

Notes on the checklist of Braconidae (Hymenoptera) from Switzerland

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Notes on the checklist of Braconidae (Hymenoptera) from Switzerland

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Changes are listed to enable an updated checklist of the Braconidae (Hymenoptera) known from Switzerland. The following new synonyms are proposed: *Baeacis* Foerster, 1878 of *Diospilus* Haliday, 1833; *Fischerastriolus* Perepechayenko, 1999 of *Coelinidea* Viereck, 1913; *Neopolemon* Perepechayenko, 1999 of *Eucoelinidea* Tobias, 1979; *Paraorthostigma* Königsmann, 1972 of *Grammospila* Foerster, 1862; *Phaenocarpa psalliotae* Telenga, 1935 of *Phaenocarpa pratellae* (Curtis, 1826); *Eubazus punctatus* (Ratzeburg, 1852) of *Eubazus rugosus* (Ratzeburg, 1848); *Spathius erythrocephalus* Wesmael, 1838, *S. curvicaudis* Ratzeburg, 1844 and *S. radzayanus* Ratzeburg, 1848 of *Spathius umbratus* (Fabricius, 1798); *Euphorus similis* (Curtis, 1833) of *Euphorus basalis* (Curtis, 1833); *Colastes flavitarsis* (Thomson, 1892) of *Colastes affinis* (Wesmael, 1838); *Microgaster contextus* Labram & Imhoff, 1836 of *Cotesia ruficrus* (Haliday, 1834); *Opius nodifer* Fischer, 1959 of *Apodesmia striatula* (Fischer, 1957); *Compressaria pugnatrix* (Marshall, 1895) of *Bathystomus xanthopus* Foerster, 1862; *Opius onzi* Fischer, 1959 of *Biosteres carbonarius* (Nees, 1834); *Bitomus rugiventris* (Thomson, 1895) of *Bitomoides rugosus* (Wesmael, 1838); *Opius celsus* Haliday, 1837 of *Opius ambiguus* Wesmael, 1835; *Opius gyoerffii* Fischer, 1958 of *Opius brevipalpis* Thomson, 1895; *Opius dureseai* Fischer, 1975 of *Opius nigricoloratus* Fischer, 1958; *Phaedrotoma pulchriiventris* (Fischer, 1958) of *Phaedrotoma pulchriceps* (Szépligeti, 1898); *Opius docilis* Haliday, 1837 of *Rhogadopsis reconditor* (Wesmael, 1835) and *Opius magnus* Fischer, 1958 of *Utetes ferrugator* (Goureau, 1862).

The following new combinations are proposed: *Eucoelinidea breviventris* (Telenga, 1935) comb. nov., *Grammospila tirolensis* (Königsmann, 1972) comb. nov., *Grammospila fuscula* (Griffiths, 1968) comb. nov., *Grammospila rufiventris* (Nees, 1814) comb. nov., *Diospilus abietis* (Ratzeburg, 1844) comb. nov. and *Diospila intermedia* (Foerster, 1878) comb. nov. The following taxa are reinstated: *Aleiodes diversus* (Szépligeti, 1903), *Aspicolpus helveticus* (Haller, 1885), *Disophrys initiator* (Fonscolombe, 1846), *Helconidea armator* (Marshall, 1898) and *Shawiana lissogaster* (Tobias, 1986). *Doryctodes* Hellén, 1927, *Grammospila* Foerster, 1862, *Heterolexis* Foerster, 1862, and *Mesocrina* Foerster, 1862 are reinstated as valid genera.

Trachionus kotenkoi (Perepechayenko, 1997) is a new record for Central Europe and Switzerland; *Adelius clandestinus* (Foerster, 1851), *Colastes affinis* (Wesmael, 1838), *Iphiaulax mactator* (Klug, 1817) and *Schizoprymnus cataphractus* (Šnoflák, 1953) are new for Switzerland.

Keywords: Insecta, Hymenoptera, Braconidae, checklist, Switzerland, new synonymies, new records, keys.

INTRODUCTION

The Braconidae form a very large family with nearly 20'000 valid species described (Yu *et al.* 2013), but probably this is less than 20 % of the total number of species worldwide. In Fauna Europaea about 3'500 valid species are listed from Europe (without Caucasus; van Achterberg 2013), but a considerable number needs still to be revised and partly described. From Switzerland at least 934 spp. are known (Yu *et al.* 2013; van Achterberg 2013), which is 50–60 % of total number to be expected (Merz & Pasche 2012). The updated Swiss checklist of which here the changes are

reported contains 957 species and will be part of the Swiss Hymenoptera checklist to be published in the series «Fauna Helvetica».

The biology of Braconidae is very variable, it varies from ectoparasitoids of all kinds of larvae of insects, egg-larval endoparasitoids, true larval endoparasitoids of several orders of insects (but not as hyperparasitoids; only one genus (*Syntretus*) contains pseudo-hyperparasitoids) to endoparasitoids of adult beetles, bugs, aphids and (rarely) bees. The Aphidiinae (endoparasitoids of aphids) are sometimes treated as a separate family (e.g. by Čapek & Hofmann (1997) in their catalogue of the Braconidae in the Cantonal Museum of Lausanne), which is not justified by their phylogeny and this group is included as a subfamily of the Braconidae.

MATERIAL AND METHODS

The Taxapad database of Ichneumonoidea, Megalyroidea and Stephanoidea (Yu *et al.* 2013) is an enormous database of over 45'000 species containing taxonomic, biological, morphological and distribution information taken from over 33'000 references gathered from published records and includes an enormous amount of interactive additional information. It is an excellent start for any regional checklist of Ichneumonoidea, including this one on the Braconidae from Switzerland. It was combined with the Braconidae part of the database of Fauna Europaea (van Achterberg 2013), which includes the references for Europe seen by the author, supplemented with unpublished records and corrections based on research on type specimens and additional material. The differences between both checklists and additions are explained in this paper as far as they concern the Swiss fauna and are in need of explanation. In 2014 the three Swiss museums with substantial collections of Braconidae were visited: the Naturhistorisches Museum Bern (NMBE), the Musée Cantonal de Zoologie, Lausanne (MZL) and the Muséum d'Histoire Naturelle de la Ville de Genève (MHNG). Additional Swiss specimens have been examined from the Natural History Museum, London (BMNH), the Canadian National Collection of Insects, Ottawa (CNC) and the Naturalis Biodiversity Center, Leiden (RMNH).

RESULTS

Agathidinae

Bassus Fabricius, 1804. Recently, the generic division of the Agathidinae has changed considerable by splitting old aggregates, including the genus *Bassus* Fabricius s.l. (Sharkey *et al.* 2009, van Achterberg & Long 2010). In the checklist it results in the following combinations in the genera *Bassus* (only *B. calculator* (Fabricius, 1798)), *Camptothlipsis* Enderlein, 1920 (*C. armeniacus* (Telenga, 1955, and *C. niger* (Telenga, 1955)), *Lytopylus* Foerster, 1862 (*L. fortipes* (Reinhard, 1867) and *L. rufipes* (Nees, 1812)) and *Therophilus* Wesmael, 1837 (*T. arcuatus* (Reinhard, 1867), *T. cingulipes* (Nees, 1812), *T. claussthalianus* (Ratzeburg, 1844), *T. conspicuus* (Wesmael, 1837), *T. dimidiator* (Nees, 1834), *T. linguarius* (Nees, 1812), *T. nugax* (Reinhard, 1867), *T. rugulosus* (Nees, 1834) and *T. tumidulus* (Nees, 1812)). *Agathis tibialis* auct. (not Nees, 1812), is considered to concern *Agathis varipes* Thomson, 1895 (Simbolotti & van Achterberg 1999).

Agathis purgator (Fabricius, 1793) is listed by Yu *et al.* (2013), but is excluded from the genus *Agathis* and from the family Braconidae by Simbolotti & van Achterberg (1999: 137) and transferred to the Ichneumonidae.

Disophrys initiator (Fonscolombe, 1846) = *D. caesa* auct. not (Klug, 1835). *D. caesa* (Klug, 1835) is a species restricted to the SW Mediterranean region (van Achterberg, in prep.). Central European and SE Mediterranean specimens belong to *Disophrys initiator* (Fonscolombe, 1846), reinstated.

Alysiinae

Agonia adducta (Haliday, 1839) is often included in the genus *Dacnusa* Haliday, despite its aberrant venation.

Alysia lucia (Haliday, 1838). *Alysia rudis* Tobias, 1962, was synonymized in Wharton's (1986) revision with *A. lucia*. Fischer (1993) reversed it, but his view is not accepted here considering the extensive variation of the facial sculpture in this species.

Anisocyrta alpinicola van Achterberg, 1986. The series reported by Čapek & Hofmann (1997) belongs to *A. alpinicola* and not to *A. perdita* (Haliday, 1838). Therefore, the latter species has to be omitted from the Swiss checklist.

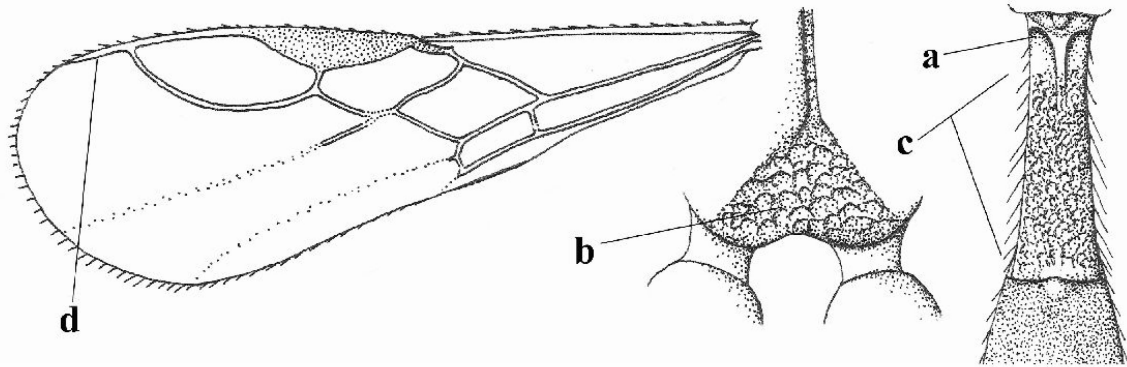
Antrusa flavicoxa (Thomson, 1895). It was included in *Exotela* by Griffiths (1964) in his revision of the European species and sometimes in the subgenus *Antrusa* Nixon, 1943 (Tobias & Jakimavicius 1986). Later Quicke *et al.* (1997) placed it in *Dacnusa* s.l. and recently (e.g., Tobias 1998; Fischer 1999) it was included in the genus *Antrusa* Nixon together with *A. melanocera* (Thomson, 1895). Both species can be recognized by having vein m-cu of the fore wing antefurcal, the precoxal sulcus sculptured and the first tergite with a more or less developed median carina.

Aspilota parvicornis (Thomson, 1895) is sometimes included in the genus *Adelphenaldis* Fischer, 2003, because of the reduced vein 2-SR. This vein is often intermediately developed and is not reliable enough to separate genera in the *Aspilota* genus group.

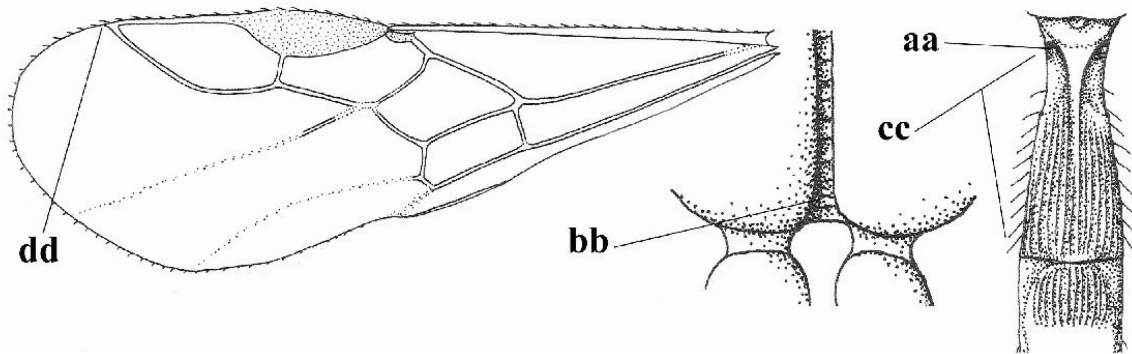
Coelinus Nees s.l. There is considerable confusion about the use and position of generic names in the *Coelinus* genus group; Wharton (1994) includes all except *Laotris* in one genus *Coelinus* Nees, 1818, Tobias (1998) used the unavailable name *Lepton* Zetterstedt, 1838, not Turton, 1822, as a subgenus in the genus *Coelinus* Nees s.l. and as a senior synonym of *Coelinidea* Viereck, 1913. Perepechayenko (1999) introduced two additional names. *Fischerastriolus* Perepechayenko, 1999 (with the species *C. semirufus* Fischer, 1957, and *C. rufus* Astafurova, 1998) is considered to belong to the genus *Coelinidea* Viereck (**syn. nov.**), because the somewhat different shape of the face is considered a character too weak for the separation of a genus. For *Coelinus breviventris* Telenga, 1935, Perepechayenko (1999) named the subgenus *Neopolemon* Perepechayenko, 1999, in the genus *Polemochartus* Schulz, but this is a synonym of *Eucoelinidea* Tobias, 1979 (**syn. nov.**), because the differences are gradual. The type species (*Eucoelinidea breviventris* (Telenga, 1935) **comb. nov.**) is similar to the type species of *Eucoelinidea*, but has the antenna of the female largely submoniliform and more densely setose, the metasoma of the female less elongate, the face punctate-rugulose and the area above the precoxal sulcus coarsely punctate-rugose.

Key to West Palaearctic genera of Coelinus s.l. (sensu Wharton 1994, with Lao-tris Nixon included because of the similar mandible)

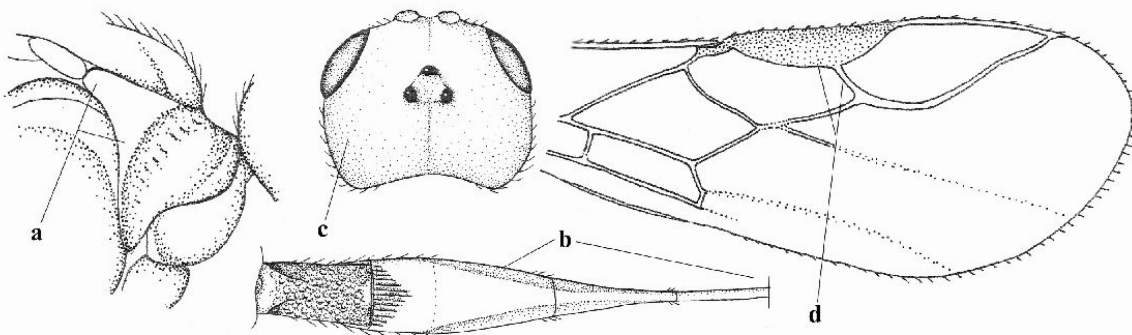
1. Dorsope absent (a) or nearly so; mesosternum with triangular reticulate-rugose area medio-posteriorly (b); first metasomal tergite more than 2.3 times as long as its apical width (c); vein 2-R1 of fore wing frequently rather long (d); [ptero-stigma usually about as long as vein 1-R1; clypeus strongly protruding forwards; = *Lepton* Zetterstedt, 1838, not Turton, 1822; *Eriocoelinus* Viereck, 1913; *Fischerastriolus* Perepechayenko, 1999, syn. nov.; *Coelinus* auctt. p.p.]
 *Coelinidea* Viereck, 1913



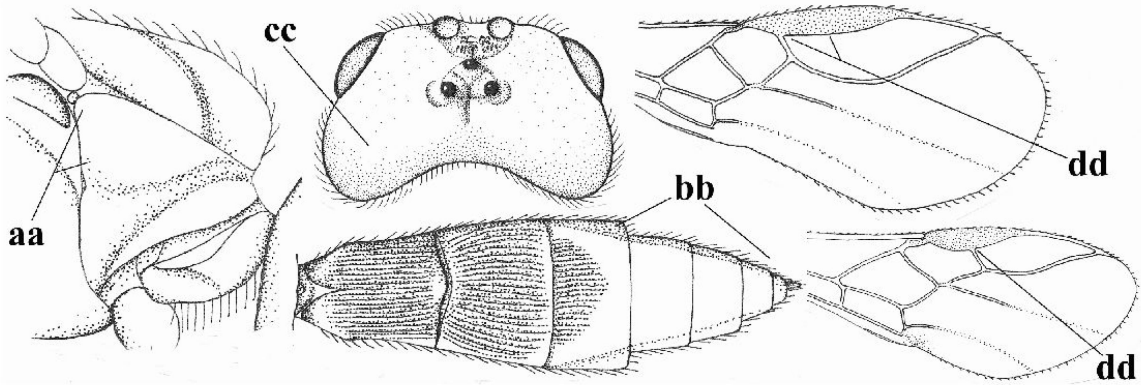
- Dorsope present (aa); mesosternum with only a narrow crenulate suture medio-posteriorly (bb); first tergite usually less than 2.3 times as long as its apical width (cc); vein 2-R1 of fore wing short or absent (dd) 2



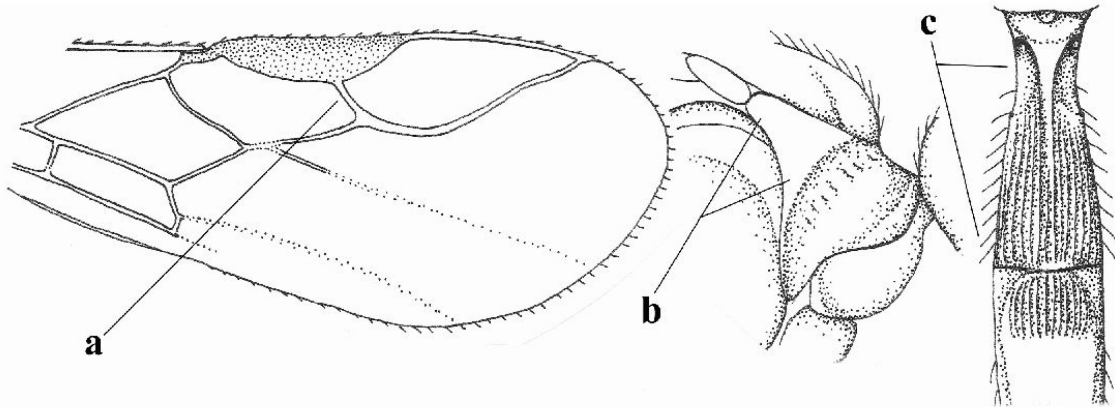
2. Dorso-posterior half of pronotal side distinctly protruding posteriorly (a); metasoma of female blade-like compressed posteriorly (b); head nearly square in dorsal view (c); vein r of fore wing issued distinctly behind middle of pterostigma (d) 3



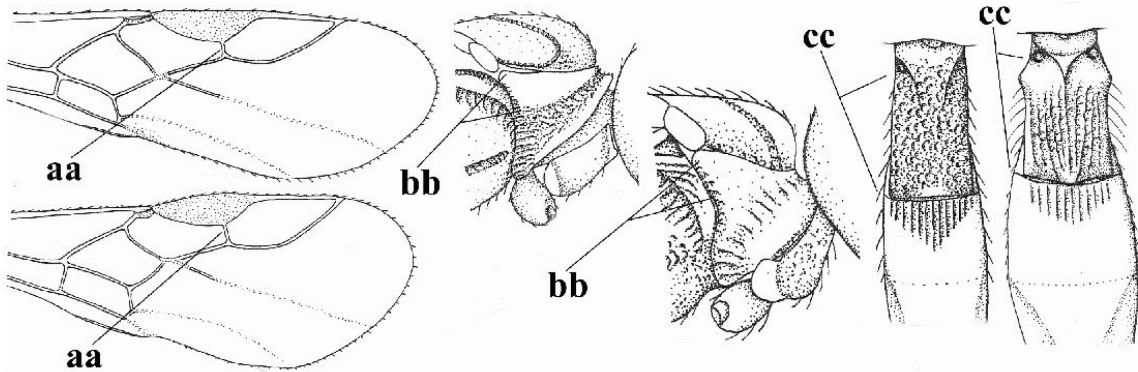
- Dorso-posterior half of pronotal side truncate (aa), at most dorso-apically protruding; metasoma of female less compressed (bb); head transverse in dorsal view (cc); vein r of fore wing usually issued between base and middle of pterostigma or from its middle (dd) 4



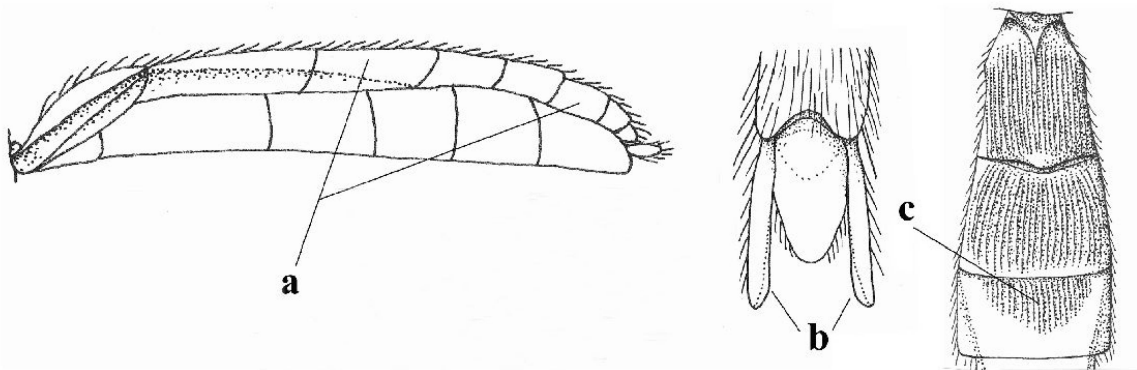
- 3. Vein r of fore wing strongly oblique (a); first metasomal tergite elongate (b); entire dorsal half of pronotal side protruding posteriorly (c); [= *Chaenon* Curtis, 1829; *Copisura* Schiødte, 1837] *Coelinus* Nees, 1818



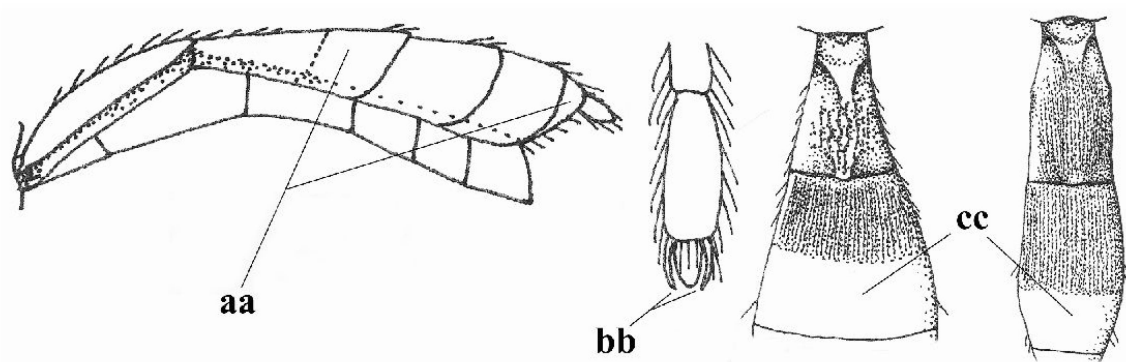
- Vein r of fore wing subvertical (aa); first tergite short (bb); dorsal half of pronotal side less protruding posteriorly (cc); [face short, sharp-angularly protruding; = *Neopolemon* Perepachayenko, 1999, syn. nov.] *Eucoelinidea* Tobias, 1979



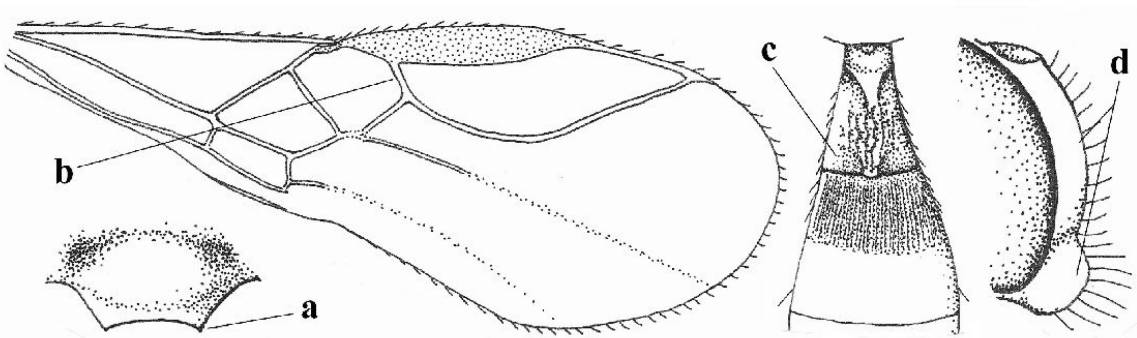
4. Third to sixth metasomal tergites densely setose (a); tarsal claws lamelliform widened apically in dorsal view (b); third tergite usually partly or largely sculptured (c); [vein r of fore wing issued near middle of pterostigma; parasitoid of *Lipara* spp. in *Phragmites*-galls] *Polemochartus* Schulz, 1911



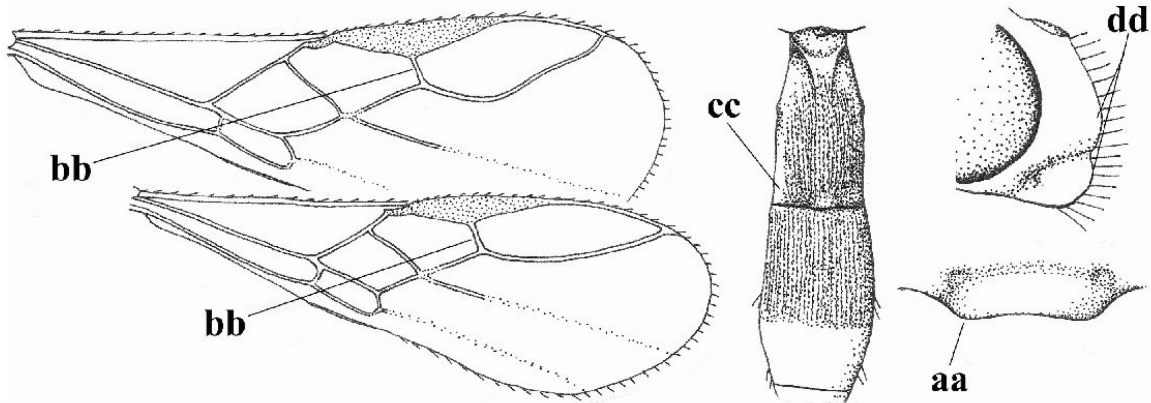
- Third to sixth tergites sparsely setose (aa); tarsal claws normal cylindrical apically in dorsal view (bb); third tergite smooth (cc) 5



5. Ventro-lateral corners of clypeus angled (a); vein r of fore wing issued sub-basally from pterostigma (b); first tergite widened apically (c); clypeus distinctly protruding in lateral view (d) *Laotris* Nixon, 1943



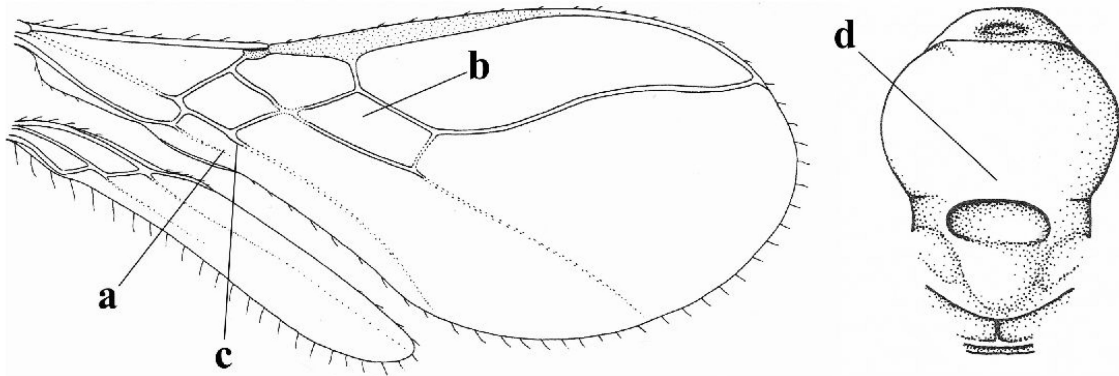
- Ventro-lateral corners of clypeus rounded (aa); vein r of fore wing issued medially from pterostigma (bb); first tergite subparallel-sided apically (cc); clypeus slightly protruding in lateral view (dd) *Sarops* Nixon, 1942



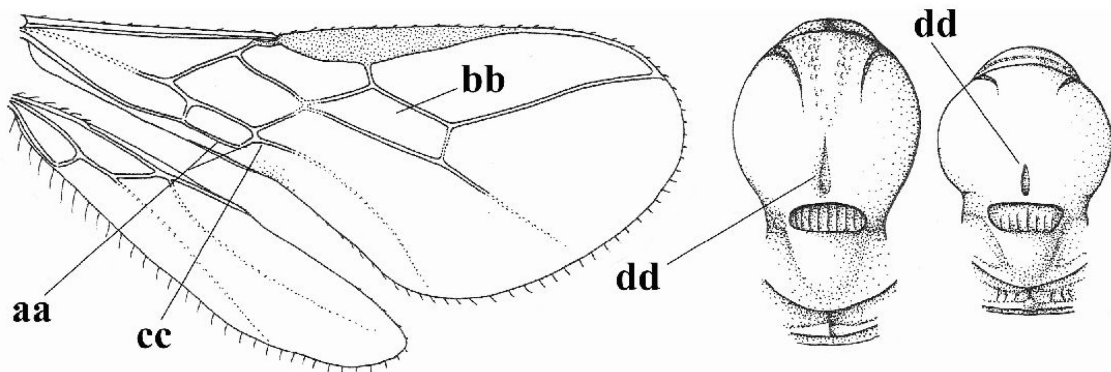
Dapsilarthra Foerster, 1862 s.l. was revised by van Achterberg (1983) and the genus was treated sensu lato, subdivided in subgenera and the genus *Adeluroloa* Strand, but after examining more material I consider it justified to elevate also the subgenera to generic rank (*Grammospila* Foerster, 1862, *Heterolexis* Foerster, 1862, and *Mesocrina* Foerster, 1862, reinstated). At least the type species of the genus *Mesocrina* has also an aberrant biology (Königsmann 1959): it is associated with hosts (Scathophagidae: *Nanna* spp.) in mushrooms; species of both other genera and of *Dapsilarthra* s.s. use numerous leaf mining hosts (Yu *et al.* 2012). *Mesocrina* was also used as a valid genus by Königsmann (1959) and considering the differences in biology and morphology this is considered justified. *Heterolexis* was used as subgenus of *Dapsilarthra* by van Achterberg (1983) and *Grammospila* was considered to be a synonym of the subgenus *Dapsilarthra*. The differences in wing venation between *Grammospila* and *Heterolexis* are substantial and comparable to character differences used in Alysiinae to separate genera and, therefore, justify separation. The separation of *Grammospila* from *Dapsilarthra* is more subjective and this may be an argument to unite both in one genus *Dapsilarthra*. However, the differences given in the key below seems to be sufficient for separation at generic level. *Grammospila* is considered to be a senior synonym of *Paraorthostigma* Königsmann, 1972, and *G. tirolensis* (Königsmann, 1972) is a new combination.

Key to West Palaearctic genera of *Dapsilarthra* s.l.

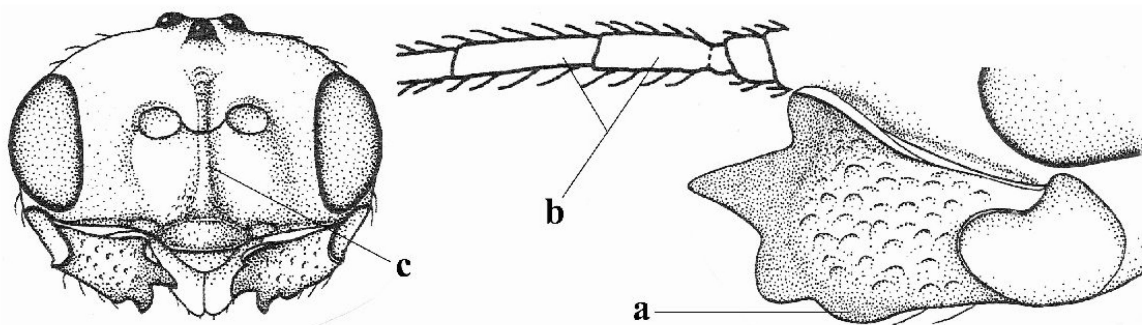
1. Veins 2-1A and CU1b of fore wing (largely) absent, resulting in an open first subdiscal cell apico-posteriorly (a); second submarginal cell of fore wing small (b); vein CU1a of fore wing at level of vein 2-CU1 (c); medio-posterior depression of mesoscutum absent (d), except in *H. dictynna* (Marshall) *Heterolexis* Foerster, 1862



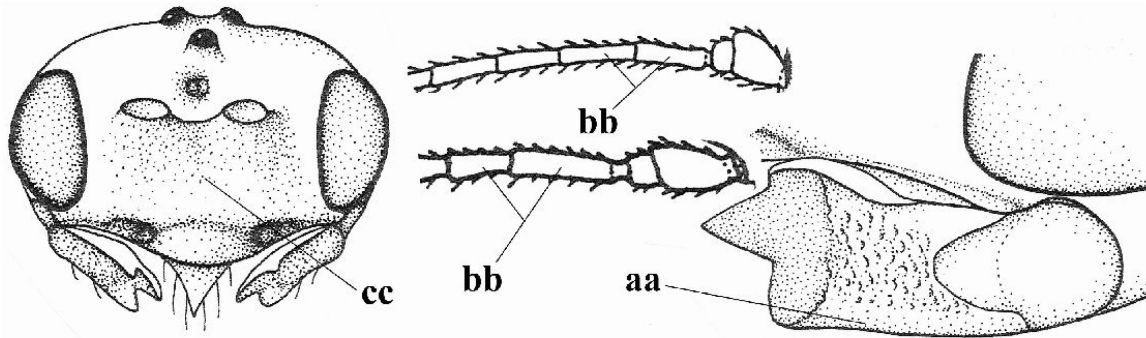
- Veins 2-1A and CU1b of fore wing present, resulting in a closed first subdiscal cell apico-posteriorly (aa); second submarginal cell of fore wing medium-sized to large (bb); vein CU1a of fore wing below level of vein 2-CU1 (cc); medio-posterior depression of mesoscutum present (dd) 2



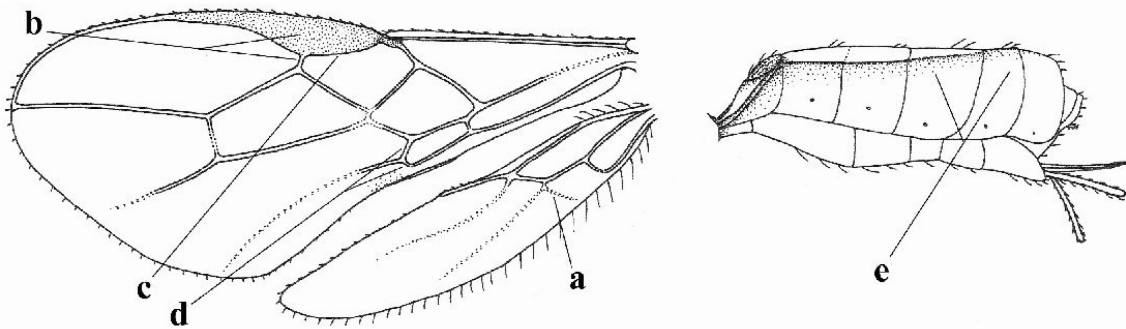
2. Mandible with small fourth protuberance ventrally (a); third antennal segment 0.9-1.1 times as long as fourth segment (b); face with longitudinal elevation medially (c); [vein m-cu of fore wing just postfurcal; = *Adelura* Foerster, 1862, not Bonaparte, 1854; *Adeluroloa* Strand, 1928; *Neocarpa* Fischer, 1966] *Adeluroloa* Strand, 1928



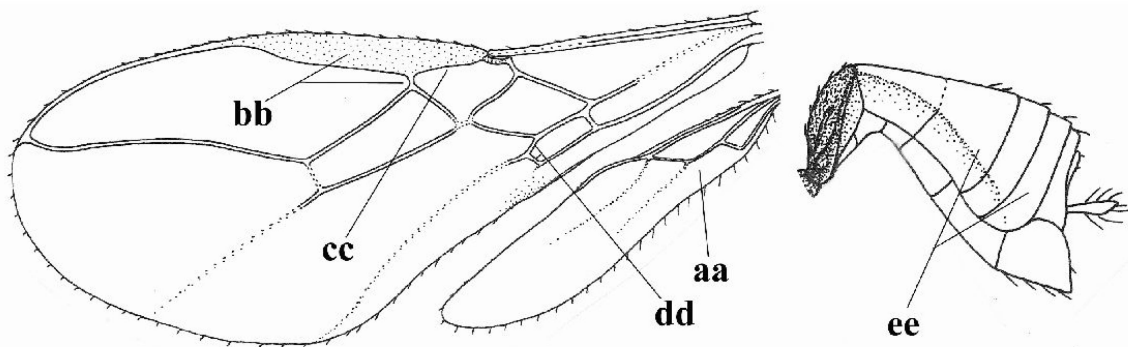
- Mandible without fourth protuberance ventrally (aa); third antennal segment 1.2-1.3 times as long as fourth segment in Palaearctic spp. (bb); face without medial elevation (cc) 3



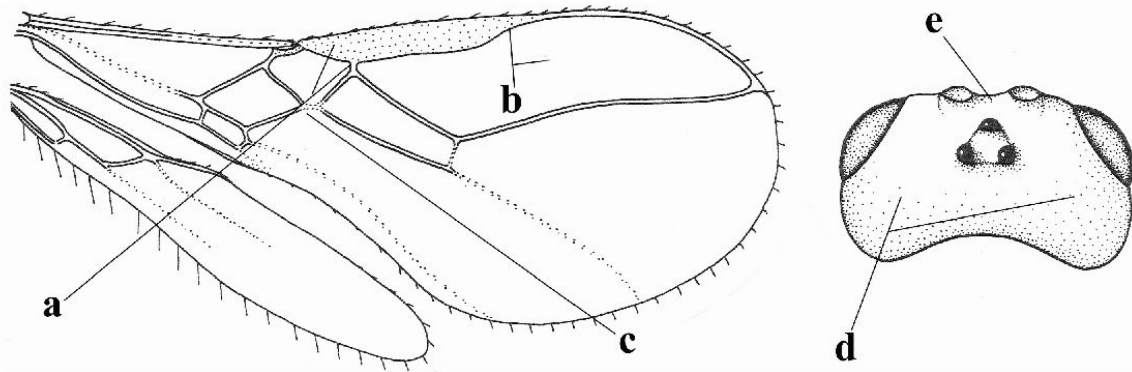
- 3. Vein m-cu of hind wing present (a); vein r of fore wing issued submedially from elliptical pterostigma (b); posterior margin of pterostigma curved (c); vein 3-CU1 of fore wing longer than vein CU1b (d); metasoma of female of type species strongly compressed (e), of male depressed; [associated with hosts in mushrooms] *Mesocrina* Foerster, 1862



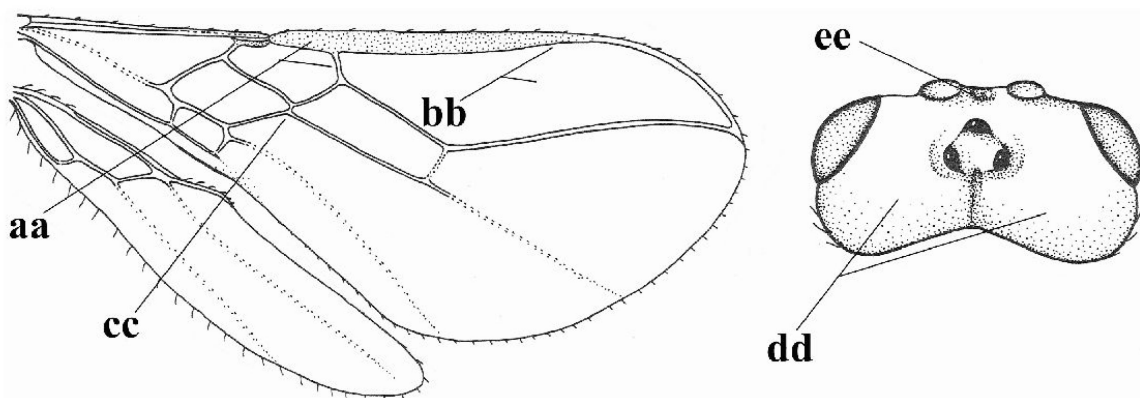
- Vein m-cu of hind wing absent (aa); vein r of fore wing issued between base and middle of pterostigma (bb); posterior margin of pterostigma straight or nearly so (cc); vein 3-CU1 of fore wing shorter than vein CU1b (dd); metasoma of female depressed (ee); [associated with leafminers] 4



4. Vein r of fore wing shorter than width of pterostigma (a) or subequal; pterostigma not reaching middle of marginal cell (b); vein m-cu of fore wing ante-furcal (c); head less transverse in dorsal view (d); frons without depression medio-anteriorly (e); [= *Paraorthostigma* Königsmann, 1972, syn. nov.]
 *Grammospila* Foerster, 1862



- Vein r of fore wing longer than width of pterostigma (aa); pterostigma reaching middle of marginal cell (bb); vein m-cu of fore wing postfurcal (cc) or subinterstitial; head distinctly transverse in dorsal view (dd); frons with depression medio-anteriorly (ee) *Dapsilarthra* Foerster, 1862



Dapsilarthra sylvia (Haliday, 1839) was listed by Čapek & Hofmann (1997) for Switzerland but the only female in MZL belongs to *Grammospila fuscula* (Griffiths, 1968) **comb. nov.** However, among the listed *D. apii* (Curtis, 1826) in MZL is a female of *Dapsilarthra sylvia* (Haliday) and the species remains on the checklist.

Dinotrema concolor (Nees, 1812), *D. distractum* (Nees, 1834) and *D. nitidulum* (Masi, 1933) are often included in the genus *Synaldis* Foerster, 1862, because of the reduced vein 2-SR. This vein is often intermediately developed and is not reliable enough to separate genera in the *Aspilota* genus group.

Dinotrema praecipuum (Marshall, 1895) is listed by Merz & Pasche (2012) for canton Genève. *D. praecipuum* is a junior synonym of *D. erythropum* Foerster, 1862. However, the only specimen in MHNG (from a female from Champel) belongs to *D. nervosum* (Haliday, 1833) and *D. erythropum* Foerster is excluded from the Swiss list.

Grammospila fuscula (Griffiths, 1968) **comb. nov.** was synonymized with *G. rufiventris* (Nees, 1814) **comb. nov.** in van Achterberg (1983), but is now considered to be a valid taxon, because of the more robust penultimate antennal segments of the female, its darker colour and the more robust second submarginal cell of the fore wing.

Idiasta nephele (Haliday, 1838). The series in MZL reported by Čapek & Hofmann (1997) belongs to *I. nephele* and not to *I. maritima* (Haliday, 1838). Therefore, the latter species has to be omitted from the Swiss checklist and *I. nephele* is added.

Phaenocarpa psalliotae Telenga, 1935, is listed by Čapek & Hofmann (1997), but the specimens in MZL belong to at least two different species not related to *P. psalliotae* and the species has to be deleted from the checklist. In addition, this species is considered to be a junior synonym of *P. pratellae* (Curtis, 1826) (**syn. nov.**).

Trachionus kotenkoi (Perepechayenko, 1997). The series reported as *Symphya mandibularis* var. *reneta* Zaykov, 1982, by Čapek & Hofmann (1997) is the real *Trachionus mandibularis* (Nees, 1816) and the series in MZL listed as *S. mandibularis* belongs to *T. kotenkoi* (Perepechayenko, 1997), which is a new record for Central Europe and Switzerland.

Brachistinae (incl. Blacini and Diospilini)

Aspicolpus helveticus (Haller, 1885) is treated as a valid species and not as a synonym of *A. carinator* (Nees, 1812). This opinion is only based on the original description because the type series from Switzerland (Bürgenstock, near Luzern) could not be traced. It differs from *A. carinator* by having the ovipositor sheath about as long as the body and much longer than the metasoma.

Aspicolpus sibiricus (Fahringer, 1934) is the valid name because *Aspicolpus borealis* (Thomson, 1892) is a junior homonym of *A. borealis* (Cresson, 1873) and thus unavailable.

Blacus macropterus Haeselbarth, 1973. When *Blacus ambulans macropterus* Haeselbarth was elevated to species rank (van Achterberg, 1988) it was indicated that *Blacus ambulans* Haliday, 1835, is restricted to Ireland and that all other specimens included in this species belong to *B. macropterus*. Therefore, *B. ambulans* has to be removed from the Swiss checklist.

Diospilus abietis (Ratzeburg, 1844) and *D. intermedia* Foerster, 1878, were formerly included in the separate genus *Baeacis* Foerster, 1878; the latter is a new synonym of *Diospilus* Haliday, 1833 (**syn. nov.**), because the shape of the clypeus is too variable in the latter genus to separate these two species in *Baeacis*.

Diospilus ovatus Marshall, 1889. According to Papp (2002) *D. ovatus* Marshall is a synonym of *D. inflexus* Reinhard, 1862, but the original description does not mention the darkened middle femur and describes the face as punctate. It is unlikely both were overlooked by Marshall, thus likely that two different species are involved; it could not be checked because the depository of the type series of *D. ovatus* is unknown. As a result *D. ovatus* is retained as valid species and *D. inflexus* is omitted from the checklist.

Eubazus rugosus (Ratzeburg, 1848) includes *E. punctatus* (Ratzeburg, 1852) (**syn. nov.**). The type of *E. punctatus* was not found in the Zoologisches Museum im Johann-Friedrich-Blumenbach-Institut für Zoologie und Anthropologie der Universität Göttingen or in the Senckenberg Deutsches Entomologisches Institut at

Müncheberg and is considered to be lost. Considering that the punctate second tergite seems to be typical for *E. rugosus* (and was mentioned in its too short description) it belongs most likely to *E. rugosus*.

Eubazus destitutus sensu Čapek & Hofmann (1997) is based on a male in MZL that belongs to *E. tibialis* (Haliday, 1835) and has to be omitted from the checklist. *E. destitutus* (Ratzeburg, 1848) is probably a junior synonym of *E. macrocephalus* Nees, 1814.

Schizoprymnus cataphractus (Šnoflák, 1953). Merz & Pasche (2012) reported *S. ambiguus* (Nees, 1816) from canton Genève, but the female from Peney in MHNG belongs to *S. cataphractus* (Šnoflák), a species new for Switzerland and *S. ambiguus* is omitted from the checklist.

Braconinae

Bracon erraticus Wesmael, 1838, includes *B. praetermissus* Marshall, 1885 (Papp, 2012).

Bracon immutator Nees, 1834, includes *B. brevisculus* Wesmael, 1838 (Papp, 2012).

Bracon osculator Nees, 1811, includes *B. coniferarum* Fahringer, 1927 (Papp, 2012).

Bracon depressiusculus Szépligeti, 1904, is the valid name of *B. rugulosus* Szépligeti, 1901, because the latter is a junior primary homonym of *B. rugulosus* Nees, 1811, and of *B. rugulosus* Say, 1836.

Bracon mauretanicus Schmiedeknecht, 1897, was reported from Switzerland by Čapek & Hofmann (1997), but it is a synonym of *B. illyricus* Marshall, 1888, according to Papp (1997) who examined the types of both species. *B. uromelas* Costa, 1888, is another synonym of *B. illyricus* Marshall and there is some uncertainty about their date of publication; most likely both were in April 1888. Only for *B. illyricus* Marshall is there a precise date (April 1st) and it is best to follow the decision of Dr. J. Papp who considers *B. illyricus* to be the oldest name. *Bracon illyricus* is a conspicuous species with long black bristly setae on the scapus in dorsal view, the wings are dark brown, the smooth metasoma is orange brown and contrasting with the black mesosoma and the setose part of the ovipositor sheath is 0.7–0.9 times as long as the hind tibia.

Coeloides melanostigma Strand, 1918, is the valid name for *C. sordidator* auctt. (Haeselbarth 1967).

Coeloides strobilorum (Ratzeburg, 1848) belongs to the genus *Bracon* Fabricius (Papp 1992) and is included there.

Habrobracon brevicornis (Wesmael, 1838), *H. genuensis* (Marshall, 1897), *H. hebetor* (Say, 1836), and *H. stabilis* (Wesmael, 1838), are also included in the genus *Bracon* Fabricius, 1804, and in the subgenus *Habrobracon* Ashmead, 1895. *Habrobracon brevicornis* is often considered to be a junior synonym of *H. hebetor*, but they are probably two separate species (van Achterberg & Walker 1998).

Iphiaulax mactator (Klug, 1817). A female from «Grono» [= Graubünden] in NMBE under *Iphiaulax impostor* (Scopoli) belongs to *Iphiaulax mactator* (Klug), a species new for Switzerland.

Pseudovipio gracilis Szépligeti, 1901. This species was described in the genus *Pseudovipio* Szépligeti, 1896, and it fits better there than in the traditionally used genus *Glyptomorpha* Holmgren, 1868.

Cheloninae

Adelius clandestinus (Foerster, 1851). Ferrière (1928) listed *A. erythronotus* (Foerster, 1851) from a *Nepticula* sp. (probably *Stigmella pyri* (Glitz)) on pear (*Pyrus communis* L.). The reared specimens in MHNG were examined and proved to belong to *A. clandestinus*. The latter is a new species for the Swiss fauna and *A. erythronotus* has to be deleted from the checklist.

Microchelonus Szépligeti, 1908, is often treated as a valid genus because its reviser, the late Prof. V.I. Tobias (Tobias, 2010) preferred a generic status. Unfortunately, there is no clear separation possible between the included West Palaearctic species of *Microchelonus* and the rest of the genus *Chelonus* Panzer, 1806 (van Achterberg & Walker 1998) and, therefore, it is considered to be a synonym of *Chelonus* Panzer. Until more is known about the phylogeny of the genus *Chelonus* it could be used as subgenus for convenience. As a result, *M. bidentulus* Tobias & Lukás, 1997, became a secondary homonym of *C. bidentulus* Thomson, 1874, and was renamed *C. lukasi* van Achterberg, 2004 (van Achterberg 2004).

Phanerotoma planifrons auctt. (not Nees, 1816) is usually *P. rufescens* (Latreille, 1809) (van Achterberg 1990); in NMBE is a female of this species new for the Swiss fauna («Wallis, Wullschlegel»). The male (MHNG) reported as *P. planifrons* by Merz & Pasche (2012) belongs to *P. dentata* and their *P. dentata* is a male of a species near *P. bouceki* van Achterberg, 1990.

Doryctinae

Doryctes obliteratus (Nees, 1834) and *D. striatellus* (Nees, 1834). The latter is considered to be different from *D. obliteratus* and is the species traditionally named *D. mutillator* (after *Ichneumon mutillator* Thunberg, 1822, which is an invalid emendation of *Ichneumon mutillarius* Fabricius, 1775; see Horstmann 1999). *Doryctes striatellus* has the setae of the hind tibia erect in dorsal view and these setae are adpressed in *D. obliteratus*. *Doryctes strigatus* Kokujev, 1900, *D. rex* Marshall, 1897 (lectotype examined) and *D. striatelloides* Strand, 1918, are included in *D. obliteratus* and this species is considered to be a separate species. *Doryctes striatelloides* Strand has vein 3-SR of the fore wing about twice as long as vein r-m (normally 1.5–1.7 times in *D. obliteratus*), but the shape of the second submarginal cell is too variable to use it for species separation.

Doryctes pomarius Reinhard, 1865. The only specimen (a male from Mayens-de-Sion in MZL) reported by Čapek & Hofmann (1997) belongs to *D. leucogaster* (Nees, 1834).

Doryctodes Hellén, 1927. Usually treated as a full synonym of the genus *Ontsira* Cameron, 1906, but according to the molecular analysis of Zaldivar-Riverón et al. (2008) *Ontsira* is not monophyletic; the *Doryctodes* genus group is sister to *Doryctes* s.s. Therefore, both species occurring in Switzerland (*D. antica* (Wollaston, 1858) and *D. imperator* (Haliday, 1836)) are transferred to the genus *Doryctodes* Hellén. The genera can be separated as follows:

1. Antescutal depression present; pronotum with antero-dorsal swellings (= collar); occipital carina reduced near hypostomal carina; mesoscutum usually gradually merging anteriorly in slightly lower situated pronotum *Doryctes* Haliday, 1836

- Antescutal depression absent; pronotum without antero-dorsal swellings; occipital carina distinctly developed near hypostomal carina; mesoscutum steep anteriorly and distinctly elevated above level of pronotum 2
- 2. Vein cu-a of fore wing subinterstitial; vein 2-M of fore wing more or less curved; precoxal sulcus wide and smooth; vein cu-a of hind wing distinctly shorter than vein 1-M; New World *Ontsira* Cameron, 1906
- Vein cu-a of fore wing distinctly postfurcal; vein 2-M of fore wing straight; precoxal sulcus comparatively narrow and more or less finely crenulate; vein cu-a of hind wing about as long as vein 1-M or distinctly shorter; Old World (including Australian Region) *Doryctodes* Hellén, 1927

Spathius melanophilae Fischer, 1966. One female from La Sarraz (MZL) was reported by Čapek & Hofmann (1997) as *S. melanophilae*, a species now considered to be a synonym of *S. polonicus* Niezabitowski, 1910, but it belongs to a species of the *S. brevicaudis* group with rugose pronotal sides. Therefore, *S. polonicus* has to be deleted from the checklist.

Spathius umbratus (Fabricius, 1798). The lectotype of *S. umbratus* from Germany and designated by Hedqvist (1976) was examined. To this species belong *Spathius erythrocephalus* Wesmael, 1838 (type series examined, **syn. nov.**), *S. curvicaudis* Ratzeburg, 1844 (type series presumably lost; **syn. nov.**) and *S. radzayanus* Ratzeburg, 1848 (type series presumably lost; **syn. nov.**). *Spathius erythrocephalus* sensu Čapek & Hoffman (1997) belongs to *S. brevicaudis* Ratzeburg, 1848, and the specimens of *S. radzayanus* identified by Čapek & Hofmann (1997) belong to *S. rubidus* (Rossi, 1794). The ovipositor is often somewhat up-curved («curvicaudis») but this is highly variable and reflects the folding of the ovipositor during the pupal stage. It also varies within reared series and the degree obviously depends on space available during enclosure. The interpretation of *S. radzayanus* by Belokobylskij & Maetô (2009) disagrees with the original diagnosis by having the ovipositor sheath as 0.4–0.5 times as long as fore wing and thus distinctly shorter than the metasoma (according to original description ovipositor somewhat shorter than metasoma), palpi yellow (dark brown), head reddish-brown (blackish, only brownish near mouthparts), second metasomal tergite striate («punctate» = granulate) and legs yellowish-brown or light brown (largely darkened).

Euphorinae (including *Meteorini*)

Centistes nasutus (Wesmael, 1838). Reported by Merz & Pasche (2012) as *Ancylocentrus saxo* (Reinhard, 1862), which is a synonym of *C. nasutus* (Wesmael). A male from Peney belonging to this species is present in MHNG.

Meteorini or **Meteorinae**. The tribe Meteorini (including the genera *Meteorus* Haliday, 1835 and *Zele* Curtis, 1832) of the subfamily Euphorinae (e.g. Stigenberg & Ronquist 2011 and Stigenberg & Boring 2013) is also treated as a separate subfamily Meteorinae (e.g. by Stigenberg & Shaw 2013). Because of a lack of clear morphological differences the Meteorini are included as a tribe in the subfamily Euphorinae.

Meteorus ruficeps (Nees, 1834) includes *M. pallipes* (Wesmael, 1835) (Papp 1983) and *M. ruficeps* should be used because it is the oldest available name (Stigenberg & Ronquist 2011).

Microctonus Wesmael, 1835, is recognised as a valid genus. Van Achterberg *et al.* (2000) included *Microctonus* provisionally as subgenus in the genus *Perilitus* Nees, 1819, and it was synonymised with *Perilitus* by Haeselbarth (2008). Recent molecular research showed that *Microctonus* is a group distinctly separated from *Perilitus* s.s. (Stigenberg & Boring 2013) and, therefore, *Microctonus* is restored as a separate genus. The same applies to the genera *Peristenus* Foerster, 1862 (following van Achterberg & Guerrero (2003)) and *Leiophron* Nees, 1819. The latter is used sensu stricto and as a result *Euphorus basalis* (Curtis, 1833) = *E. similis* (Curtis, 1833) **syn. nov.**; types examined), *E. duploclaviventris* Shenefelt, 1969, and *E. pallidistigma* Curtis, 1833, are included in the genus *Euphorus* Nees, 1834.

Pygostolus otiorhynchi (Boudier, 1834). According to Belokobylskij (2000) in the East Palaearctic *Pygostolus otiorhynchi* (Boudier, 1834) merges into *P. falcatus* (Nees, 1834) since the differentiating characters do not hold there. In my opinion this is not a proof that in Europe a number of populations represent a form instead of a separate species. In Europe it is possible to separate both species without too many problems and there seem to be ecological differences involved as well (van Achterberg 1992). Until we know more about the biology of the groups concerned (the differences may be related to *P. otiorhynchi* developing in larger hosts) and differences in DNA sequences it seems best to recognise both as valid species in the regions where recognition is not problematic.

Exothecinae

The genera *Xenarcha* Foerster, 1862, and *Shawiana* van Achterberg, 1983, are sometimes included in the genus *Colastes* s.l. (Belokobylskij, 1998). These genera can be separated as follows:

1. Pronope large, deep and round or wide elliptical 2
- Pronope absent or as transverse groove, rarely as small, shallow and elliptical depression; [clypeus distinctly differentiated from face and convex; ovipositor sheath usually distinctly longer than first tergite] *Colastes* Haliday, 1833
2. Posterior half of metanotum convex or flattened; notauli obsolescent or absent on posterior half of mesoscutum; clypeus distinctly convex; face at most laterally granulate; margin of pterostigma baso-posteriorly straight or nearly so ...
..... *Shawiana* van Achterberg, 1983
- Posterior half of metanotum keeled; notauli more or less impressed on posterior half of mesoscutum; if notauli reduced and posterior keel of metanotum obsolescent then clypeus flat and entire face granulate; margin of pterostigma baso-posteriorly curved *Xenarcha* Foerster, 1862

Xenarcha abnormis (Wesmael, 1838). The specimens listed as *Xenarcha abnormis* by Čapek & Hofmann (1997) belong to three species: 1. *Colastes affinis* (Wesmael, 1838) (this species includes *Colastes flavitarsis* (Thomson, 1892) **syn. nov.**; its lectotype has been examined); 2. *C. gracilis* Papp, 1975 (new for Switzerland); 3. *Shawiana catenator* (Haliday, 1836) (new for Switzerland). As a result *X. abnormis* has to be deleted from the checklist.

Xenarcha laticarpus (Thomson, 1892). The male specimen listed as *Xenarcha laticarpus* by Čapek & Hofmann (1997) belongs to *Colastes affinis* (Wesmael, 1838)

and *X. laticarpus* has to be deleted from the checklist. *Colastes affinis* is new for the fauna of Switzerland.

Shawiana lissogaster (Tobias, 1986). Both specimens listed under *Shawiana laevis* by Čapek & Hofmann (1997) belong to *S. lissogaster* (Tobias). The synonymy of this species with *S. laevis* (Thomson, 1892) by Belokobylskij (1998) is unjustified; the examined holotype of *S. lissogaster* has the pronope in the vertical posterior part of the pronotum (in *S. laevis* submedially in the horizontal part of the pronotum) and the propodeum is smooth medially (with longitudinal carina and partly crenulate-rugose). As a result *S. laevis* has to be removed from the checklist and replaced by *S. lissogaster* (Tobias), a species new for the Swiss fauna.

Helconinae

Helconidea armator (Marshall, 1898) re-instated. Up to now only the male holotype was known and it was synonymised as a pale specimen of *H. dentator* (Fabricius, 1804) by van Achterberg (1987). In MHNG is a female from Switzerland («Wallis, Lötschental, 2.vii.[19]18, Ferrière», and identified as *Helcon ruspator*), similar to the holotype. It has the hind tibia yellowish-brown, the hind tarsus ivory and the clypeus distinctly convex. In *H. dentator* the hind tibia and tarsus are entirely or largely infusate or dark brown and the clypeus is flattened. Therefore, *H. armator* (Marshall) is restored as a valid taxon. Up to now this species is only known from Switzerland and Poland.

Microgastrinae

Dolichogenidea Viereck, 1911. The number of genera of Microgastrinae recognised is still a matter of debate since the revision of Mason (1981). Outside the Palaearctic region in general Mason's system is followed with the inclusion of some new genera (e.g. Austin & Dangerfield 1992; Fernández-Triana 2010, 2014; Fernández-Triana *et al.* 2014) because there are less problems with recognition of the limits of the genera. Especially in the Palaearctic Region the morphological recognition of several genera is more problematic. For example, *Dolichogenidea* Viereck, 1911, vs *Apanteles* Foerster, 1862; both containing a large number of species (Papp 1988), there are no distinct biological differences (Mason 1981; van Achterberg 2002) and the morphological difference is minimal (a more or less partial reduction of the setae of the fringe of the vannal lobe of the hind wing in *Apanteles* sensu stricto). The recognition of *Dolichogenidea* as a genus and not as species group (e.g. Nixon 1972) or subgenus (Yu *et al.* 2013; van Achterberg 2013) seems a matter of convenience. It concerns large groups and it is more convenient to split large entities in smaller ones (the same problem occurs in the huge genus *Bracon* Fabricius, 1804). For the Swiss checklist we follow Taxapad (Yu *et al.* 2013) and indirectly also Fauna Europaea (van Achterberg 2013) by using an intermediate generic concept. When there are biological differences (e.g. *Cotesia* vs. *Apanteles* s.l.) as well as distinct morphological differences a species group is treated as a genus. The genera *Choeras* Mason, 1981, *Pholetesor* Mason, 1981, *Dolichogenidea*, *Exoryza* Mason, 1981, *Iconella* Mason, 1981, and *Illidops* Mason, 1981, as defined in Mason (1981) are used as subgenera of *Apanteles* sensu lato and the genera *Sathon* Mason, 1981, *Venanides* Mason, 1981, *Rasivalva* Mason, 1981, and *Distatrix* Mason, 1981, are used as subgenera of *Protapanteles* Ashmead, 1898, sensu lato.

Apanteles bicolor (Nees, 1834), *A. circumscriptus* (Nees, 1834), *A. laetus* (Marshall, 1885), *A. nanus* (Reinhard, 1880) and *A. viminetorum* (Wesmael, 1837) are frequently included in the genus *Pholetesor* Mason.

Diolcogaster rugosicoxa (Papp, 1959). I agree with Papp (1999, 2005) that this species fits better in *Diolcogaster* Ashmead, 1900, than in *Microgaster* Latreille, 1804. By accident, Papp (2005) listed this species a second time under *Microgaster* Latreille.

Microgaster contextus Labram & Imhoff, 1836. According to the figure and the biology (Labram & Imhoff 1836), it is clearly a species of *Cotesia* and most likely, considering the colour of the legs, it concerns *Cotesia ruficrus* (Haliday, 1834) **syn. nov.**

Apanteles murinanae Čapek & Zwölfer, 1957, is sometimes considered to be a junior synonym of the Nearctic *Apanteles petrovae* Walley, 1937, but according to Čapek (1989) both species are sufficiently different to treat them as separate species.

Cotesia sericea (Nees, 1834) includes *Cotesia praepotens* auctt. not (Haliday, 1834).

Microgaster rufipes Nees, 1834 = *M. globata* auctt., not (Linnaeus, 1758). *Ichneumon globatus* Linnaeus, 1758 has been for long a problematic species and was mostly associated with the genus *Microgaster* Latreille, 1804. This is contradicted by the biological data supplied in the original description and the specimens in the Linnean Society (<http://linnean-online.org/16250/>). They may be from the original Linnean collection and are labelled (by Linnaeus?) as «globatus?». It concerns specimens of a gregarious species with yellow hind coxae on a white cocoon-mass, probably belonging to the genus *Protapanteles* Ashmead, 1900. This disagrees with Linnaeus' (1761) statement that the host is *Papilio brassicae* and therewith implying that this species is *Cotesia glomerata* (Linnaeus, 1758), the common gregarious parasitoid of the cabbage white (*Pieris brassicae* (Linnaeus, 1758)). The oldest available name for *Ichneumon globatus* auctt. is *Microgaster rufipes* Nees, 1834.

Apanteles appellator Telenga, 1949, includes *A. litae* Nixon, 1972, as a junior synonym (Tobias, 1986; Shaw, 2012).

Apanteles bicolor (Nees, 1834) includes *A. pedias* Nixon, 1973 (Whitfield 2006).

Cotesia perspicua (Nees, 1834) includes *C. ofella* (Nixon, 1974) (Papp 1988).

Cotesia sericea (Nees, 1834). The oldest available name for *Cotesia praepotens* auctt. before 1997 is *C. sericea*.

Microgaster deprimator auctt. (not *Microplitis deprimator* (Fabricius, 1798)) was listed by Čapek & Hofmann (1997) and the series belongs to *Microgaster australis* Thomson, 1895. *Microplitis deprimator* is a synonym of *M. sordipes* (Nees, 1834); see Papp (1984) and van Achterberg (1997).

Protapanteles majalis (Wesmael, 1837) includes *P. callidus* auctt. (not Haliday, 1834) (van Achterberg 1997).

Opiinae

Opius Wesmael, 1835. The traditional genus *Opius* has been divided into several genera (not homologous with subgenera sensu Fischer 1972) which is based mainly on unpublished research (but see Li *et al.* 2013). For the Swiss checklist the following genera are involved: *Apodesmia* Foerster, 1862, *Atormus* van Achterberg, 1997,

Bitomoides van Achterberg, 2004, *Phaedrotoma* Foerster, 1862, *Psytalia* Walker, 1860, *Rhogadopsis* Brèthes, 1913, *Utetes* Foerster, 1862, and *Xynobius* Foerster, 1862. *Biosteres* sensu Fischer (1972) is subdivided into *Biosteres* Foerster, 1862, and *Chilotrichia* Foerster, 1862.

Apodesmia diabolica (Fischer, 1961). According to Fischer (1986), *Opius diabolicus* is a subspecies of *Phaedrotoma tuberculifer* (Fischer, 1958), but the holotype differs by the position of the occipital carina ventrally and belongs to another genus, *Apodesmia* Foerster, and is maintained as a valid species.

Apodesmia striatula (Fischer, 1957) includes *Opius nodifer* Fischer, 1959 (**syn. nov.**). The holotype of *O. nodifer* has been examined and falls within the variation encountered in *A. striatula*.

Bathystomus xanthopus Foerster, 1862, includes *Compressaria pugnatrix* (Marshall, 1895) (**syn. nov.**). This synonymy was suspected by Wharton (1993) when he synonymised *Compressaria* with *Bathystomus*; the holotype of *C. pugnatrix* has been examined and is doubtlessly a synonym of *B. xanthopus*. Often included in the genus *Diachasma* Foerster, 1862 (Yu *et al.* 2013), but it fits better in the original genus *Bathystomus* Foerster, 1862. The latter genus differs by having the precoxal sulcus largely absent, the metanotum with a median carina posteriorly, the second metasomal tergite smooth, the occiput punctate medially, the notauli reduced posteriorly and the second and third tergites of the female strongly to moderately compressed,

Biosteres carbonarius (Nees, 1834) includes *Opius onzi* Fischer, 1959 (**syn. nov.**). The holotype of *O. onzi* has been examined and proved to be a normal *B. carbonarius*.

Bitomoides rugosus (Wesmael, 1838) includes *Opius rugiventris* Thomson, 1895 (**syn. nov.**). The lectotype of *O. rugiventris* has been examined and falls within the sculptural variation encountered in *B. rugosus*.

Opius ambiguus Wesmael, 1835, includes *Opius celsus* Haliday, 1837 (**syn. nov.**). The lectotype of *O. celsus* proved to be conspecific with *O. ambiguus* despite that it has the mandible less widened basally than normally for this species.

Opius brevivalpis Thomson, 1895 (not Fischer, 1972) includes *Opius gyoerfii* Fischer, 1958 (**syn. nov.**). The type-material of *O. brevivalpis* includes one specimen belonging to the genus *Opius* and two specimens belonging to the genus *Biosteres* on the same pin. Because the specimen belonging to the genus *Opius* fits best the description given by Thomson (1895) this specimen is considered to be the holotype. The holotype of *O. gyoerfii* turned out to be conspecific and therefore, *O. gyoerfii* is regarded to be a junior synonym of *O. brevivalpis*. The female listed by Capek & Hofmann (1997) under *O. brevivalpis* belongs to *Biosteres xanthippe* (Fischer, 1959).

Opius funebris Wesmael, 1835. This species is considered to be a valid species and not a synonym of *Opius pygmaeator* (Nees, 1811). *Opius pygmaeator* sensu Fischer 1972, is the same as *O. longicornis* Thomson, 1895.

Opius nigricoloratus Fischer, 1958, includes *Opius dureseai* Fischer, 1975 (**syn. nov.**). In the original description of *O. dureseai*, Fischer mentioned that it can be distinguished from *O. nigricoloratus* by its leg colour and the length of the ovipositor. He states that the legs of *O. nigricoloratus* are completely yellow. However, the legs of the holotype of *O. nigricoloratus* are largely blackish. Since the holotype of *O. nigricoloratus* is a male, the relative length of the ovipositor sheath

is unknown of *O. nigricoloratus*. The later associated female of *O. nigricoloratus* by Fischer with which he compared the holotype of *O. dureseai* in the original description of this latter species, seems not to belong to *O. nigricoloratus* judging on the colour of the legs. I consider the largely hidden ovipositor sheath (as shown by the type series of *O. dureseai* Fischer) typical for this species.

Phaedrotoma pulchriceps (Szépligeti, 1898) includes *Phaedrotoma pulchriventris* (Fischer, 1958) (**syn. nov.**). The colour of the head is highly variable, which caused confusion and resulted in several species descriptions, one of these is *Opius pulchriventris*.

Rhogadopsis reconditor (Wesmael, 1835) includes *Opius docilis* Haliday, 1837 (**syn. nov.**). The holotype of *O. docilis* has been examined and proved to belong to *R. reconditor*.

Utetes ferrugator (Goureau, 1862) includes *Opius magnus* Fischer, 1958 (**syn. nov.**). The type series of *A. ferrugator* is lost, but it was reared from the same host (*Rhagoletis meigenii* (Loew) on *Berberis* spp.) as *O. magnus* and the description fits fairly well.

Orgilinae

Orgilus obscurator (Nees, 1812) is included, but *Orgilus obscurator* auctt. is largely *O. leptocephalus* (Hartig, 1838) (Taeger 1989).

Rogadinae

Clinocentrus gracilipes Thomson, 1891 (= *C. cunctator* (Haliday, 1836)). The only specimen listed by Čapek & Hofmann (1997) belongs to *C. exsertor* (Nees, 1812) and *C. cunctator* has to be omitted from the checklist.

Clinocentrus umbratilis Haliday, 1833. The specimens listed by Čapek & Hofmann (1997) belong to *C. exsertor* (Nees, 1812), except the female from Ferreyres (MZL) which is correctly identified.

Rogas tricolor (Wesmael, 1838). Under this name (now known as *Triraphis tricolor* (Wesmael, 1838)), two specimens of *Aleiodes praetor* (Reinhard, 1863) are listed by Čapek & Hofmann (1997). Therefore, *T. tricolor* has to be deleted from the checklist.

Aleiodes cantherius (Lyle, 1919). The male specimen listed by Čapek & Hofmann (1997) under this species belongs to *A. gastritor* (Thunberg, 1822). Therefore, *A. cantherius* has to be deleted from the checklist.

Aleiodes circumscriptus (Nees, 1834). The long series listed by Čapek & Hofmann (1997) under this name consists of two species: *A. similis* (Curtis, 1834) and *A. pictus* (Herrich-Schäffer, 1838).

Aleiodes diversus (Szépligeti, 1903) has been considered to be a synonym of *A. dissector* (Nees, 1834), but examination of the type showed that it is a valid species and *A. diversus* (Szépligeti, 1903) is re-instated.

Aleiodes heterogaster Wesmael, 1838. The specimens listed by Čapek & Hofmann (1997) under this species (valid name: *A. albitibia* (Herrich-Schäffer, 1838)) belong to *A. nigricornis* Wesmael, 1838.

Aleiodes modestus (Reinhard, 1863). The specimens listed by Čapek & Hofmann (1997) under this species belong to *A. albitibia* (Herrich-Schäffer, 1838), *A. bicolor* (Spinola, 1808) and *A. gastritor* (Thunberg, 1822) (the latter is a female from Auvernier with a dark brown hypopygium).

Aleiodes nigricornis Wesmael, 1838. The specimens listed by Čapek & Hofmann (1997) under this species belong to *A. coxalis* (Spinola, 1808).

Aleiodes rossicus (Kokujev, 1898). The female specimen listed by Čapek & Hofmann (1997) under this species belongs to *A. similis* (Curtis, 1834).

Aleiodes sanctihyacinthi (Provancher, 1880) is a doubtful record of this Nearctic species. It was introduced in Serbia against *Hyphantria cunea* (Drury, 1773) (Arctiidae), but was never recovered from this host in Europe. The report from Switzerland by Papp (1991) needs reconfirmation.

Aleiodes similis (Curtis, 1834) and the *A. grastritor* aggregate include most of the *Aleiodes testaceus* auctt.

Aleiodes testaceus (Telenga, 1941), not *Aleiodes testaceus* auctt., was described in the genus *Heterogamus* because of its similar venation, but the shape of the hind leg and metasoma, as well as unpublished COI data, indicate that this species belongs to the genus *Aleiodes* Wesmael.

Petalodes compressor (Herrich-Schäffer, 1838) is included in the genus *Aleiodes* Wesmael, 1838, as was done already by van Achterberg (1991) and Chen & He (1997). Both DNA data (Quicke *et al.* 2006) and morphological analyses (Fortier & Shaw 1999) indicate that the genus *Petalodes* Wesmael is a synonym of *Aleiodes*.

Aleiodes ruficornis (Herrich-Schäffer, 1838) includes *A. dimidiatus* auctt. and *A. gasterator* auctt. p.p.

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REFERENCES

- Achterberg, C. van, 1983. Revisionary notes on the genera *Dapsilarthra* auct. and *Mesocrina* Foerster (Hymenoptera, Braconidae, Alysiinae). — Tijdschrift voor Entomologie 126: 1–24.
- Achterberg, C. van, 1987. Revision of the European Helconini (Hymenoptera, Braconidae: Helconinae). — Zoologische Mededelingen, Leiden 61: 263–285.
- Achterberg, C. van, 1988. Revision of the subfamily Blacinae Foerster (Hymenoptera, Braconidae). — Zoologische Verhandelingen, Leiden 249: 1–324.
- Achterberg, C. van, 1990. Revision of the western Palaearctic Phanerotomini (Hymenoptera: Braconidae). — Zoologische Verhandelingen, Leiden 255: 1–106.
- Achterberg, C. van, 1991. Revision of the genera of the Afrotropical and W. Palaearctic Rogadinae Foerster (Hymenoptera: Braconidae). — Zoologische Verhandelingen, Leiden 273: 1–102.
- Achterberg, C. van, 1992. Revision of the European species of the genus *Pygostolus* Haliday (Hymenoptera: Braconidae: Euphorinae), with a key to the Holarctic species. — Zoologische Mededelingen, Leiden 66 (24): 349–358.
- Achterberg, C. van, 1997. Revision of the Haliday collection of Braconidae (Hymenoptera). — Zoologische Verhandelingen, Leiden 314: 1–115.
- Achterberg, C. van, 2002. Western Palaearctic genera of the subfamily Microgastrinae: A re-appraisal of the generic and tribal division (Hymenoptera: Braconidae): 19–35. In: Melika, G. & Thuróczy, C. (eds). Parasitic wasps: Evolution, systematics, biodiversity and biological control: 1–480. — Agroinform. Budapest.
- Achterberg, C. van, 2004. *Bitomoides* gen. nov. (Hymenoptera: Braconidae: Opiinae) from Europe. — Zoologische Mededelingen Leiden 78(21): 331–335. Achterberg, C. van & Guerrero, E.R., 2003. Two new species of the genus *Peristenus* Foerster (Hymenoptera: Braconidae: Euphorinae) from the Canary Islands. — Zoologische Mededelingen Leiden 77(3): 79–86.
- Achterberg, C. van, 2013. Braconidae. In: Jong, Y.S.D.M. de (ed.). Fauna Europaea version 2.6. — Web Service available online at <http://www.faunaeur.org>.

- Achterberg, C. van & Long, K.D. 2010. Revision of the Agathidinae (Hymenoptera, Braconidae) of Vietnam, with the description of forty-two new species and three new genera. — *ZooKeys* 54: 1–184.
- Achterberg, C. van & Walker, A.K. 1998. 17. Braconidae: 137–185. *In*: Polaszek, A. (ed.). *African Cereal Stem Borers. Economic importance, taxonomy, natural enemies and control*: 1–530. — CAB International. Wallingford.
- Achterberg, C. van, Kenis, M. & Sileshi, G. 2000. *Perilitus (Microctonus) larvicida* spec. nov. (Hymenoptera: Braconidae: Euphorinae) from Zambia. — *Zoologische Mededelingen Leiden* 74(3): 57–62.
- Austin, A.D. & Dangerfield, P.C. 1992. Synopsis of Australasian Microgastrinae (Hymenoptera: Braconidae), with a key to genera and description of new taxa. — *Invertebrate Taxonomy* 6 (1): 1–76.
- Belokobylskij, S.A. 1998. 1. Rhyssalinae, 2. Doryctinae, 3. Histeromerinae, 4. Exothecinae, pp. 41–162. *In*: Ler, P.A. (ed.). *Key to the insects of Russian Far East, 4. Neuropteroidea, Mecoptera, Hymenoptera* 3: 1–706. — *Dal'nauka, Vladivostok*.
- Belokobylskij, S.A. 2000. Euphorinae. *In*: Ler, P.A. (ed.). *Key to the insects of Russian Far East. 4. Neuropteroidea, Mecoptera, Hymenoptera*. 4: 192–339. — *Opredelitel nasekomykh Dalnego Vostoka Rossii* 4: 1–651.
- Belokobylskij, S.A. & Maetô, K. 2009. Doryctinae (Hymenoptera: Braconidae) of Japan, 1: 1–806. — *Natura optima dux Foundation, Warszawa*.
- Čapek, M. 1989. The identity of *Apanteles dioryctriae* Wilk. and *A. murinanae* Čap. & Zwölf. (Hym.: Braconidae). — *Lesnictvi (Prague)* 35 (LXII): 995–1001.
- Čapek, M. & Hofmann, C. 1997. The Braconidae (Hymenoptera) in the collections of the Musée cantonal de Zoologie, Lausanne. — *Litterae Zoologicae (Lausanne)* 2: 25–162.
- Chen, X.X. & He, J.H. 1997. Revision of the subfamily Rogadinae (Hymenoptera: Braconidae) from China. — *Zoologische Verhandelingen, Leiden* 308: 1–187.
- Fernández-Triana, J.L. 2010. Eight new species and an annotated checklist of Microgastrinae (Hymenoptera, Braconidae) from Canada and Alaska. — *ZooKeys* 63: 1–53. doi: 10.3897/zookeys.63.565.
- Fernández-Triana, J.L. 2014. Towards the conservation of parasitoid wasp species in Canada: Preliminary assessment of Microgastrinae (Hymenoptera: Braconidae). — *Biodiversity Data Journal* 2: 1–33; e1067. doi: 10.3897/BDJ.2.e1067.
- Fernández-Triana, J.L., Whitfield, J.B., Rodriguez, J.J., Smith, M.A., Janzen, D.H., Hallwachs, W., Hajibabaei, M., Burns, J.M., Solis, M.A., Brown, J., Cardinal, S., Goulet, H. & Hebert, P.D.N. 2014. Review of *Apanteles* sensu stricto (Hymenoptera, Braconidae, Microgastrinae) from Area de Conservación Guanacaste, northwestern Costa Rica, with keys to all described species from Mesoamerica. — *ZooKeys* 383: 1–565. doi: 10.3897/zookeys.383.6418.
- Ferrière, C. 1928. Braconides de la Suisse. — *Mitteilungen der Schweizerischen Entomologischen Gesellschaft* 14(1): 5–14.
- Fischer, M. 1972. Hymenoptera Braconidae (Opiinae I). (Paläarktische Region). — *Das Tierreich* 91 (1973): 1–620.
- Fischer, M. 1993. Neubeschreibungen und Wiederbeschreibungen von Kieferwespen (Hym., Braconidae, Alysini: Tribus Alysini) der Alten Welt. — *Linzer Biologische Beiträge* 25(2): 593–647.
- Fischer, M. 1999. Einiges über Kieferwespen (Hymenoptera, Braconidae, Alysini). — *Linzer Biologische Beiträge* 31(1): 5–56.
- Fortier, J.C. & Shaw, S.R. 1999. Cladistics of the *Aleiodes* lineage of the subfamily Rogadinae (Hymenoptera: Braconidae). — *Journal of Hymenoptera Research* 8(2): 204–237.
- Griffiths, G.C.D. 1964. The Alysini (Hym. Braconidae) parasites of the Agromyzidae (Diptera) I. General questions of taxonomy, biology and evolution. — *Beiträge zur Entomologie* 14(7–8): 823–914.
- Haeselbarth, E. 1967. Zur Kenntnis der paläarktischen Arten der Gattung *Coeloides* Wesm. (Hymenoptera, Braconidae). — *Mitteilungen der Münchner Entomologischen Gesellschaft* 57: 20–53.
- Haeselbarth, E. 2008. Zur Braconiden-Gattung *Perilitus* Nees 1818. 3. Beitrag: die Arten ohne ausgebildetem ersten Cubitus-Abschnitt (Hymenoptera, Braconidae). — *Linzer Biologische Beiträge* 40(2): 1013–1152.
- Hedqvist, K.J. 1976. New species of *Spathius* Nees, 1818 and a key to the species of Europe and Canary Islands (Hym. Ichneumonoidea, Braconidae). — *Eos* 51(1975): 51–63.
- Horstmann, K. 1999. Zur Interpretation der von Thunberg in der Gattung *Ichneumon* Linnaeus beschriebenen oder benannten Arten (Hymenoptera). — *Zeitschrift der Arbeitsgemeinschaft Österreichischer Entomologen* 51: 65–74.

- Königsmann, E. 1959. Revision der paläarktischen Arten der Gattung *Mesocrina*. 2. Beitrag zur systematischen Bearbeitung der Alysiniinae (Hymenoptera: Braconidae). — Beiträge zur Entomologie 9: 609–619.
- Labram, J.D. & Imhoff, L. 1836. Insekten der Schweiz, die vorzüglichsten Gattungen je durch eine Art bildlich dargestellt. Vol. 1: Pl. 25.
- Li, X.-Y., Achterberg, C. van & Tan, J.-C. 2013. Revision of the subfamily Opiinae (Hymenoptera, Braconidae) from Hunan (China), including thirty-six new species and two new genera. — ZooKeys 268: 1–168. doi: 10.3897/zookeys.268.4071.
- Linnaeus, C. von, 1761. Fauna Svecica. Editio altera: 1–578. — Laurentii Salvii. Stockholmiae.
- Mason, W.R.M. 1981. The polyphyletic nature of *Apanteles* Förster (Hymenoptera: Braconidae): A phylogeny and reclassification of Microgastrinae. — Memoirs of the Entomological Society of Canada 115: 1–147.
- Merz, B. & Pasche, A. 2012. 8.31.10. Superfamily Ichneumonoidea (Braconidae): 241–244. In: Merz, B. (ed.). Liste annotée des insectes (Insecta) du canton de Genève. — Instrumenta Biodiversitatis 8: 1–532. Genève.
- Nixon, G.E.J. 1972. A revision of the north-western European species of the *laevigatus*-group of *Apanteles* Förster (Hymenoptera, Braconidae). — Bulletin of Entomological Research 61: 701–743.
- Papp, J. 1983. A survey of the Braconid Fauna of the Hortobágy National Park (Hymenoptera, Braconidae) II. — The fauna of the Hortobágy National Park 2: 315–337.
- Papp, J. 1984. Palaeartic species of *Microgaster* Latreille (= *Microplitis* Förster) with description of seven new species (Hymenoptera, Braconidae, Microgastrinae). — Entomologische Abhandlungen 47: 95–140.
- Papp, J. 1988. A survey of the European species of *Apanteles* Först. (Hymenoptera, Braconidae: Microgastrinae). 11. «Homologization» of the species-groups of *Apanteles* s.l. with Mason's generic taxa. Checklist of genera. Parasitoid/host list 1. — Annales Historico-Naturales Musei Nationalis Hungarici 80: 145–175.
- Papp, J. 1991. Zur Insektenfauna von Gersau-Oberholz, Kanton Schwyz. X. Hymenoptera 1: Braconidae (Brackwespen). — Entomologische Berichte Luzern 25: 1–26.
- Papp, J. 1992. *Bracon strobilorum* Ratzeburg and its related species (Hymenoptera: Braconidae, Braconinae). — Folia Entomologica Hungarica 53: 129–134.
- Papp, J. 1997. Taxonomic revision of seven European species of the genus *Bracon* Fabricius (Hymenoptera: Braconidae). — Folia Entomologica Hungarica 58: 115–135.
- Papp, J. 1999. The Braconid wasps (Hymenoptera: Braconidae) of the Aggtelek National Park (N.E. Hungary). — The Fauna of the Aggtelek National Park: 547–572.
- Papp, J. 2002. The Braconid wasps (Hymenoptera: Braconidae) of the Ferto-Hanság National Park (NW Hungary). — The Fauna of the Ferto-Hanság National Park, 2002: 557–581.
- Papp, J. 2005. A checklist of the Braconidae of Hungary (Hymenoptera). — Folia Entomologica Hungarica 66: 137–194.
- Papp, J. 2012. A revision of the *Bracon* Fabricius species in Wesmael's collection deposited in Brussels (Hymenoptera: Braconidae: Braconinae). — European Journal of Taxonomy 21: 1–154.
- Perepechayenko, V.L. 1999. *Neopolemon* subgen. nov. of the genus *Polemochartus* Schulz (Hymenoptera: Braconidae: Alysiniinae: Dacnusiini). — Izvestiya Kharkovskogo Entomologicheskogo Obshchestva 7(1): 17–19.
- Quicke, D.L.J., Achterberg, C. van & Godfray, H.C.J. 1997. Comparative morphology of the venom gland and reservoir in opiine and alysiine braconid wasps (Insecta, Hymenoptera, Braconidae). — Zoologica Scripta 26(1): 23–50.
- Quicke, D.L.J., Mori, M., Zaldivar-Riverón, A., Laurence, N.M., Shaw, M.R. 2006. Suspended mummies in *Aleiodes* species (Hymenoptera: Braconidae: Rogadinae) with descriptions of six new species from western Uganda based largely on DNA sequence data. — Journal of Natural History 40(47–48): 2663–2680.
- Sharkey, M.J., Yu, D.S., Noort, S. van, Selmann, K. & Penev, L. 2009. Revision of the Oriental genera of Agathidinae (Hymenoptera, Braconidae) with an emphasis on Thailand including interactive keys to genera published in three different formats. — ZooKeys 21: 19–54.
- Shaw, M.R. 2012. Notes on some European Microgastrinae (Hymenoptera: Braconidae) in the National Museums of Scotland, with twenty species new to Britain, new host data, taxonomic changes and remarks, and descriptions of two new species of *Microgaster* Latreille. — Entomologist's Gazette 63: 173–201.
- Symbolotti, G. & Achterberg, C. van, 1999. Revision of the West Palaeartic species of the genus *Agathis* Latreille (Hymenoptera: Braconidae: Agathidinae). — Zoologische Verhandlungen, Leiden 325: 1–167.

- Stigenberg, J. & Ronquist, F. 2011. Revision of the Western Palearctic Meteorini (Hymenoptera, Braconidae), with a molecular characterization of hidden Fennoscandian species diversity. — *Zootaxa* 3084: 1–95.
- Stigenberg, J. & Shaw, M.R. 2013. Western Palaearctic Meteorinae (Hymenoptera: Braconidae) in the National Museums of Scotland, with rearing, phenological and distributional data, including six species new to Britain, and a discussion of a potential route to speciation. — *Entomologist's Gazette* 64: 251–268.
- Stigenberg, J. & Boring, C.A. 2013. Phylogeny of the parasitic wasp subfamily Euphorinae (Braconidae) and evolution of its host preferences. Preprint in: Stigenberg, J. Hidden creatures – Systematics of the Euphorinae. — Thesis, University of Stockholm.
- Taeger, A. 1989. Die *Orgilus*-Arten der Paläarktis (Hymenoptera, Braconidae). — *Arbeit aus dem Institut für Pflanzenschutzforschung Kleinmachnow, Bereich Eberswalde*. Berlin (1988): 1–260.
- Tobias, V.I. 1986. Acaeliinae, Cardiochilinae, Microgastrinae, Miracinae. Supplement: 336–501. *In*: Medvedev, G.S. (ed.). *Opredelitel Nasekomykh Evrospeiskoi Tsasti SSSR 3, Peredpontdatokrylye 4*. — *Opr. Faune SSSR* 145, (3)4: 1–501.
- Tobias, V.I. 1998. Alysiinae (Dacnusiini) and Opiinae: 299–411. *In*: Ler, P.A. (ed.). *Key to the insects of Russian Far East. 4. Neuropteroidea, Mecoptera, Hymenoptera 3*: 1–706. — *Dal'nauka, Vladivostok*.
- Tobias, V.I. 2010. Palaearctic species of the genus *Microchelonus* Szépligeti (Hymenoptera: Braconidae, Cheloninae): key to species. — *Trudy Russkogo Entomologicheskogo Obshchestva* 81 (1): 1–353.
- Tobias, V.I. & Jakimavicius, A. 1986. Alysiinae & Opiinae: 7–231. *In*: Medvedev, G.S. (ed.) *Opredelitel Nasekomykh Evrospeiskoi Tsasti SSSR 3, Peredpontdatokrylye 4*. — *Opr. Faune SSSR* 147, (3)5: 1–308.
- Wharton, R.A. 1986. The braconid genus *Alysia* (Hymenoptera): description of the subgenera and a revision of the subgenus *Alysia*. — *Systematic Entomology* 11: 453–504.
- Wharton, R.A. 1993. Review of the Hormiini (Hymenoptera: Braconidae) with a description of new taxa. — *Journal of Natural History* 27: 107–171.
- Wharton, R.A., 1994. New genera, species, and records of New World Alysiinae (Hymenoptera: Braconidae). — *Proceedings of the Entomological Society of Washington* 96(4): 630–664.
- Whitfield, J.B. 2006. Revision of the Nearctic species of the genus *Pholetesor* Mason (Hymenoptera: Braconidae). — *Zootaxa* 1144: 3–94.
- Yu, D.S., Achterberg, C. van & Horstmann, K. 2013. Ichneumonoidea 2012 (Biological and taxonomical information, Taxapad Interactive Catalogue, Ottawa) and for supraspecific level. — *Fauna Europaea* version 2.6.2 (viii.2013)
- Zaldivar-Riverón, A., Belokobylskij, S.A., Leon Regagnon, V., Briceno, G.R. & Quicke, D.L.J. 2008. Molecular phylogeny and historical biogeography of the cosmopolitan parasitic wasp subfamily Doryctinae (Hymenoptera: Braconidae). — *Invertebrate Systematics* 22(3): 345–363.

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