvae from Great Britain: Adult and larva fungivorous, larvae feed beneath the thin and fleshy fruiting bodies of the basidiomycete *Phlebia radiata* Fr. of the Meruliaceae, which occurs on the dead wood of various deciduous trees (oak, beech, hazel), occasionally also conifers (pine). Adults are active in the warm days of autumn and winter (approximately, from late September to March). They have not been observed outside that period. They can be collected by sweeping from dry or decaying branches. Larvae may be found at all seasons, under the fruiting bodies of the fungus or under bark in spring and summer. Wielink et al. (2010) observed the species in the Netherlands and found adults active only by night. They live together with larvae on dead oak branches infested by the fungus *Peniophora quercina*.

**Distribution.** Europe, North Africa.

**Species:**

*edwardsii* Stephens, 1830; Austria, Belgium, Czechia, Denmark, France, Great Britain, Germany, Hungary, Ireland, the Netherlands, Poland, North Africa (JK)

Audisio, P. et al. 1995: 14. Beutel, R. G. & Pollock, D. A. 2000: 826 (larva, morphology). Crowson, R. A. 1964b: 151 (biology). Gurlich, S. et al. 1995: 49. Klausnitzer, B. 1996: 161. Kolibáč, J. 1999: 12. Kolibáč, J. 2008: 120. Lohse, G. A. 1979: 83 (*Phloeophilus*, *sub* Melyridae). Majer, K. 1986: 114. Mayor, A. 2007: 363 (syn. *Phloeophilus bimaculatus* Stephens, 1830; synonymized by whom?).

Map 9. A distribution of the tribe Phloeophilini.
Mayor, A. 2007: 364 (syn. Phloiophilus cooperi Stephens, 1830; synonymized by whom?). H. Vogt 1967: 13. Wielink van, P. et al. 2010: 17 (biology)

Tribe Thymalini Léveillé, 1888

Léveillé, A. 1888: 444.

Type genus. *Thymalus* Latreille, 1802

Kireichuk, A. G. & Ponomarenko, A. G. 1990: 79 (Meligethiellinae, new Mesozoic subfamily). Kolibáč, J. 2006: 126 (diagnosis, stat. n.). Kolibáč, J. 2007a: 366. Krivosheina, N. P. & Mamaev, B. M. 1981: 50. Lawrence, J. F. & Newton, A. F. Jr. 1995: 868 (Protopeltinae; Rentoniinae). Ślipiński, S. A. 1992: 442 (Protopeltinae, Rentoniinae).

Meligethiellinae Kireichuk & Ponomarenko, 1990

Kolibáč, J. 2006: 126 (synonymized). revalid. subfam. Note: Removed from synonymy; see the “Remarks” section for explanation of this synonymy.

Protopeltini Crowson, 1966; Protopeltinae Crowson, 1970

Kolibáč, J. 2006: 126 (synonymized).

Rentoniini Crowson, 1966; Rentoniinae Crowson, 1966 (Rentoniinae = Protopeltini + Rentoniini; all Crowson 1966: 120); Rentoniinae Crowson, 1970 (= new status for Rentoniini, i.e. without *Protopeltis*)

Kolibáč, J. 2006: 126 (synonymized).

Remarks. A recent and extensive morphological study by Lawrence et al. (2011) considered Trogossitidae and even Cleroidea polyphyletic. In their phylogenetic tree, *Thymalus* is included in a cluster of the nitidulid genera along with *Cyclaxyra* and *Lamingtonium*, whereas the position of *Rentonellum* lies in a different part of the traditional Cucujoidea, near *Smicrips*, *Propalticus* and *Laemophloeus*. Leschen et al. (2012) used a restricted data set adopted from the Lawrence et al. (2011) study and found Cleroidea monophyletic but Trogossitidae polyphyletic: *Rentonellum* was a part of the melyrid group and *Thymalus* formed a sister group to all the remaining cleroids. The latter authors also suggested that the subfamily Rentoniinae be re-established. It is beyond the scope of the work in hand to assess this matter; it was prepared “in-group”, without using the extensive cucujiform outgroups. The morphological evidence used in the both above papers indicates the need to check Thymalini classification again, in the context of the wider cucujiform dataset, using molecular data. A new species of “Rentonium-group” has recently been discovered in South Africa (Leschen et al. 2012). Further new species is just described by Gimmel and Leschen (in press) together with its associated larva. It appears that the features of this larval record confirm Crowson’s earlier identification of the rentoniine larva from New Zealand (Crowson 1966).

Since the extinct Mesozoic genera *Meligethiella* and *Ostomalynus* are excluded from Thymalini, Peltinae and Trogossitidae herein, the synonymization of the subfamily Meligethiellinae is not valid henceforth and the taxon should not be further listed in synonymy of the tribe Thymalini.
**Key to genera** (Globorentonium Lawrence & Ślipiński, 2013 not included)

1 Body convex but not conglobate; elytra with conspicuous punctation ........... 2
   - Body conglobate; elytra without sculpture (smooth) or with very fine irregular punctures or shagreened ................................................................. 3

2 Body extremely bulged; head including eyes covered by pronotum when viewed from above (only clypeus and labrum visible); larger species (about 4–7 mm) ........................................................................................................... Thymalus
   - Body convex but not extremely bulged; head protruding (not covered by pronotum when viewed from above); smaller species (about 2.5 mm) ....... Protopeltis

3 Elytra with light and dark spots; pubescence formed by short decumbent and long erect hairs ................................................................................ Australiodes
   - Elytra unicolorous, without spots; pubescence absent or made up of short hairs only ........................................................................................................ 4

4 Elytra smooth, without pubescence, strongly involute; middle tibiae with row of spines at apex; wingless ................................................................. Rentonellum
   - Elytra pubescent, not involute; middle tibiae probably without row of spines at apex; mostly winged ................................................................................ 5

5 Middle coxal cavities widely separated; ventrites II–V with deeply transverse-ly impressed anterior margins; last antennal segment transverse and truncate at apex; pubescence of elytra with shot-silk effect .................. Parentonium
   - Middle coxal cavities narrowly separated; ventrites II–V with or without weakly impressed anterior margins; last antennal segment not truncate at apex; pubescence of elytra sparse, directed backwards, without shot-silk effect .................... 6

6 Head strongly transverse; front margin of clypeus with marked emargination; first ventrite with median keel at least in front; ventrites II–IV each with transverse line of strong backward-projecting setae near its hind border .................. Rentonidium
   - Head not transverse or only slightly so; front margin of clypeus almost straight; first ventrite without median keel; ventrites II–IV without such apical lines of setae ........................................................................................................ Rentonium

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**Genus Australiodes** Endrödy-Younga, 1960
http://species-id.net/wiki/Australiodes
Map 10

Endrödy-Younga, S. 1960: 239 [sub Liodidae]

**Type species:** *Clambus vestitus* Broun, 1886 [by monotypy]
Crowson, R. A. 1966: 120 (transferred from Liodidae to Trogossitidae: Peltinae).
Kolibáč, J. 2005: 47. Kolibáč, J. 2006: 116 (phylogeny).
**Description.** Body size: 1.4 mm. Body shape conglobate. Frons: longitudinal groove or depression absent. Cranium ventrally: tufts of long setae at sides absent. Eyes number: two. Lacinial hooks absent. Galea: shape partially fused with lacinia. Galea: ciliate setae absent. Mediostipes-Lacinia fused together. Labrum-Cranium not fused. Front coxal cavities externally open, internally closed. Pronotum subquadrate. Elytra: long hairs absent. Tegmen composed of a single unit (Kolibáč 2005).

“Maxilla with galea and lacinia largely fused; erect setae among pubescence of upper surface; metendosternite with elongate oblique arms, without lamina; elytra with pattern of light and dark patches” (ex Crowson 1966).

**Biology.** Adults were collected by Crowson (1966: 123) “in Leucopogon flowers and on male catkins of the introduced Pinus insignis. Adults were also found under loose bark of a dead Hoheria.” [...] “Adults doubtless feed on pollen, as shown by the gut-contents of a dissected specimen; the breeding sites are probably somewhere about dead trees ...” Crowson (1966).

**Distribution.** New Zealand: Port Nicholson, Wellington; Waipoua State Forest, Northland; Western Hills, Whangarei.

**Species:**

*vestitus* Broun, 1886; New Zealand (varA)

Crowson, R. A. 1966: 120. Endrödy-Younga, S. 1960: 239 (Liodidae). Kolibáč, J. 2005: 47
Genus *Globorentonium* Lawrence & Ślipiński, 2013

http://species-id.net/wiki/Globorentonium

Figs 9, 17; Map 10

Lawrence, J. F. & Ślipiński, S. A. 2013: 258.

**Type species.** *Globorentonium globulum* Lawrence & Ślipiński, 2013 [by original designation].

**Remarks.** The genus has been just recently described, therefore, it is not included in a generic key to Thymalini. A key to the all genera of *Rentonium*-group (denoted as Rentoniini Crowson, 1966) is provided by authors (Lawrence and Ślipiński 2013: 270). *Globorentonium* includes three newly described species. A key to their recognition is also provided by the authors of original descriptions (Lawrence and Ślipiński 2013: 259). Four supposed specimens of *Globorentonium plaumanni* from the same locality as the type series (Brazil: Santa Catarina, Nova Teutonia, leg. F. Plaumann 1972–77) are figured here.

**Distribution.** Australia: Victoria, New South Wales, Tasmania; Brazil: Santa Catarina.

**Species:**

*globulum* Lawrence & Ślipiński, 2013; Australia: Victoria, NSW, Tasmania (AD)
  Lawrence, J. F. & Ślipiński, S. A. 2013: 260

*lescheni* Lawrence & Ślipiński, 2013; Australia: NSW (AD)
  Lawrence, J. F. & Ślipiński, S. A. 2013: 264

*plaumanni* Lawrence & Ślipiński, 2013; Brazil: Santa Catarina (AD)
  Lawrence, J. F. & Ślipiński, S. A. 2013: 268

Genus *Parentonium* Crowson, 1970

http://species-id.net/wiki/Parentonium

Map 10

Crowson, R. A. 1970: 6.

**Type species.** *Rentonium magnum* Crowson, 1966 [by original designation]

Kolibáč, J. 2005: 76. Kolibáč, J. 2006: 116 (phylogeny).

**Description.** Body size: 1.3–2.0 mm. Body shape conglobate. Gular sutures wide, subparallel. Frontoclypeal suture present. Frons: longitudinal groove or depression absent. Cranium ventrally: tufts of long setae at sides absent. Submentum of males: ctenidium absent. Antennal groove present. Eyes: size large, lateral. Eyes number: two. Epicranial acumination absent. Lacinial hooks absent. Galea: shape partially fused with lacinia. Galea: ciliate setae absent. Mediostipes-Lacinia fused together. Palpifer: outer edge denticulate. Front coxal cavities externally open, in-
ternally closed. Pronotum transverse. Elytra: long hairs absent. Epipleuron wide. Elytral interlocking mechanism absent, scales absent. Front tibiae: spines along side reduced. Claws: denticle absent.

**Biology.** *Parentonium australicum* was found under the bark of a fallen *Nothofagus* trunk at an altitude of about 1200 m. *Parentonium magnum* was collected in mixed leaf-litter at about 250 m (Crowson 1966). It is presumed that the species are fungivorous.

**Distribution.** Australia: Queensland, Lamington National Park; New Zealand: Grampian Hill, Nelson.

**Species:**
- *australicum* Crowson, 1970; Australia: Queensland (RAC) Crowson, R. A. 1970: 6
- *magnum* Crowson, 1966; New Zealand (RAC) Crowson, R. A. 1966: 121 (*Rentonium*). Crowson, R. A. 1970: 6 (*Parentonium*, combination). Kolibáč, J. 2005: 76

**Genus Protopeltis Crowson, 1964**

http://species-id.net/wiki/Protopeltis

Fig. 9; Map 10

Crowson, R. A. 1964a: 287, 295.

**Type species.** *Grynoma viridescens* Broun, 1886 [by original designation] Crowson, R. A. 1964a: 295. Crowson, R. A. 1966: 120. Kolibáč, J. 2005: 79. Kolibáč, J. 2006: 111 (phylogeny).

**Description.** Body size: about 2.5 mm. Body shape flat. Gular sutures wide, subparallel. Frontoclypeal suture absent. Frons: longitudinal groove or depression absent. Cranium ventrally: tufts of long setae at sides absent. Submentum: ctenidium absent. Antennal groove present. Eyes: size large, lateral. Eyes number: two. Lacinial hooks: three. Galea: shape elongate. Galea: ciliate setae absent. Palpifer: outer edge even. Mandibular apical teeth number: two, horizontally situated. Mola present. Penicillus (at base) absent. Pubescence above mola or cutting edge present. Ventral furrow present. Basal notch moderate. Labrum-Cranium not fused. Ligula: ciliate setae absent. Ligula membranous, not retroflexed. Antenna 11-segmented. Antennal club symmetrical, sensorial fields absent. Front coxal cavities externally open, internally open. Pronotum transverse. Middle coxal cavities open. Elytra: long hairs absent. Epipleuron moderate. Elytral interlocking mechanism absent, carinae reduced. Elytral punctuation irregular, scales absent. Wing: radial cell oblong (or reduced), wedge cell absent, cross vein MP3-4 absent, cross vein AA1+2-3+4 absent. Front tibiae: spines along side moderate. Claws: denticle absent. Tegmen composed of two parts.

Larva: Frontal arms curved (cucujoid). Epicranial stem present. Endocarina present. Gular sutures conspicuous, parallel. Gula: anterior apodemes present. Paragular
sclerites absent. Hypostomal rods absent. Stemmata number: five. Mandibular apical teeth number: two, horizontally situated. Lacinia mandibulae tridentate. Mola absent. Maxillary palpi 3-segmented. Palpi present. Pedunculate seta absent. Mala simple. Mala: bidentate protrusion present. Carido-Stipes not fused. Carido: size much smaller than stipes. Labial palpi 2-segmented. Prementum in single part, anterior margin even. Antennal joints 1, 2 transverse. Sensory appendix larger than half of joint 3. Thoracic sclerites pattern (dorsally) 1-2-2. Thoracic sclerites pattern (ventrally) 1+0+0. Trochanter triangular. Abdominal segment IX not divided. Tergite IX flat. Urogomphi present, hooked; median process absent.

**Biology.** Larvae of *P. viridescens* were collected, according to Crowson’s note, at “fungusy bark of dead Nothofagus”. The adult gut he examined contained “abundant fungal material”, determined as “probably Hymenochaete sp.” (Crowson 1964a). Larva and adult are probably fungivorous.

**Distribution.** New Zealand (for example, Arthur’s Pass National Park).

**Species:**

*Rentonellum pulchella* Broun, 1915; New Zealand (RAC)

Broun, T. 1915: 314 (*Promanus*). Crowson, R. A. 1964a: 289

*Rentonellum viridescens* Broun, 1886; New Zealand (RAC)

Léveillé, A. 1910: 29 (*Grynoma*). Crowson, R. A. 1964a: 290 (larva). Iablokoff-Khinzorian, S. M. 1975: 147. Kolibáč, J. 2005: 78. Kolibáč, J. 2006: 109

**Genus Rentonellum Crowson, 1966**
http://species-id.net/wiki/Rentonellum

Figs 9, 17; Map 10

Crowson, R. A. 1966: 120.

**Type species.** *Rentonellum apterum* Crowson, 1966 [by original designation and monotypy]

Kolibáč, J. 2005: 80. Kolibáč, J. 2006: 111 (phylogeny).

**Description.** Body size: about 1.0 mm. Body shape conglobate. Gular sutures wide, subparallel. Frontoclypeal suture present. Frons: longitudinal groove or depression absent. Cranium ventrally: tufts of long setae at sides absent. Submentum: ctenidium absent. Antennal groove present. Eyes: size large, lateral. Eyes number: two. Epicranial acumination absent. Lacinial hooks absent. Galea: shape partially fused with lacinia. Galea: ciliate setae absent. Medistipes-Lacinia fused together. Palpifer: outer edge even. Mandibular apical teeth number: two, horizontally situated. Mola present. Penicillus (at base) absent. Pubescence above mola or cutting edge absent. Ventral furrow absent. Basal notch shallow or absent. Labrum-Cranium not fused. Epipharyngial sclerite absent. Lateral tormal process: projection projection not developed (all remaining). Ligula: ciliate setae absent. Ligula rigid, not retroflexed, weakly emarginate. Hypopharyngeal sclerite consisting of two separate parts. Antenna
10-segmented. Antennal club symmetrical, sensorial fields absent. Front coxal cavities externally open, internally closed. Pronotum transverse. Prepectus absent. Middle coxal cavities closed. Elytra: long hairs absent. Epipleuron wide. Elytral interlocking mechanism absent, carinae reduced. Elytral punctuation irregular, scales absent. Front tibiae: spines along side reduced. Hooked spur absent, apical spurs not hooked or weakly hooked. Claws: denticle absent. Parasternites number along ventrites III–VII: one. Coxitae undivided.

**Biology.** *R. apterum* was found in *Nothophagus* and *Podocarpus* leaf-litter at an altitude of 900 m (Crowson 1966). The circumstances of the second species record are not known.

**Distribution.** New Zealand; Brazil: “Nova Teutonia”.

**Species:**

*apterum* Crowson, 1966; New Zealand (RAC)
Crowson, R. A. 1966: 120. Kolibáč, J. 2005: 80

*loebli* Kolibáč, 2005; Brazil: “Nova Teutonia” (JK)
Kolibáč, J. 2005: 80

Note: It has been recently proposed that *R. loebli* might be a ciide rather than a rentoniine species (Lawrence and Šlipiński 2013)

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**Genus Rentonidium Crowson, 1966**

http://species-id.net/wiki/Rentonidium

Figs 9, 17; Map 10

Crowson, R. A. 1966: 123.

**Type species.** *Rentonidium costiventris* Crowson, 1966 [by original designation and monotypy]

Kolibáč, J. 2005: 81. Kolibáč, J. 2006: 116 (phylogeny).

**Description** (according to Crowson 1966, modified). Body size: 1.3 mm. Adult: Body conglobate. General form short ovate and very convex, Byrrhid-like; length not more than 2 mm. Head strongly transverse; front margin of clypeus with a marked emargination; galea and lacinia separate; lacinia without spines or hooks; no erect setae on upper body surface; metendosternite with slender lamina. Front coxal cavities internally closed, coxae very elongate, separated by a very narrow process; first ventrite with a median keel at least in front; ventrites II–IV each with a transverse line of strong backward-projecting setae near its hind border; tegmen undivided.

**Biology.** Collected in “male flower of *Pinus insignis*” (Crowson 1966). Probably feeding on pollen grains as do the adults of *Australiodes*.

**Distribution.** New Zealand: Northland, Waipoua State Forest.

**Species:**

*costiventris* Crowson, 1966; New Zealand (RAC)
Crowson, R. A. 1966: 123. Kolibáč, J. 2005: 81
Genus Rentonium Crowson, 1966
http://species-id.net/wiki/Rentonium
Figs 9, 17; Map 10

Crowson, R. A. 1966: 121.

Type species. Rentonium daldiniae Crowson, 1966 [by original designation and monotypy]
Crowson, R. A. 1970: 6. Kolibáč, J. 2005: 81 (redescription). Kolibáč, J. 2006: 111 (phylogeny).

Description. Body size: 1.3–1.5 mm. Body shape conglobate. Gular sutures wide, subparallel. Frontoclypeal suture absent. Frons: longitudinal groove or depression absent. Cranium ventrally: tufts of long setae at sides present. Submentum: ctenidium absent. Antennal groove present. Eyes: size large, lateral. Eyes number: two. Epicranial acumination absent. Mandibular apical teeth number: one. Mola reduced but present. Penicillus (at base) absent. Pubescence above mola or cutting edge absent. Ventral furrow absent. Basal notch shallow or absent. Labrum-Cranium not fused. Epipharyngial sclerite absent. Lateral tormal process: projection not developed (all remaining). Ligula: ciliate setae absent. Ligula rigid, not retroflexed, weakly emarginate. Hypopharyngeal sclerite H-shaped. Antenna 10-segmented. Antennal club symmetrical, sensorial fields absent. Front coxal cavities externally open, internally closed. Pronotum transverse. Epipleuron thin. Elytral interlocking mechanism absent, carinae reduced. Elytral punctuation irregular, scales absent. Wing: radial cell oblong (or reduced), wedge cell absent, cross vein MP3-4 absent, cross vein AA1+2-3+4 absent. Front tibiae: spines along side moderate. Hooked spur absent, apical spurs not hooked or weakly hooked. Claws: denticle absent. Spiculum gastrale present. Tegmen composed of only a single unit.

Larva: Frontal arms V-shaped. Epicranial stem absent. Endocarina present. Hypostomal rods absent. Stemmata number: five. Mandibular apical teeth number: two, horizontally situated. Lacinia mandibulae with several small spines. Mola absent. Maxillary palpi 2-segmented. Labial palpi 1-segmented. Torma: two separate lateral sclerites. Antennal joints 1, 2 transverse. Sensory appendix larger than half of joint 3. Thoracic sclerites pattern (dorsally) 1-2-2. Abdominal segment IX not divided. Tergite IX flat. Urogomphi present, hooked; median process absent.

Biology. The single known larva described (Crowson speculated that it might be identified as Rentonium daldiniae) was extracted from a forest litter sample (mainly Nothofagus) at an elevation of about 500m (Crowson 1966). An adult R. daldiniae was found in Daldinia sp. fungus growing on a dead tree (Crowson 1966). Rentonium chilense was collected in Nothofagus forest at around sea level.

Distribution. New Zealand: Canterbury, Waimate. South Chile: Isla Bertrand.

Species:
chilense Crowson, 1970; Chile (RAC)
Crowson, R. A. 1970: 7. Kolibáč, J. 2005: 81 (redescription)
daldiniae Crowson, 1966; New Zealand (RAC)
Crowson, R. A. 1966: 121, 123 (supposed larva). Crowson, R. A. 1970: 7. Kolibáč, J. 2005: 81 (redescription). Kolibáč, J. 2006: 109
Genus *Thymalus* Latreille, 1802
http://species-id.net/wiki/Thymalus
Figs 10, 16, 18; Map 10

Latreille, 1802: 133.

**Type species.** *Peltis brunnea* Thunberg, 1794 (= *Cassida limbata* Fabricius, 1787) [by original designation and monotypy]

Léveillé, A. 1910: 32. Barron, J. R. 1971: 35. Crowson, R. A. 1964a: 296. Kolibáč, J. 2005: 85 (redescription). Kolibáč, J. 2006: 111 (phylogeny). Kolibáč, J. 2007a: 366. Nikitsky, N. B. et al. 1998: 29 (key). Lafer, G. Sh. 1992: 83. Reitter, E. 1876: 64.

*Thymalops* Iablokoff-Khnzorian, 1962 [Type species: *Cassida limbata* Fabricius, 1787] Barron, J. R. 1971: 35. Iablokoff-Khnzorian, S. M. 1962: 421.

**Remarks.** Comparing the larvae as well as adults of *Thymalus* and *Protopeltis*, I found some interesting similarities, which led me to consideration of their phylogenetic relationship. Later character analysis (Kolibáč 2006) showed a relationship of *Thymalus* and *Protopeltis* with the former Rentonini Crowson, 1966. This in turn led to the establishment of the tribe Thymalini for the group. However, Crowson (1966, 1970) also associated the former monotypic tribe Protopeltini Crowson, 1966 with the rentoniins. Recently, such a classification was called into question by Lawrence et al. (2011) and Leschen et al. (2012), who found Trogossitidae polyphyletic in their character analyses; however, both analyses were based on the same character states. Their model genera *Thymalus* and *Rentonellum* are classified outside Cleroidea in Lawrence et al. (2011) trees whereas Leschen et al. (2012), using a restricted character set, removed them only from Trogossitidae and/or suggested subfamily rank for rentoniins again, without necessarily believing in a mutual relationship between the two genera. Some more detail appears in “Remarks” with the tribe Thymalini.

Léveillé (1877) described the Caucasian species *Thymalus aubei* as *T. fulgidus* var. *aubei* Léveillé, 1877. However, *Thymalus fulgidus* Erichson, 1844 was originally described from North America and Barron (1971) synonymized this species with *T. marginicollis* Chevrolat, 1842. That is perhaps why the latter author also synonymized the taxon *aubei* as a synonym of *marginicollis*, probably without examination of the holotype or even Caucasian specimens. Russian entomologists, for example Nikitsky et al. (1998), consider *T. aubei* a valid species, with the synonym *T. subtilis* Reitter, 1889.

**Description.** Body size: 4.3–7.5 mm. Body shape convex (not conglobate). Gular sutures wide, subparallel. Frontoclypeal suture absent. Frons: longitudinal groove or depression absent. Cranium ventrally: tufts of long setae at sides absent. Submentum: ctenidium absent. Antennal groove absent. Eyes: size large, lateral. Eyes number: two. Epicranial acumination moderate. Lacinial hooks: two. Galea: shape elongate. Galea: ciliate setae absent. Mediostipes-Lacinia not fused. Palpifer: outer edge even. Mandibular apical teeth number: two, horizontally situated. Mola present. Penicillus (at base) absent. Pubescence above mola or cutting edge absent. Ventral furrow absent. Basal notch moderate. Labrum-Cranium not fused. Epipharyngial sclerite absent. Lat-
eral tormal process: projection not developed (all remaining). Ligula: ciliate setae absent. Ligula rigid, not retroflexed, weakly emarginate. Hypopharyngeal sclerite H-shaped. Antenna 11-segmented. Antennal club symmetrical, sensorial fields absent. Front coxal cavities externally open, internally closed. Pronotum transverse. Prepectus absent. Middle coxal cavities open. Elytra: long hairs absent. Epipleuron wide. Elytral interlocking mechanism absent, carinae reduced. Elytral punctuation regular, scales absent. Wing: radial cell oblong (or reduced), wedge cell present, cross vein MP3-4 present, cross vein AA1+2-3+4 absent. Front tibiae: spines along side reduced. Hooked spur absent, apical spurs not hooked or weakly hooked. Claws: denticle absent. Parasternites number along ventrites III–VII: one. Spiculum gastrale absent. Tegmen composed of three parts.

Larva: Frontal arms V-shaped. Epicranial stem reduced. Endocarina absent. Gular sutures inconspicuous. Gula: anterior apodemes present. Paragular sclerites absent. Hypostomal rods present. Stemmata number: five. Mandibular apical teeth number: two, horizontally situated. Lacinia mandibulae with several small spines. Mola absent. Maxillary palpi 3-segmented. Palpifer present. Pedunculate seta absent. Mala simple. Mala: bidentate protrusion present. Cardo-Stipes partially fused. Cardo: size much smaller than stipes. Ligula present. Labial palpi 2-segmented. Prementum in single part, anterior margin even. Torma: two separate lateral sclerites. Antennal joints 1, 2 transverse. Sensory appendix larger than half of joint 3. Thoracic sclerites pattern (dorsally) 2-0-0. Thoracic sclerites pattern (ventrally) 0+0+0. Trochanter triangular. Abdominal segment IX not divided. Tergite IX flat. Urogomphi present, hooked; median process absent.

**Biology.** The beetles are not associated with any particular tree species and are found on both deciduous and coniferous trees. *Thymalus limbatus* is known from the trunks of birch, beech, linden, and spruce, mostly under bark. It is assumed that the larvae feed on fungi in rotten or decaying wood (Kolibáč et al. 2005). *Thymalus marginicollis* has been collected from the fungi *Polyporus betulinus*, *P. versicolor*, *Daedalea confragosa*, on the trunks of birch and also on “wild flowers in plant press” (Barron 1971).

**Distribution.** Holarctic: Northern states of USA, Canada, Europe, North Africa, Siberia to China and Japan. Some specimens, probably a new species, have recently been collected in Chinese Sichuan and Yunnan and also in northern Thailand.

**Species:**

*aubei* Léveillé, 1877; “Batum”, Caucasus (varA)

Léveillé, A. 1910: 32. Klausnitzer, B. 1996: 156. Barron, J. R. 1971: 36 (syn. *Thymalus aubei* Léveillé, 1877 with *T. marginicollis* Chevrolat, 1842). Barron, J. R. 1971: 36 (syn. *Thymalus fulgidus* var. *aubei* Léveillé, 1877 with *T. marginicollis* Chevrolat, 1842). Kolibáč, J. 2007a: 366 (syn. *Thymalus subtilis* Reitter, 1889). Lafer, G. Sh. 1992: 86 (*Thymalus subtilis* Reitter, 1889). Léveillé, A. 1910: 33 (*Thymalus subtilis* Reitter, 1889). Nikitsky, N. B. et al. 1998: 28 (syn. *Thymalus subtilis* Reitter, 1889; lectotype designated). Nikitsky, N. B. & Semenov, V. B. 2001: 49


**chinensis** Fairmaire, 1900; China: Fujian (JK)  
Léveillé, A. 1910: 32. Kolibáč, J. 2007a: 366

**laticeps** Lewis, 1894; Japan (varA)  
Léveillé, A. 1910: 32. Esaki, T. et al. 1951: 1063. Kolibáč, J. 2007a: 366. Lafer, G. Sh. 1992: 86. Nakane, T. et al. 1963: 181

**limbatus** Fabricius, 1787; Europe, North Africa: Tunisia (JK)  
Léveillé, A. 1910: 32. Alexander, K. N. A. 1996: 90 (biology). Bahillo de la Puebla, P. & López-Colón, J. I. 1999: 13. Bahillo de la Puebla, P. & López-Colón, J. I. 2004: 129. Bercedo, P. et al. 2006: 180 (distribution). Borowiec, L. 1983: 15. Burakowski, B. et al. 1986: 123. Cunev, J. 1999: 76. Franz, H. 1981: 51–52 (distribution). Klausnitzer, B. 1976: 8. Klausnitzer, B. 1978: 176. Klausnitzer, B. 1996: 155. Kolibáč, J. 1993a: 20. Kolibáč, J. 1993b: 90. Kolibáč, J. 2002: 55 (larva). Kolibáč, J. 2005: 85 (redescription). Kolibáč, J. 2006: 110 (larva). Kolibáč, J. 2007a: 366 (distribution). Kolibáč, J. 2007a: 366 (syn. *brunneus* Thunberg, 1794). Kolibáč, J. 2007a: 366 (syn. *rubiginosus* Gmelin, 1790). Krasutskii, B. V. 1996: 274. Mitter, H. 1998: 561. Pileckis, S. & Monsevičius, V. 1995: 273. Ratti, E. 1997: 178. Reitter, E. 1876: 64. Theunert, R. 2006: 113–114 (distribution). Vogt, H. 1967: 18

**marginicollis** Chevrrolat, 1842; Canada, USA (JRB)  
Barron, J. R. 1971: 36 (syn. *Thymalus aubei* Léveillé, 1877). Barron, J. R. 1971: 36 (syn. *Thymalus fulgidus* Erichson, 1844). Barron, J. R. 1971: 36 (syn. *Thymalus fulgidus* var. *aubei* Léveillé, 1877). Böving, A. G. & Craighead, F. C. 1931: 273 (larva). Dajoz, R. 1997: 44 (biology). Reitter, E. 1876: 64 (*Thymalus fulgidus* Erichson, 1844: “Amer. bor.”)

**oblongus** Reitter, 1889; Russia: North and Central Europea teritorries, Sweden, East Siberia (JK)  
Léveillé, A. 1910: 33. Lafer, G. Sh. 1992: 86. Kolibáč, J. 2007a: 366. Krasutskii, B. V. 2006: 763 (biology). Nikitsky, N. B. et al. 1998: 28 (lectotype designated)

**parviceps** Lewis, 1894; Japan (varA)  
Léveillé, A. 1910: 33. Esaki, T. et al. 1951: 1063. Kolibáč, J. 2007a: 366. Lafer, G. Sh. 1992: 86. Nakane, T. et al. 1963: 181

**punctidorsum** Latreille, 1894; Japan (varA)  
Léveillé, A. 1910: 33. Kolibáč, J. 2007a: 366. Lafer, G. Sh. 1992: 86. Nakane, T. et al. 1963: 181

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**Subfamily Lophocaterinae Crowson, 1964**

Crowson, R. A. 1964a: 297 (Lophocaterinae).  
Barron, J. R. 1971: 11, 12 (syn. Lophocateridae = Peltinae). Burakowski, B. et al. 1986: 119 (Lophocateridae). Crowson, R. A. 1970: Hunt, T. et al. 2007: 1915 (molecular phylogeny). Klausnitzer, B. 1996: 145. Kolibáč, J. 2006: 125 (diagno-
Remarks. The subfamily Lophocaterinae was established by Crowson (1964a) in Trogossitidae (minus Peltidae) and later re-classified at family rank (Crowson 1970). As Crowson remarked (1970: 9), “the group is very distinct from Peltidae in larval structure, but not easily separable from that family by skeletal characters of the adults; the larvae show apparent affinities to Trogossitidae […], from which Lophocateridae are easily separable by characters of the adults.” This is exactly the reason why taxonomists sometimes consider lophocaterins (the tribe cluster Decamerini-Lophocaterini-Ancyronini in this context) relatives of Peltinae, and sometimes Trogossitinae. The results of my two character analyses are also uncertain. In Kolibáč (2006), lophocaterins are unambiguously determined as a sister group of Peltinae but the improved analysis (Kolibáč 2008) is not so definitive. The second analysis resulted in 48 most parsimonious trees of which 16 supported a sister relationship between the lophocaters and Trogossitinae but 32 trees supported a relationship with Peltinae. Further, molecular analyses published by Hunt et al. (2007), Bocáková et al. (2011) and Gunter et al. (2013) show closer relationships between a number of representatives of Peltinae and the lophocaterins than the latter and Trogossitinae. We may therefore consider the sister relationship Lophocaterinae-Peltinae more probable than Lophocaterinae-Trogossitinae. However, it is better to use subfamily rank for all three monophyletic clades to avoid a peltine polyphyly. This has already been explained by Kolibáč and Zaitsev (2010) in detail: “There are three monophyletic branches in modern morphological analyses of Trogossitidae: (1) the subfamily Trogossitinae, (2) the tribe cluster Decamerini-Lophocaterini-Ancyronini, and (3) the subfamily Peltinae sensu stricto (Peltini-Phloiophilini-Colydiopeltini-Thymalini). A sister relation of the lophocaterine cluster and Peltinae s.str. as recognized by Kolibáč (2006) and Hunt et al. (2007) was called into question by Kolibáč (2008) and by results of the present communication. Therefore, to rule out the potential polyphyly of Peltinae s.lat. (sensu Kolibáč 2006), we recommend to refer [sic] the tribe cluster Decamerini-Lophocaterini-Ancyronini again [sic] as the separate subfamily Lophocaterinae as aforementioned [sic] by Kolibáč (2008: 125).”

Key to tribes of Lophocaterinae

1 Tarsal claws with denticle. Larva: median process between urogomphi absent..........................................................Decamerini
   – Tarsal claws without denticle. Larva: median process between urogomphi present..........................................................2

2 Penicillus mostly composed of tuft of long setae. Frontoclypeal suture absent or weak and straight..........................................................Ancyronini
   – Penicillus membranous or composed of short, fine setae. Frontoclypeal suture conspicuous, mostly broadly emarginate..................Lophocaterini
† Genus *Cretamerus* Peris, Kolibáč & Delclòs (in press)

http://species-id.net/wiki/Cretamerus

Map 11

Peris D., Kolibáč J. & Delclòs X. (in press): iii.

**Type species.** † *Cretamerus vulloii* Peris, Kolibáč & Delclòs, (in press) [by monotypy and author's designation]

**Remarks.** The fossil is the oldest known record confirmed for the entire superfamily Cleroidea on the European continent. Due to the fine state of preservation, certain morphological character states of the fossil were inserted into a character matrix of Trogossitidae genera. The resulting tree reveals the basal position of *Cretamerus vulloii* within the lophocaterine clade. It may form an extinct branch of the recent Decamerini.

In view of its fine state of preservation, certain morphological character states of the fossil to be inserted into a character matrix of Trogossitidae genera. The resulting tree reveals the basal position of *Cretamerus vulloii* within the lophocaterine clade. It may form an extinct branch of the recent Decamerini.

**Original diagnosis.** Body very small, less than 2 mm. Antenna 10-segmented, 3-segmented club nearly symmetrical. Prothorax with dentate lateral margin; procoxal cavities externally closed. Elytra without carinae, punctuation irregular or less than obviously regular. Tibiae with two straight (i.e. not hooked) spurs. Abdomen with six visible ventrites.

**Distribution.** France: Charente-Maritime (Fouras/Bois-Vert); Cretaceous: early Cenomanian.

**Species:**

† *Cretamerus vulloii* Peris, Kolibáč & Delclòs (in press); France; Cretaceous (AD) Peris D., Kolibáč J. & Delclòs X. (in press): iii

**Tribe Decamerini Crowson, 1964**

Crowson, R. A. 1964a: 287.

**Type genus:** *Decamerus* Solier, 1849

Barron, J. R. 1975: 12 (syn. Decamerinae = Peltinae). Kolibáč, J. 2006: 127 (diagnosis, stat. n.). Lawrence, J. F. & Newton, A. F., Jr. 1995: 868 (Decamerinae). Ślipiński, S. A. 1992: 442, 460 (key) (Decamerinae).

**Remarks.** Since it was established (Crowson 1964a), Decamerinae has always been connected with Peltidae (= Peltinae) in the works of a variety of authors. Unfortunately, the single larva described to date (Crowson 1964a) was not associated with adults. It possesses some general features of Lophocaterinae (mandible with long lacinia mandibulae, cranium with characteristic gular area) but it differs in having curved (cucujoid) frontal arms and in the absence of a median process between the urogomphi. The larva of *Eronyx expansus* is evidently lophocaterine (Tait et al. 1990);
however, the adults of *Eronyxa* and the present decamerins are similar in morphology and chiefly of floricolous habit. Two character analyses (Kolibáč 2006, 2008) placed *Eronyxa* on the border between Lophocaterini and Decamerini. Although the latter genus is classified within Lophocaterini herein, I feel its true relationship lies with Decamerini. This issue should be re-examined, although not before an indisputable larva of Chilean Decamerini is found and/or reared.

**Key to genera**

1. Front coxal cavities completely externally closed; tarsal claws split into two almost identical parts ................................................................. *Antixoon*
   
   – Front coxal cavities externally open or not completely closed; tarsal claws with large denticle (but shorter than outer claw) ........................................ 2

2. Antenna 10-segmented; tegmen composed of one part; front coxal cavities open (or closed to 3/4) ................................................................. *Decamerus*
   
   – Antenna 11-segmented; tegmen composed of three parts; front coxal cavities nearly closed .............................................................. *Diontolobus*

**Genus Antixoon Gorham, 1886**

http://species-id.net/wiki/Antixoon

Map 11

Gorham, H. S. 1886: 332.

**Type species.** *Antixoon cribripenne* Gorham, 1886 (sub Melyridae) [by monotypy] (not included in Léveillé 1910).

Crowson, R. A. 1964a: 291 (key). Kolibáč, J. 2005: 47. Kolibáč, J. 2006: 116 (phylogeny).

**Remarks.** In consideration of a recent re-classification of *Eronyxa* within Lophocaterini (Tait et al. 1990), the systematic position of *Antixoon* needs to be checked. However, the bifid tarsal claws correspond with Crowson’s (1964a) opinion about a close relationship between *Antixoon*, *Diontolobus* and *Decamerus*.

**Description.** Body size: about 3.0 mm. Body shape flat. Frons: longitudinal groove or depression absent. Cranium ventrally: tufts of long setae at sides absent. Antennal groove absent. Eyes number: two. Mola present. Penicillus (at base) absent. Pubescence above mola or cutting edge absent. Ventral furrow present. Basal notch moderate. Labrum-Cranium not fused. Antennal club symmetrical, sensorial fields absent. Front coxal cavities externally closed. Pronotum transverse. Elytra: long hairs absent. Claws: denticle distinct.

**Biology.** Floricolous: “collected in the flowers of bushes in more or less open country” Crowson (1964a).
**Map 11.** A distribution of the tribe Decamerini including the newly described genus † Cretamerus. A position of Eronyxa is indicated.

**Distribution.** (Map 11.) Central America: Panama.

**Species:**

*cribripenne* Gorham, 1886; Central America (Panama) (RAC)

Gorham, H. S. 1886: 332

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**Genus Decamerus Solier, 1849**

[http://species-id.net/wiki/Decamerus](http://species-id.net/wiki/Decamerus)

Figs 10, 18; Map 11

Solier, A. J. J. 1849: 369.

**Type species.** *Decamerus haemorrhoidalis* Solier, 1849 [by monotypy]

Léveillé, A. 1910: 28. Crowson, R. A. 1964a: 291. Kolibáč, J. 2005: 52 (redescription). Kolibáč, J. 2006: 111 (phylogeny).

*Pelostoma* Reitter, 1877 [Type species: *Pelostoma unguicularis* Reitter, 1877; by monotypy]

Léveillé, A. 1910: 28 (synonymized?). Reitter, E. 1877: 173.

**Description.** Body size: about 3.0 mm. Body shape flat. Gular sutures wide, convergent at apex. Frontoclypeal suture present. Frons: longitudinal groove or depression
absent. Cranium ventrally: tufts of long setae at sides absent. Submentum: ctenidium absent. Antennal groove absent. Eyes: size large, lateral. Eyes number: two. Epicranial acumination absent. Lacinial hooks absent. Galea: shape elongate. Galea: ciliate setae absent. Mediostipes-Lacinia partially fused. Palpifer: outer edge even. Mandibular apical teeth number: two, horizontally situated. Mola present. Penicillus (at base) present (fine, often membranous). Pubescence above mola or cutting edge absent. Ventral furrow present. Basal notch shallow or absent. Labrum-Cranium not fused. Epipharyngial sclerite absent. Lateral tormal process: projection projections extending laterally and downwards (Eronyxa). Ligula: ciliate setae absent. Ligula membranous, not retroflexed, deeply emarginate. Hypopharyngeal sclerite H-shaped. Antenna 10-segmented. Antennal club weakly asymmetrical, sensorial fields absent. Front coxal cavities externally open, internally open. Pronotum transverse. Prepectus present. Middle coxal cavities open. Elytra: long hairs absent. Epipleuron thin. Elytral interlocking mechanism absent, carinae reduced. Elytral punctuation irregular, scales absent. Wing: radial cell moved down, often small, wedge cell absent, cross vein MP3–4 absent, cross vein AA1+2–3+4 absent. Front tibiae: spines along side moderate. Hooked spur absent, apical spurs not hooked or weakly hooked. Claws: denticle distinct. Parasternites number along ventrites III–VII: absent. Spiculum gastrale absent. Tegmen composed of only a single part.

**Biology.** The species occur on the flowers of various bushes. Floricolous, found together with *Diontolobus.*

**Distribution.** Central part of Chile, approximately regions IV to VI.

**Species:**

*haemorrhoidalis* Solier, 1849; Chile (AL)

Léveillé, A. 1910: 28. Kolibáč, J. 2005: 52 (redescription). Reitter, E. 1877: 174 (syn. *Peltostoma unguicularis* Reitter, 1877; synonymized by Léveillé 1910?)

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**Genus Diontolobus Solier, 1849**

http://species-id.net/wiki/Diontolobus

Fig. 10; Map 11

Solier, A. J. J., 1849: 367.

**Type species.** *Diontolobus punctipennis* Solier, 1849 [by monotypy]

Léveillé, A. 1910: 27. Crowson, R. A. 1964a: 291. Kolibáč, J. 2005: 53 (redescription). Kolibáč, J. 2006: 111 (phylogeny).

*Micropeltis* Redtenbacher, 1867 [Type species: *Micropeltis serraticollis* Redtenbacher, 1867; by monotypy]

Léveillé, A. 1910: 27 (synonymized?). Reitter, E. 1876: 58.

**Description.** Body size: about 3.0–4.0 mm. Body shape flat. Gular sutures wide, convergent at apex. Frontoclypeal suture present. Frons: longitudinal groove or depression absent. Cranium ventrally: tufts of long setae at sides absent. Submentum: ctenidium absent. Antennal groove absent. Eyes: size large, lateral. Eyes number: two. Epicran-
Trogossitidae: A review of the beetle family, with a catalogue and keys

Narial acumination absent. Lacinial hooks absent. Galea: shape sub-clavate. Galea: ciliate setae absent. Medioostipes-Lacinia not fused. Palpifer: outer edge even. Mandibular apical teeth number: two, horizontally situated. Mola present. Penicillus (at base) present (fine, often membranous). Pubescence above mola or cutting edge present. Ventral furrow present. Basal notch moderate. Labrum-Cranium not fused. Epipharyngial sclerite absent. Lateral total process: projection projection curved upwards (Colydiopeltis). Ligula: ciliate setae absent. Ligula membranous, not retroflexed, deeply emarginate. Hypopharyngeal sclerite H-shaped. Antenna 11-segmented. Antennal club weakly asymmetrical, sensorial fields absent. Front coxal cavities externally closed, internally open. Pronotum transverse. Prepectus present. Middle coxal cavities open. Elytra: long hairs absent. Epipleuron thin. Elytral interlocking mechanism absent, carinae reduced. Elytral punctuation irregular, scales absent. Wing: radial cell moved down, often small, wedge cell absent, cross vein MP3-4 absent, cross vein AA1+2-3+4 absent. Front tibiae: spines along side moderate. Hooked spur absent, apical spurs not hooked or weakly hooked. Claws: denticle distinct. Parasternites number along ventrites III–VII: absent. Spiculum gastrale absent. Tegmen composed of three parts.

Larva: Frontal arms curved (cucujoid). Epicranial stem absent. Endocarina absent. Gular sutures conspicuous, parallel. Paragular sclerites absent. Hypostomal rods absent. Stemmata number: five. Mandibular apical teeth number: two, horizontally situated. Lacinia mandibulae plumose. Mola present. Maxillary palpi 3-segmented. Pedunculate seta absent. Mala simple. Cardo-Stipes not fused. Ligula present. Labial palpi 2-segmented. Prementum in single part. Antenna 1st transverse, 2nd elongate. Sensory appendix medium sized (to half of joint 3). Thoracic sclerites pattern (dorsally) 0+0+0. Abdominal segment IX not divided. Tergite IX flat. Urogomphi present, hooked; median process absent.

**Biology.** The species occur on flowers. Pollen grains were found in the gut of Di-ontolobus punctipennis (Crowson 1964a).

**Distribution.** As same as in *Decamerus*, the central part of Chile, approximately regions IV to VI.

**Species:**

*costulata* Reitter, 1876; Chile (AL)

Léveillé, A. 1910: 27. Reitter, E. 1876: 60 (*Micropeltis costulata* Reitter, 1876)

*flavolimbata* Reitter, 1877; Chile (AL)

Léveillé, A. 1910: 27

*inaequalis* Reitter, 1877; Chile (AL)

Léveillé, A. 1910: 28

*incostata* Reitter, 1876; Chile (AL)

Léveillé, A. 1910: 28. Reitter, E. 1876: 59 (*Micropeltis incostata* Reitter, 1876)

*lanuginosa* Léveille, 1895; Chile (AL)

Léveillé, A. 1910: 28

*punctipennis* Solier, 1849; Chile (AL)

Léveillé, A. 1910: 28. Kolibáč, J. 2005: 53 (redescription). Reitter, E. 1876: 59 (syn. *Micropeltis serraticollis* Redtenbacher, 1867, synonymized by Léveillé 1910?)
punctipennis var. lateritius Fairmaire, 1883: 488
diontolobus sp. (supposed larva); Chile (RAC)
Crowson, R. A. 1964a: 291. Kolibáč, J. 2006: 106

Tribe Ancyronini Kolibáč, 2006

Kolibáč, J. 2006: 127.

Type genus. Ancyrona Reitter, 1876 [designated by Kolibáč 2006]
Kolibáč, J. 2007a: 365. Kolibáč, J. & Zaitsev, A. A. 2010: 59 (phylogeny, larval morphology).

Remarks. Ancyronini are undeniably related to Lophocaterini. As observations made upon the recently recorded Ancyrona diversa larva have shown (Kolibáč and Zaitsev 2010), the major morphological features of known larvae of the two tribes are nearly identical. In fact, it is likely that Ancyrona and allied genera are simply “advanced lophocaterins” adapted to a predatory way of life. Such a life-style is clearly demonstrated by their carnivorous mouthparts in both adults and larvae (sharp mandibles without mola), different life habits (they dwell on bark, branches or logs hunting for other insects) and well as their excellent capacity for rapid flight and swift reactions to intrusive stimuli. From the point of view of phylogenetic taxonomy, it appears that Lophocaterini are paraphyletic in relation to Ancyronini; both tribes are therefore in acute need of further study.

Key to genera

1. Head quite hypognathous; tarsal pattern 4-4-4 or 5-5-5; body convex........
   2

   - Head quite prognathous; tarsal pattern 5-5-5; body more/less flattened......
   3

2. Antennae 10- or 11-segmented with loose 3-segmented club; mandible with penicillus formed by membranous appendage with short setae; eyes distinctly elevate.........................................................Afrocyrona
   - Antennae 10-segmented with compact 2-segmented club, segments 9 and 10 coalescent; mandible with penicillus composed of tuft of long setae; eyes not very elevate ..........................................................Neaspis

3. Eyes distinctly elevate; labrum sometimes fused with cranium (males); lacinia without hooked spurs; mediostipes fused with lacinia...........................Ancyrona
   - Eyes not very elevate; labrum free; lacinia with hooked pigmented spurs; mediostipes not fused with lacinia ..........................................................Leptonyxa

4. Mandible enlarged, male mandible monstrous; galea and lacinia without spines............................................................Leptonyxa
   - Mandible not enlarged; lacinia with several pale spines..............Grynoma
Genus *Afrocyrona* Kolibáč, 2007

http://species-id.net/wiki/Afrocyrona

Fig. 10; Map 12

Kolibáč, J. 2007b: 60.

**Type species.** *Afrocyrona dwesae* Kolibáč, 2007 [designated by Kolibáč 2007b]

**Description.** Body size: 2.9–5.0 mm. Body shape flat. Gular sutures narrow, sub-parallel at apex. Frontoclypeal suture present. Frons: longitudinal groove or depression absent. Cranium ventrally: tufts of long setae at sides present. Submentum: ctenidium absent. Antennal groove present. Eyes: size large, lateral. Eyes number: two. Epicranial acumination absent. Lacinial hooks: two. Galea: shape sub-clavate. Galea: ciliate setae absent. Mediostipes-Lacinia partially fused. Palpifer: outer edge even. Mandibular apical teeth number: two, horizontally situated. Mola absent. Penicillus (at base) long setae. Pubescence above mola or cutting edge absent. Ventral furrow shallow or absent. Labrum-Cranium not fused. Epipharyngeal sclerite absent. Lateral tormal process: projection projection not developed (all remaining). Ligula: ciliate setae absent. Ligula membranous, not retroflexed, weakly emarginate. Hypopharyngeal sclerite H-shaped. Antenna 11-segmented or 10-segmented. Antennal club weakly asymmetrical, sensorial fields absent. Front coxal cavities externally open, internally open. Pronotum transverse. Prepectus present. Middle coxal cavities open. Elytra: long hairs absent. Epipleuron moderate. Elytral interlocking mechanism absent, carinae conspicuous. Elytral punctuation regular, scales present. Wing: radial cell oblong (or reduced) or cell moved down, often small, wedge cell absent, cross vein MP3-4 present, cross vein AA1+2-3+4 absent. Front tibiae: spines along side moderate. Hooked spur present. Tarsal pattern 4-4-4 or 5-5-5. Claws: denticle absent. Parasternites number along ventrites III–VII: one. Spiculum gastrale absent. Tegmen composed of two parts. Coxitae divided.

**Biology.** The species were collected by beating branches and sifting rotten wood and litter. Detritus and some insect remnants were found in the gut of *A. dwesae*, whereas only insect fragments were found in the gut of *A. ciskeiensis*. The species are probably predatory and partly or occasionally fungivorous. *Afrocyrona dwesae* may be unable to fly.

**Distribution.** Three described species are known from South Africa: Eastern Cape and Transvaal. One or two more species have been recently found in the island of Sokotra.

**Species:**

* ciskeiensis Kolibáč, 2007; South Africa (JK)
  Kolibáč, J. 2007b: 61

* dwesae Kolibáč, 2007; South Africa (JK)
  Kolibáč, J. 2007b: 63

* gussmannae Kolibáč, 2007; South Africa (JK)
  Kolibáč, J. 2007b: 64
Genus *Ancyrona* Reitter, 1876

http://species-id.net/wiki/Ancyrona

Figs 2, 11; Map 12

Reitter, E. 1876: 51.

**Type species.** *Ancyrona lewisi* Reitter, 1876 [designated by Kolibáč 1993]

Léveillé, A. 1910: 25. Lafer, G. Sh. 1992: 83. Matthews, E. G. 1992: 3 (key, Australia). Kolibáč, J. 2005: 45. Kolibáč, J. 2006: 111 (phylogeny). Kolibáč, J. 2007a: 365. Kolibáč, J. & Zaitsev, A. A. (2010): 55 (larva).

*Latolaeva* Reitter, 1876 (Type species: *Latolaeva ferrarii* Reitter, 1876; designated by Kolibáč 2005)

Léveillé, A. 1910: 25. Kolibáč, J. 2005: 63. Kolibáč, J. 2006: 111 (phylogeny). Kolibáč 2007b: 54 (synonymized). Reitter, E. 1876: 49.

**Description.** Body size: 3.1–8.0 mm. Body shape flat. Gular sutures narrow, subparallel at apex. Frontoclypeal suture present or broadly emarginate. Frons: longitudinal groove or depression absent. Cranium ventrally: tufts of long setae at sides present. Submentum: ctenidium absent. Antennal groove present. Eyes: size large, lateral. Eyes number: two. Epicranial acumination absent. Lacinial hooks: two. Galea: shape sub-clavate. Galea: ciliate setae absent. Mediostipes-Lacinia not fused. Palpifer: outer edge even. Mandibular apical teeth number: two, horizontally situated. Mola absent. Penicillus (at base) long setae. Pubescence above mola or cutting edge absent. Ventral furrow absent. Basal notch shallow or absent. Labrum-Cranium not fused. Hypopharyngeal sclerite absent. Lateral tormal process: projection not developed (all remaining). Ligula: ciliate setae absent. Ligula membranous, not retroflexed, weakly emarginate. Hypopharyngeal sclerite H-shaped. Antenna 10-segmented. Antennal club weakly asymmetrical, sensorial fields absent. Front coxal cavities externally open, internally open. Pronotum transverse. Prepectus present. Middle coxal cavities open. Elytra: long hairs absent. Epipleuron moderate. Elytral interlocking mechanism absent, carinae conspicuous. Elytral punctuation regular, scales present. Wing: radial cell oblong (or reduced) or cell moved down, often small, wedge cell absent, cross vein MP3–4 present, cross vein AA1+2–3+4 absent. Front tibiae: spines along side moderate. Hooked spur present. Claws: denticle absent. Parasternites number along ventrites III–VII: one. Spiculum gastrale absent. Tegmen composed of two or three parts. Coxitae undivided.

Larva *A. diversa* Pic, 1921 (Kolibáč and Zaitsev 2010): Frontal arms Y-shaped. Epicranial stem minute, nearly absent. Endocarina present. Gular sutures conspicuous, convergent. Gula: anterior apodemes absent. Paragular sclerites absent. Hypostomal rods present. Stemmata number: two. Mandibular apical teeth number: two, horizontally situated. Lacinia mandibulae plumose. Mola absent. Maxillary palpi 3-segmented. Palpifer present. Pedunculate seta present. Mala simple. Mala: bidentate protrusion ab-
sent. Cardo-Stripes not fused. Cardo: size nearly as large as stipes. Ligula present. Labial palpi 2-segmented. Prementum in two parts, anterior margin even. Torma: two separate lateral sclerites and plate between them. Antennal joints 1, 2 elongate. Sensory appendix longer than half of joint 3. Thoracic sclerites pattern (dorsally) 1–2–0. Thoracic sclerites pattern (ventrally) 1–0–0. Trochanter oblong. Abdominal segment IX transversely divided. Tergite IX flat. Urogomphi present, hooked; median process present.

**Biology.** Predatory. Adults can be beaten from dry branches or individually collected on fallen timber, where they hunt for other insects.

**Distribution.** Africa in the south of Sahara, eastern Asia (from India to Japan and Russian Far East), Australia: Queensland, New South Wales (types of *A. aegra, A. amica, A. latebrosa, A. laticeps, A. vesca* checked), New Guinea (including undescribed species). Strangely enough, one Japanese species, *A. japonica*, was introduced to Europe and first recorded in Hungary (“Visegrad 1904”). It has now been collected several times in adjacent Slovakia, on branches of decaying oak. Two Tertiary fossil species are known from European Eocene.

**Species groups.** In a review of *Afrocyrona* and *Ancyrona*, I divided the latter genus in several informal species groups (Kolibáč 2007b). They are listed below together with a short diagnosis, although not all *Ancyrona* species are classified within the particular groups. This is only the first attempt to classify the rich and complex genus, so a monophyly of these groups should be checked and tried, then the groups may be established at the rank of subgenera.)
lewisi species-group

Species. *lewisi*, *shibatai*, *haroldi*, and numerous undescribed species from south and eastern Asia and New Guinea.

Distribution. Japan, China, southeastern Asia.

Diagnosis. Small, flat, broad, oval species. Dorsal surface with colour pattern formed by scales or rigid decumbent setae.

gabonica species-group

Species. *gabonica*, *ferrarii*, *vicina*, *bivittata*, *feai*, *incensa*, *martini*, *plana*, and numerous undescribed species from eastern Asia and tropical Africa. Australian species *A. aegra*, *amica*, *latebrosa*, *laticeps*, *vesca* probably also belong to the group.

Distribution. Tropical Africa, south-eastern Asia and probably Australia.

Diagnosis. Extremely flat, broad, oval species without scales and lacking decumbent pubescence on dorsal surface; dorsal side quite bare or with inconspicuous or erect pubescence. Some species with longitudinal colour stripes on elytra; stripes not formed by pubescence or scales. Antennal club very loose, nearly serrate. Tegmen composed of two or three parts.

japonica species-group

Species. *japonica*, *diversa*.

Distribution. Japan, northern China, Ussuri. *Ancyrona japonica* also spread to south-eastern and central Europe (from Bulgaria through Hungary to Slovakia); first European record in 1904.

Diagnosis. Rather elongate unicolorous species with long, soft pubescence on dorsal surface. Tegmen composed of 1 or 2 parts (parameral piece fused with phallobase), male abdominal segments IX–X more or less reduced.

colobicoides species-group

Species. *colobicoides*, *fairmairei*, *kosnovskorum* (syn. *fairmairi?*), *minor*.

Distribution. Madagascar.

Diagnosis. Flat, elongate species with conspicuously elevate eyes and compact 3-segmented club. Yellowish elytra with dark black-brown pattern (stripes, spots), pubescence short and decumbent. Primitive tegmen composed of three parts. Elytra with distinct carinae. One specimen known to me from Madagascan copal (Cap d’Ambre).
endroedyi species-group

Species. endroedyi, muellerae, caffra(?).

Distribution. South Africa.

Diagnosis. Body quite elongate (as in japonica group), with long, soft, erect hairs or short, decumbent, scale-like setae. Dorsal surface unicolorous or with pattern formed by pubescence. Radial cell completely or partly reduced. Tegmen composed of two or three parts. Elytra with more or less conspicuous carinae.

Species:
aegra Olliff, 1885; “Nov. Gal. mer.” (AL)
    Léveillé, A. 1910: 25
amica Olliff, 1885; S Australia (AL)
    Léveillé, A. 1910: 25
andrewesi Léveillé, 1907; India (AL)
    Léveillé, A. 1910: 25
aurora Léveillé, 1899; Congo gall. (AL)
    Léveillé, A. 1910: 25
bivittata Léveillé, 1899; Cameroon (AL)
    Léveillé, A. 1910: 25 (Latolaeva bivittata Léveillé, 1899). Kolibáč, J. 2007b: 55 (comb.; transferred from Latolaeva to gabonica-group)
blaisei Léveillé, 1907; Tonkin (AL)
    Léveillé, A. 1910: 25
bouchardi Léveillé, 1902; Sumatra (AL)
    Léveillé, A. 1910: 25
brasilia Perty, 1830; Brazil: Minas Geraes (AL)
    Léveillé, A. 1910: 25 (Latolaeva brasilia Perty, 1830)
    Note: Cleroidea? (see Reitter 1876: 51)
brunnea Léveillé, 1905; India (AL)
    Léveillé, A. 1910: 25
brunneolimbata Léveillé, 1905; Fernando Po (AL)
    Léveillé, A. 1910: 25
caffra Reitter, 1876; Cap (AL)
    Reitter, E. 1876: 52. Léveillé, A. 1910: 25
cassidoides Reitter, 1876; Malacca (AL)
    Léveillé, A. 1910: 25 (Latolaeva cassidoides Reitter, 1876). Reitter, E. 1876: 50 (Latolaeva cassidoides Reitter, 1876)
ciliata Murray, 1867; Old Calabar (Nigeria) (AL)
    Léveillé, A. 1910: 25 (transferred from Peltis to Ancyrona). Reitter, E. 1876: 53 (Peltis)
colobicoides Fairmaire, 1868; Madagascar (AL, confirmed JK)
    Léveillé, A. 1910: 30 (Ostoma (s.str.)). Kolibáč, J. 2007b: 57 (comb.; transferred from Ostoma to colobicoides-group)
    Note: maybe conspecific with A. kosnovskorum
congolensis Léveillé, 1905; Congo gall. (AL)
Léveillé, A. 1910: 26

crenata Murray, 1867; Old Calabar (Nigeria) (AL)
Léveillé, A. 1910: 26. Reitter, E. 1876: 54 (Peltis)
diversa Pic, 1921; E Siberia (Ussuri) (JK)
Pic, M. 1921: 1 (Ostoma). Kolibáč, J. 1993a: 17 (comb.; transferred from Ostoma to Ancyrona). Kolibáč, J. 1999b: 12 (morphology). Kolibáč, J. 2007a: 365 (distribution). Kolibáč, J. 2007b: 56 (shifted to japonica-group). Kolibáč, J & Zaitsev, A. A. 2010: 53 (larva)
elongata Léveille, 1905; India (AL)
Léveillé, A. 1910: 26
endroedyi Kolibáč, 2007; SA: Transvaal (JK)
Kolibáč, J. 2007b: 58
† eocenica Schmied, Wappler & Kolibáč, 2009; Germany; Tertiary: middle Eocene
Schmied, H. et al. 2009: 18
extensa Reitter, 1877; Bolivia: Bogota (AL)
Léveillé, A. 1910: 26
fairmairei Léveillé, 1903; Madagascar (AL, confirmed JK)
Léveillé, A. 1910: 30 (Ostoma (s.str.)). Kolibáč, J. 2007b: 58 (comb.; transferred from Ostoma to colobicoides-group)
feai Léveillé, 1905; Congo gall., Cameroon (AL)
Léveillé, A. 1910: 26. Kolibáč, J. 2007b: 55 (shifted to Ancyrona gabonica-group)
ferrarii Reitter, 1876; Batchian Ins. (AL)
Léveillé, A. 1910: 25 (Latolaeva). Kolibáč, J. 2005: 63 (Latolaeva; redescription). Kolibáč, J. 2007b: 55 (comb.; transferred from Latolaeva to gabonica-group). Reitter, E. 1876: 50 (Latolaeva)
francoisi Léveillé, 1907; Tonkin (AL)
Léveillé, A. 1910: 26
fryi Léveillé, 1899; Assam, Perak, Sumatra (AL)
Léveillé, A. 1910: 26
gabonica Léveillé, 1899; Congo gall. (AL)
Léveillé, A. 1910: 26. Kolibáč, J. 2007b: 55 (shifted to gabonica-group)
gestroi Reitter, 1880; Australia, New Guinea (AL)
Léveillé, A. 1910: 26
grouvellei Léveille, 1899; Détr. Torres (AL)
Léveillé, A. 1910: 26
haroldi Reitter, 1877; Japan (AL, confirmed JK)
Léveillé, A. 1910: 26. Esaki, T. et al. 1951: 1062. Kolibáč, J. 2007a: 365. Kolibáč, J. 2007b: 54 (shifted to lewisi-group). Nakane, T. et al. 1963: 181
higonia Lewis, 1894; Japan (AL)
Nakane, T. et al. 1963: 182 (Ostoma)
Note: combined with Ancyrona here according to a photograph in Nakane, T. et al. (1963)
horni Léveillé, 1902; Sri Lanka (AL)
Léveillé, A. 1910: 26

incensa Olliff, 1883; Malacca (AL)
Léveillé, A. 1910: 25 (Latolaeva). Kolibáč, J. 2007b: 55 (comb.; transferred from Latolaeva to gabonica-group)

indica Léveillé, 1907; India (AL)
Léveillé, A. 1910: 26

japonica Reitter, 1889; Asia: Japan; Europe: Bulgaria?, Czechia, Hungary (JK)
Reitter, E. 1889: 15 (Ostoma). Léveillé, A. 1910: 31 (Ostoma). Esaki, T. et al. 1951: 1062 (Grynocharis; comb.). Kolibáč, J. 1993a: 18 (comb.; transferred from Grynocharis to Ancyrona). Kolibáč, J. 1993b: 90 (check-list). Kolibáč, J. 1999: 12 (morphology). Kolibáč, J. 2007a: 365 (distribution). Kolibáč, J. 2007b: 56 (shifted to japonica-group). Lafer, G. Sh. 1992: 84 (Grynocharis). Nakane, T. et al. 1963: 182 (Grynocharis)

javanica Léveille, 1905; Java (AL)
Léveillé, A. 1910: 26

kosnovskorum Kolibáč, 2005; Madagascar (JK)
Kolibáč, J. 2005: 46. Kolibáč, J. 2007b: 58 (shifted to colobicoides-group)
Note: maybe synonym of A. colobicoides

lanuginosa Motschulsky, 1863; Sri Lanka (AL)
Léveillé, A. 1910: 26. Reitter, E. 1876: 52

latebrosa Olliff, 1885; Queensland (AL)
Léveillé, A. 1910: 26

laticeps Olliff, 1885; Queensland, Nov. Gall. mer. (=NSW?) (AL)
Léveillé, A. 1910: 26

lewisi Reitter, 1876; Japan (AL)
Léveillé, A. 1910: 26. Kolibáč, J. 1993a: 16. Kolibáč, J. 2005: 45. Kolibáč, J. 2007b: 54 (shifted to lewisi-group). Lafer, G. Sh. 1992: 84. Reitter, E. 1876: 52

maculipennis Kraatz, 1878; S Africa (AL)
Léveillé, A. 1910: 26

martini Léveille, 1899; Natal (AL)
Léveillé, A. 1910: 26. Kolibáč, J. 2007b: 55 (shifted to gabonica-group)

minor Fairmaire, 1900; Madagascar (AL)
Léveillé, A. 1910: 31 (Ostoma (s.str.)). Kolibáč, J. 2007b: 58 (comb.; transferred from Ostoma to colobicoides-group)

muellerae Kolibáč, 2007; SA: Transvaal (JK)
Kolibáč, J. 2007b: 59 (Ancyrona endroedyi-group)

nigrita J. Thomson, 1858; Gabon (AL)
Léveillé, A. 1910: 26. Reitter, E. 1876: 53 (Peltis)

obscura Léveille, 1899; Sumatra, Ternate (AL)
Léveillé, A. 1910: 26

orbicularis Léveille, 1894; Sumatra, Ternate (AL)
Léveillé, A. 1910: 26
ovalis M’Leay, 1825; Borneo, Java (AL)
Léveillé, A. 1910: 25. Reitter, E. 1876: 49 (comb.; transferred from Pelis to Latolaeva)
plana Léveille, 1902; E Africa (AL)
Léveillé, A. 1910: 26. Kolibáč, J. 2007b: 55 (shifted to gabonica-group)
pryeri Olliff, 1883; Borneo (AL)
Léveillé, A. 1910: 26
pygmea Léveille, 1907; Argentina (?) (AL)
Léveillé, A. 1910: 26
quadrimaculata Reitter, 1877; Malacca (AL)
Léveillé, A. 1910: 25
reitteri Olliff, 1883; New Guinea, Ins. Aru (AL)
Léveillé, A. 1910: 26
rufolineata Léveille, 1899; Cameroon (AL)
Léveillé, A. 1910: 26
shibatai Nakane, 1963; Japan (var A)
Nakane, T. 1963: 46. Kolibáč, J. 2007a: 365. Kolibáč, J. 2007b: 54 (shifted to lewisi-group). Nakane, T. et al. 1963: 182
simoni Reitter, 1880; Ashantee (AL)
Léveillé, A. 1910: 26
soror Léveille, 1902; Sumatra (AL)
Léveillé, A. 1910: 26
subrotundata Motschulsky, 1863; Sri Lanka (AL)
Léveillé, A. 1910: 26. Reitter, E. 1876: 53 (Ostoma)
vesca Olliff, 1885; Australia (AL)
Léveillé, A. 1910: 27
vicina Léveille, 1899; Cameroon (AL)
Léveillé, A. 1910: 27. Kolibáč, J. 2007b: 55 (shifted to gabonica-group)

Genus Grynoma Sharp, 1877
http://species-id.net/wiki/Grynoma
Fig. 10; Map 12
Sharp, D. 1877: 267

Type species. Grynoma diluta Sharp, 1877 [designated by Kolibáč 2005]
Léveillé, A. 1910: 29. Crowson, R. A. 1964a: 299 (as Grynoma Broun). Kolibáč, J. 2005: 59. Kolibáč, J. 2006: 111 (phylogeny).

Description. Body size: about 5.0–5.5 mm. Body shape flat. Gular sutures wide, convergent at apex. Frontoclypeal suture present. Frons: longitudinal groove or depression absent. Cranium ventrally: tufts of long setae at sides absent. Submentum: ctenidium absent. Antennal groove absent. Eyes: size large, lateral. Eyes number: two. Epicranial acumination moderate. Lacinial hooks absent. Galea: shape sub-clavate. Galea: ciliate setae absent. Mediodistipes-Lacinia partially fused. Palpifer: outer edge even. Mandibular apical teeth number:
two, horizontally situated. Mola absent. Penicillus (at base) long setae. Pubescence above mola or cutting edge absent. Ventral furrow absent. Basal notch shallow or absent. Labrum-Cranium fused. Epipharyngial sclerite absent. Lateral tormal process: projection projection not developed (all remaining). Ligula: ciliate setae absent. Ligula membranous, not retroflexed, weakly emarginate. Hypopharyngeal sclerite consisting of two separate parts. Antenna 10-segmented. Antennal club weakly asymmetrical, sensorial fields absent. Front coxal cavities externally open, internally open. Pronotum transverse. Prepectus present. Middle coxal cavities open. Elytra: long hairs absent. Epipleuron moderate. Elytral interlocking mechanism absent, carinae reduced. Elytral punctuation irregular, scales absent. Wing: radial cell moved down, often small, wedge cell absent, cross vein MP3-4 absent, cross vein AA1+2-3+4 absent. Front tibiae: spines along side moderate. Hooked spur absent, apical spurs not hooked or weakly hooked. Claws: denticle absent. Parasternites number along ventrites III–VII: one. Spiculum gastrale absent. Tegmen composed of three parts.

Larva: Paragular sclerites absent. Cardo-Stipes not fused. Cardo: size nearly as large as stipes. Torma H-shaped. Abdominal segment IX transversely divided. Tergite IX flat. Urogomphi present, hooked; median process present.

**Biology.** Crowson (1964a) found “only detrital material and vegetable fibres” in the gut of adult *G. varians*; however, there were “insect fragments as well as detrital material” in the gut of a larva of the same species. I assume that the adults and larvae are predatory.

**Distribution.** New Zealand.

**Species:**

*albosparsa* Broun, 1909; New Zealand (AL)

Léveillé, A. 1910: 29

*ambiguum* Broun, 1880; New Zealand (AL)

Léveillé, A. 1910: 21 (*Leperina ambigu*.). Leschen, R. A. B. & Lackner, T. 2013: 301 (comb. from *Leperina*).

*diluta* Sharp, 1877; New Zealand (AL)

Léveillé, A. 1910: 29. Kolibáč, J. 2005: 59 (redescription)

*fusca* Sharp, 1877; New Zealand (AL)

Léveillé, A. 1910: 29

*regularis* Sharp, 1882; New Zealand (AL)

Léveillé, A. 1910: 29

*varians* Broun, 1893; New Zealand (RAC)

Crowson, R. A. 1964a: 297 (adult and larva). Kolibáč, J. 2006: 107 (larva)

Note: The species was omitted by Léveillé (1910)

**Genus Leptonyxa Reitter, 1876**

http://species-id.net/wiki/Leptonyxa

Fig. 11; Map 12

Reitter, E. 1876: 54.

**Type species.** *Leptonyxa brevicollis* Reitter, 1876 [designated by Kolibáč 2005]
Remarks. I have studied only two species of *Leptonyxa*, *L. germaini* and *L. fairmairi*. The mandibles of the males are so peculiar that I hesitated over whether the genus truly belongs in Trogossitidae (Kolibáč 2006). Moreover, the other mouthparts – the reduced labrum, labium with divided prementum and plain galea and lacinia without sclerotized spurs or thorns – are also so highly modified that it is difficult to see trogossitid features in these body parts at all. More extensive material of *Leptonyxa* should be examined to establish a definitive morphological description of the genus.

Description. Body size: about 7.0 mm. Body shape flat. Gular sutures wide, convergent at apex. Frontoclypeal suture absent. Frons: longitudinal groove or depression absent. Cranium ventrally: tufts of long setae at sides present. Submentum: ctenidium absent. Antennal groove absent. Eyes: size large, lateral. Eyes number: two. Epicranial acumination absent. Lacinial hooks absent. Galea: shape elongate. Galea: ciliate setae absent. Medioistipes-Lacinia fused together. Palpifer: outer edge even. Mandibular apical teeth number: two, horizontally situated. Mola absent. Penicillus (at base) absent. Pubescence above mola or cutting edge present. Ventral furrow present. Basal notch shallow or absent. Labrum-Cranium fused. Epipharyngeal sclerite absent. Lateral tormal process: projection not developed. Ligula: ciliate setae absent. Ligula rigid, not retroflexed, weakly emarginate. Hypopharyngeal sclerite absent. Antenna 10-segmented. Antennal club weakly asymmetrical, sensorial fields absent. Front coxal cavities externally open, internally open. Pronotum transverse. Prepectus present. Middle coxal cavities open. Elytra: long hairs absent. Epipleuron moderate. Elytral interlocking mechanism absent, carinae conspicuous. Elytral punctuation regular, scales absent. Wing: radial cell moved down, often small, wedge cell absent, cross vein MP3-4 absent, cross vein AA1-2-3+4 absent. Front tibiae: spines along side moderate. Hooked spur present. Claws: denticle absent. Parasternites number along ventrites III–VII: absent. Spiculum gastrale absent. Tegmen composed of three parts. Coxitae undivided.

Biology. Nothing is known of the biology of these rare species. The last record known to me was made by a flight interception trap in Brazil. They are probably predatory.

Distribution. Tropical South America: Bolivia, Colombia, Brazil.

Species:

*boliviensis* Léveillé, 1895; Bolivia (AL)
Léveillé, A. 1910: 27

*brevicollis* Reitter, 1876; Colombia (AL)
Reitter, E. 1876: 54. Léveillé, A. 1910: 27. Kolibáč, J. 2005: 66 (redescription)

*costipennis* Reitter, 1876; Brazil (AL)
Reitter, E. 1876: 55. Léveillé, A. 1910: 27

*fairmairei* Léveillé, 1892; Brazil (AL)
Léveillé, A. 1910: 27. Kolibáč, J. 2006: 152

*germaini* Léveillé, 1895; Bolivia (AL)
Léveillé, A. 1910: 27
grouvellei Léveillé, 1895; Brazil (AL)
    Léveillé, A. 1910: 27
ornata Léveillé, 1895; Brazil: Bahia (AL)
    Léveillé, A. 1910: 27
sedilloti Léveillé, 1888; Colombia (AL)
    Léveillé, A. 1910: 27
variegata Léveillé, 1907; Brazil (AL)
    Léveillé, A. 1910: 27

Genus *Neaspis* Pascoe, 1872

http://species-id.net/wiki/Neaspis

Fig. 11; Map 12

Pascoe, F. P. 1872: 317.

**Type species.** *Neaspis villosa* Pascoe, 1872 [by monotypy]
    Léveillé, A. 1910: 25. Matthews, E. G. 1992: 4. Kolibáč, J. 2005: 70. Kolibáč, J. 2006: 111 (phylogeny). Reitter, E. 1876: 47.

**Description.** Body size: about 4.0 mm. Body shape flat. Gular sutures wide, convergent at apex. Frontoclypeal suture absent. Frons: longitudinal groove or depression absent. Cranium ventrally: tufts of long setae at sides absent. Submentum: ctenidium absent. Antennal groove absent. Eyes: size moderate. Eyes number: two. Epicranial acumination absent. Lacinial hooks absent. Galea: shape sub-clavate. Galea: ciliate setae absent. Medioptes-Lacinia not fused. Palpifer: outer edge even. Mandibular apical teeth number: two, horizontally situated. Mola absent. Penicillus (at base) long setae. Pubescence above mola or cutting edge absent. Ventral furrow absent. Basal notch shallow or absent. Labrum-Cranium not fused. Epipharyngial sclerite absent. Lateral tormal process: projection not developed (all remaining). Ligula: ciliate setae absent. Ligula rigid, not retroflexed, weakly emarginate. Hypopharyngeal sclerite H-shaped. Antenna 10-segmented. Antennal club symmetrical, sensorial fields absent. Front coxal cavities externally open, internally open. Pronotum transverse. Middle coxal cavities closed. Elytra: long hairs absent. Epipleuron moderate. Elytral interlocking mechanism absent, carinae reduced. Elytral punctuation regular, scales present. Wing: radial cell moved down, often small, wedge cell absent, cross vein MP3-4 absent, cross vein AA1+2-3+4 absent. Front tibiae: spines along side moderate. Hooked spur present. Claws: denticle absent. Spiculum gastrale absent. Tegmen composed of three parts. Coxitae undivided.

**Biology.** The species are probably predatory. According to Matthews (1992), they live in dry sclerophyll and Eremaean zones.

**Distribution.** The genus is autochthonous in Australia; *N. squamata* from the Phillippines is probably mislabelled, misidentified or introduced (I did not examine the species). Recently, I studied a specimen of *Neaspis cf. variegata* collected in Brazil.
Figure 11. A Ancyrona (syn. Latolaeve) bivittata B Ancyrona vicina C Ancyrona kosnovskorum (= fairmairi?) D Ancyrona sp., lewisi-group, Malaysia E Ancyrona japonica, Slovakia F Ancyrona gabonica G Leptonyx fairmairi H Neapis variegata.
by Wygodzinski (coll. National Museum Prague), labelled as “Corcovado, Rio D.F.” (= Rio de Janeiro, former Districto Federal). This record is believed to be plausible. The presence (either autochthonous distribution or introduction) might be the grounds for certain improbable descriptions of South American *Ancyrona* species.

**Species:**

*pusilla* Blackburn, 1891; South Australia (AL)

- Léveillé, A. 1910: 25

*sculpturata* Reitter, 1876; Australia (AL)

- Léveillé, A. 1910: 25. Reitter, E. 1876: 48

*serrata* Léveillé, 1907; Queensland (AL)

- Léveillé, A. 1910: 25

*squamata* Escherich, 1822; Philippines: Luzon (AL)

- Léveillé, A. 1910: 25. Reitter, E. 1876: 49

Note: doubtful record

*variegata* MacLeay, 1873; Australia, one specimen from Brazil (varA)

- Léveillé, A. 1910: 25. Kolibáč, J. 2005: 70 (redescription). Reitter, E. 1876: 47
  
  *(Neaspis subtrifasciata* Reitter, 1876)*

*villosa* Pascoe, 1872; Australia (AL)

- Léveillé, A. 1910: 25. Reitter, E. 1876: 48

† **Genus Sinosoronia** Zhang, 1992

http://species-id.net/wiki/Sinosoronia

Map 12

Zhang, J.-F. 1992: 333 [in Chinese], 336 [in English] (sub Nitidulidae)

**Type species.** *Sinosoronia longiantennata* Zhang, 1992 [by monotypy]

Kolibáč, J. 2006: 136 (Trogossitidae *incertae sedis*). Kolibáč, J. & Huang, D.-Y. 2008: 145 (Ancyronini). Ponomarenko, A. G. & Kireichuk, A. G. (2005–2008): http://zin.ru/animalia/Coleoptera/rus/paleosy2.htm (Peltidae). Zhang, J.-F. 1992: 333 [in Chinese], 336 [in English]. Schmied, H. et al. 2009: 26.

**Remarks.** *Sinosoronia* might be related to another Mesozoic genus, *Peltocoleops*. The latter genus was described as “Cleroidea *incertae sedis*” (Ponomarenko 1990) and classified within Lophocaterini by myself (Kolibáč 2006). The two genera differ distinctly in the shape of the antennal club. This is compact and 3-segmented, with segments weakly asymmetrical in *Peltocoleops* but loose, 2- or 3-segmented, with segments distinctly asymmetrical in *Sinosoronia*. It is therefore suggested that the latter genus be classified within the tribe Ancyronini, which has corresponding features in recent representatives. The large, elevated eyes observed in *Sinosoronia* also support such a classification (according to Kolibáč and Huang 2008).

The “posterior femur” in the original description is probably the hind coxa. The long antenna with a loose club resembles that of species of the *Ancyrona gabonica*
species-group, while a similar shape of the pronotum may be found in the *colobicoides* species-group. Such an extremely small size of body is not known in recent Ancyronini but occurs in an concurrently described species from the late middle Eocene (Schmied et al. 2009). Apart from body size, the two species share large, elevated eyes and similar shape of pronotum. The time difference between these two very similar species is about 100 million years, much more than between the Eocene and the present time. Round body and body size might appear indicative of a group of the rentoniine genera. However, the body is much smaller (about 1 mm) and the antennae shorter with a symmetrical club in the rentoniins (Kolibáč 2005). If the asymmetrical club is considered an apomorphy, *Sinoronia* may well be an ancestor of Ancyronini rather than Thymalini (according to Kolibáč and Huang 2008).

**Original description.** “Brown in colour. Head about as long as wide. Mandibles large but dentes indistinguishable. Eyes circular, expanded laterally but exterior margin ill-preserved. Antennae 1.2 times as long as head and pronotum together, several basal segments ill-preserved except for the thickened scape, each flagellum cylindrical, about twice as long as wide, club elongate, nearly one-third the length of antenna, slightly thickened apically. Pronotum 2.1 times as broad as long; anterior margin arched, its median part straight, curved forwards laterally, lateral margins arched, posterior margin sinuate, and closely connected to elytra. Scutellum about as long as wide. Elytra smooth, not striated, exterior and interior margins slightly arched, shoulder rounded, its terminal part distinctly exceeding apex of abdomen, each elytron 2.6 times as long as wide. Middle and posterior femora seemingly clubbed, both tibiae and tarsi absent. Total length 2.3 mm, width 1.3 mm.” (Zhang 1992: 336.)

**Distribution.** China: Shandong province; Mesozoic: Lower Cretaceous, Laiyang formation.

**Species:**
† *longiantennata* Zhang, 1992; China: Shandong; Lower Cretaceous: Laiyang formation (varA)

Kolibáč, J. 2006: 136. Kolibáč, J. & Huang, D.-Y. 2008: 145. Ponomarenko, A. G. & Kireichuk, A. G. (2005–2008): http://zin.ru/animalia/Coleoptera/rus/paleosy2.htm. Schmied, H. et al. 2009: 26. Zhang, J.-F. 1992: 333 [in Chinese], 336 [in English]

**Tribe Lophocaterini Crowson, 1964**

Crowson, R. A. 1964a: 297 (Lophocaterinae).

**Type genus:** *Lophocateres* Olliff, 1883

Barron, J. R. 1971: 11, 12 (syn. Lophocateridae = Peltinae). Barron, J. R. 1975: 1119. Burakowski, B. et al. 1986: 119 (Lophocateridae). Kolibáč, J. 2006: 128 (diagnosis, stat. n.). Kolibáč, J. 2007a: 365. Kolibáč, J. 2010: 35. Lafer, G. Sh. 1992: 83
Remarks. The main issue to be addressed for Lophocaterini is their possible paraphyly in relation to Ancyronini. The whole clade (lophocaterins + ancyronins) is monophyletic but the lophocaterins might be paraphyletic (i.e., non-holophyletic in the traditional Hennigian meaning) because ancyronins can only be advanced members of more primitive lophocaterins. See also “Remarks” in the Ancyronini section. Further, more detailed study is required to resolve the question. The generic composition of Decamerini and its position within Lophocaterinae should be examined along – not, however, before an associated larva of the decamerins is known.

A key to genera (after Kolibáč 2010)

1. Elytra with irregular punctuation; lateral margins of pronotum broadly explanate, lateral edge sparsely denticulate................................. Eronyxa
   – Elytra regularly punctate; lateral margins of pronotum narrowly explanate, lateral edge almost entirely evenly rounded or densely denticulate ........... 2
2. Antenna 7- or 9-segmented................................................................. 3
   – Antenna 11-segmented ........................................................................ 5
3. Antenna 7-segmented, club 1-segmented; mandible with mola.......... Lycoptis
   – Antenna 9-segmented, club 2- or 3-segmented; mandible without mola .... 4
4. Antennal club 2-segmented; mandible with prostheca near base of mandible formed by tuft of long setae; submental area lacking concave or depressed area; wing with oblong radial cell................................. Grynocharina
   – Antennal club 3-segmented; mandible without penicillus or prostheca; submental area concave; wing with small triangular radial cell displaced downwards .......................................................... Peltonyxa
5. Lateral edge of pronotum densely denticulate; lacinia with one pigmented spine............................................................................... Indopeltis
   – Lateral edge of pronotum evenly rounded or at most finely undulating; lacinia with two or three pigmented spines................................................. 6
6. Elytra with inconspicuous carinae; mola absent; ligula deeply emarginate; probably predatory. Larva: sensory appendix very short ............ Promanus
   – Elytra with conspicuous carinae; mola or remnant of mola present; ligula deeply or weakly emarginate. Mode of life: predatory (Trichocateres), herbivorous (Lophocaters), fungivorous (Grynocharis). Larva (Lophocaters, Grynocharis): length of sensory appendix about half or more than half that of antennal segment 3............. 7
7. Elytra with six carinae; tegmen without projecting phallobasic apodeme; lacinia with three pigmented, hooked spines; small species (less than 3 mm)..... Lophocaters
– Elytra with five or four distinct carinae; tegmen with projecting phallobasic apodeme; different pattern of pigmented lacinial spines; larger species (above 5 mm) .................................................................

8 Elytra with four distinct (higher) carinae and another three to four lower carinae among them; pronotum and elytra without tufts of long hairs, with short decumbent or semi-erect pubescence only, or without conspicuous pubescence; lacinia with two pigmented, hooked spines; tibial apical spur pattern 2-2-2; larger species (about 4.5–10.5 mm) ......................... Grynocharis

– Elytra with only five distinct carinae; pronotum and elytra with tufts of long, yellow-orange hairs; lacinia with three pigmented spines at apex in pattern 1+2, apical spine large and hooked, two other spines much smaller; tibial apical spur pattern 1-1-1; smaller species (about 5 mm) ............... Trichocateres

Genus Eronyxa Reitter, 1876
http://species-id.net/wiki/Eronyxa
Fig. 10; Map 11, 13

Reitter, E. 1876: 57.

Type species. Ostomodes dohrni Reitter, 1876 [by monotypy]
Barron, J. R. 1971: 38. Reitter, E. 1876: 57. Kolibáč, J. 2005: 55 (redescription).
Kolibáč, J. 2006: 111 (phylogeny). Kolibáč, J. 2010: 35 (key). Léveillé, A. 1910: 28.
Ostomodes Reitter, 1877 (Type species: Ostomodes dohrni Reitter, 1876)
Barron, J. R. 1971: 38. Léveillé, A. 1910: 28. Schaeffer, C. F. A. 1915: 69. Schaeffer, C. F. A. 1918: 200. Casey, 1916: 284. Crowson, R. A. 1964a: 290. Crowson, R. A. 1966: 125.
Grynocharis (pars.)
Barron, J. R. 1971: 38. Van Dyke, E. C. 1916: 73.

Remarks. The genus was formerly classified within Decamerini (Crowson 1964a and others). John Doyen (in Tait et al. 1990) described a larva of Eronyxa expansus and, considering its distinct similarity to known lophocaterine larvae, shifted Eronyxa to Lophocaterini. Although this classification was confirmed by myself (Kolibáč 2006, 2008), both character analyses showed Eronyxa in a basal position of the lophocaterine clade (= Lophocaterini + Ancyronini) along a border near the Decamerini-Lophocaterini split. However, the adult characters indicate a sister relationship with Decamerini [(Eronyxa (Diontolobus + Decamerus) (Lophocaterini)] rather than Lophocaterini [(Diontolobus + Decamerus)(Eronyxa + Lophocaterini)]. See also “Remarks” in the Decamerini section.

Description. Body size: about 3.5 mm. Body shape flat. Gular sutures wide, convergent at apex. Frontoclypeal suture present. Frons: longitudinal groove or depression absent. Cranium ventrally: tufts of long setae at sides absent. Submentum: ctenidium absent. Antennal groove absent. Eyes: size large, lateral. Eyes number: two. Epicranial acumination moderate. Lacinial hooks: two. Galea: shape very small.
Galea: ciliate setae absent. Mediostipes-Lacinia not fused. Palpifer: outer edge even. Mandibular apical teeth number: two, horizontally situated. Mola present. Penicillus (at base) present (fine, often membranous). Pubescence above mola or cutting edge absent. Ventral furrow absent. Basal notch moderate. Labrum-Cranium not fused. Epipharyngial sclerite absent. Lateral tormal process: projection projections extending laterally and downwards (Eronyx). Ligula: ciliate setae absent. Ligula membranous, not retroflexed, deeply emarginate. Hypopharyngeal sclerite absent. Antenna 11-segmented. Antennal club symmetrical, sensorial fields absent. Front coxal cavities externally open, internally open. Pronotum transverse. Prepectus present. Middle coxal cavities open. Elytra: long hairs absent. Epipleuron thin. Elytral interlocking mechanism absent, carinae reduced. Elytral punctation irregular, scales absent. Wing: radial cell moved down, often small, wedge cell absent, cross vein MP3-4 present, cross vein AA1+2-3+4 absent. Front tibiae: spines along side large. Hooked spur absent, apical spur not hooked or weakly hooked. Claws: denticle absent. Parasternites number along ventrites III–VII: two. Spiculum gastrale absent. Tegmen composed of two parts. Coxitae divided.

Larva: Frontal arms V-shaped. Epicranial stem absent. Endocarina present. Gular sutures conspicuous, convergent. Paragular sclerites absent. Hypostomal rods absent. Stemmata number: two. Mandibular apical teeth number: two, horizontally even, vertically situated. Lacinia mandibulae plumose. Mola absent. Maxillary palpi 3-segmented. Palpifer present. Pedunculate seta absent. Mala simple. Mala: bidentate protrusion

Map 13. A distribution of the tribe Lophocaterini.
absent. Cardo-Stipes partially fused. Ligula present. Labial palpi 2-segmented. Pre-
mentum in two parts. Torma H-shaped. Antennal joints 1 and 2 elongate. Sensory ap-
pendix very small. Thoracic sclerites pattern (dorsally) 1-0-0. Thoracic sclerites pattern
(ventrally) 1+0+0. Trochanter triangular. Abdominal segment IX transversely divided.
Tergite IX flat. Urogomphi present, hooked; median process present.

**Biology.** *Eronyxa expansus* was collected under the bark of *Libocedrus (= Calo-
cedrus) decurrens*. The larva probably feeds on *Xylococcus macrocarpae* (Barron 1971,
Tait et al. 1990). *Eronyxa pallidus* has been found on flowers, for example *Aruncus
sylvester* and *Ceanothus cuneatus*, and an imago was reared from a stem of the latter
plant. The third species, *E. angustus*, was also found on *Fraxinus* blossoms and on *Pinus
ponderosa* (Barron 1971).

**Distribution.** Western states of USA (California, Idaho, Nevada, Oregon) and
Canada (British Columbia).

**Species:**

*angustus* Casey, 1916; USA: California, Idaho, Nevada, Oregon (JRB)

*Barron, J. R. 1971: 42. Kolibáč, J. 2005: 55 (redescription)*

*expansus* Van Dyke, 1916; USA: California (JRB)

*Barron, J. R. 1971: 38. Kolibáč, J. 2006: 107 (larva). Leschen, R. A. B. 2000: 920
(biology). Tait, S. M. et al. 1990: 13 (larva)*

*pallida* Motschulsky, 1863; Canada: British Columbia, USA: California, Oregon (JRB)

*Léveillé, A. 1910: 28. Barron, J. R. 1971: 39 (syn. *Grynocharis pilosula* Crotch,
1873; synonymized by whom?). Barron, J. R. 1971: 39 (syn. *Ostomodes dohrni*
Reitter, 1877; synonymized by Léveillé 1910?). Barron, J. R. 1971: 39 (syn.
*Ostomodes lagrioides* Reitter, 1876; synonymized by whom?). Crowson, R. A.
1964a: 291 (Ostomodes). Kolibáč, J. 2005: 55 (redescription). Reitter, E. 1876: 58
(Eronyxa lagrioides)*

**Genus Grynocharina Reitter, 1877**

http://species-id.net/wiki/Grynocharina

Fig. 12; Map 13

*Reitter, E. 1877: 132.*

**Type species.** *Grynocharina peltiformis* Reitter, 1877 [by monotypy].

*Léveillé, A. 1910: 24. Kolibáč, J. 2005: 57 (redescription). Kolibáč, J. 2006: 111
(phylogeny). Kolibáč, J. 2010: 35 (key).*

**Remarks.** Only a single male specimen of the monotypic genus is known. *Grynocha-
rina peltiformis* was originally placed in a basal position on the lophocaterine tree (Kolibáč
2006: 131) and classified within Lophocaterini. However, that tree was constructed after
character weighting. A tree under equal weights contains *G. peltiformis* among the an-
cyronins in both analyses (Kolibáč 2006, 2008). I maintain the position of the species
Figure 12. A Grynocharis oblonga B Grynocharina peltiformis C Lophocateres pusillus D Promanus auripilis E Promanus subcostatus F Promanus depressus G Peltonyxa sp., Australia, NSW H Trichocateres fasciculifer.
in Lophocaterini, following the original classification of 2006 and especially the key of 2010 (l.c.) Regarding the probable paraphyletic status of Lophocaterini, the question of ancyronine/lophocaterine placement of *G. peltiformis* is rendered highly irrelevant.

**Description.** Body size: 3.0 mm. Body shape flat. Gular sutures wide, convergent at apex. Frontoclypeal suture present. Frons: longitudinal groove or depression absent. Cranium ventrally: tufts of long setae at sides absent. Submentum: ctenidium absent. Antennal groove present. Eyes: size large, lateral. Eyes number: two. Epicranial acumination moderate. Lacinial hooks: three. Galea: shape sub-clavate. Galea: ciliate setae absent. Mediostipes-Lacinia not fused. Palpifer: outer edge even. Mandibular apical teeth number: two, horizontally situated. Mola absent. Penicillus (at base) long setae. Pubescence above mola or cutting edge absent. Ventral furrow present, not ciliate. Basal notch shallow or absent. Labrum-Cranium not fused. Epipharyngeal sclerite absent. Lateral tormal process: projection curved upwards (*Colydiopeltis*). Ligula: ciliate setae absent. Ligula membranous, not retroflexed, weakly emarginate. Hypopharyngeal sclerite H-shaped. Antenna 9-segmented. Antennal club weakly asymmetrical, sensorial fields absent. Front coxal cavities externally open, internally open. Pronotum transverse. Prepectus present. Middle coxal cavities open. Elytra: long hairs absent. Epipleuron thin. Elytral interlocking mechanism absent, carinae conspicuous. Elytral punctuation regular, scales absent. Wing: radial cell oblong (or reduced), wedge cell absent, cross vein MP3-4 absent, cross vein AA1+2-3+4 absent. Front tibiae: spines along side moderate. Hooked spur present. Claws: denticle absent. Parasternites number along ventrites III–VII: two. Spiculum gastrale present. Tegmen composed of three parts.

**Biology.** Unknown.

**Distribution.** Burma (Myanmar).

**Species:**

*peltiformis* Reitter, 1877; Burma (AL)

*Léveillé, A. 1910: 24. Kolibáč, J. 2005: 57 (redescription)*

**Genus Grynocharis Thomson, 1862**

http://species-id.net/wiki/Grynocharis

Figs 12, 18; Map 13

Thomson, C. G. 1862: 71.

**Type species.** *Silpha oblonga* Linnaeus, 1758 [by original designation and monotypy].

*Léveillé, A. 1910: 31. Barron, J. R. 1971: 32. Kolibáč, J. 2005: 58 (redescription). Kolibáč, J. 2006: 111 (phylogeny). Kolibáč, J. 2007a: 365. Kolibáč, J. 2010: 35 (key). Lafer, G. Sh. 1992: 84. Larsson, S. G. 1978: 150 (Baltic amber fossil). Spahr, U. 1981: 74 (amber and copal fossils).*

*Gaurambe* Thomson, 1859

*Barron, J. R. 1971: 32 (syn. Gaurambe Thomson, 1859; misapplied)*
**Description.** Body size: about 5.5–8.0 mm. Body shape flat. Gular sutures wide, convergent at apex. Frontoclypeal suture broadly emarginate. Frons: longitudinal groove or depression absent. Cranium ventrally: tufts of long setae at sides absent. Submentum: ctenidium absent. Antennal groove present. Eyes: size moderate. Eyes number: two. Epicranial acumination deep. Lacinial hooks: two. Galea: shape subclavate. Galea: ciliate setae absent. Medioostipes-Lacinia not fused. Palpiifer: outer edge even. Mandibular apical teeth number: two, horizontally situated. Penicillus (at base) present (fine, often membranous). Pubescence above mola or cutting edge absent. Ventral furrow present, not ciliate. Basal notch shallow or absent. Labrum-Cranium not fused. Epipharyngeal sclerite absent. Lateral coronal processes: projection curved downwards, processes with bridge (Peltis). Ligula: ciliate setae absent. Ligula membranous, not retroflexed, weakly emarginate. Hypopharyngeal sclerite consisting of two separate parts. Antenna 11-segmented. Antennal club weakly asymmetrical, sensorial fields absent. Front coxal cavities externally open, internally open. Pronotum transverse. Prepectus present. Middle coxal cavities open. Elytra: long hairs absent. Epipleuron moderate. Elytral interlocking mechanism absent, carinae conspicuous. Elytral punctuation regular, scales absent. Wing: radial cell moved down, often small, wedge cell absent, cross vein MP3-4 absent, cross vein AA1+2-3+4 absent. Front tibiae: spines along side moderate. Hooked spur present. Claws: denticle absent. Parasternites number along ventrites III–VII: two. Spiculum gastrale present. Tegmen composed of three parts.

**Larva:** Frontal arms V-shaped. Epicranial stem absent. Endocarina present. Stemmata number: two. Mandibular apical teeth number: two, horizontally situated. Lacinia mandibulae plumose. Mola absent. Maxillary palpi 3-segmented. Pedunculate seta absent. Mala simple. Mala: bidentate protrusion absent. Cardo-Stipes not fused. Cardo: size nearly as large as stipes. Ligula present. Labial palpi 2-segmented. Prementum in single part. Antennal joints 1 and 2 elongate. Sensory appendix medium sized (to half of joint 3). Thoracic sclerites pattern (dorsally) 1-2-2. Abdominal segment IX transversely divided. Tergite IX flat. Urogomphi present, hooked; median process present.

**Biology.** Adults and larvae of *G. oblonga* live under bark or bark scales and in rotten wood of deciduous and coniferous trees (willow, birch, spruce, fir); they are fungivorous. In the USA, the species have been collected on *Libocedrus decurrens* and *Populus* (Barron 1971).

**Distribution.** Europe including Russia to the Urals, Caucasus; USA excluding central and southern states, Canada: south-western and south-eastern states.

**Species:**
- caucasica Motschulsky, 1863; Caucasus (JK)
- oblonga Linnaeus, 1758; all Europe to Russia (varA)

Léveillé, A. 1910: 31 (*Ostoma*). Kolibáč, J. 2007a: 366 (nomen dubium)

Léveillé, A. 1910: 31 (*Ostoma* (subgen. *Grynocharis*)). Bahillo de la Puebla, P. & López-Colón, J. I. 2004: 129. Borowiec, L. 1983: 13. Burakowski, B. et al. 1986: 119. Conrad, R. 1995: 190. Gobbi, G. 1996: 65. Klausnitzer, B. 1976: 8. Klausnitzer, B. 1978: 178. Klausnitzer, B. 1996: 163. Kolibáč, J. 1993a: 21. Kolibáč, J.
Figure 13. **A–B** *Calitis scabra* (A head and pronotum B elytral apex with interlocking mechanism) **C–D** *Acalanthis quadrisignata* (C apex of protibia with hooked spur and lateral spines D sculpture of frons with punctures conjoined into wrinkles) **E–H** *Gymnocheilis* sp., Cameroon (E head F protibia G elytral apex H detail of scales).
Figure 14. A–F Anacypta sp., Assam (A ctenidium B labium with ciliate setae C antennal club with sensorial fields D detail of sensillae E head laterally with divided eye F detail of sensorial setae and ventral eye) G–H Gymnocheilis sp., Cameroon (G antennal club H detail of sensillae).
1993b: 90. Kolibáč, J. 2005: 58 (redescription). Kolibáč, J. 2006: 107 (larva, phylogeny). Kolibáč, J. 2007a: 365 (distribution). Lafer, G. Sh. 1992: 84. Lemdahl, G. 2001: 39 (biology). Mitter, H. 1998: 561. Nilsson, S. G. 1997: 1 (biology). Pileckis, S. & Monsevičius, V. 1995: 272. Reitter, E. 1876: 63 (Ostoma). Vogt, H. 1967: 18

_oregonensis_ Schaeffer, 1918; USA, Canada: western states (JRB)

Léveillé, A. 1910: 31 (Ostoma (subgen. Grynocharis) _oregonensis_ Crotch, 1873).

Barron, J. R. 1971: 34. Dajoz, R. 1997: 44 (biology)

(pubescens) Erichson, 1844; Georgia, South European Territory of Russia, „Caucasus“, Crimea (JK)

Léveillé, A. 1910: 31 (Ostoma (subgen. Grynocharis)). Lafer, G. Sh. 1992: 84. Kolibáč, J. 2006: 107. Kolibáč, J. 2007a: 365. Mamaev, B. M. 1976: 1656 (larva). Reitter, E. 1876: 63 (Ostoma)

_quadridelineata_ Melsheimer, 1844; NE USA, Canada: Ontario, Quebec (JRB)

Léveillé, A. 1910: 31 (Ostoma (subgen. Grynocharis) _marginata_ Melsheimer, 1844). Barron, J. R. 1971: 33 (syn. Grynocharis _marginata_ Melsheimer, 1844, synonymized by Lacordaire 1854?). Reitter, E. 1876: 63 (Ostoma)

Genus _Indopeltis_ Crowson, 1966

http://species-id.net/wiki/Indopeltis

Map 13

Crowson, R. A. 1966: 126.

Type species: _Indopeltis nilgiriensis_ Crowson, 1966 [by original designation and monotypy]

Kolibáč, J. 2005: 61 (redescription). Kolibáč, J. 2006: 111 (phylogeny). Kolibáč, J. 2010: 35 (key).

Description. Body size: about 5.5 mm. Body shape flat. Gular sutures wide, convergent at apex. Frontoclypeal suture absent. Frons: longitudinal groove or depression absent. Cranium ventrally: tufts of long setae at sides absent. Submentum: ctenidium absent. Eyes: size large, lateral. Eyes number: two. Epicranial acumination moderate. Lacinial hooks: one. Galea: shape elongate. Galea: ciliate setae absent. Mediostipes-Lacinia not fused. Palpifer: outer edge even. Mandibular apical teeth number: two, horizontally situated. Mola present. Penicillus (at base) absent. Pubescence above mola or cutting edge present. Ventral furrow present. Basal notch moderate. Labrum-Cranium not fused. Epipharyngial sclerite absent. Lateral tormal process: projection projection not developed (all remaining). Ligula: ciliate setae absent. Ligula membranous, not retroflexed, deeply emarginate. Hypopharyngenal sclerite H-shaped. Antenna 11-segmented. Antennal club weakly asymmetrical, sensorial fields absent. Front coxal cavities externally open, internally open. Pronotum transverse. Middle coxal cavities open. Elytra: long hairs absent. Epipleuron moderate. Elytral interlocking mechanism absent, carinae conspicuous. Elytral punctuation regular, scales absent.
Wing: radial cell moved down, often small, wedge cell absent, cross vein MP3-4 absent, cross vein AA1+2-3+4 absent. Front tibiae: spines along side moderate. Hooked spur present. Claws: denticle absent. Spiculum gastrale present. Tegmen composed of three parts.

**Biology.** Unknown; Crowson (1966) speculated that the species was “*subcortical as in most Peltinae*”.

**Distribution.** India: Tamil Nadu, Nilgiri Hills.

**Species:**

*nilgiriensis* Crowson, 1966; South India: Tamil Nadu (RAC)

Crowson, R. A. 1966: 126. Kolibáč, J. 2005: 61 (redescription). Kolibáč, J. 2006: 111 (phylogeny)

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**Genus Lophocateres Olliff, 1883**

http://species-id.net/wiki/Lophocateres

Figs 2, 12, 18; Map 13

Olliff, A. S. 1883c: 180.

**Type species.** *Lophocateres nanus* Olliff, 1883 [by monotypy] (= *Lophocateres pusillus* Klug, 1833)

Léveillé, A. 1910: 27. Barron, J. R. 1971: 42. Crowson, R. A. 1964a: 299. Kolibáč, J. 2005: 67 (redescription). Kolibáč, J. 2006: 111 (phylogeny). Kolibáč, J. 2007a: 366. Kolibáč, J. 2010: 35 (key). Lafer, G. Sh. 1992: 84. Larsson, S. G. 1978: 150 (fossil, Baltic amber). Spahr, U. 1981: 74 (amber and copal fossils).

**Description.** Body size: about 2.5–4.0 mm. Body shape flat. Gular sutures wide, convergent at apex. Frontoclypeal suture broadly emarginate. Frons: longitudinal groove or depression absent. Cranium ventrally: tufts of long setae at sides absent. Submentum: ctenidium absent. Antennal groove present. Eyes: size large, lateral. Eyes number: two. Epicranial acumination moderate. Lacinial hooks: three. Galea: shape sub-clavate. Galea: ciliate setae absent. Mediostipes-Lacinia not fused. Palpifer: outer edge even. Mandibular apical teeth number: two, horizontally situated. Mola present. Penicillus (at base) present (fine, often membranous). Pubescence above mola or cutting edge present. Ventral furrow absent. Basal notch moderate. Labrum-Cranium not fused. Epipharyngial sclerite absent. Lateral tormal process: projection curved upwards (*Colydiopeltis*). Ligula: ciliate setae absent. Ligula membranous, not retroflexed, weakly emarginate. Hypopharyngeal sclerite consisting of two separate parts. Antenna 11-segmented. Antennal club weakly asymmetrical, sensorial fields absent. Front coxal cavities externally open, internally open. Pronotum transverse. Prepectus present. Middle coxal cavities open. Elytra: long hairs absent. Epipleuron moderate. Elytral interlocking mechanism absent, carinae conspicuous. Elytral punctuation regular, scales absent. Wing: radial cell moved down, often small, wedge cell absent, cross vein MP3-4 absent, cross vein AA1+2-3+4 absent. Front tibiae: spines
Figure 15. A–B *Nemozoma elongatum* (A cranium with longitudinal groove B detail of elongate punctures) C–D *Peltis ferruginea* (C elytral apex D antennal club, hooked spur and protarsus with large 5th tarsomere) E–G *Phloiophilus edwardsi* (E metatarsal claws and empodium F projecting procoxae G ventral surface).
Figure 16. A–F *Colydiopeltis compactum* (A ventral surface B procoxal area C head ventrally D detail of mouthparts E protarsus F apex of metatibia with row of spines) G–H *Thymalus limbatus* (G antenna H apex of protibia with straight spur).
along side moderate. Hooked spur present. Claws: denticle absent. Parasternites number along ventrites III–VII: one. Spiculum gastrale absent. Tegmen composed of three parts. Coxitae undivided.

Larva: Frontal arms V-shaped. Epicranial stem absent. Endocarina present. Gular sutures conspicuous, convergent. Gula: anterior apodemes absent. Paragular sclerites absent. Hypostomal rods absent. Stemmata number: two. Mandibular apical teeth number: two, horizontally situated. Lacinia mandibulæ plumose. Mola absent. Maxillary palpi 3-segmented. Palpifer present. Pedunculate seta absent. Mala simple. Mala: bidentate protrusion absent. Cardo-Stipes not fused. Cardo: size nearly as large as stipes. Ligula present. Labial palpi 2-segmented. Prementum in single part, anterior margin even. Torma H-shaped. Antennal joints 1, 2 transverse. Sensory appendix larger than half of joint 3. Thoracic sclerites pattern (dorsally) 0+0+0. Thoracic sclerites pattern (ventrally) 2+0+0. Trochanter triangular. Abdominal segment IX transversely divided. Tergite IX flat. Urogomphi present, hooked; median process present.

**Biology.** *Lophocateres pusillus* lives in storage facilities (warehouses, stores, barns, larders) and feeds on grains. The biology of wild populations is unknown.

**Distribution.** *Lophocateres pusillus* is cosmopolitan, although the centre of its distribution, is in south-eastern Asia. The species *L. gounellei* is probably a misidentification or a synonym of *L. pusillus*. Some new species are known to me from Malaysia.

**Species:**

- *gounellei* Léveillé, 1905; Brazil (AL)
  - Léveillé, A. 1910: 27
  - Note: dubious species – probably synonym of *L. pusillus* or different genus

- *pilosus* Olliff, 1883; Malaysia: Penang (AL)
  - Léveillé, A. 1910: 27

- *pusillus* Klug, 1833; cosmopolitan (origin in SE Asia) (varA)
  - Léveillé, A. 1910: 27 (syn. *Lophocateres africanus* Motschulsky, 1863); Algeria (AL)
  - Léveillé, A. 1910: 27 (as *Lophocateres nanus* Olliff, 1883); Borneo (AL)
  - Léveillé, A. 1910: 27 (syn. *Lophocateres yvani* Allibert, 1847). Bahillo de la Puebla, P. & López-Colón, J. I. 2004: 129. Barron, J. R. 1971: 43 (syn. *Lophocateres nanus* Olliff, 1883). Barron, J. R. 1971: 43 (syn. *Peltis africanus* Motschulsky, 1863). Barron, J. R. 1971: 43 (syn. *Peltis yvani* Allibert, 1847). Borowiec, L. 1983: 14. Burakowski, B. et al. 1986: 119. Chang, T.-C. & Liu, T.-Y. 1981: 116 (biology). Ghosh, S. & Haldar, D. P. 1989: 49 (biology). Ghosh, S. & Saha, K. 1992a: 181 (biology). Ghosh, S. & Saha, K. 1992b: 613 (biology). Ghosh, S. & Saha, K. 1995: 207 (biology). Halstead, D. G. H. 1968: 197 (biology). Klausnitzer, B. 1976: 7. Klausnitzer, B. 1978: 177. Klausnitzer, B. 1996: 163 (larva). Kolibáč, J. 1993a: 21. Kolibáč, J. 1999b: 12. Kolibáč, J. 2005: 67 (redescription). Kolibáč, J. 2006: 107 (larva). Kolibáč, J. 2007a: 366 (distribution). Lafer, G. Sh. 1992: 86. Nakane, T. et al. 1963: 182. Vogt, H. 1967: 16. Reitter, E. 1876: 63 (*Ostoma yvani*)
Genus *Lycoptis* Casey, 1890
http://species-id.net/wiki/Lycoptis
Map 13

Casey, T. L. 1890: 311, 494.

**Type species.** *Peltis americana* Motschulsky, 1863 [by monotypy]

Léveillé, A. 1910: 33. Barron, J. R. 1971: 120. Barron, J. R. 1975: 1117. Kolibáč, J. 2005: 67 (redescription). Kolibáč, J. 2006: 111 (phylogeny). Kolibáč, J. 2010: 35 (key).

**Description.** Body size: 1.9–2.2 mm. Body shape flat. Gular sutures wide, convergent at apex. Frontoclypeal suture broadly emarginate. Frons: longitudinal groove or depression absent. Submentum: ctenidium absent. Antennal groove absent. Eyes: size large, lateral. Eyes number: two. Lacinial hooks: three. Galea: shape elongate. Galea: ciliate setae absent. Medioptipes-Lacinia partially fused. Palpifer: outer edge even. Mandibular apical teeth number: two, horizontally situated. Mola present. Penicillus (at base) absent. Pubescence above mola or cutting edge absent. Ventral furrow absent. Basal notch moderate. Labrum-Cranium not fused. Ligula: ciliate setae absent, not retroflexed, deeply emarginate. Antenna 7-segmented, sensorial fields absent. Front coxal cavities externally open, internally open. Pronotum transverse. Elytra: long hairs absent. Epipleuron moderate. Elytral interlocking mechanism absent, carinae conspicuous. Elytral punctuation regular, scales absent. Wing: radial cell moved down, often small, wedge cell absent, cross vein MP3-4 absent, cross vein AA1+2-3+4 absent. Front tibiae: spines along side moderate. Hooked spur present. Claws: denticle absent. Spiculum gastrale present. Tegmen composed of two parts.

**Biology.** *Lycoptis americana* is a very rare beetle, probably fungivorous. Barron (1975) noted that it was “collected under bark of Carya”.

**Distribution.** USA: Georgia, Maryland, North Carolina, South Carolina (Barron 1975).

**Species:**

*americana* Motschulsky, 1863; USA: Georgia, Maryland, N Carolina, S Carolina (JRB)

Léveillé, A. 1910: 27 (*Lophocateres americanus* Motschulsky, 1863). Léveillé, A. 1910: 33 (*Lycoptis villosa* Casey, 1890). Barron, J. R. 1971: 120 (syn. *Lycoptis villosa* Casey, 1890). Barron, J. R. 1971: 120 (*Peltis americana* Motschulsky, 1863; comb.). Barron, J. R. 1975: 1120. Kolibáč, J. 2005: 67 (redescription)

Genus *Peltonyxa* Reitter, 1876
http://species-id.net/wiki/Peltonyxa
Figs 1, 12; Map 13

Reitter, E. 1876: 46.

**Type species.** *Peltonyxa deyrollei* Reitter, 1876 [by monotypy]

Léveillé, A. 1910: 24. Kolibáč, J. 2005: 76 (redescription). Kolibáč, J. 2006: 111 (phylogeny). Kolibáč, J. 2010: 35 (key). Matthews, E. G. 1992: 3.
Figure 17. A–B “Rentonellum” loebli (A ventral surface B prosternal intercoxal process) C cf. Globorentonium plaumanni, Brazil (C ventral surface D pro- and mesothorax ventrally E head ventrally F detail of mouthparts G protibia with tarsus H mesotibia with tarsus).
**Figure 18.**

A *Thymalus limbatus*, elytral apex with interlocking mechanism

B–E *Decamerus haemorrhoidalis* (B prothorax with partially closed procoxal cavities C metatarsal claws with denticle D protarsus with projecting empodium E irregular punctation of elytra)

F *Grynocharis oblonga*, elytral sculpture

G–H *Lophocateres pusillus* (G head in frontal view with deeply emarginate frontoclypeal suture H detail).
Description. Body size: about 3.5 mm. Body shape flat. Gular sutures wide, subparallel. Frontoclypeal suture broadly emarginate. Frons: longitudinal groove or depression absent. Cranium ventrally: tufts of long setae at sides absent. Submentum of males: ctenidium present. Antennal groove present. Eyes: size moderate. Eyes number: two. Epicranial acumination moderate. Lacinial hooks absent. Galea: shape very small. Galea: ciliate setae absent. Mediopteres-Lacinia not fused. Palpifer: outer edge even. Mandibular apical teeth number: two, horizontally situated. Mola absent. Penicillus (at base) absent. Pubescence above mola or cutting edge absent. Ventral furrow absent. Basal notch moderate. Labrum-Cranium not fused. Epipharyngial sclerite absent. Lateral tormal process: projection reduced or absent (Promanus). Ligula: ciliate setae absent. Ligula membranous, not retroflexed, deeply emarginate. Hypopharyngeal sclerite H-shaped. Antenna 9-segmented. Antennal club weakly asymmetrical, sensorial fields absent. Front coxal cavities externally open, internally open. Pronotum transverse. Prepectus present. Middle coxal cavities open. Elytra: long hairs absent. Epipleuron moderate. Elytral interlocking mechanism absent, carinae conspicuous or reduced. Elytral punctuation regular, scales absent. Wing: radial cell moved down, often small, wedge cell absent, cross vein MP3-4 absent, cross vein AA1+2-3+4 absent. Front tibiae: spines along side moderate. Hooked spur present. Claws: denticle absent. Spiculum gastrale present. Tegmen composed of three parts. Coxita divided.

Biology. Peltonyxa pusillus was collected on the flowers of Bursaria (Crowson 1970). South Australian species occur in the sclerophyll and Eremaean zones (Matthews 1992).

Distribution. Australia: South Australia, New South Wales, Victoria.

Species:
- australis Blackburn, 1891; S Australia (AL)
  - Léveillé, A. 1910: 24
- deyrollei Reitter, 1876; Australia (AL)
  - Léveillé, A. 1910: 24. Kolibáč, J. 2005: 76. Reitter, E. 1876: 46
- invalida Blackburn, 1902; Australia („Nov. Gall. mer.”) (AL)
  - Léveillé, A. 1910: 24
- pubescens Blackburn, 1891; Australia: Victoria (AL)
  - Léveillé, A. 1910: 24
- pusillus Crowson, 1970; Australia: NSW (RAC)
  - Crowson, R. A. 1970: 11 (Floricateres)

Genus Promanus Sharp, 1877
http://species-id.net/wiki/Promanus
Fig. 12; Map 13

Sharp, D. 1877: 267.

Type species. Promanus depressus Sharp, 1877 [by monotypy]
Léveillé, A. 1910: 29. Crowson, R. A. 1964a: 298. Kolibáč, J. 2005: 78 (redescription). Kolibáč, J. 2006: 111 (phylogeny). Kolibáč, J. 2010: 35 (key). Kolibáč, J. et al. 2010: 36.

**Description.** Body size: 6.8–8.8 mm. Body shape flat. Gular sutures wide, convergent at apex. Frontoclypeal suture broadly emarginate. Frons: longitudinal groove or depression absent. Cranium ventrally: tufts of long setae at sides absent. Submentum: ctenidium absent. Antennal groove present. Eyes: size large, lateral. Eyes number: two. Epicranial acumination absent. Lacinial hooks: two. Galea: shape sub-clavate. Galea: ciliate setae absent. Medio-stipes-Lacinia fused together. Palpifer: outer edge even. Mandibular apical teeth number: two, horizontally situated. Mola absent. Penicillus (at base) present (fine, often membranous). Pubescence above mola or cutting edge absent. Ventral furrow absent. Basal notch shallow or absent. Labrum-Cranium not fused. Epipharyngial sclerite absent. Lateral tormal process: projection reduced or absent (Promanus). Ligula: ciliate setae absent. Ligula membranous, not retroflexed, deeply emarginate. Hypopharyngeal sclerite H-shaped. Antenna 11-segmented. Antennal club weakly asymmetrical, sensorial fields absent. Front coxal cavities externally open, internally open. Pronotum transverse. Prepectus present. Middle coxal cavities open. Elytra: long hairs absent. Epipleuron moderate. Elytral interlocking mechanism absent, carinae reduced. Elytral punctuation regular, scales absent. Wing: radial cell moved down, often small, wedge cell absent, cross vein MP3-4 absent, cross vein AA1+2-3+4 absent. Front tibiae: spines along side moderate. Hooked spur present. Claws: denticle absent. Parasternites number along ventrites III–VII: two. Coxitae divided.

**Biology.** The adults and larvae are predatory. Crowson (1964a) found insect fragments in the gut of both stages.

**Distribution.** New Zealand.

**Species:**

- *auripilis* Broun, 1893; New Zealand (AL)
  
  Léveillé, A. 1910: 29. Kolibáč, J. et al. 2010: 36 (redescription)

- *depressus* Sharp, 1877; New Zealand (AL)
  
  Léveillé, A. 1910: 29. Crowson, R. A. 1964a: 298 (larva). Kolibáč, J. 2005: 78 (redescription). Kolibáč, J. et al. 2010: 36

- *subcostatus* Broun, 1909; New Zealand (AL)
  
  Léveillé, A. 1910: 29. Kolibáč, J. et al. 2010: 36 (redescription)
† Genus *Promanodes* Kolibáč, Schmied, Wappler & Kubisz, 2010
http://species-id.net/wiki/Promanodes
Map 13

Kolibáč, J. et al. 2010: 31.

**Type species.** *Promanodes serafini* Kolibáč, Schmied, Wappler & Kubisz, 2010 [by monotypy and author’s designation].

Schmied, H. et al. 2009: 105 (distribution). Kolibáč, J. 2011: 58.

**Description.** Body size: 3.1–5.1 mm. Procoxal cavities nearly closed; maxillary palps with securiform terminal joint; extraordinarily elongate terminal segment of labial palps (distinctly longer or as long as two preceding segments together); slender and elongate tarsi in all pair of legs (approximately as long as tibiae); tibiae without “hooked” apical spine; procoxal cavities nearly closed or maybe perfectly closed in the new species; six visible abdominal ventrites; 10-segmented antennae; flat body; antennal club large and loose, 3-segmented; mesocoxae weakly transverse; elytra with distinct carinae. (Genus diagnosis after Kolibáč 2011.)

The new genus is very similar to the recent *Promanus*, the both genera share deep and incurvate frontoclypeal suture, distinctly elevated eyes, weakly or no way projecting anterior pronotal corners, elytra with weak or inconspicuous carinae widest at about 2/3 of length, radial cell obliquely situated, dorsal body surface sparsely pubescent or nearly bare, femora conspicuously clavate, very small trochanters, and especially abdomen with six visible ventrites. Body length 3–5 mm. (According to Kolibáč et al. 2010.)

**Distribution.** (Map 13.) Baltic amber: Poland, East Baltic coast(?); Tertiary: Eocene.

**Species:**
† *allenii* Kolibáč, 2011; Baltic amber: East Baltic coast(?); Tertiary: Eocene (JK)
Kolibáč, J. 2011: 59

† *serafini* Kolibáč, Schmied, Wappler & Kubisz, 2010; Baltic amber: Poland; Tertiary: Eocene (varA)
Schmied, H. et al. 2009: 105 (distribution). Kolibáč, J. et al. 2010: 36. Kolibáč, J. 2011: 59

Genus *Trichocateres* Kolibáč, 2010
http://species-id.net/wiki/Trichocateres
Fig. 12; Map 13

Kolibáč, J. 2010: 35.

**Type species.** *Trichocateres fasciculifer* Kolibáč, 2010 [by monotypy and author’s designation].

**Description.** Body size: 5.2–5.5 mm. With general characteristics of the tribe Lophocaterini (body oval, frontoclypeal suture deeply arcuate, antennal club weakly asymmetrical, mandibular mola present, base of mandible with membranous appendage/penicillus, prostheca composed of tuft of setae, lacinia with spines). It is most
closely related to *Lophocateres, Indopeltis* and *Grynocharis* (mandibular mola present, elytral carinae well-developed).

Similarities of *Trichocateres* with *Lophocateres* and *Indopeltis*: the mandible with membranous penicillus and distinct prostheca; the wing venation with cross-veins MP3-4 and AA1+2-3+4 absent; and the metendosternite with robust stalk and widely separated anterior tendons. It resembles *Indopeltis* in aedeagus with projecting phallobasic apodeme, eyes similarly shaped, relatively large and situated dorsally, and lateral edge of pronotum undulating, whereas *Lophocateres* parallels include labrum with tormal processes branched at base and maxilla with mediostipes not fused with lacinia. Excluding the characters mentioned, *Trichocateres* differs from all three abovementioned genera chiefly in tibial spur pattern 1-1-1, two sharp grooves in prosternal process and tufts of long hairs on elytra and pronotum. (Genus diagnosis after Kolibáč 2010.)

**Biology.** The circumstances of collection are not exactly known; the specimens were knocked down from branches or fallen timber. Remnants of insect cuticle were found in the gut of the Assam specimen, the remains of an insect larva in the gut of the Laos specimen.

**Distribution.** India: Assam, northern Laos.

**Species:**
- *fasciculifer* Kolibáč, 2010; NE India: Assam, N Laos (JK)
  Kolibáč, J. 2010: 36

**Species incertae sedis**

*Calitis africana* Boheman, 1848 (Cucujoidea?)

Léveillé, A. 1910: 24.

**Note:** I studied only one non-type specimen determined as *C. africana* in the Museé d’Histoire Naturelle in Geneva. The specimen does not belong in Cleroidea.

*Latolaeva brasilia* Perty, 1830 (Cucujoidea?)

Reitter, E. 1876: 51.

**Note.** I have not studied any specimens of the species. The autochthonous distribution of *Latolaeva* or *Ancyrona* in South America is improbable, although introduction is possible. Species of the two genera could be misidentified for an autochthonous or introduced Australian *Neaspis* or *Peltoxyx* (see “Distribution” for *Neaspis*).

*Ostoma australis* Boisduval, 1835

Léveillé, A. 1910: 31.
Ostoma higonia Lewis, 1894
Léveillé, A. 1910: 31.

Ostoma pubescens Escherich, 1822
Léveillé, A. 1910: 32.

Taxa occasionally or temporarily classified within Trogossitidae

Coleoptera incertae sedis

† Genus Anhuistoma Lin, 1985
http://species-id.net/wiki/Anhuistoma

Lin, Q.-B. 1985: 309 (Trogossitidae).

Type species. Anhuistoma hyla Lin, 1985 [designated by author and by monotypy]
Kolibáč, J. & Huang, D.-Y. 2008: 136 (Coleoptera incertae sedis).

Remarks. This beetle was originally described in Trogossitidae and later removed from the superfamily as Coleoptera incertae sedis.

Original description of the genus. “A broadly elliptic beetle of small size; pronotum broadly hemiobricular (hemispherical?); elytra short and broad, ornamented with many longitudinal striae; legs short, three pairs of coxae clearly separated, fore-coxa transverse, mid-coxa rounded, both posterior coxae transverse and connected with each other; abdomen with 5 visible sternites.” (Lin 1985: 309)

Original description of the species. “The body of a small beetle with head and legs missing, 3.5 mm long and 2.3 mm wide. Body broadly elliptic. Pronotum in hemiobricular (hemispherical?) form, slightly broader than long; anterior margin of pro-
Figure 20. A facsimile of Spinaola 1844: 168–171. The original descriptions of the genus Dupontiella and the species *D. ichneumonoides*. 
Figure 21. A facsimile of Spinola 1844: 172–173. The original descriptions of the species Dupontiella ichneumonoides and D. fasciatella.

Figure 22. A facsimile of Spinola 1844: Tab XII, fig. 4 (15). The original illustrations of Dupontiella ichneumonoides.
Figure 23. A facsimile of Reitter 1876: 14–17. Author’s remarks on the genus Dupontella and the both species, *Dupontella ichneumonoides* and *D. fasciata*.
notum concave, posterior margin of pronotum as wide as the anterior. Anterior coxa transverse and disjointed. Mid-thorax slightly smaller than metathorax. Both mid-coxae rounded and disjointed from one another. Posterior coxae transversely connected. Elytra much broader at base, gradually narrowing toward apex, rounded at apical angle; surface covered with several longitudinal striae. Abdomen with 5 visible sternites.” (Lin 1985: 309)

Species:
† hyla Lin, 1985; China: Anhui province; Mesozoic: Lower-Middle Jurassic
Lin, Q.-B. 1985: 309 (Trogossitidae). Kolibáč, J. 2006: 136 (Trogossitidae incertae sedis). Kolibáč, J. & Huang, D.-Y. 2008: 137 (Coleoptera incertae sedis)
† Genus Peltocoleops Ponomarenko, 1990
http://species-id.net/wiki/Peltocoleops

Ponomarenko, A. G. 1990: 73 (Cleroidea).

**Type species.** *Peltocoleops onokhojensis* Ponomarenko, 1990 (by monotypy and original designation)

Kolibáč, J. 2006: 129 (Lophocaterini). Ponomarenko, A. G. & Kireichuk, A. G. 2005–2008: http://zin.ru/animalia/Coleoptera/rus/paleosy2.htm (Peltidae). Schmied, H. et al. 2009: 25 (Trogossitidae: Peltinae).

**Remarks.** The genus was established in Cleroidea, with no indication of an exact family classification (Ponomarenko 1990). Later, Ponomarenko and Kireichuk (2005–2008) listed it in Peltidae. I classified *Peltocoleops onokhojensis* within Lophocaterini but this opinion has to be revised here because it was based on mistranslation of antennal characteristics. The symmetrical club (not “weakly asymmetrical”), widely separated mesocoxae and obliquely situated metacoxae (Ponomarenko 1990: p. 73, 74; fig. 70b) exclude classification of the beetle within Cleroidea. It is therefore listed as Coleoptera incertae sedis herein.

**Original diagnosis of the genus** (translation from Russian). “Medium sized, oval, flat beetle. Head short, gular sutures divergent backwards [sic], antennae long with indistinct symmetrical club. Pronotum wide and short, its base not narrower than elytra, front coxae large, transverse, not projecting, with exposed trochantin, prosternal process extending behind coxae, very slightly widened. Middle coxal cavities closed by mesepimeron. Middle coxal cavities large, rounded, with exposed trochantin. Metathorax transverse, weakly convex along join of legs [sic], hind trochantins [sic] oblique. Abdomen with 5 visible sternites, their bases bordered (?). Legs relatively long, outer side of middle tibiae with row of firm spines.”

**Original description of the species** (translation from Russian). “Head twice shorter than wide, tempora shorter than eyes, gula shorter than wide. Antennomere 6 reaches backwards base [sic] of pronotum. Pronotum evenly rounded anteriorly, 2.5 times shorter than wide, anterior margin straight, about twice narrower than basal margin. Prothorax short, shorter than front coxae, prosternal process distinctly runs behind coxae. Middle coxae relatively widely separated. Metathorax about 2.5 times shorter than wide along its basal margin. Hind coxa is longest along middle of body and 3.5 times shorter than wide [sic], coxae distinctly shortened at lateral end. The first and the last abdominal sternites conspicuously longer than others. Elytra widest at basal portion, glabrous. Middle femora scarcely project out of body outline, tibiae widened, with longitudinal sulcus with row of firm spines (or setae) along outer side, tibiae longer than femora.” “Length 7.2, width 4.1, length of elytra 5.2 mm.”

**Distribution.** Russia: Transbaikalia, Onokhovo, Onokhovsky Graben, Baleysky distr., Chitinskaya obl.; Mesozoic: Early Cretaceous, Lower Neocomian, Leskovskaya Beds.

**Species:**
† *onokhojensis* Ponomarenko, 1990; Russia: Transbaikalia; Early Cretaceous, Lower Neocomian (varA)

Ponomarenko, A. G. 1990: 73. Ponomarenko, A. G. & Kireichuk, A. G. 2005–2008: http://zin.ru/animalia/Coleoptera/rus/paleosy2.htm. Schmied, H. et al. 2009: 26
Superfamily Cucujoidea incertae sedis

† Subfamily Meligethiellinae Kireichuk & Ponomarenko, 1990

Remarks. Because Meligethiellinae is excluded from Cleroidea herein, the synonymization of the subfamily with Peltinae: Thymalini is no longer valid. Meligethiellinae should be classified within traditional Cucujoidea and it is probably related to the extant Nitidulidae. However, this issue lies beyond the scope of this communication and should be addressed by those working on Cucujoidea.

† Genus Meligethiella Medvedev, 1969

http://species-id.net/wiki/Meligethiella

Medvedev, L. N. 1969: 119 (Nitidulidae).

Type species. Meligethiella soroniformis Medvedev, 1969 (by monotypy and original designation).

Kireichuk, A. G. & Ponomarenko, A. G. 1990: 81 (Peltidae: Meligethiellinae). Kolibáč, J. 2006: 126 (Thymalini). Ponomarenko, A. G. & Kireichuk, A. G. 2005–2008: http://zin.ru/animalia/Coleoptera/rus/paleosy2.htm. Schmied, H. et al. 2009: 25.

Remarks. The genus was originally described in Nitidulidae (Medvedev 1969) and latter shifted to Peltidae by Kireichuk and Ponomarenko (1990) in the new extinct subfamily Meligethiellinae along with the genera Juralithinus and Ostomalynus. I accepted the classification within Trogossitidae: Peltinae. However, I synonymized Meligethiellinae and moved all three genera into the extant Thymalini (Kolibáč 2006). After more careful examination of their descriptions and original illustration, I found the classification of Meligethiella and Ostomalynus within Trogossitidae or even Cleroidea hardly possible while Juralithinus characters are fully compatible with the definition of Peltinae. The most important characters that exclude Meligethiella from Trogossitidae are (1) widely separated mesocoxae, especially in combination with (2) irregularly punctate elytra and (3) groove for prosternal process in mesosternum.

Original description of the genus (translation from Russian). “Diagnosis: Body broadly oval, head not distinctly retracted into pronotum, pronotum just about narrower than elytra, 3–4 times shorter than elytra, middle coxae widely separated; mesothorax with groove for apex of prosternal process; elytra perfectly cover abdominal apex, smooth or with irregular punctuation; femoral lines in metathorax [paracoxal sutures?] mostly well-developed; first visible abdominal sternite longer than following one. [Measurements 3.7–4.7 mm.]”

Distribution. Russia: Bouriatskaya Autonomnaya Respublika; W Transbaikalia – Chitinskaya oblast; Kazakhstan: Chimkentskaya oblast, Baissa. Mesozoic: Late Jurassic: Karabastayskaya formation; Lower Cretaceous: Turginskaya formation; middle Neocomian: Zazinskaya formation.
Species:
† *glabra* Kireichuk & Ponomarenko, 1990; Russia: Transbaikalia, Chitinskaya obl.; Lower Cretaceous, Turginskaya formation (varA)
  Kireichuk, A. G. & Ponomarenko, A. G. 1990: 82. Ponomarenko, A. G. & Kireichuk, A. G. 2005–2008: http://zin.ru/animalia/Coleoptera/rus/paleosy2.htm. Schmied, H. et al. 2009: 25

† *kovalevi* Kireichuk & Ponomarenko, 1990; Kazakhstan: Chimkentskaya obl.; Late Jurassic: Karabastayskaya formation (varA)
  Kireichuk, A. G. & Ponomarenko, A. G. 1990: 81. Ponomarenko, A. G. & Kireichuk, A. G. 2005–2008: http://zin.ru/animalia/Coleoptera/rus/paleosy2.htm. Schmied, H. et al. 2009: 25

† *soroniiformis* Medvedev, 1969; Russia: Bouriatskaya Autonom. Rep., Baissa; Lower Cretaceous: Zazinskaya formation (varA)
  Kireichuk, A. G. & Ponomarenko, A. G. 1990: 81. Medvedev, L. N. 1969: 120. Ponomarenko, A. G. & Kireichuk, A. G. 2005–2008: http://zin.ru/animalia/Coleoptera/rus/paleosy2.htm. Schmied, H. et al. 2009: 25

† *Genus Ostomalynus* Kireichuk & Ponomarenko, 1990

http://species-id.net/wiki/Ostomalynus

Kireichuk, A. G. & Ponomarenko, A. G. 1990: 82 (Peltidae: Meligethiellinae).

Type species. *Ostomalynus ovalis* Kireichuk & Ponomarenko, 1990 (by monotypy and original designation)
  Kolibáč, J. 2006: 126 (Thymalini). Ponomarenko, A. G. & Kireichuk, A. G. 2005–2008: http://zin.ru/animalia/Coleoptera/rus/paleosy2.htm. Schmied, H. et al. 2009: 25.

Remarks. The genus was described in Meligethiellinae by Kireichuk & Ponomarenko (1990) and latter shifted to Thymalini by (Kolibáč 2006, Schmied et al. 2009). It is apparently related to *Meligethiella*, so both genera must be removed together from Trogossitidae and Cleroidea.

Original description. “Body oviform, strongly narrowed posteriorly. Pronotum short, five times shorter than elytra, prothorax very short, nearly lenticular, with strong longitudinal keel along centre, middle coxae widely separated, anterior part of mesothorax with groove for apex of prosternal process, elytra reaching behind end of abdomen, dorsally with thin lines beneath them longitudinal rows of punctures can be visible. [Measurements: length 5.3, width 2.8 mm.]”

Distribution. Russia: Transbaikalia, Chitinskaya oblast, Nerchinsko-Zavodskoy district, Pavlovka village. Mesozoic: Early Cretaceous, Lower Neocomian, Gidarinskaya formation.

Species:
† *ovalis* Kireichuk & Ponomarenko, 1990; Russia: Transbaikalia; Lower Cretaceous, Gidarinskaya formation
Superfamily Cucujoidea incertae sedis

† Genus Palaeoendomychus Zhang, 1992
http://species-id.net/wiki/Palaeoendomychus

Zhang, J.-F. 1992: 337 (Endomychidae).
[Type species: Palaeoendomychus gymnus Zhang, 1992]
Kolibáč, J. & Huang, D.-Y. 2008: 139 (Cucujoidea incertae sedis). Ponomarenko, A. G. & Kireichuk A. G. (2005–2008): http://zin.ru/animalia/Coleoptera/rus/paleosy2.htm (Trogossitidae). Schmied, H. et al. 2009: 26.

Remarks. The author (Zhang 1992: 337) compares the genus with pantropical Stenotarsus Perty, 1832 which contains about 250 recent species that are highly variable in body shape. A combination of characters similar to those of Palaeoendomychus may be found, for example, in Endomychidae and Nitidulidae (Kolibáč and Huang 2008).

Original description. “Body minute and compact, oval, hairless. Head deeply sunk into pronotum. Eyes rather large, widely separated, slightly prominent. Antennae short, flagellum cylindrical. Pronotum transverse, short (Chin.: raised at centre), without membrane [sic] in front, but with lateral sides (Chin. “edges”) broadly flattened, posterior angles prominent. Scutellum small, narrowly triangular, distinctly longer than broad. Elytra wide, dehiscent, as wide at base as pronotum, and both closely connected to one another, humeral angles rounded, terminal angles prominent, surface with striae. Legs normal, with tarsi short and narrow (Chin. 3 tarsomeres visible), first and second tarsal segments triangular, each about as long as wide, third cylindrical, noticeably longer than wide.” (Zhang 1992: 334, 337.) After Kolibáč and Huang (2008).

Note: The Chinese and English texts are somewhat different from one another. Important items from the Chinese are translated in parentheses.

Species:
† gymnus Zhang, 1992; China: Shandong; Mesozoic: Lower Cretaceous
Zhang, J.-F. 1992: 337 (Endomychidae). Kolibáč, J. 2006: 136 (Trogossitidae incertae sedis). Ponomarenko, A. G. & Kireichuk A. G. (2005–2008): http://zin.ru/animalia/Coleoptera/rus/paleosy2.htm (Trogossitidae). Schmied, H. et al. 2009: 26.
Family Salpingidae

Genus *Paralindria* Olliff, 1883 [Type species: *Paralindria bipartita* Olliff, 1883]

Olliff, S. 1883b: 57 (“… be placed between [Alindria] and Melambia.“). Reitter, E. 1890: 264 [“Paralindria Olliff, 1883 = Serrotibia Reitt. (Stett. Ztg. 1877, 339)].

*Paralindria* bipartita Olliff, 1883; Ecuador

Reitter, E. 1890: 264 [“Paralindria bipartita Olliff. = Serrotibia bicolor Reitt., 1. c. pag. 341”].

Note. The synonymy is widely accepted and the genus *Serrotibia* is classified within Salpingidae at present.

Family Chrysomelidae

Genus *Peltoschema* Reitter, 1880 [Type species: *Peltoschema filicorne* Reitter, 1880]

Reitter, E. 1880: 4 (Trogossitidae). Léveillé, A. 1910: 28 (Trogossitidae).

Note. The classification of the genus within Chrysomelidae has been well known for a long time, e.g. Daccordi (2003a, b), Daccordi and De Little (2003). Species of the genus are distributed in Australia.

Family Derodontidae

Genus *Peltastica* Mannerheim, 1852 [Type species: *Peltastica tuberculata* Mannerheim, 1852]

Léveillé, A. 1910: 28 (Trogossitidae). Reitter, E. 1876: 60 (Trogossitidae). *Peltastica tuberculata* Mannerheim, 1852; Alaska (AL)

Léveillé, A. 1910: 28 (Trogossitidae). Reitter, E. 1876: 60 (Trogossitidae). *Peltastica amurensis* Reitter, 1879; Siberia (AL)

Léveillé, A. 1910: 28 (Trogossitidae).

*Peltastica reitteri* Lewis, 1884; Japan (AL)

Léveillé, A. 1910: 28 (Trogossitidae).

Note. The classification of the genus within Derodontidae has been well known for a long time.
Family Helotidae

*Helota* MacLeay, 1825; eastern Asia
  Reitter, E. 1876: 5 (Trogositidae: subfamilia Helotidae; *sic*).

Family Monotomidae

? *Nemozoma nigripenne* Reitter, 1876; Colombia (varA)
  Léveillé, A. 1910: 6 (*Nemosoma* (subgen. *Monesoma*)). Reitter, E. 1876: 14 (*Nemozoma nigripennis*).
  syn. *Thione championi* Sharp, 1899?
  Lepesme, P. & Paulian, R. 1944: 138. According to their notes, they studied the holotype of *Nemosoma* (*Monesoma*) *nigripenne* Lév. [*sic*] and consider it “[...] est d’après le type, un Cucujidae et est identique à Thione Championi Sharp”. The matter may be unfamiliar to monotomid workers as I have found no remarks on this synonymy in the literature.

Genus *Shoguna* Lewis, 1889

*Note*. Albert Winkler listed the genus among Trogossitidae in his catalogue (1924–1932) and probably considered it a relative of *Nemozoma* (Winkler 1927). It is classified within Monotomidae at present.

Family Synteliidae

Genus *Syntelia* Westwood, 1864 [*Type species: Syntelia indica* Westwood, 1864] (genus originally described in Trogossitidae).

Reitter, E. 1876: 23 (Trogossitidae). Westwood, J. O. 1864: 11. (Trogossitidae).

*davidis* Fairmaire, 1889; China: Sichuan
*biisteroides* Lewis, 1882; Russia: Far East, Japan
*indica* Westwood, 1864; Nepal, Northeast India
  Reitter, E. 1876: 23 (Trogossitidae). Westwood, J. O. 1864: 11.
*mexicana* Westwood, 1864; Mexico: Oaxaca
  Reitter, E. 1876: 23 (Trogossitidae). Westwood, J. O. 1864: 11.
*westwoodi* Salle, 1873; Mexico
  Reitter, E. 1876: 23 (Trogossitidae).
Family Zopheridae

Genus *Holopleuridia* Reitter, 1876 [Type species: *Holopleuridia maculosa* Reitter, 1876]

Kolibáč, J. 2005: 87 (transferred to Tenebrionoidea). Léveillé, A. 1910: 27 (Trogossitidae). Reitter, E. 1876: 56 (Trogossitidae).

*maculosa* Reitter, 1876; “La Luzera” (Colombia?)

Reitter, E. 1876: 56 (Trogossitidae).

*Nematidium* Erichson, 1845 [Type species: unknown]

*tenuissima* (Reitter, 1876); Colombia

Reitter, E. 1876: 16 (sub Trogossitidae: *Filumis* Reitter, 1876)

**Phylogeny of the family Trogossitidae**

Recently, several important studies have centred upon the phylogeny of Cucujiformia, including Cleroidea and Trogossitidae.

Beutel and Pollock (2000) analyzed 20 larval head characters in 22 taxa (8 cleroid, 10 cucujiform, 4 outgroup) and advocated the monophyly of Cleroidea, but pointed out the paraphyly of traditional Cucuoidea. Trogossitidae were represented by *Calitis* and *Temnoscheila*, which genera were found in a sister relationship (*Calitis* was perhaps meant by the authors to be a representative of Peltinae). However, the inclusion of *Phloiophilus* into the trogossitids, as is presented herein, would be considered paraphyletic (but not polyphyletic) according to this study.

Hunt et al. (2007) used an extensive molecular data set of dozens Coleoptera specimens. His Cleroidea are also monophyletic but with the inclusion of Byturidae/Biphyllidae as a sister group of *Phloiophilus*. Trogossitidae are paraphyletic in the final tree: Trogossitinae + ((Lophocaterinae + Peltinae) + rest of Cleroidea). On the other hand, the most parsimonious tree of all 1880 studied beetle genera based on two mitochondrial genes shows the following phylogeny: 

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((Diplocoelus + Biphyllus) + (Byturus + (Phloiophilus + Priasilpha))) + (((Kolibacia + Temnoscheila + Nemozoma + Tenebroides) + (Ancyrona + Lophocateres + Grynocharis)) + (Peltis grossa + Peltis ferrugineum)) + (Cleridae + Melyridae sensu lato). This means that Trogossitidae (minus *Phloiophilus*) are perfectly monophyletic in the tree. It is also notable that Lophocaterinae are a sister group of Trogossinae there. (Note: *Leperina* is used for *Kolibacia tibialis*, *Trogossita* for *Temnoscheila*, *Ostoma* for *Peltis ferrugineum* in the mentioned paper.)
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The most recent system of Trogossitidae is based on my morphological studies of 2005 (adults) and 2006 (larvae). The most important result is a confirmation of both Crowson’s ideas on the relationship of Calitis with Trogossitinae and Protopeltis with the Rentonium-group. On the other hand, his opinion about the relationship between the lophocaterins and the trogossitins is called in question. However, it is correct to say that larval characters actually connect the two groups while the majority of adult characters tend to defeat them in favour of a sister relationship of the lophocaterins and trogossitins. Both major clades were analyzed separately under equal weights and then with the use of successive reweighting (Kolibáč 2006).

I employed 31 traditional morphological characters (16 adult, 15 larval) for 15 taxa (8 cleroid, 6 cucujoid, 1 derodontoid) in the analysis of 2008. Five cucujoid families (minus Phloeostichidae: Hymaea) were found to be monophyletic as well as Cleroidea. The group of cucujoid families (Cerylonidae, Coccinellidae, Endomychidae, Cucujidae, Byturidae, Phloeostichidae) were found to be paraphyletic with regard to the monophyletic Cleroidea. Trogossitidae were also found to be paraphyletic in this analysis. However, Phloiophilus was placed within a branch composed of trogossitid representatives, probably as a sister group of Thymalus. In the following analysis, Phloiophilus was analysed together with 43 trogossitid genera (88 characters of which 56 were adult and 32 larval). A strict consensus tree of 48 equally parsimonious trees indicates a possible relation of Phloiophilus with Peltinae and justifies independent subfamilial status for Lophocaterinae (the tree is reproduced herein, Fig. 26). It must be pointed out that 32 of 48 trees supported a sister relationship between the lophocaterins and the peltins. Only 16 trees supported a relationship between the lophocaterins and the trogossitins. This is perfectly consistent with the results of Hunt et al. (2007) and Kolibáč (2006).

The most extensive modern paper on the beetle phylogeny based on morphological data is that by Lawrence et al. (2011). The authors used more than 500 characters and analyzed 366 genera of 165 beetle families. The final resulting tree is, in the section relevant to us, far different from that by Hunt et al. (2007) and it is beyond the scope of this contribution to analyze differences at superfamilial level. Trogossitidae are found to be paraphyletic (Acalanthis + Temnoscheila, Eronyxa + Grynoma are placed in separate branches), even polyphyletic because Thymalus is placed in a cluster together with Lamingtonium and the nitidulid families, while Rentonellum as a sister group of Smicrips together with Laemophloeus and Propalticus lie in a very distant part of the cladogram. Phloiophilus was not studied in the paper.

Bocákova et al. (2011) used Peltis ferrugineum, Grynocharis oblonga and Temnoscheila japonica among outgroups in their molecular phylogeny of Melyridae sensu lato. Peltis and Grynocharis again form a sister group while the position of Temnoscheila is paraphyletic with regard to the rest of Cleroidea.

A work by Gunter et al. (2013) focuses on the molecular phylogeny of Cleridae. However, a relatively large set of trogossitid representatives were also studied. The resulting tree is very interesting: Phloiophilus is included in the trogossitine cluster
Figure 26. A phylogenetic tree of Trogossitidae adapted and modified from original drawing by Kolibác (2008). Paraphyletic taxa denoted with the asterisk. Published with kind permission of Pro Entomologia, Basel, a publisher of Entomologica Basiliensia et Collectionis Frey.

between Larinotus, Leperina and Temnoscheila while Rentonellum, Peltis, Grynocharis, Ancyrona and Neaspis form a second cluster with a sister relationship to the rest of Cleroidea (similar to Hunt et al. 2007).
The most updated studies are those by the Tree of Life team and R. A. B. Leschen and co-authors, unpublished as yet. Their preliminary, mutually different, results were presented in the XXIVth International Congress of Entomology in Daegu (McKenna et al. 2012, Leschen et al. 2012).

Although the outcomes of the works above differ in details, major ideas may be summarized as follows:

1) The superfamily Cleroidea is a monophyletic group.
2) A part of the traditional Cucujoidea is probably paraphyletic with regard to Cleroidea. Cleroidea will probably, therefore, be extended to include several other “cucujoid” families.
3) Lophocaterinae probably constitutes a sister group to Peltinae.
4) Trogossitinae, as a basal group, may form a sister taxon to the major bulk of Cleroidea (although none of the molecular studies included the Metaxinidae-Chaetosomatidae-Thanerocleridae cluster, which might be in sister relationship with the trogossitines). This thesis, however, can hardly be justified by just the morphological evidence. If the subfamily Trogossitinae is actually confirmed paraphyletic, it should be classified at family rank again, as well as Peltidae composed of Peltinae and Lophocaterinae.
5) The exact position of \textit{Phloiophilus} is uncertain; it is a basal group of Cleroidea, probably related to Trogossitidae \textit{sensu lato}.

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