

FA 4084: 14

An invitation

Individuals who have undertaken the study of particular groups within the Hymenoptera on either a regional or a world basis and who have prepared 'catalogues' in the form of card files for their own use, are invited to share their knowledge and preserve it for the future by submitting it for publication in the 'Hymenopterorum Catalogus'.

Information concerning preparation, editing and other relevant items can be obtained by writing to the publisher or either of the editors at the addresses given below.

Eine Einladung

Ein jeder der sich mit dem Studium von Sondergruppen von Hymenoptera befasst, entweder auf eine regionale oder weltumspannende Grundlage und der sich nur für persönliche Bedarf mittels einer Kartei einen Katalog führt, möchten wir gefälligst bitten uns seine Kenntnis anzuvertrauen. Wir möchten sie dann eventuell durch eine Publikation im 'Hymenopterorum Catalogus' festlegen damit sie in der Zukunft nicht verloren geht.

Die unterzeichneten sind zu jeder Zeit bereit jede von Ihnen gewünschte Auskunft auf dem Gebiet der Schriftvorbereitung, Fassung und ähnliche Sachen zu erteilen.

Une invitation

Nous demandons l'attention de chacun qui s'est occupé de l'étude de différents groupes de Hymenoptera en particulier s'il s'agit d'une étude à base régionale ou bien d'une étude à base mondiale et qui a fait à l'usage personnel un classement par fiches fonctionnant comme un catalogue. Nous vous invitons par la présente à communiquer vos résultats afin de les publier dans 'Hymenopterorum Catalogus' et de les conserver de cette manière.

Les soussignés sont disposés à tout temps à vous fournir les informations désirées à vous renseigner sur la préparation des textes, la publication et des questions pareilles.

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Hymenopterorum Catalogus

(nova editio)

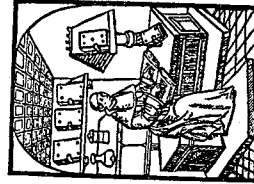
editus a

J. van der Vecht et R. D. Shenefelt

Pars 14

David R. Smith

Suborder Symphyta
(Xyelidae, Pararchexyelidae, Parapamphiliidae, Xyelidae, Karatavidae, Gigasiridae, Sepulcidae, Pseudosiricidae, Anaxyelidae, Siricidae, Xiphyriidae, Paroryssidae, Xyelotomidae, Blasticotomidae, Pergidae)



SUB Göttingen
106 828 800

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Dr. W. Junk B.V. - PUBLISHERS

The Hague - Holland
(01-VIII-1978)



ISBN 90 6193 469 9

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In obtaining much of the literature used in this study, Smithsonian Institution Library, National Museum of Natural History, Washington, D. C.; National Agricultural Library, Beltsville, Maryland; and the British Museum (Natural History) Library, London, England, I owe special thanks to Josephine Carale, C.S.I.R.O., Canberra, Australia for reviewing the Australian section of the family Pergande. She carefully compared the manuscript with the files of the C.S.I.R.O., made suggestions for additional references, and supplied copies of certain articles. Comments concerning problems in the Japanese Xiphodrilidae were given by Ichiji Togashi, Iwakioka Agricultural College, Japan, and Takaniko Naito, Kobe University, Japan. I am also grateful to John Quinlan, British Museum (Natural History), London; Gary Gibson, Biosystematics Research Institute, Agriculture Canada, Ottawa; and Donald W. Webb, Illinois Natural History Survey, Urbana, for allowing study of types and other specimens, and to authorities at many other institutions for allowing study of specimens, and to the many people who have sent me reprints of their papers on Symphyta.

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FAMILY XYLIDAE

- Xylites: Newman 1834 Ent. Mag. 2: 379, 408-409 (natural order in Stirps Strepera).
Xylidae: Westwood 1840 Introduct. Mod. Class. Insects. 114, synopsis p. 55. -- Norton 1867 Trans. Am. ent. Soc. 1: 38. -- Norton 1869 Trans. Am. ent. Soc. 2: 347-349.
Xyelina: Thomson 1871 Hym. Scand. 1: 314. -- Cameron 1890 Monogr. Brit. Phytophag. Hym. 3: 109.
Pimicollidae: André 1881 Spec. Hym. Eur. 1: 465-466, cat. p. 59 (tribe).
Xyelinae: Kirby 1882 List Hym. Brit. Mus. 1: 351-353 (subfamily). -- Dalla Torre 1894 Cat. Hym. 1: 399-401. -- Schmiedeknecht 1907 Hym. Mitteleur. 1: 754, 766. -- Enslin 1914 Insekten Mitteleur. 111, 3: 136. -- Nielsen & Henriksen 1915 Danm. Fauna 18: 25. -- Enslin 1917 Tenther. Mitteleur. 678-682. -- Hedrick 1930 Timberlitt Mitteleur. 5(2): 15. -- Schmiedeknecht 1930 Hym. Nord-Mitteleur. 23, 30. -- Geballios 1941 Eos, Madr. 17: 32. -- Geballios 1956 Cat. Hym. Esp. 1: 101.
Pimicollit: Konow 1890 Dt. ent. Z. 34: 227, 229. -- Strobl 1895 Wien. ent. Ztg. 14: 277. -- Aclouque 1897 Faune France 3: 224.
Xyelini: Konow 1897 Ent. Nachr. 23: 55-58 (key to genera). -- Konow 1904 Z. system. Hymenopt. Dipteroi. 4: 358-367 (keys to genera, species, descriptions). -- Konow 1905 Genera Insect. 27: 21-23.
Xyelidae: Dyar 1898 Can. Ent. 30: 176 (larvae defined). -- Ashmead 1898 in Dyar, Psyche, Camb. 8: 214 (table of genera). -- Ashmead 1898 Can. Ent. 30: 205. -- MacGillivray 1906 Proc. U. S. natn. Mus. 29: 621-648 (wings). -- Rohwer 1911 Proc. ent. Soc. Wash. 13: 216. -- Bradley 1913 J. Ent. Zool. 5: 2 (in key). -- MacGillivray 1916 Bull. Conn. St. geol. Surv. 22: 28, 29 (northeast. U.S.). -- Börner 1919 Biol. Zbl. 39: 174. -- Yuasa 1923 Illinois biol. Monogr. 7: 39-42, 135 (larvae). -- Ross 1932 Ann. ent. Soc. Am. 25: 153-169 (revision, Nearctic). -- Gussakovskij 1935 Fauna SSSR, Insects Hym. 2, 1: 129-137, 362-365 (Palearctic). -- Ross 1937 Illinois biol. Monogr. 15: 106 (N. Amer. genera). -- Klima 1937 Hym. Cat. 4: 1-12 (world cat.). -- Benson 1938 Trans. R. ent. Soc. Lond. 87: 359. -- Takeuchi 1938 Tenthero 2: 203-205 (Japanese Empire). -- Berland 1943 Bull. Soc. ent. Fr. 48: 89-92 (France). -- Benson 1945 Proc. R. ent. Soc. Lond. (B) 14: 34-37 (world classification). -- Berland 1947 Faune France, Hym. Tenthero. 47: 25-31 (France). -- Mao 1949 Chin. J. Zool. 3: 30-32 (China). -- Benson 1951 Handb. Ident. Br. Insects 6(28): 7-9 (Britain). -- Ross 1951 in Muesebeck, *et al.*, Agriculture Monogr. 2: 5-7 (N. Amer. cat.). -- Maxwell 1955 Can. Ent. Suppl. 1, 67: 17-19 (internal larval anatomy). -- Bradley 1955 Mem. Soc. R. ent. Belg. 27: 129 (wing venation). -- Riek 1955 Aust. J. Zool. 3: 656 (wings, fossil). -- Tonipi 1958 Trans. R. ent. Soc. Lond. 110: 491 (spiracular structure). -- Burdick 1959 J. Kans. ent. Soc. 32: 120-122 (fossil). -- Kim 1963 Human. and Sci. (Nat. Sci.) Korea Univ. 6: 277 (Korea, cat.). -- Rasnitsyn 1964 Paleont. Zh. 1: 88-96 (fossil). -- Rasnitsyn 1966 Paleont. Zh. 4: 69-85 (fossil). -- Smith 1967 Ann. ent. Soc. Am. 60: 376-384 (larvae). -- Rasnitsyn 1968 Ent. Obozr. 47: 61-70 (evolution of function of ovipositor in relation to origin of parasitism). -- Rasnitsyn 1969 Trudy paleont. inst. 123: 29-55 (key to genera, recent and fossil). -- Rasnitsyn 1971 Trudy paleont. inst. 130: 187-195 (evolution). -- Móczár & Zombori 1973 Fauna Hung. XI, Hym. 1, 2: 10-15 (Hungary).

The Xyelidae are a small archaic group of Symphyta that have the oldest fossil record of the Hymenoptera, dating back to the Triassic. Most of the Jurassic and Triassic forms were found in the fossil beds of Kazakh S.S.R. and Kirgiz S.S.R. In this catalog, 40 genera and 106 species are listed, of these, 35 genera and 60 species are extinct. The living forms are found throughout the Nearctic and Palearctic regions of the world, and most are associated with the coniferous forests. Larvae of *Xyela* feed and develop in the staminate cones or pines, *Pyrus* spp., though at least one, *X. gallitellus*, has developed a shoot-boring habit. Adults of *Xyela* are commonly found on nearby catkins bearing plants. Larvae of *Elexoneura* feed and develop in the new buds and shoots of fir, *Abies* spp. Only the members of *Megaxyela* and *Macraxyela* are external leaf feeders or angiosperms.

The higher classification of Rasnitsyn (1966, 1969, 1971) is followed in this catalog. It is based on extensive study of the fossil and living forms and coincides with the classification I proposed based on a study of larvae in 1967. The Xyelidae are placed in the superfamily Xyeloidae, though some authors have placed them in the Megalodontoidae.

Subfamily MADYGELLINAE

Madygellinae: Rasnitsyn 1969 Trudy paleont. Inst. 123: 16, 50-51.

Genus MADYGELLA Rasnitsyn

Madygella Rasnitsyn 1969 Trudy paleont. Inst. 123: 51.
Type-species: *Madygella analoga* Rasnitsyn (Original designation).

analoga Rasnitsyn

Madygella analoga Rasnitsyn 1969 Trudy paleont. Inst. 123: 16, 51, fig. 49. "Kirovskaya SSR, Oshskaya obl., Batkenskii r-n, urochishe Dzhalilaucho" (PIN, Moscow,).

Genus SIRECOMIMA Rasnitsyn

Sirecomima Rasnitsyn 1969 Trudy paleont. Inst. 123: 51.
Type-species: *Sirecomima xiphophora* Rasnitsyn (Original designation).

xiphophora Rasnitsyn

Sirecomima xiphophora Rasnitsyn 1969 Trudy paleont. Inst. 123: 16, 51-52, fig. 50. "Kazakhstan, khrebet Karatau, d. Mikhailovka" (PIN, Moscow,).

Genus XYLULA Rasnitsyn

Xylula Rasnitsyn 1969 Trudy paleont. Inst. 123: 52.
Type-species: *Xylula hybrida* Rasnitsyn (Original designation).

hybrida Rasnitsyn

Xylula hybrida Rasnitsyn 1969 Trudy paleont. Inst. 123: 16, 52, fig. 51. "Kazakhstan, khrebet Karatau, d. Mikhailovka" (PIN, Moscow,).

Subfamily ARCHEXYELINAE

Archexyelinae: Rasnitsyn 1964 Paleont. Zh. 1: 88. -- Rasnitsyn 1966 Paleont. Zh. 4: 69. -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 29-36 (key to genera and species).

Genus ARCHEXYELA Riek

Archexyela Riek 1955 Aust. J. Zool. 3: 657.
Type-species: *Archexyela aroobyi* Riek (Original designation). -- Rasnitsyn 1964 Paleont. Zh. 1: 88.

aroobyi Riek

Archexyela aroobyi Riek 1955 Aust. J. Zool. 3: 657, fig. 1. Mt. Crosby Insect Bed, Ipswich Series, Triassic" (Brisbane,). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 29, fig. 25 (in key).

Genus ASTOXYELA Rasnitsyn

Astoxyla Rasnitsyn 1964 Paleont. Zh. 1: 92.
Type-species: *Astoxyla smilodon* Rasnitsyn (Original designation). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 30 (in key, key to species).

grandipennis (Rasnitsyn)

Astoxyla grandipennis Rasnitsyn 1964 Paleont. Zh. 1: 91-92, fig. 5, pl. 14, fig. 3. "severo-zapadnaya Kirgiziya, urochishe Dzhalilaucho" (PIN, Moscow,).
Astoxyla grandipennis: Rasnitsyn 1969 Trudy paleont. Inst. 123: 15, 30, fig. 36 (in key).

Genus LEIOXYELA Rasnitsyn

Leioxyela Rasnitsyn 1969 Trudy paleont. Inst. 123: 30, 49.
Type-species: *Leioxyela mollis* Rasnitsyn (Original designation).

antiqua (Rasnitsyn)

Leioxyela antiqua Rasnitsyn 1964 Paleont. Zh. 1: 93-94, fig. 8. "severo-zapadnaya Kirgiziya, urochishe Dzhalilaucho" (PIN, Moscow,).

parvula Rasnitsyn

Parvula Rasnitsyn 1964 Paleont. Zh. 1: 93, fig. 7. "severo-zapadnaya Kirgiziya, urochishe Dzhalilaucho" (PIN, Moscow,). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 16, 30, 49, fig. 37 (redescribed, 1964 description called "nomen nudum", but a description is included in 1964).

paupura Rasnitsyn

Paupura Rasnitsyn 1969 Trudy paleont. Inst. 123: 16, 30, 48-49, fig. 35. "Kirgizskaya SSR, Oshskaya obl., Batkenskii r-n, urochishe Dzhalilaucho" (PIN, Moscow,).

smilodon Rasnitsyn

Smilodon Rasnitsyn 1964 Paleont. Zh. 1: 92-93, fig. 6, pl. 14, fig. 4. "severo-zapadnaya Kirgiziya, urochishe Dzhalilaucho" (PIN, Moscow,). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 15, 30, fig. 34 (in key).

Genus DINOXYELA Rasnitsyn

Dinoxyela Rasnitsyn 1969 Trudy paleont. Inst. 123: 29, 48.
Type-species: *Dinoxyela armata* Rasnitsyn (Original designation).

armata Rasnitsyn

Dinoxyela armata Rasnitsyn 1969 Trudy paleont. Inst. 123: 15, 29, 48, fig. 24. "Kirgizskaya SSR, Oshskaya obl., Batkenskii r-n, urochishe Dzhalilaucho" (PIN, Moscow,).

Genus EURYXYELA Rasnitsyn

Euryxyela Rasnitsyn 1964 Paleont. Zh. 1: 94.
Type-species: *Euryxyela euryptera* Rasnitsyn (Original designation). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 36 (in key).

euryptera Rasnitsyn

Euryxyela euryptera Rasnitsyn 1964 Paleont. Zh. 1: 94-95, fig. 9, pl. 14, fig. 5. "severo-zapadnaya Kirgiziya, urochishe Dzhalilaucho" (PIN, Moscow,). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 15, 36, fig. 47 (in key).

Genus FERGANOXYELA Rasnitsyn

Ferganoxyela Rasnitsyn 1969 Trudy paleont. Inst. 123: 30, 47.
Type-species: *Ferganoxyela sogdiana* Rasnitsyn (Original designation).

destructa Rasnitsyn

Ferganoxyela destructa Rasnitsyn 1969 Trudy paleont. Inst. 123: 15, 30, 47, fig. 31. "Kirgizskaya SSR, Oshskaya obl., Batkenskii r-n, urochishe Dzhalilaucho" (PIN, Moscow,) (*destructa* (!) on p. 15).

sogdiana Rasnitsyn

Ferganoxyela sogdiana Rasnitsyn 1969 Trudy paleont. Inst. 123: 15, 30, 47, fig. 30. "Kirgizskaya SSR, Oshskaya obl., Batkenskii r-n, urochishe Dzhalilaucho" (PIN, Moscow,).

Kirgiziya, urochishe Dzhaliloucho" (PIN, Moscow,).
Lezomyela (?) antiqua: Rasnitsyn 1969 Trudy paleont. inst. 123: 16, 30, fig. 42 (in key).

grandis Rasnitsyn

U.S.S.R. (Kirgiz S.S.R.) (Triassic)
Lezomyela (?) grandis Rasnitsyn 1969 Trudy paleont. inst. 123: 16, 30, 50, fig. 40.
 "Kirgizskaya SSR, Oshskaya obl., Batkenskii r-n, urochishe Dzhaliloucho" (PIN, Moscow,).

lata (Rasnitsyn)

U.S.S.R. (Kirgiz S.S.R.) (Triassic)
Lezomyela lata Rasnitsyn 1964 Paleont. Zh. 1: 95, fig. 10. "severo-zapadnaya Kirgiziya, urochishe Dzhaliloucho" (PIN, Moscow,).
Lezomyela (?) lata: Rasnitsyn 1969 Trudy paleont. inst. 123: 16, 30, fig. 38 (in key).

mitis Rasnitsyn

U.S.S.R. (Kirgiz S.S.R.) (Triassic)
Lezomyela mitis Rasnitsyn 1969 Trudy paleont. inst. 123: 16, 30, 50, fig. 41.
 "Kirgizskaya SSR, Oshskaya obl., Batkenskii r-n, urochishe Dzhaliloucho" (PIN, Moscow,).

molliis Rasnitsyn

U.S.S.R. (Kirgiz S.S.R.) (Triassic)
Lezomyela molliis Rasnitsyn 1969 Trudy paleont. inst. 123: 16, 30, 49-50, fig. 39, pl. 1, fig. 1. "Kirgizskaya SSR, Oshskaya obl., Batkenskii r-n, urochishe Dzhaliloucho" (PIN, Moscow,).

Genus LITHOMYELA Rasnitsyn

Lithomyela Rasnitsyn 1969 Trudy paleont. inst. 123: 36, 43.

Type-species: *Lithomyela fenestrata* Rasnitsyn (Original designation).

fenestrata Rasnitsyn

U.S.S.R. (Kirgiz S.S.R.) (Triassic)
Lithomyela fenestrata Rasnitsyn 1969 Trudy paleont. inst. 123: 15, 30, 43-44, fig. 48. "Kirgizskaya SSR, Oshskaya obl., Batkenskii r-n, urochishe Dzhaliloucho" (PIN, Moscow,).

Genus MADYGENIUS Rasnitsyn

Madygenius Rasnitsyn 1969 Trudy paleont. inst. 123: 30, 45-46.

Type-species: *Madygenius extraxidius* Rasnitsyn (Original designation).

extraxidius Rasnitsyn

U.S.S.R. (Kirgiz S.S.R.) (Triassic)
Madygenius extraxidius Rasnitsyn 1969 Trudy paleont. inst. 123: 15, 30, 46, fig. 43. "Kirgizskaya SSR, Oshskaya obl., Batkenskii r-n, urochishe Dzhaliloucho" (PIN, Moscow,).

primitivus Rasnitsyn

U.S.S.R. (Kirgiz S.S.R.) (Triassic)
Madygenius primitivus Rasnitsyn 1969 Trudy paleont. inst. 123: 15, 30, 46, fig. 44. "Kirgizskaya SSR, Oshskaya obl., Batkenskii r-n, urochishe Dzhaliloucho" (PIN, Moscow,).

Genus ORYCTOMYELA Rasnitsyn

Oryctomyela Rasnitsyn 1969 Trudy paleont. inst. 123: 30, 45.

Type-species: *Oryctomyela anomala* Rasnitsyn (Original designation).

anomala Rasnitsyn

U.S.S.R. (Kirgiz S.S.R.) (Triassic)
Oryctomyela anomala Rasnitsyn 1969 Trudy paleont. inst. 123: 15, 30, 45, fig. 28. "Kirgizskaya SSR, Oshskaya obl., Batkenskii r-n, urochishe Dzhaliloucho" (PIN, Moscow,).

triassica Rasnitsyn

U.S.S.R. (Kirgiz S.S.R.) (Triassic)
Oryctomyela triassica Rasnitsyn 1969 Trudy paleont. inst. 123: 15, 30, 45, fig. 29. "Kirgizskaya SSR, Oshskaya obl., Batkenskii r-n, urochishe Dzhaliloucho" (PIN, Moscow,).

Genus TRIASSOMYELA Rasnitsyn

Triassomyela Rasnitsyn 1964 Paleont. Zh. 1: 89.

Type-species: *Triassomyela foveolata* Rasnitsyn (Original designation). -- Rasnitsyn 1969 Trudy paleont. inst. 123: 30 (in key).

foveolata Rasnitsyn

U.S.S.R. (Kirgiz S.S.R.) (Triassic)
Triassomyela foveolata Rasnitsyn 1964 Paleont. Zh. 1: 89, pl. 14, fig. 1. "severo-zapadnaya Kirgiziya, urochishe Dzhaliloucho" (PIN, Moscow,). -- Rasnitsyn 1969 Trudy paleont. inst. 123: 15, 30, 48, fig. 32 (in key).

Kirgizica Rasnitsyn

U.S.S.R. (Kirgiz S.S.R.) (Triassic)
Triassomyela kirgizica Rasnitsyn 1964 Paleont. Zh. 1: 89-90, fig. 3. "severo-zapadnaya Kirgiziya, urochishe Dzhaliloucho" (PIN, Moscow,). -- Rasnitsyn 1969 Trudy paleont. inst. 123: 48 (p. p. = *T. foveolata*; p. p. = *T. kirgizica*; *kazakhstanica* (!)).

orycta Rasnitsyn

U.S.S.R. (Kirgiz S.S.R.) (Triassic)
Triassomyela orycta Rasnitsyn 1969 Trudy paleont. inst. 123: 15, 30, 48, fig. 33. "Kirgizskaya SSR, Oshskaya obl., Batkenskii r-n, urochishe Dzhaliloucho" (PIN, Moscow,).

Genus XIPHOMYELA Rasnitsyn

Xiphomyela Rasnitsyn 1969 Trudy paleont. inst. 123: 36, 46.

Type-species: *Xiphomyela procrusta* Rasnitsyn (Original designation).

procrusta Rasnitsyn

U.S.S.R. (Kirgiz S.S.R.) (Triassic)
Xiphomyela procrusta Rasnitsyn 1969 Trudy paleont. inst. 123: 15, 36, 46-47, fig. 45. "Kirgizskaya SSR, Oshskaya obl., Batkenskii r-n, urochishe Dzhaliloucho" (PIN, Moscow,).

striata (Rasnitsyn)

U.S.S.R. (Kirgiz S.S.R.) (Triassic)
Triassomyela (?) striata Rasnitsyn 1964 Paleont. Zh. 1: 91, fig. 4, pl. 14, fig. 2. "severo-zapadnaya Kirgiziya, urochishe Dzhaliloucho" (PIN, Moscow,).
Xiphomyela (?) striata: Rasnitsyn 1969 Trudy paleont. inst. 123: 15, 36, 47, fig. 46.

Genus XYELINUS Rasnitsyn

Xyelinus Rasnitsyn 1964 Paleont. Zh. 1: 95-96.

Type-species: *Xyelinus angustaxidius* Rasnitsyn (Original designation). -- Rasnitsyn 1969 Trudy paleont. inst. 123: 29 (in key).

angustaxidius Rasnitsyn

U.S.S.R. (Kirgiz S.S.R.) (Triassic)
Xyelinus angustaxidius Rasnitsyn 1964 Paleont. Zh. 1: 96. "Kirgiziya, urochishe Dzhaliloucho" (PIN, Moscow,). -- Rasnitsyn 1969 Trudy paleont. inst. 123: 15, 29, fig. 26 (in key).

maius Rasnitsyn

U.S.S.R. (Kirgiz S.S.R.) (Triassic)
Xyelinus maius Rasnitsyn 1969 Trudy paleont. inst. 123: 15, 29, 43, fig. 27. "Kirgizskaya SSR, Oshskaya obl., Batkenskii r-n, urochishe Dzhaliloucho" (PIN, Moscow,).

Subfamily XYELINAE

Xyelinae: Ashmead 1898 Can. Ent. 30: 206 (*Managela* and *Xyela* included). -- Benson 1945 Proc. R. ent. Soc. Lond. (B) 14: 35 (*Xyela* included). -- Rasnitsyn 1965 Polskie Pismo ent. 35: 483-519 (biol., systematics, phylogeny; key to genera and species). -- Rasnitsyn 1966 Paleont. Zh. 4: 69 (fossil). -- Smith 1967 Ann. ent. Soc. Am. 60: 377 (2 tribes). -- Rasnitsyn 1969 Trudy paleont. inst. 123: 36-41 (key to recent and fossil genera and species).
 Pteroneurinae: Benson 1945 Proc. R. ent. Soc. Lond. (B) 14: 35 (*Pteroneura* included).

Pteroneurini: Smith 1967 Ann. ent. Soc. Am. 60: 377.

Tribe XYELINI

Xyelini: Rasnitsyn 1966 Paleont. Zh. 4: 72-73 (fossil). -- Smith 1967 Ann. ent. Soc. Am. 60: 377 (only *Xyela* included). -- Rasnitsyn 1969 Trudy paleont. inst. 123: 36-41 (key to recent and fossil genera and some fossil species).

Genus EOXYELA Rasnitsyn

Eoxyela Rasnitsyn 1965 Polskie Pismo ent. 35: 487-488, 512.

Type-species: *Eoxyela scoliura* Rasnitsyn (Original designation). -- Rasnitsyn 1969 Trudy paleont. inst. 123: 36 (key to species).

atra Rasnitsyn

Eoxyela atra Rasnitsyn 1966 Paleont. Zh. 4: 73, fig. 5, pl. 4, fig. 4. "Yuzhnei Kazakhstan, Khrebet Karatau, s. Mikhailovka" (PIN, Moscow). -- Rasnitsyn 1969 Trudy paleont. inst. 123: 16, 38, fig. 59 (in key).

punctata Rasnitsyn

Eoxyela punctata Rasnitsyn 1965 Polskie Pismo ent. 35: 488, 489-490, 513, fig. 3, 57. "Yuzhnei Kazakhstan, Khrebet Karatau, mestonakhozhdenie Mikhailovka" (PIN, Moscow). -- Rasnitsyn 1969 Trudy paleont. inst. 123: 16, 38, fig. 58 (in key).

scoliura Rasnitsyn

Eoxyela scoliura Rasnitsyn 1965 Polskie Pismo ent. 35: 488-489, 512, fig. 1, 55. "Yuzhnei Kazakhstan, Khrebet Karatau, mestonakhozhdenie Mikhailovka" (PIN, Moscow). -- Rasnitsyn 1969 Trudy paleont. inst. 123: 16, 38, fig. 57 (in key).

sibirica Rasnitsyn

Eoxyela sibirica Rasnitsyn 1969 Trudy paleont. inst. 123: 18, 38, 52, fig. 56. "Zabaikalie, r. Vitim, urochische Baisa" (PIN, Moscow).

Genus SPATHOXYELA Rasnitsyn

Spathoxyela Rasnitsyn 1969 Trudy paleont. inst. 123: 36, 53.

Type-species: *Eoxyela foesslii* Rasnitsyn (Original designation).

fossilis (Rasnitsyn)

Eoxyela fossilis Rasnitsyn 1965 Polskie Pismo ent. 35: 488, 490, 512, fig. 4, 58. "Zabaikalie, r. Vitim, mestonakhozhdenie Baisa" (PIN, Moscow).

Spathoxyela foesslii: Rasnitsyn 1969 Trudy paleont. inst. 123: 18, 36, 53, fig. 52.

Genus ENNEOXYELA Rasnitsyn

Enneoxyela Rasnitsyn 1966 Paleont. Zh. 4: 73-74.

Type-species: *Enneoxyela compressicauda* Rasnitsyn (Original designation). -- Rasnitsyn 1969 Trudy paleont. inst. 123: 36, 38 (key to species).

compressicauda Rasnitsyn

Enneoxyela compressicauda Rasnitsyn 1966 Paleont. Zh. 4: 74-75, fig. 7, pl. 4, fig. 6. "Khrebet Karatau, s. Mikhailovka" (PIN, Moscow). -- Rasnitsyn 1969 Trudy paleont. inst. 123: 16, 38, fig. 55 (in key).

crassicauda Rasnitsyn

Enneoxyela crassicauda Rasnitsyn 1966 Paleont. Zh. 4: 74, fig. 6, pl. 4, fig. 5. "Khrebet Karatau, s. Mikhailovka" (PIN, Moscow). -- Rasnitsyn 1969 Trudy paleont. inst. 123: 16, 38, fig. 54 (in key).

karatavica (Rasnitsyn)

Eoxyela karatavica Rasnitsyn 1965 Polskie Pismo ent. 35: 488, 489, 512, fig. 2, 56.

9. "Yuzhnei Kazakhstan, Khrebet Karatau, mestonakhozhdenie Mikhailovka" (PIN, Moscow). -- *Enneoxyela karatavica*: Rasnitsyn 1969 Trudy paleont. inst. 123: 16, 38, fig. 53 (in key).

Genus XYELISCA Rasnitsyn

Xyelisca Rasnitsyn 1969 Trudy paleont. inst. 123: 38, 53.

Type-species: *Xyelisca leptopoda* Rasnitsyn (Original designation).

leptopoda Rasnitsyn

Xyelisca leptopoda Rasnitsyn 1969 Trudy paleont. inst. 123: 16, 38, 53, fig. 61. "Buryatskaya ASSR, Zailgaevskii r-n, r. Bryanka, pade Novaya Bryane" (PIN, Moscow).

Genus XYELA Da lman

Genus XYELA Subgenus XYELA Da lman

Xyela Brébisson 1818 Bull. Soc. philomath Paris: 116-117 (preoccupied by *Pinctola* Vieillot 1805).

Type-species: *Pinctola julii* Brébisson (Monotypic). -- Latreille 1818 in Nouv. Dict. Hist. Nat. 26: 451-452 (Brébisson's article stated to have been published in August 1818, therefore vol. 26 of Nouv. Dict. Hist. Nat. must have been published after that). -- André 1881 Spec. Hym. Eur. Alg. 1: 467-469, cat. p. 59. -- Acloque 1897 Faune France 3: 199.

Maestogaster Klug 1818 in Latreille in Nouv. Dict. Hist. Nat. 26: 451 (associated with *Pinctola* by Latreille -- "M. Klug, célèbre naturaliste de Berlin, m'en avoit envoyé, il y a long-temps, une espèce sous le nom générique de *Maestogaster*, mais j'ignore s'il a publié les caractères de ce genre").

Xyela Dalman 1819 K. svenska Vetensk-Akad. Handl. 40: 122-124, pl. 6, fig. 1-11. Type-species: *Xyela pusilla* Dalman (Designated by Curtis 1824). -- Dalman 1823 Anal. ta Ent.: 27-28, pl. 3, fig. 1-11. -- Lepelletier 1823 Monogr. Tenthréd.: 1. -- Curtis 1824 Brit. Ent. 3: 30 (type-species). -- Lepelletier & Serville 1828 Ency. Méth. 10: 791-792. -- Latreille 1829 Crust. Arach. Insects Fam. Nat. 2: 277. -- Newman 1834 Ent. Mag. 2: 379, 409. -- Dahlbom 1835 Conspectus Tenthréd., Siricid., Orysid., Scand.: 15-16. -- Hartig 1837 Fam. Blattwesp.: 349-352. -- Cuvier 1837 Anim. Kingdom 4: 213-214. -- Herrich-Schaeffer 1840 Nomencl. Ent. 2: 36, 243. -- Blanchard 1840 Hist. Nat. Anim. Art. 3: 223. -- Westwood 1840 Introduct. Mod. Class. Insects, synops. p. 55. -- Blanchard 1849 in Cuvier, Règne Anim. 7: 128. -- Norton 1869 Trans. Am. ent. Soc. 2: 347-349 (N. Amer.). -- Thomson 1871 Hym. Scand. 1: 314-317. -- Kirby 1882 List Hym. Brit. Mus. 1: 352-353. -- Cameron 1890 Monogr. Brit. Phytophag. Hym. 3: 110-111 (England). -- Dalla Torre 1894 Cat. Hym. 1: 399-401. -- Konow 1897 Ent. Nachr. 23: 55, 57-58 (key to species). -- Ashmead 1898 in Dyar, Psyche, Camb. 8: 214 (in key). -- Ashmead 1898 Can. Ent. 30: 206. -- Konow 1904 Z. system. Hymenopt. Dipteroi. 4: 363-367 (key to and descriptions of species). -- Konow 1905 Genera Insect. 27: 22-23. -- Schmiedeknecht 1907 Hym. Mittel-eur.: 766. -- Rohwer 1913 Proc. U.S. natn. Mus. 45: 265-272 (Nearctic species). -- Enslin 1915 Insekten Mitteleur. 5(2): 15. -- Schmiedeknecht & Henriksen 1915 Danm. Fauna 18: 25-26. -- MacGillivray 1916 Bull. Conn. St. geol. nat. Hist. Surv. 22: 29, 30 (northeast. U. S.). -- Enslin 1918 Tenthréd. Mittel-eur.: 679, 680-682. -- Hedricke 1930 Tierwelt Mitteleur. 5(2): 15. -- Gusakovskij 1935 Fauna SSSR, Insects Hym. 2, 1: 130, 131-136, 363-364 (Palearctic species). -- Klima 1937 Hym. Cat. 4: 3-7 (world cat.). -- Ross 1937 Illinois biol. Monogr. 15: 106-107 (syn.: *Neoxyela* Curran). -- Berland 1937 Bull. Soc. ent. Fr. 48: 90 (France, distinguished from *Xyelata*). -- Berland 1943 Bull. Soc. ent. Fr. 48: 90 (France, distinguished from *Xyelata*). -- Benson 1945 Proc. R. ent. Soc. (London). -- Ma 1949 Chin. J. Zool. 3: 30 (China). -- Ross 1951 in Muesebeck, et al., Agriculture Monogr. 2: 5-6 (N. Amer. cat.). -- Benson 1951 Handbk Ident. Br. Insects 6(2a): 9 (Great Britain). -- Burdick 1959 J. Kans. ent. Soc. 32: 121 (separation from *Pinctolites*). -- Burdick 1961 Univ. Calif. Publ. Ent. 17: 285-356 (N. Amer. species, syn.: *Xyelata* Benson). -- Togashi 1964 Life Study, Fukui 8: 51-52 (Japan). -- Rasnitsyn 1965 Polskie Pismo ent. 35: 490-497 (key to world species, groupings designated).

-- Smith 1967 Ann. ent. Soc. Am. 60: 378, 383 (larvae). -- Smith 1970 J. Ga. ent. Soc. 5: 72 (larvae separated from those of *Platanus*). -- Rasnitsyn 1971 Trudy paleont. Inst. 130: 187-196 (divided into sections). -- Mészár & Zombori 1973 Fauna Hung. XI, Hym. 1, 2: 12-14 (Hungary). -- Beneš 1975 Acta ent. bohém. 72: 122 (Czechoslovakia). *Průzkumný* Schilling 1826 in Schummel, Uebers. Arbeit. Bernd. schles. Gesell. vaterl. Kultur 1825: 43 (associated with *Xyleta*, no species included).

Mastigocera Berthold 1827 Latreille's Nat. Fam. Tierreichs: 442 (probably a mistake for *Mastigocera* Klug, "die Unterkieferpaare der *Xyleta* (welche Klug vor Dalman mit dem Namen *Mastigocera* beilegt hatte), ...").

Neoxyleta Curran 1923 Can. Ent. 55: 20.

Type-species: *Neoxyleta alberta* Curran (original designation). -- Ross 1932 Ann. ent. Soc. Am. 25: 154, 155-156. -- Klima 1937 Hym. Cat. 4: 7.

Xyleta Benson 1938 Proc. R. ent. Soc. Lond. (B) 7: 34.

Type-species: *Xyleta longula* Dalman (original designation). -- Berland 1943 Bull. Soc. ent. Fr. 48: 90 (separation from *Xyleta*). -- Benson 1945 Proc. R. ent. Soc. Lond. (B) 14: 36 (in key). -- Berland 1947 Faune France. 47. Hym. Tenthred.: 29-30 (France). -- Benson 1951 Handb. ident. Br. Insects 6(2a): 9 (Great Britain). -- Rasnitsyn 1971

Trudy paleont. Inst. 130: 193-194, 195. -- Mészár & Zombori 1973 Fauna Hung. XI, Hym. 1, 2: 11, 14 (Hungary).

Xyleta section *Magnusxyleta* Rasnitsyn 1971 Trudy paleont. Inst. 130: 193.

Type-species: *Xyleta magna* Stötz (original designation).

Xyleta section *Enslayxyleta* Rasnitsyn 1971 Trudy paleont. Inst. 130: 193.

Type-species: *Xyleta Enslayi* Burdick (original designation).

Xyleta section *Alpigenxyleta* Rasnitsyn 1971 Trudy paleont. Inst. 130: 194.

Type-species: *Pimocla alpigena* Strobl (original designation).

Xyleta section *Concordxyleta* Rasnitsyn 1971 Trudy paleont. Inst. 130: 194.

Type-species: *Xyleta concaza* Burdick (original designation).

Xyleta section *Minotrixyleta* Rasnitsyn 1971 Trudy paleont. Inst. 130: 194.

Type-species: *Xyleta minor* Norton (original designation).

Xyleta section *Desertiexyleta* Rasnitsyn 1971 Trudy paleont. Inst. 130: 194.

Type-species: *Xyleta deserti* Burdick (original designation).

alberta (Curran)

Canada (Alberta); U.S. (California, Colorado, Montana, Wyoming).

Ross 1932 Ann. ent. Soc. Am. 25: 156, pl. 1, fig. 4, pl. 2, fig. 18. -- Klima 1937

Hym. Cat. 4: 7.

Xyleta alberta: Ross 1937 Illinois biol. Monogr. 15: 106. -- Ross 1951 in Muesebeck

et al., Agricultural Monogr. 2: 5. -- Burdick 1961 Univ. Calif. Publ. Ent. 17: 535-536

(*et al.*, distribution; host a). -- Rasnitsyn 1965 Polskie Pismo ent. 35: 516 (host a, in

section *Banksianoides* and *Taediopondenosoides*; *minor* group). -- Burks 1967 in Krombein

& Burks, Agriculture Monogr. 2, suppl. 2: 6 (host a). -- Rasnitsyn 1971 Trudy paleont.

Inst. 130: 194 (in section *Minotrixyleta*).

Hosts: a) *Pinus contorta*.

alpigena (Strobl)

Austria; Canada (Ontario, Québec); Japan; Switzerland; U.S. (Colorado, Illinois, Maine, Maryland, Michigan, New Mexico, New York, Utah).

Pimocla alpigena Strobl 1895 Wien. ent. Ztg. 14: 277-278. *et al.*, "Am Rottenmanner-

tauern um den Scheipisee, 1600 m." (Wien ?), (host a ?). -- Konow 1897 Ent. Nachr.

23: 58 (as syn. of *gallii*).

Xyleta alpigena: Enslin 1917 Tenthred. Mitteleur. 682. -- Benson 1938 Proc. R. ent.

Soc. Lond. (B) 7: 35, 35, fig. 4 (Switzerland, Austria; host a). -- Berland 1943 Bull.

Soc. ent. Fr. 48: 91. -- Benson 1961 Ergebn. wiss. Unters. Schweiz. Nattharks 7: 171

(distribution; hosts a, b; syn.: *midllekayfi* Burdick). -- Benson 1962 Bull. Br. Mus.

nat. Hist. (Ent.) 12: 385 (holotype; syn.: *brunneiceps* Rohwer). -- Rasnitsyn 1965

Polskie Pismo ent. 35: 491, 502-503, 513, fig. 7-11 (host a, in section *Strobiloides*;

alpigena group). -- Togashi 1965 in Asahima, *et al.*, Iconogr. Insects Jap. 3: 243, pl.

122, fig. 2 (Japan). -- Burks 1967 in Krombein & Burks, Agriculture Monogr. 2, suppl.

2: 6-7. -- Togashi 1970 Mushii 43, suppl.: 7, 54 (internal reproductive organs). --

Rasnitsyn 1971 Trudy paleont. Inst. 130: 194 (in section *Alpigenxyleta*). -- Mészár &

Zombori 1973 Fauna Hung. XI, Hym. 1, 2: 18 (in key). -- Beneš 1975 Acta ent. bohém.

72: 122 (in key, not in Czechoslovakia; host a). -- Zombori 1975 Ber. nat.-med. Ver.

Innsbruck 62: 90 (Austria; host a). -- Schedl 1976 Verhoff. Univ. Innsbruck 103, Al-

at

pine biol. Studies 8: 32 (Austria; host a).

Xyleta brunneiceps Rohwer 1913 Proc. U. S. natn. Mus. 43: 266, 269-270. *et al.*, "Sugar

lost Mountain, Boulder County, Colorado, 8100' (Washington, ?). -- Klima 1937 Hym.

Cat. 4: 4. -- Ross 1951 in Muesebeck, *et al.*, Agriculture Monogr. 2: 6. -- Burdick

1961 Univ. Calif. Publ. Ent. 17: 344 (holotype, redescribed).

Xyleta midllekayfi Burdick 1961 Univ. Calif. Publ. Ent. 17: 343-344. *et al.*, "theca,

New York" (Washington, ?) (further distribution; host b).

Hosts: a) *Pinus cembris*; b) *Pinus strobus*.

bakeri Konow

Canada (Alberta, British Columbia, Qué-

bec); U.S. (Alabama, Arizona, California,

Colorado, Florida, Georgia, Idaho, Mary-

land, Michigan, Nevada, New Jersey, New

Mexico, New York, North Carolina, Oregon,

Tennessee, Texas, Utah, Virginia, Wyo-

ning).

Xyleta bakeri Konow 1898 Ent. Nachr. 24: 328. *et al.*, "Amer. Bor. (Nevada, Colorado)"

(Eberswalde, ?). -- Konow 1904 Z. system. Hymenopt. Dipt. 4: 366-367. -- Konow

1905 Genera Insect. 27: 23. -- Rohwer 1913 Proc. U. S. natn. Mus. 43: 265, 266, 267

(syn.: *negundinus* Cockerell). -- Ross 1932 Ann. ent. Soc. Am. 25: 155. -- Klima 1937

Hym. Cat. 4: 4. -- Ross 1951 in Muesebeck, *et al.*, Agriculture Monogr. 2: 5. -- Bur-

dick 1961 Univ. Calif. Publ. Ent. 17: 325-327 (9, *et al.*, distribution; syn.: *salicis* Roh-

wer, *intzabidius* MacGillivray; hosts a, b, c, d; adults found on *Salix*, *Salix humilis*,

Salix trietis, *Alnus*, *Corylus*, *Acer rubrum*, *Acer negundo*, wild plum). -- Rasnitsyn

1965 Polskie Pismo ent. 35: 498-499, 514, fig. 17-19, 47, 66, 81, 82 (hosts a, b, c,

in section *Banksianoides* and *Taediopondenosoides*; *bakeri* group). -- Ebel 1966 Ann.

ent. Soc. Am. 59: 227 (habits, rearing notes; Florida; hosts d, e). -- Burks 1967 in

Krombein & Burks, Agriculture Monogr. 2, suppl. 2: 7. -- Smith 1973 Proc. ent. Soc.

Wash. 75: 30 (electrotype from Nevada).

Xyleta negundinus Cockerell 1907 Can. Ent. 59: 324. *et al.*, "Boulder, Colorado" (Washing-

ton, ?) ("On flowers of *Acer negundo*"). -- Rohwer 1912 Univ. Colo. Stud. Ser. Biol.

9: 94 (Boulder Co., Colo., at flower of *Acer negundo*).

Xyleta salicis Rohwer 1913 Proc. U. S. natn. Mus. 43: 265, 266-267. *et al.*, "Graham's

Peak, Rio de los Pinos, Colorado" (Washington, ?) (on *Salix* flowers). -- Klima 1937

Hym. Cat. 4: 7. -- Ross 1951 in Muesebeck, *et al.*, Agriculture Monogr. 2: 6.

Xyleta intzabidius MacGillivray 1923 Bull. Brooklyn ent. Soc. 18: 53-54. *et al.*, "Wyand-

danch, Long Island, New York" (Urbana, Ill., ?). -- Ross 1932 Ann. ent. Soc. Am. 25:

155 (close to *bakeri*). -- Klima 1937 Hym. Cat. 4: 4. -- Ross 1951 in Muesebeck, *et al.*,

Agriculture Monogr. 2: 6.

Hosts: a) *Pinus ponderosa*; b) *Pinus sabiniana*; c) *Pinus virginiana*; d) *Pinus palustris*;

e) *Pinus elliptica*.

californica Rohwer

U.S. (California)

Xyleta californica Rohwer 1913 Proc. U. S. natn. Mus. 43: 266, 272. *et al.*, "Alameda

County, California" (Washington, ?). -- Ross 1932 Ann. ent. Soc. Am. 25: 167, pl. 1,

fig. 2. -- Klima 1937 Hym. Cat. 4: 4. -- Ross 1951 in Muesebeck, *et al.*, Agriculture

Monogr. 2: 6. -- Burdick 1961 Univ. Calif. Publ. Ent. 17: 340-341 (9, *et al.*, -- Rasnitsyn

1965 Polskie Pismo ent. 35: 516 (*minor* group). -- Burks 1967 in Krombein & Burks,

Agriculture Monogr. 2, suppl. 2: 7. -- Rasnitsyn 1971 Trudy paleont. Inst. 130: 194

(in section *Minotrixyleta*).

chelonae Burdick

Canada (British Columbia); U. S. (Calif-

ornia, Idaho, Nevada, Oregon, Washing-

ton).

Xyleta chelonae Burdick 1961 Univ. Calif. Publ. Ent. 17: 336-337. *et al.*, "Phonde L.,

British Columbia" (Ottawa, ?) (host a). -- Rasnitsyn 1965 Polskie Pismo ent. 35: 516

(host a, in section *Banksianoides* and *Taediopondenosoides*; *minor* group). -- Burks 1967

in Krombein & Burks, Agriculture Monogr. 2, suppl. 2: 7. -- Rasnitsyn 1971 Trudy

paleont. Inst. 130: 194 (in section *Minotrixyleta*).

Hosts: a) *Pinus ponderosa*.

coerulea Schilling

Xyela coerulea Schilling 1830 in Gravenhorst, Uebers. Arbeit. schles. Gesell. Vaterl. Kultur 1829: 54-55 (Nomen nudum); "Dr. Schilling beschrieb eine neue Art von *Xyela*, welche *coerulea* genannt wurde, und am Zobenberge gefangen war, ..." next part of sentence deals with ants). -- Dalla Torre 1894 Cat. Hym. 1: 399 (*coerulea*; emendation ?). -- Klima 1937 Hym. Cat. 4: 12 (*species inquirendae*). *

concolor Burdick

U.S. (California, Nevada, Utah).
Xyela concolor Burdick 1961 Univ. Calif. Publ. Ent. 17: 342-343. ♀, ♂. "Westgard Pass, Inyo County, California" (Washington, ♀) (host a). -- Rasnitsyn 1965 Polskie Pismo ent. 35: 504-509, 514, fig. 12, 44, 64 (host a, in section *Parryanoidea*; *concolor* group). -- Burks 1967 in Krombein & Burks, Agriculture Monogr. 2, suppl. 2: 7. -- Rasnitsyn 1971 Trudy paleont. Inst. 130: 194 (in section *Concoloriayela*).

Hosts: a) *Pinus monophylla*.

curva Benson

Austria; Czechoslovakia; Spain; Switzerland.

Xyela curva Benson 1938 Proc. R. ent. Soc. Lond. (B) 7: 33, 35, 36, fig. 2. ♀, ♂. "Austria: Wiesenbach, River Triesting" (Wien, ♀). -- Berland 1943 Bull. Soc. ent. Fr. 48: 91. -- Benson 1960 Proc. R. ent. Soc. Lond. (B) 29: 110 (Spain). -- Benson 1961 Ergebn. wiss. Unters. Schweiz. Natnparks 7: 171 (Switzerland). -- Rasnitsyn 1965 Polskie Pismo ent. 35: 516 (*minor* group). -- Rasnitsyn 1971 Trudy paleont. Inst. 130: 194 (in section *Minorayela*). -- Móczár and Zombori 1973 Fauna Hung. XI, Hym. 1, 2: 14 (in key; W. Slovakia). -- Zombori 1974 Folia ent. hung. 27: 238 (Carpathian Basin; *curva*). -- Beneš 1975 Acta ent. bohém. 72: 121-122 (Czechoslovakia; found together with both sexes of *julizii*; hosts a, b). -- Zombori 1975 Ber. nat.-med. Ver. Innsbruck 62: 90 (Austria).

Hosts: a) *Pinus sylvestris*; b) *Pinus nigra* (?).

deserti Burdick

U.S. (California, Nevada).
Xyela deserti Burdick 1961 Univ. Calif. Publ. Ent. 17: 347-348. ♀, ♂. "Arcus Mts., Inyo County, California" (Urbana, Ill., ♀) (host a). -- Rasnitsyn 1965 Polskie Pismo ent. 35: 501-502, 515, fig. 20, 37, 48 (host a, in section *Parryanoidea*; *deserti* group). -- Burks 1967 in Krombein & Burks, Agriculture Monogr. 2, suppl. 2: 7. -- Rasnitsyn 1971 Trudy paleont. Inst. 130: 194 (in section *Desertiayela*).

Hosts: a) *Pinus monophylla*.

dodgei Greenbaum

U.S. (Florida).
Xyela dodgei Greenbaum 1973 Fla. Ent. 57: 104-106, fig. 1. ♂. "Florida. Cedar Key" (Washington, ♂).

erichsoni Dahlbom

Xyela erichsoni Dahlbom 1835 Conspectus Tenthr., Siricid., Oryssin. Scand.: 16. (Nomen nudum); "*Xyela Erichsoni* mih. nov. sp. - Jemtlandia, D. Boheman". -- Hartig 1837 Fam. Blattwes. Holzweisp. 352 (not known to author, *erichsonii*). -- Kirchner 1867 Cat. Hym. Eur.: 20 (*erichsonii*, listed). -- Dalla Torre 1894 Cat. Hym. 1: 599. -- Klima 1937 Hym. Cat. 4: 12 (*species inquirendae*).

exilicornis Maa

China (Fukien).
Xyela exilicornis Maa 1949 Chin. J. Zool. 3: 30, 31-32. ♂. "Fukien: Wu-Ku, Shaowin" (Maa Collection, ♂). -- Rasnitsyn 1965 Polskie Pismo ent. 35: 518 (♂ in key).

gallicaulis Smith

U.S. (Georgia, Virginia).
Xyela sp.. Hetrick 1942 Proc. ent. Soc. Wash. 44: 55 (biol., from gallis on host a; Virginia).

Xyela galliaulalis Smith 1970 J. Ga. ent. Soc. 5: 69-72, fig. 1-5. ♀, ♂. "Clarke Co., Georgia" (Washington, ♀) (habits; hosts a, b, c).

Hosts: a) *Pinus taeda*; b) *Pinus echinata*; c) *Pinus elliotii*.

graeca Stein

Algeria; Austria; France; Greece; Hungary; Israel; Romania; Turkey; U.S.S.R. (Ukrainian S.S.R.).

Xyela graeca Stein 1876 Stettin. ent. Ztg. 37: 57-58. ♀. "Griechenland" (-- Kirby 1882 List Hym. Brit. Mus. 1: 353. -- Dalla Torre 1894 Cat. Hym. 1: 400. -- Konow 1897 Ent. Nachr. 23: 58 (a syn of *julizii*). -- Enslin 1917 Tenthr. Mitteleur.: 682 (3 syn. of *julizii*). -- Gussakovskij 1935 Fauna SSSR, Insects Hym. 2, 1: 134, 363-364 (3 syn. of *julizii*). -- Benson 1938 Proc. R. ent. Soc. Lond. (B) 7: 33, 35, fig. 1 (distribution; host a; type not located). -- Berland 1943 Bull. Soc. ent. Fr. 48: 89-90. -- Berland 1947 Fauna France. 47. Hym. Tenthr. 27-28. -- Benson 1955 Bull. Res. Coun. Israel 4: 352 (Israel). -- Benson 1960 Proc. R. ent. Soc. Lond. (B) 29: 110 (compared with *obscura*). -- Rasnitsyn 1965 Polskie Pismo ent. 35: 515 (*obscura* group). -- Heilén 1967 Beitr. Ent. 17: 478 (Greece). -- Benson 1968 Bull. Br. Mus. nat. Hist. (Ent.) 22: 112 (Turkey, distribution). -- Rasnitsyn 1971 Trudy paleont. Inst. 130: 193 (syn.: *nigrae* Rasnitsyn). -- Móczár & Zombori 1973 Fauna Hung. XI, Hym. 1, 2: 13, fig. 12 (Hungary). -- Zombori 1974 Folia ent. hung. 27: 238 (Carpathian Basin). -- Zombori 1975 Folia ent. hung. 28: 370 (Hungary). -- Zombori 1975 Ber. nat.-med. Ver. Innsbruck 62: 90 (Austria).

Pinicola graeca: André 1881 Spec. Hym. Eur. Alg. 1: 467. -- Konow 1890 Dt. ent. Z. 34: 242.

Xyela julizii: Berland 1937 Bull. Soc. ent. Fr. 42: 192 (Algeria; misidentification).
Xyela nigrae Rasnitsyn 1965 Polskie Pismo ent. 35: 510-511, 519. ♀. "Ramety bliz uzgoroda" (Moscow, ♀) (host b, in section *Banksianoidea*; *julizii* group).

Hosts: a) *Pinus nigra mauritanica*; b) *Pinus nigra*.

helvetica (Benson)

Switzerland

Xyelatana helvetica Benson 1961 Ergebn. wiss. Unters. Schweiz. Natnparks 7: 171. ♀. "Switzerland. Grisons, Val Furi, near Il Fuorn, 1900 m." ("Nationalpark - Museum, Chur", ♀).

Xyela helvetica: Rasnitsyn 1965 Polskie Pismo ent. 35: 514 (*Longula* group).

julii (Brébisson)

Albania; Austria; Belgium; Czechoslovakia; Denmark; England; Finland; France; Germany; Hungary; Ireland; Italy; Japan; Mongolia; Netherlands; Norway; Scotland; Spain; Sweden; Switzerland; U.S.S.R. (European R.S.F.S.R., Irkutsk, Krasnoyarsk, Latvian S.S.R., Tatar A.S.S.R., Ukrainian S.S.R.); Yugoslavia.

Pinicola julii Brébisson 1818 Bull. Soc. philomath Paris: 117. ♀, ♂. "Il l'a trouvé sur des arbres résineux et conifères, et sur des génévriers, ou sur le gazon qui avoisinait ces arbres, à la Tour, près Falaise dans les premiers jours du mois de mai. On le trouve pendant quinze à vingt jours." (-- André 1881 Spec. Hym. Eur. Alg. 1: 468, pl. 22, fig. 11-15, cat. p. 59. -- Konow 1890 Dt. ent. Z. 34: 242. -- Oudemans 1894 Tijdschr. Ent. 37: 92 (Netherlands). -- Strobl 1895 Wien. ent. Ztg. 14: 277 (Germany, "aut. Thugay"). -- Acloque 1897 Fauna France 3: 224 (France).

Xyela julii: Kirby 1862 List Hym. Brit. Mus. 1: 352 (syn.: *pusilla* Dalmat). -- Cameron 1885 Monogr. Brit. Phytophag. Hym. 2: pl. 6, fig. 11. -- Cameron 1885 Entomologist's mon. Mag. 22: 123. -- Cameron 1890 Monogr. Brit. Phytophag. Hym. 3: 111-112 (England). -- Dalla Torre 1894 Cat. Hym. 1: 400 (on *Betula alba*). -- Konow 1897 Ent. Nachr. 23: 57, 58. -- Schrömer 1901 Alg. Z. Ent. 6: 280 (Berlin vicinity). -- Klaer 1902 Fauna Arctica 2(3): 406 (Norway, Sweden). -- Morice 1904 Entomologist's mon. Mag. (2) 15: 33 (England). -- Konow 1904 Z. system. Hymenopt. Dipteroi. 4: 365-366. -- Konow 1905 Genera Insect. 27: 23. -- MacGillivray 1906 Proc. U. S. natn. Mus. 29: 569-654, pl. 24, fig. 35 (wings). -- Schmiedeknecht 1907 Hym. Mitteleur.: 766. -- Morley 1908 Entomologist 41: 173 (beaten from host a). -- Rudow 1909 Int. ent. Z. 3: 136. -- Haupt 1913 Mitt. ent. Ges. Halle 5/7: 59 (collection notes). -- Nielsen & Henriksen 1915 Danm. Fauna 18: 26, fig. 27, 28 (Denmark). -- Enslin 1917 Tenthr. Mitteleur.: 680, 681-682. -- Forsius 1919 Acta Soc. Fauna Flora fenn. 46: 23 (Lojo-Gebeite). -- Mädl 1923 Annln naturh. Mus. Wien 36: 33 (Albania). -- Welsh 1924 Entomologist's mon. Mag. 60: 64 (England; on spruce). -- Leonardi 1927 Elenco Insetti dann. Ital. 2: 470 (Italy; Beutle). -- Crevecoeur & Marechal 1929 Bull. Annls Soc.

- r. ent. Belg. 69: 166. -- Perkins 1929 Trans. Devon. Assoc. Adv. Sci. Lit. Arts 61: 309 (Devonshire; usually on birch trees). -- Stelfox 1929 Proc. R. Ir. Acad. 39(B): 13 (Ireland). -- Hedrick 1930 Tierwelt Mitteleur. 5(2): 15. -- Schmiedeknecht 1930 Hym. Nord-Mitteleur.: 30. -- Reichert 1933 Sperr. naturf. Ges. Lpz.: 71. -- Conde 1934 Korrespbl. Naturf. Ver. Riga 61: 194 (near Riga). -- Forsius & Heilén 1935 Enum. Insect. Fenn. 2: 1. -- Gussakovskij 1935 Fauna USSR, Insects Hym. 2, 1: 134, 363, 364 (syn.: *henschi* Mocsáry). -- Klima 1937 Hym. Cat. 4: 4-6. -- Zirmingli 1937 Feistschr. E. Strand 3: 348-349 (Niederösterreich, von *Pyraus domestica*; Japan). -- Benson 1938 Proc. R. ent. Soc. Lond. (B) 7: 33, 35, fig. 3 (N. and Cent. Europe; Russia, Ural, West. Siberia). -- Takeuchi 1938 Tentredo 2: 203, 204 (syn.: *zarnagata* Rohrer; Japan, Honshu and Kjusiu). -- Daltrey 1939 Trans. a. Rep. N. Staffs. Field Club 73: 95 (England, son 1940 Entomologist's mon. Mag. 76: 35-36 (host a, biol. not; England). -- Benson 1941 Eos, Madr. 17: 32 (Spain). -- Berland 1943 Bull. Soc. ent. Fr. 48: 89 (France, on conifers). -- Kloet & Hines 1945 Checklist Brit. Insects. 220. -- Berland 1947 Fauna France. 47. Hym. Tentredo.: 26-27 fig. 9 (France). -- Fahländer 1951 Opusc. flowers of host a; adults on *Betula*. -- Tsinovskij 1953 Insects 6(2a): 9 (in staminate tails and sawflies. 35. -- Benson 1954 Entomologist's mon. Mag. 90: 93 (England; host a; finding of larvae; adults on *Betula* and *Salix*). -- Gebali 1956 Cat. Hym. Esp.: 101 (Spain). -- Tonapi 1958 Trans. R. ent. Soc. Lond. 110: 491-492 (spiracular structure). -- Aerts 1960 Decheniana 113: 309 (Netherlands; host a). -- Benson 1960 Proc. R. ent. Soc. Lond. (B) 29: 111, fig. 4 (distribution; host a; fig. of head). -- Kontu-niemi 1960 Suom. Eläim. 9: 69 (Finland; host a). -- Togashi 1964 Life Study, Fukui 8: 6 (Ukraine). -- Valpas & Kontu-niemi 1964 Suom. hyönt. Aikak. 30: 232 (Finland; pupa). -- Rasnitsyn 1965 Polskie Pismo ent. 35: 499-500, fig. 21-23, 49, 67-69, 83, 84 (host a, in section *Kalapanotidae*; *juv.* group). -- Togashi 1965 Kontyû 33: 230 (rectal papillae). -- Verzhutskij 1966 Sawflies of Baikal Region: 16 (pest of conifer plantings; host a; Siberia). -- Lindqvist 1966 Notul. ent. 46: 92 (south. Finland). -- Heilén 1967 Beitr. Ent. 17: 478 (Albania). -- Wolf 1968 Bull. Annls Soc. F. ent. Belg. 103: 334 (Belgium). -- Ermolenko 1969 Vest. Zool. 6: 55 (Ukraine). -- Zombori 1971 Acta zool. hung. 17: 233 (Mongolia). -- Móczár & Zombori 1973 Fauna Hung. XI. Hym. 1: 2: 12 (Hungary). -- Zombori 1974 Folia ent. hung. 27: 238 (Carpathian Basin). -- Torgash 1975 Trans. Shikoku ent. Soc. 12: 14 (Shikoku; adults on flowers of pear trees). -- Benes 1975 Acta ent. bohém. 72: 122 (in key; host a; Czechoslovakia). -- Rasnitsyn 1975 Zool. Zh. 54: 854, pl. 2, fig. 3 (head). -- Stroganova 1976 Trudy biol. inst. Sib. Otd. Akad. Nauk SSSR 18: 268 (west. Siberia).
- Xylea pusilla* Dalman 1819 K. svenska Vetensk.-Akad. Handl. 40: 124, pl. 4, fig. 11, 9, 8. "Hab. in Pinus sylvestris junioribus passim, in uplandis, Vestrogothia, praesertim vere obvia" (). -- Dalman 1823 Anallecta Ent.: 28, pl. 3, fig. 11 (9, 8 redescr.). -- Lepelletier 1823 Monogr. Tentredo.: 1. -- Curtis 1824 Brit. Ent. 1: 30 (Type-species of *Xylea*, on umbelliferous plants in vicinity of fir trees). -- Lepelletier & Serville 1828 Ency. Méth. 10: 792 (*juv.* as a syn.). -- Stephens 1829 Syst. Cat. Brit. Insects. 341: -- Lepelletier 1830 Fauna France: 74, pl. 14, fig. 7. -- Herrich-Schaeffer 1830 Fauna Insect. Germ. pl. 117, fig. 15. -- Hartig 1837 Fam. Illus. Brit. Ent. Mand. 7: 109 (England; Scotland; in vicinity of fir groves). -- Dahlbom 1835 Conspectus Tentredo., Siricid., Dryssin. Scand.: 15. -- Hartig 1837 Fam. Blattwes. Holzweesp.: 552, pl. 6, fig. 25-33. -- Zetterstedt 1838 Insect. Lapp. 1: 356 (in pinetis et lignis ejusdem arboris recentiv). -- Herrich-Schaeffer 1840 Nomencl. mod. Class. Insects 2: synop. p. 55. -- Guérin 1844 Iconogr. Règne Anim. Insectes 7: 402, pl. 64, fig. 12 (1834). -- Schaeffer 1851 Sher. Akad. wiss. Wien, math.-nat. Klasse 6: 373 (on birch). -- Kirchner 1854 Verh. zool.-bot. Ver. Wien 4: 289 (on *Betula alba*). -- Kalltenbach 1858 Verh. naturh. Ver. preuss. Rheinl. 15: 106. -- Kalltenbach 1861 Steffin. ent. Ztg. 22: 127 (Karlsruhe, Kassel). -- Kawaji 1864 Byull. mosk. Obshch. Ispyt. Pri-r. 37: 299, 500 (prov. Casanensis). -- Taschenberg 1866 Hym. Deutschl. 28. -- Kirchner 1867 Cat. Hym. Eur.: 20. -- Snellen van Volkenhoven 1869 (1868) Tijdschr. Ent. 12: 110 (Netherlands). -- Thomson 1871 Hym. Scand. 1: 316. -- Kalltenbach 1874 Pflanzenf. 609 (on birch). -- Brischke & Zaddach 1883 Schr. naturf. Ges. Danzig 2: 319. -- Kiaer 1898 Tromsø Mus. Aarsn. 19: 27 (Sweden, Norway). *Xylea zarnagata* Rohrer 1910 Proc. U. S. natn. Mus. 39: 100, 118, 9. "Hakone, Japan" (Washington, 9). -- Gussakovskij 1935 Fauna USSR, Insects Hym. 2, 1: 132, 135, 363. -- Klima 1937 Hym. Cat. 4: 11.

Xylea henschi Mocsáry 1912 Rovart. Lapp. 19: 131, 9, 8. "Ad Krapiham Croatiae" (Budapest, 9) (on *Betula alba*). -- Enslin 1917 Tentredo. Mitteleur.: 682 (similar to *juv.*). -- Schmiedeknecht 1930 Hym. Nord-Mitteleur.: 30. -- Gussakovskij 1935 Fauna USSR, Insects Hym. 2, 1: 134, 363-364 (2 syn. of *juv.*).

Hosts: a) *Pyraus sylvestris*.

Kamishatica Gussakovskij

Xylea kamishatica Gussakovskij 1935 Fauna USSR, Insects Hym. 2, 1: 131, 133-134, 363-364, fig. 49, 9. "Kamishatka" (Moscow 7, 9). -- Klima 1937 Hym. Cat. 4: 7. -- Takeuchi 1938 Tentredo 2: 203-204 (Hokkaido). -- Togashi 1961 Life Study, Fukui 5: 29, 39, 40 (Mt. Hakusan). -- Benson 1961 Ergebn.-wiss. Unters. Schweiz. Nattparks 7: 171 (as syn. of *alpegena*). -- Rasnitsyn 1965 Polskie Pismo ent. 35: 574 (host a, in section *Strobiloides*; *alpegena* group; Japan (1)). -- Zombori 1971 Acta zool. hung. 17: 233 (Mongolia).

Xylea juv.: Enslin 1926 Ezheg. zool. Mus. 27: 379-380 (misidentification: record from Kamchatka).

latipennis Stötz

Xylea latipennis Stötz 1936 Decheniana 93: 263, pl. 1, fig. 2, 9. "Gestein: Gelb-bräuner Schiefer" Rott am Steingebirge (). -- Burdick 1959 J. Kans. ent. Soc. 52: 121 ("The evidence given in the text and in his illustrations indicates a probable synonymy of *X. latipennis* Stötz and *X. angustipennis*, when compared with variation as found in living species"). -- Rasnitsyn 1965 Polskie Pismo ent. 35: 491, 596, 513, fig. 6 (9, middle Oligocene, West Germany; syn.: *angustipennis* Stötz).

Xylea angustipennis Stötz 1936 Decheniana 93: 264, pl. 1, fig. 3, 9. "Gestein: Gelbbräuner Schiefer" Rott am Steingebirge ().

linseyi Burdick

Xylea linseyi Burdick 1961 Univ. Calif. Publ. Ent. 17: 344-345, 9, 8. "Modoc National Forest, Modoc County, California" (Urbana, 111, 9) (host a, 7). -- Rasnitsyn 1965 Polskie Pismo ent. 35: 491, 505-506, 514, fig. 14-16, 35, 36, 45, 46 (host a, in section *Banksioides*; *linseyi* group). -- Burks 1967 in Krombein & Burks, Agricultural Monogr. 2, suppl. 2: 7. -- Smith 1970 J. Ga. ent. Soc. 5: 71 (separation from *gallii-zaddachi*). -- Rasnitsyn 1971 Trudy paleont. inst. 130: 192 (in section *Linseyla*).

Hosts: a) *Pyraus ponderosa*.

Tongula Dalman

Xylea tongula Dalman 1819 K. svenska Vetensk.-Akad. Handl. 40: 124-125, 9. "Habitat in Vestrogothia rarissime" (). -- Dalman 1823 Anallecta Ent.: 23 (redescr.). -- Lepelletier 1823 Monogr. Tentredo.: 1, 2. -- Curtis 1824 Brit. Ent. 3: 30. -- Lepelletier & Serville 1828 Ency. Méth. 10: 792. -- Dahlbom 1835 Conspectus Tentredo., Siricid., Dryssin. Scand.: 16. -- Hartig 1837 Fam. Blattwes. Holzweesp.: 552. -- Zetterstedt 1838 Insect. Lapp. 2: 356. -- Herrich-Schaeffer 1840 Nomencl. Ent. 2: 243. -- Kirchner 1867 Cat. Hym. Eur.: 20. -- Snellen van Volkenhoven 1869 (1868) Tijdschr. Ent. 12: 110 (Netherlands). -- Thomson 1871 Hym. Scand. 1: 316-317. -- Kirby 1882 List Hym. Br. Mus. 1: 352. -- Brischke & Zaddach 1883 Schr. naturf. Ges. Danzig 2: 319. -- Dalla Torre 1894 Cat. Hym. 1: 400. -- Konow 1904 Z. system. Hymenopt. Dipteroi. 4: 364-365. -- Konow 1905 Genera Insect. 27: 23, fig. 2, 5, 12, 22. -- Schmiedeknecht 1907 Hym. Mitteleur.: 766. -- Enslin 1914 Insekt. Mitteleur. 111. Hym. 3: 194, pl. 4, fig. 8. -- Enslin 1917 Tentredo. Mitteleur.: 680-681. -- Schmiedeknecht 1930 Hym. Nord-Mitteleur.: 30. -- Hedrick 1930 Tierwelt Mitteleur. 5(2): 15. -- Conde 1934 Korrespbl. Naturf. Ver. Riga 61: 194 (Latvia). -- Gussakovskij 1935 Fauna USSR, Insects Hym. 2, 1: 132, 363 (Leningrad, Luga). -- Stritt 1935 Mitt. bad. Landesver. Naturk. 3: 190 (Baden). -- Heilén 1935 Notul. ent. 15: 17. -- Forsius & Heilén 1935 Enum. Insect. Fenn. 2: 1. -- Klima 1937 Hym. Cat. 4: 6. -- Gregor & Bata 1940 Sb. ent. Odd. naturf. Mus. Praha 18: 224 (Czechoslovakia). -- Heilén 1948 Notul. ent. 25: 41 (compared with

piliserra). -- Tsinovskii 1953 Insects of Latvian SSR, hornfalls and sawflies: 35. -- Rasnitsyn 1965 Polskie Pismo ent. 35: 504, 514, fig. 13, 65, 80 (host a, in section *Halapensoidea*; *Longula* group). -- Bassus 1973 Fauna Abh. 4: 138 (Germany). -- Beneš 1975 Acta ent. bohém. 72: 122 (Czechoslovakia; host a).
Pinicola longula: André 1881 Spec. Hym. Eur. Alg. 1: 468. -- Konow 1890 Dt. ent. Z. 34: 242. -- Oudemans 1894 Tijdschr. Ent. 37: 92 (Netherlands).
Xyelatana longula: Benson 1938 Proc. R. ent. Soc. Lond. (B) 7: 34. -- Berland 1947 Faune France, 47. Hym. Tenthréd.: 30. -- Kontunien 1960 Suom. Eläim. 9: 70 (Finland). -- Möczár & Zombori 1973 Fauna Hung. XI, Hym. 1, 2: 14 (in key). -- Zombori 1974 Folia ent. hung. 27: 238 (Carpathian Basin).

Hosts: a) *Pinus sylvestris*.

Lugdenensis (Berland)

France

Xyelatana lugdenensis: Berland 1943 Bull. Soc. ent. Fr. 48: 90-91, fig. 1. ♀.
 "Lyon" (Paris, ♀). -- Berland 1947 Faune France, 47. Hym. Tenthréd.: 30.
Xyela lugdenensis: Rasnitsyn 1965 Polskie Pismo ent. 35: 514 (*Chrysleyr* group).

Lunata Burdick

U. S. (California)

Xyela lunata: Burdick 1961 Univ. Calif. Publ. Ent. 17: 334-335, ♀, ♂. "Alum Rock Park, Santa Clara County, California" (Washington, ♀) (hosts a, b). -- Rasnitsyn 1965 Polskie Pismo ent. 35: 516 (hosts a, b, in section *Banksianoidea* and *Taedepondoidea*; *minor* group). -- Burks 1967 in Krombein & Burks, Agriculture Monogr. 2, suppl. 2: 7. -- Rasnitsyn 1971 Trudy paleont. Inst. 130: 194 (in section *Minorxyelata*).

Hosts: a) *Pinus sabiniana*; b) *Pinus coulteri*.

magna Statz

Germany (Oligocene)

Xyela magna: Statz 1936 Decheniana 93: 264-265, pl. 2, fig. 4. ♀. "Gestein: Gelb-bräuner Schiefer" Rott am Siebenbürg (in Museum Zoologique, Lausanne). ♀. -- Rasnitsyn 1965 Polskie Pismo ent. 35: 491, 498, 513, fig. 5 (♀, middle Oligocene, West Germany; in *magna* group). -- Rasnitsyn 1971 Trudy paleont. Inst. 130: 193 (in section *Magnaxyelata*).

menelaus Benson

Greece

Xyela menelaus: Benson 1960 Proc. R. ent. Soc. Lond. (B) 29: 111-112, fig. 1. ♀. -- "Greece: Peloponnesos, Taygetos Mountains" (in Museum Zoologique, Lausanne). ♀. -- Rasnitsyn 1965 Polskie Pismo ent. 35: 514 (*bakert* group). -- Rasnitsyn 1971 Trudy paleont. Inst. 130: 193 (in *Xyela* s. str.).

minor Norton

Canada (Alberta, British Columbia, Ontario, Québec): U. S. (Arizona, California, Colorado, District of Columbia, Florida, Georgia, Idaho, Illinois, Maryland, Massachusetts, Mississippi, Nevada, New Jersey, New Mexico, New York, North Carolina, Oregon, Pennsylvania, South Carolina, Texas, Utah, Virginia, Wyoming).

Xyela minor: Norton 1869 Trans. Am. ent. Soc. 2: 349. ♀. "Washington, D.C.; Pennsylvania; Mass." (Philadelphia, ♀). -- Provancher 1878 Naturaliste can. 10: 208 (*Xyela*). -- Kirby 1882 List Hym. Brit. Mus. 1: 353. -- Provancher 1883 Petite Faune Ent. Can. Hym.: 234 (*Xyela*). -- Dalla Torre 1894 Cat. Hym. 1: 400-401. -- Ashmead 1898 Can. Ent. 30: 206. -- Dyar 1898 Can. Ent. 30: 174, 176 (larva; biol. note, in staminate aments; host c). -- Dyar 1899 Proc. ent. Soc. Wash. 4: 313 (larvae inside flowers of pine). -- Ashmead 1899 Proc. ent. Soc. Wash. 4: 214-215. -- Ashmead 1900 1904 Z. system. Hymenopt. Dipteroi. 4: 366. -- Konow 1905 Genera Insect. 27: 23. -- MacGillivray 1910 Rep. New Jers. Dept. Agric. 1899: 601 (N.J.). -- Rohrer 1913 Proc. U. S. natn. Mus. 45: 264, 266, 269. -- MacGillivray 1916 Bull. Conn. St. geol. nat. Hist. Surv. 22: 30. -- Yuasa 1923 Illinois biol. Monogr. 7: 42 (larva, in staminate flowers of pine). -- Rohrer 1928 in Leonard, Mem. Cornell Univ. agric. Exp. Stn 101: 871 (N.Y.). -- Cresson 1928 Mem. Am. ent. Soc. 5: 7 (type ♀ from Mass.). -- Klima

1937 Hym. Cat. 4: 7-8. -- Brimley 1938 Insects North Carolina: 391. -- Snodgrass 1941 Smithsonian misc. Collns 99: 26. -- Schaffner & Middleton 1950 Misc. Publs U. S. Dep. Agric. 657: 383. -- Ross 1951 in Muesebeck, et al., Agriculture Monogr. 2: 6. -- Maxwell 1955 Can. Ent., suppl. 1, 87: 17 (internal larval anatomy; Ont.; host f). -- Burdick 1961 Univ. Calif. Publ. Ent. 17: 330-334 (syn. *luteopicta* Cockerell, *alutis* Rohrer, *virginiana* Rohrer, *dissecta* Rohrer, *nevadensis* Rohrer, *exans* Rohrer; distribution; hosts a-e; adults on *Salix*, *Alnus rugosa*, *Corylus*, plum blossoms). -- Daly 1963 Ann. ent. Soc. Am. 56: 299, fig. 1, 2 (musculature). -- Rasnitsyn 1965 Polskie Pismo ent. 35: 501, 506, fig. 24-34, 38-41 (hosts a-e, section *Banksianoidea* and *Taedepondoidea*; *minor* group). -- Ebel 1966 Ann. ent. Soc. Am. 59: 227 (Florida; habits and rearing; hosts h, i). -- Burks 1967 in Krombein & Burks, Agriculture Monogr. 2, suppl. 2: 7. -- Rasnitsyn 1971 Trudy paleont. Inst. 130: 194 (in section *Minorxyelata*). -- Smith 1978 in Krombein, et al., Cat. Hym. N. Amer. (in press) (syn.: *coladenensis* Rohrer).

Xyela luteopicta: Cockerell 1902 Can. Ent. 34: 194. ♂. "Las Vegas, N. M." (Washington, ♂). -- Rohrer 1912 Univ. Colo. Stud. Ser. Biol. 9: 95 (Colo., on or about *Salix*). -- Rohrer 1913 Proc. U. S. natn. Mus. 45: 265, 266, 269. -- Klima 1937 Hym. Cat. 4: 6. -- Ross 1951 in Muesebeck, et al., Agriculture Monogr. 2: 6.

Xyela alutis: Rohrer 1913 Proc. U. S. natn. Mus. 45: 265, 266, 268, ♀, ♂. "Great Falls, Virginia" (Washington, ♀) ("some from flowers of *Alnus*"). -- Klima 1937 Hym. Cat. 4: 4. -- Ross 1951 in Muesebeck, et al., Agriculture Monogr. 2: 5.

Xyela wisnemaniae: Rohrer 1913 Proc. U. S. natn. Mus. 45: 265, 268-269, ♀. "Plummers Island, Maryland" (Washington, ♀). -- Klima 1937 Hym. Cat. 4: 7. -- Ross 1951 in Muesebeck, et al., Agriculture Monogr. 2: 6.

Xyela errans: Rohrer 1913 Proc. U. S. natn. Mus. 45: 266, 269, ♀. "North Carolina" (Washington, ♀). -- Klima 1937 Hym. Cat. 4: 4. -- Brimley 1938 Insects North Carolina: 391. -- Ross 1951 in Muesebeck, et al., Agriculture Monogr. 2: 6.

Xyela disjuncta: Rohrer 1913 Proc. U. S. natn. Mus. 45: 266, 270, ♀. "Banff, Alberta, Canada" (Washington, ♀). -- Klima 1937 Hym. Cat. 4: 4. -- Ross 1951 in Muesebeck, et al., Agriculture Monogr. 2: 6.

Xyela nevadensis: Rohrer 1913 Proc. U. S. natn. Mus. 45: 266, 271, ♀. "Nevada" (Washington, ♀). -- Klima 1937 Hym. Cat. 4: 7. -- Ross 1951 in Muesebeck, et al., Agriculture Monogr. 2: 6.

Xyela coloradenensis: Rohrer 1913 Proc. U. S. natn. Mus. 45: 266, 272, ♂. "Colorado" (Washington, ♂). -- Klima 1937 Hym. Cat. 4: 4. -- Ross 1951 in Muesebeck, et al., Agriculture Monogr. 2: 6.

Hosts: a) *Pinus sabiniana*; b) *Pinus muricata*; c) *Pinus virginiana*; d) *Pinus ponderosa*; e) *Pinus coulteri*; f) *Pinus banksiana*; g) *Pinus* sp., pine; h) *Pinus ellottii*; i) *Pinus palustris*.

obscura (Strobl)

Austria; Canada (British Columbia, Newfoundland, Northwest Territories, Nova Scotia, Ontario, Québec); Czechoslovakia; Japan; Switzerland; U.S. (Arkansas, California, Colorado, District of Columbia, Florida, Georgia, Idaho, Maryland, Mississippi, Montana, New York, North Carolina, Pennsylvania, South Carolina, Texas, Virginia, Washington); U.S.S.R. (Altay).

Pinicola julii var. *obscura*: Strobl 1895 Wien. ent. Ztg. 14: 277. ♀. "Auf *Pinus Pumilio* der Scheiblerhochalpe, des Kalbling und Scheiblsstein, c. 1600 m, bei Admont" (Wien ?, ♀). -- Konow 1897 Ent. Nachr. 23: 58 (as syn. of *julii*). -- Hedrick 1937 Hym. Cat. 4: 5 (? syn. of *julii*).

Xyela obscura: Benson 1960 Proc. R. ent. Soc. Lond. 29: 110, fig. 2, 3 (a distinct species; Austria; Switzerland; ♀, ♂; hosts e, f). -- Benson 1961 Ergebn. wiss. Unters. Schweiz. Natnparks 7: 170-171 (Austria, Switzerland to Japan; hosts e, f; syn.: *pini* Rohrer, *japonica* Rohrer). -- Benson 1962 Bull. Br. Mus. nat. Hist. (Ent.) 12: 385 (holartic species). -- Togashi 1964 Life Study, Fukui 8: 51 (Japan). -- Togashi 1965 in Asahina, et al., Iconogr. insect. Japan. 3: 243, pl. 122, fig. 1. -- Rasnitsyn 1965 Polskie Pismo ent. 35: 515 (host e, section *Halapensoidea*; *julii* group; Alps, Altit. Mountains). -- Ebel 1966 Ann. ent. Soc. Am. 59: 227 (habits, rearing; Florida; hosts g, h). -- Burks 1967 in Krombein & Burks, Agriculture Monogr. 2, suppl. 2: 7.

— Togashi 1970 Mushl. 43, suppl.: 5 (internal reproductive organs). — Maccár & Zombori 1973 Fauna Hung. XI, Hym. 1: 2-12 (in key; hosts e, f). — Zombori 1974 Folia ent. hung. 27: 238 (Carpethian Basin). — Togashi 1974 Trans. Shikoku ent. Soc. 12: 14 (Shikoku). — Beneš 1975 Acta ent. bohém. 72: 121, 122 (syn.: *juvill* var. *tatryz* Gregor; Czechoslovakia; hosts e, f, 1). — Schedl 1976 Verh. Univ. Innsbruck 103, Alpine Biol. Studies 8: 32 (adults on *Alnus viridis*; hosts e, f; Austria).
Xyela japonica Rohrer 1910 Proc. U. S. natn. Mus. 39: 99-100, 118. ♀ "Hokone, Japan (Washington, ?)". — Yano 1932 in Esaki, Iconogr. insect. Japon. 2: 470. — Gussakovskij 1935 Fauna USSR, Insects Hym. 2, 1: 152, 153, 363. — Klima 1937 Hym. Cat. 4: 4. — Takeuchi 1938 Tentredo 2: 203, 204.

Xyela pyra Rohrer 1913 Proc. U. S. natn. Mus. 45: 265, 266, 267-268. ♀, ♂. "Call, Texas" (Washington, ?) ("swarmed about a single tree of *Pinus palustris*"). — Klima 1937 Hym. Cat. 4: 7. — Ross 1951 in Muesebeck, *et al.*, Agriculture Monogr. 2: 6. — Burdick 1961 Univ. Calif. Pub. Ent. 17: 327-330 (distribution in U.S. and Canada; syn.: *elaeosoma* Rohrer, *xyela* Rohrer; adults recorded from *Salix*, *Salix eriastris*, *Alnus*, filament trees (*Corylus*), *Corylus americana*, and honeysuckle; host a - d). — Rasnitsyn 1965 Polskie Pismo ent. 35: 516, 518 (hosts a - d, section *Banks-canoides* and *Taeadopanderosoides*; minor group).

Xyela xyela Rohrer 1913 Proc. U. S. natn. Mus. 45: 266, 271-272. ♂. "Call, Texas" (Washington, ?). — Klima 1937 Hym. Cat. 4: 7. — Ross 1951 in Muesebeck, *et al.*, Agriculture Monogr. 2: 6.
Xyela elaeosoma Rohrer 1913 Proc. U. S. natn. Mus. 45: 266, 270-271. ♀, ♂. "Biscayne Bay, Florida" (Washington, ?). — Klima 1937 Hym. Cat. 4: 7. — Ross 1951 in Muesebeck, *et al.*, Agriculture Monogr. 2: 6.

Xyela julii var. *tatryz* Gregor 1940 in Gregor & Bata, Sb. ent. Odd. nř. Mus. Praze 18: 225. ♀. "Štrbské Pleso in Slovakia" ().

Hosts: a) *Pinus palustris*; b) *Pinus virginiana*; c) *Pinus banksiana*; d) *Pinus ponderosa*; e) *Pinus mugo*; f) *Pinus cembra*; g) *Pinus eliotii*; h) *Pinus taeda*; i) *Pinus nigra* ?.

piliserra Thomson

Finland; France; Scotland; Sweden.

Xyela piliserra Thomson 1871 Hym. Scand. 1: 317. ♀. "Sälsynt; Tunnen i Lappland" (Lund, ?). — Kirrey 1882 List Hym. Brit. Mus. 1: 352. — Dalla Torre 1894 Cat. Hym. 1: 401. — Konow 1897 Ent. Nachr. 23: 57-58 (as syn. of *longula*). — Gussakovskij 1935 Fauna USSR, Insects Hym. 2, 1: 152, 363, 364 (syn. of *longula*). — Heilen 1948 Norv. ent. 28: 41 (compared with *longula*).

Pinicola piliserra: André 1881 Spec. Hym. Eur. Alg. 1: 468. — Konow 1890 Dt. ent. Z. 34: 242.

Xyelatana piliserra: Benson 1938 Proc. R. ent. Soc. Lond. (B) 7: 34 (Lapland). — Bertland 1943 Bull. Soc. ent. Fr. 48: 90 (France). — Bertland 1947 Faune France. 47. Hym. Tentred. 29, fig. 5 (France). — Harwood 1950 Entomologist's mon. Mag. 86: 360 (Scotland; host a). — Benson 1951 Handb. Ident. Br. Insects 6(2a): 9 (Scotland; host a, in staminate flowers). — Konttinen 1960 Suom. Eläim. 9: 70 (Finland).

Hosts: a) *Pinus sylvestris*.

priceae Burdick

U.S. (California).

Xyela priceae Burdick 1961 Univ. Calif. Pub. Ent. 17: 339-340. ♀, ♂. "M. E. Mt. Hamilton, Santa Clara County, California" (Washington, ?) (biol., host a). — Rasnitsyn 1965 Polskie Pismo ent. 35: 516 (host a, section *Banks-canoides* and *Taeadopanderosoides*; minor group). — Burks 1967 in Krombein & Burks, Agriculture Monogr. 2, suppl. 2: 7. — Rasnitsyn 1971 Trudy paleont. Inst. 130: 194 (in section *Microrhyzella*).

Hosts: a) *Pinus coulteri*.

radiatae Burdick

U.S. (California).

Xyela radiatae Burdick 1961 Univ. Calif. Pub. Ent. 17: 337-339. ♀, ♂. "Oakland Hills, Alameda County, California" (Washington, ?) (host a). — Rasnitsyn 1965 Polskie Pismo ent. 35: 516 (host a, section *Banks-canoides* and *Taeadopanderosoides*; minor group). — Burks 1967 in Krombein & Burks, Agriculture Monogr. 2, suppl. 2: 7. — Rasnitsyn 1971 Trudy paleont. Inst. 130: 194 (in section *Microrhyzella*).

Hosts: a) *Pinus radiata*.

serrata Burdick

U.S. (California).

Xyela serrata Burdick 1961 Univ. Calif. Pub. Ent. 17: 341-342. ♀, ♂. "4 mi. W. Plantation, Sonoma County, California" (Washington, ?) (host a). — Rasnitsyn 1965 Polskie Pismo ent. 35: 515 (host a, section *Banks-canoides* and *Taeadopanderosoides*; minor group). — Burks 1967 in Krombein & Burks, Agriculture Monogr. 2, suppl. 2: 8. — Rasnitsyn 1971 Trudy paleont. Inst. 130: 194 (in section *Microrhyzella*).

Hosts: a) *Pinus muricata*.

stinicola Mae

China (Chekiang, Fukien, Hangchow).

Xyela stinicola Mae 1943 Biol. Bull. Fukien Christ. Univ. 3: 61-63. ♀. "Shin-Yang-Tsuen, ca. 250 m., Bohai Hills, Chung-An Hsien, Sukien NW" (coll. author, ?). — Mae 1949 Chin. J. Zool. 3: 30, 31 (♀, ♂; distribution).

styrax Burdick

U.S. (District of Columbia, Georgia, New York, Maryland, Virginia).

Xyela styrax Burdick 1961 Univ. Calif. Pub. Ent. 17: 345-347. ♀, ♂. "Virginia, 5 mi. S.W. Washington, D. C." (Washington, ?) (host a). — Rasnitsyn 1965 Polskie Pismo ent. 35: 514 (host a, section *Banks-canoides*; *zinalegi* group). — Burks 1967 in Krombein & Burks, Agriculture Monogr. 2, suppl. 2: 8. — Rasnitsyn 1971 Trudy paleont. Inst. 130: 194 (in section *Trusleyella*).

Hosts: a) *Pinus virginiana*.

usurtiensis Rasnitsyn

U.S.S.R. (Primorski Krai).

Xyela usurtiensis Rasnitsyn 1965 Polskie Pismo ent. 35: 491, 503, 513, fig. 8, 42, 61, 78. ♀, ♂. "Dalenii Vostok, khr. Sikhote-Alin, bassein r. Takema" (Moscow, ?) (host a, section *Strobiloides*; *alpengena* group).

Hosts: a) *Pinus koraiensis*.

Genus XYLEA Subgenus MESOXYELA Rasnitsyn

Xyela subg. *Mesoxylea* Rasnitsyn 1965 Polskie Pismo ent. 35: 491, 497-498, 513.

Type-species: *Xyela (Mesoxylea) mesoxylea* Rasnitsyn (Original designation). — Rasnitsyn 1969 Trudy paleont. Inst. 123: 38 (in key). — Rasnitsyn 1971 Trudy paleont. Inst. 130: 193, 195 (discussion).

mesoxylea Rasnitsyn

U.S.S.R. (Buryat A.S.S.R.) (Cretaceous ?)

Xyela (Mesoxylea) mesoxylea Rasnitsyn 1965 Polskie Pismo ent. 35: 491, 498, 513, fig. 59. ♀. "Zabai-kal'ie, r. Vittim mestonakhozhdenie Baisa" (PIN, Moscow, ?). — Rasnitsyn 1969 Trudy paleont. Inst. 123: 18, 38, fig. 62 (in key).

Genus PINICOLITES Meunier

Pinicolites Meunier 1920 Proc. Sect. Sci. K. ned. Akad. Wet. 22(2): 896.

Type-species: *Pinicolites graciosus* Meunier (Monotypic). — Burdick 1959 J. Kans. ent. Soc. 32: 120-122 (separation from *Xyela* and *Pleroneura*). — Rasnitsyn 1971 Trudy paleont. Inst. 130: 193, 195 (phylogenetic position).

graciosus Meunier

Germany (Oligocene)

Pinicolites graciosus Meunier 1920 Proc. Sect. Sci. K. ned. Akad. Wet. 22(2): 896, fig. 4, fig. 5 on plate. ♀. "Kott" (). — Burdick 1969 J. Kans. ent. Soc. 32: 120-122. — Rasnitsyn 1969 Trudy paleont. Inst. 123: 38, fig. 60 (in key).
Pleroneura graciosa: Stötz 1936 Decleniana 93: 258, 262-263, pl. 1, fig. 1 (re-description, finding of another ♀ specimen).

Genus PLERONEURA Konow

Pleroneura Konow 1897 Ent. Nachr. 23: 55, 56-57.

Type-species: *Xyela dahlzi* Hartig (Designated by Rohrer 1911). — Konow 1904 Z.

system. Hymenopt. Dipteroi; 4: 362-363. -- Konow 1905 Genera Insect. 27: 22. -- Schmiedeknecht 1907 Hym. Mitteleur.: 766. -- Rohrer 1910 Can. J. Ent. 42: 88-90 (key to N. Amer. species). -- Rohrer 1911 Tech. Ser. Bur. Ent. U. S. 20: 87, 104 (type-species; syn.: *Manozyela* Ashmead). -- Enslin 1914 Insect. Mitteleur. III. Hym. 3: 194. -- Enslin 1917 Tenthr. Mitteleur.: 679 (European species). -- Schmiedeknecht 1930 Hym. Nord-Mitteleur.: 30. -- Hedrick 1930 Tierwelt Mitteleur. 5(2): 15. -- Ross 1932 Ann. ent. Soc. Am. 25: 154, 156-159 (key to N. Amer. species). -- Gussakovskij 1935 Fauna SSSR, Insects Hym. 2, 1: 130, 136-137, 364-365 (Palearctic species). -- Klima 1937 Hym. Cat. 4: 7-8 (world cat.). -- Takeuchi 1938 Tenthr. 2: 203, 204-205 (Japanese Empire). -- Ross 1951 in Muesebeck, et al., Agriculture Monogr. 2: 6 (N. Amer. cat.). -- Burdick 1959 J. Kans. ent. Soc. 32: 121 (separation from *Ptinocallia*). -- Smith 1967 Ann. ent. Soc. Am. 60: 378, 382-383 (larvae). -- Smith 1967 J. Ga. ent. Soc. 5: 71 (separation of larvae from those of *Xyela*).

Pteroneura (*!*) Ashmead 1898 in Dyar, Psyche, Camb. 8: 214 (in key). -- Ashmead 1898 Can. Ent. 30: 206. -- MacGillivray 1916 Bull. Conn. St. geol. nat. Hist. Surv. 22: 29, 30. -- Rohrer 1928 in Leonard, Mem. Cornell Univ. agric. Exp. Stn 101: 871 (N.Y.).

Manozyela Ashmead 1898 (May) in Dyar, Psyche, Camb. 8: 214.

Type-species: *Manozyela californica* Ashmead (original designation). -- Ashmead 1898 (August) Can. Ent. 30: 206.

aldrichi Ross

Pteroneura aldrichi Ross 1932 Ann. ent. Soc. Am. 25: 157, 158-159, pl. 1, fig. 3, 7; pl. 2, fig. 13, 19, 23; 9, d. "Moscow, Idaho" (Urbana, Ill., 9). -- Klima 1937 Hym. Cat. 4: 7. -- Ross 1951 in Muesebeck, et al., Agriculture Monogr. 2: 6. -- Smith 1967 Proc. ent. Soc. Wash. 69: 183 (as syn. of *californica*). -- Osmart & Dahisten 1977 Can. Ent. 109: 1001-1007 (biol.; California; host a).

Hosts: a) *Abies concolor*.

brunneticornis Rohrer

Pteroneura bruneticornis (!) Rohrer 1910 Can. Ent. 42: 88, 89-90. 9. "Gloversville, N. Y." (Washington, 9). -- Rohrer 1910 Can. Ent. 42: 220 (corrected to *bruneticornis*). -- MacGillivray 1916 Bull. Conn. St. geol. nat. Hist. Surv. 22: 30. -- Rohrer 1928 in Leonard, Mem. Cornell Univ. agric. Exp. Stn 101: 871 (N.Y.). -- Klima 1937 Hym. Cat. 4: 7. -- Ross 1951 in Muesebeck, et al., Agriculture Monogr. 2: 6. -- Webb & Forbes 1951 Can. Ent. 83: 181-183 (biol., N.B.; hosts a, b; injury also noticed in N.S., Mich., Wis.). -- Maxwell 1955 Can. Ent. 87, suppl. 1: 17 (internal larval anatomy; N.B., host a). -- Raizenne 1957 Publs. Dep. Agric. Can. 1009: 7 (Ont.; host a). -- Smith 1967 Ann. ent. Soc. Am. 60: 382-383 (larvae).

Hosts: a) *Abies balsamea*; b) *Abies concolor*.

californica (Ashmead)

Manozyela californica Ashmead 1898 (May) in Dyar, Psyche, Camb. 8: 214. No sex or locality, see Rohrer 1911. (Washington, 9). -- Dyar 1898 (July) Can. Ent. 30: 174. -- Ashmead 1898 (August) Can. Ent. 30: 206.

Pteroneura californica: Rohrer 1911 Tech. Ser. Bur. Ent. U. S. 20: 104-105 (description, type from Alameda Co., Calif., sex unknown [abdomen missing]). -- Ross 1932 Ann. ent. Soc. Am. 25: 157-158 (distribution; syn.: *fabrizioides* Rohrer). -- Klima 1937 Hym. Cat. 4: 8-9. -- Ross 1951 in Muesebeck, et al., Agriculture Monogr. 2: 6. -- Smith 1967 Proc. ent. Soc. Wash. 69: 183 (syn.: *schwarzii* Rohrer; host a).

Pteroneura fabrizioides Rohrer 1910 Can. Ent. 42: 88, 89. d. "Placer Co., Calif." (Washington, 9).

Pteroneura schwarzii Rohrer 1910 Can. Ent. 42: 220. 9. "Alto, Utah" (Washington, 9). -- Ross 1932 Ann. ent. Soc. Am. 25: 157, 158. -- Klima 1937 Hym. Cat. 4: 8. -- Ross 1951 in Muesebeck, et al., Agriculture Monogr. 2: 6.

Hosts: a) fir.

coniferarum (Hartig)

Xyela confixerum Hartig 1837 Fam. Blattwesp. Holzwesp.: 352. "Das Vaterland bei der ist Oestreich" (Kirby 1882 List Hym. Brit. Mus. 1: 352. -- Dalla Torre 1894 Cat. Hym. 1: 399. -- *Ptinocalla confixerum*: André 1881 Spec. Hym. Eur. 1: 469, pl. 2, fig. 3. -- Konow 1890 Dt. ent. 2: 34: 242. -- Strobl 1895 Wien. ent. Ztg. 14: 277 (Germany: "auf saße Blüthen," "unter *Abies excelsa*"). -- Acloque 1897 Faune France 3: 224, fig. 104. *Pteroneura confixerum*: Konow 1897 Ent. Nachr. 23: 57. -- Konow 1904 Z. syst. Hymenopt. Dipteroi. 4: 363. -- Konow 1905 Genera Insect. 27: 22. -- Schmiedeknecht 1907 Hym. Mitteleur.: 766. -- Enslin 1917 Tenthr. Mitteleur.: 680. -- Hedrick 1930 Tierwelt Mitteleur. 5(2): 15. -- Schmiedeknecht 1930 Hym. Nord-Mitteleur.: 30. -- Gussakovskij 1935 Fauna SSSR, Insects Hym. 2, 1: 136, 365 (9, d; distribution). -- Klima 1937 Hym. Cat. 4: 8. -- Gregor & Bata 1940 Sb. ent. Odd. nár. Mus. Praze 18: 224 (Czechoslovakia). -- Berland 1943 Bull. Soc. ent. Fr. 48: 91 (France; syn.: *numidica* Benson). -- Berland 1947 Faune France. 47. Hym. Tenthr. 31. -- Wolf 1968 Bull. Annls Soc. r. ent. Belg. 103: 334 (Belgium; distribution). -- Móczár & Zombori 1973 Fauna Hung. XI, Hym. 1, 2: 15 (Hungary). -- Zombori 1974 Folia ent. hung. 27: 238 (Carpathian Basin).

Pteroneura numidica Benson 1940 Proc. R. ent. Soc. Lond. (B) 9: 39-40, fig. 1, 2. 9, d. "Algeria: northern slope of Mt. Babor (Kabylie Range), 1900 m." (Paris, 9). "Taken when mountain summit was still covered with snow, and was apparently associated with *Abies numidica*... (the Algerian pine)." Other European species probably associated with coniferous forests and possibly with *Abies*.)

dahliei (Hartig)

Xyela dahliei Hartig 1837 Fam. Blattwesp. Holzwesp.: 352. "Das Vaterland bei der Oestreich" (Kirby 1882 List Hym. Brit. Mus. 1: 352. -- Dalla Torre 1894 Cat. Hym. 1: 399. -- *Ptinocalla dahliei*: André 1881 Spec. Hym. Eur. 1: 468. -- Konow 1890 Dt. ent. 2: 34: 242.

Pteroneura dahliei: Konow 1897 Ent. Nachr. 23: 56, 57. -- Konow 1904 Z. syst. Hymenopt. Dipteroi. 4: 362, 363. -- Konow 1905 Genera Insect. 27: 22. -- Schmiedeknecht 1907 Hym. Mitteleur.: 766. -- Enslin 1917 Tenthr. Mitteleur.: 680. -- Hedrick 1930 Tierwelt Mitteleur. 5(2): 15. -- Schmiedeknecht 1930 Hym. Nord-Mitteleur.: 30. -- Gussakovskij 1935 Fauna SSSR, Insects Hym. 2, 1: 136, 364-365 (9, d; distribution). -- Klima 1937 Hym. Cat. 4: 8. -- Takeuchi 1938 Tenthr. 2: 204-205 (Japan (Hokkaido); Korea). -- Benson 1940 Proc. R. ent. Soc. Lond. (B) 9: 39. -- Gregor & Bata 1940 Sb. ent. Odd. nár. Mus. Praze 18: 224 (Czechoslovakia). -- Berland 1947 Fauna France. 47. Hym. Tenthr.: 31. -- Kim 1963 Human. and Sci. (Nat. Sci.) Korea Univ. 6: 277 (Korea). -- Kim 1970 Illus. Ency. Fauna Flora Korea 11, Insecta 3: 120, 121, 715. -- Móczár & Zombori 1973 Fauna Hung. XI, Hym. 1, 2: 15, fig. 16 (Hungary). -- Zombori 1974 Folia ent. hung. 27: 238 (Carpathian Basin). -- Zombori 1975 Ber. nat.-med. Ver. Innsbruck 62: 90 (Austria).

hikosana Togashi

Pteroneura hikosana Togashi 1972 Mush. 46: 53-55, fig. 1-7. 9, d. "Mt Hiko, Fukuoka Pref." (Fukuoka, 9). -- Togashi 1972 Mush. 46: 131 (seasonal occurrence on Mt. Hiko).

koebelieri Rohrer

Pteroneura koebelieri Rohrer 1910 Can. Ent. 42: 89, 90. d. "Oregon" (Washington, 9).

Hosts: a) *Abies concolor*.

lutea Rohrer
Pteronotus lutea Rohrer 1910 Can. Ent. 42: 89, 90, d. "Oregon" (Washington, d). --
 Ross 1932 Ann. ent. Soc. Am. 25: 157, 159. -- Klima 1937 Hm. Cat. 4: 8. -- Ross 1951
 in Muesebeck, et al., Agriculture Monogr. 2: 6. -- Smith 1967 Proc. ent. Soc. Wash.
 69: 183. -- Ohmart & Dahisten 1977 Can. Ent. 109: 1001-1007 (biol., California; host
 a).

Hosts: a) *Adiast concolor*.

Tribe LIADOXYELINI

Liadoxyelini: Rasnitsyn 1966 Paleont. Zh. 4: 69-70. -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 36, 38, 41 (key to genera, species). -- Rasnitsyn 1971 Trudy paleont. Inst. 130: 192, 195 (phylogenetic position).

Genus LIADOXYELA Martynov

Liadoxyela Martynov 1937 Trudy paleont. Inst. 7: 41, 142.
 Type-species: *Liadoxyela praeox* Martynov (Original designation). -- Rasnitsyn 1966 Paleont. Zh. 4: 70. -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 38 (key to species). -- Rasnitsyn 1971 Trudy paleont. Inst. 130: 192.

tenis Rasnitsyn

Liadoxyela tenis Rasnitsyn 1969 Trudy paleont. Inst. 123: 16, 53-54, fig. 66.
 "Pribalkae, r. Iya u d. Vladimirovka" (PIN, Moscow,).

Liadoxyela praeox: Rasnitsyn 1966 Paleont. Zh. 4: 70, fig. 1.

praeox Martynov

Liadoxyela praeox Martynov 1937 Trudy paleont. Inst. 7: 41-42, 142-143, fig. 20.
 "Lower Lias of Kisyl-Kiya, Uch-Kurgan" (Leningrad,). -- Burdick 1959 J. Kans. ent. Soc. 32: 120 (from Kisyl-Kiya, Turkey (!)). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 16, 38, fig. 65.

Genus KIRGHIZOXYELA Rasnitsyn

Kirghizoxyela Rasnitsyn 1966 Paleont. Zh. 4: 70.
 Type-species: *Kirghizoxyela mrazbitia* Rasnitsyn (Original designation). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 38 (in key).

mrazbitia Rasnitsyn

Kirghizoxyela mrazbitia Rasnitsyn 1966 Paleont. Zh. 4: 71, fig. 2. "Ozero Issyk-Kul" (PIN, Moscow,). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 16, 38, fig. 64 (in key).

Genus LYDOXYELA Rasnitsyn

Lydoxyela Rasnitsyn 1966 Paleont. Zh. 4: 71.
 Type-species: *Lydoxyela excellens* Rasnitsyn (Original designation). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 41 (in key).

excellens Rasnitsyn

Lydoxyela excellens Rasnitsyn 1966 Paleont. Zh. 4: 71-72, fig. 3. "Yuzhnyi Kazakh-
 sten, kireet karatau, s. Mikhailovna" (PIN, Moscow,). -- Rasnitsyn 1969 Trudy
 paleont. Inst. 123: 16, 41, fig. 68 (in key).

Genus ANOMOXYELA Rasnitsyn

Anomoxyla Rasnitsyn 1966 Paleont. Zh. 4: 72.
 Type-species: *Anomoxyla incerta* Rasnitsyn (Original designation). -- Rasnitsyn 1969
 Trudy paleont. Inst. 123: 38 (in key).

incerta (Rasnitsyn)

Anomoxyla incerta Rasnitsyn 1963 Paleont. Zh. 1: 89, 95, fig. 8, d. "Kazakhstan,
 kireet karatau, s. Galikino" (PIN, Moscow, d).
Anomoxyla incerta: Rasnitsyn 1966 Paleont. Zh. 4: 72, fig. 4. -- Rasnitsyn 1969
 Trudy paleont. Inst. 123: 16, 38, fig. 67 (in key).

Subfamily MACROXYELINAE

Macroxyelinae: Ashmead 1898 Can. Ent. 30: 205-206 (Included *Macroxyela*, *Megaxyela*,
Pleuroxela (!)). -- Benson 1945 Proc. R. ent. Soc. Lond. (B) 14: 36. -- Rasnitsyn
 1966 Paleont. Zh. 4: 75-85 (3 tribes, fossil and recent). -- Smith 1967 Ann. ent. Soc.
 Am. 60: 377 (larvae; 2 tribes). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 36, 41,
 43 (key to genera and some species; 5 tribes, fossil and recent). -- Rasnitsyn 1971
 Trudy paleont. Inst. 130: 191-192, 195 (discussion; phylogenetic position).

Tribe GIGANTOXYELINI

Gigantoxylini: Rasnitsyn 1969 Trudy paleont. Inst. 123: 18, 41. -- Rasnitsyn 1971
 Trudy paleont. Inst. 130: 191, 195.

Genus GIGANTOXYELA Rasnitsyn

Gigantoxyla Rasnitsyn 1966 Paleont. Zh. 4: 81.
 Type-species: *Gigantoxyla quadrifurcata* Rasnitsyn (Original designation). -- Ras-
 nitsyn 1969 Trudy paleont. Inst. 123: 41 (in key).

quadrifurcata Rasnitsyn

Gigantoxyla quadrifurcata Rasnitsyn 1966 Paleont. Zh. 4: 81-82, fig. 12. "r. Vitim,
 urochishe Baisa" (PIN, Moscow,). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 18,
 41, fig. 1 (in key).

Genus CHAETOXYELA Rasnitsyn

Chaetoxyla Rasnitsyn 1966 Paleont. Zh. 4: 82.
 Type-species: *Chaetoxyla huxuta* Rasnitsyn (Original designation). -- Rasnitsyn 1969
 Trudy paleont. Inst. 123: 18, 41 (in key).

huxuta Rasnitsyn

Chaetoxyla huxuta Rasnitsyn 1966 Paleont. Zh. 4: 82-83, fig. 13. "r. Vitim,
 urochishe Baisa" (PIN, Moscow,). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 18,
 41, fig. 76 (in key).

Tribe ANGARDIYELINI

Angardiylini: Rasnitsyn 1966 Paleont. Zh. 4: 75. -- Rasnitsyn 1969 Trudy paleont.
 Inst. 123: 41 (key to genera). -- Rasnitsyn 1971 Trudy paleont. Inst. 130: 191, 195.

Genus ANGARDIYELA Rasnitsyn

Angardiyla Rasnitsyn 1966 Paleont. Zh. 4: 75-76.
 Type-species: *Angardiyla veltmca* Rasnitsyn (Original designation). -- Rasnitsyn
 1969 Trudy paleont. Inst. 123: 41 (key to species).

minor Rasnitsyn

Angardiyla minor Rasnitsyn 1966 Paleont. Zh. 4: 76-77, pl. 4, fig. 2. "r. Vitim,
 urochishe Baisa" (PIN, Moscow,). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 18,
 41, fig. 74 (in key).

pallipes Rasnitsyn
U.S.S.R. (Buryat A.S.S.R.) (Cretaceous ?)
Angaridylea pallipes Rasnitsyn 1966 Paleont. Zh. 4: 77, pl. 4, fig. 3. "r. Vitim, urochishhe Baisa" (PIN, Moscow,). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 18, 41, fig. 75 (in key).

vitimica Rasnitsyn
U.S.S.R. (Buryat A.S.S.R.) (Cretaceous ?)
Angaridylea vitimica Rasnitsyn 1966 Paleont. Zh. 4: 76, fig. 8, pl. 4, fig. 1. "r. Vitim, urochishhe Baisa" (PIN, Moscow,). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 18, 41, fig. 75 (in key).

Genus NIGRIMONTICOLA Rasnitsyn

Nigrimonticola Rasnitsyn 1966 Paleont. Zh. 4: 77.

Type-species: *Nigrimonticola longicornis* Rasnitsyn (Original designation). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 41 (in key).

longicornis Rasnitsyn
U.S.S.R. (Kazakh S.S.R.) (Jurassic)
Nigrimonticola longicornis Rasnitsyn 1966 Paleont. Zh. 4: 77-78, fig. 9. "Yuzhnei Kazakhstan, khrebet Karatau, s. Mikhailovka" (PIN, Moscow,). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 16, 41, fig. 70 (in key).

Genus BATSOXYELA Rasnitsyn

Batsoxyela Rasnitsyn 1969 Trudy paleont. Inst. 123: 41, 54.

Type-species: *Batsoxyela tarsalis* Rasnitsyn (Original designation).

tarsalis Rasnitsyn
U.S.S.R. (Buryat A.S.S.R.) (Cretaceous ?)
Batsoxyela tarsalis Rasnitsyn 1969 Trudy paleont. Inst. 123: 18, 41, 54, fig. 71. "Zabaikalie, r. Vitim, urochishhe Baisa" (PIN, Moscow,).

Genus OPHITHALMOXYELA Rasnitsyn

Opithalmoxyela Rasnitsyn 1966 Paleont. Zh. 4: 78-79.

Type-species: *Opithalmoxyela brachyura* Rasnitsyn (Original designation). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 41 (in key).

brachyura Rasnitsyn
U.S.S.R. (Kazakh S.S.R.) (Jurassic)
Opithalmoxyela brachyura Rasnitsyn 1966 Paleont. Zh. 4: 79, fig. 10. "khrebet Karatau, s. Mikhailovka" (PIN, Moscow,). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 16, 41, fig. 72 (in key).

Tribe CERXYELINI

Cerxyelini: Rasnitsyn 1969 Trudy paleont. Inst. 123: 18, 41. -- Rasnitsyn 1971 Trudy paleont. Inst. 130: 191, 195 (Cerxyeleni (!)).

Genus CERXYELA Rasnitsyn

Cerxyela Rasnitsyn 1966 Paleont. Zh. 4: 80.

Type-species: *Cerxyela dolichocera* Rasnitsyn (Original designation). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 41 (in key).

dolichocera Rasnitsyn

U.S.S.R. (Buryat A.S.S.R.) (Cretaceous ?)
Cerxyela dolichocera Rasnitsyn 1966 Paleont. Zh. 4: 80-81, fig. 11. "r. Vitim, urochishhe Baisa" (PIN, Moscow,). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 18, 41, fig. 77 (in key).

Tribe MACROXYELINI

Macroxyelini: Rasnitsyn 1966 Paleont. Zh. 4: 75. -- Smith 1967 Ann. ent. Soc. Am. 60: 377 (larvae; 2 genera). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 41 (2 genera; in key). -- Rasnitsyn 1971 Trudy paleont. Inst. 130: 191, 195.

Genus MACROXYELA Kirby

Macroxyela Kirby 1882 List Hym. Brit. Mus. 1: 351.

Type-species: *Xyela ferruginea* Say (Original designation). -- Ashmead 1897 Ent. Nachr. 23: 55-56 (in key, discussion). -- Ashmead 1898 In Dyar, Psyche, Camb. 8: 214 (in key). -- Ashmead 1898 Can. Ent. 30: 206 (in key). -- Dyar 1898 Can. Ent. 30: 174 (larva unknown). -- Konow 1904 Z. system. Hymenopt. Dipt. 4: 359-360. -- Konow 1905 Genera Insect. 27: 21-22. -- MacGillivray 1916 Bull. Conn. St. geol. nat. Hist. Surv. 22: 30, 31. -- Crampton 1919 Proc. ent. Soc. Wash. 21: 129-155, fig. 51 (♂ genitalia). -- Ross 1932 Ann. ent. Soc. Am. 25: 164-166 (revision; syn.: *Protaxyela* MacGillivray). -- Ross 1937 Illinois Biol. Monogr. 15: 106, 108 (in key, description). -- Klima 1937 Hym. Cat. 4: 10-12 (world cat.). -- Benson 1945 Proc. R. ent. Soc. Lond. (B) 14: 37 (in key, a Nearctic genus). -- Ross 1951 in Muesebeck, et al., Agriculture Monogr. 2: 7 (N. Amer. cat.). -- Smith 1967 Ann. ent. Soc. Am. 60: 378, 379-380 (larvae). -- Kennington 1972 J. Ent. (A) 46: 112 (*Macroxyela* sp., silk gland morphology).

Protaxyela MacGillivray 1912 Can. Ent. 44: 295.

Type-species: *Xyela aenea* (!) Norton (Original designation). -- MacGillivray 1916 Bull. Conn. St. geol. nat. Hist. Surv. 22: 50, 51.

aenea (Norton)

U.S. (Louisiana, Missouri, New York, Texas).

Xyela aenea Norton 1872 Trans. Am. ent. Soc. 4: 86. ♂. "Texas" (Philadelphia, ♂). -- Cresson 1880 Trans. Am. ent. Soc. 8: 48. -- Dalla Torre 1894 Cat. Hym. 1: 399. -- Cresson 1928 Mem. Am. ent. Soc. 5: 3, 85 (type).

Macroxyela aenea: Kirby 1882 List Hym. Brit. Mus. 1: 352. -- Konow 1897 Ent. Nachr. 23: 56. -- Dyar 1898 Can. Ent. 30: 174 (listed). -- Ashmead 1900 in Smith, Insects New Jers., Rep. New Jers. Dep. Agric. 1899: 601 (host a.). -- Howard 1901 Insect Book: pl. 13, fig. 5. -- Konow 1904 Z. system. Hymenopt. Dipt. 4: 359, 360. -- Konow 1905 Genera Insect. 27: 22. -- Crampton 1919 Proc. ent. Soc. Wash. 21: 129-155, pl. 11, fig. 27, 28, 56, 57 (♂ genitalia). -- Rohwer 1928 in Leonard, Mem. Cornell Univ. agric. Exp. Stn 101: 871 (N.Y.). -- Ross 1932 Ann. ent. Soc. Am. 25: 164, 165, pl. 1, fig. 6, 10; pl. 2, fig. 21. -- Klima 1937 Hym. Cat. 4: 10-11. -- Ross 1951 in Muesebeck, et al., Agriculture Monogr. 2: 7.

Protaxyela aenea: MacGillivray 1912 Can. Ent. 44: 294 (*aenea* (!)). -- MacGillivray 1916 Bull. Conn. St. geol. nat. Hist. Surv. 22: 51.

Hosts: a) elm.

bicolor MacGillivray

U. S. (Illinois, Ohio).

Macroxyela bicolor MacGillivray 1912 Can. Ent. 44: 294. ♂. "Columbus, Ohio" (Urbana, Ill., ♂). -- MacGillivray 1916 Bull. Conn. St. geol. nat. Hist. Surv. 22: 51. -- Ross 1932 Ann. ent. Soc. Am. 25: 164, 166. -- Frison 1927 Bull. Ill. St. nat. Hist. Surv. 16: 234 (type). -- Klima 1937 Hym. Cat. 4: 11. -- Ross 1951 in Muesebeck, et al., Agriculture Monogr. 2: 7 (syn.: *hanti* Ross).

Macroxyela bicolor var. *hanti* Ross

ferruginea (Say)

Canada (Ontario); U. S. (Arkansas, Connecticut, Idaho, Illinois, Iowa, Kansas, Maine, Maryland, Massachusetts, Missouri, Nebraska, New York, Ohio, Oklahoma, Pennsylvania, Virginia, Wisconsin).
Xyela ferruginea Say 1824 in Keating, Narr. Long's 2nd Exped., App.: 310-311. ♀. "Arkansa" (lost). -- LeConte 1859 Writ. T. Say: 2: 207. -- Cresson 1861 Proc. ent. Soc. Philad. 1: 38. -- Norton 1869 Trans. Am. ent. Soc. 2: 348. -- Dalla Torre 1894 Cat. Hym. 1: 399.

Macrozygela ferruginea: Kirby 1882 List Hym. Brit. Mus. 1: 351, pl. 14, fig. 1. -- Konow 1897 Ent. Nachr. 23: 55. -- Dyer 1898 Can. Ent. 30: 174 (listed). -- Young 1899 Can. Ent. 31: 41 (larva; host a; biol., syn.: *trifasciata* Norton). -- Asmead 1900 in Smith, Insects New Jers., Rep. New Jers. Dep. Agric. 1899: 601 (N.J.). -- Konow 1904 Z. system. Hymenopt. Dipt. 4: 359, 360. -- Konow 1905 Genera Insect. 27: 22. -- MacGillivray 1906 Proc. U.S. natn. Mus. 29: 569-684, pl. 23, fig. 33 (wings). -- MacGillivray 1916 Bull. Conn. St. geol. nat. Hist. Surv. 22: 32. -- Yuasa 1923 Illinois biol. Monogr. 7: 42 (larva; host b). -- Garlick 1923 Can. Ent. 55: 256 (Kans.; adults feeding on buds of elm, pear, and plum). -- Rohrer 1928 in Leonard, Mem. Cornell Univ. agric. Exp. Stn 101: 871 (N.Y.). -- Ross 1932 Ann. ent. Soc. Am. 25: 164, 165-166, pl. 2, fig. 15, 22 (host b; distribution; description; syn.: *dietziana* MacGillivray, *obsolleta* MacGillivray). -- Klima 1937 Hym. Cat. 4: 11-12. -- Smith 1943 in Smith, *et al.*, Rep. Kans. St. Bd. Agric. 62: 382 (Kans.). -- Ross 1951 in Muesebeck, *et al.*, Agriculture Monogr. 2: 7 (host b). -- Maxwell 1955 Can. Ent. 87, suppl. 1: 17 (terminal larval anatomy; host a; Ont.). -- Smith 1967 Ann. ent. Soc. Am. 60: 379-380, fig. 17-22 (larva).

Xyela trifasciata Harris 1835 in Hitchcock, Zool. Bot. Mineral. Geol. Mass.: 583 (nomen nudum).

Xyela trifasciata Norton 1862 Proc. Boston nat. Hist. Soc. 8: 224, d. "Mass." (Cambridge, Mass. (?), d.). -- Cresson 1861 Proc. ent. Soc. Philad. 1: 58. -- Norton 1869 Trans. Am. ent. Soc. 2: 349. -- Dalla Torre 1884 Cat. Hym. 1: 400.

Macrozygela trifasciata: Kirby 1882 List Hym. Brit. Mus. 1: 351. -- Dyer 1898 Can. Ent. 30: 174 (listed). -- MacGillivray 1910 in Smith, Rep. New Jers. Dep. Agric. 1909: 580 (N.J.; host b). -- MacGillivray 1916 Bull. Conn. St. geol. nat. Hist. Surv. 22: 32. -- Rohrer 1920 J. Wash. Acad. Sci. 10: 515 (type of Harris in Harris Coll.). -- Rohrer 1928 in Leonard, Mem. Cornell Univ. agric. Exp. Stn 101: 871 (N.Y.).

Macrozygela obsolleta MacGillivray 1912 Can. Ent. 44: 294-295, 9. "Thaca, N.Y." (Urbana, Ill., 9). -- MacGillivray 1916 Bull. Conn. St. geol. nat. Hist. Surv. 22: 32. -- Frison 1927 Bull. Ill. St. nat. Hist. Surv. 16: 243 (type). -- Rohrer 1928 in Leonard, Mem. Cornell Univ. agric. Exp. Stn 101: 871 (N.Y.).

Macrozygela dietziana MacGillivray 1912 Can. Ent. 44: 295, 9. d. "Thaca, N.Y." (Urbana, Ill., 9). -- MacGillivray 1916 Bull. Conn. St. geol. nat. Hist. Surv. 22: 32. -- Frison 1927 Bull. Ill. St. nat. Hist. Surv. 16: 244 (type 9). -- Rohrer 1928 in Leonard, Mem. Cornell Univ. agric. Exp. Stn 101: 871 (N.Y.).

Hosts: a) *Ulmus americana*; b) *Ulmus* sp., elm.

Genus МЕГАХЕЛА Asmead

Megazygela Asmead 1898 (May) in Dyer, Psyche, Camb. 8: 214.

Type-species: *Xyela major* Cresson (Original designation). -- Dyer 1898 (July) Can. Ent. 30: 174, 175 (listed). -- Asmead 1898 (August) Can. Ent. 30: 206. -- Konow 1904 Z. system. Hymenopt. Dipt. 4: 358, 361. -- Konow 1905 Genera Insect. 27: 22. -- Rohrer 1911 Tech. Ser. Bur. Ent. U.S. 20: 83. -- MacGillivray 1916 Bull. Conn. St. geol. nat. Hist. Surv. 22: 29, 31. -- Ross 1932 Ann. ent. Soc. Am. 25: 154, 161-164 (N. Amer.; syn.: *Odontophyes* Konow, *Pezomachia* MacGillivray). -- Gussakovskij 1935 Fauna USSR, Insects Hym. 2: 130 (Palaeartic). -- Ross 1937 Illinois biol. Monogr. 15: 394, 396 (in key, description). -- Klima 1937 Hym. Cat. 4: 8-10 (world cat.). -- Takeuchi 1938 Tentredo 2: 203, 205 (Japanese Empire). -- Benson 1945 Proc. R. ent. Soc. Lond. (B) 14: 36 (in key; N. Amer. and East Asia). -- Ross 1951 in Muesebeck, *et al.*, Agriculture Monogr. 2: 7 (N. Amer. cat.). -- Smith 1967 Ann. ent. Soc. Am. 60: 378, 380-381 (larvae).

Odontophyes Konow 1899 Wien. ent. Ztg. 18: 42.

Type-species: *Pleurostoma antixyeta* Dyer (Monotypic). -- Konow 1904 Z. system. Hymenopt. Dipt. 4: 358, 361-362. -- Konow 1905 Genera Insect. 27: 22. -- MacGillivray 1916 Bull. Conn. St. geol. nat. Hist. Surv. 22: 29, 30.

Megazygela Schulz 1906 Spolia Hym. 2: 88 (emendation).

Type-species: *Xyela tricolor* Norton (Original designation). -- MacGillivray 1916 Bull. Conn. St. geol. nat. Hist. Surv. 22: 30, 31.

bicoloripes (Rohrer)

U. S. (Mississippi, Pennsylvania, Virginia).

Odontophyes bicoloripes Rohrer 1924 Proc. ent. Soc. Wash. 26: 215, 9. "Agricultur-

a) College, Mississippi" (Washington, 9).

Megazygela bicoloripes: Ross 1932 Ann. ent. Soc. Am. 25: 162, 163-164, pl. 1, fig. 5 (allotype d). -- Klima 1937 Hym. Cat. 4: 9. -- Ross 1951 in Muesebeck, *et al.*, Agriculture Monogr. 2: 7.

gigantea Mocsáry

China (Chinkiang, Kiangsu); Japan; Korea; U.S.S.R. (Primorski Krai).

Megazygela gigantea Mocsáry 1909 Annls. hist.-nat. Mus. natn. hung. 7: 39, 9. "Si-biria orientalis: Ussuri (Kasakowitch)" (Budapest, 9). -- Gussakovskij 1935 Fauna USSR, Insects Hym. 2: 130, 362. -- Klima 1937 Hym. Cat. 4: 9. -- Takeuchi 1937 Aikitu 1: 25 (Honshu; syn.: *mitaka* Sato). -- Takeuchi 1938 Tentredo 2: 205 (Japan, Korea; host a). -- Takeuchi 1940 Notes Ent. chin.-7: 484 (Chinkiang). -- Wu 1941 Cat. Insect. Sin. 6: 1 (Kiangsu). -- Takeuchi 1949 Trans. Kansai ent. Soc. 14: 47 (host a). -- Maa 1949 Chin. J. Zool. 3: 30 (distribution; host a). -- Kim 1965 Human. and Sci. (Nat. Sci.) Korea Univ. 6: 277 (Korea; *gigantea* (!)). -- Okutani 1967 Jap. J. appl. Ent. Zool. 11: 44 (host a). -- Ko 1969 List Forest Insect Pests of Korea: 302-303 (Korea; hosts b, c). -- Kim 1970 Illus. Ency. Fauna Flora Korea 11, Insecta 3: 120, 121, 715, pl. 1, fig. 1.

Megazygela mitaka Sato 1930 J. Chosen nat. Hist. Soc. 11: 5-6, fig. 9. "Kazan near Surgen, Korea" (authors collection, 9) ("upon the bush of *Erythra padus* L."), -- Gussakovskij 1935 Fauna USSR, Insects Hym. 2: 130, note 1. -- Klima 1937 Hym. Cat. 4: 10.

Hosts: a) *Juglans* sp., b) *Juglans mandshurica*; c) *Juglans sibirica*.

major (Cresson)

U.S. (Florida, Kansas, Mississippi, New York, Oklahoma, Texas).

Xyela major Cresson 1880 Trans. Am. ent. Soc. 8: 34, 9. d. "Texas" (Philadelphia, 9). -- Dalla Torre 1884 Cat. Hym. 1: 400. -- Cresson 1916 Mem. Am. ent. Soc. 1: 5 (type 9).

Macrozygela major: Kirby 1882 List Hym. Brit. Mus. 1: 351. -- Konow 1897 Ent. Nachr. 23: 56.

Megazygela major: Asmead 1898 (May) in Dyer, Psyche, Camb. 8: 214. -- Dyer 1898 (July) Can. Ent. 30: 174, 175 (larva; host a). -- Asmead 1898 (August) Can. Ent. 30: 206. -- Asmead 1900 in Smith, Insects New Jers., Rep. New Jers. Dep. Agric. 1899: 601 (N.J.; host a). -- Konow 1904 Z. system. Hymenopt. Dipt. 4: 361. -- Konow 1905 Genera Insect. 27: 22. -- Schulz 1906 Spolia Hym. 2: 88 (mistake (!)). -- MacGillivray 1910 in Smith, Rep. New Jers. Dep. Agric. 1909: 581 (1900 N.J., record a mistake). -- MacGillivray 1916 Bull. Conn. St. geol. nat. Hist. Surv. 22: 31. -- Yuasa 1923 Illinois biol. Monogr. 7: 41, fig. 6 (larva; hosts a, b). -- Taylor 1931 Ann. ent. Soc. Am. 24: 451-466. -- Ross 1932 Ann. ent. Soc. Am. 25: 162, pl. 2, fig. 9 (distribution; hosts a, b; syn.: *ferruginea* Bridwell). -- Ross 1936 Ent. News 47: 132 (compared with *longicornis*). -- Klima 1937 Hym. Cat. 4: 9-10. -- Ross 1951 in Muesebeck, *et al.*, Agriculture Monogr. 2: 7. -- Smith 1978 in Krombein, *et al.*, Cat. Hym. N. Amer. (in press) (syn.: *longicornis* Ross).

Odontophyes ferruginea Bridwell 1906 Ent. News 17: 94, 9. "Baldwin, Kansas" (Washington, 9) ("...upon the flowers of the early shrub willow").

Megazygela longicornis: Ross 1936 Ent. News 47: 131-132, 9, d. "State College, Mississippi" (Urbana, Ill., 9) (host b). -- Ross 1951 in Muesebeck, *et al.*, Agriculture Monogr. 2: 7. -- Smith 1967 Ann. ent. Soc. Am. 60: 380-381, fig. 25-31 (larva).

Hosts: a) hickory; b) *Carya pecan*, pecan.

petraefracta Brues

U. S. (Colorado) (Miocene).

Megazygela petraefracta Brues 1908 Bull. Mus. comp. Zool. Harv. 51: 271, 274, fig. 10, 9. "Florissant, Col." (Miocene (Cambridge, Mass., 9)). -- Zhelokhovtsev & Rasnitsyn 1972 Psyche, Camb. 79: 315, fig. 1 (Oligocene).

tricolor (Norton)

U. S. (Illinois, Indiana, Kansas, New Jersey, New York).

Xyela tricolor Norton 1862 Proc. ent. Soc. Philad. 1: 144, d. "Kansas" (Philadelphia, d). -- Norton 1869 Trans. Am. ent. Soc. 2: 348. -- Dalla Torre 1894 Cat. Hym. 1: 401. -- Cresson 1928 Mem. Am. ent. Soc. 5: 9, 85 (type).

- Macroxyela tricolor*: Kirby 1882 List Hym. Brit. Mus. 1: 352. -- Dyar 1898 Can. Ent. 30: 174.
- Megaxyela tricolor*: Konow 1904 Z. system. Hymenopt. Dipt. 4: 361. -- Konow 1905 Genera Insect. 27: 22. -- Ross 1932 Ann. ent. Soc. Am. 25: 162-163, pl. 1, fig. 11 (description, distribution). -- Klima 1937 Hym. Cat. 4: 10. -- Ross 1951 in Muesebeck, et al., Agriculture Monogr. 2: 7. -- Smith 1978 in Krombein, et al., Cat. Hym. N. Amer. (in press) (syn.: *avizgrata* Dyar).
- Paraxyela tricolor*: MacGillivray 1912 Can. Ent. 44: 294. -- MacGillivray 1916 Bull. Conn. St. geol. nat. Hist. Surv. 22: 31.
- Pleuroneura* (!) *avizgrata* Dyar 1898 (May) Psyche, Camb. 8: 213-214. ♀, larva. "Staten Island, N. Y.; Bellport, Long Island; Bedford Park, N. Y.; Fort Lee and Plainfield, N. J." (Washington, 9) (hosts a, b) (the type is from Bedford Park, N.Y.). -- Dyar 1898 (July) Can. Ent. 30: 174, 176 (listed). -- Dyar 1899 Can. Ent. 31: 127 (larva; answer to Konow's 1899 criticism).
- Odontophyes avizgrata*: Konow 1899 Wien. ent. Ztg. 18: 41 (criticism of Dyar's 1898 description). -- Ashmead 1900 in Smith, Insects New Jers., Rep. New Jers. Dep. Agric. 1899: 601 (N.J.; hosts a, b). -- Konow 1901 Z. system. Hymenopt. Dipt. 4: 44 (host b). -- Konow 1904 Z. system. Hymenopt. Dipt. 4: 362. -- Konow 1905 Genera Insect. 27: 22. -- MacGillivray 1906 Proc. U. S. natn. Mus. 29: pl. 23, fig. 32 (wings). -- Bridwell 1906 Ent. News 17: 94. -- MacGillivray 1910 in Smith, Rep. New Jers. Dep. Agric. 1909: 580 (N.J.; hosts a, b; *avizgrata* (!)). -- MacGillivray 1916 Bull. Conn. St. geol. nat. Hist. Surv. 22: 30. -- Yuasa 1923 Illinois Biol. Monogr. 7: 41 (larva; hosts a, b). -- Rohwer 1928 in Leonard, Mem. Cornell Univ. agric. Exp. Stn 101: 871 (N.Y.; hosts a, b).
- Megaxyela avizgrata*: Ross 1932 Ann. ent. Soc. Am. 25: 162, 163, pl. 2, fig. 14, 17 (description, distribution; hosts a, b). -- Klima 1937 Hym. Cat. 4: 9. -- Ross 1951 in Muesebeck, et al., Agriculture Monogr. 2: 7. -- Smith 1967 Ann. ent. Soc. Am. 60: 381, fig. 23-24 (larva).

Hosts: a) hickory; b) butternut.

Tribe XYLECIINI

- Xyleciini: Benson 1945 Proc. R. ent. Soc. Lond. (B) 14: 36 (one genus).
- Xyleciini: Rasnitsyn 1966 Paleont. Zh. 4: 83 (fossil). -- Smith 1967 Ann. ent. Soc. Am. 60: 377. -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 41, 43 (key to genera). -- Rasnitsyn 1971 Trudy paleont. Inst. 130: 191, 195 (phylogenetic position).

Genus MICROXYELECIA Rasnitsyn

- Microxyelecia* Rasnitsyn 1969 Trudy paleont. Inst. 123: 43, 54-55.
- Type-species: *Microxyelecia brachycera* Rasnitsyn (Original designation).
- brachycera* Rasnitsyn
- Microxyelecia brachycera* Rasnitsyn 1969 Trudy paleont. Inst. 123: 17, 43, 55, fig. 80. "Yuzhnei Kazakhstan, khrebet Karatau, d. Mikhailovka" (PIN, Moscow,).
- U.S.S.R. (Kazakh S.S.R.) (Jurassic).

Genus UROXYELA Rasnitsyn

- Uroxyela* Rasnitsyn 1966 Paleont. Zh. 4: 84-85.
- Type-species: *Uroxyela sticticauda* Rasnitsyn (Original designation). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 43 (in key).

- sticticauda* Rasnitsyn
- Uroxyela sticticauda* Rasnitsyn 1966 Paleont. Zh. 4: 85, fig. 15. "r. Vitim, urochishe Baisa" (PIN, Moscow,). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 18, 43, fig. 79 (in key).
- U.S.S.R. (Buryat A.S.S.R.) (Cretaceous ?)

Genus XYLITES Rasnitsyn

- Xylites* Rasnitsyn 1966 Paleont. Zh. 4: 83.

Type-species: *Xylites trigeminus* Rasnitsyn (Original designation). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 41 (in key).

- trigeminus* Rasnitsyn
- Xylites trigeminus* Rasnitsyn 1969 Paleont. Zh. 4: 83, fig. 14. "r. Vitim, urochishe Baisa" (PIN, Moscow,). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 41, fig. 78 (in key).
- U.S.S.R. (Buryat A.S.S.R.) (Cretaceous ?)

Genus XYLELECIA Ross

- Xylelecia* Ross 1932 Ann. ent. Soc. Am. 25: 154, 159.
- Type-species: *Xylelecia nearctica* Ross (Original designation). -- Klima 1937 Hym. Cat. 4: 8. -- Ross 1951 in Muesebeck, et al., Agriculture Monogr. 2: 7. -- Smith 1967 Ann. ent. Soc. Am. 60: 378, 381-382 (larva). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 43 (in key, separation from fossil general). -- Togashi 1972 Kontyû 40: 87-89 (first record from Japan).

JAPONICA Togashi

- Xylelecia japonica* Togashi 1972 Kontyû 40: 87-89, fig. 1-5. ♀. "Mt. Ohdaigahara, Nara Pref." (Osaka, ♀).
- Japan

nearctica Ross

- Xylelecia nearctica* Ross 1932 Ann. ent. Soc. Am. 25: 160-161, pl. 1, fig. 1, 8; pl. 2, fig. 12, 16, 20. ♀. "White Branch Meadow, Three Sisters, Frog Camp, Oregon, elevation approximately 5,500 ft." (Urbana, Ill., ♀). -- Klima 1937 Hym. Cat. 4: 8. -- Ross 1951 in Muesebeck, et al., Agriculture Monogr. 2: 7. -- Smith 1964 Pan-Pacif. Ent. 40: 54-56, fig. 1-8 (♂). -- Smith 1967 Ann. ent. Soc. Am. 60: 381-382, fig. 12-16 (larva; host a).
- Canada (British Columbia); U. S. (California, Idaho, Montana, Oregon).

Hosts: a) white fir.

Family PARACHEXYELIDAE

Pararchexyelidae: Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 191, 228. -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 24, 76, 78.

This is a small extinct family of the Jurassic period. Rasnitsyn (1969) did not assign the Pararchexyelidae to a superfamily but placed it between the Xyeloidae and Megalodontoidae.

Genus PARACHEXYELA Rasnitsyn

Pararchexyela Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 228.

Type-species: *Pararchexyela macroptera* Rasnitsyn (Original designation).

macroptera Rasnitsyn

U.S.S.R. (Kazakh S.S.R.) (Jurassic)

Pararchexyela macroptera Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 228-229, fig. 37, pl. 24, fig. 13. "Yuzhnei Kazakhstan, Khirebet Karatau, mestonakhozhdenie Mikhailovka" (PIN, Moscow,). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 17, 78, fig. 2.

Family PARAPAMPHILIIDAE

Parapamphiliidae: Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 191-192. -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 25, 58.

An extinct family of the Jurassic period placed as an archaic member of the Megalodontoidae by Rasnitsyn (1969).

Genus PARAPAMPHILIUS Rasnitsyn

Parapamphilius Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 192.

Type-species: *Parapamphilius confusus* Rasnitsyn (Original designation).

confusus Rasnitsyn

U.S.S.R. (Kazakh S.S.R.) (Jurassic)

Parapamphilius confusus Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 192, fig. 1. "mestonakhozhdenie Mikhailovka" (PIN, Moscow,). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 17, 58, fig. 10.

Family XYELYDIDAE

Xyelydidae: Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 191, 192-193 (key to genera and species). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 27, 58 (key to genera and species).

An extinct family of the Jurassic period placed as an archaic member of the superfamily Megalodontoidea by Rasnitsyn (1969).

Genus XYELYDA Rasnitsyn

Xyelyda Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 193.

Type-species: *Xyelyda exzellens* Rasnitsyn (Original designation).

excellent Rasnitsyn

Xyelyda exzellens Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 193, fig. 2, pl. 23, fig. 1. "Yuzhnei Kazakhstan, Khirebet Karatau, mestonakhozhdenie Mikhailovka" (PIN, Moscow,). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 17, 58, fig. 84 (in key).

Genus PROLYDA Rasnitsyn

Prolyda Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 194.

Type-species: *Prolyda karataviae* Rasnitsyn (Original designation).

karatavica Rasnitsyn

Prolyda karataviae Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 194, fig. 3. "Yuzhnei Kazakhstan, Khirebet Karatau, mestonakhozhdenie Mikhailovka" (PIN, Moscow,). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 17, 60, fig. 12 (in key).

xylocera Rasnitsyn

Prolyda xylocera Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 194-195, pl. 23, fig. 2. "Yuzhnei Kazakhstan, Khirebet Karatau, mestonakhozhdenie Mikhailovka" (PIN, Moscow,). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 17, 60, fig. 88 (in key).

Genus STROPHANDRIA Rasnitsyn

Strophandria Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 195.

Type-species: *Strophandria grossa* Rasnitsyn (Original designation).

grossa Rasnitsyn

Strophandria grossa Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 195-196, fig. 4, pl. 23, fig. 3. "Yuzhnei Kazakhstan, Khirebet Karatau, mestonakhozhdenie Mikhailovka" (PIN, Moscow,). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 17, 58, fig. 87 (in key).

Genus MESOLYDA Rasnitsyn

Mesolyda Rasnitsyn 1963 Paleont. Zh. 1: 87.

Type-species: *Mesolyda jurassica* Rasnitsyn (Original designation). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 58 (key to species).

depressa Rasnitsyn

Mesolyda depressa Rasnitsyn 1969 Trudy paleont. Inst. 123: 17, 58, 60, fig. 86, pl. 4, fig. 10. "Yuzhnei Kazakhstan, Khirebet Karatau, d. Mikhailovka" (PIN, Moscow,).

Jurassica Rasnitsyn

Mesolyda jurassica Rasnitsyn 1963 Paleont. Zh. 1: 87-88, fig. 1. "Yuzhnei Kazakhstan, Khirebet Karatau, s. Galkino" (PIN, Moscow,). -- Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 193 (in key). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 17, 58, fig. 85 (in key).

U.S.S.R. (Kazakh S.S.R.) (Jurassic)

Family KARAVITIDAE

Karavitiidae: Rasnitsyn 1963 Paleont. Zh. 1: 96-99. -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 27 (in key). -- Rasnitsyn 1975 Zool. Zh. 54: 848-860 (ancestors of Apocrita are Jurassic Karavitiidae).

Karavitiinae: Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 191, 208-209 (as subfamily of Karavitiidae).

The Karavitiidae are an extinct family of Siricoidea known only from the Jurassic period.

Genus KARAVITES Rasnitsyn

Karavites Rasnitsyn 1963 Paleont. Zh. 1: 97.

Type-species: *Karavites angustus* Rasnitsyn (Original designation). -- Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 209-210 (type-species given as "*K. jurassicus* Rasnitsyn", but there is no such species in *Karavites*). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 72.

angustus Rasnitsyn

Karavites angustus Rasnitsyn 1963 Paleont. Zh. 1: 97-98, fig. 10, pl. 8, fig. 6, d7. "Kazakhstan, khrebet Karatau, s. Galkino" (PIN, Moscow,). -- Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 209 (in key). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 17, 31, 74, fig. 23, 114. -- Rasnitsyn 1975 Zool. Zh. 54: 851, pl. 1, fig. 1.

medium Rasnitsyn

Karavites medium Rasnitsyn 1969 Trudy paleont. Inst. 123: 17, 72, fig. 113. "Kazakhstan, khrebet Karatau, d. Mikhailovka" (PIN, Moscow,).

Genus PROAPOCRITUS Rasnitsyn

Proapocritus Rasnitsyn 1975 Trudy paleont. Inst. 147: 22-23.

Type-species: *Proapocritus praecursor* Rasnitsyn (Original designation) (Questionably placed in Symphyta: Karavitiidae).

praecursor Rasnitsyn

Proapocritus praecursor Rasnitsyn 1975 Trudy paleont. Inst. 147: 23, fig. 1. "Kirgizskaya SSR, Oshskaya obl., Batkenskii r-n, cel Sagui" (PIN, Moscow,). -- Rasnitsyn 1975 Zool. Zh. 54: 851, pl. 1, fig. 5 (in Karavitiidae ?).

Family GIGASIRICIDAE

Gigasiricidae: Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 191, 197. -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 27, 62 (key to genera).

An extinct family of the Siricoidea, known only from the Jurassic period.

Genus GIGASIREX Rasnitsyn

Gigasirex Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 197.

Type-species: *Gigasirex longipes* Rasnitsyn (Original designation). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 62 (in key).

longipes Rasnitsyn

Gigasirex longipes Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 196, fig. 6, pl. 23, fig. 4. "Kazakhstan, khrebet Karatau, mestonakhozhdenie Mikhailovka" (PIN, Moscow,). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 17, 62, fig. 91 (in key).

Genus LIASIREX Rasnitsyn

Liasirex Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 198.

Type-species: *Liasirex sogdianus* Rasnitsyn (Original designation). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 62 (in key).

sogdianus Rasnitsyn

Liasirex sogdianus Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 198, pl. 23, fig. 5. "Kirgizskaya SSR, Oshskaya obl., Batkenskii r-n" (PIN, Moscow,). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 16, 62, fig. 90 (in key).

Genus PROTOSIREX Rasnitsyn

Protosirex Rasnitsyn 1969 Trudy paleont. Inst. 123: 62.

Type-species: *Protosirex xylopterus* Rasnitsyn (Original designation).

xylopterus Rasnitsyn

Protosirex xylopterus Rasnitsyn 1969 Trudy paleont. Inst. 123: 17, 62, 63, fig. 19, pl. 5, fig. 12. "Kazakhstan, khrebet Karatau, d. Mikhailovka" (PIN, Moscow,).

Family SEPULCIDAE

Sepulcinae: Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 209, 210 (subfamily of Karavitiidae).

Sepulcidae: Rasnitsyn 1969 Trudy paleont. Inst. 123: 27, 63 (key to genera).

An extinct family of Siricoidea known only from the Jurassic period.

Genus SEPULCA Rasnitsyn

Sepulca Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 209, 210.

Type-species: *Sepulca mixabilis* Rasnitsyn (Original designation). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 63 (in key).

mixabilis Rasnitsyn

Sepulca mixabilis Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 209, 210, fig. 17, pl. 24, fig. 4. "Kazakhstan, khrebet Karatau, mestonakhozhdenie Mikhailovka" (PIN, Moscow). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 17, 63, fig. 21 (in key).

Genus SEPULENIA Rasnitsyn

Sepulenia Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 209, 210.

Type-species: *Sepulenia syriaca* Rasnitsyn (Original designation). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 63 (in key).

syriaca Rasnitsyn

Sepulenia syriaca Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 209, 211, fig. 18. "Kirgizskaya SSR, Oshskaya obl." (PIN, Moscow). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 16, 63, fig. 92 (in key).

Family PSEUDOSIRICIDAE

Pseudosiricidae: Handlirsch 1908 Die Fossilen Insekten 4: 574. -- Carpenter 1932 Ann. Carneg. Mus. 21: 125-128 (study of specimens from Solenhofen).

Myrmicidae: Maa 1949 Notes Ent. chin. 13: 17-19 (discussion, Pseudosiricidae as a syn.). -- Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 191 (in key). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 18, 73, 75 (key to genera, species; syn.: Megapteritidae).

Megapteritinae: Maa 1949 Notes Ent. chin. 13: 77-78 (subfamily of Siricidae).

Megapteritidae: Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 191, 217 (in key, description).

The Pseudosiricidae are an extinct family of Siricoidea with representatives known from the Jurassic beds of England, Bavaria, and Kirgiz S.S.R., and a single species from the Eocene of Bournemouth, England.

Genus SHURABISCA Rasnitsyn

Shurabisca Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 217.

Type-species: *Shurabisca liassica* Rasnitsyn (Original designation). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 73 (in key).

liassica Rasnitsyn

Shurabisca liassica Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 218, fig. 24, pl. 24, fig. 10. "Kirgizskaya SSR, Oshskaya obl., Batkenskii r-n" (PIN, Moscow). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 16, 73, fig. 120 (in key).

Genus FORMICIUM Westwood

Formicium Westwood 1854 Q. J. I. geol. Soc. Lond. 10: 393.

Type-species: *Formicium brodiei* Westwood (Monotypic). -- Giebel 1856 Fauna d. Vorwelt II, 1: 173-174 (syn. of *Ponera* (Formicidae)). -- Handlirsch 1908 Die Fossilen Insekten 4: 577 (syn. of *Pseudosirex*). -- Cockerell 1920 Ann. Mag. nat. Hist. (9) 5: 279 (distinct genus). -- Cockerell 1921 Can. Ent. 53: 22-23, fig. 27 (compared with modern Siricidae). -- Maa 1949 Notes Ent. chin. 13: 18, 19, fig. 8 (in Anaxylidae). -- Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 217 (in Megapteritidae). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 75 (in key). -- Brown 1973 in Meggers, et al., Tropical Forest Ecosystems in Africa and S. Amer.: 180 (in Siricidae).

brodiei Westwood

England (Jurassic)

Formicium brodiei Westwood 1854 Q. J. I. geol. Soc. Lond. 10: 388, 393, pl. 14, fig. 8. "Lower Purbecks, Durdlestone Bay" (London). -- Scudder 1885 in Zittel, Handbk Paleont. 1: pt. 2: 815, 816, fig. 1095. -- Scudder 1886 in Zittel-Barrois, Traité de Paleont. 2: 817, fig. 1112. -- Scudder 1886 Bull. U. S. geol. Surv. 31: 97. -- Scudder 1891 Bull. U. S. geol. Surv. 71: 230, 231. -- Cockerell 1921 Can. Ent. 53: 22-23, fig. 27. -- Maa 1949 Notes Ent. chin. 13: 18, 19, fig. 8. -- Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 217 (in key). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 17, 75, fig. 122 (in key).

Ponera brodiei: Giebel 1856 Fauna d. Vorwelt II, 1: 173. -- Dalla Torre, 1893 Cat. Hym. 7: 38.

Pseudosirex brodiei: Handlirsch 1908 Die Fossilen Insekten 4: 577, pl. 46, fig. 23.

Genus MYRMICIUM Westwood

Myrmicium Westwood 1854 Q. J. I. geol. Soc. Lond. 10: 396.

Type-species: *Myrmicium heerii* Westwood (Monotypic). -- Maa 1949 Notes Ent. chin. 13: 17-19 (syn.: *Hagenia* Weyenbergh, *Pseudosirex* Weyenbergh, *Rhipidoxabus* Oppenheim, *Flabellonena* (!) Oppenheim). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 73 (in key).

Apizacoa Germar 1839 Nova Acta Leopoldina 19: 210.

Type-species: *Apizacoa antiqua* Germar (Monotypic). -- Maa 1949 Notes Ent. chin. 13: 17 (impossible to place to genus or family, ? bee or sawfly).

Hagenia Weyenbergh 1869 Archs Mus. Teyler 2: 250, 272.

Type-species: *Sphix schroeteri* Germar (Monotypic).

Pseudosirex Weyenbergh 1873 Archs Mus. Teyler 3: 238.

Type-species: *Pseudosirex dawsoni* Weyenbergh (Monotypic). -- Deichmüller 1886 Mitt. K. miner.-geol. prähist. Mus. Dresden 7: 76-84 (syn.: *Hagenia* Weyenbergh, *Rhipidornithidus* Oppenheim, *Fabellovena* Oppenheim). -- Dalla Torre 1894 Cat. Hym. 1: 393, (species not listed). -- Handlirsch 1908 Die Fossilien Insekten 4: 574-577 (description, 15 species listed). -- Tillyard 1927 Trans. R. ent. Soc. Lond. 307, 313, 317. -- Carpenter 1932 Ann. Carnegie Mus. 12: 125 (study of specimens in Carnegie Museum and Museum of Comparative Zoology; apparently only 2 valid species, *nanus* and *schröeteri* which include all other species, compared with recent *Stiridae*).

Rhipidornithidus Oppenheim 1885 Berl. ent. Z. 29: 344.

Type-species: *Rhipidornithidus schroeteri* Oppenheim (by present designation). -- Maa 1949 Notes Ent. chin. 13: 17 (Type-species designated as *Sphix schroeteri* Germar, but *schröeteri* Germar was not among the three species included by Oppenheim).

Fabellovena Oppenheim 1885 Berl. ent. Z. 29: 344.

Type-species: *Fabellovena karschi* Oppenheim (Designated by Maa 1949).

Fabellovena (!) Dalla Torre 1893 Cat. Hym. 7: 108, 110 (mistake for *Myrmecium* West-

wood; as syn. of *Myrmica* (Formicidae)).

antiquum (Germar), n. comb.

Germany (Jurassic)

Apizacoa antiqua Germar 1839 Nova Acta Leopoldina 19: 210-211, pl. 22, fig. 10. Solenhofen (). -- Heer 1850 Verh. Schweiz. naturf. Ges. 34: 81-82 (referred to *Femites*). -- Heer 1850 Geschicht d. Insekt. 4-5. -- Heer 1850 Neues Jb. Miner. Geol. Paläont. 1850: 18. -- Heer 1850 Q. J. geol. Soc. Lond. 2: 69. -- Giebel 1852 Deutschl. Petref. 644. -- Giebel 1856 Fauna d. Vorwelt 11, 1: 184, 497 (Hymenoptera). -- Hagen 1856 Berendt, Bernst. Berindl. Organ. Reste Vorw. 2(1): 48 (referred to *Femites*). -- Hagen 1862 Palaeontographica 10: 111 (Hymenoptera, not *Femites*). -- Weyenbergh 1869 Tijdschr. Ent. (214): 236. -- Weyenbergh 1869 Archs Mus. Teyler 2: 253, 259 (Hymenoptera). -- Scudder 1885 in Zittel, Handbk. Palaeont. 1, 2: 815. -- Scudder 1886 in Zittel-Barrois, Traité de Palaeont. 2: 817. -- Scudder 1886 Bull. U. S. geol. Surv. 31: 97. -- Scudder 1891 Bull. U. S. geol. Surv. 71: 228-229, 232. -- Maa 1949 Notes Ent. chin. 13: 17 (impossible to classify, ? bee or sawfly).

Sirex antiquus: Assmann 1877 Ber. Versamm. dt. Naturf. 1: 192.

Pseudosirex antiquus: Handlirsch 1908 Die Fossilien Insekten 4: 577.

compressum (Oppenheim), n. comb.

Germany (Jurassic)

Fabellovena compressa Oppenheim 1885 Berl. ent. Z. 29: 345, pl. 12, fig. 11. Solenhofen, Bavaria (). -- Scudder 1891 Bull. U. S. geol. Surv. 71: 230. -- Winkler 1898 Archs Mus. Teyler (2) 5: 311.

Pseudosirex compressus: Handlirsch 1908 Die Fossilien Insekten 4: 576 (d).

dawsoni (Weyenbergh), n. comb.

Germany (Jurassic)

Pseudosirex dawsoni Weyenbergh 1873 Archs Mus. Teyler 3: 238. Solenhofen, Bavaria (Mus. Teyler, Haarlem,). -- Weyenbergh 1873 Notes Insects Calc. Jurass. 5. -- Weyenbergh 1874 Periodico Zool. 1: 82-83, 91, pl. 3, fig. 1, 2. -- Weyenbergh 1874 Enum. Syst. Faune Ent. Mesoz. 5. -- Weyenbergh 1878 Pet. Nouv. Ent. 2: 253. -- Scudder 1885 in Zittel, Handbk. Palaeont. 1, 2: 815. -- Scudder 1886 in Zittel-Barrois, Traité de Palaeont. 2: 814. -- Scudder 1886 Bull. U. S. geol. Surv. 31: 95. -- Scudder 1891 U. S. geol. Surv. 71: 231. -- Handlirsch 1908 Die Fossilien Insekten 4: 575, 9).

deichmülleri (Handlirsch), n. comb.

Germany (Jurassic)

Pseudosirex deichmülleri Handlirsch 1908 Die Fossilien Insekten 4: 575 (as "*deichmülleri*"). d. Solenhofen in Bayern (). -- Deichmüller 1886 Mitt. K. miner.-geol. prähist. Mus. Dresden 7: 84, pl. 5, fig. 21 (d only; not *elongatus* Germar).

elegans (Oppenheim), n. comb.

Germany (Jurassic)

Fabellovena elegans Oppenheim 1885 Berl. ent. Z. 29: 345, pl. 12, fig. 14. Solenhofen, Bavaria (). -- Scudder 1891 Bull. U. S. geol. Surv. 71: 230.

Pseudosirex elegans: Handlirsch 1908 Die Fossilien Insekten 4: 576 (d).

elongatum (Germar), n. comb. Germany (Jurassic)

Belostomatium elongatum Germar 1839 Nova Acta Leopoldina 19: 205-206, pl. 22, fig. 6.

Solenhofen (). -- Giebel 1852 Deutschl. Petref. 636. -- Giebel 1856 Fauna d. Vorwelt 11, 1: 371. -- Hagen 1862 Palaeontographica 10: 111. -- Weyenbergh 1869 Tijdschr. Ent. (2) 4: 233. -- Weyenbergh 1873 Archs Mus. Teyler 3: 239 (Hymenoptera). -- Weyenbergh 1873 Notes Insects Calc. Jurass. 6. -- Weyenbergh 1874 Periodico Zool. 1: 83-84 (a Hymenoptera ?). -- Assmann 1877 Ber. Versamm. dt. Naturf. 1: 192 (near *Sirex*). -- Scudder 1885 in Zittel, Handbk. Palaeont. 1, 2: 815, fig. 1094. -- Oppenheim 1885 Berl. ent. Z. 29: 338, pl. 12, fig. 12. -- Scudder 1886 in Zittel-Barrois, Traité de Palaeont. 2: 814, 817, fig. 1111. -- Scudder 1886 Bull. U. S. geol. Surv. 31: 61, 96, 97. -- Scudder 1891 Bull. U. S. geol. Surv. 71: 229 (in *Uroceridae*).

Pseudosirex elongatus: Deichmüller 1886 Mitt. K. miner.-geol. prähist. Mus. Dresden 7: 84, pl. 5, fig. 21, 22 (9, d figured; syn.: *Rhipidornithidus gracilis* Oppenheim, *Fabellovena karschi* Oppenheim, *P. elegans* Oppenheim, *P. compressus* Oppenheim) (note: Handlirsch (1908) named Deichmüller's 9 as *separatus* and his d as *deichmülleri*). -- Handlirsch 1908 Die Fossilien Insekten 4: 576 (9; "vielleicht mit den vorhergehenden Arten [*gracilis* Oppenheim] synonym.").

gracilis (Oppenheim), n. comb.

Germany (Jurassic)

Rhipidornithidus gracilis Oppenheim 1885 Berl. ent. Z. 29: 344, pl. 2, fig. 10. Solenhofen, Bavaria (). -- Scudder 1891 Bull. U. S. geol. Surv. 71: 232.

Pseudosirex gracilis: Handlirsch 1908 Die Fossilien Insekten 4: 576 (9; "vielleicht = *Karschi*", resp. *elongatus*.").

heerii Westwood

England (Jurassic)

Myrmecium heerii Westwood 1854 Q. J. geol. Soc. Lond. 10: 390, 396, pl. 18, fig. 21. "Lower Purbeck, Durdlestone Bay" (London,). -- Scudder 1885 in Zittel, Handbk. Palaeont. 1, 2: 815. -- Scudder 1886 in Zittel-Barrois, Traité de Palaeont. 2: 817. -- Scudder 1886 Bull. U. S. geol. Surv. 31: 97. -- Scudder 1891 Bull. U. S. geol. Surv. 71: 231. -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 17, 75, fig. 121.

Myrmica heerii: Giebel 1856 Fauna d. Vorwelt 11, 1: 178. -- Dalla Torre 1893 Cat. Hym. 7: 110.

Pseudosirex heerii: Handlirsch 1908 Die Fossilien Insekten 4: 557 pl. 46, fig. 24.

karschi (Oppenheim), n. comb.

Germany (Jurassic)

Fabellovena karschi Oppenheim 1885 Berl. ent. Z. 29: 344, pl. 12, fig. 13. Solenhofen, Bavaria (). -- Scudder 1891 Bull. U. S. geol. Surv. 71: 232. -- Meinert 1897 Archs Mus. Teyler (2) 5: 237 (*Fabellovena* (1)). -- Winkler 1898 Archs Mus. Teyler (2) 5: 311.

Pseudosirex karschi: Handlirsch 1908 Die Fossilien Insekten 4: 576 (9).

minutum (Oppenheim), n. comb.

Germany (Jurassic)

Rhipidornithidus minutus Oppenheim 1885 Berl. ent. Z. 29: 344, pl. 11, fig. 9. Solenhofen, Bavaria (). -- Scudder 1891 Bull. U. S. geol. Surv. 71: 231, 232. -- Meinert 1897 Archs Mus. Teyler (2) 5: 236 (study of specimens in Mus. Teyler, Haarlem). -- Winkler 1898 Archs Mus. Teyler (2) 5: 310.

Pseudosirex minutus: Deichmüller 1886 Mitt. K. miner.-geol. prähist. Mus. Dresden 7: 84, pl. 5, fig. 23. -- Handlirsch 1908 Die Fossilien Insekten 4: 576 (d).

nanus (Handlirsch), n. comb.

Germany (Jurassic)

Pseudosirex nanus Handlirsch 1908 Die Fossilien Insekten 4: 577, 9. "Solenhofen in Bayern" (Mien, 9). -- Carpenter 1932 Ann. Carnegie Mus. 21: 125-127, fig. 10 (separation from *schröeteri*).

schröeteri (Germar)

Germany (Jurassic)

Schröeter 1784 Neue Literatur u. Beytr. 1: 411-413, pl. 3, fig. 16 (unnamed). -- Schlottheim 1820 Petretracten. 42 ("Spinix"). Solenhofen. -- *Sphix schroeteri* Germar 1839 Nova Acta Leopoldina 19: 193 ("*Schröeteri*"). Solenhofen. (). -- Giebel 1852 Deutschl. Petref. 644. -- Giebel 1856 Fauna d. Vorwelt 11, 1: 188 (Lepidoptera). -- Assmann 1877 Ber. Versamm. dt. Naturf. 1: 192 ("Holzwespe"). -- Scudder 1885 in Zittel, Handbk. Palaeont. 1, 2: 815 (not *Belostomatium*). -- Scudder 1886 in Zittel-Barrois, Traité de Palaeont. 2: 817. -- Scudder 1886 Bull. U. S. geol. Surv. 31: 97. -- Scudder 1891 Bull. U. S. geol. Surv. 71: 230, 232. *Belostomatium schroeteri*: Hagen 1862 Palaeontographica 10: 109, 111-112.

Itagenia schroeteri: Weyenbergh 1869 Archs Mus. Teyler 2: 250, 272 (Hemiptera). -- Weyenbergh 1869 Insects Foss. Calc. Lithogr.: 4, 26. -- Weyenbergh 1869 Tijdschr. Ent. (2) 4: 233.

Pseudostreus schroeteri: Deichmüller 1886 Mitt. K. miner.-geol. prähist. Mus. Dresden 7: VII, 82-83 (syn.: *Sphix snelleni* Weyenbergh, *Pseudostreus darwini* Weyenbergh, *Rhipidiorhabdus schroeteri* Oppenheim). -- Handlirsch 1908 Die Fossilen Insekten 4: 575, pl. 46, fig. 21 (syn.: *schroeteri* Oppenheim). -- Carpenter 1932 Ann. Carneg. Mus. 21: 125-127 (probably includes all other species from Solenhofen except *nana*).

Myrmecotum schroeteri: Maa 1949 Notes Ent. chin. 13: 17. -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 17, 76, fig. 17 (sensu Maa 1949).

Rhipidiorhabdus schroeteri Oppenheim 1885 Berl. ent. Z. 29: 344, pl. 2, fig. 7. Solenhofen, Bavaria () (homonym and synonym; apparently the same as *schroeteri* Germar, but Oppenheim does not mention Germar and states "mili" after the species name; most authors list Oppenheim's species in the synonymy of *schroeteri* Germar). -- Weunier 1897 Archs Mus. Teyler (2) 5: 236, pl. XI, fig. 23 (same as *P. schroeteri* Deichmüller; study of specimens in Mus. Teyler, Haarlem). -- Winkler 1898 Archs Mus. Teyler (2) 5: 311.

separatum (Handlirsch), n. comb. Germany (Jurassic)
Pseudostreus separatum Handlirsch 1908 Die Fossilen Insekten 4: 576. ♀. "Solenhofen in Bayern" () ("vielleicht mit Karschi identisch. n").

Pseudostreus elongatus: Deichmüller 1886 Mitt. K. miner.-geol. prähist. Mus. Dresden 7: 84, pl. 5, fig. 22 (♀ only; not *elongatus* Germar).

snelleni (Weyenbergh), n. comb. Germany (Jurassic)

Sphix snelleni Weyenbergh 1869 Archs Mus. Teyler 2: 260, 261-263, pl. 34, fig. 9. ♀ ? Solenhofen, Bavaria (Mus. Teyler, Haarlem,) (Lepidoptera). -- Weyenbergh 1869 Insects Foss. Calc. Lithogr.: 15-17, pl. I, fig. 9, 9a, 10, 10a. -- Weyenbergh 1869 Tijdschr. Ent. 2(4): 236. -- Weyenbergh 1875 Archs Mus. Teyler 3: 236-239 (discussion; Lepidoptera). -- Weyenbergh 1873 Notes Insects Calc. Jurass.: 3-6. -- Weyenbergh 1874 Periodico Zool. 1: 83, 91. -- Weyenbergh 1874 Enum. Syst. Faune Ent. Mesoz.: 5. -- Dawson 1880 Chain of Life: 149, fig. 130. -- Scudder 1885 in Zittel, Handbk Paleont. 1, 2: 813. -- Scudder 1886 in Zittel-Barrois, Traité de Paleont. 2: 814. -- Scudder 1886 Bull. U. S. geol. Surv. 31: 95. -- Scudder 1891 Bull. U. S. geol. Surv. 71: 233. -- Meunier 1897 Archs Mus. Teyler (2) 5: 236 (same as *Rhipidiorhabdus schroeteri* Oppenheim and *R. schroeteri* Deichmüller; study of specimens in Mus. Teyler, Haarlem). -- Winkler 1898 Archs Mus. Teyler (2) 5: 313.

Pseudostreus snelleni: Handlirsch 1908 Die Fossilen Insekten 4: 575 ("Ist vielleicht dieselbe Art wie *Schroeteri*").

Genus MEGAPTERITES Cockerell

Megapterites Cockerell 1920 Ann. Mag. nat. Hist. (9) 5: 278-279.

Type-species: *Megapterites mirabilis* Cockerell (Monotypic). -- Cockerell 1921 Can. Ent. 53: 22-23 (compared with modern Siricidae). -- Maa 1949 Notes Ent. chin. 13: 77-78. -- Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 217. -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 75 (in key).

mirabilis Cockerell

England (Eocene)
Megapterites mirabilis Cockerell 1920 Ann. Mag. nat. Hist. (9) 5: 278-279, fig. 3. "Bagshot Beds, Bournemouth" (London,). -- Cockerell 1921 Can. Ent. 52: 22-23, fig. 26 (compared with modern Siricidae). -- Maa 1949 Notes Ent. chin. 13: 77-78, fig. 93a. -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 75, fig. 123.

Family ANAXYELIDAE

Anaxyelidae: Martynov 1925 Izv. Akad. Nauk SSSR (4) 19: 754. -- Maa 1949 Notes Ent. chin. 13: 19 (1 genus, 1 species). -- Rasnitsyn 1963 Paleont. Zh. 1: 88 (re-description). -- Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 191, 198-200 (key to genera and species). -- Rasnitsyn 1968 Ent. Obozr. 47: 66 (evolution of function of ovipositor in relation to origin of parasitism). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 63-67 (key to genera and species; syn.: Syn-texidae).

The Anaxyelidae were most prevalent during the Jurassic and Cretaceous periods; most fossils are from the Jurassic beds of Kazakh S.S.R. There is a single living representative, *Syntexia tibetensis*, in western North America.

Subfamily ANAXYELINAE

Anaxyelinae: Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 199, 201.

Genus ANAXYELA Martynov

Anaxyela Martynov 1925 Izv. Akad. Nauk SSSR (4) 19: 754.

Type-species: *Anaxyela gracilis* Martynov (Monotypic). -- Tillyard 1927 Trans. ent. Soc. Lond.: 309 (listed). -- Maa 1949 Notes Ent. chin. 13: 19 (1 species). -- Rasnitsyn 1963 Paleont. Zh. 1: 88-89 (key to species, some of which have been transferred to other genera). -- Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 199, 201 (description, key to species). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 65 (key to species).

destructa Rasnitsyn

U.S.S.R. (Kazakh S.S.R.) (Jurassic)
Anaxyela destructa Rasnitsyn 1969 Trudy paleont. Inst. 123: 17, 65, 70, fig. 100. ♀. "Kazakhstan, khirebet Karatau, d. Mikhailovka" (PIN, Moscow,).

dubia Rasnitsyn

U.S.S.R. (Kazakh S.S.R.) (Jurassic)
Anaxyela dubia Rasnitsyn 1963 Paleont. Zh. 1: 89, 94-95, fig. 7, pl. 8, fig. 4. ♀. "Kazakhstan, khirebet Karatau, urochishe Karabastau" (PIN, Moscow,).

gracilis Martynov

U.S.S.R. (Kazakh S.S.R.) (Jurassic)
Anaxyela gracilis Martynov 1925 Izv. Akad. Nauk SSSR (4) 19: 754-755, fig. 13, 14. ♀. "Jurassic strata near the village Galkino, East Karatau" (Leningrad,). -- Tillyard 1927 Trans. ent. Soc. Lond.: 309 (listed). -- Maa 1949 Notes Ent. chin. 13: 19. -- Rasnitsyn 1963 Paleont. Zh. 1: 89-90, fig. 2 (description; syn.: *martynovi* Cockerell). -- Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 199 (in key). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 17, 65, fig. 99 (in key).

Anaxyela martynovi Cockerell 1928 Psyche, Camb. 35: 127. ♀. Vicinity of Galkino in Turkmenistan. ("Middle Asian Museum at Tashkent",).

nana (Rasnitsyn)

U.S.S.R. (Kazakh S.S.R.) (Jurassic)
Anaxyela nana Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 200, 206-207, fig. 14, pl. 24, fig. 2. "Kazakhstan, khirebet Karatau, mesto-nakhodhenie Mikhailovka" (PIN, Moscow,).

Anaxyela nana: Rasnitsyn 1969 Trudy paleont. Inst. 123: 17, 65, fig. 98 (in key).

parvula Rasnitsyn

U.S.S.R. (Kazakh S.S.R.) (Jurassic)
Anaxyela parvula Rasnitsyn 1963 Paleont. Zh. 1: 89, 91-92, fig. 4, pl. 8, fig. 2. "Kazakhstan, khirebet Karatau, s. Galkino" (PIN, Moscow,). -- Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 199, 201 (in key). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 17, 65, fig. 97 (in key).

Genus AMASYNTESIS Rasnitsyn

Amasyntesis Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 199, 208.
Type-species: *Amasyntesis strophandrea* Rasnitsyn (Original designation). -- Rasnitsyn 1969 Trudy paleont. inst. 123: 65 (in key).

strophandra Rasnitsyn

U.S.S.R. (Kazakh S.S.R.) (Jurassic)
Amasyntesis strophandrea Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 199, 208, fig. 16. "Kazakhstan, khibet Karatau, mestonakhozhdenie Mikhailovka" (PIN, Moscow,). -- Rasnitsyn 1969 Trudy paleont. inst. 123: 17, 65, fig. 104 (in key).

Genus BRACHYSYNTEXIS Rasnitsyn

Brachysyntesis Rasnitsyn 1969 Trudy paleont. inst. 123: 65, 70.
Type-species: *Syntetylela brachyura* Rasnitsyn (Original designation).

brachyura (Rasnitsyn)

U.S.S.R. (Kazakh S.S.R.) (Jurassic)
Syntetylela brachyura Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 200, 202, fig. 9, pl. 23, fig. 7. "Kazakhstan, khibet Karatau, mestonakhozhdenie Mikhailovka" (PIN, Moscow,).

Brachysyntesis brachyura: Rasnitsyn 1969 Trudy paleont. inst. 123: 17, 65, fig. 102.

macrura Rasnitsyn

U.S.S.R. (Kazakh S.S.R.) (Jurassic)
Brachysyntesis micrura Rasnitsyn 1969 Trudy paleont. inst. 123: 17, 65, 71, fig. 103. "Kazakhstan, khibet Karatau, d. Mikhailovka" (PIN, Moscow,).

nova Rasnitsyn

U.S.S.R. (Kazakh S.S.R.) (Jurassic)
Brachysyntesis nova Rasnitsyn 1969 Trudy paleont. inst. 123: 17, 65, 70, fig. 101, pl. 6, fig. 15. "Kazakhstan, khibet Karatau, d. Mikhailovka" (PIN, Moscow,).

Genus KEMPENDAJA Rasnitsyn

Kempendaja Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 199, 207.
Type-species: *Kempendaja jacutensis* Rasnitsyn (Original designation). -- Rasnitsyn 1969 Trudy paleont. inst. 123: 65 (in key).

jacutensis Rasnitsyn

U.S.S.R. (Yakutsk A.S.S.R.) (Cretaceous ?)
Kempendaja jacutensis Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 199, 207, fig. 15, pl. 24, fig. 3. "Yakutiya, r. Kempendui nizhe ustiya r. Namyu" (PIN, Moscow,). -- Rasnitsyn 1969 Trudy paleont. inst. 123: 18, 65, fig. 94 (in key).

Genus KULBASTAVIA Rasnitsyn

Kulbastavia Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 199, 207.
Type-species: *Anazygela macrura* Rasnitsyn (Original designation). -- Rasnitsyn 1969 Trudy paleont. inst. 123: 65 (in key).

macrura (Rasnitsyn)

U.S.S.R. (Kazakh S.S.R.) (Jurassic)
Anazygela macrura Rasnitsyn 1963 Paleont. Zh. 1: 89, 92-94, fig. 5, 9. "Kazakhstan, khibet Karatau, s. Galikino" (PIN, Moscow,).

Kulbastavia macrura: Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 199, 207. -- Rasnitsyn 1969 Trudy paleont. inst. 123: 17, 65, fig. 105 (in key).

Genus SPHENOSYNTEXIS Rasnitsyn

Sphenosyntesis Rasnitsyn 1969 Trudy paleont. inst. 123: 65, 67.
Type-species: *Anazygela antonovi* Rasnitsyn (Original designation).

antonovi (Rasnitsyn)

U.S.S.R. (Kazakh S.S.R.) (Jurassic)
Anazygela antonovi Rasnitsyn 1963 Paleont. Zh. 1: 89, 90-91, pl. 8 fig. 1, 9. "Kazakhstan, khibet Karatau, s. Galikino" (PIN, Moscow,). -- Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 199, 201 (in key).

Sphenosyntesis antonovi: Rasnitsyn 1969 Trudy paleont. inst. 123: 17, 65, 67, fig. 95.

pallicornis Rasnitsyn

U.S.S.R. (Kazakh S.S.R.) (Jurassic)
Sphenosyntesis pallicornis Rasnitsyn 1969 Trudy paleont. inst. 123: 17, 65, 67, 70, fig. 96, 9. "Kazakhstan, khibet Karatau, d. Mikhailovka" (PIN, Moscow,).

Genus UROSYNTEXIS Rasnitsyn

Urosyntesis Rasnitsyn 1969 Trudy paleont. inst. 123: 65, 71.
Type-species: *Syntetylela magna* Rasnitsyn (Original designation).

depressa Rasnitsyn

U.S.S.R. (Kazakh S.S.R.) (Jurassic)
Urosyntesis depressa Rasnitsyn 1969 Trudy paleont. inst. 123: 17, 67, 71, fig. 112, 9. "Kazakhstan, khibet Karatau, d. Mikhailovka" (PIN, Moscow,).

drepanura (Rasnitsyn)

U.S.S.R. (Kazakh S.S.R.) (Jurassic)
Syntetylela drepanura Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 200, 205-206, fig. 13, pl. 24, fig. 1. "Kazakhstan, khibet Karatau, mestonakhozhdenie Mikhailovka" (PIN, Moscow,).

Urosyntesis drepanura: Rasnitsyn 1969 Trudy paleont. inst. 123: 17, 67, fig. 110 (in key).

magna (Rasnitsyn)

U.S.S.R. (Kazakh S.S.R.) (Jurassic)
Syntetylela magna Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 200, 203, fig. 10, pl. 23, fig. 8. "Kazakhstan, khibet Karatau, mestonakhozhdenie Mikhailovka" (PIN, Moscow,).

Urosyntesis magna: Rasnitsyn 1969 Trudy paleont. inst. 123: 17, 67, fig. 111 (in key).

Genus SYNTEXELA Rasnitsyn

Syntetylela Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 199, 201-202.
Type-species: *Anazygela media* Rasnitsyn (Original designation). -- Rasnitsyn 1969 Trudy paleont. inst. 123: 65 (in key; key to species).

asiatica Rasnitsyn

U.S.S.R. (Kazakh S.S.R.) (Jurassic)
Syntetylela asiatica Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 200, 205, fig. 12, pl. 23, fig. 11. "Kazakhstan, khibet Karatau, mestonakhozhdenie Mikhailovka" (PIN, Moscow,). -- Rasnitsyn 1969 Trudy paleont. inst. 123: 17, 67, fig. 107 (in key).

gracilicornis Rasnitsyn

U.S.S.R. (Kazakh S.S.R.) (Jurassic)
Syntetylela gracilicornis Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 200, 204-205, pl. 23, fig. 10. "Kazakhstan, khibet Karatau, mestonakhozhdenie Mikhailovka" (PIN, Moscow,). -- Rasnitsyn 1969 Trudy paleont. inst. 123: 17, 67, fig. 109 (in key).

inversa Rasnitsyn

U.S.S.R. (Kazakh S.S.R.) (Jurassic)
Syntetylela inversa Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 200, 203-204, fig. 11, pl. 23, fig. 9. "Kazakhstan, khibet Karatau, mestonakhozhdenie Mikhailovka" (PIN, Moscow,). -- Rasnitsyn 1969 Trudy paleont. inst. 123: 17, 67, fig. 108 (in key).

media (Rasnitsyn)

Anazygela media Rasnitsyn 1963 Paleont. Zh. 1: 89, 94, fig. 6, pl. 7, fig. 3, 9. "Kazakhstan, kirebet Karatau, s. Galkino" (PIN, Moscow,).

Syntazygela media: Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 200, 202, fig. 8 (redescription). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 17, 67, fig. 106 (in key).

Subfamily DOLICHOSTIGMATINAE

Dolichostigmatinae: Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 199, 200.

Genus DOLICHOSTIGMA Rasnitsyn

Dolichoestigma Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 199, 200.
Type-species: *Dolichoestigma tenuipes* Rasnitsyn (Original designation). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 64 (in key).

tenuipes Rasnitsyn

Dolichoestigma tenuipes Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 199, 200, fig. 7, pl. 23, fig. 6. "Zabaikalie, r. Vitim, mestonakhozhdenie Baisa" (PIN, Moscow,). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 18, 64, fig. 93 (in key).

U.S.S.R. (Buryat A.S.S.R.) (Cretaceous ?)

Subfamily SYNTEXINAE

SynTexinae: Benson 1935 Ann. Mag. nat. Hist. (10) 16: 539. -- Klima 1937 Hym. Cat. 2: 53. -- Ma 1949 Notes Ent. chin. 13: 19 (listed). -- Benson 1938 Trans. R. ent. Soc. Lond. 87: 357, 359. -- Ries 1951 in Muesebeck, et al., Agriculture Monogr. 2: 82-83.

SynTexinae: Ross 1937 Illinois Biol. Monogr. 15: 110.
SynTexinae: Rasnitsyn 1969 Trudy paleont. Inst. 123: 64.

Genus SYNTEXIS Rohwer

Syntexis Rohwer 1915 Proc. ent. Soc. Wash. 17: 115.

Type-species: *Syntexis tibocedrii* Rohwer (Original designation). -- Benson 1935 Ann. Mag. nat. Hist. (10) 16: 539 (in new family). -- Klima 1937 Hym. Cat. 2: 53. -- Ross 1937 Illinois Biol. Monogr. 15: 110-111. -- Ries 1951 in Muesebeck, et al., Agriculture Monogr. 2: 82-83.

Tibocedrii Rohwer

Syntexis tibocedrii Rohwer 1915 Proc. ent. Soc. Wash. 17: 115-117, fig. 1-5, 9. "Rose Camp, California" (Washington, 9) (host a). -- Benson 1935 Ann. Mag. nat. Hist. (10) 16: 539, fig. 2, 4 (lateral thorax: host a). -- Klima 1937 Hym. Cat. 2: 53. -- Ross 1937 Illinois Biol. Monogr. 15: 110-111. -- Ries 1951 in Muesebeck, et al., Agriculture Monogr. 2: 83 (host a). -- Middlekauff 1964 Pan-Pacif. Ent. 40: 257, fig. 1, 2 (d; host a; California records). -- Wickman 1967 Ann. ent. Soc. Am. 60: 1291-1295, fig. (host a; life history). -- Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 233, fig. 51 (d genitalia). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 64, fig. 20 (in key). -- Westcott 1971 Pan-Pacif. Ent. 47: 310, fig. 1-4 (hosts a, b, c; Oregon records). -- Middlekauff 1974 Pan-Pacif. Ent. 50: 288-290, fig. (larva).

Hosts: a) *Libocedrus decurrens*; b) *Juniperus occidentalis*; c) *Thuja plicata*.

Family SIRICIDAE

Urocerata: Latreille 1802 Hist. nat. Crust. Insectes 3: 304-305 (part; *Urocerus* and *Orygassus* included). -- Latreille 1805 Hist. Nat. Crust. Insectes 13: 147-160 (part). -- Latreille 1807 Gen. Crust. Insect. 3: 238-249 (part). -- Lepelletier & Serville 1828 Ency. Méth. 10: 769 (as tribe; part). -- Latreille 1837 in Cuvier, Anim. Kingdom 4: 201-205 (as tribe; part).

Uroceratae: Fallén 1813 Spec. Nov. Hym. Disp. Meth.: 6, 11 (part). -- Zetterstedt 1838 Insect. Lapp.: 355-357 (part). -- Eversmann 1847 Byull. mosk. Obshch. Ispyt. Priro. 20: 62-68 (part).

Uroceridae: Leach 1819 in Samouelle, Ent. Compend.: 267-268 (part). -- Stephens 1829 Syst. Cat. Brit. Insects: 342-343 (part). -- Stephens 1835 Illus. Brit. Ent., Mand. 7: 111-116 (part). -- Norton 1869 Trans. Am. ent. Soc. 2: 349-367 (part). -- Cresson 1880 Trans. Am. ent. Soc. 8: 66-67 (part). -- Cresson 1887 Trans. Am. ent. Soc., suppl. vol.: 21 (part).

Siricidae: Billberg 1820 Enum. Insect. Mus. Billberg: 98 (part). -- Dahlbom 1835 Conspectus Tenthræd., Siricid., Oryssin. Scand.: 16. -- Dahlbom 1835 Clavis Novi Hym. Syst.: 6, 11. -- Dahlbom 1836 Prodrum. Hym. Scand.: 9. -- Hartig 1837 Fam. Blattwesp. Holzwebsp.: 353-387.

Bombopetæ: Macleay 1821 Horae Ent. 1 (11): 439, 440 (as a separate suborder).

Uroceridae: Leach 1830 (1815) Edin. Ency. 9: 141 (part).

Siricidae: Newman 1833 Ent. Mag. 1: 414.

Siricidae: Newman 1834 Ent. Mag. 2: 379 (natural order Siricidae in stirps Siricina).

Siricidae: Kirby 1837 in Richardson, Fauna Bor.-Am. 4: 256-257. -- Herrich-Schaeffer 1840 Nomencl. Ent. 2: 36 (part). -- André 1881 Spec. Hym. Eur. Alg. 1: 548-562; cat. p. 68-70 (part). -- Schöyen 1887 Ent. Tidskr. 8: 116-117 (part). -- Cameron 1890 Monogr. Brit. Phytophag. Hym. 3: 124-139 (part). -- Ashmead 1898 Can. Ent. 30: 143, 178-179 (classification). -- MacGillivray 1906 Proc. U.S. natn. Mus. 29: 621, 642, 648 (wings). -- Bradley 1913 J. Ent. Zool. 5: 1-50 (N. Amer. genera and species). -- MacGillivray 1916 Bull. Conn. St. geol. nat. Hist. Surv. 22: 169-172 (north-east U.S.). -- Yuasa 1923 Illinois Biol. Monogr. 7: 114-115 (larvae). -- Boulaugh 1924 Mém. Trav. Faculté Cathol. Lille 28: 302-312 (l'appareil copulateur). -- Ross 1937 Illinois Biol. Monogr. 15: 111-113 (N. Amer. genera). -- Benson 1938 Trans. R. ent. Soc. Lond. 87: 359. -- Sonan 1938 Trans. nat. Hist. Soc. Formosa 28: 88-94 (Formosa).

Takeuchi 1938 Tenthrædo 2: 187-195 (Japanese Empire). -- Wu 1941 Cat. Insect. Sin. 6: 35-36 (China cat.). -- Benson 1943 Bull. ent. Res. 34: 27-51 (key to world genera; notes on genera and species with emphasis on European and southern Asia). -- Kjeller 1945 Opusc. ent. 10: 5-14 (Sweden). -- Berland 1947 Fauna France. 47. Hym. Tenthrædo: 69-79 (France). -- Ma 1949 Notes Ent. chin. 13: 76-163, 170-178 (keys to genera and species, emphasis on and cat. of Asiatic species). -- Ries 1951 in Muesebeck, et al., Agriculture Monogr. 2: 83-85 (N. Amer. cat.). -- Benson 1951 Handbok Ident. Br. Insects 6(2a): 17-22 (Great Britain). -- Vité 1952, 1953 Die holzerstörrenden Insekten Mitteleur. 1952: 108-113; 1953: 45-47, 49, 75, 76 (part). -- Maxwell 1955 Can. Ent., suppl. 1, 87: 97-99 (internal larval anatomy). -- Takeuchi 1955 Akitsu 4: 1-9 (Japan). -- Aurora 1956 Res. Bull. Panjab Univ., no. 90, Zool.: 85-119 (relationships of Symphyta to other orders based on adult external morphology). -- Bakke 1960 Norsk ent. Tidsskr. 11: 117-120 (Norway). -- Rites 1960 Dokl. Akad. Nauk SSSR 132: 478-480 (galleries). -- Middlekauff 1960 Bull. Calif. Insect Surv. 6: 59-77 (California). -- Geballos 1960 Graellsia 20: 55-67 (Spain). -- Takeuchi 1962 Insecta Japon. (2) pt. 4: 1-12 (Japan). -- Kim 1963 Human. and Sci. (Nat. Sci.) Korea Univ. 6: 294-295 (Korea cat.). -- Okutani 1963 Sci. Rep. Hyogo Univ. Agric., Ser. Agric. Biol. 6: 23-27 (larvae). -- Wickman 1964 Can. Ent. 96: 508-510 (measuring populations in wood). -- Bachmaier 1966 Anz. Schädlingssk. 9: 129-132 (key to European species).

Stroganova 1968 Horntails of Siberia: 1-143 (descriptions, life histories, distributions of species in Siberia). -- Wolf 1968 Bull. Annls Soc. r. ent. Belg. 104: 427-457 (ethologie; host list). -- Morgan 1968 Ann. Rev. Ent. 13: 239-256 (biometrics). -- Wolf 1969 Bull. Annls Soc. r. ent. Belg. 105: 202-224 (enemies of siricids). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 72-73 (key to fossil forms). -- Wolf 1969 Bull. Soc. r. ent. Belg. 76: 281-301 (species and biol. in Belgium). -- Togashi 1970 Mushl, suppl., 43: 1-114 (internal reproductive organs). -- Möczár & Zombori 1973 Fauna Hung. XI, Hym. 1, 2: 47-57 (Hungary). -- Smith 1975 Co-op. econ. Insect. Rep. 25(44): 851-852 (key, N. Amer. genera).

Siricidae: Blanchard 1840 Hist. Nat. Anim. Art. 3: 243 (part).

Siriciti: Spinola 1843 Considerazioni sopra i costumi degli imenotteri del C. Sirax,

Fab. e sopra il miglior posto dei Siricidi: 1-24 (account of larvae and life history with reference to previous literature on the family).

Urocerates: Dufour 1854 Ann. Sci. Nat., Zool. (4) 1: 201-236 (anatomy).

Siricidae: Costa 1860 Fauna Regno Napoli, pt. 11a, Siricidae: 1-6. -- Rasnitsyn 1963 Paleont. Zh. 1: 88-91 (fossil and recent). -- Rasnitsyn 1968 Ent. Obozr. 47: 66-69 (evolution of function of ovipositor in relation to origin of parasitism). -- Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 191 (key to fossil and recent families).

Siricinae: Thomson 1871 Hym. Scand. 1: 14, 324-329 (part; tribe in Siricidae). -- Costa 1894 Prospetto Imenotteri Ital. 3: 256-261 (group in Siricidae). -- Costa 1895 Atti Accad. Sci. fis. mat., Napoli (2) 7: 184-188.

Siricinae: Kirby 1882 List Hym. Brit. Mus. 1: 373-386 (subfamily). -- Mocsáry 1886 Rovart. Lap. 3: 67-73, XI-XII (subfamily; Hungary). -- Dalla Torre 1894 Cat. Hym. 1: 350-393 (subfamily). -- Schmiedeknecht 1907 Hym. Mitteleur.: 768, 769. -- Enslin 1917 Tentred. Mitteleur.: 703-704, 705-706, 710-715 (subfamily). -- Gussakovskij 1935 Fauna SSSR, Insects Hym. 2: 1: 46-72, 337-344 (subfamily; key to and descriptions of Palearctic species).

Hym. 2: 1: 46-72, 337-344 (subfamily; key to and descriptions of Palearctic species). -- Głowacki 1956 Polski Zwiazek ent. 24(2): 9, 13-20 (subfamily; Poland). -- Góralios 1956 Cat. Hym. Esp.: 133-134 (subfamily). -- Precupetu & Negru 1961 Rev. Biol., Buc. 6: 82, 85-89 (subfamily; Romania). -- Stroganova 1963 Trudy biol. inst. Sib. Otd. Akad. Nauk SSSR 10: 24-42 (notes on Siberian species).

Siricinae: Konow 1890 Dt. ent. Z. 34: 250, 242 (tribe). -- Konow 1896 Wien. ent. Ztg. 15: 41-45 (tribe; European genera and species). -- Konow 1898 Wien. ent. Ztg. 17: 73-91 (tribe; world genera and species). -- Konow 1905 Z. system. Hymenopt. Dipteroi. 5: 33, 60-64, 97-128 (subfamily; key to and descriptions of world genera and species). -- Konow 1905 Genera Insect. 28: 5-9 (subfamily). -- Enslin 1911 Dt. ent. Z.: 434-439 (subfamily).

Siricideae: Rohrer 1911 Proc. ent. Soc. Wash. 13: 217. -- Hedické 1938 Hym. Cat. 6: 1-52 (world cat.).

Siricinae: Hedické 1930 Tierwelt Mitteleur. 5(2): 8, 74-75 (subfamily).

Fifteen genera and 100 species or subspecies of Siricidae are listed in this catalog. This total includes the extinct forms which number 6 genera and 7 species. The Siricidae are native to the coniferous and angiospermous forests of the northern hemisphere except for one small genus in central Africa. Introduced species are known in Australia, New Zealand, and South America. The larvae are wood borers, the Siricinae in coniferous trees, the Tremicinae in angiospermous trees. Because of their wood boring habit and because some species may take several years to develop, they are easily transported in logs and lumber to regions outside their native ranges and may easily become established under favorable conditions. The prime example is the introduction of *Sirex noctilio* into New Zealand and Australia where it has become a serious pest of the introduced coniferous trees of those countries. In their native habitats, siricids are not considered as primary pests of healthy trees. Most species attack weakened trees, fire-damaged trees, or recently felled trees. However, their borings result in reduced value of timber or wood products, and the emergence of adults from infested timber in buildings may cause damage. Adults have also been reported to cut through metal or cause electrical short circuits when emerging.

Because of their conspicuous nature, such as the large size and color of some species, and the damage they cause, the Siricidae are noted in numerous articles in the literature. Some of the more common species are listed in most every natural list available, and it is impossible to locate and cite each reference. The references given are the most significant and others cited will give an idea of the nature and scope of the literature available.

Siricidae is not the oldest family-group name available. Group names based on the genus *Urocerus* were the first to be used. However, most authors in the nineteenth century considered *Urocerus* a junior synonym of *Sirex*, and, following the practice of those times and through tradition to the present, family-group names based on *Sirex* have been used. Because of its general usage for 100 years or more, Siricidae is maintained, in accordance with Article 40(a) of the International Code of Zoological Nomenclature which states "if a family-group name, changed before 1961 because of such synonymy [a nominal type-genus is rejected as a junior synonym], it is obvious that the name Siricidae has been generally accepted. According to Article 40(b) of the Code, the date of Siricidae becomes 1802. If cited with author, it should read: Siricidae Billberg 1820 (Urocerata Latreille 1802).

Subfamily PRAESIRICINAE

Praesiricinae: Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 216.

Genus PRAESIREX Rasnitsyn

Praesirex Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 216.

Type-species: *Praesirex hirtus* Rasnitsyn (Original designation). -- Rasnitsyn 1969 Trudy paleont. inst. 123: 73.

hirtus Rasnitsyn

Praesirex hirtus Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 216, fig. 23, pl. 24, fig. 9, "Zabalkal'ye, r. Vitim, urochishne Baisa" (PIN, Moscow). -- Rasnitsyn 1969 Trudy paleont. inst. 123: 18, 73, fig. 115 (in key).

Subfamily AULISCINAE

Auliscinae: Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 209, 211 (a subfamily of Karatavitiidae). -- Rasnitsyn 1969 Trudy paleont. inst. 123: 73 (subfamily of Siricidae; key to genera and species).

Genus AULISCA Rasnitsyn

Aulisca Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 209, 212.

Type-species: *Aulisca odontura* Rasnitsyn (Original designation). -- Rasnitsyn 1969 Trudy paleont. inst. 123: 73 (in key).

odontura Rasnitsyn

Aulisca odontura Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 209, 212-213, fig. 19, pl. 24, fig. 5, 9, "Yuzhnei Kazakhstan, khrebet Karatau mestonokhozdienie Mikhailovka" (PIN, Moscow). -- Rasnitsyn 1969 Trudy paleont. inst. 123: 17, 73, fig. 118.

varicornis Rasnitsyn

Aulisca varicornis Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 209, 213, fig. 20, pl. 24, fig. 20, "Yuzhnei Kazakhstan, khrebet Karatau mestonokhozdienie Mikhailovka" (PIN, Moscow). -- Rasnitsyn 1969 Trudy paleont. inst. 123: 17, 73, fig. 119.

Genus MEGALISCA Rasnitsyn

Megalisca Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 213-214.

Type-species: *Megalisca grosea* Rasnitsyn (Original designation). -- Rasnitsyn 1969 Trudy paleont. inst. 123: 73.

grosea Rasnitsyn

Megalisca grosea Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 209, 214, fig. 21, pl. 24, fig. 7, 9, "Yuzhnei Kazakhstan, khrebet Karatau mestonokhozdienie Mikhailovka" (PIN, Moscow). -- Rasnitsyn 1969 Trudy paleont. inst. 123: 17, 73, fig. 116.

Genus MEGURA Rasnitsyn

Megura Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 214-215.

Keen 1938 Misc. Publ. U. S. Dep. Agric. 273: 201, fig. 96 (hosts a, c, h, k). -- Hedrick 1938 Hym. Cat. 6: 15. -- Benson 1940 Trans. Herts. nat. Hist. Soc. Field Club 21: 191 (has been intercepted in Britain). -- Chamberlin 1949 Pan-Pacif. Ent. 25: 118 (Oregon, host j, in stumps). -- Riles 1951 in Muesebeck, *et al.*, Agriculture Monogr. 2: 83 (hosts a, b, h, j, k). -- Benson 1951 Handk. Ident. Br. Insects 6(2a): 20, 21 (occasionally introduced but not established in Britain). -- De Leon 1952 Pan-Pacif. Ent. 28: 85 (California, host a). -- Middlekauff 1960 Bull. Calif. Insect Surv. 6: 62-63 (distribution; hosts a, b, d-g, i-k). -- Cameron 1965 Tech. Bull. Commonw. Inst. Biol. Control 5: 7 (hosts a, b, d-g, i-k). -- Cameron 1967 Can. Ent. 99: 21 (in key). -- Westcott 1971 Pan-Pacif. Ent. 47: 310 (Oregon, host i). --

Stenocera areolaris: Benson 1935 Ann. appl. Biol. 22: 763 (Britain). -- Benson 1943 Bull. ent. Res. 34: 30, 31, 32, 36 (measurements; occasionally imported into Britain but not established). -- *Stenocera areolaris*: Konow 1898 Wien. ent. Ztg. 17: 79, 81, 90 (syn.: ? *gracilis* Westwood, *areolaris* (!) Cresson, *apicalis* Kirby). -- Konow 1905 Z. system. Hymenopt. Dipteroi. 5: 106, 109. -- Konow 1905 Genera Insect. 28: 7. -- Reichert 1933 Sber. naturf. Ges. Lpz. 56-59: 73 (adventive in Germany). -- *Stenocera gracilis* Westwood 1874 Thesaurus ent. Oxon.: 114, pl. 21, fig. 4. ♀. "American septentrionalis" (Oxford, ♀). -- Dalla Torre 1894 Cat. Hym. 1: 389. -- *Stenocera gracilis*: Cresson 1880 Trans. Am. ent. Soc. 3: 51, 67. -- Harrington 1893 Trans. R. Soc. Can., section IV: 143. --

Panturus gracilis: Asmead 1898 Can. Ent. 30: 179. -- *Panturus areolaris*: Cresson 1880 Trans. Am. ent. Soc. 3: 34-35, ♀. "Vancouver's Island" (Philadelphia, ♀). -- Harrington 1893 Trans. R. Soc. Can., section IV: 141. -- Cresson 1916 Mem. Am. ent. Soc. 1: 10 (type). --

Stenocera areolaris: Kirby 1882 List Hym. Brit. Mus. 1: 379. -- "Dalla Torre 1894 Cat. Hym. 1: 384. -- *Stenocera areolaris*: Bradley 1913 J. Ent. Zool. 5: 13-14 (trace). -- Benson 1935 Ann. appl. Biol. 22: 763 (*areolaris* (!); adventive in Britain). -- Hedrick 1938 Hym. Cat. 6: 15. --

Stenocera apicalis Kirby 1882 List Hym. Brit. Mus. 1: 377-378, pl. 15, fig. 11. ♂. "Vancouver's Island" (London, ♂). -- Dalla Torre 1894 Cat. Hym. 1: 384. -- Bradley 1913 J. Ent. Zool. 5: 12 (the male of *obesus* ?). -- Hedrick 1938 Hym. Cat. 6: 15. -- *Stenocera apicalis*: MacGillivray 1893 Can. Ent. 25: 243. -- Harrington 1893 Trans. R. Soc. Can., section IV: 143 (probably ♂ of *areolaris*). --

Panturus apicalis: Asmead 1898 Can. Ent. 30: 179. -- Howard 1901 Insect Book: pl. 13, fig. 3 (*Panturus* (!)). --

Hosts: a) *Sequoia sempervirens*, redwood; b) *Cupressus macrocarpa*, Monterey cypress; c) cypress; d) *Pinus contorta*; e) *Pinus jeffreyi*; f) *Pinus lambertiana*; g) *Pinus radiata*; h) pine; i) *Libocedrus decurrens*; j) *Pseudotsuga menziesii* (= *P. taxifolia*), Douglas-fir; k) cedar; l) *Juniperus occidentalis*; m) *Taxodium distichum*. --

Notes: This species is found less frequently on pines than on other hosts. The record from Honduras is based on a single specimen intercepted by U.S. Plant Quarantine at New Orleans, Louisiana. -- "Honduras...with bananas." --

bethrensi (Cresson)

U.S. (California, Idaho, Nevada, Oregon, Washington; adventive in eastern states emerging from lumber). --

Stenocera bethrensi: Cresson 1880 Trans. Am. ent. Soc. 8: 35, ♀. "California" (Philadelphia, ♀). -- MacGillivray 1893 Can. Ent. 25: 243. -- Harrington 1893 Trans. R. Soc. Can., section IV: 143-144. -- Cresson 1916 Mem. Am. ent. Soc. 1: 9 (type). -- *Stenocera bethrensi*: Kirby 1882 List Hym. Brit. Mus. 1: 379. -- Dalla Torre 1894 Cat. Hym. 1: 384. -- Bradley 1913 J. Ent. Zool. 5: 10, 11, 16, fig. 1, 25, 37 (♀, ♂). --

Flanders 1925 J. econ. Ent. 18: 236-237 (California, host e, ovipositing in burned trees). -- Essig 1926 Insects West. N. Amer.: 771, fig. 649A, B (*bethrensi*, host e). -- Hedrick 1938 Hym. Cat. 6: 15 (*bethrensi*). -- Riles 1951 in Muesebeck, *et al.*, Agriculture Monogr. 2: 83 (hosts c, e). -- Middlekauff 1960 Bull. Calif. Insect Surv. 6: 63 (distribution; hosts a-f). -- Daily 1963 Ann. ent. Soc. Am. 56: 301 (morphology; muscles). -- Cameron 1965 Tech. Bull. Commonw. Inst. Biol. Control 5: 7 (hosts a-f). -- Cameron 1967 Can. Ent. 99: 21 (in key). -- Burks 1967 in Krombein, *et al.*, Agriculture Monogr., suppl. 2, 2: 26. --

Panturus bethrensi: Konow 1898 Wien. ent. Ztg. 17: 79, 82, 90. -- Konow 1905 Z. system. Hymenopt. Dipteroi. 5: 106, 110. -- Konow 1905 Genera Insect. 28: 7. --

Hosts: a) *Pinus jeffreyi*; b) *Pinus lambertiana*; c) *Pinus ponderosa*; d) *Pinus radiata*; e) *Cupressus macrocarpa*, Monterey cypress; f) Japanese pine. --

caryintha Konow

Stenocera caryintha: Konow 1890 Dt. ent. Z. 34: 242 (nomen nudum). -- Konow 1891 Dt. ent. Z. 35: 210, ♀. "Caryintha" (Eberswalde, ♀). -- Dalla Torre 1894 Cat. Hym. 1: 384. -- Konow 1899 Termész. Filz. 18: 50 (d, similar to *juvencus* and *noctilio*). -- Konow 1896 Wien. ent. Ztg. 15: 45, 46 (in subg. *Panturus*). -- Benson 1943 Bull. ent. Res. 34: 36 (not seen). -- Mészár & Zombori 1973 Fauna Hung. XI, Hym. 1: 2: 52, 55 (in key). -- Zombori 1974 Folia ent. hung. 27: 239 (Carpathian Basin). --

Stenocera juvencus: Benson 1963 (1962) Entomologist's mon. Mag. 98: 252. -- *Stenocera caryintha*: Konow 1898 Wien. ent. Ztg. 17: 81, 90. -- Konow 1905 Z. system. Hymenopt. Dipteroi. 5: 107, 113-114. -- Konow 1905 Genera Insect. 28: 7. -- Schmiedeknecht 1907 Hym. Mitteil.: 771. -- Ghigi 1909 Bull. Soc. ent. Ital. 40: 168, 170 (compared with *atlantidis*). -- Enslin 1917 Tenther. Mitteil.: 712 (as syn. of *juvencus*). -- Schmiedeknecht 1930 Hym. Nord-Mittel.: 74. -- Gussakovskij 1935 Fauna USSR, Insects Hym. 2, 1: 58, 59, 62-63, 342. --

Notes: Benson placed *caryintha* as a subspecies of *juvencus*, but it has more recently been considered as a species. Moreover, the range of *juvencus* covers that of *caryintha*. --

cyaneus Fabricius

Stenocera cyaneus Fabricius 1781 Species Insect. 1: 419, ♀. "America borealis" (Coll. Fabricius, ♀). -- Fabricius 1787 Mant. Insect. 1: 258. -- Karsten 1789 Mus. Lesk. Reg. Anim. 1: 56. -- Gyllenhal 1780 Linn. Syst. Nat., Ed. 13, 1: 2673. -- Fabricius 1793 Ent. Syst. 2: 127. -- Kirby 1882 List Hym. Brit. Mus. 1: 378-379 (host s). -- Cameron 1890 Monogr. Brit. Phytophag. Hym. 3: 134 (Britain). -- Dalla Torre 1894 Cat. Hym. 1: 385. -- Kiear 1902 Fauna Arctica 2(3): 407 (arctic America). -- MacGillivray 1916 Bull. Conn. St. geol. nat. Hist. Surv. 22: 170, 171 (hosts d, l). -- Evans 1922 Scott. Nat. 131-132: 175-189 (Scotland; history, emergence, enemies, records). -- Waterston 1928 in Chrystal, Bull. ent. Res. 19: 220-224 (in key; systematic notes). -- Chrystal 1928 Bull. ent. Res. 19: 224-247 (England; biology, hosts e, l, o, p, s). -- Chrystal & Meyers 1928 Emp. For. J. 7: 145-154 (England; biology, parasites, hosts f, s). --

Chrystal & Meyers 1928 Bull. ent. Res. 19: 67-77 (England; biology, parasites). -- Cartwright 1929 Ann. appl. Biol. 16: 183-187 (associated fungus). -- Chrystal 1930 Oxf. For. Mem. 11: 1-63 (studies of parasites). -- Peacock & Gresson 1931 Proc. R. Soc. Edinb. 51: 97-103 (♂ haploidy and ♀ diploidy). -- Benson 1935 Ann. appl. Biol. 22: 763 (hosts l, p, s). -- anonymous 1937 Rep. Forest Prod. Res. Bd. (London). --

Cartwright 1938 Ann. appl. Biol. 25: 430-432 (fungus association). -- Hanson 1939 Bull. ent. Res. 30: 27-65 (in most coniferous forests in Britain; biology, parasites). -- Benson 1940 Trans. Herts. nat. Hist. Soc. Field Club 21: 192. -- Parkin 1941 Nature, Lond. 147: 329 (fungus in larva). -- Parkin 1942 Ann. appl. Biol. 29: 268-274 (England; symbiosis, tungus, hypopleural organs). -- Benson 1943 Bull. ent. Res. 34: 30, 31, 32, 38 (taxonomy, separation from *juvencus*). -- Kjellander 1945 Opusc. ent. 10: 8-9, 13 (Sweden). -- Kjellander 1945 K. Vysig. Skilsk. Land Föhr. 15: 123 (Sweden). --

Maa 1949 Notes Ent. chin. 13: 120, 173-174 (has been erroneously listed in the literature from Asia). -- Riles 1951 in Muesebeck, *et al.*, Agriculture Monogr. 2: 83 (hosts g, l, p). -- Benson 1951 Handk. Ident. Br. Insects 6(2a): 21 (a polarctic species, established in Britain). -- Short 1952 Trans. R. ent. Soc. Lond. 103: 21 (morphology, larval head). -- Maxwell 1955 Can. Ent., suppl. 1, 87: 97-98 (internal larval anatomy; host p). -- Burks 1958 in Krombein, *et al.*, Agriculture Monogr.,

- suppl. 1, 2: 16. -- Bakke 1960 Norsk ent. Tidsskr. 11: 118 (Norway ?). -- Stillwell 1960 Forest Sci. 6: 225-231 (host a; decay association). -- Middlekauff 1960 Bull. Calif. Insect Surv. 6: 64-65 (hosts a, b, g, l, p). -- Benson 1962 Bull. Br. Mus. nat. Hist. (Ent.) 12: 305 (a circumboreal species; *varipes* Walker not a syn.). -- Wilson 1962 J. econ. Ent. 55: 510-516 (Minn., in pulpwood of hosts a, b, h). -- Zimsen 1964 Type Material of J. C. Fabricius: 361 (type). -- Okutani 1965 Akitsu 12: 32 (intercepted in Japan in henlock from U.S.). -- Cameron 1965 Tech. Bull. Commonw. Inst. Biol. Control 5: 8 (hosts a, b, d, e, g, l, p, r). -- Bachmair 1966 Anz. Schädlingssk. 39: 130 (Europe; hosts h, l, p). -- Morris 1967 J. ent. Soc. Br. Columb. 64: 60-63 (B.C.; hosts t, m). -- Wolf 1967 Bull. Annls Soc. R. ent. Belg. 103: 334 (Belgium; distribution in Europe). -- Cameron 1967 Can. Ent. 99: 21, 22 (in key). -- Arman 1969 J. econ. Ent. 62: 249-250 (host c). -- Schedl 1972 Mitt. Abt. Zool. Landesmus. Joazeur 1: 104 (Austria; hosts h, l, p). -- Kirk 1974 J. Ga. ent. Soc. 9: 139-140 (N.C.; parasites, host c). -- Kirk 1975 Pan-Pacif. Ent. 51: 57-60 (Colo.; parasites, hosts a, k). -- Kirk 1975 Entomologist's mon. Mag. 110: 215-221 (Ireland; host t).
- Sirex cyanus cyanus*: Benson 1965 Ann. Mag. nat. Hist. (13) 8: 141.
- Sirex cyanus cyanus*: Norton 1869 Trans. Am. ent. Soc. 2: 356, 357-358 (syn.: *nitidus* Harris, *duplex* Shuckard). -- Cresson 1875 Rep. Geog. Surv. West 100th Meridian 5: 707. -- Provancher 1878 Naturaliste can. 10: 230-231 (Québec). -- Cresson 1880 Trans. Am. ent. Soc. 8: 67 (in cat.). -- Provancher 1883 Petite Faune Ent. Can., Hym.: 239, 241. -- Harrington 1893 Trans. R. Soc. Can., section IV: 141-142.
- Panurgus cyanus*: Ashmead 1898 Can. Ent. 30: 179. -- Konow 1898 Wien. ent. Ztg. 17: 79, 81, 89-90 (syn.: *abbotti* Kirby; host n). -- Ashmead 1900 in Smith, Insects New Jers., Rep. New Jers. Dep. Agric. 1899, 27: 598. -- Howard 1901 Insect Book: pl. 13, fig. 12 (*Panurgus* (1)). -- Konow 1905 Z. system. Hymenopt. Dipterol. 5: 106, 107-108 (host n). -- Konow 1905 Genera Insect. 28: 7. -- Felt 1906 Mem. N.Y. St. Mus. nat. Hist. 8: 669. -- MacGillivray 1910 in Smith, Rep. New Jers. Dep. Agric. 1909: 593 (N. J.).
- Sirex juvenis cyanus*: Bradley 1913 J. Ent. Zool. 5: 14-15, fig. 23 (syn.: *juvenis* Kirby; as race *cyanus*; hosts n, o). -- Essig 1926 Insects West. N. Amer.: 772 (race *cyanus*; hosts d, p). -- Rohwer 1928 in Leonard, Mem. Cornell Univ. agric. Exp. Stn 101: 874 (race *cyanus*; N.Y.). -- Eidmann 1935 Arb. morph. taxon. Ent. Berl. 2: 101 (Labrador). -- Hedicke 1938 Hym. Cat. 6: 19-20. -- Bedard 1938 Can. Ent. 70: 194 (race *cyanus*; host g).
- Sirex nigricornis*: Newman 1833 Entomologist's Mag. 1: 414 (redescription; not *nigricornis* Fabricius).
- Sirex juvenis*: Kirby 1837 in Richardson, Fauna Bor.-Am. 4: 257 (not Linnaeus; N. Amer.; syn.: *torvus* Harris).
- Sirex torvus*: Harris 1782 Expos. Engl. Insects: 96, pl. 28, fig. 1, 3, 4, 9, larva, pupa. England. () (spelled "Sirex" on pl. 28).
- Sirex duplex*: Shuckard 1837 Mag. nat. Hist. (n.s.) 1: 631-632, 9, 8. "Cambridge-shire" () (host n). -- Inghen 1840 Trans. R. ent. Soc. Lond. 2: proc. p. lxxxii (emerged from house in England, wood from Canada). -- Inghen 1841 Trans. R. ent. Soc. Lond. 3: proc. p. ii (from house, wood local, not from Canada). -- Lubbock 1852 Trans. R. ent. Soc. Lond. 2: proc. p. iii (England; host s). -- Holdsworth 1857 Trans. R. ent. Soc. Lond. 4: proc. p. xcvi ("Scotch fir").
- Urocerus nitidus*: Harris 1841 Rep. Insects Mass. Injurious Veg.: 391-392, 9. Dublin, New Hampshire. (Cambridge, Mass., 9). -- Harrington 1882 Can. Ent. 14: 226-227 (Ontario). -- Rohwer 1920 J. Wash. Acad. Sci. 10: 517 (type and locality).
- Sirex nitidus*: Johnson 1950 Psyche, Camb. 57: 281-282 (parasites; host a).
- Sirex abbotti*: Kirby 1882 List Hym. Brit. Mus. 1: 378, pl. 15, fig. 8. 8. "Georgia" (London, 8). -- Dalla Torre 1894 Cat. Hym. 1: 383. -- Bradley 1913 J. Ent. Zool. 5: 13 (possible δ of *edwardsii*, not *cyanus*). -- Eidmann 1935 Arb. morph. taxon. Ent. N.Y. St. Coll. For. 10: 95 (biol., host q). -- Eidmann 1935 Arb. morph. taxon. Ent. Berl. 2: 101 (Labrador). -- Hedicke 1938 Hym. Cat. 6: 14. -- Ries 1951 in Muesebeck, et al., Agricu. Hure Monogr. 2: 83 (*abbotti* (1); host q). -- Cameron 1965 Tech. Bull. Commonw. Inst. Biol. Control 5: 7 (host q).
- Urocerus abbotti*: Harrington 1893 Trans. R. Soc. Can., section IV: 142.
- Panurgus abbotti* (1): Ashmead 1898 Can. Ent. 30: 179.
- Sirex hirsutus*: Kirby 1882 List Hym. Brit. Mus. 1: 380, pl. 15, fig. 6. 6. "Georgia" (London, 6). -- Dalla Torre 1894 Cat. Hym. 1: 389.
- Urocerus hirsutus*: Harrington 1893 Trans. R. Soc. Can., section IV: 142.
- Panurgus hirsutus*: Ashmead 1898 Can. Ent. 30: 179. -- Konow 1898 Wien. ent. Ztg. 17: 81, 89 (as syn. of *nigricornis* Fabricius).

Hosts: a) *Abies balsamea*; b) *Abies concolor*; c) *Abies fraseri*; d) *Abies* spp., fir; e) silver fir; f) alpine fir; g) *Pseudotsuga menziesii* (= *P. mucronata*), Douglas-fir; h) *Pseudotsuga* sp., l) black spruce; j) *Picea glauca*; k) *Picea engelmannii*; l) *Picea* spp., spruce; m) white spruce; n) *Pinus nigra*; o) *Pinus sylvestris*, scots pine; p) *Pinus* spp., pine; q) *Larix laricina*; r) *Larix europaea*; s) *Larix* spp., larch; t) *Abies procera*.

Notes: Because of the similarity of *cyanus* and *juvenis*, the two species were confused in some of the early literature. Authors may have had mixed series of the two species, especially those authors who regarded them as conspecific. The exact distribution in the Palearctic Region has still not been determined. Benson believed that *cyanus* is a holarctic and circumboreal species.

cyanus dux (Semenov-Tian-Shanskij)

Hungary; Israel (introduced, probably not established); U.S.S.R. (Armenian S.S.R., Georgian S.S.R.).

Panurgus dux Semenov-Tian-Shanskij 1921 (1917) Russk. ent. Obozr. 17: 90-91. 9. "Transcaucasia occidentalis: Abastuman provinciae Kutaisensis" (Leningrad, 9). -- Semenov-Tian-Shanskij & Gussakovskij 1935 Annls Soc. ent. Fr. 104: 124, (d; distribution). -- Gussakovskij 1935 Fauna SSSR, Insects, Hym. 2, 1: 57, 59, 62, 341, 342, fig. 27C (host a). -- Lozovoi 1941 Trudy zool. Sekt., Tbilisi 3: 206 (Georgian SSR). -- Andguladze 1951 Trudy zool. Inst., Tbilisi 10: 224 (Georgian SSR; host a). -- Zhelokhovtsev, et al. 1955 in Pavlovskii & Shtrakei'berg, Forest Pests, Reference Book 1: 293 (references to other Russian literature).

Sirex dux: Hedicke 1938 Hym. Cat. 6: 16. -- Benson 1943 Bull. ent. Res. 34: 30, 31, 32, 38 (measurements, in key, near *cyanus*). -- Ma 1949 Notes Ent. chin. 13: 121, 122, 174. -- Benson 1955 Bull. Res. Coun. Israel 4: 352 (Israel, probably introduced with timber from Transcaucasia). -- Dedurian 1962 Sb. Zool., Zool. Inst. Akad. Nauk Arm. SSR 12: 65 (Armenian SSR). -- Cameron 1965 Tech. Bull. Commonw. Inst. Biol. Control 5: 8. -- Guryanova 1969 Zool. Zh. 48: 1358-1368 (parasites; host a; northwest, Caucasus). -- Zombori 1974 Folia ent. hung. 27: 239. (Carpathian Basin).

Sirex cyanus dux: Benson 1965 Ann. Mag. nat. Hist. (13) 8: 141. -- Benson 1968 Bull. Br. Mus. nat. Hist. (Ent.) 22: 117. -- Móczár & Zombori 1973 Fauna Hung. XI, Hym. 1, 2: 53, 54 (Hungary).

Hosts: a) *Abies nordmanniana*.

cyanus melanopus Benson

Sirex cyanus melanopus Benson 1965 Ann. Mag. nat. Hist. (13) 8: 141. 9, 8.

"Kashmir" (London, 9) (host a).

Sirex cyanus subsp. n.: Dharmadikari & Achan 1965 Tech. Bull. Commonw. Inst. Biol. Control 6: 78 (host a).

Hosts: a) *Abies pindrow*.

edwardsii (Brullé)

Canada (Québec, Saskatchewan); U.S. (Alabama, Arkansas, Georgia, Maryland, Massachusetts, North Carolina, New York, South Carolina, Virginia, West Virginia, Wisconsin).

Urocerus edwardsii Brullé 1846 in Lepelletier, Hist. Nat. Insectes, Hym. 4: 645, pl. 45, fig. 1. 9. "l'Amérique septentrionale" (Paris ?). (As "*Urocerus edwardsii*" on p. 645, "*Sirex* (*Urocerus*) *edwardsii*" in legend for plate 45, and "*Sirex edwardsii*" in caption under fig. 1). -- Norton 1869 Trans. Am. ent. Soc. 2: 356-357 (western records not this species). -- Cresson 1880 Trans. Am. ent. Soc. 8: 67 (syn.: *abbotti* Westwood). -- Harrington 1893 Trans. R. Soc. Can., section IV: 139-140 (western records not this species).

Sirex edwardsii: Kirby 1882 List Hym. Brit. Mus. 1: 377. -- Dalla Torre 1894 Cat. Hym. 1: 385. -- Bradley 1913 J. Ent. Zool. 5: 10, 11, fig. 20, 21 (9, 8). -- MacGillivray 1916 Bull. Conn. St. geol. nat. Hist. Surv. 22: 170, 171 (in key). -- Crampton 1918 Proc. ent. Soc. Wash. 21: 155, fig. 45, 53 (genitalia). -- Rohwer 1928 in Leonard, Mem. Cornell Univ. agric. Exp. Stn 101: 874 (N.Y.). -- Johnson 1928 Bull. Boston Soc. nat. Hist. 49: 3, fig. 9 (host b). -- Johnson 1930 Publs Nantucket Maria Mitchell Assoc. 3: 91 (Mass.; dead pines). -- Hedicke 1938 Hym. Cat. 6: 16. -- Benson

Phaenocarpa eucalypti Ashmead, 1890 Cat. Hym. 206: 119 (1890).
17, 79, 81, 90 (*edwardsi*); syn.: *zonatix* Norton, *phloeotactatus* Westwood. -- Ashmead 1905 in Smith, Insects New Jersey, Rep. New Jersey Dep. Agric., 1899, 21: 598. -- Krombein 1960 in Smith, Hymenopt. Dipteroi, 5: 106, 108-109 (*edwardsi*); syn.: *hopkinsi* Ashmead. -- Krombein 1905 Genera Insect., 28: 7 (*edwardsi*).
See also 2, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.

Caranx zonatus: Asmussen 1950 Cat. Fish. Juc. 1: 172.
Steved plicocentrus Westwood 1874 Thesaurus ent. Oxon., 114, pl. 21, fig. 11, d.
"America-Septentrionalis" (Oxford, 6).
Steved abaddon Westwood 1874 Thesaurus ent. Oxon., 115, pl. 21, fig. 7, c: "*America-Septentrionalis*" (Oxford, 9).

Paranyssus hickmanae Ashmead 1904 Can. Ent. 36: 64. ♀, ♂, "Tryon, N. C. and Kahnawka, W. Va." (Washington, ?) (host ♂, many specimens from drying pine trees; the type ♀ is from Tryon, North Carolina).

Stirex abbotti (?) Kirk 1974 J. Ga. ent. Soc. 9: 139-144 (parasites; distribution in southeast. U. S., hosts b-g; a misidentification).

Hosts: a) *Pinus* sp., pine; b) *Pinus rigida*; c) *Pinus echinata*; d) *Pinus taeda*; e) *Pinus elliotii* var. *elliotii*; f) *Pinus virginiana*; g) *Pinus palustris*; h) *Pinus strobus*; i) *Picea abies*.

Notes: Hosts h and i have not before been recorded.

ermak (Semenov-Tian-Shanskij)

Paumotuus emicki Semenov-Tjan-Schanskij 1921 (1917) Russk. ent. Doozr.: 17: 92. ♀.
emack (Semenov-Tjan-Schanskij)
u.S.S.R. (Amur, Buryat A.S.S.R., Irkutsk, Kamchatka, Kemerovo, Krasnojarsk, Kurile Is., Primorskij Krai, Sakhalin, Tomsk, Tuva A.S.S.R., Yakutsk A.S.S.R.)

msibirijske orientalis prov. Amurskies: filviti i zela cura. inter. contra urbem Blagov. iestsinskij. ins. Sachalin: ad filv. Poronai (Leningrad, 7). -- Semenov-Tian-Shanskij i Gussakovskij 1935 Annis Soc. ent. Fr. 104: 124 (d). -- Gussakovskij 1935 Fauna SSSR, insects Hym. 2, i: 58, 59, 63-64, 342, fig. 27E (host a, b). -- Takeuchi 1936 Tentredo i: 59 (Sachalin). -- Florov 1938 insect pests of coniferous forests in E Siberia: 165. -- Kurentsov 1950 Trudi dal'nievost Fil. Akad. Nauk SSSR i: 169 (Pri-morski Krai). -- Zhelokhovtsev, et al. 1935 in Pavlovskii i Shtrikel' berg, Forest pests, Reference Book i: 293. -- Bvalaya 1963 in Shornik, Vreditel' lesov v Pri-bai-kal'e, Irkutsk 8: 19-24 (baital area). -- Bvalaya 1963 in Shornik, Vreditel' lesov v Pri-bai-kal'e, Irkutsk 8: 27, 28, fig. 4, 6 (larva). -- Bvalaya 1964 Izv. vost.-sib. Otd. imp. russ. geogr. Obshch. 62: 23-42 (baital area, host a). -- Bvalaya 1964 Izv. Otd. imp. russ. geogr. Obshch. 62: 23-42 (baital area, host a). -- Bvalaya 1966 in vost.-sib. Otd. imp. russ. geogr. Obshch. 62: 63 (larva; in key). -- Bvalaya 1966 in Rozhnok, Pests of Siberian larch: 159, 162-163, pl. 27, pl. 28, fig. 4, 5, 10, pl. 29, fig. 5-8 (host a; one of principal pests of Siberian larch; biol., parasit.).

S. macr. emma Jakuchin 1938 Tenthr. 2: 192. -- Hedice 1938 Hym. Cat. 6: 16. -- Benson 1943 Bull. ent. Res. 34: 30, 31, 32, 34, 37, 38 (measurements, recorded from Sze-tschuan, China). -- Ma 1949 Notes Ent. chin. 13: 121, 122, 174 (Benson's China record not correct). -- Cherepanov 1956 Trudy biol. inst. zapad.-sib. Fil. Akad. Nauk SSSR 1: 73 (Tuve). -- Striganova 1965 Trudy biol. inst. Sib. ottd. Akad. Nauk SSSR 10: 26, 36-38, fig. 7-9 (west. Siberia). -- Zenkova 1965 in listed. Zashite Lesov Sibiri, Akad. Nauk SSSR, Sib. ottd. inst. biol. Control 5: 2. -- Krivolutskaya g). -- Cameron 1965 Tech. Bull. Comm. inst. biol. Control 5: 8. -- Krivolutskaya & Striganova 1966 in Entomofauna of Forests of Kurile Is., Kamchatka, Magadan: 61. -- Striganova 1968 Hornhills of Siberia: 52-57, fig. 16-18 (hosts a-f; Siberia, distribution). -- Verzhbitskii 1973 Ident. larvae woodwasp and sawflies of Siberia and Far East: 7, 28, 45, 47, 49. -- Krivolutskaya 1973 Entomofauna of the Kurile Is.:

145, 146 (Kur'ie's.). -- Stroganova, 1976 Trudy biol. inst. Sib. Otd. Akad. Nauk SSSR 18: 259, 264 (west. Siberia).
Sirex juvenis ermak: Benson 1963 (1962) Entomologist's mon. Mag. 98: 252.

Hosts: a) *Larix sibirica*, siberian larch; b) *Larix daurica*, Dahurian larch; c) fir; d) spruce; e) yeddo spruce; f) stone pine; g) Siberian cedar.

Notes: Though considered a subspecies of *juvencus* by Benson, *ermak* is more frequently recognized as a distinct species. Furthermore, the two forms are sympatric. *S. ermak* appears to prefer larch, *Larix* spp.

juvencus caitoronicus (Ashmead)

Paumotu *californicus* Ashmead (1944 Can. Ent. 36: 64, ♀, Placer Co., California; Hoqueim, Wash. " (Washington, ?) (the type is from Placer Co., California; 1905 Zool. system. Hymenopt. Diptero. 5: 110 (as syn. of *debezevi* (Cresson)). -- Horvath 1907, 1908, 1909, 1910, 1911, 1912, 1913, 1914, 1915, 1916, 1917, 1918, 1919, 1920, 1921, 1922, 1923, 1924, 1925, 1926, 1927, 1928, 1929, 1930, 1931, 1932, 1933, 1934, 1935, 1936, 1937, 1938, 1939, 1940, 1941, 1942, 1943, 1944, 1945, 1946, 1947, 1948, 1949, 1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 25

Sirex aculeiformis: Bradley 1910 J. Ent. Soc. U.S., 19: 167-168; Timberlake 1920 Bull. U.S. Dep. Agric. 83: 8. -- Essig 1926 Insects West., N. Amer.: 771-772.
-- Hedrick 1938 Hym. Cat. 6: 15-16. -- Benson 1943 Bull. ent. Res. 34: 37 (not seen).
-- Ries 1951 in Muesebeck, et al., Agricultural Monogr. 2: 83. -- Middleknap 1960 Bull. Calif. Insect Surv. 6: 63-64 (hosts a-e). -- Cameron 1965 Tech. Bull. Commonw. Inst. biol. Control 5: 7-8 (hosts a-e). -- Burks 1967 in Krombein & Burks, Agriculture Monogr., suppl. 2, 2: 26.

strict juvenans *aculeatorum* Benson 1905 (1902), entomologist's nom. mes., reg. 90: 422.
-- Cameron 1967 Can. Ent. 99: 18-23 (d., hosts a-g; syn.: *obesus* Bradley). --
Morris 1967 J. ent. Soc. Br. Columb. 64: 60-63 (B.C., hosts b, c, f, g). -- Cameron
1968 Pan-Pacif. Ent. 44: 168 (host c, from smog-killed trees; parasite). -- Norrfla
1969 Supn. byont. Aikak 35: 166 (compared with *juvenans*). -- Kirk 1974 Pan-Pacif. Ent.
51: 57-61 (parasites; host c).

52-year species Bradley 1913 J. Ent. Zool. 5: 12-13. ♀. Arizona (Philaedipia, ♀).
 -- Baumberger 1915 Ent. News 26: 34 (Calif.). -- Essig 1926 Insectos West. N. Amer. . .
 772. -- Cresson 1928 Mem. Am. ent. Soc. 5: 11 (type). -- Ries 1951 in Muesebeck, et al., Agriculture Monogr. 2: 83. -- Middlekauff 1960 Bull. Calif. Insect Surv. 6: 65 (host b.). -- Cameron 1965 Tech. Bull. Commonw. Inst. Control 5: 10 (host).

Hosts: a) *Pinus jeffreyi*; b) *Pinus contorta* (= *murrayana*), lodgepole pine; c) *Pinus ponderosa*, ponderosa pine; d) *Cupressus macrocarpa*; e) *Pseudotsuga menziesii*, Douglas fir; f) *Larix occidentalis*, western larch; g) alpine fir.

Notes: The single specimen I have seen from Mexico bears a label "on Madera pine".

<i>juvencus imperialis</i> Kirby	India (Assam, Jammu and Kashmir, Punjab); Pakistan.
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Stizoxa imperialis Kirby 1862 List Hym. Brit. Mus.: 1, 583, pl. 12, fig. 5. V. "North India" (London, ♀). --- Dalla Torre 1894 Cat. Hym.: 1, 389. --- Stebbing 1903 Dep't Insects Affect. Forestry 2: 151-155, pl. 7, fig. 1 (as *Stizoxa* sp., India, biol.), host e). --- Stebbing 1906 Dep't Insects Affect. Forestry 3: 355 (*Stizoxa* sp. of 1903, p. 151 identified). --- Stebbing 1908 Manual or Forest Zool. of India: 56-57, 85-86, pl. 28, fig. 85, 86 (11e history; host d). --- Stebbing 1914 Indian Forest Insects: 21 (parasit; host f). --- Rohwer 1915 Rec. Indian Mus.: 11: 39 (f; Assam). --- Beeson

and Chatterjee 1935 *J. Indian Forest Rec.* (n.s.) 1: 166 (parasites; hosts c, e). -- Hedrick 1938 *Hym. Cat.* 6: 16. -- Benson 1941 *Ecology and Control of Forest Insects of India and Neighbouring Countries*: 516-517 (biol., hosts b, c, e). -- Benson 1943 *Bull. ent. Res.* 34: 30, 31, 32, 48 (measurements; Punjab). -- Maa 1949 *Notes Ent. China* 13: 122-124, 174, 119, 162-165 (♀ redescribed). -- Ashraf 1964 *Tech. Bull.* *Commonw. Inst. Biol. Control*, 4: 66 (Pakistan, parasites; hosts a, c, d, g). -- Cameron 1965 *Tech. Bull. Commonw. Inst. Biol. Control* 5: 8 (hosts b, c, e). -- Dharwadikar and Achari 1965 *Tech. Bull. Commonw. Inst. Biol. Control* 6: 78 (Kashmir, Punjab; parasites; host a).

Sitona juvencaus imperialis: Benson 1965 Ann. Mag. nat. Hist. (13) 8: 141.
Paranus imperialis: Konow 1898 Wien. ent. Ztg. 16: 80, 82, 90. -- Konow 1905
 Z. system. Hymenopt. DipteroI. 5: 106, 110. -- Konow 1905 Genera Insect. 28: 7.

Hosts: a) *Abies pindrow*; b) *Abies webbiana*; c) *Cedrus deodara*; d) *Picea smithiana*; e) *Picea morinda*; f) spruce; g) *Pinus roxburghii*.

JUVENUS JUVENUS (Linnaeus)

Algeria; Australia (intercepted, not established); Austria; Belgium; Canada (British Columbia, New Brunswick, Newfoundland - insular and Labrador, Yukon Territory); Czechoslovakia; Denmark; England; Finland; France; Germany; Greece; Hungary; India (Punjab, Jammu and Kashmir; Himachal Pradesh); Italy; Japan; Korea; Netherlands; Norway; Philippines (intercepted, not established); Poland; Romania; Spain; Sweden; Switzerland; Turkey (introduced ?); U.S. (New Jersey, and probably most of northern U.S.); U.S.S.R. (Amur, Altay, Georgian S.S.R., Irkutsk, Kamchatka, Kemerovo, Khabarovsk, Krasnovarsk, Kurile Islands, Lithuanian S.S.R., Latvian S.S.R., Omsk, Primorski Krai, Novosibirsk, European R.S.F.S.R., Sakhalin, Toms, Tuva A.S.S.R., Tyumen', Ukrainian S.S.R.).

sect. 1: 568-569, pl. 36, fig. 7. -- Göße 1778 DeGeert: Abh. Gesch. Insek. 1 (4): 22-23, pl. 36, fig. 7.

Ichneumon juvenus Linnaeus 1758 Syst. Nat., Ed. 10, 1: 560, 9. "Habitat in Sylvis" (). -- Brünnich 1761 Prodr. Insector. Siaeiland: 17. -- Scopoli 1763 Ent. Carn.: 282, pl. 40, fig. 741 ("Abietii", in subgenus *Sirex*).

Sirex juvenus Linnaeus 1761 Fauna Suec., Ed. 2: 396 ("Habitat in Rotlagia"). -- Linnaeus 1767 Syst. Nat., Ed. 12, 1: 929. -- Fabricius 1775 Syst. Ent.: 326. -- Fuesslin 1775 Verz. Schweitz. Insect.: 48. -- Ph. L. Müller 1775 Linn.: Völlst. Natursyst. 2(5): 839. -- O.F. Müller 1776 Zool. Dan. Prodr.: 151. -- Sulzer 1776 Abgek. Gesch. Insek. 1: 187, pl. 26, fig. 9, 10. -- Fabricius 1781 Spec. Insect. 1: 419. -- Retzius 1783 Gen. Spec. Insect.: 67. -- Fabricius 1787 Mant. Insect. 1: 257.

19. -- Thunberg 1788 Mus. Nat. Acad. Upsal. 6: 84. -- Villers 1789 C. Linn. Ent. 3: 128-129; 4: 550. -- Römer 1789 Gen. Insect.: 57, pl. 26, fig. 9, 10. -- Gmelin 1790 Linn. Syst. Nat., Ed. 13, 1 (5): 2672-2673. -- Christ 1791 Naturg. Insek. 4: 416-417, pl. 47, fig. 3, 4. -- Fabricius 1793 Ent. Syst. 2: 126-127. -- Cederhjelms 1798 Fauna Ingric. Prodr.: 154-155 ("in ligno putrescente"). -- Panzer 1798 Faun. Insect. Germ.: fasc. 52, pl. 17. -- Ludwig 1799 Autz. Sachsen Insek.: 36 (*juvenus*). -- Fabricius 1804 Syst. Pie-fauna Paris 2: 45. -- Schrank 1802 Fauna Boica 2: 225. -- Fabricius 1804 Syst. Pie-zaf.: 50. -- Bechstein & Scharfentberg 1805 Vollst. Naturg. Forstins. 3: 869.

870. -- Spinnola 1806 Insect. Liguriae 1: 60. -- Panzer 1806 Krit. Rev. Insekten. Deutsch. 2: 55. -- Turton 1806 Gen. Syst. Nature 3 (2): 427. -- Jurine 1807 Nouv. Méth. Class. Hym. Dipt. 1: 79, pl. 7, fig. 11. -- Lamarck 1817 Hist. Nat. Anim. sans Vert. 4: 167. -- Billberg 1820 Enum. Insect. Mus. Billberg: 98. -- Stephens 1829 Syst. Nat. Brit. Insects: 342. -- Curtis 1829 Brit. Ent. 3: 253, fig. 9, 8 (type-species of *Sirex*). -- Leach 1830 (1815) Edin. Ency. 9: 141. -- Dahlbom 1835 Conspicua Tenthr. Sirex. 3: 138, 143-144, pl. 4, fig. 3, 15 (hosts u, a). -- Lucas 1846 Explor. Alger., insect. 3 (3): 342 (Algeria). -- Eversmann 1847 Byull. mosk. Obsch. Ispyt. Priro. 20: 67 (prov. Casanensis). -- Westwood 1849 Trans. R. ent. Soc. Lond. 9: proc. p. lxxxvii.

-- Raddon 1850 Trans. R. ent. Soc. Lond. 9: proc. p. lxxxv. -- Mosley 1850 Zoologist 8: 2960-2961 (Spruce fir; habits). -- Norman 1854 Zoologist 12: 4527. -- Kirchner 1854 Verh. zool.-bot. Ver. Wien 4: 290 (Böhmen; listed). -- Dufour 1854 Ann. Sci. nat.,

Zool. (4) 1: 201-236, fig. 4 (anatomy). -- Reinhard 1856 Stettin. ent. Z. 17: 110 (Germany; in rafters). -- Kollar 1857 Verh. zool.-bot. Ver. Wien 7: 153-155 (notes, observations). -- Cook 1857 Entomologist's Weekly Intellig. 3: 13 (at sugar placed on tree for moths). -- Newman 1857 Zoologist 15: 5829. -- Heyer 1859 Allg. Forst. Jagdztg. 35: 446 (damage to lead bullets of French forces). -- Staveland 1860 Trans. Linn. Soc. Lond. 23: pl. 16, fig. 13 (hiding). -- Ratzeburg 1861 Forst. Bl. 2: 84-85 (Fichten). -- Taschenberg 1861 Berl. ent. Z. 5: 195 (host a). -- Snellen van Volghoven 1861 Naturh. Hist. Neder. 4: 333 (Netherlands). -- Ratzeburg 1863 Forst. Bl. 5: 187-193. -- Kawai 1864 Byull. mosk. Obsch. Ispyt. Priro. 3: 302 (Volgo-Uralensem). -- Ratzeburg 1866 Waldverderbniss 1: 227. -- Taschenberg 1866 Hym. Deutschl. 29. -- Taschenberg 1866 Z. ges. Naturw. 27: 459 (biting of lead). -- Kirchner 1867 Cat. Hym. Eur.: 21. -- Snellen van Volghoven 1869 Tijdschr. Ent. 12: 112 (Netherlands). -- Newman 1870 Entomologist 5: 19 (note, Eng.). -- Thomson 1871 Hym. Scand. 1: 327-328 (Sweden). -- Newman 1872 Entomologist 6: 111. -- Walker 1873 Entomologist 6: 359. -- Walker 1873 Can. Ent. 5: 78. -- Ghiliani 1873 Boll. Soc. ent. Ital. 5: 243 (Italy; parasite). -- Kallenbach 1874 Pflanzenfunde: 699. -- Altum 1875 Forstzool. 3: 281. -- P.S. 1876 Feuille jeune. Nat. 6: 89 (bullet of cartridge pierced by *juvenus*). -- Sparre Schneider 1880 in Siebke, Enum. Insect. Norveg. 5: 29 (Norway). -- Cuni 1881 An. Soc. esp. Hist. nat. 10: 387 (Spain). -- André 1881 Spec. Hym. Eur. Alg. 1: 556, pl. 24, fig. 1; cat. p. 69. -- Wachtl 1881 Zentbl. ges. Forstw. 7: 352-359 (Germany; compared with *noctilio*; biology, hosts u, a). -- Kirby 1882 List Hym. Brit. Feuille jeune. Nat. 14: 53 (in gallery formed by "Rhopalopus temeratus"). -- Cameron 1885 Monogr. Brit. Phytophag. Hym. 2: pl. 7, fig. 5. -- Mocsáry 1886 Rovart. Lap. 3: 68, 69, 71, XI (Hungary). -- Perkins 1887 Entomologist's mon. Mag. 24: 156 (rare in England; note on collection). -- Gardner 1889 Entomologist 22: 117. -- Konow 1890 Dt. ent. Z. 34: 242 (listed). -- Berlese 1890 Boll. Soc. ent. Ital. 22: 182-183 (Italy). -- Cameron 1890 Monogr. Brit. Phytophag. Hym. 3: 134, 135, 136. -- Cobelli 1891 Pubbl. Mus. civ. Rovereto 19: 4, 27 (Trentino). -- anonymous 1891 Entomologist 24: 248. -- Streck 1893 Mitt. Schweiz. ent. Ges. 9: 10 (Switzerland). -- Oudemans 1894 Tijdschr. Ent. 37: 93 (Netherlands). -- Dalla Torre 1894 Cat. Hym. 1: 389-390. -- Griffini 1895 (1894) Miscnea ent. 12: 132 (Piémont). -- Strobl 1895 Wien. ent. Ztg. 14: 279 (distribution). -- Costa 1894 Prospetto imenotteri Ital. 3: 259. -- Costa 1895 Atti Accad. Sci. fis. mat., Napoli 7 (1): 186-187 (Italy). -- Dusmet 1896 An. Soc. esp. Hist. nat. 24: 42, 44 (in subg. *Pezomachus*). -- Ström 1896 Norw. ent. Ztg. 14: 279 (Norway). -- Klaer 1902 Fauna Arctica 2(3): 407 (Sweden, Norway). -- Schirmer 1903 Societas ent. 18: 121-122 (parasites). -- Morice 1904 Entomologist's mon. Mag. (2) 15: 34 (probably not in England; records for *juvenus* in England are probably *noctilio*). -- Ghigi 1905 Annuar. R. Mus. zool. R. Univ. Napoli 1: 24 (Italy, records). -- Lameer 1908 Ann. Soc. ent. Belg. 52: 84 (Belgium; host a). -- Schultze 1908 Philipp. J. Sci. Parenzo Istriz. Agric. 2: 499-500. -- Demoli 1909 Z. Wissenschaft. Zool. 92: 199-202 (mouthparts). -- Rudow 1909 Int. ent. Z. 3: 137 (biol. notes). -- Matsumura 1911 J. Coll. Agric. Hokkaido Imp. Univ. 4: 2, 86 (Sakhalin). -- Matsumura 1912 Thous. Insect. Japan, suppl., 4: 22, pl. 43, fig. 5. -- Barnola 1913 Butll. Inst. catal. Hist. nat. (2) 10: 34-37. -- Nielsen & Henriksen 1915 Fauna 18: 19, 20 (Denmark). -- Morice 1919 Trans. R. ent. Soc. Lond. 1918: 253 (syn.: *noctilio* Kirby; accidental import in Australia). -- Hudson 1919 Entomologist's mon. Mag. 55: 181 (import in N.Z. [may refer to *noctilio*]). -- Evans 1922 Scott. Nat. 131-132: 176 (records from Scotland and *cyaneus*). -- Scheidter 1923 Z. Schäd.Bekämpf. 1: 89-72, fig. (biol., under both *Sirex* and *Pezomachus*; hosts u, a). -- Carpenter 1926 Lambillionea 26: 16 (Belgium). -- Leonard 1927 Elenco Insetti dann. Ital. 2: 469 (Italy; parasite). -- Waterston 1928 in Chrystal, Bull. ent. Res. 19: 219. -- Chrystal 1928 Bull. ent. Res. 19: 220-247 (rare in England; biol., parasites). -- Chrystal & Meyers 1928 Bull. ent. Res. 18: 75 (records from N.Z. belong to *noctilio*, known as *juvenus* at that time). -- Chrystal & Meyers 1928 Emp. For. J. 7: 145-146 (hosts b, c, d). -- Kepp 1930 Ent. Jber 43: 287. -- Matsumura 1930 Illus. Thous. Insects Japan 2: 61, pl. 6, fig. 5. -- Matsumura 1931 6000 Illus. Insects. Jap.-Empire: 78. -- Uhlmann 1932 Mitt. Ges. Vorratsschutz 8: 65-68. -- Benson 1935 Ann. appl. Biol. 22: 763 (doubtful in Britain). -- Hedrick 1938 Hym. Cat. 6: 16-19. -- Takeuchi 1938 Tenthrudo 2: 191, 192 (Japan; hosts a, o). -- Jansson 1939 Entomologbladet 3 (1-4): 37-39 (Scandinavia; parasites; habits). -- Kono & Sugihara 1939 Insecta matsum. 13: 108 (Sakhalin, host p). -- Henson 1939 Bull. ent. Res. 30: 28 (rare in England; biol., parasites). -- Benson

Pauturus juvenus: Konow 1898 Wien, ent. Ztg., 17: 80, 90 (syn.). *laeaelatus*: Tournier d'not 9; *nigricornis* Aعرbi.. -- Konow 1905 Z. system. Hymenopt. Dipteroi. 5: 107, 112-113 (host a). -- Konow 1905 Genera Insect. 28: 7. -- Schmidknecht 1907 Hym.-Mittellaur.: 771. -- Ghigi 1909 (1908) Boll. Soc. ent. Ital. 40: 168, 170 (separation of *aetactoides*). -- Baer 1910 Tharander Forstl. Jahrb. 61: 95-96 (host a). -- Enslin 1917 Tenthed. Mittelaur.: 712, 750 (hosts a, i, o). -- Yano 1917 Coll. Essays V. Name: 120. -- Forsius 1919 Acta Soc. Fauna Flora tem. 46: 24 (Finland). -- Pax 1921 Jh. Ver. schles. Insektenk. 13: 46-51, fig. 1, 2 (galleries). -- Koornmeef 1925 Ent. Ber., must. 6: (142): 358 (Netherlands). -- Bischoff 1925 Abh. math.-nat. Abt. Bayer Ak., Suppl. 7: 356 (Liithauens). -- Steilfox 1929 Proc. R. Ir. Acad. (B) 59: 13 (Ireland). -- Dovaner-Zapolskiy 1929 Izv. sev.-kazakz. Kraev. Sta. Zashch. Raat. 12: 47 (larva in key, hosts i, u). -- Schmidknecht 1930 Hym. Nord-Mittelaur.: 73. -- Hediche 1930 Tierwelt Mittelaur. 5(2): 75, pl. 1, fig. d (hosts i, u). -- Koornmeef 1930 Tijdschr. Ent. 73: xiv (parasite). -- Oberasi 1931 Fragm. Faun. Mus. Zool. Pol. 10 (11): 48 (Poland). -- Dovaner-Zapolskiy 1931 Izv. sev.-kazakz. Kraev. Sta. Zashch. Raat. 6-7: 44. -- Ass & Funtikow 1932 Z. angew. Ent. 19: 557-578 (biol., parasites; hosts a, i). -- Reichert 1933 Sber. naturf. Ges. Lpz.: 75 (Leipzig; hosts a, o). -- Malaise 1934 Rec. Indian Mus. 36: 474 (India). -- Gussakovskij 1935 Fauna USSR, insects Hym. 2: 1: 57, 59-60, 341, 342, fig. 21A, 28A (in keys, distribution). -- Takeuchi 1936 Tenthedo i: 58 (Sakhalin). -- Flovor 1938 Insect pests or contentious forests in E. Siberia: 164, 165. -- Francke-Grossmann 1939 Z. angew. Ent. 25: 647-680 (German; associated fungus). -- Iozovoi 1941 Trudy zool. Sekti. TBilisi 3: 206 (Georgian SSR). -- Il'yinski 1948 Key to egg clusters, larvae, pupae insects injur. forests: 510. -- Kurentsov 1950 Trudy dal'nereost Fil. Akad. Nauk SSSR i (4): 168-169, fig. 44 (Moritime Region). -- Kisileva 1950 Uch. Zap. Tomsk. Gos. Univ. 15: 96-97 (Tomsk; host j). -- Andguladze 1951 Trudy zool. Inst. TBilisi 10: 224 (Georgian SSR). -- Gusev & Rimski-Korskov 1951 Key to injur. of forest and ornaments, trees, Europ.-USSR: 181, 451 (hosts i, u). -- Zakharov 1951 Priroda, Mosk. 8: 47-49, fig. 1-3 (descrip. each stage, galleries). -- Vitte 1932, 1935 Die holzersterbenden Insekten Mitteleur. 1952: 112; 1953: 45, 49, 76, fig. 113, 114, 128-130, 224 (hosts a, y, aa). -- Bordenes 1953 Ent. Medd. 26: 495-498 (*G. giga* or *P. juvenus*, Denmark, producing short circuits, boring through metal). -- Tsinovskii 1953 Insects of Latvian SSR, nomalis and sawflies: 30-31, fig. 111 (hosts a, o). -- Zhelokhovsey, et al. 1955 in Pavlovskii & Sitkael' Berg, Forest Pests, Reference Book i: 293. -- Cherenpanov 1956 Trudy biol. inst. zapad.-sib. Fil. Akad. Nauk SSSR i: 73 (Tuva SSR). -- Raties 1957 Zool. Zh. 36: 1455-1456 (Neyrn sands, Transvolga's; host i). -- Egorov 1958 Zool. Zh. 37: 1492 (Pine groves in steppes in west. Siberia). -- Stroganova 1959 Tezisy dokl. IV syezda Vses. ent. ob.-va., ch. 11. -- Aerets 1960 Decheniana 113: 310 (Rhineand; hosts a, o). -- Pfeiffer 1965 Z. angew. Ent. 51: 203-207 (host j)). -- Klein 1964 Anz. Schödl ingssk. 37: 43 (virus disease). -- Byalaya 1964 Izv. vost.-sib. Otd. imp. russ. geogr. Obshch. 62: 23-42 (Baikal area; host ff). -- Isaev & Tarasova 1965 in Issled. Zashite Lesov Sibiri, Akad. Nauk SSSR, sib. Otd. Inst. Lesa i Dreves., 9 (host a, Amur). -- Zenkova 1965 in Issled. Zashite Lesov Sibiri, Akad. Nauk SSSR, sib. Otd. Inst. Lesa i Dreves., 21 (west Sayan; host ii). -- Byalaya 1966 in Rozhnok, Pests of Siberian Larich: 159, 161, pl. 28, fig. 9 (host ff; rarely on larich).

Ichnemon sp.: Gronovio 1762 Acta Helvet. 5: 152 (no. 389).

Urocera vi: Schaeffer 1779 Iconogr. Insect. Ratisbon 3: pl. 205, fig. 3.

Sitex nigricornis: Acerbi 1802 Trav. Sweden 2: 255, pl. 1, fig. 1 d, not Fabricius (misidentification).

Urocera cornutus: Acerbi 1802 Trav. Sweden 2: 255, pl. 1, fig. 1 d, not Fabricius (misidentification).

Urocera cornutus Latreille 1804 in Nouv. Dict. Hist. Nat. 22: 522 (nomen nudum ?). -- Latreille 1919 in Nouv. Dict. Hist. Nat. 25: 148.

Sitex laeaelatus Tournier 1890 Ent. Genet. i: 220-222. d not 9. "a quelques kilomètres du port de Douarnenez, sur l'Océan (Finistère)" (). -- Dalla Torre 1894 Cat. Hym. i: 390.

Sitex (?) dubia Kirby 1882 List Hym. Brit. Mus. i: 375 (unnecessary new name for *nigricornis* Acerbi from Lapland). -- Dalla Torre 1894 Cat. Hym. i: 385.

Sitex aetactoides Kirroy 1882 List Hym. Brit. Mus. i: 383, pl. 15, fig. 12. 9.

Australlia (London, ?). -- Dalla Torre 1894 Cat. Hym. i: 584.

Australlia aetactoides: Konow 1898 Wien, ent. Ztg., 17: 80, 82, 90. -- Konow 1905 Z. system. Hymenopt. Dipteroi. 5: 106, 110-111. -- Konow 1905 Genera Insect. 28: 7.

Pauturus juvenus var. *yungo* Enslin 1917 Tenthed. Mittelaur.: 712. No locality.

(*Pauturus juvenus*), -- Koornmeef 1930 Tijdschr. Ent. 73: xiv (mentioned).

Pauturus juvenus ab. *mazzalata* Heillen 1935 Notul. ent. 15: 26. Finland. ().

Pseudotsuga sinensis Koornneef 1935 Tijdschr. Ent. 78: xiv-xv, xix-xx. Inter-
cepted or imported in Netherlands from north Russia? (Leiden, 7).
Strez succineiceps: Cameron 1965 Tech. Bull. Commonw. Inst. Biol. Control 5: 10.
Strez juvenis var. *atricornis* Kjellander 1945 K. tysiogr. Sällsk. Lund Förr. 15:
126. Sweden. (). -- Kjellander 1945 Opusc. ent. 10: 7, 12 (Sweden, rec-
ords).

Hosts: a) *Pinus sylvestris*, scots pine; b) *Pinus radiata*; c) *Pinus ponderosa*; d)
Pinus muricata; e) *Pinus strobus*; f) *Pinus rigida*; g) *Pinus banksiana*; h) *Pinus*
contorta; lodgepole pine; i) *Pinus* sp., pine; j) Stone pine; k) Siberian stone pine;
l) Korean pine; m) Japanese red pine; n) Japanese black pine; o) *Picea caelata*; p)
Picea japonica, yeddo spruce or yesso spruce; q) *Picea sitchensis*; r) *Picea amurica*;
s) *Picea abies*; t) *Picea maritima*; u) *Picea* sp., spruce; v) *Abies balsamea*; w) *Abies*
alba; x) *Abies sachalinensis*, sakhalin fir; y) *Abies laocarpus*, alpine fir; z) *Abies*
pinifolia; aa) *Abies* sp., fir; bb) Siberian fir; cc) *Pseudotsuga menziesii* glauca; dd)
Pseudotsuga menziesii (= *P. taxifolia*), Douglas-fir; ee) *Chamaecyparis lawsoniana*;
ff) Siberian larch; gg) *Larix* sp., larch; hh) pine oak; ii) Siberian cedar; jj) sil-
ver fir.

Notes: The typical subspecies of *juvencus* is widely distributed in the Holarctic
Region, with the subspecies *californicus* confined to western North America and the
subspecies *imperialis* in the western Himalayas. Its exact distribution in North
America, especially in the United States, has not been determined; it has probably been
confused with *juvencus* in the literature and in collections. Early records of *juvencus*
from New Zealand belong to *noctilio*.

Tongricauda Middlekauff

U.S. (California, Colorado, Idaho, New
Mexico, Oregon, Utah; adventive in
eastern states emerging from lumber).

Strez longicauda Middlekauff 1948 Pan.-Pacif. Ent. 24: 189-190. ♀. "Berkeley,
California" (San Francisco, ♀) (host a). -- Burks 1958 in Krombein, et al., Agri-
culture Monogr., suppl. 1, 2: 16 (host a). -- Middlekauff 1960 Bull. Calif. Insect
Surv. 6: 65 (host a). -- Middlekauff 1962 Pan.-Pacif. Ent. 38: 31-32 (♂; hosts a, b).
-- Wickman 1964 Pan.-Pacif. Ent. 40: 259-261 (oviposition; host b). -- Cameron 1965
Tech. Bull. Commonw. Inst. Biol. Control 5: 9 (hosts a, b). -- Burks 1967 in Krombein
& Burks, Agriculture Monogr., suppl. 2, 2: 26 (distribution). -- Cameron 1967 Can.
Ent. 99: 21 (in key). -- Kirk 1975 Pan.-Pacif. Ent. 51: 57-58 (parasites; host a).

Hosts: a) *Abies concolor*; b) *Abies magnifica*; c) *Pinus ponderosa*; d) *Pseudotsuga*
menziesii.

Notes: Apparently rare in hosts c and d.

mongolorum (Semenov-Tian-Shanskij & Gussakovskij) Mongolia; U.S.S.R. (Chita).

Pseudotsuga mongolorum Semenov-Tian-Shanskij & Gussakovskij 1935 Annls. Soc. ent.
Fr. 104: 125. ♀. "Mongolia septentr.: riv. Sigu-nur, curs. super. fluviu Chara-gol
in montibus Kentgei" (Leningrad, ♀). -- Gussakovskij 1935 Fauna SSSR, Insects Hym. 2,
1: 56, 63, 342, fig. 27D.

Strez mongolorum: Hedrick 1938 Hym. Cat. 6: 20. -- Benson 1943 Bull. ent. Res.
34: 48. -- Maa 1949 Notes Ent. chin. 13: 120, 122, 174. -- Cameron 1965 Tech. Bull.
Commonw. Inst. Biol. Control 5: 9. -- Stroganova 1968 Horntails of Siberia: 57 (hosts
a-e; biol.; distribution).

Strez juvenis mongolorum: Benson 1963 (1962) Entomologist's mon. Mag. 98: 252.

Hosts: a) spruce; b) stone pine; c) larch; d) pine; e) Siberian larch.

nigricornis Fabricius

Canada (Ontario, Québec, Saskatchewan);
U. S. (Alabama, Arkansas, Delaware,
District of Columbia, Florida, Georgia,
Louisiana, New York, North Carolina,
Ohio, South Carolina, Tennessee, West
Virginia, Wisconsin).

Strez nigricornis Fabricius 1781 Species Insect. 1: 418. ♀. "America boreali"
(Coll. Fabricius, ♀). -- Fabricius 1787 Ment. Insect. 1: 257. -- Gmelin 1790 Linn.

Syst. Nat., Ed. 13, 1: 2672. -- Fabricius 1793 Ent. System. 2: 125-126. -- Fabricius
1804 Syst. Piez.: 49. -- Turton 1806 Gen. Syst. Nature 3(2): 427. -- Kirby 1882 List
Hym. Brit. Mus. 1: 379. -- Dalla Torre 1894 Cat. Hym. 1: 391. -- Bradley 1913 J. Ent.
Zool. 5: 10, 11, 15-16, fig. 24 (♀, ♂; two races). -- MacGillivray 1916 Bull. Conn.
St. geol. nat. Hist. Surv. 22: 170, 171. -- Hedrick 1938 Hym. Cat. 6: 20. -- Benson
1943 Bull. ent. Res. 34: 50, 51, 52 (measurements). -- Ries 1951 in Muesebeck, et al.,
Agriculture Monogr. 2: 83 (host b). -- Burks 1958 in Krombein, et al., Agriculture
Monogr., suppl. 1, 2: 16 (Wisc.). -- Zinsen 1964 Type Material of J. C. Fabricius:
361 (type). -- Cameron 1965 Tech. Bull. Commonw. Inst. Biol. Control 5: 9 (host b).
-- Kirk 1974 J. Ge. ent. Soc. 9: 139-144 (parasites; distribution; hosts b-f).

Urocera nigricornis: Norton 1869 Trans. Am. ent. Soc. 2: 356, 359-360 (Calif.
record incorrect). -- Cresson 1880 Trans. Am. ent. Soc. 8: 67 (Calif. record incor-
rect; syn.: *morio* Westwood). -- Harrington 1893 Trans. R. Soc. Can., section IV: 143
(Calif. record incorrect). -- Webster 1895 Ohio Farmer: 177 (Tenn., from peach and
apple trees?).

Pseudotsuga nigricornis: Ashmead 1898 Can. Ent. 30: 179. -- Konow 1898 Wfen. ent.
Ztg. 17: 79, 81, 89. -- Konow 1898 Wfen. ent. Ztg. 17: 270 (syn.: *pinicola* Ashmead).
-- Ashmead 1900 in Smith, Insects New Jers., Rep. New Jers. Dep. Agric. 1899, 27.
598. -- Konow 1905 Z. system. Hymenopt. Dipteroi. 5: 106, 108. -- Konow 1905 Genera
Insect. 28: 7. -- MacGillivray 1910 in Smith, Rep. New Jers. Dep. Agric. 1909: 593
(N.J.).

Strez nigricornis race *nigricornis*: Bradley 1913 J. Ent. Zool. 5: 16. -- Rohwer
1928 in Leonard, Mem. Cornell Univ. agric. Exp. Stn 101: 874.
Strez morio Westwood 1874 Thesaurus ent. Oxon.: 115, pl. 21, fig. 6. ♀. "America
Septentrionalis" (Oxford, ♀).

Pseudotsuga pinicola Ashmead 1898 Can. Ent. 30: 179. ♀. "Jacksonville, Fla.; Washing-
ton, D.C.; and Morgantown, W. Va." (Washington, ♀) (host a); the type is from Washing-
ton, D.C.). -- Howard 1901 Insect Book: pl. 12, fig. 21 (*Pseudotsuga* (!)). -- Ashmead
1904 Can. Ent. 36: 64 (♂; a valid species).

Strez nigricornis pinicola: Bradley 1913 J. Ent. Zool. 5: 16 (race *pinicola*). --
Hedrick 1938 Hym. Cat. 6: 20.

Hosts: a) *Pinus* sp., pine; b) *Pinus echinata*; c) *Pinus rigida*; d) *Pinus taeda*; e)
Pinus palustris; f) *Pinus elaeagnus*; g) *Pinus strobus*.

Notes: Host g is unrecorded.

nitobei Matsumura

Japan; Korea.
Strez nitobei Matsumura 1912 Thous. Insects Japan, suppl. 4: 17, 18, pl. 43, fig.
1. ♀, ♂. "Honshu (Aomori)" (Sapporo,). -- Matsumura 1930 Illus. Thous. Insects
Japan 2: 58, pl. 6, fig. 1. -- Matsumura 1931 6000 Illus. Insects Jap.-Emp.: 78, fig.
426. -- Gussakovskij 1935 Fauna SSSR, Insects Hym. 2, 1: 63 (? syn. of *juvencus* or
ermaki). -- Hedrick 1938 Hym. Cat. 6: 20. -- Takeuchi 1938 Tentredo 2: 191, 192 (Japan
(Honshu, Kyushu); Korea; hosts a, b). -- Benson 1943 Bull. ent. Res. 34: 48. -- Ta-
keuchi 1949 Trans. Kansai ent. Soc. 14: 47 (host d). -- Maa 1949 Notes Ent. chin. 13:
121, 122, 174. -- Shiraki 1952 Cat. Injur. Insects Japan 5: 85 (host d). -- Takeuchi
1955 Akitu 4: 3, 8 (host d). -- Takeuchi 1962 Insecta Japon. (2) pt. 4: 5, 10, pl. 1,
fig. 7, 8 (host d). -- Kim 1963 Human. and Sci. (Nat. Sci.), Korea Univ. 6: 294
(Korea). -- Okutani 1965 Sci. Rep. Hyogo Univ. Agric., Ser. Agric. Biol. 6: 25 (larva;
hosts a, b, c). -- Oda, et al., 1964 Forest Protection News 13: 11. -- Togashi 1965 in
Asahina, et al., Iconogr. Insect. Japon. 3: 244, pl. 122, fig. 16a, b. -- Cameron
1965 Tech. Bull. Commonw. Inst. Biol. Control 5: 9 (hosts a, b). -- Okutani 1967 Jap.
J. appl. Ent. Zool. 11: 44 (hosts a, b, c). -- Ko 1969 List Forest Insect Pests in
Korea: 315 (hosts a, b, c). -- Kim 1970 Illus. Ency. Fauna Flora Korea 11, Insecta 3:
132-133, 735, pl. 81, fig. 17.

Pseudotsuga nitobei: Yano 1917 Coll. Essays Y. Nawa: 119. -- Yano 1932 in Esaki,
Iconogr. Insect. Japon 2: 472, fig. (hosts a, b).

Urocera nitobei: Conde 1932 Notul. ent. 15: 69.

Hosts: a) *Pinus densiflora*; b) *Pinus thunbergii*; c) *Larix leptolepis*; d) *Pinus* sp.,
pine.

noctilio Fabricius

Australia (Tasmania, Victoria; intro-
duced and established); Austria; Azores;

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- Phytophag. Hym. 3: 135, 136 (close to *juvencus*). -- Konow 1898 Dt. ent. Z. 34: 242 (listed). -- Strand 1898 Ent. Tidskr. 19: 82 (Norway; listed).
Sirex juvencus var. *melanocephalus*: Strobl 1895 Wien. ent. Ztg. 14: 279.
Sirex lasseleus: Tournier 1890 Ent. Genev. 1: 220 (9 not δ).
Pauxurus atlantidis Ghigi 1909 (1908) Boll. Soc. ent. Ital. 40: 163-170, fig. 1, 3, 9. "Ponta Delgada nell'isola de San Miguel, appartenente all'Archipelago delle Azore" ().
Sirex atlantidis: Cameron 1965 Tech. Bull. Commonw. Inst. biol. Control 5: 7.
 Hosts: a) *Pinus radiata*; b) *Pinus nigra aalabrica*; c) *Pinus nigra austriaca* or *P. austriaca*; d) *Pinus ponderosa*; e) *Pinus elliotii*; f) *Pinus patula*; g) *Pinus contorta*; h) *Pinus caribaea*; i) *Pinus pinaster*; j) *Pinus attenuata*; k) *Pinus muricata*; l) *Pinus strobus*; m) *Pinus sylvestris*; n) *Pinus banksiana*; o) *Pinus maritima*; p) *Pinus laricio*; q) *Pinus muricata*; r) *Pinus rigida*; s) *Pinus nigra*; t) silver fir; u) stone pine; v) *Pinus* sp., pine; w) *Abies* sp., fir; x) *Abies picea*; y) *Abies alba*; z) *Abies excelsa*; aa) *Abies sibirica*, siberian fir; bb) *Picea* sp., spruce; cc) *Picea abies*; dd) *Picea excelsa*; ee) *Picea obovata*; ff) *Pseudotsuga* sp.; gg) *Pseudotsuga menziesii*; h) *Picea glauca*; hh) *Pseudotsuga menziesii*, Douglas-fir; ii) *Larix* sp., larch; jj) *Larix europaea*; kk) *Larix sibirica*; ll) spruce-fir wood; mm) *Dacrydium cypressinum*; nn) *Podocarpus ferrugineus*; oo) *Picea sibirica*; pp) *Abies peucedana*.
 Notes: *S. noctilio* has received considerable recognition since its introduction and establishment in New Zealand and Australia where it has become a serious pest of pine plantations, particularly *Pinus radiata*. A large amount of work has been done on the biological aspects of *noctilio* and the introduction of parasites and diseases to aid in the control of the species. In its native habitat in the Palearctic Region, *noctilio* is not considered an important pest. *Noctilio* is very rare in North America or may not occur there at all. It was recorded from Ontario by Benson (1962) but there are no other verified records. It is commonly intercepted in wood at ports of entry in the United States, and it would not be surprising to sometime find it established there.
 The coloration of *noctilio* and *juvencus* are very similar, and *noctilio* was considered a synonym of *juvencus* in much of the older literature; some authors treated *noctilio* as a variety of *juvencus*.
SYNTICUS Maa
Sirex synticus Maa 1949 Notes Ent. chin. 13: 124-126, 175, fig. 166-168, δ . "Hopei: Peiping" ("Maa coll.", δ). -- Cameron 1965 Tech. Bull. Commonw. Inst. biol. Control 5: 10.
 China (Hopei).
TIANSHANICUS (Semenov-Tian-Shanskij)
Pauxurus tianshanicus Semenov-Tian-Shanskij 1921 (1917) Russk. ent. Obozr. 17: 91, δ . "Prov. Heptapotamica (Smirjetshj'e): in urbe Vjernu; in opp. Przhvalsk; ad lac. Issyk-kul prope Przhvalsk; fontes Dzhitaur non procul a Przhvalsk" (Leningrad,) (host a). -- Gussakovskij 1935 Fauna SSSR, Insects Hym. 2, i: 57, 59, 61, 341, 343, fig. 278 (host a). -- Zhelokhovtsev, et al. 1955 In Pavlovskii & Shtakel'berg, Forest Pests, Reference Book 1: 294.
Sirex tianshanicus: Hedick 1938 Hym. Cat. 6: 22. -- Benson 1943 Bull. ent. Res. 34: 50, 51, 32, 57 (measurements, near *juvencus*). -- Maa 1949 Notes Ent. chin. 13: 121, 122, 175. -- Cameron 1965 Tech. Bull. Commonw. Inst. biol. Control 5: 10.
 Hosts: a) *Picea schrenkiana*.
 varipes Walker
 Canada (British Columbia); England (adventive emerging from timber, not established); U. S. (California, Montana, Nevada, Oregon, Washington, Wyoming; adventive in eastern states emerging from lumber).
Sirex varipes Walker 1866 in Lord, Naturalist Vancouver Is. and British Columbia 2: 342-343, 9. British Columbia. (London, 9). -- Walker 1873 Can. Ent. 5: 78. -- Kirby 1882 List Hym. Brit. Mus. 1: 377, pl. 15, fig. 9. -- Dalla Torre 1894 Cat. Hym. 1: 395 (*varipes*, emendation). -- Konow 1898 Wien. ent. Ztg. 17: 81, 90 (as syn. of *cyaneus* Fabricius). -- Benson 1943 Bull. ent. Res. 34: 30, 31, 32, 48 (measurements).

- J. Biol. Sci. 22: 915-924 (mechanism of pathogenicity on host a; effects of symbiotic fungus). -- Curtis 1969 Aust. J. Biol. Sci. 22: 1152-1161 (mechanism of pathogenicity on host a, effects of mucus). -- Riek 1970 in CSIRO, Insects Aust. 889, 890, fig. 170, 370 (s.e. Aust., Tasmania). -- Newmann 1970 J. Aust. ent. Soc. 9: 168-169 (white eyed forms and gynandromorphs; Victoria; host a). -- Horwood, et al., 1970 Aust. For. 34: 49-59 (effectiveness of contact insecticides against *noctilio*). -- Madden 1971 Bull. ent. Res. 60: 467-472 (Tasmania; host a; treatments which render host attractive to *noctilio*). -- Morgan, et al., 1971 Aust. For. 35: 133-142 (translocation of insecticides in host a and effectiveness on *noctilio*). -- Morgan & Stewart 1972 Aust. For. 36: 38-46 (lure-trap for *noctilio*). -- Spadbury 1973 Ann. appl. Biol. 75: 309-320 (phytoxic effects of siricids on conifers). -- Móczár & Zombori 1973 Fauna Hung. XI, Hym. 1: 54 (Hungary). -- Wong & Crowden 1973 Aust. J. Biol. Sci. 26: 365-378 (physiological effects of mucus on foliage of host a). -- Zombori 1973 Mitt. Museum Komitates Veszprem 12: 469. -- Zombori 1974 Folia ent. hung. 27: 239 (Carpathian Basin). -- Milligan 1974 Proc. N. Z. ecol. Soc. 21: 36 (note, on host a in N.Z.). -- Madden 1974 Aust. J. Zool. 22: 341-351 (Tasmania; host a; oviposition behaviour). -- Madden 1975 Bull. ent. Res. 65: 491-500 (Tasmania; host a; analysis of an outbreak). -- Madden 1975 J. Invert. Path. 25: 283-287 (bacteria and yeasts associated with *noctilio*). -- Simpson 1976 Entomologia exp. appl. 19: 11-18 (bioassay of pine oil components as attractants for *noctilio*). -- Wong & Crowden 1976 Aust. J. Biol. Sci. 29: 21-32 (mucus secretion, physicochemical and biochemical properties). -- Strogonova 1976 Trudy biol. Inst. Sib. Otd. Akad. Nauk. SSSR 18: 264 (west Siberia).
Pauxurus noctilio: Konow 1898 Wien. ent. Ztg. 17: 80, 90 (syn.: *lasseleus* Tournier 9, not δ). -- Konow 1905 J. system. Hymenopt. Dipteroi. 5: 106, 111-112 (host x). -- Konow 1905 Genera Insect. 28: 7, fig. 10, 11. -- Schmiedeknecht 1907 Hym. Mitteleur. 771. -- Ghigi 1909 (1908) Boll. Soc. ent. Ital. 40: 168, 170 (separation of *atlantidis*). -- Baer 1910 Tharander forstl. Jahrb. 61: 95-96 (compared with *juvencus*). -- Haupt 1913 Mitt. ent. Ges. Halle 5-7: 59 (Germany; host m). -- Pax 1921 Jh. Ver. schles. Insektenk. 13: 46. -- Semenov-Tian-Shanskij 1921 (1917) Russk. ent. Obozr. 17: 91 (Caucasus, prov. Kubanicael). -- Schmiedeknecht 1930 Hym. Nord-Mitteleur. 73 -- Scheidter 1934 Z. Pflkrankh. 44: 513-518 (Weisstannen). -- Gussakovskij 1935 Fauna SSSR, Insects Hym. 2, i: 57, 60-61, 341, 342, fig. 288 (in key; distribution; hosts dd, ee). -- Zhelokhovtsev 1938 Trudy altajsk. gos. Zapov. 1: 322 (Altai). -- Florov 1938 Insect pests of coniferous forests in E. Siberia: 165. -- Francke-Grosmann 1939 Z. angew. Ent. 25: 647-680 (Germany; fungus association). -- Zhelokhovtsev, et al., 1955 In Pavlovskii & Shtakel'berg, Forest Pests, Reference Book 1: 293 (U.S.S.R.). -- Cherepanov 1956 Trudy biol. Inst. zapad.-sib. Fil. Akad. Nauk SSSR 1: 73 (Tuva SSR). -- Strogonova 1959 Tezisy dokl. IV, svezda Vses. ent. ob-va, ch. 11. -- Rates 1961 Ent. Obozr. 40: 521-540 (Ent. Rev. 40: 279-289) (origin and shape of passages; host v; Kazakh SSR). -- Isaev & Tarasova 1965 in Issled. Zashite Lesov Sibiri, Akad. Nauk SSSR, Otd. Inst. Lesa i Dreves.: 9 (host m; Amur). -- Byalaya 1966 in Rozhkov, Pests of Siberian Larch: 159, 163 (biol; host kk).
Pauxurus juvencus var. *noctilio*: Enslin 1917 Tenthrud. Mitteleur. 712. -- Forsius 1919 Acta Soc. Fauna Flora Fenn. 46: 24 (Finland). -- Müller 1922 (1920) Verh. Mitt. siebenb. Ver. Naturw. 52: 20 (Siebenbürgen). -- Bischoff 1925 Abh. math.-naturw. Abt. Bayer Ak., suppl. 7: 336 (Lithauens). -- Enslin 1927 Ezheg. zool. Muz. 1926, 27: 381 (Kamchatka). -- Reichert 1933 Sber. naturf. Ges. Lpz. 56-59: 73 (Leipzig). -- Heilén 1935 Notul. ent. 15: 25 (Finland). -- Struve 1940 Abh. naturw. Ver. Bremen 31: 825 (Borkum Is.). -- Viñé 1952, 1953 Die holzzerstörenden Insekten Mitteleur. 1952: 112; 1953: 45, fig. 115 (hosts a, w, bb). -- Tsinovskij 1953 Insects of Latvian SSR, horn-tails and sawflies: 30.
Sirex nigricornis: Ludwig 1799 Autz. Sachsen Insekten: 36.
Sirex juvencus: Klug 1803 Monogr. Siric. Germ. 36, pl. 3, fig. 4, 5, pl. 4, fig. 1, 2. -- Hartig 1837 Fam. Blattwes. Holzweisp.: 384, pl. 8, fig. 16, 17, 19, 21, 23-26. -- Jacobs 1884 Annls Soc. ent. Belg. (CR) 28: xxxiv. -- Müller 1919 N. Z. J. Agric. 19: 207-208, fig. 10, 11 (N.Z. introduced). -- Tiliyard 1927 Nelson Evening Mail: 6 (N. Z., host a). -- Clark 1927 Te Kura Ngahere 2: 10-16 (N.Z.).
Urocerus feisthamelae Brullé 1832 Expéd. Sci. Morée 3(1): Zool. 2nd Section: 387-388, pl. LII, fig. 8. "Hab. Communiqué par M. Feisthamel" (). -- André 1881 Spec. Hym. Eur. Alg. 1: cat. p. 69 (as syn. of *juvencus*).
Sirex feisthamelae (L.): Kirby 1882 List Hym. Brit. Mus. 1: 375 (Greece).
Sirex melanocephalus Thomson 1871 Hym. Scand. 1: 328. Sweden. (). -- Sparre Schneider 1880 in Siebek, Enum. Insect. Norveg. 5: 29 (Norway). -- André 1881 Spec. Hym. Eur. Alg. 1: cat. p. 69 (as syn. of *juvencus*). -- Cameron 1890 Monogr. Brit.

-- Burks 1958 in Krombein, *et al.*, Agriculture Monogr., suppl. 1, 2: 16 (distribution; host a-d). -- Benson 1963 (1962) Entomologist's mon. Mag. 98: 252 (a cross between *juvencus juvencus* X *juvencus californicus*; in Britain in timber from western Canada). -- Cameron 1965 Tech. Bull. Commonw. Inst. biol. Control 5: 10 (hosts a-d). -- Burks 1967 in Krombein & Burks, Agriculture Monogr., suppl. 2, 2: 26.

Urocaerus varipes: Harrington 1893 Trans. R. Soc. Can., section IV: 141.

Hosts: a) *Picea sitchensis*; b) *Pinus contorta*; c) *Pinus ponderosa*; d) *Abies lasiocarpa*; e) *Abies magnifica*.

Notes: Host e has not before been recorded.

Vátes Mocsáry
Sitona vates Mocsáry 1882 (1881) Természeti. Fiz. 5: 36-37, 9. "China septentrionalis ad Kuangjien (Szu-suen)" (Budapest, 9). -- Mocsáry 1892 Természeti. Fiz. 15: 126

(Kuan-jün-Shien). -- Dalla Torre 1894 Cat. Hym. 1: 393. -- Hedlicke 1938 Hym. Cat. 6: 22. -- Benson 1943 Bull. ent. Res. 34: 49 (near *imperialis* Kirby). -- Maa 1949 Notes Ent. chin. 13: 120, 122, 175. -- Cameron 1965 Tech. Bull. Commonw. Inst. biol. Control 5: 10.

Sitona vates: Konow 1898 Wien. ent. Ztg. 17: 80, 82, 90. -- Konow 1905 Z. system. Hymenopt. Dipteroi. 5: 106, 110. -- Konow 1905 Genera Insect. 28: 7. -- Gussakovskij 1935 Fauna SSSR, Insects Hym. 2, 1: 57, 64, 342. -- Wu 1941 Cat. Insect. Sin. 6: 35.

Genus STIRCOOMA Forsius

Stircooma Forsius 1933 Bull. Raffles Mus. 8: 173.

Type-species: *Stircooma tremecoides* Forsius (Original designation). -- Benson 1943 Bull. ent. Res. 34: 34. -- Maa 1949 Notes Ent. chin. 13: 126, 175.

tremecoides Forsius

Malaysia (Selangor).

Stircooma tremecoides Forsius 1933 Bull. Raffles Mus. 8: 174-175, 9. "Malay Peninsula, Selangor, Bukit Kutu, 3,300-5,500 ft." (London, 9). -- Hedlicke 1938 Hym. Cat. 6: 22. -- Benson 1943 Bull. ent. Res. 34: 35, fig. 12. -- Cameron 1965 Tech. Bull. Commonw. Inst. biol. Control 5: 17.

Genus UROCAERUS Geoffroy

Urocaerus Geoffroy 1762 Hist. Insect. Paris 2: 264 (publication not available for nomenclatorial purposes, Opinion 228, Internat. Comm. Zool. Nomencl., April 1954).

-- Geoffroy 1785 in Fourcroy, Ent. Paris. 2: 362.

Type-species: *Ichneumon gigas* Linnaeus (Monotypic). -- Latreille 1802 Hist. Nat.

Crust. Insectes 3: 304-305 (part). -- Latreille 1805 Hist. Nat. Crust. Insectes 13: 151-157 (part). -- Latreille 1807 Gen. Crust. Insectes 3: 238-245 (part). -- Dufour 1823 Consid. Gen. Classe Insectes: 214 (part). -- Lepeletier & Serville 1828 Ency. Méth. 10: 438, 769-770 (part). -- Leach 1830 (1815) Edin. Ency. 9: 141 (part). --

Westwood 1840 Introd. Mod. Class. Insects, synop. 2: 55. -- Dufour 1860 Mem. Acad. Sci. Inst. Fr. 31 (2): 975-977 (part). -- Norton 1869 Trans. Am. ent. Soc. 2: 354-356 (part). -- Harrington 1893 Trans. R. Soc. Can., section IV: 138-150 (part). --

Bradley 1913 J. Ent. Zool. 5: 17-18 (N. Amer.). -- Morice & Durrant 1915 Trans. R. ent. Soc. Lond.: 384-385 (synonymous with *Sitona*). -- Conde 1935 Notul. ent. Com. St. geol. nat. Hist. Surv. 22: 171 (northeast, U.S.). -- Conde 1935 Notul. ent. 15: 69-70 (part; key to Asiatic species). -- Ross 1937 Illinois biol. Monogr. 15: 112.

-- Takeuchi 1936 Tentredo 2: 187-191 (Japanese Empire). -- Hedlicke 1938 Hym. Cat. 6: 4-14 (catalog). -- Benson 1943 Bull. ent. Res. 34: 34, 38-41 (key to Europe; syn.: *Xanthozex* Semenov-Tian-Shanskij). -- Berland 1947 Faune France. 47. Hym. 19-20 (Brit. In.). -- Ries 1951 in Muesebeck, *et al.*, Agriculture Monogr. 2: 84 (N. Amer. cat.). -- Takeuchi 1955 Akitu 4: 4-5, 8-9 (Japan). -- Głowacki 1956 Polski Zwłazek ent. 24 (2): 13, 16-18 (Poland). -- Middlekauff 1960 Bull. Calif. Insect

Surv. 6: 61, 66-68 (west. N. Amer.). -- Takeuchi 1962 Insecta Japon. (2) pt. 4: 7-8, 11 (Japan). -- Okutani 1963 Sci. Rep. Hyogo Univ. Agric., Ser. Agric. biol. 6: 24 (larvae). -- Gebaillos 1963 Graellsia 20: 59 (Spain). -- Bachmaier 1966 Anz. Schäd. Insekt. 39: 130-131 (key to European species). -- Stroganova 1968 Hornhills of Siberia: 65-77 (biol. and distribution of Siberian species). -- Mészár & Zombor 1973 Fauna Hung. XI, Hym. 1, 2: 48-51 (Hungary). -- Verzhitskij 1973 Ident. Larvae Saw-flies and Woodwasps of Siberia and Far East: 46-48 (larvae).

Sitona: Fabricius 1775 Syst. Ent.: 325-326 (part). -- Fabricius 1776 Gen. Insect.: 113 (*Urocaerus* as a syn. of *Sitona*). -- Jurine 1801 Intell. Lit. 249, Erl.: 362. -- Panzer 1806 Krit. Rev. Insek. Deutschl. 2: 54-56 (part). -- Jurine 1807 Nouv. Méth. Class. Hym. Dipt. 1: 76-79 (part). -- Taschenberg 1866 Hym. Deutschl.: 29 (part). -- André 1881 Spec. Hym. Eur. Alg. 1: 554-556, cat. p. 68-69 (part). -- Cameron 1890 Monogr. Brit. Phytophag. Hym. 3: 130-139 (part). -- Konow 1890 Dt. ent. Z. 34: 242 (part). -- Dalla Torre 1894 Cat. Hym. 1: 383-393 (part). -- Konow 1895 Wien. ent. Ztg. 15: 41 (part). -- Konow 1898 Wien. ent. Ztg. 17: 73, 74-78, 88-89. -- Ashmead 1898 Can. Ent. 30: 179. -- Konow 1905 Z. system. Hymenopt. Dipteroi. 5: 61, 62-64, 97-105 (key to and descriptions of world species). -- Konow 1905 Genera Insect. 28: 6-7. -- Schmiedeknecht 1907 Hym. Mitteleur.: 769, 770-771. -- Enslin 1917 Tentredo. Mitteleur.: 706, 713-715. -- Hedlicke 1930 Tierwelt Mitteleur. 5(2): 75. -- Schmiedeknecht 1930 Hym. Nord-Mitteleur.: 73. -- Gussakovskij 1935 Fauna SSSR, Insects Hym. 2, 1: 47-55, 358-340 (Palearctic). -- Soman 1938 Trans. nat. Hist. Soc. Formosa 28: 89-91 (Taiwan).

Xanthozex Semenov-Tian-Shanskij 1921 (1917) Russk. ent. Obozr. 17: 86. Type-species: *Xanthozex pharissae* Semenov-Tian-Shanskij (Original designation). -- Gussakovskij 1935 Fauna SSSR, Insects Hym. 2, 1: 47, 55-56, 341.

The species here included in *Urocaerus* had been placed in *Sitona* by many authors of the nineteenth and early part of the twentieth centuries because the two genera were considered synonymous and because of the use of *Pezomachus* Konow for those species currently included in *Sitona*. *Urocaerus* is distributed throughout the coniferous forests of the Northern Hemisphere with one species apparently established as an alien in Chile.

albicornis (Fabricius)

Sitona albicornis Fabricius 1781 Spec. Insect. 1: 419-420, 9. "America borealis" (Coll. Fabricius, 9). -- Fabricius 1787 Mant. Insect. 1: 258. -- Gmel in 1790 Linn. Syst. Nat., Ed. 13, 1: 2673. -- Fabricius 1793 Ent. System. 2: 127. -- Fabricius 1804 Syst. Plezest.: 51. -- Turton 1806 Gen. Syst. Nature 3(2): 428. -- Harris 1834 in Hitchcock, Rep. Geol. Mineral., Bot., Zool. Mass.: 584. -- Kirby 1882 List Hym. Brit. Mus. 1: 379. -- Walker 1873 Entomologist 6: 359. -- Walker 1873 Can. Ent. 5: 78. -- Cameron 1890 Monogr. Brit. Phytophag. Hym. 3: 134 (found occasionally in Britain). -- Dalla Torre 1894 Cat. Hym. 1: 383-384. -- Konow 1898 Wien. ent. Ztg. 17: 75, 77, 88 (syn.: *adaminella* Harris, *stephanezi* Kirby). -- Ashmead 1900 in Smith, Insects New Jersey. Rep. New Jersey. Dep. Agric. 1899, 27: 598. -- Konow 1905 Z. system. Hymenopt. Dipteroi. 5: 63, 98. -- Konow 1905 Genera Insect. 28: 6. -- MacGillivray 1910 in Smith, Rep. New Jersey. Dep. Agric. 1909: 593. -- Zimsen 1964 Type Material of J. C. Fabricius: 361 (type).

Urocaerus albicornis: Harris 1841 Rep. Insects Mass. Injur. Veg.: 391 (host a). -- Fitch 1858 Trans. N. Y. St. agric. Soc. 17: 45, 255, pl. 6, fig. 2 (host a). -- Norton 1869 Trans. Am. ent. Soc. 2: 356, 360-361 (host a). -- Cresson 1875 Rep. Geol. Surv. West 100th Merid. 5: 707 (N. Mex.). -- Provancher 1878 Naturaliste can. 10: 230 (Québec). -- Townsend 1878 Rep. U.S. Geol. Surv. 22: 171, fig. 15. -- Thomas 1881 Rep. 111. St. Ent. 1880, 10: 71 (larva, 9, 6). -- Harrington 1880 Can. Ent. 12: 97 (hooks on wings). -- Harrington 1882 Can. Ent. 14: 227 (Ont.). -- Provancher 1883

- Petite Faune ent. Can., Hym.: 238, 240. -- Cresson 1887 Trans. Am. ent. Soc., suppl. vol.: 172. -- Packard 1890 Rep. U.S. Ent. Comm. 5: 733. -- Harrington 1893 Trans. R. Soc. Can., section IV: 144 (hosts a, g). -- MacGillivray 1893 Can. Ent. 23: 243 (Wash.). -- Harrington 1894 Rep. ent. Soc. Ont. 24: 49. -- Stosson 1895 Ent. News 6: 317. -- Linthier 1897 Country Gentleman 62: 707. -- Linthier 1898 Rep. St. Ent. N. Y. 1897, 13: 338-340 (hosts a, j). -- Howard 1901 Insect Book: pl. 12, fig. 24. -- Felt 1906 Mem. N. Y. St. Mus. nat. Hist. 8, 2: 667-668. -- Bradley 1913 J. Ent. Zool. 5: 17, 19-20, pl. 5, fig. 32 (distribution). -- Baumbarger 1915 Ent. News 29: 34 (Calif.). -- MacGillivray 1916 Bull. Conn. St. geol. nat. Hist. Surv. 22: 171 (hosts f, j, l). -- Blackman & Stage 1918 Tech. Publ. N. Y. St. Coll. For. 10: 90-92 (host n). -- Chapman 1922 Psyche, Camb. 29: 98 (host l, in stumps 1 year old; parasite). -- Essig 1926 Insects West. N. Amer.: 772. -- Waterston 1928 in Chrystal, Bull. ent. Res. 19: 223 (separation of *δ* of *f. albicornis* and *albicornis*). -- Rohrer 1928 in Leonard, Mem. Cornell Univ. agric. Exp. Stn 101: 874. -- Benson 1935 Ann. appl. Biol. 22: 763 (has been recorded from Britain). -- Hedicke 1938 Hym. Cat. 6: 4-5. -- Bedford 1938 Can. Ent. 70: 194 (Idaho; host m). -- Benson 1940 Trans. Herts. nat. Hist. Soc. Field Club 21: 191 (has been recorded from Britain). -- Benson 1943 Bull. ent. Res. 34: 30, 31, 32, 40 (measurements, sometimes intercepted in Britain in lumber). -- Reeks and Smith 1945 Acad. Nat. 2: 12 (Newfoundland; host f). -- Craighead 1950 Misc. Publ. U. S. Dep. Agric. 657: 589 (hosts a, d, pl). -- Ries 1951 in Muesebeck, et al., Agriculture Monogr. 2: 84 (hosts a, f, m). -- Benson 1951 Handbk Ident. Br. Insects 6(2a): 19, 20 (occasionally introduced in Britain in timber). -- Belyea 1952 Can. Ent. 84: 325-335 (Ont., biol., host c). -- Glowacki 1956 Polski Zwizsek ent. 24(2): 16-17 (Poland). -- Middlekauff 1960 Bull. Calif. Insect Surv. 6: 66 (distribution; parasites; hosts a, c, f, j, l, m, p). -- Stillwell 1960 Forest Sci. 6: 225-231 (host c; decay association). -- Wilson 1962 J. econ. Ent. 55: 510-516 (Minn.; pulpwood of hosts c, h). -- Cameron 1965 Tech. Bull. Commonw. Inst. Biol. Control 5: 10-11 (hosts a, c, f, h, j, l, n, q). -- Stillwell 1966 Forest Sci. 12: 121-128 (N.B.; fungus association, host c). -- Morris 1967 J. ent. Soc. Br. Columb. 64: 60-63 (B.C.; hosts d, m, o, q).
- Sirex magus*: Stephens 1829 Syst. Cat. Brit. Insects: 343. -- Stephens 1835 Illus. Brit. Ent., Mend. 7: 116 (misidentifications).
- Sirex abdominalis* Harris 1834 in Hitchcock, Rep. Geol., Mineral., Bot., Zool. Mass.: 584 (nomen nudum).
- Urocenus abdominalis* Harris 1841 Rep. Insects Mass. Injur. Veg.: 392. *δ*. Massachusetts. (Cambridge, Mass., *δ*) (host bl). -- Fitch 1858 Trans. N. Y. St. agric. Soc. 17: 45, 253 (host a). -- Thomas 1881 Rep. Ill. St. Ent. 1880, 10: 71 (similar to *albicornis*). -- Norton 1869 Trans. Am. ent. Soc. 2: 356, 361 (likely the *δ* of *albicornis*; host bl). -- Packard 1890 Rep. U. S. Ent. Comm. 5: 733 (*δ* of *albicornis*?). -- Harrington 1893 Trans. R. Soc. Can., section IV: 144-145. -- Howard 1901 Insect Book: pl. 13, fig. 17, 24.
- Sirex abdominalis*: Kirby 1882 List Hym. Brit. Mus. 1: 380. -- Dalla Torre 1894 Cat. Hym. 1: 383. -- Rohrer 1920 J. Wash. Acad. Sci. 10: 516-517 (Harris' type).
- Sirex stephensi* Kirby 1882 List Hym. Brit. Mus. 1: 375, pl. 16, fig. 6. *♀*. "England (probably introduced), near London" (London, *♀*) (Kirby believed the species described by Stephens as *Sirex magus* to be *albicornis*, not [*Tremex*] *magus* Fabricius). -- Cameron 1890 Monogr. Brit. Phytophag. Hym. 3: 134 (found occasionally in Britain). -- Dalla Torre 1894 Cat. Hym. 1: 393.
- Hosts: a) *Pinus* sp., pine; b) white pine; c) *Abies balsamea*, balsam fir; d) alpine fir; e) *Abies fraseri*; f) *Abies* sp., fir; g) *Picea engelmannii*; h) *Picea mariana*, black spruce; i) *Picea sitchensis*; j) *Picea* sp., spruce; k) *Tsuga heterophylla*; l) *Tsuga* sp., hemlock; m) *Pseudotsuga menziesii* (= *P. mucronata*), Douglas-fir; n) *Larix laricina*; o) *Larix occidentalis*, western larch; p) *Thuja plicata*, western red cedar; q) cedar.
- antennatus** (Muriatt)
- China (Kirin); Japan; Korea; U.S.S.R. (Buryat A.S.S.R., Kurile Islands, Primorski Krai, Sakhalin).
- Sirex antennatus* Muriatt 1898 Proc. U. S. natn. Mus. 21: 500. *♀*. "Giba" (Japan). (Washington, *♀*). -- Nakagawa 1999 Zool. Mag., Tokyo 9: 207 (listed). -- Nakagawa 1902 Spec. Rep. agric. Exp. Stn Nishigahwa 17: 9. -- Konow 1905 Z. system. Hymenopt. Dipreriol. 5: 63, 100. -- Konow 1905 Genera Insect. 28: 6. -- Matsumura 1912 Thous. Insects Japan, suppl., 4: 17, pl. 42, fig. 24 (*antennatus*!). -- Yano 1917 Coll.

- Essays Y. Nawa: 119. -- Matsumura 1930 Illus. Thous. Insects Japan 2: 57, pl. 5, fig. 24 (*antennatus*!). -- Matsumura 1931 6000 Illus. Insects Jap.-Emp.: 78 (*antennatus*!). -- Clausen 1931 Circ. U. S. Dep. Agric. 168: 81 (listed). -- Matsumura 1932 Illus. Common Insects Japan 4: 31, 44, pl. 8, fig. 10 (*antennatus*!). -- Yano 1932 in Esaki, Iconogr. Insect. Japon. 2: 472, fig. -- Semenov-Tian-Shanskij & Gussakovskij 1935 Anns Soc. ent. Fr. 104: 122 (east Siberian localities). -- Gussakovskij 1935 Fauna SSSR, Insects Hym. 2, 1: 48, 49, 50, 338, 339 (syn.: *ogumae* Matsumura). -- Takeuchi 1936 Tenthredo 1: 57-58 (Hokkaido, Honshu, Sakhalin). -- Kurentsov 1950 Trudy dal'n'evost Fil. Akad. Nauk SSSR 1: 166-167, fig. 44(1). -- Zhelokhovtsev, et al. 1955 in Pavlovskii & Shitakei'berg, Forest Pests Reference Book 1: 292.
- Urocenus antennatus*: Conde 1935 Notul. ent. 15: 68-69 (possibly a color var. of *albicornis*, *ogumae* perhaps a syn.). -- Takeuchi 1938 Tenthredo 2: 187, 188 (syn.: *umaculatus* Zingibeli). -- Hedicke 1938 Hym. Cat. 6: 5-6. -- Murauma 1941 Rep. Changpeshan Exped. Kirin: 199, pl. 47, fig. 3 (Kirin). -- Benson 1943 Bull. ent. Res. 34: 30, 31, 32, 40 (measurements, separation of *albicornis* and *antennatus*). -- Maa 1949 Notes Ent. chin. 13: 108-110, 171, fig. 125, 130, 136, 157, 215, 216. -- Shiraki 1952 Cat. Injur. Insects Japan 5: 85 (hosts k, m, o). -- Takeuchi 1955 Akiu 4: 5, 9 (Japan, hosts h, o). -- Takeuchi 1962 Insecta Japon. (2) pt. 4: 7-8, 11, pl. 1, fig. 16, 17 (hosts h, o). -- Kim 1963 Human. and Sci. (Nat. Sci.) Korea Univ. 6: 294-295 (*antennatus*!). -- Kim 1963 Human. and Sci. (Nat. Sci.) Korea Univ. 6: 294-295 (*antennatus*!). -- Togashi 1964 New Ent. Ueda 13: 43 (Japan Alps). -- Cameron 1965 Tech. Bull. Commonw. Inst. Biol. Control 5: 11. -- Togashi 1965 in Asahina, et al., Iconogr. Insect. Japon. 3: 244, fig. 18. -- Krivolutskaia & Stranova 1966 Entomofauna of Forests of Kurile Is., Kamchatka, Magadan: 61, 62, fig. 2. -- Okutani 1967 Jap. J. appl. Ent. Zool. 11: 45 (hosts a-g). -- Stroganova 1968 Horn-tails of Siberia: 65-68 (distribution, biol., hosts a, h-n). -- Ko 1969 List of Forest Pests in Korea: 315 (hosts a, f, g, o). -- Kim 1970 Illus. Ency. Fauna Flora Korea 11, Insecta 3: 134-135, 735, pl. 2, fig. 21a, 21b. -- Verzhutskii 1973 Ident. larvae wood-wasps and sawflies of Siberia and Far East: 46. -- Krivolutskaia 1975 Entomofauna of the Kurile Islands: 144, 145.
- Sirex ogumae* Matsumura 1911 J. Coll. Agric. Hokkaido imp. Univ. 4: 85. *♀*, *δ*. "Kussunai, Todoroki" (Sakhalin). (Sapporo, *♀*). -- Matsumura 1912 Thous. Insects Japan, suppl., 4: 22-23, pl. 43, fig. 6. -- Matsumura 1930 Illus. Thous. Insects Japan 2: 61, pl. 6, fig. 6. -- Matsumura 1931 6000 Illus. Insects Jap.-Emp.: 79.
- Paururus ogumae*: Yano 1917 Coll. Essays Y. Nawa: 120.
- Sirex antennatus* var. *umaculatus* Zingibeli 1937 Festschr. E. Strand 3: 350. "Japan, Etorou-Is." (Wien, *♀*).
- Urocenus antennatus* var. *umaculatus*: Hedicke 1938 Hym. Cat. 6: 6. -- Maa 1949 Notes Ent. chin. 13: 171. -- Cameron 1965 Tech. Bull. Commonw. Inst. Biol. Control 5: 11.
- Hosts: a) *Abies* sp., fir; b) *Abies firma*; c) *Abies homolepis*; d) *Abies mariesii*; e) *Abies sachalinensis*; f) *Picea jezoensis*; g) *Cryptomeria japonica*; h) *Picea* sp., spruce; i) stone pine; j) Korean spruce; k) yeddo spruce, yesso spruce; l) Khingan fir; m) Sakhalin fir; n) Korean pine; o) *Pinus* sp., pine.
- argonautarum** (Semenov-Tian-Shanskij)
- Turkey; U.S.S.R. (Armenian S.S.R., Georgian S.S.R., south European R.S.F.S.R.).
- Sirex argonautarum* Semenov-Tian-Shanskij 1921 (1917) Russk. ent. Obozr. 17: 84. *♀*, *δ*. "Caucasus et Transcaucasia occidentales: prov. Kubanica: curs. super. fluvii Labae Majoris, vall. fluvii Labae Majoris, ibidem in valle Zaagdan, curs. super. fl. Labae Minoris, fl. Bjelaja ad illapsun fl. Abago; prov. Kutaisensis: Abastuman, Ozurgety; prov. Tiflissensis: Bakuriani; prov. Batumensis: Artvin" (Leningrad, *♀*). -- Semenov-Tian-Shanskij & Gussakovskij 1935 Anns Soc. ent. Fr. 104: 122 (further description of *δ*, additional localities). -- Dovnar-Zapolskij 1931 Izv. sev.-kavkaz. kraev. Sta. Zashch. Rast. 6-7: 44 (listed, north Caucasus). -- Gussakovskij 1935 Fauna SSSR, Insects Hym. 2, 1: 48, 49, 52-53, 339, 340, fig. 24A (host a). -- Lozovoi 1941 Trudy zool. Sekti, Tbilisi 3: 206 (Georgian SSR). -- Andguladze 1951 Trudy zool. Inst., Tbilisi 10: 223-224 (Georgian SSR). -- Zhelokhovtsev, et al. 1955 in Pavlovskii & Shitakei'berg, Forest Pests, Reference Book 1: 292 (references to other Russian literature).
- Urocenus argonautarum*: Hedicke 1938 Hym. Cat. 6: 6. -- Maa 1949 Notes Ent. chin. 13: 96, 99, 110, 171 (not subsp. of *grigas*). -- Dadurian 1962 Zool. Inst., Zool. Pers., Akad. Nauk Arm. SSR 12: 65 (Armenian SSR; Smith as author). -- Kapuscinski 1962

Polisje Pismo ent. 32: 211 (host a). -- Cameron 1965 Tech. Bull. Commonw. Inst. Biol. Control 5: 11. -- Guryanova 1969 Zool. Zh. 48: 1358-1368 (parasites; host a: N. W. Caucasus).
Urocerus grigas argenteus: Benson 1943 Bull. ent. Res. 34: 30, 31, 32, 39 (measurments). -- Benson 1945 Entomologist's mon. Mag. 81: 103 (centered in Caucasus).
 -- Bachmayer 1966 Anz. Schädlingssk. 39: 131 (host a). -- Benson 1968 Bull. Br. Mus. nat. Hist. (Ent.) 22: 116 (Turkey localities).

Hosts: a) *Abies nordmanniana*.

augur (Klug)

Albania; Austria; Belgium; Czechoslovakia; England (introduced, not established); Finland; France; Germany; Greece; Hungary (?); Ireland; Italy; Lebanon; Morocco; Poland; Romania; Spain; Switzerland; Syria (?); Turkey; U.S.S.R. (Armenian S.S.R., Georgian S.S.R.).

Stenax augur Klug 1803 Monogr. Sibiricum Germ.: 34-35, pl. 3, fig. 1, 2, pl. 4, fig. 3, 9, d. "Habitat in Germaniae australioris silvis" (Berlin,). -- Panzer 1806 Kr. it. Rev. Insek. Deutschl. 2: 54-55 (as syn. or *grigas*). -- Jurine 1807 Nouv. Méth. Class. Hym. Dipt. 1: 79 (possibly a var. of *grigas*). -- Stephens 1829 Syst. Cat. Brit. Insects 342: -- Stephens 1835 Illus. Brit. Ent. Méth. 7: 114 (not seen from England). -- Hartig 1837 Fam. Blattwesp. Holzwebsp. 383: -- Ratzeburg 1844 Die Forst-Insecten 3: 144. -- Eversmann 1847 Bull. mosk. Obsch. Ispr. 20: 66-67 (prov. Casanensis). -- Schaffer 1851 Sber. Akad. Wiss. Wien. Math.-nat. Klasse 6: 375 (Austria). -- Kirchner 1854 Verh. zool.-bot. Ver. Wien 4: 290 (Böhen). -- Taschenberg 1866 Hym. Deutschl. 30: -- Kirchner 1867 Cat. Hym. Eur.: 20. -- André 1881 Spec. Hym. Eur. Alg. 1: 557; cat. p. 69. -- Mocsáry 1886 Rovart. Lap. 3: 68, 69, 70, XI (Hungary). Austria). -- Berlese 1890 Boll. Soc. ent. ital. 22: 182 (Italy). -- Cameron 1890 Monogr. Brit. Phytophag. Hym. 3: 135. -- Fabre 1891 Souv. Ent. 4: 337-358. -- Dalla Torre 1894 Cat. Hym. 1: 384. -- Costa 1894 Prospetto Imerotteri Ital. 3: 256-259 (Italy). -- Griffini 1895 (1894) Miscnea ent. 12: 132 (Piemont; 6 described). -- Costa 1895 Atti Accad. Sci. fis. mat. Napoli (2) 7: 186, 187 (Italy). -- Strobl 1895 Anis Soc. linn. Lyon 50: 167-170 (host j). -- Know 1896 Wien. ent. Ztg. 17: 76, 78, 89. -- Xambou 1904 Univ. Napoli 1: 24 (Germany; listed). -- Know 1905 Z. system. Hymenopt. Dipteroi. 5: 64, 102-103. -- Know 1905 Genera Insect. 28: 6. -- Enslin 1917 Tentred. Mitteleur.: 771. -- Rudow 1909 Int. ent. Z. 3: 157 (host p). -- Enslin 1917 Tentred. Mitteleur.: 771. -- Mädl 1923 Anlin naturh. Mus. Wien 56: 34 (Albania). -- Scheidter 1923 Z. Schäd.Bekämpf. 1: 89-90 (biol.), host q). -- Leonard 1927 Elenco Insetti dann. Ital. 2: 468 (hosts e, f, h, i, l, m, n, o). -- Schmiedeknecht 1930 Hym. Nord-Mitteleur.: 73. -- Hedické 1930 Tierwelt Mitteleur. 5(2): 75. -- Obarski 1931 Fragm. faun. Mus. Zool. Polon. 1: 369 (Poland). -- Scheidter 1934 Z. Pfl.Krankh. 44: 513-518 (Weiss-tannen). -- Gussakovskij 1935 Fauna SSSR, Insects Hym. 2: 1: 48, 49, 53-54, 339, 340. -- Michel 1938 Revue Scient. Bourdon. Cent. Fr.: 60-73. -- Francke-Grosmann 1939 Z. angew. Ent. 25: 647-680 (associated tungus). -- Vité 1952, 1953 Die holzzerstörenden Insekten Mitteleur. 1952: 113, 1953: 46, fig. 118. -- Ionescu 1954 Buletin şti. Acad. Repub. pop. rom. 6: 331 (Romania). -- Zhelokhovtsev, et al. 1955 in Pavlovskii & Shtekel'berg, Forest Pests, Reference Book 1: 292 (U.S.S.R.). -- Aerts 1960 Declenia-na 113: 310 (Rhineeland).

Urocerus augur: Latreille 1805 Hist. Nat. Crust. Insectes 13: 155 (possibly a var. of *grigas*). -- Donovan 1808 Nat. Hist. Brit. Insects 13: 440. -- Benson 1938 Ann. of Biol. 22: 763 (has been recorded from Britain). -- Hedické 1938 Hym. Cat. 6: 67. -- Benson 1938 Entomologist's mon. Mag. 74: 255 (has been reported from Britain; specimens not seen). -- Gregor & Bata 1940 Sb. ent. Odd. nat. Mus. Práze 18: 210 (Czechoslovakia). -- Benson 1940 Trans. Herts. nat. Hist. Soc. Fild Club 21: 191 (has been recorded from Britain). -- Berland 1947 Faune France. 47. Hym. Tentred.: 76, 77-78, fig. 80, 82, 84. -- Ionescu 1954 Buletin şti. Acad. Repub. pop. rom. 6: 331. -- Glowacki 1956 Polski Zwiastek ent. 24(2): 17, fig. 15 (Poland). -- Geballios 1956 -- Cat. Hym. Esp. 133 (Spain). -- Pruija 1959 Bull. Soc. Sci. nat. Maroc 39: 203 (Morocco; host c). -- Badharz 1960 Przegl. Zool. 4: 211, fig. 1 (Poland; host i). -- Precupetu & Negru 1961 Revue Biol., Buc. 6: 82, 88-89 (Romania; hosts j, l). --

Dedurian 1962 Sb. Zool., Zool. Inst. Akad. Arm. SSR 12: 65 (Armenian SSR). -- Kapušciński 1962 Polska Pismo ent. 32: 213-214 (Poland; hosts d, r). -- Geballios 1963 Graellsia 20: 64 (Spain; hosts j, l). -- Landin 1964 Opusc. ent. 29: 176. -- Bachmayer 1966 Anz. Schädlingssk. 39: 130, 131 (host d). -- Heilén 1967 Beltr. Ent. 17: 403 (Albania). -- Wolf 1968 Bull. Ann. Soc. r. ent. Belg. 104: 334 (Belgium). -- Wolf 1969 Bull. Soc. r. ent. Belg. 76: 281-301 (host b). -- Scobolova-Palade & Istratie 1972 Studii Conn. Croitor. Nat., Succesive RSR 3: 282, 287 (hosts j, l). -- Folia ent. hung. 27: 239 (Carpathian Basin). -- Zombori 1975 Ber. nat.-med. Ver. Innsbruck 62: 91 (Austria).

Urocerus augur augur: Benson 1943 Bull. ent. Res. 34: 40, 41 (syn. *cedroxum* Smith). -- Mac 1949 Notes Ent. chin. 13: 95, 100, 171. -- Benson 1951 Handb. Ident. Br. Insects 6(2a): 19, 20 (occasionally introduced into Britain, not established). -- Cameron 1965 Tech. Bull. Commonw. Inst. Biol. Control 5: 11 (hosts s, t). -- Benson 1968 Bull. Br. Mus. nat. Hist. (Ent.) 22: 116 (syn.: *augur bensoni*; Mac: Turkey, Lebanon). -- Schedl 1972 Mitt. Abt. Zool. Landesmus. Joanneum 1: 104 (Austria, host d). -- Kirk 1975 Entomologist's mon. Mag. 110: 215-221 (Ireland; hosts a, g).

Stenax augur: 111iger 1807 Rossi, Fauna Etrusca 2: 50 (probably meant to be *augur*).

Stenax grigas: Panzer 1798 Faun. Insect. Germ. fasc. 52, pl. 15.

Stenax cedroxum Smith 1860 Ann. Insect. Germ. fasc. 52, pl. 15. (London, ?) (host k, in portion of trunk). -- Walker 1873 Can. Ent. 5: 78 (Mr. Lebanon). -- Kirby 1882 List Hym. Brit. Mus. 1: 375-376, pl. 15, fig. 2, 3 (9, d). -- Dalla Torre 1894 Cat. Hym. 1: 385 (Syria). -- Know 1898 Wien. ent. Ztg. 17: 78, 79 (as syn. or *plantomus*). -- Semenov-Tian-Shanskij & Gussakovskij 1935 Fauna SSSR, Insects Hym. 2: 1: 48, 54, 339. -- Lozovoi 1941 Trudy zool. sekt., Tbilisi 3: 206 (Georgian SSR). -- Andguladze 1951 Trudy zool. inst., Tbilisi 10: 224 (Georgian SSR).

Urocerus cedroxum: Benson 1938 Entomologist's mon. Mag. 74: 255-256 (new to England). -- Hedické 1938 Hym. Cat. 6: 7. -- Benson 1940 Trans. Herts. nat. Hist. Soc. Fild Club 21: 191. -- Zombori 1974 Folia ent. hung. 27: 239 (Carpathian Basin).

Urocerus augur bensoni Mac 1949 Notes Ent. chin. 13: 110-111, 9. "Europe" (Taipei, ?). -- Cameron 1965 Tech. Bull. Commonw. Inst. Biol. Control 5: 11 (*Bensoni*).

Hosts: a) *Picea sitchensis*; b) *Picea abies*; c) *Abies pinsapo marocana*; d) *Abies alba*; e) *Abies balsamea*; f) *Abies peccinatus*; g) *Abies procera*; h) *Larix europaea*; i) *Pinus sp.*; pine; j) *Juniperus sp.*; k) cedar; l) *Populus sp.*; poplar; m) *Betula alba*; n) *Quercus sp.*; oak; o) *Salix sp.*; p) *Carpinus*; q) fir; r) *Larix sp.*; larch; s) *Abies sp.*; fir; t) *Picea sp.*, spruce.

brachyurus Mac

Urocerus brachyurus Mac 1949 Notes Ent. chin. 13: 99, 103-104, 172, fig. 123, 128, 133, 9. "Formosa: Daisukutsu" (Taipei, ?) ("May not be specifically distinct from *U. nitidulus*"). -- Cameron 1965 Tech. Bull. Commonw. Inst. Biol. Control 5: 12.

californicus Norton

Canada (British Columbia); England (intercepted in lumber, not established); Japan (intercepted, not established); Mexico; U. S. (Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, adventive in eastern states emerging from lumber).
Urocerus albicornis var. *californicus* Norton 1869 Trans. Am. ent. Soc. 2: 360, 9. No locality given for this variety. (Can., section IV: 144). -- Harrington 1893 Trans. R. Soc.

Urocerus californicus: Bradley 1913 J. Ent. Zool. 5: 17, 18, 20, fig. 7, 33 (syn. *fulvus* Cresson, *laevipennis* Kirby). -- Essig 1926 Insects West N. Amer.: 773, fig. 650A (hosts t, n, o). -- Badar 1938 Can. Ent. 70: 194 (Idaho, host o). -- Hedické 1938 Hym. Cat. 6: 7. -- Keen 1938 Misc. Publs U. S. Dep. Agric. 273: 201. -- revised 1952 (hosts t, n, o). -- Benson 1943 Bull. ent. Res. 34: 30, 31, 32 (measurements). -- Benson 1945 Entomologist's mon. Mag. 81: 67 (intercepted in England in lumber from B.C., hosts e, f, k, o). -- Ries 1951 in Muesebeck, et al., Agriculture Monogr. 2: 84

(hosts f, n, o). -- Benson 1951 Handbk Ident. Br. Insects 6 (2a): 19, 20 (Britain, recorded once from imported timber). -- Middlekauff 1960 Bull. Calif. Insect. Surv. 6: 66-68 (distribution, hosts a, b, d, h, k, o). -- Wickman 1964 Pan-Pacif. Ent. 40: 259 (oviposition habits, hosts b, m). -- Okutani 1965 Akitu 12: 32 (intercepted in Japan in lumber from U. S., hosts q, r). -- Cameron 1965 Tech. Bull. Commonw. Inst. biol. Control 5: 12 (hosts a, b, d, h, k, o). -- Morris 1967 J. ent. Soc. Br. Columb. 64: 60-63 (B.C., hosts c, g, i, p). -- Burks 1967 in Krombein & Burks, Agriculture Monogr., suppl. 2, 2: 26 (adventive in eastern states emerging from lumber). -- Kirk 1975 Pan-Pacif. Ent. 51: 57-58 (host b).

Strez albiacornis var. *californicus*: Dalla Torre 1894 Cat. Hym. 1: 384.

Strez californicus: Konow 1898 Hym. ent. Ztg. 17: 75, 77, 89. -- Konow 1905 Z. system. Hymenopt. Dipt. 5: 63, 98. -- Konow 1905 Genera Insect. 28: 6.

Urocerus fulvus: Cresson 1880 Trans. Am. ent. Soc. 8: 35, 67, d. "Colorado, Washington Territory" (Philadelphia, d.). -- Cresson 1916 Mem. Am. ent. Soc. 1: 10 (type ♂ from Colorado).

Strez fulvus: Kirby 1882 List Hym. Brit. Mus. 1: 379 (Mexico). -- Cameron 1883 Biol. cent.-am., Hym. 1: 68 (Mexico). -- Dalla Torre 1894 Cat. Hym. 1: 386. -- Konow 1898 Hym. ent. Ztg. 17: 75, 77, 89 (? = *californicus*). -- Konow 1905 Z. system. Hymenopt. Dipt. 5: 63, 99-100. -- Konow 1905 Genera Insect. 28: 6.

Strez flavipennis: Kirby 1882 List Hym. Brit. Mus. 1: 380, pl. 15, fig. 10. ♀. "Vancouver's Island" (London, ♀). -- Dalla Torre 1894 Cat. Hym. 1: 385. -- Konow 1898 Hym. ent. Ztg. 17: 75, 77, 89. -- Konow 1905 Z. system. Hymenopt. Dipt. 5: 63, 69. -- Konow 1905 Genera Insect. 28: 6. -- Snodgrass 1909 Proc. U. S. natn. Mus. 36: pl. 61, fig. 167, pl. 62, fig. 171, 172, pl. 68, fig. 206, 207 (morphology of thorax).

Urocerus flavipennis: Cresson 1887 Trans. Am. ent. Soc., suppl. vol.: 173. -- Harrington 1893 Trans. R. Soc. Can., section IV: 145-146.

Hosts: a) *Abies balsamea*; b) *Abies concolor*; c) *Abies lasiocarpa*, alpine fir; d) *Abies magnifica*; e) *Abies nobilis*; f) *Abies* sp., fir; g) *Iaria occidentalis*, western larch; h) *Larix laricina*; i) *Picea engelmannii*; j) *Picea sitchensis*; k) *Pinus contorta*, lodgepole pine; l) *Pinus lambertiana*, western white pine; m) *Pinus ponderosa*; n) *Pinus* sp., pine; o) *Pseudotsuga menziesii* (= *P. taxifolia*, *P. mucronata*), Douglas-fir; p) *Tsuga heterophylla*, western hemlock; q) *Tsuga* sp., hemlock; r) Port Orford cedar.

Notes: This species shows a preference for firs, *Abies* spp., and has only occasionally been recorded from the other hosts listed.

cressoni Norton

Canada (New Brunswick, Nova Scotia, Ontario, Québec; Poland (intercepted, not established); U. S. (Florida, Georgia, Massachusetts, Minnesota, New Jersey, New York, North Carolina, Pennsylvania, Wisconsin).

Urocerus cressoni: Norton 1864 Proc. ent. Soc. Philad. 3: 16. ♀. "Pennsylvania" (Philadelphia, ♀). -- Norton 1869 Trans. Am. ent. Soc. 2: 356, 361-362. -- Cresson 1880 Trans. Am. ent. Soc. 8: 67 (syn.: *dimidiatus* Westwood). -- Lintner 1884 Country Gentleman 49: 9. -- Harrington 1893 Trans. R. Soc. Can., section IV: 147. -- Cooley 1896 Psyche, Camb. 7: 397 (spines at base of forewing). -- Lintner 1898 Rep. St. Ent. N. Y. 1897, 13: 340-342. -- MacGillivray 1916 Bull. Conn. St. geol. nat. Hist. Surv. 22: 171. -- Cresson 1928 Mem. Am. ent. Soc. 5: 10 (type). -- Johnson 1928 Bull. Boston Soc. nat. Hist. 49: 7, fig. a, b (New England states). -- Hedrick 1938 Hym. Cat. 6: 7-8. -- Benson 1943 Bull. ent. Res. 34: 30, 31, 32 (measurements). -- Craighead 1950 Misc. Publ. U. S. Dep. Agric. 657: 589 ("found on poplar"). -- Ries 1951 in Musebeck, et al., Agriculture Monogr. 2: 84 (syn.: *tricolor* Provancher, *unicolor* Bradley). -- Burks 1958 in Krombein, et al., Agriculture Monogr., suppl. 1, 2: 16. -- Wilson 1962 J. econ. Ent. 55: 510-516 (Minn., in pulpwood of hosts a, b). -- Cameron 1965 Tech. Bull. Commonw. Inst. biol. Control 5: 12.

Urocerus cressoni var. *cressoni*: Bradley 1913 J. ent. Zool. 5: 18, 21-22. -- Rohwer 1928 in Leonard, Mem. Cornell Univ. agric. Exp. Stn 101: 874.

Strez cressoni: Kirby 1882 List Hym. Brit. Mus. 1: 382 (*cressoni*?). -- Dalla Torre 1894 Cat. Hym. 1: 385 (*cressoni*?). -- Konow 1898 Hym. ent. Ztg. 17: 75, 76, 88. -- Ashmead 1900 in Smith, Insects New Jers., Rep. New Jers. Dep. Agric. 1899, 27: 598.

-- Konow 1905 Z. system. Hymenopt. Dipt. 5: 63, 97 (syn.: *fischeri* Ashmead). -- Konow 1905 Genera Insect. 28: 6.

Urocerus tricolor Provancher 1868 Naturaliste can. 1: 17-18. ♀. Québec (Ste. Foy, 9). -- Norton 1869 Trans. Am. ent. Soc. 2: 356, 362 (may be var. of *cressoni*?). -- Provancher 1871 Naturaliste can. 3: 77-78 (♂). -- Provancher 1875 Naturaliste can. 7: 371-372. -- Provancher 1878 Naturaliste can. 10: 229-230. -- Cresson 1880 Trans. Am. ent. Soc. 8: 67. -- Provancher 1883 Petite Fauna Ent. Can., Hym.: 238, 240. -- Harrington 1893 Trans. R. Soc. Can., section IV: 147. -- Lintner 1898 Rep. St. Ent. N. Y. 1897, 13: 342. -- Gahan & Rohwer 1918 Can. Ent. 50: 200 (type). -- Glowacki 1956 Polski Zwizek ent. 24(2): 17 (Poland). -- Smith 1975 Naturaliste can. 102: 320 (type).

Urocerus cressoni var. *tricolor*: Bradley 1913 J. ent. Zool. 5: 21. -- Rohwer 1928 in Leonard, Mem. Cornell Univ. agric. Exp. Stn 101: 874. -- Johnson 1928 Bull. Boston Soc. nat. Hist. 49: 7. -- Hedrick 1938 Hym. Cat. 6: 8.

Strez tricolor: Kirby 1882 List Hym. Brit. Mus. 1: 382. -- Dalla Torre 1894 Cat. Hym. 1: 393. -- Konow 1898 Hym. ent. Ztg. 17: 75, 77, 88. -- Konow 1905 Z. system. Hymenopt. Dipt. 5: 63, 97-98. -- Konow 1905 Genera Insect. 28: 7.

Strez cressoni var. *tricolor*: MacGillivray 1910 in Smith, Rep. New Jers. Dep. Agric. 1909: 593 (N. J.).

Strez dimidiatus Westwood 1874 Thesaurus ent. Oxon.: 115, pl. 21, fig. 5. ♀. "America Septentrionalis" (Oxford, ♀). -- Walker 1873 Can. Ent. 5: 78. -- Kirby 1882 List Hym. Brit. Mus. 1: 381.

Strez fischeri Ashmead 1904 Can. Ent. 36: 63. ♀. "Tryon, N. C." (Washington, ♀). -- Konow 1905 Genera Insect. 28: 6.

Urocerus cressoni var. *unicolor*: Bradley 1913 J. ent. Zool. 5: 21, 22, fig. 31. ♀. "Quebec (Joliette)" (Ithaca, ♀). -- Hedrick 1938 Hym. Cat. 6: 8.

Hosts: a) *Abies balsamea*, balsam fir; b) *Picea mariana*, black spruce; c) *Abies fraseri*; d) *Picea* sp., spruce; e) *Pinus rigida*; f) *Pinus taeda*.

Notes: Hosts c to f have not before been recorded.

fantoma (Fabricius)

Austria; Czechoslovakia; Finland; France; England (intercepted, not established); Germany; Greece; Hungary; Italy; Netherlands; Poland; Spain; Sweden; Switzerland; U.S.S.R. European R.S.F.S.R., Ukrainian S.S.R.).

Strez fantoma Fabricius 1781 Species Insect. 1: 419. ♀. "Habitat in Germania" (Coll. Fabricius, ♀). -- Fabricius 1787 Mant. Insect. 1: 258. -- Villers 1789 C. Linn. Ent. 3: 131. -- Gmelin 1790 Linn. Syst. Nat., Ed. 13, 1: 2673 (*phantoma*). -- Fabricius 1793 Ent. System. 2: 127. -- Walckenaer 1802 Fauna Paris 2: 46. -- Klug 1803 Monogr. Siricium Germ.: 35-36, pl. 3, fig. 3. -- Fabricius 1804 Syst. Piezat.: 50. -- Spinola 1806 Insect. Liguriae 1: 60. -- Turton 1806 Gen. Syst. Nature 3(2): 427 (*phantoma*). -- Jurine 1807 Nouv. Méth. Class. Hym. Dipt. 1: 79. -- Lepelletier & Serville 1828 Ency. Méth. 10: 438. -- Rottemund 1835 Übers. Arb. schles. Ges. Vaterl. Kultur 1834, 1: 91. -- Dahlbom 1835 Conspectus Tenthræ, Siricid., Oryssin. Scand.: 16. -- Hartig 1837 Fam. Blattwespen. Holzesp.: 383-384. -- Eversmann 1847 Buill. mosk. Obsch. Ispyt. Priro. 20: 67 (prov. Casanensis). -- Taschenberg 1866 Hym. Deutschl.: 30. -- Kirchner 1867 Cat. Hym. Eur.: 21. -- Thomson 1871 Hym. Scand. 1: 329. -- André 1881 Spec. Hym. Eur. Alg. 1: 557, cat. p. 69 (distribution). -- Mocsáry 1886 Rovart. Lap. 3: 69, 70-71, XI (Hungary). -- Berlese 1890 Boll. Soc. ent. Ital. 22: 183 (Italy). -- Dalla Torre 1894 Cat. Hym. 1: 391 (*phantoma*; *cardigrahus* Cederhjelms as syn.). -- Sahlberg 1893 Medd. Soc. Fauna Flora tenn. 17: 5 (♂). -- Konow 1896 Hym. ent. Ztg. 15: 42, 43 (*phantoma*). -- Konow 1898 Hym. ent. Ztg. 17: 76, 89 (*phantoma*). -- Konow 1905 Z. system. Hymenopt. Dipt. 5: 64, 104-105 (*phantoma*). -- Konow 1905 Genera Insect. 28: 7 (*phantoma*). -- Schmiedeknecht 1907 Hym. Mitteleur.: 771. -- Enslin 1917 Tenthræ. Mitteleur.: 715, 750 (*phantoma*). -- Forsius 1919 Acta Soc. Fauna Flora tenn. 46: 24 (*phantoma*; Finland). -- Bischoff 1925 Abh. math.-nat. Abt. Bayer Ak., suppl. 7: 337 (*phantoma*; Lithuans). -- Leonard 1927 Elenco Insetti dann. Ital. 2: 469 (*phantoma*; Italy, hosts b, d). -- Dvornar-Zapolski 1929 Izv. sev.-kavkaz. kraev. Sta. Zashch. Rast. 12: 47 (larva, in key). -- Schmiedeknecht 1930

Hym. Nord-Mittel-eur.: 73. -- Hedlicke 1930 Tierwelt Mittel-eur. 5(2): 75 (*phantoma*).
 -- Koonneet 1930 Tjidschr. Ent. 73: XLIII (*phantoma*, Netherlands). -- Oudemans 1930
 Ent. Ber., Amst. 8: 60-61 (*phantoma*; Netherlands). -- Oberški 1931 Polska Pismo ent.
 10: 49 (*phantoma*, Poland). -- Reichert 1933 Sher. naturf. Ges. 1933: 73 (*phantoma*, Leipzig).
 -- Müller 1934 Arch. Mikrobiol. 5: 84-147 (*phantoma*; analysis of food wood and trass).
 -- Heilen 1935 Notul. ent. 15: 26 (*phantoma*, Finland). -- Gusekovskii 1935 Fauna
 SSSR, Insects Hym. 2: 1: 49, 55, 339, 340 (*phantoma*; Scandinavia, parasitic habits). --
 1939 Entomologicheskii 3 (1-4): 37-39 (*phantoma*; Scandinavia, parasitic habits). --
 Viñe 1932, 1935 Die holzzerstörenden Insekten Mittel-eur., 1932: 113, 1935: 46, fig.
 119 (*phantoma*). -- Zimsen 1964 Type Material of J. C. Fabricius: 361 (type).
Phocenus fantoma: Latreille 1805 Hist. Nat. Crust. Insects 13: 155. -- Dufénil
 1860 Mém. Acad. Sci. Inst. Fr. 31: 977. -- Conde 1934 Korrespond. Naturf. Rige
 61: 195 (*phantoma*). -- Hedlicke 1938 Hym. Cat. 6: 13 (*phantoma*). -- Gregor & Beta
 1940 Sb. ent. Odd. nár. Mus. Praze 18: 210 (*phantoma*; Czechoslovakia). -- Benson 1943
 Bull. ent. Res. 34: 30, 31, 32, 39, 40, 41 (measurements; *tardigrades* as syn.). --
 Kjellander 1945 Opusc. ent. 10: 11, 13 (*phantoma*; Sweden). -- Bertland 1947 Faune
 France. 47. Hym. Tenthred.: 76, 79 (*phantoma*; distribution; host a). -- Maa 1949
 Notes Ent. chin. 13: 117-118, 172, fig. 147, 151, 160 (in part, partially refers to
tardigrades). -- Fahlander 1951 Opusc. ent. 61: 47. -- Heilen 1955 Notul. ent. 35:
 110 (*phantoma*). -- Some previous references for *fantoma* in Finland actually
 refer to *tardigrades*. -- Gebalios 1956 Cat. Hym. Esp.: 134 (*phantoma*; Spain). --
 Bednarz 1960 Przegl. Zool. 4: 211, fig. 2 (*phantoma*; Poland). -- Kapuščířski 1962
 Polska Pismo ent. 32: 209-215 (*phantoma*; hosts k, d, l, m). -- Commonw. Inst. Biol.
 20: 64 (*phantoma*; Spain; host a). -- Cameron 1965 Tech. Bull. Commonw. Inst. Biol.
 Control 5: 12 (host n). -- Iseev & Tarasova 1965 Insect. Zashite Lesov Sibiri.
 Akad. Nauk SSSR, Sib. Otd. Inst. Lesa i Dreves.: 9 (host m). -- Wettenech 1967 Ent.
 Jber 77: 99 (*phantoma*; listed; parasite). -- Mészár & Zombori 1973 Fauna Hung. XI,
 Hym. 1, 2: 50, 51 (*phantoma*). -- Zombori 1974 Polla ent. hung. 27: 239 (*phantoma*;
 Campathian Basin). -- Zombori 1975 Ber. nat.-med. Ver. Innsbruck 62: 91 (*phantoma*;
 Austria).

Phocenus IV, V: Schaeffer 1779 Iconogr. Insect. Ratissbon. 3: pl. 205, fig. 1, 2.
Phocenus fantoma var. *pallida* Ermolenko (reference not found, treated as a var.
 of *fantoma* by Mészár & Zombori 1973 Fauna Hung. XI, Hym. 1, 2: 50).

Hosts: a) *Picea excelsa*; b) *Pinus* sp., pine; c) *Larix deodara*; d) *Larix* sp., larch;
 e) Abeti; f) *Betula* sp.; g) Pioppi; h) Quercio; i) Salicci; j) Legnami; k) *Abies alba*;
 l) *Picea abies*; m) *Pinus sylvestris*; n) *Larix dahurica*.

Notes: The emendation to *phantoma* first appeared in Gmelin, 1790. Dalla Torre (1894)
 again used *phantoma*, and it has been spelled as either *phantoma* or *fantoma* in the
 literature since Dalla Torre. *Fantoma* and *tardigrades* are similar and apparently have
 been confused in much of the literature.

gigas flavicornis (Fabricius)

Brazil (adventive, not established);
 Canada (Alberta, British Columbia, New
 Brunswick, Newfoundland, Northwest
 Territories, Nova Scotia, Ontario,
 Québec); England (intercepted, not es-
 tablished); Mexico; U. S. (Alaska,
 Arizona, California, Colorado, Connec-
 ticut, Idaho, Massachusetts, Montana,
 Nebraska (?), New Hampshire, New Jersey,
 New Mexico, New York, Oregon, Utah,
 Washington, Wyoming); U.S.S.R. (Siber-
 ria (?)).

Stenocera flavicornis Fabricius 1781 Species Insect. 1: 418-419, 9. "Habitat in Labra-
 dor Americae" (London, 9). -- Fabricius 1787 Mant. Insect. 1: 257. -- Gmelin 1790
 Linn.: Syst. Nat., Ed. 13, 5: 2672. -- Fabricius 1793 Ent. System. 2: 126. -- Fabri-
 cius 1804 Syst. Plezot.: 49. -- Turton 1806 Gen. Syst. Nature 3(2): 482. -- Walker
 1873 Entomologist 6: 359. -- Walker 1873 Can. Ent. 5: 78. -- Kirby 1882 List Hym.
 Brit. Mus. 1: 380-381, pl. 12, fig. 18. -- Cameron 1883 Biol. cent.-am., Hym. 1: 68
 (Mexico). -- Cameron 1890 Monogr. Brit. Phytophag. Hym. 3: 134 (found occasionally in
 Britain). -- Dalla Torre 1894 Cat. Hym. 1: 385. -- Konow 1898 Wien. ent. Ztg. 17: 75,

77, 89 (syn.: *latifasciatus* Westwood). -- Ashmead 1900 in Smith, Insects New Jers.,
 Rep. New Jers. Dep. Agric. 1899, 274 598. -- Kjaer 1902 Fauna Arctica 2(3): 407 (Arctic
 America). -- Konow 1905 Z. system. Hymenopt. Dipteroi. 5: 63, 99. -- Konow 1905
 Genera Insect. 28: 6. -- MacGillivray 1910 in Smith, Rep. New Jers. Dep. Agric. 1909:
 593. -- Rohwer 1912 Univ. Colo. Stud. Ser. Biol. 9: 95 (Colorado). -- Zimsen 1964 Type
 Material of J. C. Fabricius: 361 (type).

Stenocera flavicornis: Lepelletier & Serville 1828 Ency. Méth. 10: 438.

Phocenus flavicornis: Cresson 1865 Proc. ent. Soc. Phila. 4: 274 (Colo., syn.:
braziliensis Stephens). -- Norton 1869 Trans. Am. ent. Soc. 2: 362-363. -- Cresson 1875
 Rep. Geog. Surv. West 100th Merid. 5: 707. -- Provancher 1878 Naturaliste can. 10:
 228-229 (Québec; 9 only). -- Cresson 1880 Trans. Am. ent. Soc. 8: 67 (in cat.). --
 Provancher 1883 Petite Faune Ent. Can., Hym., 238, 239, fig. 32. -- Riley 1886 Proc.
 ent. Soc. Wash. 1: 15 (Pt. Barrow, Alaska; probably introduced). -- Harrington 1893
 Trans. R. Soc. Can., section IV: 146. -- Bradley 1913 J. Ent. Zool. 5: 18-19, pl. 3,
 fig. 8, pl. 5, fig. 26 (distribution; Nebr. (?); syn.: *pygmaeus* MacGillivray). --
 MacGillivray 1916 Bull. Com. St. geol. nat. Hist. Surv. 22: 171 (Conn.). -- Walker
 1916 Can. Ent. 48: 259 (Newfoundland). -- MacGillivray 1919 Rep. Can. Arctic Exped.
 1913-1918, 3: Insects: 39 (Nome, Alaska; imported from states in lumber ?). -- Mac-
 Gillivray 1920 Can. Ent. 52: 216 (distribution). -- Essig 1926 Insects West. N. Amer.:
 773 (hosts a, d, g). -- Rohwer 1928 in Leonard, Mem. Cornell Univ. agric. Exp. Stn
 101: 874 (N.Y.). -- Waterston 1928 in Crystal, Bull. ent. Res. 19: 223 (separation of
 d from d of *albicollis*). -- Conde 1935 Notul. ent. 15: 66-69 (color var. of *gigas*).
 -- Eldmann 1935 Arb. morph. taxon. Ent. Berl. 2: 101 (Labrador). -- Keen 1938 Misc.
 Publ. U. S. Dep. Agric. 273: 201, revised 1952 (western states; hosts a, g). -- He-
 dlicke 1938 Hym. Cat. 6: 8-9. -- Weber 1950 Trans. Am. ent. Soc. 76: 187 (Nome, Alaska).
 -- Burks 1958 in Krombein, et al., Agriculture Monogr., suppl. 1, 2: 16 (distribution;
 hosts b, d, f, h). -- Cameron 1965 Tech. Bull. Commonw. Inst. Biol. Control 5: 12-13
 (distribution; hosts b, d, f, h, i).

Phocenus gigas flavicornis: Benson 1935 Ann. appl. Biol. 22: 763 (has been found
 in Britain). -- Benson 1940 Trans. Herts. nat. Hist. Soc. Field Club 21: 191 (has been
 recorded from Britain). -- Benson 1943 Bull. ent. Res. 34: 30, 31, 32, 39, 44 (mea-
 surements; in key; occasionally introduced into Britain, not established). -- Benson
 1945 Entomologist's mon. Mag. 81: 103 (N. Amer. related to *tardigrades*). -- Chapman
 1954 Ecology 35: 44 (summit frequenting insects of western mts.). -- Middlekauff
 1960 Bull. Calif. Insect Surv. 6: 68 (distribution; hosts a, d, e, g). -- Stillwell
 1966 Forest Sci. 12: 122 (N.B., associated fungus; host k). -- Morris 1967 J. ent.
 Soc. Br. Columb. 64: 60-63 (B.C., host j).

Phocenus gigas: Riles 1946 Ent. News 57: 218 (adventive in Brazil). -- Kirk 1975
 Pan-Pacif. Ent. 51: 57-58 (host c).

Stenocera braziliensis Stephens 1829 Syst. Cat. Brit. Insects: 342 (nomen nudum). --
 Stephens 1835 Illus. Brit. Ent., Mend. 7: 114, pl. 36, fig. 2, 9. "near *rudum*" (Lon-
 don, 9). -- Kirby 1837 in Richardson, Fauna Bor.-Am. 4: 256-257 (N.Y.). -- Kirchner
 1867 Cat. Hym. Eur.: 21 (Germany). -- Bethune 1875 Can. Ent. 7: 159 (N.Y.). -- Kirby
 1882 List Hym. Brit. Mus. 1: 381 (introduced into Britain). -- Dalla Torre 1894 Cat.
 Hym. 1: 384. -- Kjaer 1902 Fauna Arctica 2(3): 407 (arctic America).

Phocenus braziliensis: Harrington 1882 Can. Ent. 14: 227-228 (B.C.).

Stenocera latifasciatus Westwood 1874 Thesaurus ent. Oxon.: 114, pl. 21, fig. 2, d.
 "America Septentrionalis" (Oxford, d). -- Kirby 1882 List Hym. Brit. Mus. 1: 378. --
 Dalla Torre 1894 Cat. Hym. 1: 390.

Phocenus latifasciatus: Cresson 1860 Trans. Am. ent. Soc. 8: 50, 67. -- Harring-
 ton 1893 Trans. R. Soc. Can., section IV: 146.

Phocenus pygmaeus MacGillivray 1893 Can. Ent. 25: 244, d. "Olympia and Skokomish
 River" (Washington state). (Urubana, 111, d). -- Konow 1898 Ent. Nachr. 24: 266 (syn.
 of *albifrons* Norton). -- Frison 1927 Bull. 111. Nat. Hist. Surv. 16: 268 (type).

Hosts: a) *Abies* sp., fir; b) *Abies lasiocarpa*; c) *Abies concolor*; d) *Pseudotsuga
 muhlenbergii* (= *P. taxifolia*), Douglas-fir; e) *Picea* sp., spruce; f) *Picea sitchensis*;
 g) *Pinus* sp., pine; h) *Pinus murrayana*; i) *Pinus contorta*; j) *Larix occidentalis*,
 western larch; k) *Abies balsamea*.

gigas (Linnaeus)

Albania; Algeria; Austria; Belgium;
 Bulgaria; Chile (introduced, apparent-
 ly established); Cyprus; Czechoslovakia;
 Denmark; Egypt (interception ?); Eng-

land; Finland; France; Germany; Greece; Hungary; Iceland; Ireland; Israel (interception); Italy; Japan ? (possibly subsp. *orientalis*); Korea ? (possibly subsp. *orientalis*); Netherlands; Norway; Poland; Reunioff (interception); Romania; Scotland; Sicily; South Africa (interception); Spain; Sweden, Switzerland; U.S.S.R. (Latvian S.S.R.; Lithuanian S.S.R.; European R.S.F.S.R.; Ukrainian S.S.R.; records from Siberia may be another subsp.).

Linnaeus 1736 Litt. et Sc. Suec. 4: 124. -- Linnaeus 1739 K. svenska Vetensk.-Akad. Handl. i: pl. 3, fig. 7. -- Réaumur 1742 Mém. Hist. Insect. 6: 312-315, pl. 31, fig. 1, 2. -- Linnaeus 1746 Fauna Suec.: 282-283 (n. 925). -- Rösel 1749 Mon. nat. Insect. 1: 7, Wespen: 37-44, pl. 8-9. -- DeGeer 1752 Mém. Hist. Insect. 1: 564-567, pl. 36, fig. 1-5. -- Göze 1778 DeGeer Abh. Gesch. Insect 1(4): 19-21, pl. 36, fig. 1-5.

Tachemon grigas Linnaeus 1758 Syst. Nat., Ed. 10, i: 560, 9, d. "Habitat in Suecia frequens" (Linn. Soc. London, 9). -- Poda 1761 Insecta Mus. Graec.: 104, pl. 1, fig. 6. -- Sulzer 1761 Kennz. d. Insecten.: pl. 18, fig. 114. -- Brönnich 1761 Prodr. Insectol. Stælland: 17. -- Scopoli 1763 Ent. Carn.: 281-282, pl. 40, fig. 739 (subg. *Strew*; "in *Pino abiete* et *picea*"). -- Matalue & Benson 1934 Ark. Zool. 26A: 12 (type 9).

Strew grigas: Linnaeus 1761 Fauna Suec., Ed. 2: 396. -- O.F. Müller 1764 Fauna Insect. Fridrichsd.: 70. -- Seba 1765 Locup. Nat. 4: 63, pl. 53, fig. 15. -- Linnaeus 1767 Syst. Nat., Ed. 12, 1(2): 928. -- Berkenhout 1769 Outlin. Nat. Hist. Gr. Brit. 1: 164. -- Linnaeus 1771 Paud. et Flora Rybens: 16. -- Füsslin 1775 Verz. Schwellt. Insecten: 48 (Fichten und Tannenholz). -- Ph. L. Müller 1775 Linn.: Vollst. Natursyst. 2(5): 837-838, pl. 26, fig. 1, 2. -- Fabricius 1775 Syst. Ent.: 325. -- O.F. Müller 1776 Zool. Dan. Prodr.: 150. -- Schrank 1781 Enum. Insect. Austr.: 343-344. -- Fabricius 1781 Spec. Insect. 1: 418. -- Reitzius 1783 Gen. Spec. Insect.: 67. -- Linnaeus 1785 Amon. Acad. 8: 86. -- Fabricius 1787 Mant. Insect. 1: 257. -- Thunberg 1788 Mus. Nat. Acad. Upsal. 6: 84. -- Ström 1788 Danske Vid. Sersk. Skrift. Nya Saml. 3: 275. -- Villers 1789 C. Linn. Ent. 3: 126-128. -- Karsten 1789 Mus. Lesk. Reg. Anim. 1: 56. -- Gmelin 1790 Linn.: Syst. Nat., Ed. 13, 1(5): 2671. -- Rossi 1790 Fauna Etrusca 2: 33. -- Christ 1791 Naturg. Insek.: 412-414, pl. 46, fig. 2, 3. -- Fischer 1791 Vers. Naturg. Livland: 342. -- Fabricius 1793 Ent. Syst. 2: 124. -- Donovan 1797 Nat. Hist. Brit. Insects 6: 39-41, pl. 197 (biol. notes). -- Panzer 1798 Faun. Insect. Germ.: fasc. 52, pl. 15. -- Cederhjelms 1798 Faun. Ingric. Prodr.: 154 ("in pinetis"). -- Ludwig 1799 Aufz. Sachsen Insek.: 36. -- Lamarck 1801 Syst. Anim. sans Vert.: 264. -- Walckenaer 1802 Fauna Paris. 2: 45. -- Schrank 1802 Fauna Boica 2(2): 224. -- Klug 1803 Monogr. Sircum Germ.: 31-34, pl. 2, fig. 1, 2, 3-5 (syn.: *mazzaeus* Linnaeus). -- Fabricius 1804 Syst. Piezat.: 48. -- Bechstein & Scharfenberg 1805 Vollst. Naturg. Forstins. 3: 867-869 (♀, larva; biol. notes). -- Spinola 1806 Insect. Liguriæ 1: 59. -- Panzer 1806 Krit. Rev. Insek. Deutsch. 2: 54-55. -- Turton 1806 Gen. Syst. Nature 3(2): 426. -- Jurine 1807 Nouv. Méth. Class. Hym. Dipt. 1: 79. -- Huber 1807 Vollst. Naturg. d. Bau- u. Baumbläzer 1(4): 128. -- Illiger 1807 Rossi: Fauna Etrusca, Ed. 2, 2: 48-51 (syn.: *hungaricus* Christ). -- Lamarck 1817 Hist. Nat. Anim. sans Vert. 4: 167. -- Bechstein 1818 Forstinsectol.: 142, 144, pl. 4, fig. 45. -- Billberg 1820 Enum. Insect. Mus. Billberg: 98. -- Lepeletier & Serville 1828 Ency. Méth. 10: 438. -- Curtis 1829 Brit. Ent. 3: 253 (England; pine and lime trees). -- Dahlbom 1835 Conspectus Tenthed., Siricid., Orissin. Scand.: 16. -- Dahlbom 1835 Clavis Novi Hym. System.: 39 (larva). -- Lamarck 1835 Hist. Nat. Anim. sans Vert., Ed. 2: 4: 376. -- Oken 1835 Aligem. Naturgesch. für alle Stände 5(2): 892-893 (biol.). -- Stephens 1835 Illus. Brit. Ent. Mand. 7: 113-114. -- Latreille 1837 in Cuvier, Anim. Kingdom 4: 215. -- Harfig 1837 Fam. Blattwespen: 382, pl. 8, fig. 20 (Fichten, Tannen). -- Zetterstedt 1838 Insect. Lapp. 1: 356. -- Sells 1840 Trans. ent. Soc. Lond. 2: proc. p. lxxxiii (England; destroyed fir trees). -- Guérin 1844 Iconogr. Règne Anim., Insectes 3: 404-405; pl. 64, fig. 18 (1834). -- Siebold 1844 Preuss. Prov. Bl. 31: 128. -- Ratzeburg 1844 Forstins. 3: 139-144, pl. 4, fig. 2 (Fichten). -- Lucas 1846 Explor. Algérie Zool. 3(3): 341 (Algeria). -- Eversmann 1847 Byull. mosk. Obshch. Ispyt. 20: 66 (2 color forms; prov. Casanensi et Orenburgensi). -- Blanchard 1849 in Cuvier, Règne Anim. 7: 130-131, pl. 109, fig. 7. -- Doubleday

1849 Proc. zool. Soc. Lond. 17: 95, pl. XII (fig. larvae in wood; host x; Gr. Brit.). -- Lacaze-Duthiers 1849 Ann. Sci. Nat., Zool. (3) 12: 365-369; 1850, 14: 50, pl. 13, fig. 1-10 (female terminalia). -- Erichson 1851 in Middendorff, Reise Nord. Ostfen Sibiriens 2(1): 63 (Siberia). -- Lucas 1853 Anns Soc. Ent. Fr. (3) 1: ixli-lixiv (host d, construction wood). -- MacIntosh 1854 Naturalist 4: 156-158, fig. -- Kirchner 1854 Verh. zool.-bot. Ver. Wien 4: 290 (Böhmen). -- Watney 1856 Entomologist's Weekly Intellig. 1: 195. -- Cox 1857 Entomologist's Weekly Intellig. 2: 151 (imported, at dock). -- Rye 1857 Entomologist's Weekly Intellig. 3: 8 (collection record). -- Garland 1858 Entomologist's Weekly Intellig. 4: 167-168 (collection record). -- Tidmore 1858 Entomologist's Weekly Intellig. 4: 168 (collection record). -- Lespes 1858 Ann. Sci. Nat., Zool. (4) 9: 241 (l'appareil auditif). -- Parry 1858 Entomologist's Weekly Intellig. 4: 150 (in pine wood). -- Tyrer 1859 Entomologist's Weekly Intellig. 6: 124 (in fir plantation). -- Jordan 1859 Entomologist's Weekly Intellig. 6: 183 (note on capture). -- Penny 1860 Entomologist's Weekly Intellig. 8: 179 (collection record). -- Tryer 1860 Entomologist's Weekly Intellig. 9: 11 (capture). -- Costa 1860 Fauna Regno Napoli, Pt. Ila, Siricidae: 3-4 (Italy). -- Green 1861 Entomologist's Weekly Intellig. 10: 188 (at window; note on egg laying). -- Lucas 1861 Anns Soc. Ent. Fr. (4) 1: xxiv (boring through metal). -- Snellen van Vollenhoven 1861 Natuur. Hist. Neder. 4: 333, pl. 22, fig. 8 (Netherlands). -- Edwards 1861 C. r. heb. Séanc. Acad. Sci., Paris 53: 320-322 (penetrating lead bullets). -- Ahlemann 1863 Forst. Bl. 6: 89-111. -- Ratzeburg 1863 Forst. Bl. 5: 187-193. -- Hartig 1864 Berl. ent. Z. 8: 397 (in Black Forest). -- Kawai 1864 Byull. mosk. Obshch. Ispyt. 37: 302 (Volgo Uralensom). -- Kaltenbach 1864 Verh. naturh. Ver. preuss. Reim. 21: 301 (Fichte und Weissanne; Larchen). -- Disconzi 1865 Ent. Vicent.: 139, pl. 10, fig. 159. -- Ratzeburg 1866 Waldverderbniss 1: 227. -- Bianconi 1866 Memorie Accad. Sci. Ist. Bologna (2) 6: 439-455, pl. 1 (piercing metal; Italy). -- Tachenberg 1866 Hym. Deutsch.: 29. -- Kirchner 1867 Kat. Hym. Eur.: 20. -- Snellen van Vollenhoven 1869 Tijdschr. Ent. 12: 111 (Netherlands). -- White 1870 Entomologist 5: 197 (note on capture; England). -- Thomson 1871 Hym. Scand. 1: 328-329 (subg. *Urocerus*). -- Ghiliani 1873 Boll. Soc. ent. ital. 5: 243 (Italy; parasite). -- Walker 1873 Entomologist 6: 359. -- Walker 1873 Can. Ent. 5: 78. -- Kaltenbach 1874 Pflanzenfunde: 198. -- Altum 1875 Forstzoologie 3(2): 281. -- P.S. 1876 Feuille Jeun. Nat. 6: 89 (larvae eating through bullets of cartridges in Grenoble arsenal). -- Mocsáry 1878 Tijdschr. Ent. 21: 198 (listed from Siberia). -- Andersson 1879 Entomologist 12: 111 (early emergence in England). -- Wilson 1879 Entomologist 12: 111 (host a, in boles, England). -- Cuni 1880 An. Soc. esp. Hist. nat. 9: 233 (Spain). -- Sparre Schneider 1880 in Stebek, Enum. Insect. Norveg. 5: 29-30 (Norway). -- Xambou 1880 Anns Soc. ent. Fr. (5) 10: xciii. -- Wachtl 1881 Zentbl. ges. Forstw. 7: 352. -- Prest 1881 Entomologist 14: 23. -- Magretti 1881 Boll. Soc. ent. ital. 13: 54, 268 (Italy). -- André 1881 Spec. Hym. Eur. Alg. 1: 556, pl. 71, fig. 4; cat. p. 68. -- Canestrini & Berlese 1881 Atti Soc. Vento-Trentin. 1: 13, 24, fig. 4; cat. p. 68. -- Brischke 1883 Schr. naturf. Ges. Danzig 5: 322. -- Jacobs 1884 Kiel 1884 Ent. Nachr. 10: 234 (Germany, accompanying a swarm of dragonflies). -- Cameron 1885 Monogr. Brit. Phytophag. Hym. 2: pl. 7, fig. 6, 7. -- Anns 1885 Ann. Sci. Nat., Zool. (6) 19: 72-91 (des organes de vol). -- Mocsáry 1886 Rovart. Lap. 3: 68, 69, X (Hungary). -- Pios 1888 Rovart. Lap. 3: 224, xxviii. -- Sharp 1886 Entomologist's mon. Mag. 23: 108 (ovipositing on host bb; England). -- Perkins 1887 Entomologist's mon. Mag. 24: 156 (destructive to host bb; England). -- Johnson 1888 Injur. Insects during 1890 14: 122-124 (Ireland; hosts d, j). -- Ormerod 1891 Rep. Soc. ent. ital. 22: 182 (Italy). -- Cameron 1890 Monogr. Brit. Phytophag. Hym. 3: 135, pl. 4, fig. 12 (larva fig.). -- Cobelli 1891 Pubbl. Mus. civ. Rovereto 19: 4, 27 (Trentino). -- Leech 1891 Entomologist 24: 248 (abundance in Ireland; host e). -- anonymous 1891 Entomologist 24: 248. -- Streck 1893 Mitt. schweiz. ent. Ges. 9: 10 (Switzerland). -- Oudemans 1894 Tijdschr. Ent. 37: 93 (Netherlands). -- Dalla Torre 1894 Cat. Hym. 1: 386-388 (syn.: *LeFebvre Guérin*). -- Costa 1894 Prospetto Inenotteri Ital. 3: 257-258 (Italy). -- Costa 1895 Atti Accad. Sci. fis. mat., Napoli 12(7) 1: 185, 187 (Italy). -- Griffini 1895 (1894) Miscnea ent. 12: 132 (Piemont). -- Strobl 1895 Wien. ent. Ztg. 14: 279 (host k). -- Dusmet 1896 An. Soc. esp. Hist. nat. 25: 54 (Spain). -- Konow 1896 Wien. ent. Ztg. 15: 41, 43. -- Jablonowski 1897 Rovart. Lap. 4: 49-52. -- Strand 1898 Ent. Tidskr. 19: 82 (Norway). -- Kiaer 1898 Tromsø Mus. Aarsh 19: 28 (Norway). -- Kiaer 1902 Fauna Arctica 2(3): 407 (Norway, Sweden).

- Miss. Unters. Schweiz. Natn Parks 7: 173 (Switzerland). -- Roberti, et al. 1965 Ann. del'ist. Ent. Agraria Univ. Bari 1: 88 (Piacentino). -- Cameron 1965 Tech. Bull. Commonw. Inst. biol. Control 5: 13 (hosts e, l, aa). -- Bachmaier 1966 Anz. Schäd- lingsk. 39: 130, 131. -- Scobilia-Palade 1966 Trav. Mus. Hist. nat. Gr. Antipa 6: 390 (Sulina). -- Wolf 1969 Bull. Soc. r. for Belg. 76: 281-301 (Belgium; damage; etholo- gy; hosts c, f, m, n, z). -- Schedl 1973 Mitt. Abt. Zool. Landesmus. Joanneum 1: 103-104 (Austria; hosts d, j, u, x). -- Zombori 1973 Mitt. Museen Komitates Veszprem 12: 469. -- Schedl 1976 Veröffentl. Univ. Innsbruck 103. Alpin-Biol. Studien 8: 33 (Austria; hosts a, j, u, v, x, ff).
- Sirex mazzolei* Linnaeus 1761 Fauna Suec., Ed. 2: 397. -- "Habitat upsaliae" (). -- Linnaeus 1767 Syst. Nat., Ed. 12: 929. -- Fabricius 1775 Syst. Ent.: 326. -- Füsslin 1775 Verz. Schweitz. Insect.: 48. -- Ph. L. Müller 1775 Linn.: Vollst. Natur. Gesch. Insect. 1(4): 19, pl. 36, fig. 1, 2. -- O. F. Müller 1776 Zool. Dan. Prodr.: 151. -- Göze 1778 DeGeer. Abh. 1(4): 19, pl. 36, fig. 1, 2. -- Fabricius 1781 Spec. Insect.: 420. -- Fabricius 1787 Mant. Insect.: 258. -- Cyrtill 1787 Ent. Neap. Spec.: pl. 1, fig. 1 (d). -- Thunberg 1788 Mus. Nat. Acad. Upsal. 6: 84. -- Karsten 1789 Mus. Lesh. Reg. Anim. 1: 56. -- Villiers 1789 C. Linn. Ent. 3: 129. -- Gmelin 1790 Linn.: Syst. Nat., Ed. 13, 1(5): 2673. -- Christ 1791 Naturg. Insect.: 415-416, pl. 47, fig. 2. -- Fabricius 1793 Ent. Syst.: 130. -- Cederhjelms 1798 Faun. Ingric. Prodr.: 135. -- Panzer 1798 Faun. Insect. Germ.: fasc. 32, pl. 20. -- Ludwig 1799 Autz. Sachsen Insek.: 36. -- Fabricius 1804 Syst. Piezat.: 51. -- Bechstein & Scharfberg 1805 Vollst. Naturg. Forstin. 3: 871. -- Turlin 1806 Gen. Syst. Nature 3 (2): 429. -- Panzer 1806 Krit. Rev. Insek. Germ. 2: 56. -- Jurine 1807 Nouv. Méth. Class. Hym. Dipt.: 1: 79 (d of *gigas*). -- Lepelletier & Serville 1828 Ency. Méth. 10: 438.
- Sirex tangaricus* Christ 1791 Naturg. Insect.: 414-415, pl. 47, fig. 1 "Ungarn"
- Sirex pygillus* Fabricius 1793 Ent. Syst. 2: 124-125. -- "Habitat in Europa" (Coll. Fabricius,). -- Fabricius 1804 Syst. Piezat.: 49. -- Turlin 1806 Gen. Syst. Nature 3(2): 426-427. -- Jurine 1807 Nouv. Méth. Class. Hym. Dipt. 1: 79 (*pygillus* (?); a var. of *gigas*). -- Blanchard 1840 Hist. Nat. Anim. Art. 3: 245. -- Zinsens 1964 Type Material of J.C. Fabricius: 360 (type).
- Urocenus pygillus*: Leach 1830 (1815) Edin. Ency. 9: 141.
- Urocenus lefebvrei* Guérin 1833 Mag. Zool. 3: classe IX, pl. 68. "sicile" ().
- Sirex lefebvrei*: Guérin 1844 Iconogr. Règne Anim. Insectes 3: 404, pl. 64, fig. 17 (1834). -- Kirby 1882 List Hym. Brit. Mus. 1: 373.
- Sirex grandis* Blanchard 1849 Cuvier's Règne Anim., Ed. 3, Insects 2: pl. 109, fig. 7 (*Sirex grandis* on legends for fig.; *Sirex gigas* in caption below plate and on p. 130. Probably a mistake for *gigas*).
- Sirex faustus* Costa 1894 Prospetto Inenotteri Ital. 3: 258. d. "Genova" (Napoli, d).
- Costa 1895 Atti Accad. Sci. fis. mat., Napoli (2) 7: 185, 187, pl. 3, fig. 8.
- Urocenus gigas* var. *montana* Ermolenko 1956 (reference not found).
- Hosts: a) *Pinus austriaca*; b) *Pinus sylvestris*; c) *Pinus banksiana*; d) *Pinus* sp., pine; e) silver fir; f) *Abies alba*; g) *Abies grandis*; h) *Abies procera*; i) *Abies pectinata*; j) *Abies* sp., fir; k) *Picea excelsa*; l) *Picea omorica*; m) *Picea abies*; n) *Picea sitchensis*; o) *Abies sibirica*; p) *Larix sibirica*; q) *Picea pungens*; r) *Picea excelsa*; s) *Picea excelsa septentrionalis*; t) *Picea abnata*; u) *Picea* sp., spruce; v) *Larix deodura*; w) *Pinus sibirica*; x) *Larix* sp., larch; y) *Pseudotsuga menziesii*; z) *Chamaecyparis lawsoniana*; aa) *Cedrus libani*; bb) deodar; cc) *Populus*; dd) *Fraxinus*; ee) *Salix*; ff) *Pinus cembra*.

Notes: *Urocenus gigas* and its subspecies are probably the most commonly found forms of siricids in Eurasia, as the numerous literature references attest. It is no doubt entered in many other lists or short notes that are not given here. The subspecies are separated only by coloration which is consistent within certain geographical areas, though those of Eurasia undoubtedly overlap and intermediates are frequent. Since the subspecies were created by Benson (1943), much of the literature prior to that time may be difficult to place to the correct form. Some of the literature listed under *gigas gigas*, therefore, may pertain to one of the other subspecies; however, I doubt that it makes much difference as to which subspecies the articles pertain. In general, the typical subspecies is found in Europe; *orientalis* is found in eastern China, eastern Siberia, and Japan; *tibetanus* is found in the Himalayas; and *taiganus* is more northern, occurring from Scandinavia through Siberia.

gigas orientalis Maa

- Urocenus gigas orientalis* Maa 1949 Notes Ent. chin. 13: 107-108, 172. ♀. "Sachalin: Tomorikishi, Shisuka" (Taipei, ♀) (also from "Siberia E.: Tschita" and "China (Shan-tung) (77)"). -- Cameron 1965 Tech. Bull. Commonw. Inst. biol. Control 5: 13.
- Sirex flavicornis*: Ashmead 1902 Proc. Wash. Acad. Sci. 4: 252 (Kamchatka).
- Sirex gigas*: Matsumura 1911 J. Coll. Agric. Hokkaido Imp. Univ. 4: 84 (Sachalin). -- Matsumura 1912 Thous. Insects Japan, suppl., 4: 16, pl. 42, fig. 23. -- Yano 1917 Coll. Essays Y. Nawa: 117. -- Enslin 1927 (1926) Ezheg. zool. Muz. 27: 360 (Kamchat- ka). -- Forsius 1929 Ark. Zool. 208 (5): 4 (Kamchatka). -- Matsumura 1930 Illus. Thous. Insects Japan 2: 57, pl. 5, fig. 23. -- Matsumura 1931 6000 Illus. Insects Jap.-Emp.: 78, fig. 422. -- Malaize 1931 Ark. Zool. 234: 65 (Kamchatka; host a). -- Yano 1932 in Esaki, Iconogr. Insect. Japan: 471, fig. 923 (?), may be typical *gigas*. -- Takeuchi 1936 Tenthredo 1: 56 (Sachalin).
- Urocenus gigas*: Takeuchi 1938 Tenthredo 2: 187, 188 (in part). -- Kôno and Sugihara 1939 Insecta matsum. 13: 109 (Sachalin; hosts b, c). -- Shiraki 1952 Cat. Injur. In- sects Japan 5: 85-86 (hosts b, c, d, e). -- Kim 1963 Human. and Sci. (Nat. Sci.) Korea Univ. 6: 295 (Korea). -- Ko 1969 List Forest Insect Pests of Korea: 314 (hosts c, f, g; Korea). -- Kim 1970 Illus. Ency. Fauna Flora Korea 11, Insecta 3: 135, 735, pl. 81 fig. 22 (Korea). -- Togashi 1973 Life Study, Fukui 17: 103 (Korea).

Hosts: a) *Larix* sp., larch; b) *Abies sachalinensis*, sachalin fir; c) *Picea jezoensis*, yesso spruce; d) Japanese larch; e) Japanese silver fir; f) *Pinus densiflora*; g) *Abies* sp., fir.

gigas taiganus Benson

- Urocenus gigas taiganus* Benson 1943 Bull. ent. Res. 33: 30, 31, 39, 40, 45, fig. 4. ♀. "Finland: Watershed between 70°17'N. and 29°50'E. - 26°55'E., 1,000 - 2,000 ft., and near Kunes, Coastal area between 70°17'N. and 26°40'E. - 26°55'E." (Lon- don, 9). -- Benson 1945 Entomologist's mon. Mag. 81: 68, 103 (found in Hertfordshire, possibly native to Scotland, found in northern coniferous belt from Europe to Japan, Scotland). -- Maa 1949 Notes Ent. chin. 13: 98, 172 (in key). -- Benson 1951 Handbk. Ident. Br. Insects 6(2a): 19, 20 (Caledonian forest in northern Britain, occasionally introduced in timber). -- Benson 1960 Trans. Herts. nat. Hist. Soc. Fid Club 25: 98 (Hertfordshire, probably imported). -- Bakke 1960 Norsk ent. Tidsskr. 11: 119 (Nor- way, host h). -- Stroganova 1963 Trudy biol. Inst. Sib. Otd. Akad. Nauk SSSR 10: 28-30, fig. 1 (western Siberia). -- Landin 1964 Opusc. ent. 29: 176. -- Karppinen 1964 Suom. hyönt. Aikak 30: 62 (Finland). -- Cameron 1965 Tech. Bull. Commonw. Inst. biol. Control 5: 13 (hosts c, j). -- Iseev & Tarasova 1965 in Issled. Zashite Lesov Sibi- ri, Akad. Nauk SSSR, Sib. Otd. Inst. Lesa i Dreves.: 7, 9 (host j; Amur). -- Zemkova 1965 in Issled. Zashite Lesov Sibi- ri, Akad. Nauk SSSR, Sib. Otd. Inst. Lesa i Dreves.: 21 (host k). -- Bachmaier 1966 Anz. Schädlingk. 39: 130, 131 (northern Europe, Si- beria; hosts a, b, c). -- Ivliev 1966 in Entomofauna of Forests of Kurile Is., Kam- chatka, Magaden: 82. -- Stroganova 1968 Hornfalls of Siberia: 72-77, fig. 24 (biol. distribution in Siberia; hosts a, b, d-g). -- Nuorteva 1969 Suom. hyönt. Aikak. 35: 161 (compared with *gigas*). -- Krivolitskaya 1973 Entomofauna of the Kurile Is.: 144, 145, 146 (Kurile islands). -- Stroganova 1976 Trudy biol. Inst. Sib. Otd. Akad. Nauk SSSR 48: 259, 264 (west. Siberia).

Urocenus taiganus: Kapušinski 1962 Polskie Pismo ent. 32: 211-212 (Poland).

- Sirex gigas*: Zhelekhovisev 1938 Trudy altaisk. gos. Zapov. 1: 322 (Altay). -- Kurentsov 1950 Trudy dal'nnevost Fil. Akad. Nauk SSSR 1(4): 40, 165. -- Cherepanov 1950 Lesnoe Khoz. 9: 88 (Tuva). -- Kiseleva 1950 Uch. Zap. Tomsk Gos. Univ. 15: 96 (Tomsk; host o). -- Byalaya 1963 in Sbornik, Vreditel' lesov Pribaikal'ye, Irkutsk 8: 26, 27-28, fig. 1, 3 (larva). -- Byalaya 1964 Izv. vost.-sib. Otd. imp. russ. geogr. Obsch. 62: 23-42 (Baikal area; host i). -- Byalaya 1964 Izv. vost.-sib. Otd. imp. russ. geogr. Obsch. 62: 62, 63 (larva, in key). -- Byalaya 1966 in Roztkov, Pests of Siberian Larch: 159, 160-161, pl. 26, fig. 6, 7, pl. 29, fig. 1-4 (adult, larva; biol.; host f).

Xanthostreus tardigradus: Semenov-Tian-Shanskij & Gussakovskij 1935 Annls Soc. ent. Fr. 104: 123 (syn.: *phantasma* Semenov-Tian-Shanskij; distribution; host f.). -- Gussakovskij 1935 Fauna SSSR, Insects Hym. 2, i: 55-56, 340. -- Florov 1938 Insect pests of coniferous forests in east. Siberia: 164. -- Hedicke 1938 Hym. Cat. 6: 22. -- Taiwan 1948 Ent. Obozr. 30: 82-87 (biol., host f.). -- Kontinien 1951 Agia ent. fenn. 9: 1 (Finland). -- Zhelokhovtsev, et al. 1955 in Pavlovskii & Sitakel'berg, Forest Pests, Reference Book i: 293. -- Kontinien 1960 Suom. Eläim. 9: 69 (Finland, hosts f.). -- Bjalaya 1963 in Snorik, Vrediteli lesov v Pribalkal'e, Irkutsk 8: 26, 28, fig. 2 (larva). -- Bjalaya 1964 Izv. vost.-sib. Otd. imp. russ. geogr. Obshch. 62: 23-42 (biol. area, host c.). -- Bjalaya 1963 Izv. vost.-sib. Otd. imp. russ. geogr. Obshch. 62: 62 (larva in key, *Xanthostreus* (1)). -- Bjalaya 1966 in Rozhkov, Pests of Siberian Larch: 159, 161, pl. 28, fig. 3 (biol., host c.).

Urocerus tardigradus: Kapušciński 1962 Polskie Pismo ent. 32: 209-210 (Poland). -- Hellén 1955 Notul. ent. 35: 109 (Finland). -- Bachmayer 1966 Anz. Schädlingssk. 39: 130, 131 (hosts b, d, e, g). -- Stroganova 1968 Horntails of Siberia: 68-70 (distribution; hosts b, d, e, f). -- Schimitschek 1968 Z. angew. Ent. 61: 45-50 (Austria; biol.; parasites; hosts f, h). -- Verzhutskii 1973 Ident. Larvae Woodwasps and Sawflies of Siberia and Far East: 47, 48. -- Méczár & Zombori 1973 Fauna Hung. XI, Hym. 1, 2: 50, 51 (in key). -- Zombori 1974 Folia ent. hung. 27: 239 (Carpathian Basin). -- Stroganova 1976 Trudy biol. Inst. Sib. Otd. Akad. Nauk SSSR 18: 264 (west. Siberia).

Sirex phantoma: Nylander 1859 Not. Salisk Fauna Flora Fenn. 4: 246. -- Enslin 1917 Tenthred. Mitteleur.: 715, 750 (in part). -- Schmiedeknecht 1930 Hym. Nord-Mitteleur.: 73 (in part).

Urocerus phantoma: Benson 1943 Bull. ent. Res. 34: 39, 40, 41 (in part). -- Maa 1949 Notes Ent. chin. 13: 117-118, 172 (in part). -- Glowacki 1956 Polski Zwizek ent. 24(2): 17-18, fig. 16 (Poland; host d). -- Bednarczyk 1960 Przegl. zool. 4: 210. -- Stroganova 1962 Trudy biol. Inst. Otd. Akad. Nauk SSSR 10: 31.

Xanthostreus phantasma Semenov-Tian-Shanskij 1921 (1917) Russk. ent. Obozr. 17: 86-87. ♀. "Rossia europaea septentrionalis: prov. Vologdensis: prope opped. Velski; Siberia orientalis: prov. Irkutensis: ad fl. Ilim; prov. Transbaikalia: prope oppid. Tshita; prov. Littoralis, distr. Austro-Ussuriensis: Tjutiche" (Leningrad, ♀).

Hosts: a) *Larix* sp., larch; b) *Larix dahurica*; c) Siberian larch; d) *Picea* sp., spruce; e) *Pinus* sp., pine; f) *Pinus sylvestris*, scott's pine; g) *Abies* sp., fir; h) *Picea excelsa*; i) *Larix gmelini*; j) *Picea abies*.

Notes: This species and *fantoma* were no doubt confused in the literature, mainly because *tardigradus* was, for a considerable length of time, considered a synonym of *fantoma*.

taxodii (Ashmead)

U.S. (District of Columbia, Florida, Georgia, Missouri, New York (?), North Carolina, Virginia).

Sirex taxodii: Ashmead 1904 Can. Ent. 36: 63, ♀, ♂. "Tryon, N.C." (Washington, ♀) (host a). -- Konow 1905 Z. system. Hymenopt. Dipteroi. 5: 97 (syn. of *areoson* Norton). *Urocerus taxodii*: Bradley 1913 J. Ent. Zool. 5: 17, 20-21, fig. 2, 29 (description; host a). -- Rohrer 1928 in Leonard, Mem. Cornell Univ. agric. Exp. Stn 101: 874 (Long island, N.Y., accidental occurrence ?). -- Hedicke 1938 Hym. Cat. 6: 14. -- Benson 1943 Bull. ent. Res. 34: 48 (separation from *niger* Benson). -- Burks 1958 in Krombein, et al., Agriculture Monogr., suppl. 1, 2: 17 (distribution; host a). -- Cameron 1965 Tech. Bull. Commonw. Inst. biol. Control 5: 14.

Host: a) *Taxodium distichum*.

tsutsujiamanus (Sonan)

Taiwan.

Sirex nitakana var. *tsutsujiamanus* Sonan 1938 Trans. nat. Hist. Soc. Formosa 28: 90-91. ♀. "Tsutsujiaman, Mount Nilitaka (10,000 feet)" (Taipei, ♀).

Urocerus nitakana var. *tsutsujiamanus*: Takeuchi 1938 Tenthredo 2: 188 (not seen). -- Benson 1943 Bull. ent. Res. 34: 47 (may be form of *U. japonicus*).

Urocerus tsutsujiamanus: Maa 1949 Notes Ent. chin. 13: 95, 99, 104-106, 173, fig. 134, 137, 139, 141, 143 (♀ type redescribed; Takeuchi's 1938 key revised to include species). -- Cameron 1965 Tech. Bull. Commonw. Inst. biol. Control 5: 14.

tumidus Maa

Burma (?); Taiwan.

Urocerus tumidus Maa 1949 Notes Ent. chin. 13: 95, 99, 107, 173, fig. 138, 140, 142, 144. ♀. "Formosa: Hassenzan" (Taipei, ♀). -- Maa 1950 O. J. Taiwan Mus. 3: 21 (additional localities from Formosa: forewing-ovipositor ratio). -- Cameron 1965 Tech. Bull. Commonw. Inst. biol. Control 5: 14.

Urocerus multifaecatus: Benson 1943 Bull. ent. Res. 34: 30, 31, 32, 47-48 (mis-identification; measurements; ?North Burma).

xanthus (Cameron)

China (Tibet); India (Himachal Pradesh, Jammu and Kashmir, Punjab); Pakistan.

Sirex xanthus Cameron 1876 Trans. R. ent. Soc. Lond.: 471. ♀. "North India" (London, ♀). -- Kirby 1882 List Hym. Brit. Mus. 1: 383, pl. 15, fig. 7 (Nagard, India). -- Dalla Torre 1894 Cat. Hym. 1: 393. -- Konow 1898 Wien. ent. Ztg. 17: 76, 78, 89. -- Konow 1905 Z. system. Hymenopt. Dipteroi. 5: 64, 100-101. -- Konow 1905 Genera Insect. 28: 7. -- Cockerell 1921 Can. Ent. 53: 22-23, fig. 27 (abnormal wing venation). *Urocerus xanthus*: Hedicke 1938 Hym. Cat. 6: 14. -- Benson 1943 Bull. ent. Res. 34: 30, 31, 32, 40, 47 (measurements; Kashmir and Punjab). -- Maa 1949 Notes Ent. chin. 13: 95, 98, 100-102, 173, fig. 94, 121, 126, 131 (♀ redescribed; Tibet). -- Ashraf 1964 Tech. Bull. Commonw. Inst. biol. Control 4: 66 (Pakistan; parasite; hosts a-d).

-- Dharmadhikari & Achan 1965 Tech. Bull. Commonw. Inst. biol. Control 6: 78 (Punjab, Kashmir, Himachal Pradesh; parasites; hosts a, e). -- Cameron 1965 Tech. Bull. Commonw. Inst. biol. Control 5: 14.

Hosts: a) *Abies pindrow*; b) *Cedrus deodara*; c) *Picea smithiana*; d) *Pinus roxburghii*; e) *Picea moninda*.

yasushii (Yano)

Japan; Korea; U.S.S.R. (Khabarovsk ?, Kurile Islands, Primorski Krai, Sakhalin).

Sirex yasushii Yano 1917 Coll. Essays Y. Nawa: 117, fig. 7. ♀. Japan. (Nawa Entomological Laboratory, Gifu, ♀). -- Conde 1935 Notul. ent. 15: 70 (*yasushii* (1), not placed in key). -- Takeuchi 1936 Tenthredo 1: 57 (♀ described; Sakhalin, Japan (Honsu Semenov-Tian-Shanskij, *sachalinensis* Conde)).

Urocerus yasushii: Takeuchi 1938 Tenthredo 2: 187, 188 (? Japan, Sakhalin, Korea, East Siberia). -- Hedicke 1938 Hym. Cat. 6: 14. -- Maa 1949 Notes Ent. chin. 13: 95, 97, 173. -- Takeuchi 1955 Akitu 4: 5, 9 (Japan, host a). -- Takeuchi 1962 Insecta Japon. (2) pt. 4: 7, 8, 11, pl. 1, fig. 18 (host a). -- Kim 1963 Humani. and Sci. (Nat. Sci.) Korea Univ. 6: 295 (Korea). -- Cameron 1965 Tech. Bull. Commonw. Inst. biol. Control 5: 15 (*yasushii* (1)). -- Okutani 1967 Jap. J. appl. Ent. Zool. 11: 44 (hosts a, b, c). -- Ko 1969 List of Forest Insect Pests in Korea: 314 (hosts a, b). -- Kim 1970 Illus. Ency. Fauna Flora Korea 11, Insecta 3: 136, 735 (Korea).

Sirex umbra Semenov-Tian-Shanskij 1921 (1917) Russk. ent. Obozr. 17: 84-86. ♀. "Siberia orientalis prov. Littoralis: sinus De-Castris" (Leningrad, ♀). -- Semenov-Tian-Shanskij & Gussakovskij 1935 Annls Soc. ent. Fr. 104: 123 (♂, distribution). -- Gussakovskij 1935 Fauna SSSR, Insects Hym. 2, i: 48, 49, 50, 338, 339.

Urocerus umbra: Conde 1937 Korrespbl. Naturf. Riga 62: 112 (syn.: *sachalinensis* Conde). -- Hedicke 1938 Hym. Cat. 6: 14. -- Benson 1943 Bull. ent. Res. 34: 30, 31, 48 (measurements, separation from *niger* Benson). -- Krivolutskaia & Stroganova 1968 Entomofauna of Forests of Kurile Is., Kamchatka, Magadan: 62. -- Stroganova 1968 Horntails of Siberia: 76-77 (distribution; biol., host a). -- Krivolutskaia 1973 Entomofauna of the Kurile Islands: 144, 145, 146.

Urocerus sachalinensis Conde 1935 Notul. ent. 15: 68, 70. ♀. "Flussgebiet Egranwis, Tschernoleska und Nal-Nal" (host a).

Hosts: a) *Abies* sp., fir; b) *Abies firma*; c) *Abies sachalinensis*.

Genus XERIS Costa

Sirex subg. *Xeris* Costa 1894 Prospetto Imanotteri Ital. 3: 259.

Type-species: *Ichneumon spectrum* Linnaeus (Monotypic). -- Costa 1895 Atti Accad. Sci. fis. mat., Napoli (2) 7: 295.

Xeris: Konow 1898 Wien. ent. Ztg. 17: 73, 74 (key to species). -- Ashmead 1898

Can. Ent. 30: 179. -- Konow 1905 Z. system. Hymenopt. Dipteroi. 5: 125-128 (key to Can. and descriptions of world species; in tribe Tremecidae). -- Konow 1905 Genera Insect. 28: 9. -- Schmiedeknecht 1907 Hym. Mitteleur.: 769, 772. -- Bradley 1913 J. Ent. Zool. 5: 22-23 (N. Amer.). -- Enslin 1917 Tentred. Mitteleur.: 705, 711 (1 European species). -- Schmiedeknecht 1930 Hym. Nord-Mitteleur.: 72. -- Hedlicke 1938 Hym. Cat. 6: 6: 23-25 (cat.). -- Takeuchi 1938 Tentredo 2: 194-195 (Japanese Empire). -- Benson 1943 Bull. ent. Res. 34: 34, 38. -- Berland 1947 Faune France. 47: Hym. Tentred.: 72-74 (France). -- Maa 1949 Notes Ent. chin. 13: 78-89, 170 (revision, key to world species and subspecies). -- Benson 1951 Handb. ident. Br. insects 6(2a): 22 (Britain). -- Ries 1951 in Musebeck, et al., Agriculture Monogr. 2: 84 (N. Amer. cat.). -- Takeuchi 1955 Akitu 4: 3-4, 8 (Japan). -- Głowacki 1956 Polski Zwiastek ent., 24(2): 14 (Poland). -- Burks 1958 in Krombein, et al., Agriculture Monogr., suppl. 1, 2: 17 (N. Amer. cat.). -- Takeuchi 1962 Insecta Japon. (2) pt. 4, 6, 11 (Japan). -- Okutani 1963 Sci. Rep. Hyogo Univ. Agric., Ser. Agric. biol. 6: 25 (larvae). -- Bachmayer 1966 Anz. Schädlingssk. 39: 130, 131 (Europe).

Süze: Jurine 1807 Nouv. Méth. Class. Hym. Dipt. 1: 76-79 (part). -- Taschenberg 1866 Hym. Deutschl.: 29-30 (part). -- Dalla Torre 1894 Cat. Hym. 1: 392-393 (part). -- Konow 1896 Wien. ent. Ztg. 15: 41 (part).

Urocerus: Lepelletier & Serville 1828 Ency. Méth. 10: 769, 770 (part). -- Leach 1830 (1815) Edin. Ency. 9: 141 (part).

Xeris is a small genus with representatives found throughout the coniferous forests of the Northern Hemisphere.

himalayensis Bradley

India (Himachal Pradesh, Kashmir, Punjab); Pakistan. *Xeris himalayensis* Bradley 1934 Rec. Indian Mus. 36: 145, 9, 8. "Deoban, Chakrata Div., United Provinces, India, altitude 9,000 ft. (Washington, 9). -- Hedlicke 1938 Hym. Cat. 6: 23. -- Benson 1941 Ecology and Control of Forest Insects of India and Neighbouring Countries: 397 (India). -- Benson 1943 Bull. ent. Res. 34: 30, 31, 32, 47 (measurements; Kashmir). -- Viedma & Suárez 1961 Graellsia 19: 20, 22, 23 (compared with *obsoletus*). -- Ashraf 1964 Tech. Bull. Commonw. Inst. biol. Commonw. Inst. biol. hosts a, b, c, d). -- Dharmadikhar & Achon 1965 Tech. Bull. Commonw. Inst. biol. Control 6: 78 (Kashmir, Punjab, Himachal Pradesh; hosts a, e). *Xeris spectrum himalayensis*: Maa 1949 Notes Ent. chin. 13: 82, 83, 88, 170 (9, 8; distribution; host b). -- Cameron 1965 Tech. Bull. Commonw. Inst. biol. Control 5: 15-16 (host b).

Hosts: a) *Abies pindrow*; b) *Cedrus deodara*; c) *Picea smithiana*; d) *Pinus roxburghii*; e) *Picea morinda*.

morrisoni indecisus (MacGillivray)

Canada (British Columbia); U. S. (California, Idaho, Nevada, Oregon, Utah, Washington). *Urocerus indecisus* MacGillivray 1893 Can. Ent. 25: 243, 8. "Olympia, Washington" (Urbeno, 111, 8). -- Konow 1898 Ent. Nachr. 24: 226 (syn. of *morrisoni* Cresson). -- Friess 1927 Bull. 111. St. nat. Hist. Surv. 16: 268 (type). *Xeris morrisoni indecisus*: Maa 1949 Notes Ent. chin. 13: 80, 85-86 (hosts a, b, c). -- Burks 1958 in Krombein, et al., Agriculture Monogr., suppl. 1, 2: 17 (hosts a-c, g-1). -- Okutani 1965 Akitu 12: 32 (intercepted in Japan from U.S., in Port Orford cedar). -- Cameron 1965 Tech. Bull. Commonw. Inst. biol. Control 5: 15 (hosts a-c, g-1).

Xeris morrisoni: Essig 1926 Insects West. N. Amer.: 774-775 (hosts b, e). -- Behard 1938 Can. Ent. 70: 194 (Idaho; host k, in trees killed by Douglas-fir beetle). -- Middlekauff 1960 Bull. Calif. Insect Surv. 6: 69-70 (hosts b, d-1, parasites). -- Morris 1967 J. ent. Soc. Br. Columb. 64: 60-62 (B.C.; host j).

Hosts: a) *Abies grandis*; b) *Abies concolor*, white fir; c) *Abies lasiocarpa*; d) *Abies magnifica*; e) *Pinus contorta*, lodgepole pine; f) *Pinus ponderosa*; g) *Larix laricina*; h) *Picea sitchensis*; i) *Tsuga heterophylla*; j) *Larix occidentalis*; k) *Pseudotsuga menziesii* (= *P. mucronata*).

morrisoni morrisoni (Cresson)

U. S. (Arizona, Colorado). *Urocerus morrisoni* Cresson 1880 Trans. Am. ent. Soc. 8: 35, 9. "Colorado, Utah, Washington Territory" (Philadelphia, 9). -- Harrington 1893 Trans. R. Soc. Can., section IV: 149. -- Cresson 1916 Mem. Am. ent. Soc. 1: 10 (type, from Colorado). *Süze*: *morrisoni*: Kirby 1882 List Hym. Brit. Mus. 1: 382. -- Dalla Torre 1894 Cat. Hym. 1: 390.

Xeris morrisoni: Ashmead 1898 Can. Ent. 30: 180. -- Konow 1898 Wien. ent. Ztg. 17: 74, 83. -- Howard 1901 Insect Book: pl. 14, fig. 36. -- Konow 1905 Z. system. Hymenopt. Dipteroi. 5: 125, 126. -- Konow 1905 Genera Insect. 28: 9. -- Bradley 1913 J. Ent. Zool. 5: 22, 23, 24, pl. 5, fig. 27. -- Hedlicke 1938 Hym. Cat. 6: 13. -- Benson 1943 Bull. ent. Res. 34: 30, 31 (measurements). -- Ries 1951 in Musebeck, et al., Agriculture Monogr. 2: 84 (hosts b, e).

Xeris morrisoni morrisoni: Maa 1949 Notes Ent. chin. 13: 80, 83-85, fig. 96, 98, 105, 108, 108a (hosts a, b, c). -- Burks 1958 in Krombein, et al., Agriculture Monogr., suppl. 1, 2: 17 (hosts a, b, c). -- Cameron 1965 Tech. Bull. Commonw. Inst. biol. Control 5: 15 (hosts a, c, e). -- Burks 1967 in Krombein & Burks, Agriculture Monogr., suppl. 2, 2: 27 (Arizona). -- Kirk 1975 Pan-Pacif. Ent. 51: 57-58 (host b).

Hosts: a) *Pseudotsuga menziesii* (= *P. lasiocarpa*), Douglas-fir; b) *Abies concolor*, white fir; c) *Picea parryana*; d) *Picea pungens*; e) lodgepole pine.

spectrum cobosi Viedma & Suárez

Xeris spectrum cobosi: Viedma & Suárez 1961 Graellsia 19: 20-24, fig. 2, 4, 9. "Izumi-Ifr (Marinecoos)" ("en colección Suárez", 9) (probable hosts: *Cedrus atlantica*, *Abies pinsapo marocana*).

spectrum malaisei Maa

Xeris spectrum malaisei: Maa 1949 Notes Ent. chin. 13: 81, 88, 170, 9. "Formosa: Taiheizhan" (Taipei, 9). -- Maa 1950 Q. J. Taiwan Mus. 3: 21 (additional Formosan record). -- Cameron 1965 Tech. Bull. Commonw. Inst. biol. Control 5: 16.

spectrum spectrum (Linnaeus)

Algeria; Austria; Canada (Alberta, British Columbia?, New Brunswick, Northwest Territories, Nova Scotia, Ontario, Québec); China (Kirlin, Sinkiang); Czechoslovakia; Denmark; England; Finland; France; Germany; Hungary; Israel (interception); Italy; Japan; Morocco; Netherlands; Norway; Poland; Romania; South Africa (interception); Spain; Sweden; Switzerland; Taiwan; U.S. (Alaska, California, Colorado, Connecticut, Maine, Nevada, New Hampshire, Oregon, Washington); U.S.S.R. (Altay, Georgian S.S.R., Kamchatka, Kemerovo, Krasnoyarsk, Kurile Islands, Latvian S.S.R., Novosibirsk, Primorski Kray, Sakhalin, Tyumen'; Tuva S.S.R., European R.S.F.S.R.); Yugoslavia.

Linnaeus 1746 Fauna Suec.: 283 (n. 926; Stockholmiae). -- Degeer 1752 Mem. Hist. Insect. 1: 567-568, pl. 36, fig. 6. -- Gêze 1778 Degeer. Abh. Gesch. Insect. 1(4): 21-22, pl. 36, fig. 6. *Tachinon spectrum* Linnaeus 1758 Syst. Nat., Ed. 10, 1: 560, 9. "Habitat in Lignis putridis antiquis Pini & Abietis" (Linn. Soc. London, 9). -- Brönnich 1764 Prod. Insectol. Staelland: 17. -- Scopoli 1763 Ent. Carn.: 282, pl. 40, fig. 740 (subg. *Süze*). -- Malaise & Benson 1934 Ark. Zool. 26 A: 12 (type 9).

Süze spectrum: Linnaeus 1761 Fauna Suec., Ed. 2: 396. -- Degeer 1762 Mem. Hist. Insect. 1: 567, pl. 36, fig. 6. -- O.F. Müller 1764 Fauna Insect. Fridrichsd.: 70. -- Linnaeus 1767 Syst. Nat., Ed. 12, 1(2): 929. -- Fabricius 1775 Syst. Ent.: 326. -- Füsslin 1775 Verz. Schweitz. Insect.: 48. -- Ph. L. Müller 1775 Linn. Vellst. Natur-syst. 2(5): 838-839. -- O.F. Müller 1776 Zool. Dan. Prodr. Anim.: 151. -- Fabricius 1781 Spec. Insect. 1: 419. -- Retzius 1783 Gen. Spec. Insect.: 67. -- Fabricius 1787 Ment. Insect. 1: 257. -- Ström 1788 Danske Vid. Selsk. Skrift. Nya Saml. 3: 376, pl. 1, fig. 12. -- Thunberg 1788 Mus. Nat. Acad. Upsal. 6: 84. -- Villiers 1789 C. Linn.

- [illegible]

- Schr. naturw. Ver. Schlesw.-Holst. 38: 70 (Schleswig-holstein). -- Scobiole-Palade 1968 Trav. Mus. Hist. nat. Gr. Antipa 9: 379 (Bucharest). -- Schmittschek 1968 Z. angew. Ent. 61: 45-60 (Austria); biol., parasites, host 1, o. -- Ko 1969 Bull. Soc. r. for Belg. sect. Pests of Korea: 314 (Korea); hosts j, u, x). -- Wolt 1969 Bull. Soc. r. for Belg. sect. Pests of Korea: 314 (Korea); hosts r, s, v. -- Kim 1970 Illus. Ency. Fauna Flora 76: 281-301 (Belgium; biol., hosts r, s, v). -- Togashi 1972 Mush. 46: 55 (Mt. Hiko). -- Korea 11, Insecta 3: 137, 136, fig. 25. -- Togashi 1972 Mush. 46: 55 (Mt. Hiko). -- Schedl 1972 Mitt. Abt. Zool. Landesmus. Joanneum 1: 105 (Austria); hosts a, f, o, w). -- Scobiole-Palade & Istaitie 1972 Stud. Commun. Oecot. Nat. 3: 282, 287 (Romania); hosts a, f, o. -- Gobbi 1973 Boll. Ass. romana Ent. 27: 31 (parasite). -- Móczár & Zombori 1973 Fauna Hung. XI, Hym. 1, 2: 56 (Hungary). -- Togashi 1973 Life Study, Fukuji 17: 103 (Korea). -- Zombori 1973 Mitt. Mus. Konitates Veszprem 12: 469. -- Zombori 1974 Fregm. Balcan. Mus. Macedon. Sci. Nat. 9: 176 (Yugoslavia). -- Zombori 1974 Folia ent. hung. 27: 239 (Carpathian Basin; Hungary). -- Stroganova 1976 Trudy biol. inst. Sib. Otd. Akad. Nauk SSSR 18: 259, 264.
- Xeris spectrum spectatum*: Maa 1949 Notes Ent. chin. 13: 82, 86-87, 170, fig. 99, 103, 109, 109a (syn.: *caudatus* Cresson; distribution: key to subsp., 1). -- Burks 1958 in Krombein, et al., Agriculture Monogr., suppl. 1, 2: 17 (N. Amer. distribution; hosts b, c, l, t). -- Cameron 1965 Tech. Bull. Commonw. Inst. biol. Control 5: 16 (hosts b, l, t, v).
- Ichneumon* sp.: Gronovio 1762 Acta Helvet. 5: 396 (no. 392).
- Urocerus* 1: Schaeffer 1766 Iconogr. Insect. Ratissbon (1): pl. 4, fig. 9, 10. *Urocerus* 111: Schaeffer 1779 Iconogr. Insect. Ratissbon. 5: pl. 237, fig. 3, 4. *Stenex natus* O.F. Müller 1776 Zool. Dan. Prodr. 151. No sex or locality. ().
- Dalla Torre 1894 Cat. Hym. 1: 391.
- Stenex toratus* Fabricius 1793 Ent. Syst. 2: 128, d. "Habitus in Germania" (Coll. Fabricius,). -- Turtion 1806 Gen. Syst. Nature 3(2): 428. -- Zimsen 1964 Type Material of J. C. Fabricius: 361 (type).
- Xiphidria emarginata*: Fabricius 1804 Syst. Piezat. 53. -- Billberg 1820 Enum. Insect. Mus. Billberg: 98 (Xiphidria).
- Urocerus caudatus*: Cresson 1865 Proc. ent. Soc. Philad. 4: 247-248, 9. Colorado Territory. (Philadelphia, 9). -- Norton 1869 Trans. Am. ent. Soc. 2: 365-364. -- Provancher 1878 Naturaliste can. 10: 231. -- Cresson 1880 Trans. Am. ent. Soc. 8: 67 (syn.: *malinchoia* Westwood). -- Provancher 1883 Petite Faune Ent. Can., Hym.: 241. (syn.: *malinchoia* Westwood). -- section IV: 148-149. -- Cresson 1916 Mem. Am. ent. Soc. 1: 10 (type).
- Stenex caudatus*: Kirby 1882 List Hym. Brit. Mus. 1: 382. -- Dalla Torre 1894 Cat. Hym. 1: 385. -- Kiear 1902 Fauna Arctica 2(3): 407 (arctic America).
- Xeris caudatus*: Ashmead 1898 Can. Ent. 30: 180. -- Konow 1898 Wien ent. Ztg. 17: 74, 88. -- Howard 1901 Insect Book: pl. 13, fig. 29. -- Konow 1905 Z. system. Hymenopt. Dipteroi. 5: 125, 126. -- Konow 1905 Genera Insect. 28: 9. -- Rohrer 1912 Univ. Colo. Stud. Ser. Biol. 9: 96 (Colo.). -- MacGillivray 1916 Bull. Com. St. geol. nat. Hist. Surv. 22: 171.
- Xeris spectrum caudatus*: Bradley 1913 J. Ent. Zool. 5: 23 (race *caudatus*). -- Essig 1926 Insects West. N. Amer.: 774, fig. 649E (race *caudatus*). -- Hedrick 1938 Hym. Cat. 6: 24-25.
- Stenex melanchoia*: Westwood 1874 Thesaurus ent. Oxon.: 116, pl. 21, fig. 8, d. "America Septentrionalis" (Oxford, d).
- Hosts: a) *Pinus sylvestris*; b) *Pinus contorta*; c) *Pinus murrayana*; d) stone pine; e) *Pinus* sp., pine; f) *Abies alba*; g) *Abies sachalinensis*; h) *Abies pinagao macrocarpa*; i) *Abies pectinata*; j) *Abies firma*; k) *Abies balsamea*; l) *Abies laocarpa*; m) *Abies* sp., fir; n) *Pinus parryana*; o) *Pinus ascarata*; p) *Pinus uncinata*; q) *Pinus glehnii*; r) *Pinus sibirica*; s) *Pinus aricae*; t) *Pinus purpurea*; u) *Pinus* sp., spruce; v) *Pseudotsuga menziesii* (= *P. taxifolia*), Douglas-fir; w) *Pseudotsuga* sp., x) *Chamaecyparis obtusa*; y) *Larix sibirica*; z) *Larix* sp., larch; aa) cedar; bb) *Abies sibirica*; cc) Siberian cedar; dd) *Abies nephrolepis*; ee) *Pinus ajacensis*; ff) *Pinus jezoensis*.
- Notes: *Xeris spectrum* is a holarctic species, with the typical subspecies also being holarctic. The several subspecies are apparently only color variations from the typical forms which are found on the periphery of the range of *spectrum*, *cobosi* from Morocco, *malinchoia* from Taiwan, and *townesi* from the western United States and Canada.

SPECTRUM TOWNESI Maa

Canada (British Columbia): U. S. (Montana, Oregon, Washington). *Xeris spectrum townesi* Maa 1949 Notes Ent. chin. 13: 81, 88-89, 9, d. "Hokuan" (Washington, 9) (hosts a-e). -- Maa 1950 O. J. Taiwan Mus. 3: 21 (Washington). --

Burks 1958 in Krombein, et al., Agriculture Monogr., suppl. 1, 2: 17 (hosts a-d, f). -- Cameron 1965 Tech. Bull. Commonw. Inst. biol. Control 5: 16 (hosts a-d, f).

Hosts: a) *Pinus sibirica*; b) *Abies laocarpa*; c) *Abies grandis*; d) *Pseudotsuga menziesii* (= *P. taxifolia*); e) *Pinus* sp., spruce; f) *Tsuga heterophylla*.

Mexico (Chiapas): U. S. (California, Oregon, Washington).

Urocerus taxatilis: Cresson 1880 Trans. Am. ent. Soc. 8: 52, 9. "Washington Territory" (Philadelphia, 9). -- Harrington 1893 Trans. R. Soc. Can., section IV: 148. -- Konow 1898 Wien. ent. Ztg. 17: 88 (syn. of *morisoni* Cresson). -- Cresson 1916 Mem. Am. ent. Soc. 1: 10 (type).

Stenex taxatilis: Kirby 1882 List Hym. Brit. Mus. 1: 382. -- Dalla Torre 1894 Cat. Hym. 1: 393.

Xeris taxatilis: Maa 1949 Notes Ent. chin. 13: 80, 82-83, fig. 95, 97, 104, 107, 107a (syn.: *maculilivax* Bradley; allotype d; host a). -- Burks 1958 in Krombein, et al., Agriculture Monogr., suppl. 1, 2: 17 (hosts a, c). -- Cameron 1965 Tech. Bull. Commonw. Inst. biol. Control 5: 16 (hosts a-c). -- Westcott 1971 Pan-Pacif. Ent. 47: 310 (host d).

Xeris maculilivax: Bradley 1913 J. Ent. Zool. 5: 23, 24-25, pl. 5, fig. 30, 35, 9. Locality omitted, but "Noliymia, Washington" handstamped in reprints I have seen. (Ithaca, 9). -- Hedrick 1938 Hym. Cat. 6: 25. -- Ries 1951 in Muesebeck, et al., Agriculture Monogr. 2: 84. -- Middlekauff 1960 Bull. Calif. Insect. Surv. 6: 69 (hosts a, b).

Hosts: a) *Cypripedium macrocarpa*; b) *Leucoedus decurrens*; c) *Phylla plicata*; d) *Juniperus occidentalis*.

Genus XOANON Semenov-Tian-Shanskij

Xoanon Semenov-Tian-Shanskij 1921 (1917) Russk. ent. Obozr. 17: 87.

Type-species: *Xoanon mygata* Semenov-Tian-Shanskij (Original designation). -- Gusakovskij 1935 Fauna USSR, Insects Hym. 2: 1: 47, 56, 368 (1 sp.). -- Takeuchi 1938 Terrestrial 2: 191 (1 sp.). -- Benson 1943 Bull. ent. Res. 34: 34 (in key). -- Maa 1949 Notes Ent. chin. 13: 89-90, 170-171 (2 spp., key and cat.). -- Takeuchi 1962 Insecta Japon. (2) pt. 4: 6, 11 (Japan).

matsumurae (Rohrer)

China ("northern China"); Japan; Korea; U.S.S.R. (Chita, Irkutsk, Kurile Islands, Primorsky Krai, Sakhalin).

Stenex matsumurae: Rohrer 1910 Proc. U. S. natn. Mus. 39: 102, 9 "Sapporo, Japan" (Washington, 9). -- Matsumura 1911 J. Coll. Agric. Hokkaido Imp. Univ. 4: 84, pl. 2, fig. 1 (*matsumurae* (1); Sakhalin; host g). -- Matsumura 1912 Thous. Insects Japan, suppl. 1, 4: 15, pl. 42, fig. 21 (9, d). -- Yano 1917 Coll. Essays Y. Nawa: 117. -- Matsumura 1930 Illus. Thous. Insects Japan 2: 55, pl. 5, fig. 21. -- Matsumura 1931 6000 Illus. Insects Jap.-Emp.: 78, fig. 425, color pl. 1, fig. 7. -- Clausen 1931 Circ. U. S. Dep. Agric. 166: 81 (hosts c, f). -- Matsumura 1932 Illus. Common Insects Japan 4: 50, 42, pl. 8, fig. 1 (Sakhalin; Hokkaido; hosts t, j).

Xoanon matsumurae: Semenov-Tian-Shanskij 1921 (1917) Russk. ent. Obozr. 17: 88 (? syn.: *mygata* Semenov-Tian-Shanskij). -- Takeuchi 1936 Terrestrial 1: 58 (syn.: *mygata* Semenov-Tian-Shanskij; Sakhalin; host j).

-- Takeuchi 1938 Terrestrial 2: 191 (Japan; host j). -- Hedrick 1938 Hym. Cat. 6: 22 (*matsumurae*). -- Matsum. 13: 109 (*matsumurae*; host g). -- Takeuchi 1949 Trans. Kansai ent. Soc. 14: 47 (hosts f, j). -- Maa 1949 Notes Ent. chin. 13: 89, 92-95, 170-171, fig. 110, 112, 115, 117-120 (9, d; distribution). -- Shiraki 1952 Cat. Insect. Insects Japan 5: 86 (hosts c, g, h, i). -- Takeuchi 1955 Akita 4: 4, 8 (Japan; hosts c, t, j). -- Takeuchi 1962 Insecta Japon. (2) pt. 4: 6, 11, pl. 1, fig. 12, 13 (hosts c, t, j). -- Kim 1963 Humen. and Sci. (Nat. Sci.) Korea Univ. 6: 294 (Korea). -- Cameron 1965 Tech. Bull. Commonw. Inst. biol. Control 5: 16 (host j). -- Okutani 1967 Jap. J. appl. Zool. 11: 44 (hosts a, t, g, h, j). -- Ko 1969 List of Forest Insect Pests in Korea: 314 (hosts a, c, f, i). -- Kim 1970 Illus. Ency. Fauna Flora Korea 11, Insecta 3: 137, 735, pl. 2, fig. 26 (Korea). -- Togashi 1973 Life Study, Fukuji 17: 103 (Korea). -- Verzhbitskii 1973 Ident. Larvae Sawflies and Hornets of Siberia and Far East: 49. -- Krivolutskaia 1973 Entomofauna of the Kurile Islands: 145.

Urocyon matsumurae: Conde 1935 Notul., ent. 15: 69 (in key).
Xoanon myeta: Semenov-Tian-Shanskij 1921 (1917) Russk., ent. Obozr. 17: 88-90. ♀, ♂.
 "Siberia orientalis: insula Sachalin inter Kusana et Manue; distr. Austro-Ussuriensis provinciae Littoralis: 7Vladivostok" (Leningrad, ?). -- Gussakovskij 1935 Fauna SSSR, Insects Hym. 2, 1: 56, 340-341 (host d). -- Benson 1943 Bull. ent. Res. 34: 30, 31, 32, 34, fig. 7 (measurements; 2 species ?). -- Kurentsov 1950 Trud' dal'nevost. Fil. Akad. Nauk SSSR 1: 167-168, 169, fig. 45 (Primorski Krai). -- Zhelokhovtsev, et al., 1955 in Pavlovskii & Shrakel'berg, Forest Pests, Reference Book 1: 295. -- Krivolutskaia & Stroganova 1966 in Entomofauna of Forests of Kurile Is., Kamchatka, Magadan: 62. -- Stroganova 1968 Horntails of Siberia: 63-65, fig. 21 (biol. and distribution in Siberia; "northern China": hosts b, c, e, f, j). -- Krivolutskaia 1973 Entomofauna of the Kurile Islands: 144, 145.

Hosts: a) *Larix leptolepis*; b) *Larix* sp., larch; c) *Pinus* sp., pine; d) *Pinus koraiensis*; e) stone pine; f) *Abies* sp., fir; g) *Abies sachalinensis*, sakhalin fir; h) *Abies firma*, Japanese silver fir; i) *Picea jezoensis*, yesso spruce; j) *Picea* sp., spruce.

praelongum Maa China (Chekiang).
Xoanon praelongum Maa 1949 Notes Ent. chin. 13: 90-92, 171, fig. 111, 113, 116. ♀.
 "Chekiang: Lishui Hsien" ("Maa coll.," ♀) (found on seasoned lumber of host a). -- Cameron 1965 Tech. Bull. Commonw. Inst. Biol. Control 5: 17 (host a).

Hosts: a) *Cryptomeria japonica*.

Subfamily TREMICINAE

Tremicinae: Ashmead 1898 Can. Ent. 30: 178, 179-180 (*Xeris*, *Teredon*, *Tremex*). -- Rohrer 1911 Proc. ent. Soc. Wash. 13: 217. -- Hedicke 1938 Hym. Cat. 6: 29. -- Maa 1949 Notes Ent. chin. 13: 127-163, 175-178. -- Benson 1943 Bull. ent. Res. 34: 6. Tremicinae: Bradley 1913 J. Ent. Zool. 5: 8 (*Tremex*, *Teredon*). -- Ross 1937 Illinois Biol. Monogr. 15: 112.
 Tremecides: Konow 1905 Z. system. Hymenopt. Dipt. 5: 114-128 (as tribe; includes *Xeris*).
 Tremicini: Gussakovskij 1935 Fauna SSSR, Insects Hym. 2, 1: 47, 64, 338 (as tribe).

Genus AFROTREMEX Pasteels

Afrotremex Pasteels 1951 Bull. Annls Soc. r. ent. Belg. 87: 185-186.
 Type-species: *Tremex hyalinatus* Mocsáry (Original designation).
hyalinatus (Mocsáry) Gabon; Uganda; Zaïre.
Tremex hyalinatus Mocsáry 1891 Természetr. Fü. 14: 158-159. ♀. "Gabon Africae occidentalis" (Budapest, ♀). -- Dalla Torre 1894 Cat. Hym. 1: 382. -- Konow 1898 Wien. ent. Ztg. 17: 84, 86, 90. -- Konow 1905 Z. system. Hymenopt. Dipt. 5: 115, 116-117. -- Konow 1905 Genera Insect. 28: 8. -- Guiglia 1937 Annali Mus. civ. Stor. nat. Genova 59: 435-437, fig. 1, 2, pl. 15 (♀; Congo). -- Hedicke 1938 Hym. Cat. 6: 29. -- Benson 1943 Bull. ent. Res. 34: 35 (probably belongs in a separate genus). -- Maa 1949 Notes Ent. chin. 13: 163 (in species *thaxterae* *sedis*).
Afrotremex hyalinatus: Pasteels 1951 Bull. Annls Soc. r. ent. Belg. 87: 196.

violaceus Pasteels

Afrotremex violaceus Pasteels 1951 Bull. Annls Soc. r. ent. Belg. 87: 196-197. ♀.
 "Mayidi" () (also from "Bas Congo: Lemfu").

Genus ERITREMEX Benson

Eritremex Benson 1943 Bull. ent. Res. 34: 42 (key to species).
 Type-species: *Tremex smithi* Cameron (Original designation). -- Maa 1949 Notes Ent. chin. 13: 127-134, 175-176 (portions of Benson's 1943 key revised). -- Maa 1956 Proc. Hawaii. ent. Soc. 16: 91-92 (key to ♀♀).

Eritremex is a small genus native to southeast Asia and the East Indies. One species is adventive in southeastern United States.

brevicornis Maa Philippines.
Eritremex brevicornis Maa 1949 Notes Ent. chin. 13: 130-131, 175, fig. 171, 172. ♀. "Philippine Is.; Cuernos Mts., Negros" (Washington, ♀). -- Maa 1956 Proc. Hawaii. ent. Soc. 16: 92 (in key). -- Baltazar 1966 Pacif. Insects 8: 14.
flavicornis (Cameron) India (Assam).
Tremex flavicornis Cameron 1899 Mem. Proc. Manch. lit. phil. Soc. 43: 3-4, ♀.
 Khasia Hills, India. (London, ♀). -- Konow 1905 Z. system. Hymenopt. Dipt. 5: 116, 119. -- Konow 1905 Genera Insect. 28: 8. -- Hedicke 1938 Hym. Cat. 6: 27.
Eritremex flavicornis: Benson 1943 Bull. ent. Res. 34: 43 (? in *Tremex*). -- Maa 1949 Notes Ent. chin. 13: 175 (type lost ?). -- Maa 1956 Proc. Hawaii. ent. Soc. 16: 91 (in key).

formosanus (Matsumura)

Laos; Taiwan; Viet Nam; U. S. (Alabama, Florida, Georgia).

Tremex formosanus Matsumura 1912 Thous. Insects Japan, suppl., 4: 20-21, pl. 43, fig. 4. ♀. "Formosa" (Sapporo, ♀). -- Yano 1917 Coll. Essays Y. Nawa: 121. -- Takeuchi 1923 J. nat. Hist. Soc. Taiwan 66: 40. -- Matsumura 1930 Illus. Thous. Insects Japan 2: 60, pl. 6, fig. 4. -- Matsumura 1931 6000 Illus. Insects Jap.-Emp.: 70, fig. 450. -- Takeuchi 1938 Tentredo 2: 194. -- Sonan 1938 Trans. nat. Hist. Soc. Formosa 28: 93-94, fig. 3. -- Hedicke 1938 Hym. Cat. 6: 27-28.

Eritremex formosanus: Benson 1943 Bull. ent. Res. 34: 43, 44 ("Indo-China, Haut Mekong, Vien Poukha"). -- Maa 1949 Notes Ent. chin. 13: 93-94, 175, fig. 217-221 (Tonkin: Mt. Bavi, 800-1000 m.). -- Maa 1956 Proc. Hawaii. ent. Soc. 16: 91 (in key). -- Smith 1975 Co-op. econ. Insect Rep. 25: 851-854, fig. 1, 2 (♀, pupa; adventive in U. S.; host a).

Hosts: a) *Quercus nigra*, water oak.

foveopygus Maa

Eritremex foveopygus Maa 1949 Notes Ent. chin. 13: 131-133, 176, fig. 173, 174. ♀. "Philippine Is.: Cuernos Mts., Negros" (Washington, ♀) (also from "Island Samar"). -- Maa 1956 Proc. Hawaii. ent. Soc. 16: 91, 92 (in key; possibly opposite sex of *Tremex rugicollis* Westwood). -- Baltazar 1966 Pacif. Insects 8: 14.

insignis (Smith)

Indonesia (Aru Is., West Irian); Papua New Guinea.

Tremex insignis Smith 1859 J. Linn. Soc., Zool. 3: 178. ♀. "Aru" (Oxford, ♀). -- Westwood 1874 Thesaurus ent. Oxon.: 117 (redescribed). -- Dalla Torre 1894 Cat. Hym. 1: 382. -- Konow 1898 Wien. ent. Ztg. 17: 84, 86, 91. -- Konow 1905 Z. system. Hymenopt. Dipt. 5: 115, 117-118. -- Konow 1905 Genera Insect. 28: 8. -- Hedicke 1938 Hym. Cat. 6: 29.

Eritremex insignis: Benson 1943 Bull. ent. Res. 34: 44. -- Maa 1949 Notes Ent. chin. 13: 128-129, fig. 169, 170 (British New Guinea; Moroka; syn.: *konowi* Lange). -- Maa 1956 Proc. Hawaii. ent. Soc. 16: 92 (in key).

Tremex konowi Lange 1909 Dt. ent. Z. 210. ♀. "Deutsch-Neuguinea" (). -- Soldanski 1914 Dt. ent. Z. 198-199 (♂). -- Hedicke 1938 Hym. Cat. 6: 29.
Eritremex konowi: Benson 1943 Bull. ent. Res. 34: 44.

malayanus Benson

Malaysia (Kedah).

Tremex malayanus Benson 1943 Bull. ent. Res. 34: 43, 44. ♂. "Malay" (London, ♂) (Forsius' species named).
Tremex thalassus: Hedicke 1938 Hym. Cat. 6: 29 (in part).
Eritremex thalassus: Benson 1943 Bull. ent. Res. 34: 43, 44. ♂. "Malay" (London, ♂) (Forsius' species named).

Eritremex thalassus: Hedicke 1938 Hym. Cat. 6: 29 (in part).

Tremex purpureipennis Westwood 1874 Thesaurus ent. Oxon.: 117. "Malacca (Lorquin)"

Malaysia (Malacca, Sabah).

("In Mus. Jard. des Plantes, Paris (olim Coll. Sichel)"). -- Kirby 1882 List Hym. Brit. Mus. 1: 386. -- Dalla Torre 1894 Cat. Hym. 1: 383. -- Konow 1898 Wien. ent. Ztg. 17: 84, 86, 91 (as syn. of *usignis* Smith).

Exochus purpureipennis: Benson 1943 Bull. ent. Res. 34: 44 (reference of *usignis* by Forsius, 1933, belongs to *purpureipennis*). -- Ma 1949 Notes Ent. chin. 13: 176 (type lost?). -- Ma 1956 Proc. Hawaii. ent. Soc. 16: 91, 92 (in key; possibly a color form of *usignis*).
Exochus usignis: Forsius 1933 Bull. Raffles Mus. 8: 172 ("North Borneo: Bettotan, near Sandakan").

Pygmaeus Ma Philippines.
Exochus pygmaeus Ma 1956 Proc. Hawaii. ent. Soc. 16: 92-94. ♀. Mindoro, Santo Luis, Calapan, 150 ft. (Townes Coll., ♀).

Smith (Cameron) India (3).
Exochus smithi: Cameron 1876 Trans. R. ent. Soc. Lond. 470-471. ♀. "North India" (London, ♀). -- Kirby 1882 List Hym. Brit. Mus. 1: 385, pl. 15, fig. 1 (*smithi*; ♀ type from "East Indies"). -- Dalla Torre 1894 Cat. Hym. 1: 383 (*smithi*; ♀). -- Konow 1898 Wien. ent. Ztg. 17: 85, 86, 91. -- Konow 1905 Z. system. Hymenopt. Dipt. 5: 115, 118-119. -- Konow 1905 Genera Insect. 28: 8. -- Hedrick 1938 Hym. Cat. 6: 30-31. *Exochus smithi*: Benson 1943 Bull. ent. Res. 34: 43 ("Indo-Chinese subregion"). -- Ma 1949 Notes Ent. chin. 13: 176 ("E. Indies"). -- Ma 1956 Proc. Hawaii. ent. Soc. 16: 92 (in key; E. India).

Vitidiceps (Cameron) Malaysia (Sarawak).
Exochus vitidiceps: Cameron 1908 Entomologist 41: 33-34. "w" = d. "Kuching" Borneo (London, ♂). -- Hedrick 1938 Hym. Cat. 6: 31.
Exochus vitidiceps: Benson 1943 Bull. ent. Res. 34: 43, 44 (type is ♂; in key; "may belong in *Exochus*"). -- Ma 1949 Notes Ent. chin. 13: 176, 178 (in *Exochus* "may belong in *Exochus*"). -- Ma 1956 Proc. Hawaii. ent. Soc. 16: 92 (not included in key).

Genus TEREDON Norton
Teredon Norton 1869 Trans. Am. ent. Soc. 2: 366.
Type-species: *Exochus cubensis* Cresson (Designated by Rohwer 1911). -- Ashmead 1898 Can. Ent. 50: 180. -- Rohwer 1911 Tech. Ser. Bur. Ent. U. S. 20: 90 (type-species). -- Bradley 1913 J. Ent. Zool. 5: 6, 8, 27. -- Ma 1949 Notes Ent. chin. 13: 163.
Teredon Kirby 1882 List Hym. Brit. Mus. 1: 386 (unnecessary new name for *Teredon* Norton). -- Konow 1898 Wien. ent. Ztg. 17: 73, 83, 90. -- Konow 1905 Z. system. Hymenopt. Dipt. 5: 124.
Teredon (1) Mocsáry 1886 Rovart. Lap. 3: 67.
Teredon (1) Ross 1937 Illinois Biol. Monogr. 15: 112.

Cubensis (Cresson) Cuba.
Exochus cubensis: Cresson 1865 Proc. ent. Soc. Philad. 4: 2. ♀. "Cuba" (Philadelphia, ♀). -- Cresson 1916 Mem. Am. ent. Soc. 1: 10 (type). -- Smith 1971 Trans. Am. ent. Soc. 97: 530 (type).
Exochus cubensis: Norton 1869 Trans. Am. ent. Soc. 2: 366. -- Dalla Torre 1894 Cat. Hym. 1: 380. -- Bradley 1913 J. Ent. Zool. 5: 27, fig. 15. -- Hedrick 1938 Hym. Cat. 6: 31. -- Benson 1943 Bull. ent. Res. 34: 34. -- Smith 1969 Proc. ent. Soc. Wash. 71: 543.
Exochus cubensis: Kirby 1882 List Hym. Brit. Mus. 1: 386. -- Konow 1898 Wien. ent. Ztg. 17: 83, 90. -- Konow 1905 Genera Insect. 28: 9. -- Konow 1905 Z. system. Hymenopt. Dipt. 5: 124.

latitarsis (Cresson) Cuba.
Exochus latitarsis: Cresson 1865 Proc. ent. Soc. Philad. 4: 3, fig. 1. ♂. "Cuba" (Philadelphia, ♂). -- Cresson 1916 Mem. Am. ent. Soc. 1: 10 (type). -- Smith 1971 Trans. Am. ent. Soc. 97: 530 (type).
Exochus latitarsis: Norton 1869 Trans. Am. ent. Soc. 2: 367. -- Dalla Torre 1894 Cat. Hym. 1: 380. -- Bradley 1913 J. Ent. Zool. 5: 27, fig. 10, 12. -- Hedrick 1938 Hym. Cat. 6: 31. -- Smith 1969 Proc. ent. Soc. Wash. 71: 543.
Exochus latitarsis: Kirby 1882 List Hym. Brit. Mus. 1: 386. -- Konow 1898 Wien. ent. Ztg. 17: 83, 90 (as syn. of *cubensis* Cresson).

Genus TREMEX Jurine

Tremex Jurine 1807 Nouv. Méth. Class. Hym. Dipt. 1: 80-81.

Type-species: *Sixes fuscoarvens* Fabricius (Designated by Latreille 1810). -- Latreille 1810 Consid. Gén. 297, 436. -- Lepeletier & Serville 1828 Ency. Méth. 10: 438, 696-697. -- Leach 1830 (1815) Edin. Ency. 9: 141-142. -- Westwood 1814 Theaenus ent. Oxon.: 116 (syn.: *Xylocerus* Hartig). -- André 1881 Spec. Hym. Eur. 19: 1: 595-560, cat. p. 69-70. -- Mocsáry 1886 Rovart. Lap. 3: 68, 72-73 (Hungary). -- Dalla Torre 1894 Cat. Hym. 1: 380-383. -- Costa 1894 Prospetto Imenopter. Ital. 3: 260. -- Costa 1895 Atti Accad. Sci. fis. mat. Napoli (2) 7: 187-188 (Italy). -- Konow 1896 Wien. ent. Ztg. 15: 41 (in key). -- Konow 1898 Wien. ent. Ztg. 17: 73, 84-87, 90-91 (key to species). -- Konow 1905 Z. system. Hymenopt. Dipt. 5: 114-121 (key to and descriptions of world species). -- Konow 1905 Genera Insect. 28: 8. -- Schmiedeknecht 1907 Hym. Mitteil. 769, 772. -- Bradley 1913 J. Ent. Zool. 5: 6, 8, 25 (N. Amer.). -- Enslin 1917 Tentred. Mitteil. 705, 710-711 (Europe). -- Schmiedeknecht 1930 Hym. Nord-Mittel. 72. -- Hedrick 1930 Tierwelt Mitteil. 5(2): 75. -- Gussakovskij 1935 Fauna USSR, Insects Hym. 2, 1: 47, 66-68, 338, 343-344 (Palearctic). -- Ross 1937 Illinois Biol. Monogr. 15: 112-113. -- Sonan 1938 Trans. nat. Hist. Soc. Formosa 28: 88, 91-94 (Taiwan). -- Takeuchi 1938 Tentredo 2: 192-194 (Japanese Empire). -- Hedrick 1938 Hym. Cat. 6: 25-31. -- Benson 1943 Bull. ent. Res. 34: 35, 41-42 (key to European species). -- Berland 1947 Faune France, 47. Hym. Tentred.: 70-72 (France). -- Ma 1949 Notes Ent. chin. 13: 135-163, 176-178 (key to Old World species). -- Ries 1951 in Muesebeck, *et al.*, Agriculture Monogr. 2: 84-85 (N. Amer. cat.). -- Takeuchi 1955 Akitsu 4: 2-3, 6-8 (Japan). -- Głowacki 1956 Polski Związek ent. 24(2): 13-14 (Poland). -- Takeuchi 1962 Insecta Japon. (2) pt. 4: 2-4, 9-10 (Japan). -- Okutani 1963 Sci. Rep. Hyogo Univ. Agric., Ser. Agric. Biol. 6: 25-26 (larvae, Japan). -- Stroganova 1968 Horntails of Siberia: 79-83 (biol. and distribution of species in Siberia). -- Mocsáry & Zombori 1973 Fauna Hung. XI, Hym. 1, 2: 56-59 (Hungary). -- Verzutskii 1973 Ident. Larvae Swiflies and Woodwasps of Siberia and Far East: 51-52. *Strex* subg. *Xylocerus* Hartig 1857 Fam. Blattwesp. Holzesp. 365-386 (preoccupied by *Xylocerus* Erichson 1836).

Type-species: *Sixes fuscoarvens* Fabricius (Designated by Rohwer 1911). -- Rohwer 1911 Tech. Ser. Bur. Ent. U. S. 20: 92 (type-species).

Xyloceratus Heyden 1868 Berl. ent. Z. 12: 227 (new name for *Xylocerus* Hartig).

Larvae of *Tremex* bore in the wood of Angiospermous trees and are found in most areas of the Northern Hemisphere. Species usually attack dead or dying trees; consequently, they have not been considered to be of economic significance.

a) Chymista Mocsáry

Hungary; Romania.

Tremex magus var. *alchymista* Mocsáry 1886 Rovart. Lap. 3: 73, XI. ♀. Hungary. (Budapest, ♀) ("dun poirier sougelet"). -- Konow 1891 Dt. ent. Z. 34: 211. -- Dalla Torre 1894 Cat. Hym. 1: 383. -- Konow 1898 Wien. ent. Ztg. 17: 85, 87, 91 (♀, ♂). -- Konow 1905 Z. system. Hymenopt. Dipt. 5: 116, 120. -- Konow 1905 Genera Insect. 28: 8. -- Ghigi 1905 Annuaire. Ist. Mus. Zool. Univ. Napoli 1: 24 (Hungary, listed). -- Enslin 1917 Tentred. Mitteil. 711. -- Schmiedeknecht 1930 Hym. Nord-Mittel. 74. -- Berland 1947 Faune France, 47. Hym. Tentred.: 72. -- Negru 1957 Buletin st. Acad. Repub. pop. rom. 9: 215-216, 223, fig. 6b (Romania; biol., host a). -- Precupetu & Negru 1961 Revue Biol., Buc. 6: 82, 86, fig. 1, 2, 15 (Romania; hosts b-g, same hosts as given for *magus*). -- Scobolova-Palade 1968 Trav. Mus. Hist. nat. Antipa 9: 579 (Igeanesti).

Tremex alchymista: Semenov-Tjan-Shanskij & Gussakovskij 1935 Annis Soc. ent. Fr. 104: 126. -- Gussakovskij 1935 Fauna USSR, Insects Hym. 2, 1: 66, 67, 69, 343, 344 (♀, ♂; Hungary). -- Hedrick 1938 Hym. Cat. 6: 25. -- Benson 1943 Bull. ent. Res. 34: 30, 31, 32, 41, 42 (measurements; in key). -- Mocsáry & Zombori 1973 Fauna Hung. XI, Hym. 1, 2: 57 (Hungary). -- Zombori 1973 Mitteil. Mus. Komitates Veszprem 12: 469. -- Zombori 1974 Folia ent. hung. 27: 239 (Carpathian Basin).

Hosts: a) *Quercus cerris*; b) *Quercus* sp., oak; c) *Acer campestre*; d) *Betula* sp., birch; e) *Fagus* sp., beech; f) pear; g) *Carpinus* sp.

apicalis Matsumura

China (Chekiang, Hopei, Hupei, Kiangsu, Szechwan); Japan; Korea.

Tremex apicalis Matsumura 1912 Thous. Insects Japan, suppl., 4: 23-24, pl. 43, fig. 7. ♀, ♂. "Hokkaido (Sapporo, ...) (host d.). -- Yano 1917 Coll.

- Essays Y. Nawa: 121 (Yezo, Honshu). -- Matsumura 1930 Illus. Thous. Insects Japan 2: 10, 62, pl. 6, fig. 7. -- Matsumura 1931 6000 Illus. Insects Jap.-Emp.: 79, fig. 429. -- Matsumura 1932 Illus. Common Insects Japan 4: 35, 50-51, pl. 9, fig. 12 (7 in coniferous trees, *Abies*, *Picea*). -- Yano 1932 in Esaki, Iconogr. Insect. Japon. 2: 474, fig. -- Semenov-Tian-Shanskij & Gussakovskij 1935 Annis Soc. ent. 104: 125-126 (syn.: *propheta* Semenov-Tian-Shanskij; close to *magus*). -- Gussakovskij 1935 Fauna USSR, Insects Hym. 2: 1, 67, 69, 343 (Korea; host d.). -- Hedicke 1938 Hym. Cat. 6: 26. -- Takeuchi 1938 Tentredo 2: 193-194 (host a; conspecific with *panzona* Westwood?). -- Takeuchi 1939 (1938) Notes Ent. chin. 5: 85 (Kiangsu). -- Kono & Sugihara 1939 Insecta matsum. 13: 109 (host b). -- Wu 1941 Cat. Insect. Sin. 6: 35. -- Benson 1943 Bull. ent. Res. 34: 41. -- Takeuchi 1949 Trans. Kansai ent. Soc. 14: 47 (hosts e, f). -- Maa 1949 Notes Ent. chin. 13: 136, 138, 140-144, 176, fig. 175, 181, 186, 192, 198, 205 (9, d; China distribution; host c). -- Miyatake 1950 Trans. Shikoku ent. Soc. 1: 39 (Honshu; Shikoku). -- Shiraki 1952 Cat. Injur. Insects Japan 5: 85 (hosts d, f?). -- Takeuchi 1955 Akitu 4: 2, 6-7 (hosts e, f). -- Zhelokhovtsev, et al. 1955 in Pavlovskii & Shtakel'berg, Forest Pests, Reference Book 1: 294. -- Iwata 1958 Mushi 31: 51, pl. 5, fig. 4 (varieties). -- Takeuchi 1962 Insecta Japon. (2) pt. 4: 2, 3, 9, 10, pl. 1, fig. 1, 2 (hosts e, f). -- Kim 1970 Illus. Ency. Fauna Flora Korea 11, Insecta 3: 133, 136, pl. 1, fig. 18 (Korea). -- Ho-shan 1976 Scientia Sinica 19: 763-765, pl. 11, fig. 1-6; fig. 12, 13 (Hepai Province; broil.; host g). *Tremex propheta* Semenov-Tian-Shanskij 1921 (1917) Russk. ent. Obozr. 17: 93-94. 9. "China septentrionalis" (Leningrad, 9). -- Wu 1941 Cat. Insect. Sin. 6: 36.
- Hosts: a) dead cherry tree; b) *Acer palmatum*; c) *Populus* sp. (? *pyramidalis*); d) *Abies sachalinensis*, sakhalin fir; e) *Prunus* sp., f) *Acer* sp., maple; g) willow.
- atratus** Mocsáry
Viet Nam.
- Tremex atratus* Mocsáry 1904 Annis. hist.-nat. Mus. natn. Hung. 2: 498. 9. "Tonkin: Montes Maous, in altitude 2-3000 pedum" (Budapest, 9). -- Kono 1905 Z. system. Hymenopt. Dipteroi. 5: 115, 117. -- Forsius 1927 Ark. Zool. 19A (10): 2 (9 of *panzona* Westwood). -- Hedicke 1938 Hym. Cat. 6: 26. -- Benson 1943 Bull. ent. Res. 34: 41. -- Maa 1949 Notes Ent. chin. 13: 135, 139, 176.
- chujoi** Sonan
Taiwan.
- Tremex chujoi* Sonan 1938 Trans. nat. Hist. Soc. Formosa 28: 92-93, fig. 5. 9.
- "Hassen-zan" (Fukuoka, 9). -- Takeuchi 1938 Tentredo 2: 193, 194. -- Benson 1943 Bull. ent. Res. 34: 41, 47 (9 of *niger* Sonan?). -- Maa 1949 Notes Ent. chin. 13: 135, 139, 156, 176.
- columbia** (Linnaeus)
Canada (New Brunswick, Nova Scotia, Ontario, Québec); Mexico (?); U.S. (Arizona, California, Colorado, Connecticut, Georgia, Illinois, Indiana, Kansas, Maryland, Massachusetts, Michigan, Missouri, New Jersey, New Mexico, New York, Pennsylvania, Tennessee, Utah, Virginia).
- Sirex columbia* Linnaeus 1763 Amoenitates Academicæ 6: 412 (Cent. Insect. Rar.: 291). 9. "America" (Linn. Soc. Lond., 9). -- Linnaeus 1767 Syst. Nat., Ed. 12, 1(2): 929. -- Fabricius 1775 Syst. Ent.: 325. -- P.L. Müller 1775 Linne: Volut. Natursyst. 2(5): 838. -- Fabricius 1781 Species Insect. 1: 418 (syn.: *penylozianus* DeGeer). -- Fabricius 1787 Mant. Insect. 1: 257. -- Thunberg 1788 Mus. Nat. Acad. Upsal. 6: 84. -- Gmel in 1790 Linn.: Syst. Nat., Ed. 13, 1(5): 2671-2672. -- Christ 1791 Naturg. Insekt.: 417-418. -- Fabricius 1793 Ent. System. 2: 125. -- Fabricius 1804 Syst. Anim. Piezat.: 49. -- Turton 1806 Gen. Syst. Nature 3(2): 427. -- Blanchard 1840 Hist. Nat. Art. 3: 245. -- Costa 1864 Annuar. Ist. Mus. Zool. Univ. Napoli 2: 67 (listed). -- Malaise & Benson 1934 Ark. Zool. 26A: 12 (type 9. Linn. Soc. London, as *Ichneumon columbia*).
- Tremex columbia*: Say 1825 Amer. Ent. 2: 74-75, pl. 32, fig. 3 (9). -- Harris 1827 New England Farmer 5: 167, 175, 186, 211. -- Lepeletier & Serville 1828 Ency. Méth. 10: 438, 697. -- Leach 1830 (1815) Edin. Ency. 9: 142. -- Harris 1841 Rep. Insects Injur. Vegetation Mass.: 389-391 (9, d; hosts i, m). -- Fitch 1857 Trans. N. Y. agric. Soc. 16: 349 (N.Y., host a). -- Fitch 1859 Trans. N.Y. agric. Soc. 18: 791, 841 (hosts b, c). -- Leconte 1859 Writ. T. Say: 74-75. -- Walsh and Riley 1868 Amer. Ent.

- 1: 59 (Wo.; parasites; host b). -- Clementi 1868 Can. Ent. 1: 29 (Ont.; emerged from oak firewood). -- Norton 1869 Trans. Am. ent. Soc. 2: 364 (syn.: *eneticus* Drury, *obsoletus* Say; hosts a, c, i, l). -- Riley 1870 Amer. Ent. 2: 128 (Ill., host e). -- Walker 1873 Can. Ent. 5: 78. -- Dresson 1875 Rep. Geog. Surv. West 100th Merid. 5: 707. -- Thomas 1876 Rep. Ill. St. Ent. 6: 41-42 (Ill., parasites; hosts b, e, i, l). -- Packard 1878 Rep. U.S. Geol. Surv. 10: 531, fig. 9. -- Provancher 1878 Naturaliste can. 10: 231 (Québec). -- Dresson 1880 Trans. Am. ent. Soc. 8: 67 (syn.: *maurus* Westwood, *sericeus* Say, *serpyllus* Brullé). -- Thomas 1881 Rep. Ill. St. Ent. 1880, 10: 71 (larva; hosts a, b, e, i, l). -- Packard 1881 Bull. U.S. Ent. Commis., no. 7: 105-106, fig. 47 (larva; hosts b, c, i, l). -- Harrington 1882 Can. Ent. 14: 225-226 (Ont.; hosts c, t; *columbia* (l)). -- Kirby 1882 List Hym. Brit. Mus. 1: 384 (syn.: *amerzicatus* Christ). -- Saunders 1882 Rep. Fruit-growers Assoc. Ont. 1882: 272, fig. 9. -- Provancher 1883 Petite Faune Ent. Can., Hym.: 242. -- Linfner 1884 County Gentleman 49: 331 (parasite). -- Packard 1890 Rep. U.S. Ent. Commis. 5: 79, 283, 298, 379-381, host c). -- Dimmock 1885 Psyche, Camb. 4: 285-286 (summary of literature; hosts a, b, t, i, l). -- Riley 1888 Insect Life, Wash. 1: 168-179, fig. 39 (adult, larva, pupa; parasites, Mo.; hosts n, o). -- Harrington 1889 Insect Life, Wash. 1: 253 (correction to Riley's article). -- Packard 1890 Rep. U.S. Ent. Commis. 5: 79, 283, 298, 379-381, 484, fig. 141 (larva; hosts b, c, i, l, k). -- Harrington 1893 Trans. R. Soc. Can., section IV: 150 (Ont.; hosts c, f). -- Dalla Torre 1894 Cat. Hym. 1: 380-381 (host n). -- Cooley 1896 Psyche, Camb. 7: 397, pl. 9, fig. 11, 12 (spines on underside of forewing). -- Kono 1898 Wien. ent. Ztg. 17: 85, 87, 91. -- Ashmead 1900 in Smith, Insects New Jers., Rep. New Jers. Dep. Agric. 1899, 27: 599, fig. 282 (each stage; in shade and orchard trees that are weakened or dying). -- Howard 1901 Insect Book: 69-70, fig. 41, pl. 12, fig. 23, 27 (hosts b, c, i, l). -- Kono 1901 Z. system. Hymenopt. Dipteroi. 1: 261 (host r). -- Kono 1905 Z. system. Hymenopt. Dipteroi. 5: 116, 122-123 (hosts a, c, i, n). -- Kono 1905 Genera Insect. 28: 8. -- Felt 1905 Mem. N.Y. St. Mus. nat. Hist. 8: 1: 50, 54, 61-64, 261, fig. 5 (N.Y., hosts a, b, e, t, i, l, p). -- MacGillivray 1910 in Smith, Rep. New Jers. Dep. Agric. 1909: 594 (N.J.). -- Snodgrass 1910 Proc. U.S. natn. Mus. 39: fig. 1. -- Bradley 1913 J. Ent. Zool. 5: 25-27, fig. 3, 9, 11, 36, 38 (key to races). -- MacGillivray 1916 Bull. Conn. St. geol. nat. Hist. Surv. 22: 172 (Conn.; hosts a, b, c, e, t, i, l). -- Fyles 1917 Rep. ent. Soc. Ont. 47: 28 (Ont.; host d; parasite). -- Crampton 1919 Proc. ent. Soc. Wash. 21: 154, 155, fig. 36, 41, 47, 49 (d genitalia). -- Yuasa 1923 Illinois biol. Monogr. 7: 116, fig. 4, 46, 113, 120, 122, 148, 155 (larva, eggs, oviposition; parasitism). -- Blackman & Stage 1924 Tech. Publ. N.Y. St. Coll. For. 17, 24: 156 (N.Y., oviposition; host k). -- Essig 1926 Insects West. N. Amer. 774, fig. 650 (attacks coniferous trees; races). -- Rohrer 1928 in Leonard, Mem. Cornell Univ. agric. Exp. Stn. 101: 875 (race *columbia*; N.Y.). -- Laurent 1931 Ent. News 42: 67 (Pa.; emergence dates; host c). -- Davis 1933 Proc. Indiana Acad. Sci. 42: 219. -- Holway 1935 Psyche, Camb. 42: 17 (structure of pretarsus). -- Herrick 1935 Insect Enemies of Shade Trees: 188-189. -- Ross 1937 Illinois biol. Monogr. 15: 113 (1 Nearctic species). -- Hedicke 1938 Hym. Cat. 6: 26-27. -- Benson 1943 Bull. ent. Res. 34: 30, 31, 32, 41 (measurements, separation from *fluviatilis*). -- Smith 1945 in Smith, et al., Rep. Kans. St. Bd. Agric. 62: 387, fig. 424 (Kans.; hosts b, c, i). -- Beal & Massey 1945 Bull. Duke Univ. School Forestry 10: 70, 155 (host k). -- Fattig 1949 Ent. News 60: 69-71 (Ga.; biol. observations; parasites; host f). -- Maa 1949 Notes Ent. chin. 13: 135, 150, fig. 187, 193, 200, 214 (separation from *fluviatilis*). -- Riles 1951 in Muesebeck, et al., Agriculture Monogr. 2: 84-85 (syn.: *arexus* Bradley; in dead or weakened trees; hosts b, c, i). -- Maxwell 1955 Can. Ent. suppl. 1, 87: 98-99, fig. 129 (Ill.; host c; internal larval anatomy). -- Reizenne 1957 Publs. Dep. Agric. Can. 1009: 41 (Ont.; host pl. -- Middlekauff 1960 Bull. Calif. Insect Surv. 6: 70-71 (distribution; biol. notes; parasites; hosts a, b, c, e-l). -- Stillwell 1964 Can. J. Bot. 42: 493-496. -- Stillwell 1965 Can. Ent. 97: 783-784 (hypopleural organs, tungs association; N.B.; host q). -- Stillwell 1967 Can. Ent. 98: 686-689 (N.B.; biol.; host q).
- Xylocrematium columbia*: Heyden 1868 Berl. ent. Z. 12: 230.
- Sirex penylozianus* DeGeer 1773 Mén. Serv. Hist. Insectes 3: 593, pl. 30, fig. 13. 9. "Pennsylvanie"). -- Göze 1780 DeGeer: Abh. Gesch. Insectes 3: 384, pl. 30, fig. 13. -- Retzius 1783 Gen. Spec. Insect.: 67.
- Sirex atratus* Drury 1773 Illus. Nat. Hist. 2: 72, pl. 38, fig. 2. 9. "New York").
- Sirex americana* Christ 1791 Naturg. Insekt.: 412, 9. "New York").

- Thymus obscurus* Say 1823 West. Quart. Repr. 2: 73. d. "Missouri" (lost). -- Say 1825 Amer. Ent. 2: 74, pl. 32, fig. 2. -- Norton 1869 Trans. Am. ent. Soc. 2: 365 (syn. of *sericeus* ?). -- Leconte 1859 Writ. T. Say: 74, pl. 32, fig. 2.
- Thymus sericeus* Say 1823 West. Quart. Repr. 2: 73. 9. "Missouri" (lost). -- Say 1825 Amer. Ent. 2: 73-74, pl. 32, fig. 1. -- Leconte 1859 Writ. T. Say: 73, pl. 32, fig. 1. -- Norton 1869 Trans. Am. ent. Soc. 2: 366 (syn. of *sericeus* Brullé). -- Kirby 1882 List Hym. Brit. Mus. 1: 384-385. -- Konow 1898 Wien. ent. Ztg. 17: 86, 87, 91.
- Thymus sericeus* Brullé 1846 in Lepelletier, Hist. Nat. Insects, Hym. 4: 645, pl. 45, fig. 2. 9. "Amérique septentrionale" ().
- Thymus maximus* Westwood 1874 Thesaurus ent. Oxon. 116-117, pl. 21 fig. 3. d. "America Septentrionalis" (Oxford, d). -- Kirby 1882 List Hym. Brit. Mus. 1: 385.
- Thymus columba* race *auratus* Bradley 1913 J. Ent. Zool. 5: 26. 9. "Colorado (Clear Creek, Berkeley, Denver, Ft. Collins); New Mexico (Albuquerque); Arizona (Ithaca, 9). -- Essig 1926 Insects West. N. Amer. 774 (Calif.). -- Hedicke 1938 Hym. Cat. 6: 27 (as subspecies).
- Hosts: a) pear; b) *Quercus* sp.; oak; c) *Acer* sp.; maple; d) red maple; e) apple; f) *Fagus* sp.; beech; g) *Betula* sp.; birch; h) box elder; i) *Ulmus* sp.; elm; j) hackberry; k) hickory; l) *Platanus* sp.; sycamore; m) buttonwood; n) *Negundo aceroides*; o) *Celtis occidentalis*; p) *Acer saccharum*, sugar maple; q) *Fagus grandifolia*; r) *Ulmus americana*.
- contractus** Maa
- Thymus contractus* Maa 1949 Notes Ent. chin. 13: 135, 139, 161-163, 177, fig. 185, 195. 9. "Chekiang: Hangchow" (Maa, Coll. "9"). -- Takeuchi 1955 Akitu 4: 2, 7 (Shikoku, Japan). -- Takeuchi 1962 Insecta Japon. (2) pt. 4: 2, 3-4, 10, pl. 1, fig. 4 (Japan).
- fuscicornis** (Fabricius)
- China (Chekiang); Japan.
- Thymus fuscicornis* Fabricius 1787 Ment. Insect. 1: 257. "Habitat Halae Saxorum Dom. Hybern" (Coll. Fabricius). -- Villiers 1789 C. Linn. Ent. 3: 130-131. -- Gmelin 1800 Linn. Syst. Nat., Ed. 13, l. (5): 2672. -- Fabricius 1793 Ent. Syst. 2: 126. -- Ludwig 1799 Autz. Sachsen Insekten: 36. -- Klug 1803 Monogr. Siricum Germ.: 41-42, pl. 5, fig. 5 (syn. of *oemalogagae* Christ). -- Lameck 1817 Hist. Nat. Anim. Sans Vert. Turin 1806 Gen. Syst. Nature 5(2): 427. -- Lameck 1817 Hist. Nat. Anim. Sans Vert. 4: 167. -- Herrich-Schaeffer 1833 Faun. Insect. Germ. tasc. 125, t. 9. -- Lameck 1835 Hist. Nat. Anim. Sans Vert., Ed. 2, 4: 377. -- Hartig 1837 Fam. Blattwesp. Holz-wesp. 387 (subg. *Xylotrupa*). -- Blanchard 1840 Hist. Nat. Anim. Art. 3: 246. -- Ratzeburg 1844 Forstinssek. 3: 144 (in Pappel). -- Eversmann 1847 Byul. mosk. Otschik-lispyt. Prii. 20: 68 (prov. Casanenski; host r.). -- Durour 1854 Ann. Sci. Nat., Zool. (4) 1: 201-236 (anatomy). -- Dahlbom 1859 Annls Soc. ent. Fr. (3) 7: 1xxxiii. -- Sichel 1859 Annls soc. ent. Fr. (3) 7: 1xxxiv. -- Holmgren 1860 K. svenska Vetensk.-Akad. Handl. 3 (10): 10-11 (parasite). -- Kattenbach 1864 Verh. naturh. Ver. preuss. Rheinl. 21: 242. -- Taschenberg 1866 Hym. Deutschl.: 30. -- Thomson 1871 Hym. Scand.
- Austria: China (Chekiang, Fukien, Heilungkiang, Kiangsu, Shensi, Hopei, Kirin, Liang); Czechoslovakia; Denmark; Finland; France; Germany; Hungary; Italy; Japan; Korea; Norway; Poland; Romania; Spain; Sweden; Switzerland; U.S.S.R. (European R.S.F.S.R., Altay, Armenian S.S.R., Buryat A.S.S.R., Chita, Kamchatka, Kurile Islands, Latvian S.S.R., Primorski Krai, Sakhalin, Ukrainian S.S.R., Tomsk).
- 1: 326-327. -- Kattenbach 1874 Pflanzenzenteinde: 559 (host f.). -- Brauns 1881 Ent. Nachr. 7: 74-78. -- Zimsen 1964 Type Material of J.C. Fabricius: 361 (type).
- Urocyon fuscicornis*: Latreille 1805 Hist. Nat. Crust. Insectes 13: 156-157. -- Latreille 1807 Gen. Crust. Insectes 3: 244.
- Thymus fuscicornis*: Jurine 1807 Nouv. Méth. Class. Hym. Dipt. 1: 81. -- Latreille 1810 Consid. Gén.: 436. -- Lepelletier 1828 Ency. Méth. 10: 438, 697. -- Leach 1830 (1815) Edin. Ency. 9: 141. -- André 1881 Spec. Hym. Eur. Alg. 1: 560, pl. 24, fig. 3. cat. p. 69. -- Mocsary 1886 Revart. Lap. 3: 72-73, XII (Hungary). -- Ber-lasse 1890 Bull. Soc. ent. Ital. 22: 183 (Italy). -- Steck 1893 Mitt. Schweiz. ent. Ges. 9: 10 (Switzerland). -- Dalla Torre 1894 Cat. Hym. 1: 381-382. -- Griffini 1895 (1894) Miscra ent. 12: 132 (Piemont). -- Costa 1894 Prospetto Imenotteri Ital. 3: 261 (Italy). -- Costa 1895 Atti Accad. Sci. mat. Napoli (2) 7: 187-188 (Italy). -- Strobl 1895 Wien. ent. Ztg. 14: 279. -- Konow 1898 Wien. ent. Ztg. 17: 85, 87, 91 (syn. of *strobil* 1895 Wien. ent. Ztg. 14: 279. -- Ghigi 1905 Annuaire. Ist. Mus. Zool. Univ. Napoli 1: 24 (Hungary, Italy). -- Konow 1905 Z. system. Hymenopt. Dipteroi. 5: 116, 121 (host a.). -- Konow 1905 Genera Insect. 28: 8. -- Forsius 1906 Medd Soc. Fauna Flora Fenn. 31: 70 (Finland). -- Schmiedeknecht 1907 Hym. Mitteleur.: 771. -- Rudow 1909 Int. ent. Z. 3: 137 (biol. note). -- Haupt 1913 Mitt. ent. Ges. Halle 5/7: 59-60 (Germany). -- Nielsen & Henriksen 1915 Danm. Fauna 18: 18, fig. 23 (Denmark; host f.). -- Enslin 1917 Tenthered. Mitteleur.: 710, 746, 751 (hosts a, f, p). -- Forsius 1919 Acta Soc. Fauna Flora Fenn. 46: 24 (Finland). -- Semenov-Tian-Shanskij 1921 (1917) Russk. ent. Obozr. 17: 95 (Caucasus, Novorossiysk). -- Müller 1922 (1920) Verh. Mitt. siebenb. Ver. Naturw. 52: 20 (Siebenbürgen). -- Bischoff 1925 Abh. math.-naturh. Abt. Bayes Ak. suppl. 7: 336 (Lithuania). -- Wnukowski 1927 Konowia 6: 31 (*Phaetennia* ?). Kor-fes Kornilow. -- Dimitrova 1927 Z. Morph. Okol. Tiere 7: 711-713, 726-728, fig. 13, 14, 24-25 (wings). -- Bischoff 1927 Biol. Hym.: 108, 166, 343-344, fig. 224. -- Dornar-Zapolski 1929 Izv. sev.-kavkaz. Kraev. Sta. Zashch. Rast. 12: 46 (larva, in key; host f.). -- Schmiedeknecht 1930 Hym. Nord-Mitteleur.: 74. -- Hedicke 1930 Tierwelt Mitteleur. 5(2): 75 (hosts b, f, p). -- Dornar-Zapolski 1931 Izv. sev.-kavkaz. Kraev. Sta. Zashch. Rast. 6-7: 44 (listed). -- Dorski 1931 Fragm. Fauna Mus. Zool. Pol. 1: 368 (Poland). -- Yano 1932 in Esaki, Iconogr. Insect. Japon. 2: 473, fig. (Japan). -- Reichert 1933 Ber. naturf. Ges. Lpz.: 72 (Leipzig; hosts b, f, p). -- Conde 1934 Korrespond. Naturf. Riga 61: 145 (Latvia). -- Gussakovskij 1935 Fauna SSR. Insects Hym. 2: 1, 67, 68, 70, 344, fig. 31B, 32 (in key, distribution). -- Heilen 1935 Notul. ent. 15: 25 (Finland). -- Conde 1937 Korrespond. Naturf. Riga 62: 112 (Latvia). -- Hedicke 1938 Hym. Cat. 6: 28-29. -- Takeuchi 1938 Tenthered. 2: 193 (Japan, Korea, Siberia; hosts b, f, p). -- Kato 1938 Tokyo-Tu Pluricus Region Rep. 11: 141 (Mushashi-no). -- Kono & Sugihara 1939 Insecta matsum. 13: 109 (Hokkaido; hosts b, f). -- Franke-Grosman 1939 Z. angew. Ent. 25: 647-680 (fungus association; hosts f, o). -- Gregor & Bata 1940 Sb. ent. Otd. nar. Mus. Praha 18: 209 (Czechoslovakia; hosts b, f, p). -- Benson 1943 Bull. ent. Res. 34: 30, 31, 32, 33, 41, 42, fig. 5, 9, 16 (measurements; separation from *colubus*). -- Kjellander 1945 Opusc. ent. 10: 11-12, 14 (Sweden, distribution). -- Takeuchi 1947 Mush. 18: 57 (China). -- Berland 1947 Faune France. 47. Hym. Tenthered.: 71-72, fig. 73 (France; hosts a, c, d, e, p; parasites). -- Il'yinski 1948 Key to egg clusters, larvae, pupae of insects injurious to forests: 309. -- Maa 1949 Notes Ent. chin. 13: 138, 140, 146-150, 177, fig. 176, 185, 189, 194, 199, 206, 208, 210, 213 (distribution in Asia; hosts j, k). -- Takeuchi 1949 Trans. Kansai ent. Soc. 14: 47 (hosts w, x). -- Miyake 1950 Trans. Shikoku ent. Soc. 1: 38 (Shikoku; Honshu). -- Gusev 1951 Keys Injuries Forest and Ornamental Trees of European USSR: 44, 82, 374, 500 (hosts b, c, f, p). -- Vit6 1952, 1953 Die holzzerst6renden Insekten Mitteleur. 1952: 112, 1953: 47, fig. 121 (hosts b, f, p). -- Tsinovskij 1953 Insects of Latvian SSR, normalis and sawflies: 32 (hosts b, f, p, q, r; Manchuria). -- Ionescu 1954 Bulletin st. Acad. Repub. pop rom. 6: 331 (Romania). -- Zheleznikovskiy, et al. 1955 in Pavlovskiy & Shitakei (eds.), Reference Book 1: 294 (re-ferences to Russian literature). -- Takeuchi 1955 Akitu 4: 3, 7 (Japan; hosts b, f, p, w, y, z). -- Cepalios 1956 Cat. Hym. Esp.: 133 (Spain). -- Strojny 1956 Acta parasit. pol. 4: 819-835 (Poland; host i; galleries of larvae, exits, parasites). -- Glowacki 1956 Polski Zwiasek ent. 24 (2): 13-14 (Poland; hosts b, c, e, p, cc). -- Stroganova 1959 Tezisy dokl. IV, svezda Vses. ent. ob-sha, ch. 11 (west. Siberia). -- Bakke 1960 Norsk ent. Tidsskr. 11: 118 (Norway). -- Kontinien 1960 Suom. El6lm. 9: 69 (Finland; hosts b, f, p). -- Precupetu & Negru 1961 Revue Biol., Buc. 6: 82, 85-86 (Romania; hosts a, f, g, p, q, r). -- Precupetu & Negru 1960 Bulletin inst. Akad. Repub. pop rom. 12: 21-31 (Romania). -- Dadurian 1962 Zool. Pap., Zool. Inst., Akad. Nauk Arm. SSR 12: 65-66 (Armenian SSR; damage, habits, host n). -- Takeuchi 1962 In-

-- Schmiedeknecht 1907 Hym. Mittel EUR.: 772. -- Rudow 1909 1st ent. 2, 3: 138 (host b, j.). -- Enslin 1917 Tenther., Mittel EUR.: 710-711, 742, 744, 746, 750, 755 (hosts b, c, f, h, i). -- Dovan-Zapolskiy 1929 Izv. sev.-kavkaz. Kraev. Sta. Zashch. Rast. 12: 46 (larva, in key). -- Schmiedeknecht 1930 Hym. Nord.-Mittel EUR.: 74. -- Hedlicke 1930 46 (larva, in key). 5 (2): 75 (hosts b, d, f, h, i). -- Gusakovskij 1935 Fauna SSSR, Tierwelt u. Mittel EUR., 5 (2): 75 (hosts b, d, f, h, i). -- Hedlicke 1938 Hym. Cat. 6: 1 insects Hym. 2, 1: 66, 68, 743, 744 (5. Russia; Krim). -- Hedlicke 1938 Hym. Cat. 6: 29-30. -- Zhelokhovtsev 1938 Trudy atirsk. gos. Zapov. 1: 322 (Altai b). -- Grigor', d, f, g, h, i, Berla 1940 Sb. ent. odd. nár. Mus. Prazd 18: 209 (Czechoslovakia; hosts b, d, f, h, i, j). -- Benson 1943 Bull. ent. Res. 34: 30, 31, 32, 41, 42 (measurements, in key). -- Berla 1944 Faune France, 47. Hym. Tenther.: 72 (France; parasite; hosts b, c, e, h, i). -- 11 Vírinsk 1948 key to egg clusters, larvae, pupae of insects injur. to forests: 309. -- Maas 1949 Notes Ent. chin. 13: 136, 138, 177 (in key; 35 Siberia). -- Gusev & Rimskii-Korsakov 1951 Keys to injurias of forest and Ornamental Trees of European USSR: 82, 147, 287 (hosts d, t, h). -- Viták 1952, 1953 Die holzzerstórenden Insekten Mittel-Eur. 1952: 112; 1953: 47, fig. 122 (hosts b, d, t, h, o.). -- Zhelokhovtsev, et al., 1955 in Pavlovskii & Shakhel'berg, Forest Pests, Reference Book 1: 294 (preferences to other Russian literature). -- Glowacki 1955 Polski Zwyzek ent. 24 (2): 14 (Poland; hosts b, d, e, h, o.). -- Negru 1957 Butletin şti. Acad. Repub. pop rom. 9: 211-225, fig. 1-12 (Romania; larva, biol.). -- Precupetu & Negru 1961 Revue Biol., Buc. 6: 82, 86, fig. 1, 2. Zashch. Rast. 8: 11, 12. -- Precupetu & Negru 1961 Vestnik Zool. Zashch. Rast. 8: 11, 12. -- Ermolenko 1967 Mestnik Zool. 6: 55 (Crimea). -- Stroganova Akad. Ukrain. USSR 20: 101. -- Ermolenko 1967 Vestnik Zool. 6: 55 (Crimea). -- Stroganova 1968 Horrtails of Siberia: 80 (Altay; hosts b, d, f, h, k, m, n). -- Scobolova-Palade 1968 Trava. Mus. Hist. nat. Gr. Antipa 9: 379 (Comana). -- Móczár & Zombori 1973 Fauna Hung. XI, Hym. 1, 2: 37, fig. 35 (Hungary). -- Zombori 1974 Folia ent. hung. 27: 239 (Carpathian Basin). -- Zombori 1975 Ber. nat.-med. Ver. Innsbruck 62: 91 (Austria). -- Stroganova 1976 Trudy biol. inst. Sib. otd. Akad. Nauk SSSR 18: 264 (west. Siberia).

Xylobates magus: Kitchner 180 / Cat. Hym., Eur.: 20. --- Nabouk 1913 / Insectes de l'Europe Méridionale: 167.
Perlebre: 24. --- Wachtl 1882 Wien, ent. Ztg. I: 295 (hosts C, e, h).
Xylocentaurus magus: Heyden 1868 Berl., ent. Z. 12: 230. --- Brauns 1879 Arch. Ver-
freunde Naturg. Mecklenb. 32: 76 (listed).

Stenax nigricollis Fabricius 187 Ment. Insect., i: 226, fig. "Material natide javanicae detine-
re." -- Fabricius 1903 Entom. Monographs, 1: 156, fig. "Material natide javanicae detine-
re." -- Karsten 1879 Mus. Leek. Reg. Anim., i: 56, -- Gmelin
Hybern? (Coll. Fabricius, d). -- Karsten 1879 Mus. Leek. Reg. Anim., i: 56, -- Gmelin
1790 Linn. Syst. Nat., Ed. 13: (15): 2673. -- Fabricius 1793 Ent. System., 2: 127-128
-- Ludwig 1799 Aufz. Sachsen Insek., 35. -- Fabricius 1804 Syst. Piezeta., 51. -- Tur-
ton 1806 Gen. Syst. Nature 3(2): 428. -- Zlinzen 1964 Type Material of J. C. Fabricius
361 (Type).

Hosts: a) *Betula alba*; b) *Betula* sp., birch; c) *Fagus sylvatica*; d) *Fagus* sp., beech; e) *Acer campestre*; f) *Acer* sp., maple; g) *Quercus cerris*; h) *Quercus* sp., oak; i) *Carpinus* sp., j) *Carpinus betulus*; k) hornbeam; l) *Ficus communis*; m) pear; n) *Populus* sp., poplar; aspen; o) *Pyrus* sp.

Japan, **Shinano** (Osaka, ♀)
Thynnus nakazeki Takeuchi 1955 Akitsu 4: 3, 7-8, 9. "Shimajima, (from Honshu and Shikoku). -- Takeuchi 1962 Insecta Japon. (2), pt. 4: 3, 4, 10, pl. 1, fig. 6 (Japan). -- Okutani 1967 Jap. J. appl. Ent. Zool. 11: 44 (nost. n.).

Hosts: a) *Acer micranthum*.

Taiwan, niger Sonan

Thaemaeus rugosus Fenn 1938 Trans. nat. Hist. Soc. Formosa 20: 91, fig. 4, ♀, n. n. Taiwan (7,500 feet)" (Taipei, ♂). -- Takeuchi 1938 Tentredo 2: 194 (doubtful species). -- Benson 1943 Bull. ent. Res. 34: 47 (♂ of *chugotus* Fenn ?). -- Ma 1949 Notes Ent. chin. 13: 157-159, 177, fig. 179, 205 (♂ described; additional localities from Taiwan possible syn of *chugotus*).

India; China (Chekiang, Kiangsu).

Zrenner poldanz Westwood 1814 *Thesaurus* *act.* Oxon., 1: 116, pl. 41, fig. 9 a, c, titled "Orientalism" (Oxford, d.). -- Kirby 1882 *List* *hym.* Brit. Mus., 1: 385 (d; Shanghai). -- Della Torre 1894 *Cat.* *Hym.* 1: 383. -- Konow 1898 *Wien*, *ent.* *Ztg.*, 17: 84, 86, 91. -- Konow 1905 *Z. system.* *Hymenopt.*, *Dipterol.*, 5: 115, 118. -- Konow 1905 *Genera* *Insect.*, 26: 8. -- Forsius 1927 *Ark. Zool.*, 19A (10): 2 (Kiangsu; *saxatilis* Semenov-Tian-Shanskij).

and *atraxius* Mosonyi as synonyms). -- Hedlicke 1938 Hym. Cat. 6: 30. -- Takeuchi 1939 Notes Ent. chin. 5: 85 (corresponding with *atraxoides* Matsumura?). -- Wu 1941 Cat. Insect. Sin. 6: 36. -- Benson 1943 Bull. ent. Res. 34: 41, 44 (E. India and China). -- Mac 1949 Notes Ent. chin. 13: 163, 178 ("E. Indies", exact type-locality and distributional range are doubtful).

Philippines, 204109

Thremax trypocollis Westwood 1874 Insectus ent. Oxon., 1: 11, pl. 20, fig. 3. -- *Thremax trypocollis* (L.) (in Mus. Semper, 1861, 6). -- Della Torre sulae Philippi (nests [Digilator in prope Lazon?]) (in Mus. Semper, 1861, 6). -- 1894 Cat. Hym., ii: 363. -- Korow 1898 Wien. ent. Ztg., 17: 84, 86, 91 (a *Thremax*?). -- Ashmead 1904 J. N. Y. ent. Soc., 12: 21. -- Ashmead 1904 Proc. U. S. natn. Mus., 28: 158 (*trypocollis*?). -- Korow 1905 Z. system. Hymenopt. Diptacol., 5: 115, 118. -- Korow 1905 Genera Insect., 28: 8. -- Brown 1906 Philipp. J. Sci., i: 694 (*trypocollis*?). -- Hedlicke 1928 Hym. Cat., 6: 30. -- Benson 1943 Bull. i. ent. Res., 34: 42 (may not be in *Thremacineae*). -- Maa 1949 Notes Ent. chin., 13: 163, 178 (status doubtful; type lost?). -- Baltazar 1966 Pacif. Insects 8: 14 (type = G. Semper collection, Altona, Germany).

U.S.S.R. (Buryat A.S.S.R., Primorski satanas Semenov-T'ian-Shanski)

Phemac batzanas Semenov-Tian-Shanskij 1921 (1917) Russk. ent., Obozr. 17: 92-93, d. n. sibiriae orientalis prov. L'itral'ski: dist. Austro-Ussuriensis: val'lii riv. Or. (Leningrad, d.). — Semenov-Tian-Shanskij & Gusevskovski 1935 Anis. Soc. ent., Fr. 104: 126 (transbaikali: Ust'-Iuruk pres. riv. Tsikhikoi, d. or *apizotica* Motsuura ?). — Gusevskovski 1935 Fauna USSR, Insects Hym. 2, 1: 66; 69, 344. — Florov 1938 Insect pests of coniferous forests in E. Siberia, 1 (transbaikali and Ussuri). — Hym. Cat. 6: 30. — Benson 1945 Bull. ent. Res. 34: 41 (transbaikali and Ussuri). — Hym. 1949 Notes Ent. chin. 13: 135, 178 (transbaikali, Ussuria). — Stroganova 1966 Zhurn. ent. sibirsk. 79, 112-113 (biol., distribution in Siberia; hosts a-c). — Kozhanchikov 1975 Ident. Larvae Woodmoths and Sawflies of Siberia for East? 7, 52.

Hosts: a) Siberian fir; b) fir; c) larch.

sepulcris Maa China (Hopei)
Thymus sepulcris Maa 1949 Notes Ent. chin. 13: 152-155, 178, fig. 177, 201, 228-230, d. "Hopei: Eastern Tomb" ("Maa Coll.", d).

simplicissimus Mae China.
Thymus simplicissimus Mae 1949 Notes Ent. chin. 13: 155, i78, fig. 231-235. d.
 "Chahar: Yangkiaping" (Shanghai, d.).

China (Chekiang, Hopei, Shensi).

Phragma septentrionale Semenov-Il'ian-Shanskii 1921 (1917) Russk. ent. obozr. 1: 42-97.
Phragma septentrionale 1s^a (Lengnau, 92). -- Gusakovskii 1935 Fauna SSSR, Insecta 9.
 "China septentrionale" 1s^a (Lengnau, 92). -- Wu 1941 Cat. Hym. 2: 67, 68, 71, 344 (9, 6). -- Hedcice 1938 Hym. Cat. 6: 30. -- Wu 1941 Cat. Hym. 2: 67, 68, 71, 344 (9, 6). -- Genson 1945 Bull. ent. Res. 34: 30, 31 (measurements). -- Maa 1949 Notes Ent. chin. 13: 149, 178 (Höpel: merges into *phragmotype* and possibly a synonym of it). -- Takeuchi 1948 Mushi 18: 57-58 (Shensi).

temporalis Maa

China (Chekiang).

Thynnus temporalis Maa 1949 Notes Ent. Chin. 13: 151-152, 178, fig. 182, 190, 196.
? "Chkiang: W. T'ien-Mu-Shan" (Shanghai "Mus. Heude" on p. 152; "Maa Collection" on p. 178, ?).

Violaceus Maa
China (Fukien).

Therapsat violaceus Maa 1949 Notes Ent.-chin. 15: 145-146, 1/6, fig. 442-443. ♀.

Family XIPHYDRIIDAE

- Uroceratae: Fallén 1813 Spec. Nov. Hym. Disp. Meth.: 11 (part). -- Zetterstedt 1838 Insect. Lapp. 2: 357 (part). -- Eversmann 1847 Byull. mosk. Obshch. 1spyt. Prir. 20: 65 (part).
- Xiphydriidae: Leach 1819 in Samouelle, Ent. Compend.: 267.
- Siricidae: Billberg 1820 Enum. Insect. Mus. Billberg: 98 (part). -- Hartig 1837 Fam. Blattwesp. Holzesp.: 353-356, 367-370 (part).
- Xiphydriidae: Leach 1830 (1815) Edin. Ency. 9: 141 (part).
- Xiphidriites: Newman 1834 Ent. Mag. 2: 379 (natural order, in sirips Siricina).
- Tenthredinidae: Dahlbom 1835 Conspectus Tenthred., Siricid., Oryssin. Scand.: 16 (part).
- Xiphydriidae: Stephens 1835 Illus. Brit. Ent., Mand. 7: 108 (part). -- Ashmead 1898 Can. Ent. 30: 143, 180. -- MacGillivray 1906 Proc. U.S. natn. Mus. 29: 621, 641, 648 (wings). -- Rohrer 1911 Proc. ent. Soc. Wash. 13: 217. -- Bradley 1913 J. Ent. Zool. 5: 3. -- MacGillivray 1916 Bull. Conn. St. geol. nat. Hist. Surv. 22: 168-169 (northeast. U.S.). -- Crampton 1919 Proc. ent. Soc. Wash. 21: 129-155 (genitalia).
- Yuasa 1923 Illinois biol. Monogr. 7: 112, pl. 1, fig. 3 (biol., larvae). -- Ross 1937 Illinois biol. Monogr. 15: 35, 111 (Nearctic genera). -- Hedicke 1938 Hym. Cat. 7: 1-17 (world cat.). -- Takeuchi 1938 Tenthredo 2: 179-187 (Japanese Empire). -- Benson 1938 Trans. R. ent. Soc. Lond. 87: 358, 359. -- Wu 1941 Cat. Insect. Sin. 4: 35 (China cat.). -- Kjelander 1945 Opusc. ent. 10: 2-5 (Sweden). -- Berland 1947 Faune France. 47. Hym. Tenthred.: 65-69 (France). -- Maa 1949 Notes Ent. chin. 13: 20-76, 164-170 (key to world tribes and genera). -- Benson 1951 Handbk Ident. Br. Insects 6(2a): 16-17 (Britain). -- Ries 1951 in Muesebeck, et al., Agriculture Monogr. 2: 85-86 (N. Amer. cat.). -- Benson 1954 Trans. R. ent. Soc. Lond. 105: 151-162 (world classification). -- Riek 1955 Aust. J. Zool. 3: 281-285 (Australia). -- Max-well 1955 Can. Ent., suppl. 1, 87: 99-100 (internal larval anatomy). -- Arora 1956 Res. Bull. Panjab Univ., Zool. 90: 85-119 (relationship of Symphyta to other orders based on adult external morphology). -- Bakke 1960 Norsk ent. Tidsskr. 11: 117-120 (Norway). -- Kim 1963 Human. and Sci. (Nat. Sci.) Korea Univ. 6: 295 (Korea); Xiphidriinae (!). -- Togashi 1965 Kontyû 33: 231 (rectal papillae). -- Stroganova 1968 Horntails of Siberia: 13-14, 18-43 (biol., distribution in Siberia). -- Wolf 1969 Bull. Rech. Agron. Belg. 4: 162-165 (west. Europe). -- Riek 1970 in C.S.I.R.O., Insects Aust.: 890. -- Togashi 1970 Mush. 43: 8-9 (internal reproductive organs); Verzhurskij 1973 Ident. Larvae Sawflies and Woodwasps of Siberia and Far East: 53-55 (larvae). -- Wéczer & Zombori 1973 Fauna Hung. XI, Hym. 1, 2: 41-46 (Hungary). -- Smith 1976 Trans. Am. ent. Soc. 102: 101-131 (N. Amer.).
- Xiphidriidae: Dahlbom 1836 Prodrum. Hym. Scand.: 8.
- Siricidae: Herrlich-Schaeffer 1840 Nomencl. Ent. 2: 36 (part). -- André 1881 Spec. Hym. Eur. Alg. 1: 560-562, cat. p. 70 (part). -- Vité 1952, 1953 Die holzzerstörenden Insekten Mitteleur. 1952: 109-113; 1953: 47 (part).
- Oryssidae: Costa 1860 Fauna Regno Napoli, pt. IIIa, Oryssidae: 1-3 (part).
- Tenthredinidae: Taschenberg 1866 Hym. Deutschl.: 28-29 (part).
- Siricidae: Snellen van Vollenhoven 1869 Tijdschr. Ent. 12: 111 (part).
- Uroceridae: Norton 1869 Trans. Am. ent. Soc. 2: 352-354 (part). -- Cresson 1880 Trans. Am. ent. Soc. 8: 56 (part). -- Cresson 1887 Trans. Am. ent. Soc., suppl. vol. 172 (part).
- Xiphidriinae: Thomson 1871 Hym. Scand. 1: 14 (tribe of Siricidae).
- Xiphidriinae: Thomson 1871 Hym. Scand. 1: 329-331 (tribe of Siricidae). -- Cameron 1890 Monogr. Brit. Phytophag. Hym. 3: 124-130 (section of Siricidae).
- Xiphidriinae: Kirby 1882 List Hym. Brit. Mus. 1: 368 (subfamily of Siricidae).
- Mocsáry 1886 Rovart. Lap. 3: 38. -- Dalla Torre 1894 Cat. Hym. 1: 394-398. -- Schmiedeknecht 1907 Hym. Mitteleur.: 768, 770. -- Enslin 1917 Tenthred. Mitteleur.: 704-705, 706-709. -- Schmiedeknecht 1930 Hym. Nord-Mitteleur.: 71-72. -- Hedicke 1930 Tierwelt Mitteleur. 5(2): 74. -- Gussakovskij 1935 Fauna SSSR, Insects Hym. 2, 1: 30, 31-46, 333-337 (Palearctic genera and species; keys and descriptions). -- Ceballos 1956 Cat. Hym. Esp.: 133. -- Glowacki 1956 Polski Zwiazek ent 24 (2): 1-20. -- Precupetu & Negru 1961 Revue Biol., Buc. 6: 82, 83-85 (Romania). -- Stroganova 1963 Trudy biol. Inst. Sib. Otd. Akad. Nauk SSSR 10: 26-28 (Siberia).
- Xiphidriini: Konow 1890 Dt. ent. Z. 34: 242 (tribe of Siricidae). -- Konow 1897 Ent. Nachr. 23: 297. -- Konow 1905 Z. system. Hymenopt. Dipterol. 5: 33-60 (key to and descriptions of world genera and species). -- Konow 1905 Genera Insect. 28: 2-5.

Xiphydriinae: Costa 1894 Prospetto Inenotteri Ital. 3: 291-294 (Italy). -- Costa 1895 Atti Accad. Sci. fis. mat., Napoli (2) 7: 188-189 (Italy; part).

The Xiphydriidae are found in all regions of the world except for Africa. The larvae are wood borers and usually attack smaller limbs and branches of broadleaved trees and shrubs, and usually those that are dead or dying. Large limbs and trunks are apparently not attacked. There are a few unconfirmed records of coniferous trees as hosts. Adults commonly emerge in houses from firewood brought in or stored inside, but the xiphydriids pose no threat to structural wood.

In this catalog, 95 species in 22 genera and 2 subfamilies are listed. The Derocytinae are strictly Neotropical and Australian, and the Xiphydriinae are holarctic and Australian. Maa (1949) revised the world genera and erected a number of subfamilies based largely on mouthparts. Benson (1954) proposed a classification of higher categories grouping many of Maa's subfamilies, and this is the classification followed here. The Xiphydriidae are in the superfamily Siricoidea. There are no known fossil forms.

Subfamily XIPHYDRIINAE

Xiphydriinae: Ashmead 1898 Can. Ent. 30: 180 (part). -- Rohrer 1911 Proc. ent. Soc. Wash. 13: 217. -- Maa 1949 Notes Ent. chin. 13: 26-76. -- Benson 1954 Trans. R. ent. Soc. London 105: 157 (synonymy of Maa's subfamilies).

Brachyxiiphiinae: Maa 1949 Notes Ent. chin. 13: 25 (part).

Moaxiiphiinae: Maa 1949 Notes Ent. chin. 13: 29.

Hyperxiiphiinae: Maa 1949 Notes Ent. chin. 13: 31.

Euxiiphiinae: Maa 1949 Notes Ent. chin. 13: 73.

Xiphydriini: Maa 1949 Notes Ent. chin. 13: 63.

Konowiini: Maa 1949 Notes Ent. chin. 13: 63.

Paraxiiphiini: Maa 1949 Notes Ent. chin. 13: 70.

Genus CINGALIXIPHIA Maa

Indoxiphia subg. *Cingalixiphia* Maa 1949 Notes Ent. chin. 13: 67.
Type-species: *Xiphidria striatiformis* Cameron (Original designation).
Cingalixiphia: Benson 1954 Trans. R. ent. Soc. Lond. 105: 161.

Laeviceps (Smith)

Xiphidria (!) *laeviceps* Smith 1861 J. Linn. Soc., Zool. 5: 137. ♀. "Ambyona" (London, 9). -- Westwood 1874 Thesaurus ent. Oxon.: 112. -- Dalla Torre 1894 Cat. Hym. 1: 396 (*laeviceps* (!)). -- Konow 1897 Ent. Nachr. 23: 303, 308, 311. -- Konow 1905 Z. system. Hymenopt. Dipterol. 5: 43, 55. -- Konow 1905 Genera Insect. 28: 4. -- Hedicke 1938 Hym. Cat. 7: 8.

Moaxiphia laeviceps: Maa 1949 Notes Ent. chin. 13: 29.

Cingalixiphia laeviceps: Benson 1954 Trans. R. ent. Soc. Lond. 105: 161 (Buru and Amboina).

striatiformis (Cameron)

Sri Lanka

Xiphidria striatiformis Cameron 1905 Spolia zeylan. 3: 70, pl. A, fig. 1. ♀.
"Pundalu-oya" (London, 9).
Xiphidriola striatiformis: Benson 1935 Zool. Meded., Leiden 18: 171. -- Hedicke 1938 Hym. Cat. 7: 13.

Indoxiphia (*Cingalixiphia*) *striatiformis*: Maa 1949 Notes Ent. chin. 13: 67, 169.

Genus DRYXIPHIA Maa

Dryxiphia Maa 1949 Notes Ent. chin. 13: 61.

Type-species: *Dryxiphia punctatissima* Maa (Original designation).

albiantennata Okutani

Taiwan

Dryxiphia albiantennata Okutani 1966 Kontyû 34: 313-314. ♀. "Sungkang, Formosa" (Fukuoka, 9).

punctissima Maa
Dysiphrissa punctissima Maa 1949 Notes Ent. chin. 13: 61-63, 168, fig. 46, 58, 60, 71, 9. "Formosa: Sinchiku" (Taipei, 9). -- Maa 1950 Q. Ji Taiwan Mus. 3: 20-21 (in key separating *punctissima* and *radiata*).

radiata Maa
Dysiphrissa radiata Maa 1950 Q. Ji Taiwan Mus. 3: 19-20, fig. 7, 9. "Kwangtung: Lung-Tau-Shan, alt. 600 m., Yiu VIII. above Tsokokwan" ("Lingnan N. H. Surv. and Mus.", 9).

Genus EOXIPHIA Maa

Eoxiphia Maa 1949 Notes Ent. chin. 13: 25.
 Type-species: *Xiphidria paragaudis* Konow (Original designation). -- Benson 1954 Trans. R. ent. Soc. Lond. 105: 155 (in Xiphidriinae).

paragaudis (Konow)

Xiphidria paragaudis Konow 1899 Ent. Nachr. 25: 149, 9. "Peru (Callanga, Cuzco)" (Eberswäide, 9). -- Konow 1905 Z. system. Hymenopt. Dipteroi. 5: 44, 55-56. -- Konow 1905 Genera Insect. 28: 4. -- Hedicke 1938 Hym. Cat. 7: 15.
Eoxiphia paragaudis: Maa 1949 Notes Ent. chin. 13: 25.

Genus EUXIPHYDRIA Semenov-Tian-Shanskij & Gussakovskij

Euxiphydria Semenov-Tian-Shanskij & Gussakovskij 1935 Annls Soc. ent. Fr. 104: 117.
 Type-species: *Xiphidria potanini* Jakovlev (Original designation). -- Gussakovskij 1935 Fauna SSSR, Insects Hym. 2, 1: 32, 333. -- Takeuchi 1938 Tentredo 2: 182-185 (Japanese Empire). -- Hedicke 1938 Hym. Cat. 7: 14. -- Maa 1944 Biol. Bull. Fukien Christ. Univ. 4: 37 (key to 4 China spp., some of which are now placed elsewhere). -- Maa 1949 Notes Ent. chin. 13: 73-75, 169 (key to spp.).

potanini (Jakovlev)

China (Kansu, Kirin, Manchuria); Japan; Korea; U.S.S.R. (Amur, Khabarovsk, Kurile Islands, Primorsk) Krav, Sakhalin).

Xiphidria potanini Jakovlev 1892 Hor. Soc. ent. Ross. 26: 15-16, 9. "Chinae prov. Gen-su" (Leningrad, 9). -- Dalla Torre 1894 Cat. Hym. 1: 397 (*potanini*). -- Konow 1897 Ent. Nachr. 23: 302, 306, 311. -- Semenov-Tian-Shanskij 1901 Russk. ent. Obozr. 1: 186. -- Konow 1905 Z. system. Hymenopt. Dipteroi. 5: 58-59. -- Konow 1905 Genera Insect. 28: 4. -- Semenov-Tian-Shanskij 1921 (1917) Russk. ent. Obozr. 17: 83 (syn.: *xyficeps* Mocsáry). -- Takeuchi 1938 Tentredo 1: 54 (Sakhalin) syn.: *xyficeps* Matsumura, *akazui* Matsumura). -- Takeuchi 1937 Akitsu 1: 30 (Kaiba Is., Sakhalin). -- Takeuchi 1938 Tentredo 2: 183 (as syn. of *xyficeps* Mocsáry). -- Wu 1941 Cat. Insect. Sin. 6: 35 (*potanini*).

Euxiphydria potanini: Semenov-Tian-Shanskij & Gussakovskij 1935 Annls Soc. ent. Fr. 104: 117 (Jakovlev's specimen at Leningrad). -- Gussakovskij 1935 Fauna SSSR, Insects Hym. 2, 1: 32, 33, 333. -- Hedicke 1938 Hym. Cat. 7: 14. -- Maa 1949 Notes Ent. chin. 13: 75, 169. -- Watanabe 1956 Insecta matsum. 20: 7 (Hokkaido). -- Krivolusky & Stroganova 1966 in Entomofauna of Forests of Kurile Is., Kamchatka, Magadan: 60 (host a). -- Stroganova 1966 Horfalis of Siberia: 19-22, fig. 4 (biol., distribution in Siberia; host a; *xyficeps* and *potanini* are the same species). -- Verzhitskii 1973 Ident. Larvae Woodwasps and Sawflies of Siberia and Far East: 73 (host a).

Xiphidria xyficeps Mocsáry 1909 Annls. hist.-nat. Mus. natn. hung. 7: 39, 9. "Sibiria orientalis: Ussuri (Kasakowitsch)" (Budapest, 9).

Euxiphydria xyficeps: Semenov-Tian-Shanskij & Gussakovskij 1935 Annls Soc. ent. Fr. 104: 117 (Siberia, Manchuria). -- Gussakovskij 1935 Fauna SSSR, Insects Hym. 2, 1: 32, 33, 334. -- Hedicke 1938 Hym. Cat. 7: 14. -- Takeuchi 1938 Tentredo 2: 183 (Japan, Siberia, Manchuria; syn.: *maida* Zirngiebl). -- Maa 1949 Notes Ent. chin. 13: 75, 169-170, fig. 35, 41, 86-91 (Matrin). -- Miyatake 1950 Trans. Shikoku ent. Soc. 1: 38 (Hokkaido, Honshu, Shikoku). -- Watanabe 1956 Insecta matsum. 20: 7. -- Togashi 1965 Kontyû 33: 231 (rectal palillae). -- Togashi 1965 in Asahina, et al.,

Iconogr. Insect. Japon. 3: 244, fig. 24. -- Togashi 1973 Life Study, Fukui 17: 104 (Korea).

Xiphidria xyficeps Matsumura 1912 Thous. Insects Japan, suppl., 4: 210-211, pl. 54, fig. 22, 9. "Hokkaido (Sapporo)" (Sapporo, 9) (preoccupied by *Xiphidria xyficeps* Mocsáry 1909). -- Yano 1917 Coll. Essays Y. Nawa: 116. -- Matsumura 1927 Insecta matsum. 1: 202-203. -- Matsumura 1930 Illus. Thous. Insects Japan 2: 178, pl. 17, fig. 22 (Honshu). -- Matsumura 1931 6000 Illus. Insects Jap.-Emp. 80, fig. 435. -- Watanabe 1956 Insecta matsum. 20: 6 (type).

Xiphidria akazui Matsumura 1932 Illus. Common Insects Japan 4: 31, 44, pl. 8, fig. 9, 9. "Hokkaido, Honshu" (Sapporo, 9) ("May be a form of *X. xyficeps* Mocsáry").
Xiphidria maida Zirngiebl 1937 Festschr. E. Strand 3: 324-343, 9. "Ostibirien (Ajatchka-Krasnaja bei Chabarowska)" (Wien, 9) (also 18 from "Japan (Nopporo)"). -- Hedicke 1938 Hym. Cat. 7: 9.
Euxiphydria maida: Maa 1949 Notes Ent. chin. 13: 76, 169.

Hosts: a) *Acer mono*.

pseudoruficeps Okutani

Euxiphydria pseudoruficeps Okutani 1966 Kontyû 34: 311-312, 9. "Sungkang, Formosa" (Fukuoka, 9).

subtrifida Maa

Euxiphydria subtrifida Maa 1944 Biol. Bull. Fukien Christ. Univ. 4: 33-35, 6. "Mao-Shan, Lungchien Hsien, SW. Chekiang" ("Maa coll.", 6). -- Maa 1949 Notes Ent. chin. 13: 76, 170.

Genus GENAXIPHIA Maa

Genaxiphia Maa 1949 Notes Ent. chin. 13: 57-58 (key to species).
 Type-species: *Genaxiphia paratella* Maa (Original designation).

hirashimai Okutani

Genaxiphia hirashimai Okutani 1965 Kontyû 33: 74-76, fig. 1-6, 6. "Mt. Yuwandake, Amami-Oshima Is." (Fukuoka, 6).

inomata Maa

Genaxiphia inomata Maa 1949 Notes Ent. chin. 13: 58-59, 168, fig. 22-24, 9. "Szechwan, Mt. Onei, 1800 m" ("Nanking Univ.", 9).

paratella Maa

Genaxiphia paratella Maa 1949 Notes Ent. chin. 13: 59-61, 168, fig. 44, 51, 55, 62, 63, 6. "Chekiang: W. Tien-Mu-Shan" ("Acad. Sinica" [in Shanghai], 6).

Genus GRYPONEURA Benson

Gryponeura Benson 1954 Trans. R. ent. Soc. Lond. 105: 161-162.
 Type-species: *Xiphidria quadrimaculata* Cameron (Original designation).

orientalis (Westwood)

Burma (?); India (Sikkim, Tamil Nadu); Sri Lanka.
Xiphidria orientalis Westwood 1874 Thesaurus ent. Oxon. 112, pl. 20, fig. 10, 9. "India Orientalis, Montibus Neelgherrensibus, necnon in insula Taprobana" (Oxford, 9). -- Dalla Torre 1894 Cat. Hym. 1: 397. -- Konow 1897 Ent. Nachr. 23: 302, 307, 311 (India, "Birm."). -- Konow 1905 Z. system. Hymenopt. Dipteroi. 5: 43, 52-53 (Ost-Indien, Burma, Insel Taprobana). -- Konow 1905 Genera Insect. 28: 4 (India, Burma). -- Rohwer 1915 Rec. Indian Mus. 11: 39 (Kurseong, East Himalayas). -- Hedicke 1938 Hym. Cat. 7: 10.

Platygryponeura orientalis: Takeuchi 1938 Tentredo 3: 185.
Xiphidriola (*Platygryponeura*) *orientalis*: Maa 1949 Notes Ent. chin. 13: 64, 168 (Burma, E. Himalayas).

Gryponeura orientalis: Benson 1954 Trans. R. ent. Soc. Lond. 105: 162 (India: Nilgiri Hills, Ceylon).

quadrinaculata (Cameron)
Xiphidria quadrimaculata Cameron 1899 Mem. Proc. Manch. lit. phil. Soc. 43: 4-6.
 9. "Khasia Hills" (London, 9). -- Konow 1905 Z. system. Hymenopt. Dipt. 5: 45, 54-55. -- Konow 1905 Genera Insect. 28: 4. -- Hedlicke 1938 Hym. Cat. 7: 12. -- Maa 1949 Notes Ent. chin. 13: 76, 170 (unplaced species).
Gryponeura quadrimaculata: Benson 1954 Trans. R. ent. Soc. Lond. 105: 162 (India: Assam: Khasia Hills and Shillong).

Genus HYPERXIPHIA Maa

Hyperxiphia Maa 1949 Notes Ent. chin. 13: 38-39, 165 (key to species).
 Type-species: *Hyperxiphia unguilivaria* Maa (Original designation).

borneensis (Rohwer)
Xiphidria borneensis Rohwer 1921 Proc. U.S. natn. Mus. 59: 87. 9.
 "Sandakan, Borneo" (Washington, 9). -- Hedlicke 1938 Hym. Cat. 7: 7.

Hyperxiphia borneensis: Maa 1949 Notes Ent. chin. 13: 39, 165.
 Indonesia (Java).
Xiphidria borneensis Mocsáry 1891 Természetr. Füzet. 14: 158. 9. "Java" (Budapest, 9).
 -- Dalla Torre 1894 Cat. Hym. 1: 395. -- Konow 1897 Ent. Nachr. 23: 302, 307, 311.
 -- Konow 1905 Z. system. Hymenopt. Dipt. 5: 43, 54. -- Konow 1905 Genera Insect. 28: 4. -- Forsius 1933 Bull. Raffles Mus. 8: 170 (near Sandakan, Borneo [identification questionable]). -- Hedlicke 1938 Hym. Cat. 7: 6.

Hyperxiphia borneensis: Maa 1949 Notes Ent. chin. 13: 40, 165 (Borneo ?).
 Malaysia (Sarawak, Selangor).
Xiphidria erythropus Cameron 1903 J. Straits Brch R. Asiat. Soc. 39: 89-90. 8.
 "Matang, 3600 feet" (London, 8). -- Konow 1905 Z. system. Hymenopt. Dipt. 5: 197-198. -- Konow 1905 Genera Insect. 28: 4. -- Forsius 1933 Bull. Raffles Mus. 8: 170 (9. 8; Malay Peninsula: Selangor, Bukit Kudu, 3,300-3,500 ft.; syn.: *melanopus* Cameron). -- Hedlicke 1938 Hym. Cat. 7: 7.

Hyperxiphia erythropus: Maa 1949 Notes Ent. chin. 13: 39, 165.
Xiphidria melanopus Cameron 1903 J. Straits Brch R. Asiat. Soc. 39: 90. 9.
 "Matang" (London, 9). -- Konow 1905 Z. system. Hymenopt. Dipt. 5: 198. -- Konow 1905 Genera Insect. 28: 4.

heritiera (Rohwer)
Xiphidria heritiera Rohwer 1921 Proc. U.S. natn. Mus. 59: 86-87. 9. 8. "Sunderbans, Bengal, British India" (Washington, 9) (host a). -- Hedlicke 1938 Hym. Cat. 7: 7.
Hyperxiphia heritiera: Maa 1949 Notes Ent. chin. 13: 39, 165.
 Hosts: a) reared from "Sundri" (*Heritiera fomes* Buch (= *myrsin*)).

Japan.
Leucopoda (Takeuchi)
Euraphidria leucopoda Takeuchi 1938 Tenthredo 2: 183-184, fig. 2. 9. "Daisen, Tottori Prefecture, Honshu" (Osaka, 9). -- Togashi 1974 Trans. Shikoku ent. Soc. 12: 14 (Shikoku).

Hyperxiphia leucopoda: Maa 1949 Notes Ent. chin. 13: 39, 165. -- Togashi 1974 Habachia 1: 12.

melanaria (Mocsáry)
Xiphidria melanaria Mocsáry 1904 Annls. hist.-nat. Mus. natn. hung. 2: 497. 9.
 "Tonkin: Montes Mauson, in altitude 2-3000 pedum" (Budapest, 9). -- Konow 1905 Z. system. Hymenopt. Dipt. 5: 32, 200. -- Konow 1905 Genera Insect. 28: 4. -- Hedlicke 1938 Hym. Cat. 7: 9.

Hyperxiphia melanaria: Maa 1949 Notes Ent. chin. 13: 40, 165.
 Japan.
nakanishi (Takeuchi)
Euraphidria leucopoda var. *nakanishi* Takeuchi 1938 Tenthredo 2: 185. 9. "Daisen, Tottori Prefecture, Honshu" (Osaka, 9).

Hyperxiphia nakanishi: Maa 1949 Notes Ent. chin. 13: 40, 165.
 China (Chekiang).
ungulivaria Maa
Hyperxiphia unguilivaria Maa 1949 Notes Ent. chin. 13: 40-42, 165, fig. 11, 12, 15,

28, 29, 31, 36, 37, 42. 9. "Chekiang: W. Tien-Mu-Shan" (Shanghai, 9).

varia (Mocsáry)

Viet Nam.

Xiphidria varia Mocsáry 1904 Annls. hist.-nat. Mus. natn. hung. 2: 497. 9. "Tonkin: Montes Mauson, cum praecedente simul lecta" [*melanaria*] (Budapest, 9). -- Konow 1905 Z. system. Hymenopt. Dipt. 5: 32, 198-199. -- Konow 1905 Genera Insect. 28: 4. -- Hedlicke 1938 Hym. Cat. 7: 12.
Hyperxiphia varia: Maa 1949 Notes Ent. chin. 13: 40, 165.

Genus INDOXIPHIA Maa

Malaysia (Selangor).

Indoxiphia Maa 1949 Notes Ent. chin. 13: 67, 168.
 Type-species: *Xiphidriola quadricincta* Benson (Original designation). -- Benson 1954 Trans. R. ent. Soc. Lond. 105: 160.

Indonesia (Forsius)

Xiphidria indonesica Forsius 1933 Bull. Raffles Mus. 8: 170-172. 9. "Malay Peninsula: Selangor, Gombak Valley" (London, 9).

Xiphidriola indonesica: Benson 1955 Zool. Meded., Leiden 18: 171. -- Hedlicke 1938 Hym. Cat. 7: 13.
Indoxiphia (Indoxiphia) indonesica: Maa 1949 Notes Ent. chin. 13: 67, 168 (Malacca).

quadrinaculata (Benson)

Xiphidriola quadricincta Benson 1935 Zool. Meded., Leiden 18: 168-171. 9.
 "Pekalongan, Pekalongan Province, Central Java" (Leiden, 9). -- Hedlicke 1938 Hym. Cat. 7: 13.

Indoxiphia (Indoxiphia) quadricincta: Maa 1949 Notes Ent. chin. 13: 67, 169.

quadrinaculata (Benson)

Xiphidriola quadricincta Benson 1935 Zool. Meded., Leiden 18: 168-171. 9.
 "Pekalongan, Pekalongan Province, Central Java" (Leiden, 9). -- Hedlicke 1938 Hym. Cat. 7: 13.

Indoxiphia (Indoxiphia) quadricincta: Maa 1949 Notes Ent. chin. 13: 67, 169.

Genus KONOWIA Brauns

Konowia Brauns 1884 Wien. ent. Ztg. 3: 220.

Type-species: *Konowia megapolytaria* Brauns (Monotypic). -- Dalla Torre 1894 Cat. Hym. 1: 398. -- Konow 1897 Ent. Nachr. 23: 297, 309. -- Ashmead 1898 Can. Ent. 30: 180. -- Konow 1905 Z. system. Hymenopt. Dipt. 5: 59. -- Konow 1905 Genera Insect. 28: 5.

-- Enslin 1917 Tenthred. Mittelleur.: 705, 709, fig. 148. -- Schmiedeknecht 1930 Hym. Nord-Mittelleur.: 72. -- Gussakovskij 1935 Fauna SSSR, Insects Hym. 2, 1: 32, 45, 333. -- Ross 1937 Illinois biol. Monogr. 15: 111 (as syn. of *Xiphidria*). -- Hedlicke 1938 Hym. Cat. 7: 13. -- Maa 1949 Notes Ent. chin. 13: 67, 70 (divided into subgenera). -- Benson 1954 Trans. R. ent. Soc. Lond. 105: 157 (syn.: *Pseudoxiphidria* Enslin, *Apoxiphia* Maa). -- Glowacki 1956 Polski Zwiazek ent. 24 (2): 10, 12-13 (Poland). -- Mocsáry & Zombori 1973 Fauna Hung. XI, Hym. 1, 2: 45-46 (Hungary).

Pseudoxiphidria Enslin 1911 Dt. ent. Z.: 177.
 Type-species: *Pseudoxiphidria betulae* Enslin (Original designation). -- Enslin 1917 Tenthred. Mittelleur.: 705, 708, fig. 147. -- Schmiedeknecht 1930 Hym. Nord-Mittelleur.: 72. -- Gussakovskij 1935 Fauna SSSR, Insects Hym. 2, 1: 32, 45, 333. -- Ross 1937 Illinois biol. Monogr. 15: 111 (as syn. of *Xiphidria*). -- Hedlicke 1938 Hym. Cat. 7: 13. -- Glowacki 1956 Polski Zwiazek ent. 24 (2): 9, 12 (Poland). -- Mocsáry & Zombori 1973 Fauna Hung. XI, Hym. 1, 2: 44-45 (Hungary).

Konowia subg. *Pseudoxiphidria*: Maa 1949 Notes Ent. chin. 13: 70.
Konowia subg. *Apoxiphia* Maa 1949 Notes Ent. chin. 13: 67-68.

Type-species: *Konowia (Apoxiphia) bifurcata* Maa (Original designation). -- Belgium; Finland; Germany; Poland; U.S.S.R. (European R.S.F.S.R., Kemerovo, Krasnoyarsk, Tomsk).

Pseudoxiphidria betulae Enslin 1911 Dt. ent. Z.: 178. 9. Germany, Tharandt. ("Forstskademe Tharandt", 9) (biol., host a). -- Enslin 1917 Tenthred. Mittelleur.: 709, 744 (Germany; host a). -- Dovnar-Zapolskii 1929 Izv. sev.-kavkaz. kraev. Sta. Zashch. Rast. 12: 46 (larva; in key). -- Schmiedeknecht 1930 Hym. Nord-Mittelleur.: 72. -- Hedlicke 1938 Tierswelt Mittelleur. 5 (2): 74 (host a). -- Gussakovskij 1935 Fauna SSSR, Insects Hym. 2, 1: 45, 337 (west. Siberia, localities). -- Maréchal &

Darmont 1936 Lambillionea 36: 219 (Belgium). -- Bluthgen 1937 Stettin. ent. Ztg. 98: 238 (Thuringen). -- Hedricke 1938 Hym. Cat. 7: 13. -- Il'yinski 1948 Key to Egg Clusters, Larvae, and Pupae of Insects Injurious to Forests: 308. -- Znielokhovtsev, et al. 1955 in Pavlovskii & Shtrakei'berg. Forest Pests, Reference Book 1: 291. -- Glowacki 1956 Polski Zwiazek ent. 24(2): 12 (Poland; host a). -- Shnasky 1967 Zool. Zh. 46: 1109; host a). -- Wolf 1969 Bull. Gamboux Rech. Agron. (n.s.): 4: 162, 164 (Belgium). -- Kontunemi 1969 Suom. hyönt. Aikak. 49: 287 (Finland). -- Móczár & Zombori 1973 Fauna Hung. XI, Hym. 1, 2: 45 (in key).

Konowia betulae: Maa 1949 Notes Ent. chin. 13: 169, 169 (type at Sachsen, Forest-akademij, Tharandt). -- Stroganova 1968 Horntails of Siberia: 23 (host a, in wood of dead branches; biol. and distribution in Siberia). -- Verzhutskii 1973 Ident. Larvae of Woodwasp and Sawflies of Siberia and Far East: 53, 55 (larva). -- Stroganova 1976 Trudy biol. inst. Sib. Otd. Akad. Nauk SSSR 18: 259, 264 (west, Siberia).

Hosts: a) *Betula* sp., birch.

bifurcata Maa

Konowia (Apocrypta) bifurcata Maa 1949 Notes Ent. chin. 13: 68-69, fig. 45, 79, 81, d. "Europe" (Taipei, d). -- Zombori 1969 Acta zool. hung. 5: 247-249 (probably d of *Xiphiidra picta* Konow).

guntionensis Zombori

Konowia guntionensis Zombori 1969 Acta zool. hung. 15: 249-253, fig. 2, g. "Koszegi hegyek" (Budapest, g). -- Móczár & Zombori 1973 Fauna Hung. XI, Hym. 1, 2: 46 (Hungary). -- Zombori 1974 Folia ent. hung. 27: 239 (Carpathian Basin).

markewitschi (Ermolenko), new comb.

Pseudoxiphiidra markewitschi Ermolenko 1960 in Flora i Fauna Karpat. Izd. Akad. Nauk SSSR: 205-207, fig. 1, g. "Ukiliin Svalyavskogo raiona Zakarpatskoi oblasti" (Kiev, Folia ent. hung. 27: 239 (Carpathian Basin)).

megapolitana Brauns

Austria; Finland; Germany; Hungary; Poland; U.S.S.R. (European R.S.F.S.R., White Russian S.S.R.); Yugoslavia. *Konowia megapolitana* Brauns 1884 Wien. ent. Ztg. 3: 220-222. "Streilitz (Necklen-Konow 1897 Ent. Nachr. 23: 310, 311. -- Dalla Torre 1894 Cat. Hym. 1: 398. -- Obzor. 1: 80-82. -- Konow 1905 Z. system. Hymenopt. Dipteroi. 5: 59-60. -- Konow 1905 Genera Insect. 28: 5. -- Schmiedeknecht 1907 Hym. Mitteleur.: 770. -- Haupt 1913 3: 198 (Austria). -- Enslin 1917 Tentred. Mitteleur.: 709 (g, d; distribution). -- Heilgen 1925 Medon Soc. Fauna Flora terr. 50: 2 (Finland). -- Schmiedeknecht 1930 Hym. Nord-Mitteleur.: 72. -- Hedricke 1930 Tierwelt Mitteleur. 5(2): 74. -- Forsius 1935 Soc. ent. Fr. 104: 121-122 (localities in U.S.S.R., hosts a, b). -- Gussakovskij 1935 Annls Fauna SSSR, Insects Hym. 2, 1: 36, 337 (g, d; distribution). -- Hedricke 1938 Hym. Cat. 7: 13. -- Maa 1949 Notes Ent. chin. 13: 67. -- Glowacki 1956 Polski Zwiazek ent. 24(2): 12-13 (Poland). -- Kontunemi 1960 Suom. Elgin. 9: 68 (Finland). -- Zombori 1969 Acta zool. hung. 5: 247-253 (distribution, compared with other species). -- Móczár & Zombori 1973 Fauna Hung. XI, Hym. 1, 2: 46 (Hungary). -- Verzhutskii 1973 Ident. Larvae of Woodwasp and Sawflies of Siberia and Far East: 55. -- Zombori 1974 Folia ent. hung. 27: 239 (Carpathian Basin). -- Huflejt 1976 Fragm. fauna Polska Akad. Nauk 21: 97 (Poland; host c).

Hosts: a) *Rubus idaeus*; b) *Alnus incana*; c) *Betula* sp.

yasumatsui (Togashi), new comb.

Pseudoxiphiidra yasumatsui Togashi 1972 Mush. 46: 55-56, g. "Mt. Hiko, Fukuoka Pref." (author's coll., g).

Genus MOAXIPHIA Maa
Moaxiphia Maa 1949 Notes Ent. chin. 13: 29, fig. 10, 14, 16, 25, 30.
Type-species: *Derecynta deceptus* Smith (Original designation).

decepta (Smith)

Derecynta deceptus Smith 1876 Trans. R. ent. Soc. Lond.: 474, pl. 4, fig. 6, g. Canterbury Province, South Island, New Zealand. (London, g). -- Hutton 1881 Cat. N. Z. Dipt., Orthop., Hymenopt.: 131 (redescription).

Xiphiidra decepta: Cameron 1880 Entomologist's mon. Mag. 16: 221. -- Konow 1897 Ent. Nachr. 23: 302, 306, 311. -- Konow 1905 Z. system. Hymenopt. Dipteroi. 5: 43, 52. -- Konow 1905 Genera Insect. 28: 4. -- Tillyard 1926 Insects Aust. and N. Z.: 265, fig. 114. -- Hedricke 1938 Hym. Cat. 7: 6-7. -- Valentin 1950 N. Z. Ent. 4: 53 (host a).

Brachymeria deceptus: Kirby 1881 Trans. R. ent. Soc. Lond.: 49 (syn.: *flavopicta* Smith). -- Kirby 1882 List Hym. Brit. Mus. 1: 369-370, pl. 14, fig. 16 (g), fig. 10 (d). -- Dalla Torre 1894 Cat. Hym. 1: 398.

Moaxiphia decepta: Maa 1949 Notes Ent. chin. 13: 29. *Xiphiidra flavo-picta* Smith 1878 Trans. R. ent. Soc. Lond.: 1-2, d. Otago, New Zealand. (London, d). -- Hutton 1881 Cat. N. Z. Dipt., Orthop., Hymenopt.: 131 (redescription).

Hosts: a) *Corymbia robusta*.

duniana (Gourlay)

New Zealand.

Xiphiidra duniana Gourlay 1927 Trans. Proc. N. Z. Inst. 58: 72, fig. 1, 2, g. "Third house" Dun Mountain, 2,000 feet" (Gawthron Inst., g). -- Hedricke 1938 Hym. Cat. 7: 7. -- Valentin 1970 N. Z. Ent. 4: 53 (hosts a, b; larvae feed in twigs and stems). -- Milligan 1974 Proc. N. Z. ecol. Soc. 21: 36 (*Xiphiidra duniana* (1); host c).

Moaxiphia duniana: Maa 1949 Notes Ent. chin. 13: 29.

Hosts: a) *Nothofagus fusca*; b) *Nothofagus menziesii*; c) *Nothofagus* sp., dead twigs and small branches.

Genus NASOXIPHIA Maa

Nasoxiphia Maa 1949 Notes Ent. chin. 13: 26, 164.

Type-species: *Xiphiidra jakovlevi* Semenov-Tian-Shanskij & Gussakovskij (Original designation). -- Benson 1954 Trans. R. ent. Soc. Lond. 105: 153, 157 (in Xiphidriinae).

Jakovlevi (Semenov-Tian-Shanskij & Gussakovskij)

China (Kirin); U.S.S.R. (Kurile Islands, Primorski Krai).

Xiphiidra jakovlevi Semenov-Tian-Shanskij & Gussakovskij 1935 Annls Soc. ent. Fr. 104: 121, g. "Districtu Usuriensi Sibiriae orientalis: sinus Vladimiri Monach pr. Vladivostok" (Leningrad, g). -- Gussakovskij 1935 Fauna SSSR, Insects Hym. 2, 1: 34, 39, 334. -- Hedricke 1938 Hym. Cat. 7: 7-8. -- Krivolutskaia & Stroganova 1966 in Entomofauna of Forests of Kurile Is., Kamchatka, Magadan: 61. -- Stroganova 1968 Horntails of Siberia: 33-34, 112-113 (hosts a, b). -- Verzhutskii 1973 Ident. Larvae of Sawflies and Horntails of Siberia and the Far East: 54. *Nasoxiphia jakovlevi*: Maa 1949 Notes Ent. chin. 13: 26-29, 164, fig. 1-7 (China: Kirin).

Hosts: a) birch; b) alder.

Genus PALYXIPHIA Maa

Palyxiphia Maa 1949 Notes Ent. chin. 13: 31-32, 165 (key to spp.).

Type-species: *Xiphiidra formosana* Enslin (Original designation).

flavicornis (Rohwer)

Malaysia (Sabah).

Xiphiidra flavicornis Rohwer 1921 Proc. U. S. natn. Mus. 59: 87, g, d. "Sandakan, Borneo" (Washington, g). -- Forsius 1935 Bull. Raffles Mus. 8: 170 (North Borneo). -- Hedricke 1938 Hym. Cat. 7: 7.

Palyxiphia flavicornis: Maa 1949 Notes Ent. chin. 13: 33, 165.

formosana (Enslin)

Xiphydria formosana Enslin 1911 Dt. ent. Natn-Biblthk 2: 182. ♂. "Fuhoshoh". -- Rohwer 1916 Ent. Mitt., Suppl. Ent. 5: 82 (syn. *sauterzi* Mocsáry). -- Takeuchi 1923 Trans. nat. Hist. Soc. Formosa 13: 40. -- Takeuchi 1938 Tenthredo 1: 180, 182. -- Hedicke 1938 Hym. Cat. 7: 7. *Platyxyphidia formosana*: Maa 1949 Notes Ent. chin. 13: 36-38, 165, fig. 9, 13, 17, 26, 27, 32, 38 (type at Eberswalde?). *Euaxiphydria sauterzi* Mocsáry 1912 Rovart. Lap. 19: 131-132. ♂. "Insula Formosa, ad Fuhoshoh" (Budapest, ♂).

funicornis (Konow)

Xiphydria funicornis Konow 1897 Ent. Nachr. 23: 302, 305-306, 311. ♀. "Birmanian (Chan-Yona)" (Eberswalde, ♀). -- Konow 1905 Z. system. Hymenopt. Dipt. 5: 43, 51-52. -- Konow 1905 Genera Insect. 28: 4. -- Hedicke 1938 Hym. Cat. 7: 7. *Palpaxiphidia funicornis*: Maa 1949 Notes Ent. chin. 13: 33, 165.

humeralis Maa

Palpaxiphidia humeralis Maa 1949 Notes Ent. chin. 13: 33-36, 165, fig. 18-20. ♂. "Fukien: Tzu-Shui, nr. Ta-Chu-Lan" (Maa coll., ♂).

machilivora Togashi

Palpaxiphidia machilivora Togashi 1975 Kontyû 43: 327-329. ♀. "Mt. Omoto in Ishigaki Island" (Fukuoka, ♀) (host a).

Hosts: a) *Machilus thunbergi* (emerged from branch).

pyrura (Rohwer)

Xiphydria pyrura Rohwer 1921 Proc. U.S. natn. Mus. 59: 88-89. ♂. "Mount Makiling, Luzon, Philippine Islands" (Washington, ♂). -- Hedicke 1938 Hym. Cat. 7: 12. *Palpaxiphidia pyrura*: Maa 1949 Notes Ent. chin. 13: 31, 165. -- Baltazar 1966 Pacif. Insects Monogr. 8: 14.

yamamotoi Okutani

Palpaxiphidia yamamotoi Okutani 1958 Mushi 32: 143-144. ♂. "Japan (Honshu): Hyonosen in Tazima" (). -- Togashi 1963 Kontyû 31: 188 (Kyushu).

Genus PARAXIPHIA Maa

Paraxiphidia Maa 1949 Notes Ent. chin. 13: 70-71, 169. Type-species: *Xiphydria insularis* Rohwer (Original designation).

insularis (Rohwer)

Xiphydria insularis Rohwer 1916 Ent. Mitt., Suppl. Ent. 5: 82-83. ♂. "Hoozan, Formosa" (Eberswalde, ♂). -- Takeuchi 1923 Trans. nat. Hist. Soc. Formosa 13: 40. -- Takeuchi 1938 Tenthredo 1: 180, 182. -- Hedicke 1938 Hym. Cat. 7: 7. *Paraxiphidia insularis*: Maa 1949 Notes Ent. chin. 13: 71-73, 169, fig. 48, 53, 57, 83-85 (♀ allotype from Formosa).

Genus PLATYXIPHYDRIA Takeuchi

Platyxyphidia Takeuchi 1938 Tenthredo 2: 185.

Type-species: *Platyxyphidia taphiiformis* Takeuchi (Original designation). -- Benson 1954 Trans. R. ent. Soc. Lond. 105: 157. -- Togashi 1963 Kontyû 31: 86-90 (Japanese species).

Xiphydriola subg. *Platyxyphidia*: Maa 1949 Notes Ent. chin. 13: 63-65 (key to species).

antennata (Maa)

Xiphydriola (Platyxyphidia) antennata Maa 1949 Notes Ent. chin. 13: 65-66, 168, fig. 49, 52, 56, 78, 80, 82. ♀. "Formosa: Rikiri, nr. Koshun" (Taipei, ♀).

flavipes Togashi

Platyxyphidia flavipes Togashi 1963 Kontyû 31: 89-90, fig. 17-21. ♂. "Mt. Japan."

Shirataka, Ishikawa Pref., Honshu" (author's coll., ♂). -- Togashi 1972 Mushi 46: 55 (Mt. Hiko, Kyushu). -- Togashi 1974 Trans. Shikoku ent. Soc. 12: 14 (Shikoku).

miyakei Togashi

Platyxyphidia miyakei Togashi 1963 Kontyû 31: 87-89, fig. 1-16. ♀, ♂. "Mt. Kumado, Fukuoka Pref., Kyushu" (author's coll., ♀) (also from Mt. Shirataka, Ishikawa Pref., Honshu). -- Togashi 1965 In Asahina, et al., Iconogr. Insect. Japon. 3: 244, fig. 23. -- Togashi 1974 Trans. Shikoku ent. Soc. 12: 14 (Shikoku).

taphiiformis Takeuchi

Platyxyphidia taphiiformis Takeuchi 1938 Tenthredo 2: 185-186, fig. 3. ♀. "Ochiai, Higashi-Iwayama-Mura, Tokushima Prefecture, Shikoku" (Osaka, ♀). -- Miyatake 1950 Trans. Shikoku ent. Soc. 1: 38 (Shikoku). -- Togashi 1963 Kontyû 31: 87 (Honshu and Shikoku). -- Togashi 1972 Mushi 46: 55 (Mt. Hiko, Kyushu). -- Togashi 1974 Habachia 1: 12. *Xiphydriola (Platyxyphidia) taphiiformis*: Maa 1949 Notes Ent. chin. 13: 64, 168. -- Iwata 1958 Mushi 31: 50, pl. 5, fig. 2 (ovaries).

Genus RHYSACEPHALA Benson

Rhysacephala Benson 1954 Trans. R. ent. Soc. Lond. 105: 158-159. Type-species: *Xiphydria obtusiventris* Rohwer (Original designation). -- Riek 1955 Aust. J. Zool. 3: 283-285 (Australian spp.).

leai (Forsius)

Xiphydria leai Forsius 1927 Rec. S. Aust. Mus. 3: 286. ♂. "Queensl.: Cairns district" (Adelaide, ♂). -- Hedicke 1938 Hym. Cat. 7: 8. *Moaxiphia leai*: Maa 1949 Notes Ent. chin. 13: 29. *Rhysacephala leai*: Benson 1954 Trans. R. ent. Soc. Lond. 105: 159. -- Riek 1955 Aust. J. Zool. 3: 283-284 (redescribed).

obtusiventris (Rohwer)

Xiphydria obtusiventris Rohwer 1918 Ann. Mag. nat. Hist. (9) 2: 433-434. ♀. "Kuranda, N. Queensland, Australia, 1100 ft." (London, ♀). -- Morice 1919 Trans. R. ent. Soc. Lond. 1918: 253. -- Hedicke 1938 Hym. Cat. 7: 10.

Moaxiphia obtusiventris: Maa 1949 Notes Ent. chin. 13: 29.

Rhysacephala obtusiventris: Benson 1954 Trans. R. ent. Soc. Lond. 105: 159. -- Riek 1955 Aust. J. Zool. 3: 284 (♀ from Mt. Glorious, Queensland described).

rufipes (Smith)

Xiphydria (t) rufipes Smith 1859 J. Proc. Linn. Soc. Lond., Zool. 3: 177-178. ♀. "Aru" (London, ♀). -- Westwood 1874 Thesaurus ent. Oxon. 112. -- Daila Torre 1894 Cat. Hym. 1: 397. -- Konow 1897 Ent. Nachr. 23: 301, 303, 310. -- Konow 1905 Z. system. Hymenopt. Dipt. 5: 42, 44. -- Konow 1905 Genera Insect. 28: 4. -- Hedicke 1938 Hym. Cat. 7: 12.

Moaxiphia rufipes: Maa 1949 Notes Ent. chin. 13: 29.

Rhysacephala rufipes: Benson 1954 Trans. R. ent. Soc. Lond. 105: 159, 160.

testacea (Mocsáry)

Xiphydria testacea Mocsáry 1900 Természetr. Füzet. 23: 127. ♂. "Nova-Guinea-Germania" (Budapest, ♂). -- Konow 1905 Z. system. Hymenopt. Dipt. 5: 199. -- Konow 1905 Genera Insect. 28: 4. -- Hedicke 1938 Hym. Cat. 7: 12.

Moaxiphia testacea: Maa 1949 Notes Ent. chin. 13: 29.

Rhysacephala testacea: Benson 1954 Trans. R. ent. Soc. Lond. 105: 160 (probably in *Rhysacephala*).

wilsoni Benson

Rhysacephala wilsoni Benson 1954 Trans. R. ent. Soc. Lond. 105: 159-160. ♀. "Victoria: Ringwood" ("Wilson's Collection", ♀). -- Riek 1955 Aust. J. Zool. 3: 284-285, fig. 1 (♀ redescribed; other Victoria localities; "running rapidly on foliage").

Genus XIPHYDIA Benson

Xiphidaphora Benson 1954 Trans. R. ent. Soc. Lond. 105: 161.
Type-species: *Xiphidaphora erebus* Benson (Original designation).

erebus Benson

Viet Nam.

Xiphidaphora erebus Benson 1954 Trans. R. ent. Soc. Lond. 105: 161. ♀. "Indo China: Tonkin, Chapai" (London, ♀).

Genus XIPHYDIA Latreille

Xiphidaphora Latreille 1802 Hist. Nat. Crust. Insectes 3: 304.

Type-species: *Ichneumon camezius* Linnaeus (Monotypic). -- Fabricius 1804 Syst. Plezest. 52-53. -- Latreille 1805 Hist. Nat. Crust. Insectes 13: 145-146 (syn.: *Hypocnortus* Klug, *Urocaerus* Jurine). -- Latreille 1810 Consid. Gén. 296, 426. -- Dumeril 1823 Consid. Gén. Classe Insectes: 214. -- Leach 1830 (1815) Edin. Ency. 9: 141. -- Stephens 1835 Illus. Brit. Ent., Mand. 7: 110. -- Latreille 1837 in Cuvier, Anim. Kingdom 4: 214. -- Hartig 1837 Fam. Blattwesp. Holzesp.: 367-370. -- Zetterstedt 1838 Insect. Lapp.: 357. -- Westwood 1845 Trans. R. ent. Soc. Lond. 4: 122-136 (economy and relations of *Xiphidaphora*). -- Costa 1860 Fauna Regno Napoli, pt. 11a, Orysidea: 2-3 (1 sp.). -- Taschenberg 1866 Hym. Deutschl.: 28-29. -- Laboulbène 1878 (1877) Annls Soc. ent. Fr. (5) 7: 417 (parasites). -- André 1881 Spec. Hym. Eur. 119, 1: 560-562; cat. p. 70. -- Kirby 1882 List Hym. Brit. Mus. 1: 370 (syn.: *Xiphidaphora* Provancher). -- Mocsary 1886 Rovart. Lep. 3: 40-42 (Hungary). -- Cameron 1890 Monogr. Brit. Phytophag. Hym. 3: 126-130 (Britannia). -- Harrington 1893 Trans. R. Soc. Can. (Italy). -- Costa 1895 Atti Accad. Sci. fis. mat., Napoli (2) 7: 188-189 (Italy). -- Konow 1897 Ent. Nachr. 23: 297, 500-511 (key to world species). -- Konow 1905 Z. system. Hymenopt. Dipteroi. 5: 41-59 (key to and descriptions of world species). -- Konow 1905 Genera Insect. 28: 3-4. -- MacGillivray 1916 Bull. Conn. St. geol. nat. Hist. Surv. 22: 168-169 (northeast, U.S.). -- Enslin 1917 Tentred. Mittelnur. 704, 706-708 (Europe). -- Rohwer 1918 Ent. News 29: 105-111 (Nearctic). -- Yuasa 1923 Illinois Biol. Monogr. 7: 113-114, fig. 5, 45, 107, 110 (larvae). -- Schmiedeknecht 1930 Hym. Nord-Mittelur. 72. -- Hedrick 1930 Tierwelt Mitteleur. 5(2): 75. -- Gussakovskij 1935 Fauna USSR, Insecta Hym. 2: 1: 32, 34-36, 334-337 (key to and descriptions of Palearctic species). -- Ross 1937 Illinois Biol. Monogr. 15: 111. -- Hedrick 1938 Hym. Cat. 7: 4-13 (world cat.). -- Takeuchi 1938 Tentred. 2: 179-182 (Japanese Empire). -- Bertrand 1947 Faune France. 47. Hym. Tentred.: 65-69 (France). -- Mae 1949 Notes Ent. chin. 13: 42-57, 166-168 (revision of Gussakovskij's key; cat. of Asiatic species). -- Rles 1951 in Muesebeck, et al., Agriculture Monogr. 2: 85-86 (N. Amer. cat.). -- Benson 1951 Handbk Ident. Br. Insects 6(2a): 17 (Britain). -- Watanabe 1956 Insecta matsum. 20: 9 (Japan). -- Glowacki 1956 Polski Związek ent. Rasmitsyn 1968 Ent. Obozr. 47: 66-69 (evolution of function of ovipositor in relation to origin of parasitism). -- Mocsary & Zombor 1973 Fauna Hung. XI, Hym. 1, 2: 42-44 (Hungary). -- Smith 1976 Trans. Am. ent. Soc. 102: 101-131 (Nearctic).
Urocaerus Jurine 1801 Erlangen Litt. Ztg. 1: 163 (suppressed, 1936, 12th Internat. Congr. Zool., G. R. 5: 185; preoccupied by *Urocaerus* Geoffroy 1785). -- Jurine 1807 Nouv. Méth. Class. Hym. Dipt. 1: 73-75.
Hypocnortus Klug 1803 Monogr. Siricum Germ.: 11-14.
Type-species: *Ichneumon camezius* Linnaeus (Designated by Rohwer 1911). -- Rohwer 1911 Tech. Ser. Bur. Ent. U.S. 20: 81 (Type-species).
Xiphidaphora Panzer 1806 Krit. Rev. Insekt. Deutschl. 2: 56-57 (and some subsequent authors; variant spelling).
Xiphidaphora Fallén 1813 Spec. Nov. Hym. Disp. Meth.: 11-12 (emendation?).
Xiphidaphora Lamarck 1817 Hist. Nat. Anim. Sans Vert. 4: 169 (and some subsequent authors; variant spelling).
Hypocnortus Billberg 1820 Enum. Insect. Mus. Billberg: 98 (misspelling?; competes with *Hypocnortus* Wollaston 1873 [Coleoptera]). -- Enslin 1917 Tentred. Mittelnur. 704, 706.
Xiphidaphora Lepeletier 1823 Monogr. Tentred.: 2 (and some subsequent authors; variant spelling).
Xiphidaphora Norton 1869 Trans. Am. ent. Soc. 2: 352 (variant spelling).

Xiphidaphora Provancher 1875 Naturaliste can. 7: 374.
Type-species: *Xiphidaphora canadensis* Provancher (Monotypic). -- Provancher 1883 Petite Faune Ent. Can., Hym.: 237, 243.

Xiphidaphora is the largest genus of Xiphidaphidae and is holarctic in distribution. Various spellings of *Xiphidaphora* have appeared in the literature, mainly the first "m" and the "y" have been transposed or substituted for one another. Most of these are apparently misspellings. I have seen no indications of intentional emendations.

abdominalis Say

Canada (Ontario); U.S. (Connecticut, Iowa, Maryland, Michigan, New Jersey, New York, Ohio, Pennsylvania, Wisconsin).

Xiphidaphora abdominalis Say 1824 in Keating, Narr. Long's Exped. 2: Appendix: 311.
♀. "Pennsylvania" (lost; neotype by Rohwer 1918, Washington, ♀). -- Lecomte 1859 Writ. T. Say 1: 208. -- Norton 1869 Trans. Am. ent. Soc. 2: 354 (*Xiphidaphora*). -- Dalla Torre 1894 Cat. Hym. 1: 394. -- Konow 1897 Ent. Nachr. 23: 303, 308, 311 (syn.: *attemuata* Norton, *xyfientia* Cresson). -- Ashmead 1900 in Smith, Insects New Jers., Rep. New Jers. Dep. Agric. 1899, 27: 599 (*attemuata* Harris as syn.). -- Konow 1905 Z. system. Hymenopt. Dipteroi. 5: 44, 56-57. -- Konow 1905 Genera Insect. 28: 5. -- Rohwer 1918 Ent. News 29: 106, 107-108 (neotype from Harrisburg, Pennsylvania; host a; parasites). -- Rohwer 1921 Proc. U.S. natn. Mus. 59: 83 (*attemuata* Norton not a syn.; specimen chosen as neotype in 1918 cannot be considered as such). -- Hedrick 1938 Hym. Cat. 7: 4. -- Rles 1951 in Muesebeck, et al., Agriculture Monogr. 2: 85 (hosts a, b). -- Smith 1976 Trans. Am. ent. Soc. 102: 106-108, fig. 1, 9, 18, 34 (hosts a, b).
Xiphidaphora attemuata Norton 1862 Proc. ent. Soc. Philad. 1: 144. ♀. "Pennsylvania" (Philadelphia, ♀). -- Norton 1869 Trans. Am. ent. Soc. 2: 354 (*Xiphidaphora*). -- Cresson 1880 Trans. Am. ent. Soc. 8: 50. -- Provancher 1886 Addit. Corr. Faune Ent. Can., Hym.: 28 (*Xiphidaphora*). -- Dalla Torre 1894 Cat. Hym. 1: 394. -- MacGillivray 1910 in Smith, Rep. New Jers. Dep. Agric. 1909: 593 (N.J.). -- Rohwer 1921 Proc. U.S. natn. Mus. 59: 83-84 (a good species). -- Rohwer 1926 in Leonard, Mem. Cornell Univ. agric. Exp. Stn 101: 874 (N.Y.; host a). -- Cresson 1928 Mem. Am. ent. Soc. 5: 10 (type).
-- Hedrick 1938 Hym. Cat. 7: 4-5.
Konowia attemuata: Ashmead 1900 in Smith, Insects New Jers., Rep. New Jers. Dep. Agric. 1899, 27: 600. -- Konow 1905 Z. system. Hymenopt. Dipteroi. 5: 60. -- Konow 1905 Genera Insect. 28: 5.
Xiphidaphora xyfientia Cresson 1880 Trans. Am. ent. Soc. 8: 34. ♀. "New York" (Philadelphia, ♀). -- Harrington 1893 Trans. R. Soc. Can., section IV: 137 (Ontario). -- Harrington 1893 Can. Ent. 25: 63 (addition to Can. fauna). -- Dalla Torre 1894 Cat. Hym. 1: 397. -- Cresson 1916 Mem. Am. ent. Soc. 1: 10 (type). -- Rohwer 1921 Proc. U.S. natn. Mus. 59: 84 (as syn. of *attemuata*).
Brachymeria xyfientia: Ashmead 1900 in Smith, Insects New Jers., Rep. New Jers. Dep. Agric. 1899, 27: 599.

Hosts: a) *Tilia americana*; b) *Acer* sp.

ainiyoara Matsumura

Japan; U.S.S.R. (Primorski Krai).

Xiphidaphora ainiyoara Matsumura 1927 Insecta matsum. 1: 203, 206. ♀. "Hokkaido (Sapporo)" (Sapporo, ♀) (collected on alder). -- Gussakovskij 1935 Fauna USSR, Insecta Hym. 2: 1: 34, 36, 38, 334, 336 (Primorski Krai). -- Hedrick 1938 Hym. Cat. 7: 4. -- Takeuchi 1938 Tentred. 2: 181. -- Kôno & Sugihara 1939 Insecta matsum. 13: 109 (Hokkaido; host a). -- Takeuchi 1949 Trans. Kansai ent. Soc. 14: 47 (hosts b, c). -- Mae 1949 Notes Ent. chin. 13: 166. -- Shureki 1952 Cat. Injur. Insects Japan 5: 86 (host d). -- Watanabe 1956 Insecta matsum. 20: 7 (electrotype ♀, from Sapporo?; syn. of *palaeazaretiaca* Semenov-Tian-Shanskij). -- Stroganova 1968 Hornfalls of Siberia: 32-35 (host c; only record from Primorski Krai is that of Gussakovskij). -- Verzhutskij 1973 Ident. Larvae Sawflies and Woodwasps of Siberia and Far East: 53.

Hosts: a) *Acer palmatum*; b) *Acer* sp., maple; c) *Alnus* sp., alder; d) Japanese alder.

annuitibria Takeuchi

Japan; U.S.S.R. (Sakhalin).

Xiphidaphora annuitibria Takeuchi 1936 Tentred. 2: 182 (Honshu (Osaka, ♀). -- Hedrick 1938 Hym. Cat. 7: 4. -- Takeuchi 1938 Tentred. 2: 182 (Honshu and Saghalien). -- Mae 1949 Notes Ent. chin. 13: 44, 166. -- Miyatake 1950 Trans. Shikoku ent. Soc. 1: 58 (Shikoku, Hokkaido, Honshu). -- Watanabe 1956 Insecta matsum. 20: 9.

- 1938 Mushl 31: 50, pl. 5, fig. 1 (ovaries). -- Tonapi 1958 Trans. R. ent. Soc. Lond. 110: 492-493 (spiracular structure). -- Okutani 1959 in Kikanda, *et al.*, illus. Insect Larvae Japan: 553, fig. (larva). -- Bakke 1960 Norsk. ent. Tidsskr. 11: 118, 120 (Norway). -- Aerts 1960 Decheniana 113: 310 (*Xiphodria*, Rhineland; hosts f, h). -- Benson 1960 Trans. Herts. nat. Hist. Soc. Fild Club 25: 98 (Hertfordshire; host h). -- Kon-Tuneli 1960 Suom. Eläim. 9: 68 (Finland; hosts b, f, h). -- Precupetu & Negru 1961 Revue Biol., Buc. 6: 82, 83 (Romania; hosts b, c, h). -- Benson 1961 Entomol. wiss. Unterr. Schweiz. NatParks 7: 173 (Switzerland). -- Varley 1961 Entomologist's mon. Mag. 47: 1, fig. 1, 2 (review of film of alder woodwasp, filmed at Dept. of Forestry, University of Oxford with commentary by G.H. Thomson & E. Skinner; parasitoid; host f). -- Geballios 1963 Graellsia 20: 58-59 (Spain; hosts b, c, h, j, l, p, r). -- Stroganova 1963 Trudy biol. inst. Sib. Otd. Akad. Nauk SSSR 10: 26, 27-28 (West Siberia). -- Cherepanov & Zolotarevko 1963 Trudy biol. inst. Sib. Otd. Akad. Nauk SSSR 10: 43 (trunk pests, west, Siberia). -- Kim 1963 Humen. and Sci. (Nat. Sci.) Korea Univ. 6: 295 (Korea). -- Togashi 1965 in Asahina, *et al.*, iconogr. insect. Japan. 3: 244, pl. 122, fig. 21. -- Togashi 1965 Kontyû 33: 231 (rectal papillae). -- Krivolutskaya & Stroganova 1966 in Entomofauna of Forests of Kurile Is., Kamchatka, Magadan: 61. -- Vilev 1966 in Entomofauna of Forests of Kurile Is., Kamchatka, Magadan: 85. -- Lindqvist 1966 Notul. ent. 46: 93 (Finland). -- Okutani 1967 Jap. J. appl. Ent. Zool. 11: 44 (hosts d, g, k, m, q). -- Stroganova 1968 Horntails of Siberia: 34-39, fig. 8-10 (biol. and distribution in Siberia; hosts f, h, j). -- Hoop 1968 Schr. naturw. Ver. Schlesw.-Holst. 38: 70 (Schleswig-Holstein). -- Scobiola-Palade 1968 Trav. Mus. Hist. nat. Gr. Antipa 9: 379 (Comana). -- Rasnitsyn 1968 in Jurassic Insecta Karatau, Otd. Osh. Biol. Akad. Nauk SSSR: 231, fig. 44 (antenna). -- Woelf 1969 Bull. Rech. Agron. Gembloux 4: 163 (Belgium; host h). -- Ko 1969 List of Forest Insect Pests of Korea: 314-315 (hosts f, h, k, n, q). -- Kim 1970 Illus. Entom. Fauna Flora Korea 11, Insecta 3: 129-130, 736. -- Togashi 1972 Mushl 46: 55 (H. Hiko). -- Schedl 1972 Mitt. Abt. Zool. Landesmus. Joazeum 1: 102-103 (hosts b, h). -- Scobiola-Palade & Istrate 1972 Studii Comun. Octot. Nat. 3: 282, 287 (Romania). -- Zombori 1973 Mitt. Mus. Komitatus Veszpremi 12: 469. -- Verzhutskii 1973 Identif. Larvae Woodwasp & Sawflies of Siberia and Far East: 53-54, fig. 24 (larva; host g). -- Mócsai & Zombori 1973 Fauna Hung. XI, Hym. 1, 2: 44 (Hungary). -- Bassus 1973 Faun. Abh. 4: 138 (Germany). -- Zombori 1974 Polia la ent. hung. 27: 239 (Carpethian Basin). -- Omoluch & Plotowski 1975 Polska Pismo ent. 45: 566 (Lublin; hosts b, c, v). -- Huflejt 1976 Fragm. faun. Polska Akad. Nauk 21: 97 (Poland; hosts a, f, h). -- Stroganova 1976 Trudy biol. inst. Sib. Otd. Akad. Nauk SSSR 18: 259, 264 (West Siberia).
- Hypobatus camelus*: Kling 1803 Monogr. Sircum Germ.: 14-15, pl. 1, fig. 4, 5.
- Urocera camelus*: Jurine 1807 Nouv. Méth. Class. Hym. Dipt. 1: 74-75.
- Tenthrredo (Xiphodria) camelus*: Blanchard 1849 Cuvier. Règne Anim., Ed. 3, Insects 2: pl. 109, fig. 5.
- Urocera* Vill.: Schaeffer 1779 Iconogr. Insect. Ratiston 3: pl. 207, fig. 5, 6.
- Xiphodria ebora*: Konow 1899 Ent. Nachr. 25: 3, 9. "Japania (Tokio)" (Eberswalde, 9). -- Konow 1905 Z. system. Hymenopt. Dipteroi. 5: 53. -- Konow 1905 Genera Insect. 28: 4. -- Semenov-Tian-Shanskij 1921 (1917) Russk. ent. Obozr. 17: 83 (listed). -- Matsumura 1927 Insecta matsum. 1: 202-203. -- Clausen 1931 Circ. U. S. Dep. Agric. 138: 81 (hosts s, t). -- Yano 1932 in Esaki, iconogr. Insect. Japan. 2: 475, fig. -- Conte 1935 Notul. ent. 15: 70 (syn.: *Kuchazontia* Matsumura). -- Gussakovskij 1935 Fauna SSSR, Insects Hym. 2, 1: 35, 36, 42-43, 335, 336 (Usuri). -- Hedlicke 1938 Hym. Cat. 7: 7. -- Maa 1949 Notes Ent. chin. 13: 166. -- Zhelokhovtsev, *et al.*, 1955 in Pavlovskii & Shtakel'berg, Forest Pests, Reference Book 1: 291. -- Krivolutskaya & Stroganova 1966 in Entomofauna of forests of Kurile Is., Kamchatka, Magadan: 60. -- Stroganova 1968 Horntails of Siberia: 42-43 (biol. and distribution in Siberia; hosts n, r, one of few xiphodrids on conifers). -- Verzhutskii 1973 Identif. Larvae Woodwasp & Sawflies of Siberia and Far East: 54.
- Xiphodria camelus ebora*: Togashi 1961 Life Study, Fukui 5: 29 (Mt. Hakusan).
- Xiphodria buyesoni*: Matsumura 1911 J. Coll. Agric. Hokkaido imp. Univ. 4: 85, pl. 2, fig. 2. -- Yano 1917 Coll. Essays Y. Nawa: 117.
- Xiphodria jozana* Matsumura 1927 Insecta matsum. 1: 202, 203, 204-205, 6. "Hokkaido (Jozenki near Sapporo)" (Sapporo, 8). -- Gussakovskij 1935 Fauna SSSR, Insects Hym. 2, 1: 34, 44. -- Hedlicke 1938 Hym. Cat. 7: 8. -- Maa 1949 Notes Ent. chin. 13: 47, 166. -- Watanabe 1956 Insecta matsum. 20: 7 (type).
- Xiphodria kaibakami* Matsumura 1927 Insecta matsum. 1: 202, 203-204, 9, d. "Hokkaido (Oshimane, Sapporo, Kucharo)" (Sapporo, 9) (host f). -- Matsumura 1931 6000 Illus.

- Insects. Jap.- Empire: 80, fig. 76. -- Matsumura 1932 Illus. Common Insects Japan 4: 36, 51, pl. 9, fig. 15 (host f). -- Gussakovskij 1935 Fauna SSSR, Insects Hym. 2, 1: 35, 36, 41-42, 335, 336 (Usuri, Sakhalin). -- Semenov-Tian-Shanskij & Gussakovskij 1935 Annls Soc. ent. Fr. 104: 120 (9, 8). -- Hedlicke 1938 Hym. Cat. 7: 8. -- Maa 1949 Notes Ent. chin. 13: 54-55, 166, fig. 35, 39, 70. -- Zhelokhovtsev, *et al.*, 1955 in Pavlovskii & Shtakel'berg, Forest Pests, Reference Book 1: 291. -- Watanabe 1956 Insecta matsum. 20: 6 (lectotype ♀ from Oshimane). -- Stroganova 1968 Horntails of Siberia: 40-41 (biol. and distribution in Siberia; hosts f, h). -- Verzhutskii 1973 Identif. Larvae Woodwasp & Sawflies of Siberia and Far East: 54.
- Xiphodria kuchazontia* Matsumura 1927 Insecta matsum. 1: 202, 203, 204, 9. "Hokkaido (Kushiro)" (Sapporo, 9). -- Gussakovskij 1935 Fauna SSSR, Insects Hym. 2, 1: 35, 36, 42, 335, 336 (9, 4; Usuri). -- Semenov-Tian-Shanskij & Gussakovskij 1935 Annls Soc. ent. Fr. 104: 119-120 (9, 4; Usuri, listed). -- Conte 1935 Notul. ent. 15: 70 (syn. of *ebora* Konow). -- Hedlicke 1938 Hym. Cat. 7: 8. -- Maa 1949 Notes Ent. chin. 13: 47, 167. -- Watanabe 1956 Insecta matsum. 20: 6 (lectotype). -- Stroganova 1968 Horntails of Siberia: 41-42 (biol. and distribution in Siberia; hosts f, h; dying and weak trees in deciduous groves).
- Xiphodria camelus* form *nigerrima* Heilén 1955 Notul. ent. 35: 110, d. "Kirkkonummi").
- Hosts: a) *Populus tremula*; b) *Alnus glutinosa*; c) *Alnus incana*; d) *Alnus hirsuta*; e) Japanese alder; f) *Alnus* sp., alder; g) *Betula grossa*; h) *Betula* sp., birch; i) *Populus* sp., poplar; aspen; j) *Salix* sp., willow; k) *Quercus grosserata* or *Q. mongolica* var. *grosserata*; l) *Quercus* sp., oak; m) *Fagus orientalis*; n) *Fagus* sp., beech; o) *Prunus* sp.; p) *Ulmus* sp., elm; q) *Aesculus turbinata*; r) pine; s) sakhalin fir; t) fir; u) spruce; v) *Betula verrucosa*.

canadensis Provancher

- Xiphodria* (!) *canadensis* Provancher 1875 Naturaliste can. 7: 373-374, 9. "St. Hyacinthe" (St. Foy, 9). -- Provancher 1878 Naturaliste can. 10: 233 (*Xiphodria*). -- Cresson 1880 Trans. Am. ent. Soc. 8: 49. -- Provancher 1883 Proc. Faune Ent. Can., Hym.: 243 (*Xiphodria*). -- Harrington 1893 Can. Ent. 25: 63 (identification question-able). -- Dalla Torre 1894 Cat. Hym. 1: 395. -- Konow 1897 Ent. Nachr. 23: 308, 311 (as syn. of *tibialis* Say). -- Gahan & Rohwer 1918 Can. Ent. 50: 200 (type). -- Rohwer 1918 Ent. News 29: 105, 110 (Virginia). -- Hedlicke 1938 Hym. Cat. 7: 6. -- Riles 1951 in Muesebeck, *et al.*, Agricultural Monogr. 2: 85. -- Smith 1975 Naturaliste can. 102: 296 (type). -- Smith 1976 Trans. Am. ent. Soc. 102: 106, 109-110, fig. 1, 11, 22 (labels on specimens indicate association with red pine, spruce, and/or balsam).

Xiphodria (Xiphodria) canadensis: Maa 1949 Notes Ent. chin. 13: 66.

caucasica Semenov-Tian-Shanskij & Gussakovskij

U.S.S.R. (south European R.S.F.S.R., Georgian S.S.R.).

- Xiphodria caucasica* Semenov-Tian-Shanskij & Gussakovskij 1935 Annls Soc. ent. Fr. 104: 119, 9. "Caucasus Transcaucasique: prov. Koubanka: trajectus Eptshik, Krasnaja-poljana: Grusica: Fances Lagodechik" (Leningrad, 9). -- Gussakovskij 1935 Fauna SSSR, Insects Hym. 2, 1: 35, 41, 335. -- Hedlicke 1938 Hym. Cat. 7: 6. -- Maa 1949 Notes Ent. chin. 13: 166. -- Benson 1968 Bull. Br. Mus. nat. Hist. (Ent.) 22: 166 (Transcaucasica).

champlaini Rohwer

U.S. (Florida?, Maryland, New York, Pennsylvania).

- Xiphodria champlaini* Rohwer 1921 Proc. U.S. natn. Mus. 59: 84-85, 9, d. "Harrisburg, Pennsylvania" (Washington, 9) (host a). -- Hedlicke 1938 Hym. Cat. 7: 6. -- Maa 1949 Notes Ent. chin. 13: 43. -- Riles 1951 in Muesebeck, *et al.*, Agriculture Monogr. 2: 86 (as syn. of *tibialis* Say). -- Smith 1976 Trans. Am. ent. Soc. 102: 106, 110-112, fig. 2, 10, 19 (host a).

Hosts: a) *Carpinus caroliniana*.

flavipes Motschulsky

- Xiphodria* (!) *flavipes* Motschulsky 1859 Byull. mosk. Obsch. Ispyt. Prir. 32: 500 (nomen nudum; listed in "Catalogue des insectes rapportés des environs du fl. Amour"). -- Hedlicke 1938 Hym. Cat. 7: 7.

hickories

U.S. (Florida, Illinois, Ohio, Massachusetts, New Jersey, New York, Pennsylvania).

Xiphidria hickoriae Rohrer 1918 Ent. News 29: 107, 109, ♀, ♂. "Harrisburg, Pennsylvania" (Washington, ♀) (host a). -- Blackman & Stage 1924 Tech. Publs N.Y. St. Coll. For. 17, 24: 115-116 (biol.; host a). -- Rohrer: 1926 in Leonard, Mem. Cornell Univ. agric. Exp. Stn 101: 874 (N.Y., host a). -- Hedrick 1938 Hym. Cat. 7: 7. -- Maa 1949 Notes Ent. chin. 13: 43. -- Ries 1951 in Muesebeck, et al., Agriculture Monogr. 2: 85 (hosts b, d). -- Smith 1976 Trans. Am. ent. Soc. 102: 105, 106, 112-113, fig. 2, 12, 24, 32 (hosts b, c, d).

Hosts: a) *Hicoria* sp., b) *Carya* sp.; c) *Carya ovata*; d) *Ulmus* sp.

Tsimi Maa

China (Chekiang).

Xiphidria limi Maa 1949 Notes Ent. chin. 13: 50-53, 167, fig. 74, 75, ♂. "Chekiang: W. Tien-Wu-Shan" ("Acad. Sinica" Shanghai, ♂).

longicollis (Geoffroy)

Austria; Belgium; France; Germany; Greece; Hungary; Italy; Poland; Romania; Switzerland; U.S.S.R. (European R.S.F.S.R., Ukrainian S.S.R.).

Tenthredo longicollis Geoffroy 1785 in Fourcroy, Ent. Paris. 2: 378. Vicinity of Paris. (), -- Villiers 1789 C. Linn. Ent. 3: 125. -- Dalla Torre 1894 Cat. Hym. 1: 412 (*Longicollis* Fourcroy as syn. of *Cephus tabulae* (Fabricius)).

Xiphidria longicollis: Mocsary 1886 Rovart. Lap. 3: 40, 41 (Hungary; syn.: *annulatus* Jurine). -- Konow 1897 Ent. Nachr. 23: 301, 305, 310 (*cameus* of Rossi 1790 is *Longicollis*; host b). -- Konow 1905 Z. system. Hymenopt. Dipt. 5: 42, 48-49 (host b). -- Konow 1905 Genera Insect. 28: 4. -- Schmiedeknecht 1907 Hym. Mitteleur.: 770. -- Enslin 1917 Tenthred. Mitteleur.: 706-707, 742, 744, 750, 753, fig. 150a (hosts a, c, e, f). -- Haupt 1913 Mitt. ent. Ges. Halle 5/7: 59. -- Müller 1922 (1920) Verh. Mitt. siebenb. Ver. Naturw. 52: 20 (*Xiphidria*; Siebenbürgen). -- Dönnar-Zapolskii 1929 Izv. sev.-kavkaz. kraev. Sta. Zashch. Rast. 12: 46 (larva; in key). -- Hedrick 1930 Tierwelt Mitteleur. 5(2): 75 (hosts a, c, e, f). -- Dönnar-Zapolskii 1931 Izv. sev.-kavkaz. kraev. Sta. Zashch. Rast. 6-7: 44 (listed; localities). -- Reichenr. 1933 Sber. naturf. Ges. Lepz. 72 (Leipzig; hosts a, c, e, f). -- Schimitschek 1935 Zentbl. ges. Forstw. 61: 210-214. -- Gussakovskij 1935 Fauna USSR, Insects Hym. 2: 36, 43-44, 337 (west. Europe, south. Russia). -- Hedrick 1938 Hym. Cat. 7: 8-9. -- Berland 1947 Fauna France. 47. Hym. Tenthred.: 66, 67-68, fig. 69 (France; parasite; hosts b, c, e, f). -- Gusev 1951 Keys to Injuries of Forest and Ornamental Trees of European USSR: 44, 115, 147, 286 (hosts a, c, e, f). -- Vitě 1952 Die holzzerstörenden Insekten Mitteleur.: 112 (hosts a, c, e, f). -- Zhelokhovtsev, et al. 1955 in Pavlovskii & Shtrkel'berg, Forest Pests, Reference Book 1: 291 (references to Russian literature). -- Glowacki 1956 Polski Zwierzak ent. 24(2): 10 (Poland; hosts a, c, e, f). -- Ermolenko & Zagaikovich 1959 in Problemi Entomologii na Ukraini, Akad. Nauk USSR: 239-241 (host h; Ukrainian SSR). -- Bednarsz 1960 Przegl. Zool. 4: 210-211 (Poland). -- Precupetu & Negru 1961 Revue Biol., Buc. 6: 82, 84-85 (Romania; galleries, hosts b, c, e, f). -- Scobiola-Palade 1967 Trav. Mus. Hist. nat. Gr. Antipa 7: 157 (Dobroudja). -- Scobiola-Palade 1968 Trav. Mus. Hist. nat. Gr. Antipa 9: 379 (Romania). -- Wolf 1969 Bull. Rech. Agron. Gembloux (n.s.) 4: 163 (Belgium; hosts b, c, e, f). -- Verzhutskii 1973 Ident. Larvae Sawflies and Woodwasps of Siberia and Far East: 54. -- Móczár & Zombori 1973 Fauna Hung. XI, Hym. 1, 2: 43-44 (Hungary). -- Zombori 1974 Folia ent. hung. 27: 239 (*Longicollis* (?); Carpathian Basin).

Stenocamelus: Rossi 1790 Fauna Etrusca 2: 33-34. -- Illiger 1807 Rossi: Fauna Etrusca, Ed. 2, 2: 50 (part).

Xiphidria longicollis Latreille 1805 Hist. Nat. Crust. Insectes 13: 146. "environs de Paris" () (homonym and synonym). -- Dalla Torre 1894 Cat. Hym. 1: 396-397.

Urocera annulatus Jurine 1807 Nouv. Méth. Class. Hym. Dipt. 1: 74, 75, pl. 7, fig. 10, 9, ♂. No locality. ()

Xiphidria annulata: Lepeletier 1823 Monogr. Tenthred.: 3-4 (*Xiphidria*). -- Lepeletier & Serville 1828 Ency. Méth. 10: 790-791 (*Xiphidria*). -- Hartig 1837 Fam. Blatt. wesp. Holzesp.: 369-370. -- Blanchard 1840 Hist. Nat. Anim. Art. 3: 244 (*Xiphidria*). -- Giraud 1854 Verh. zool.-bot. Ver. Wien 4: 605 (*Xiphidria*; parasite; Austria; host d). -- Dufour 1854 Ann. Sci. Nat., Zool. (4) 1: 201-236 (anatomy). -- Kalténbach 1858

Verh. naturh. Ver. preuss. Rheinl. 16: 106 (host a). -- Duméril 1860 Mém. Acad. Sci. Inst. Fr. 3(2): 979 (*Xiphidria*; France). -- Costa 1860 Fauna Regni Napoli, pt. IIIa, Orvysidea: 3, pl. 79, fig. 5 (Italy). -- Taschenberg 1861 Berl. ent. Z. 5: 195. -- Kawell 1864 Byull. mosk. Obsch. Ispyt. Priir. 37: 302 (Kurland). -- Taschenberg 1866 Hym. Deutschl.: 29. -- Kirchner 1867 Cat. Hym. Eur.: 20. -- Kalténbach 1874 Pflanzenfeinde: 91, 608 (hosts a, c). -- André 1881 Spec. Hym. Eur. Alg.: 561-562, cat. p. 70. -- Berlese 1890 Boll. Soc. ent. ital. 22: 184 (*Xiphidria*; Italy). -- Konow 1890 Dt. ent. Z. 34: 242. -- Costa 1894 Prospetto Inenotteri Ital. 3: 263 (Italy). -- Costa 1895 Atti Accad. Sci. fis. mat., Napoli (2) 7: 189 (Italy). -- Rudow 1909 Int. ent. Z. 3: 135-136 (*Xiphidria*; biol. note).

Stenocamelus: Ratzeburg 1844 Forstinssek. 3: 145 (in subg. *Xiphidria*; host a). *Xiphidria longicollis* var. *pacca*: Konow 1897 Ent. Nachr. 23: 301, 310 (not *pacca* Fabricius 1787 which is considered a synonym of a species in Sapygidae).

Hosts: a) *Betula* sp., birch; b) *Betula alba*; c) *Acer* sp., maple; d) *Acer campestre*; e) *Quercus* sp., oak; f) *Pinus communis*; g) *Pinus* sp., pine; h) *Quercus robur*; i) *Pinus* sp.

maculata Say

Canada (Manitoba, New Brunswick, Ontario, Prince Edward Is., Québec); U.S. (California; Connecticut, District of Columbia, Illinois, Indiana, Iowa, Kansas, Maine, Maryland, Massachusetts, Michigan, Minnesota, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Texas, Vermont, Virginia, West Virginia, Wisconsin).

Xiphidria maculata Say 1836 Boston J. nat. Hist. 1: 221-222, ♂. "Indiana" (lost, neotype by Rohrer 1918, Washington, ♂). -- Leconte 1859 Writ. T. Say 2: 681. -- Norton 1869 Trans. Am. ent. Soc. 2: 353 (*Xiphidria*; probably ♂ of *abacoemae*). -- Cresson 1880 Trans. Am. ent. Soc. 8: 66. -- Harrington 1893 Trans. R. Soc. Can., section IV: 135-136 (host a, on small and medium sized trees). -- Dalla Torre 1894 Cat. Hym. 1: 397. -- Konow 1897 Ent. Nachr. 23: 303, 309, 311. -- Konow 1905 Z. system. Hymenopt. Dipt. 5: 44, 57-58. -- Konow 1905 Genera Insect. 28: 4. -- MacGillivray 1910 in Smith, Rep. New Jers. Dep. Agric. 1909: 593 (N.J.). -- Rohrer 1915 Proc. ent. Soc. Wash. 17: 195-196, fig. 1 (mating habits). -- MacGillivray 1916 Bull. Conn. St. Geol. Nat. Hist. Surv. 22: 168 (host a). -- Rohrer 1918 Ent. News 29: 108 (neotype ♂, from Plummer's Island, Maryland; parasites; host b). -- Brues 1927 Psyche, Camb. 34: 78 (N.Y.; host a). -- Hedrick 1938 Hym. Cat. 7: 9. -- Maa 1949 Notes Ent. chin. 13: 43. -- Ries 1951 in Muesebeck, et al., Agriculture Monogr. 2: 85 (hosts a, d, e). -- Smith 1976 Trans. Am. ent. Soc. 102: 105, 106, 113-116, fig. 3, 7, 8, 13, 20, 35-43 (hosts a-e).

Xiphidria abacoemae Harris 1835 in Hitchcock, Rep. Geol., Mineral., Botany, Zool. Mass.: 584 (nomen nudum). -- Harris 1841 Rep. Insects Mass. Injur. Vegetation: 392-393. 9. No locality. (Cambridge, Mass., ♀). -- Norton 1869 Trans. Am. ent. Soc. 2: 352-353 (*Xiphidria*). -- Provancher 1878 Naturaliste can. 10: 232. -- Cresson 1880 Trans. Am. ent. Soc. 8: 66. -- Thomas 1881 Rep. Ill. St. Ent. 1880, 10: 71 (*Xiphidria*; probably bores in soft-wooded trees). -- Harrington 1882 Can. Ent. 14: 224 (host a). -- Provancher 1883 Petite Faune Ent. Can., Hym.: 243 (*maculata* as syn.; Québec; *Xiphidria*). -- Harrington 1884 Rep. ent. Soc. Ont. 1883, 14: 7, 40-42 (host a). -- Packard 1890 Rep. U.S. Ent. Commiss. 5: 381-382 (host a). -- Howard 1901 Insect Book: pl. 21, fig. 25 (*Xiphidria*). -- Rohrer 1920 J. Wash. Acad. Sci. 10: 515 (type from Dublin, N.H., in Harris collection).

Hosts: a) *Acer* sp., maple; b) *Acer saccharinum*; c) *Acer rubrum*, red maple; d) *Malus malus*?; e) *Tilia americana*?

mellipes Harris

Canada (British Columbia, Manitoba, New Brunswick, Newfoundland, Northwest Territories, Nova Scotia, Ontario, Québec, Saskatchewan); U.S. (Connecticut, Illinois, Maine, Maryland, Massachusetts, Michigan, Minnesota,

- Xiphidria mellipes* Harris 1835 in Hitchcock, Rep. Geol., Mineral., Botany, Zool. Mass., 564 (nomen nudum). -- Harris 1841 Rep. Insects Mass. Injur. Vegetation: 393. 9. No locality (Cambodge, Mass., 9). -- Norton 1869 Trans. Am. ent. Soc. 2: 353 (*Xiphidria*; as syn. of *fabialis* Say). -- Westwood 1874 Theaenus ent. Oxon.: 113 (? syn. of *abacismus* Harris). -- Thomas 1881 Rep. 111. St. Ent. 1880, no. 71 (prob. a var. of *abacismus*; *Xiphidria*). -- Rohrer 1918 Ent. News 29: 108 (as syn. of *maulica* Say). -- Crampton 1919 Proc. ent. Soc. Wash. 21: 129 (d. genitalia). -- Rohrer 1920 J. Mass. Acad. Sci. 10: 515-516 (type from Dublin, N.H., in Harris collection). -- Rohrer 1928 in Leonard, Mem. Cornell Univ. agric. Exp. Stn 101: 874 (syn.: *protonchert*; Cresson, N.Y.). -- Hedické 1938 Hym. Cat. 7: 9-10. -- Ries 1951 in Muesebeck, et al., Agriculture Monogr. 2: 85 (syn.: *walshii* Westwood; hosts e, f, g, h). -- Smith 1976 Trans. Am. ent. Soc. 102: 106, 116-119, fig. 4, 14, 23, 33 (hosts a-h).
- Xiphidria (Xiphidria) mellipes*: Mae 1949 Notes Ent. chin. 13: 66.
- Xiphidria (Xiphidria) mellipes* Westwood 1874 Theaenus ent. Oxon.: 113. d. "Amer. Sept. New York (London, d.). -- Cresson 1880 Trans. Am. ent. Soc. 8: 50. -- Kirby 1882 List Hym. Brit. Mus. 1: 371, pl. 14, fig. 14 (*walshii*). -- Harrington 1893 Trans. R. Soc. Can., section IV: 138 (near *protonchert*). -- Dalla Torre 1894 Cat. Hym. 1: 397. -- Konow 1897 Ent. Nachr. 23: 309, 311 (as syn. of *baazilae* Say [now placed in Cephidae]). -- Rohrer 1918 Ent. News 29: 110-111 (unplaced species). -- Rohrer 1928 in Leonard, Mem. Cornell Univ. agric. Exp. Stn 101: 874 (perhaps syn. of *mellipes*). -- Hedické 1938 Hym. Cat. 7: 12-13 (*walshii*).
- Kenovia walshii*: MacGillivray 1916 Bull. Com. St. geol. nat. Hist. Surv. 22: 169.
- Xiphidria (Xiphidria) walshii*: Mae 1949 Notes Ent. chin. 13: 66 (probably d. of *mellipes*).
- Xiphidion canadensis* Provancher 1875 Naturaliste can. 7: 374-375. 9. "Cap Rouge" (St. Foy, 9) (preoccupied in *Xiphidria* by *canadensis* Provancher 1875, p. 373-374). -- Provancher 1878 Naturaliste can. 10: 233. -- Provancher 1883 Rept. Faune Ent. Can., Hym.: 244 (*canadense*). -- Gahan & Rohrer 1918 Can. Ent. 50: 200 (type). -- Smith 1975 Naturaliste can. 102: 296 (type).
- Xiphidion canadensis*: Konow 1905 Z. system. Hymenopt. Diptera 5: 44, 58. -- Konow 1905 Genera Insect. 28: 4. -- MacGillivray 1916 Bull. Com. St. geol. nat. Hist. Surv. 22: 168 (host 1).
- Xiphidria protoncherti* Cresson 1880 Trans. Am. ent. Soc. 8: 49 (new name for *Xiphidion canadensis* Provancher). -- Provancher 1882 Naturaliste can. 13: 49. -- Harrington 1893 Trans. R. Soc. Can., section IV: 136-137. -- Dalla Torre 1894 Cat. Hym. 1: 309. -- Konow 1897 Ent. Nachr. 23: 303, 309, 311. -- Howard 1901 Insect Book: pl. 14, fig. 34 (*Xiphidria*). -- Rohrer 1918 Ent. News 29: 109-110 (host b.). -- Yasae 1923 Illinois Biol. Monogr. 7: 113-114 (larva; parasite; host a).
- Hosts: a) *Betula* sp., birch; b) *Betula populifolia*; c) *Betula papyrifera*; d) *Betula lenta*; e) *Betula alleghaniensis* (= *B. lutea*); f) *Betula occidentalis*; g) *Fagus* sp., beech; h) *Alnus* sp., alder; i) white birch.
- ogasawara Matsumura**
- Japan: U.S.S.R. (Kunashir Is., Iturup Is., Primorsky Krai).
- Xiphidria ogasawarae* Matsumura 1927 Insecta matsum. 1: 203, 205-206. 9. "Honshu, Hokkaido, one female specimen was collected in the middle part of June, 1911, by T. Ogawara at Iwate" (Sapporo, 9) (on p. 203 only Honshu given as habitat and only the female is in the key; in description on p. 205-206 the male is not described but the length of the male is given and the additional locality - is given). -- Hedické Gussakovskij 1935 Fauna SSSR, Insects Hym. 2, 1: 34, 38, 334 (Ussuri). -- Hedické 1938 Hym. Cat. 7: 10. -- Takeuchi 1938 Tenthredo 2: 180, 181. -- Takeuchi 1949 Trans. Kansai ent. Soc. 14: 47 (host a). -- Mae 1949 Notes Ent. chin. 13: 167. -- Watanabe 1956 Insecta matsum. 20: 7 (holotype ♀ from Iwate, Honshu; described from one specimen only; cf. *palaeoarctica* Semenov-Tian-Shanskij). -- Togashi 1961 Life Study, Fukuji 5: 29 (Mt. Hakusan). -- Krivolutskaya & Stroganova 1966 in Entomotana of Forests of Kurile Is., Kamchatka, Magadan: 60-61, fig. 1 (host b.). -- Stroganova 1968 Horntails of Siberia: 29-32, fig. 7 (distribution and biol. in Siberia; hosts a-d). -- Verzhutskii 1973 Ident. Larvae Sawflies and Woodwasps of Siberia and Far East: 54 (host b.).

Hosts: a) *Acer* sp., maple; b) *Acer picta*; c) *Acer mono*; d) alder.

palaeoarctica Semenov-Tian-Shanskij

- Xiphidria palaeoarctica* Semenov-Tian-Shanskij 1921 (1917) Russk. ent. Obozr. 17: 81-82. 9. "Siberiae orientalis prov. Littoralis, distr. Austro-Ussuriensis: walls riv. Odarka, haud procul a Vladivostok" (Leningrad, 9). -- Semenov-Tian-Shanskij & Gussakovskij 1935 Fauna SSSR, Insects Hym. 2, 1: 34, 37, 334 (Ussuri and Japan). -- Gussakovskij 1935 Fauna SSSR, Insects Hym. 2, 1: 34, 37, 334 (Ussuri and Japan). -- Hedické 1938 Hym. Cat. 7: 10. -- Takeuchi 1938 Tenthredo 2: 180, 181 (East Siberia, Japan, Korea). -- Yasumatsu 1939 Insects Jap. 11th. Monogr.: 329, fig. 577. -- Mae 1949 Notes Ent. chin. 13: 47-48, 167, fig. 64 (China). -- Shiraki 1952 Cat. Injur. Insects Japan 5: 86 (hosts a, j, k). -- Zhelokhovtsev, et al., 1955 in Pavlovskii & Shtrakei'berg, Forest Pests, Reference Book 1: 291. -- Watanabe 1956 Insecta matsum. 20: 6-9 (*ogasawarae* Matsumura and *almyra* Matsumura as syn., host *Acer* mono may refer to one of those species). -- Kim 1963 Human and Sci. (Nat. Sci.) Korea Univ. 6: 295 (*palaeoarctica* (1); Korea). -- Togashi 1965 in Asahina, et al., Injur. Insect. Japan. 3: 244, fig. 22. -- Okutani 1967 Jap. J. appl. Ent. Zool. 11: 44 (hosts a-f). -- Stroganova 1968 Horntails of Siberia: 27-28 (distribution and biol. in Siberia; hosts g, h). -- Ko 1969 List of Forest Insect Pests of Korea: 315 (Korea; hosts a, c, d, e, f). -- Kim 1970 Illus. Ency. Fauna Flora Korea 11, Insecta 3: 130, 736-737. -- Verzhutskii 1973 Ident. Larvae Sawflies and Woodwasps of Siberia and Far East: 53, 54 (larva; hosts e, f).
- Xiphidria ebonyata* Matsumura 1912 Thous. Insects Japan, suppl., 4: 24-25, pl. 43, fig. 8. -- Yano 1917 Coll. Essays Y. Nawa: 116.
- Xiphidria japoensis* Matsumura 1927 Insecta matsum. 1: 202, 203, 205. 9. "Hokkaido (Sapporo)" (Sapporo, 9) (host h; syn.: *ebonyata* Matsumura 1912, not Konow). -- Matsumura 1930 Illus. Thous. Insects Japan 2: 62, pl. 6, fig. 8. -- Matsumura 1931 6000 Illus. Insects Jap.-Emp. 80, fig. 433. -- Conde 1935 Notul. ent. 15: 70 (Okenskaja). -- Watanabe 1956 Insecta matsum. 20: 7 (lectotype).

Hosts: a) *Alnus japonica*, Japanese alder; b) *Acer* sp., maple; c) *Acer palmatum*; d) *Acer mono*; e) *Asseulus turbinata*; f) *Juglans mandshurica* subsp. *seeboldiana*; g) birch; h) *Alnus* sp., alder; i) *Juglans mandshurica*; j) pine; k) Japanese elm.

picta Konow

- Austria; Finland; France; Poland; Romania; Sweden; Switzerland; U.S.S.R. (European R.S.F.S.R., Georgian S.S.R., Kazakh S.S.R., Ukrainian S.S.R., Primorsky Krai ?).
- Xiphidria picta* Konow 1897 Ent. Nachr. 23: 301, 304, 310. 9. d. "Heliethia et Caucasus" (Eberswalde,). -- Konow 1905 Z. system. Hymenopt. Diptera 5: 42, 47-48. -- Konow 1905 Genera Insect. 28: 4. -- Schmiedeknecht 1907 Hym. Mittel-eur. 770. -- Enslin 1917 Tenthred. Mitteleur. 708. -- Forsius 1919 Acta Soc. Fauna Flora Fenn. 46: 25. -- Malaise 1921 Ent. Tidsskr. 41: 17 (Sweden). -- Hedické 1930 Tierwelt Mitteleur. 5(2): 75. -- Dornar-Zepolski 1931 Zw. sev.-kavkaz. kraev. Sta. Zashch. Rast. 6-7: 44 (listed; localities). -- Forsius 1935 Notul. ent. 13: 9 (Finland). -- Heilén 1935 Notul. ent. 13: 3 (Finland). -- Gussakovskij 1935 Fauna SSSR, Insects Hym. 2, 1: 35, 36, 40-41, 335, 336. -- Conde 1935 Notul. ent. 15: 70 (Ussuri). -- Hedické 1938 Hym. Cat. 7: 10. -- Lozovoi 1941 Trudy zool. sekt., Tbilisi 3: 205 (Georgian SSR). -- Kjellander 1945 Opusc. ent. 10: 3-4, 12 (Sweden, localities). -- Berland 1947 Faune France, 47. Hym. Tenthredo 66, 67, fig. 71, 72 (France; Grime). -- Mae 1949 Notes Ent. chin. 13: 167 (Siberia ?). -- Andguladze 1951 Trudy zool. inst., Tbilisi 10: 223 (Georgian SSR). -- Zhelokhovtsev, et al., 1955 in Pavlovskii & Shtrakei'berg, Forest Pests, Reference Book 1: 291. -- Glowacki 1956 Polski Zw. zek ent. 24(2): 12 (Poland; host a). -- Kontunemi 1960 Suom. Eläim. 9: 68 (Finland). -- Precupetu & Negru 1961 Revue Biol., Buc. 6: 82, 83-84 (Romania; galleries; host a). -- Esmolenko 1967 Vestnik Zool. 6: 56 (Crimea). -- Scobolai-Palade 1966 Trav. Mus. Hist. nat. Gr. Antip 9: 379 (Romania). -- Scobolai-Palade & Istrate 1972 Studii Commun. Nat. 3: 282, 287 (Romania). -- Schedl 1972 Mitt. Abt. Zool. Landesmus. Joanneum 1: 102 (Austria; other distribution; host a). -- Verzhutskii 1973 Ident. Larvae Sawflies and Woodwasps of Siberia and Far East: 54. -- Móczár & Zombori 1973 Fauna Hung. XI, Hym. 1, 2: 44 (in key). -- Zombori 1974 Folia ent. hung. 27: 239 (Carpathian Basin).

Hosts: a) *Alnus* sp., alder.

polia Smith
Xiphidaria polia Smith 1976 Trans. Am. ent. Soc. 102: 105, 106, 110-121, fig. 5, 15, 25, 31, 9, 8. "Manhattan, Ks." (Urbana, Ill., 9).

popovi Semenov-Tian-Shanskii & Gussakovskii China (Kilin): U.S.S.R. (Amur, Chita, Irkutsk, Primorsky Krai).

104: 118-119, 9, 8. "Siberia orientalis: Transbaikalia et prov. Irkutensis: List-venitshnaja ad lac. Baical; Troitzkosavsk; Dauria sine indic. loci; fluminis Amur cursu superior: ad vic. Tolbozino; prov. Amurensis: vic. Pikan; distr. Ussuriensis: Turjiche, Stat. svjagino, Viadovostok, vallis fl. Odarka, vic. Kamenj-Rybolov ad lac. Chanka, vic. B. Suchodol, vic. Vinogradovka, vic. Jakovlevka." (Leningrad, 1). -- Gussakovskii 1935 Fauna SSSR, Insects Hym. 2, i: 35, 36, 40, 334, 336. -- Hedicke 1938 Hym. Cat. 7: 10. -- Maa 1949 Notes Ent. chin. 13: 53-54, 167, fig. 47, 50, 54, 59, 67 (9, 8; China). -- Zhelokhovtsev, et al. 1955 in Pavlovskii & Shtakel'berg, Forest Pests, Reference Book 1: 291. -- Stroganova 1968 Horntails of Siberia: 39-40, 112-113 (distribution and biol. in Siberia; host a). -- Verzhutskii 1973 Ident. Larvae Sawflies and Woodwasps of Siberia and Far East: 54.

Hosts: a) birch.

prolongata (Geoffroy)

Austria; Belgium; Czechoslovakia; Denmark; England; France; Germany; Italy; Hungary; Netherlands; Norway; Poland; Romania; Sweden; Switzerland; U.S.S.R. (European R.S.F.S.R., Latvian S.S.R., Kazakh S.S.R., Novosibirsk).

Tenthredo prolongata Geoffroy 1785 in Fourcroy, Ent. Paris. 2: 379. Vicinity of Paris. (). -- Villiers 1789 C. Linn. Ent. 3: 125. -- Dalla Torre 1894 Cat. Hym. 1: 401 (? syn. of *Janus compressus* (Fabricius) (Ophiidae)).

Xiphidaria prolongata: Konow 1897 Ent. Nachr. 23: 302, 305, 311 (9, 8; syn.). *drumedaricus* Fabricius, *fasciata* Lepelletier; host b). -- Morice 1904 Entomologist's mon. Mag. (2): 15: 35 (England; host a). -- Konow 1905 Genera Insect. 28: 4. -- Konow 1907 Hym. Hymenopt. Dipt. 5: 43, 50-51 (hosts a, d, f). -- Schmiedeknecht 1907 Hym. Hymenopt. 770 (hosts a, d). -- Zavattari 1912 Annali Accad. Agric. Torino 54: 36 (Italy; hosts a, d, f). -- Scott 1915 Entomologist's mon. Mag. 51: 266-267 (England). -- Enslin 1917 Tenthred. Mitt. 756, 757, 758 (hosts c, e, h). -- Turner 1919 Entomologist's mon. Mag. 55: 161 (England; emerged in hospital from persons artificial leg). -- Müller 1922 (1920) Verh. Mitt. siebenb. Ver. Naturw. 52: 20 (*Xiphidaria*; Siebenbürgen). -- Carpentier 1926 Lambillionea 26: 16 (Belgium). -- Benson 1928 Nat. Hist. Wicken Fen 4: 323 (Wicken Fen). -- Dovnar-Zapolskii 1929 Izv. sev.-kavkaz. kraev. Sta. Zashch. Rast. 12: 46 (larva, in key; hosts c, e, h). -- Hedrick 1930 Tierwelt Mittel. 5(2): 75 (hosts c, e, h). -- Dovnar-Zapolskii 1931 Izv. sev.-kavkaz. kraev. Sta. Zashch. Rast. 6-7: 44 (listed, localities). -- Chrystal & Skinner 1932 Scott. For. J. 46: 36-51, fig. 1-16 (Scotland, biol.; parasite; host e). -- Gussakovskii 1935 Fauna SSSR, Insects Hym. 2, i: 34, 37, 334 (Europe to Siberia). -- Cartwright 1938 Ann. appl. Biol. 25: 430-432 (fungus association). -- Hedrick 1938 Hym. Cat. 7: 10-12. -- Zirngiebl 1939 Abh. naturw. Ver. Bremen 31: 106-108 (variations in wing venation). -- Benson 1940 Trans. Herit. nat. Hist. Soc. Fild Club 21: 192 (Hertfordshire; host e). -- Struve 1940 Abh. naturw. Ver. Bremen 31: 825 (Borkum Is.). -- Gregor & Bata 1940 Sb. ent. Odd. nar. Mus. Praha 18: 208 (Czechoslovakia; hosts c, e, h). -- Hincks 1943 Entomologist's mon. Mag. 49: 233 (England; host e). -- Kleiander 1945 Opusc. ent. 10: 4-5, 13 (Sweden, records). -- Berland 1947 Faune France. 47. Hym. Tenthred.: 65, 68-69 (France; parasites; hosts a, d, f). -- Il'yinski 1948 Key to Egg Clusters. Larvae. Pupae of Insects Injur. Forests: 308. -- Maa 1949 Notes Ent. chin. 13: 43, 167, fig. 65 (type in Antun Museum; syn.: *camezus* Lepelletier & Serville, not Linnaeus). -- Gusev 1951 Keys Injuries to Forest and Ornamental Trees of European USSR: 223, 374, 500 (hosts a, e). -- Benson 1951 Handbk Ident. Br. Insects 6(2a): 17 (England; hosts c, e, h). -- Vitě 1952 Die holzzerstören-ident. Insekten Mittel. 112 (hosts c, e, h, m). -- Tsinovskii 1953 Insects of Latvian SSR, horntails and sawflies: 28 (host o). -- Zhelokhovtsev, et al. 1955 in Pavlovskii & Shtakel'berg, Forest Pests, Reference Book 1: 291. -- Glowacki 1956 Polski Związek

ent. 24(2): 10 (Poland; hosts a, b, d, n). -- Bakke 1960 Norsk ent. Tidsskr. 11: 118 (Norway). -- Aerts 1960 Decheniana 113: 310 (*Xiphidaria*; Rhineland; hosts c, e, h). -- Konfinen 1960 Suom. Eläim. 9: 68 (Finland; hosts c, e, h, p). -- Precupetu & Negru 1961 Revue Biol., Buc. 6: 82, 84 (Romania; biol.; parasites; hosts a, b, d, 9, k). -- Stroganova 1963 Trudy biol. Inst. Sib. Otd. Akad. Nauk SSSR 10: 26, 27 (west. Siberia). -- Stroganova 1968 Horntails of Siberia: 24-27, 112-113, fig. 6 (biol. and distribution in Siberia; hosts c, e, h, i, j). -- Hoop 1968 Schr. naturw. Ver. Schlesw.-Holst. 38: 70 (Schleswig-Holstein). -- Scobiola-Palade 1968 Trav. Mus. Hist. nat. Gr. Antipa 9: 136, fig. 14, 15 (Romania; galleries; host l). -- Scobiola-Palade 1968 Trav. Mus. Hist. nat. Gr. Antipa 9: 379 (Cernica). -- Wolf 1969 Bull. Rech. Agron. Gambiolo (n.s.) 4: 163-165 (Belgium; host e). -- Scobiola-Palade 1972 Studi si Comun. Ocrot. Nat. 3: 282, 287 (Suceava). -- Verzhutskii 1973 Ident. Larvae Woodwasps and Sawflies of Siberia and Far East: 53, 54 (larva). -- Móczár & Zombori 1973 Fauna Hung. XI, Hym. 1, 2: 42-43, fig. 27 (Hungary). -- Zombori 1973 Mitt. Mus. Komitatus Veszprem 12: 469. -- Scobiola-Palade 1974 Trav. Mus. Hist. nat. Gr. Antipa 14: 142 (Romania; host d). -- Zombori 1974 Folia ent. hung. 27: 239 (Carpathian Basin). -- Stroganova 1976 Trudy biol. Inst. Sib. Otd. Akad. Nauk SSSR 18: 264 (west. Siberia).

Willow Wood Wasp: Gray 1940 Veter. J. 96: 370-373 (associated with watermark disease of willows).

Stizus drumedaricus Fabricius 1787 Mant. Insect. 1: 258. "Habitat Kilifae Dom. Dal-dorff" (Coll. Fabricius,). -- Villiers 1789 C. Linn. Ent. 3: 131, pl. 7, fig. 22. -- Karsten 1789 Mus. Lesk. Reg. Anim. 1: 57. -- Rossi 1790 Fauna Etrusca 2: 34. -- Gmelin 1790 Linn. Syst. Nat., Ed. 13, 1(5): 2673. -- Fabricius 1793 Ent. System. 2: 128. -- Ludwig 1799 Autz. Sachsen Insect.: 36. -- Turton 1806 Gen. Syst. Nature 3(2): 428. -- Illiger 1807 Rossi: Fauna Etrusca, Ed. 2, 2: 51-52. -- Ratzeburg 1844 Forstinsect. 3: 145 (subg. *Xiphidaria*). -- Zinsen 1964 Type Material of J. C. Fabricius: 361 (type). *Hyponotus drumedaricus*: Klug 1803 Monogr. Siricum Germ.: 15-16, pl. i, fig. 6, 7. *Xiphidaria drumedaricus*: Fabricius 1804 Syst. Piezat.: 53. -- Latreille 1805 Hist. Nat. Crust. Insectes 13: 146. -- Panzer 1806 Krit. Rev. Insect. Deutschl. 2: 57 (as *Urocerus*, but under *Xiphidaria*). -- Latreille 1807 Gen. Crust. Insectes 3: 237. -- Latreille 1810 Cons. Gén.: 436. -- Lamarck 1817 Hist. Nat. Anim. Sans Vert. 4: 169. -- Lepeletier 1823 Monogr. Tenthred.: 3 (*Xiphidaria*). -- Lepeletier & Serville 1828 Ency. Méth. 10: 788 (*Xiphidaria*). -- Leach 1830 (1815) Edin. Ency. 9: 141. -- Dahlbom 1835 Conspectus Tenthred., Siricid., Oryssin. Scand.: 16 (*Xiphidaria*). -- Lamarck 1835 Hist. Nat. Anim. Sans Vert., Ed. 2, 4: 379 (*Xiphidaria*). -- Stephens 1835 Illus. Brit. Ent., Mand. 7: 111 (England). -- Hartig 1837 Fam. Blattwesp. Holzesp.: 370, pl. 8, fig. 11. -- Blanchard 1840 Hist. Nat. Anim. Art. 3: 244 (*Xiphidaria*). -- Westwood 1840 Introd. Mod. Class. Insects 2: synopsis p. 55. -- Siebold 1844 Preuss. Prov. Bl. 31: 128. -- Eversmann 1847 Byull. mosk. Obshch. Ispyt. Priro. 20: 65 (*Xiphidaria*; parasites; host d). -- Giraud 1854 Verh. zool.-bot. Ver. Wien 4: 603-608 (Austria; *Xiphidaria*; parasites; host d). -- Dufour 1854 Ann. Sci. Nat., Zool. (4) 1: 201-236 (anatomy). -- Kirchner 1854 Verh. zool.-bot. Ver. Wien 4: 289 (*Xiphidaria*; Böhmen). -- Duméril 1860 Mém. Acad. Sci. Inst. Fr. 31(2): 979 (*Xiphidaria*; France; hosts c, e). -- Stavel 1860 Trans. Linn. Soc. Lond. 23: 135, pl. 16, fig. 12 (*Xiphidaria*; wings). -- Holmgren 1860 K. svenska Vetensk.-Akad. Handl. 3(10): 9 ("Xiphidariae Drumedarii", parasite). -- Snelien van Vollenhoven 1861 Natuur. Hist. Neder. 4: 333 (Netherlands). -- Kawai 1864 Byull. mosk. Obshch. Ispyt. Priro. 37: 302 (Volgo-Uralensm). -- Kaitenbach 1864 Verh. naturh. Ver. preuss. Rheinl. 21: 341-342 (*Xiphidaria*; hosts b, d). -- Taschenberg 1866 Hym. Deutschl.: 29. -- Kirchner 1867 Cat. Hym. Eur.: 20. -- Snelien van Vollenhoven 1869 Tijdschr. Ent. 12: 111 (Netherlands). -- Thomson 1871 Hym. Scand. 1: 331 (Sweden). -- Kaitenbach 1874 Pflanzenzettelnde: 559, 582 (*Xiphidaria* and *Xiphidaria*; parasites; hosts c, e). -- André 1881 Spec. Hym. Eur. Alg. 1: 961, cat. p. 70. -- Brischke & Zaddach 1883 Schr. naturh. Ges. Danzig 4: 322-323. -- Cameron 1885 Monogr. Brit. Phytophag. Berlese 1890 Boll. Soc. ent. ital. 22: 184 (*Xiphidaria*; Italy). -- Cameron 1890 Monogr. Brit. Phytophag. Hym. 3: 129, pl. 4, fig. 10, 11 (larva, pupa fig.; hosts e, f). -- Streck 1893 Mitt. schweiz. ent. Ges. 9: 10 (Switzerland). -- Oudemans 1894 Tijdschr. Ent. 37: 92 (Netherlands). -- Dalla Torre 1894 Cat. Hym. 1: 395-396. -- Costa 1894 Prospetto Insettoriferi Ital. 3: 262 (Italy). -- Griffini 1895 (1894) Miscnea ent. 12: 132 (Piémont). -- Costa 1895 Atti Accad. Sci. fis. mat., Napoli (2) 7: 188 (Italy). -- Strobl 1895 Wien. ent. Ztg. 14: 279. -- Leisewitz 1897 Forst. Naturw. 2: 6: 207-224 (host h, biol., adult and larva; Germany). -- Morley 1899 Entomologist's mon. Mag. 35: 190-191 (England; from oak post). -- Ghigi 1905 Annuar. Ist. Mus. Zool. Univ.

Napoli (n.s.) : 25 (*Xyphidria*; listed, distribution). -- Rudow 1909 Int. ent. Z. 3: 136 (biol. note). -- Nielsen & Henriksen 1915 Danm. Fauna 18: 17 (Denmark). -- Smits van Burgst 1920 Ent. Ber., Amst. 5(112): 223 (Netherlands; hosts c, e, h). -- Leonard 1927 Elenco Insetti dann. Ital. 2: 469 (Alberici; parasites; Italy). -- Callan 1939 J. Soc. Br. ent. 1: 242-244 (biol. note; England; host m). -- *Urocera dronedarius*: Panzer 1805 Faun. Insect. Germ.: fasc. 85, fig. 10 (*Astatius dronedarius* for figure, *Urocera* in description). -- Jurine 1807 Nouv. Méth. Class. Hym. Dipt. 1: 75.

Xyphidria (1) *fasciata* Lepelletier 1823 Monogr. Tenthréd.: 3. 9. 6. "in agro Parli-siensis" (Paris ?). -- Lepelletier & Serville 1828 Ency. Méth. 10: 790 (*Xyphidria*). -- Brullé 1846 in Lepelletier, Hist. Nat., Insect., Hym. 4: 646, pl. 45, fig. 5 (*Xyphidria*). -- Dufour 1854 Ann. Sci. Nat., Zool. 4(4): 1: 201-236 (anatomy). -- Desmarest 1859 in Cherny, Ency. Hist. Nat., Annales: 177, fig. 147 (the combination "*Oxyssa fasciata*" from Desmarest as given in some previous catalogs is not so). -- Costa 1864 Annuer. Ist. Mus. Zool. Univ. Napoli 2: 104.

Xyphidria camelus: Lepelletier & Serville 1828 Ency. Méth. 10: 790.

Hosts: a) *Populus tremula*; b) *Populus nigra*; c) *Populus* sp., poplar, aspen; d) *Salix alba*; e) *Salix* sp., willow; f) *Acer campestre*; g) *Ulmus foliacea*; h) *Ulmus* sp., elm; i) birch; j) oak; k) *Platanus* sp.; l) *Populus alba*; m) *Salix alba* var. *coerulea*; n) *Ulmus campestris*; o) *Alnus* sp.; p) *Salix caprea*.

ribesii (Zhelekhovtsev)

U.S.S.R. (Tomsk).

Xyphidria ribesii Zhelekhovtsev 1968 Sp. Trud. gos. zool. Muz. 11: 47-48. 9. "Tomsk, botanical garden" (Moscow, 9) (host a). -- Verzhutskii 1975 Ident. Larvae Sawflies and Woodwasps of Siberia and Far East: 53.

Xyphidria ribesii: Stroganova 1976 Trudy biol. Inst. Sib. Otd. Akad. Nauk SSSR 18: 259, 264 (west. Siberia).

Hosts: a) *Ribes rubrum*.

scata Smith

U.S. (District of Columbia, New York, Pennsylvania, Virginia).

Xyphidria scata Smith 1976 Trans. Am. ent. Soc. 102: 106, 121-122, fig. 5, 16, 21, 26, 27. 9, d. "Hummelstown, Pa." (Washington, 9) (host a).

Hosts: a) *Carpinus americana*.

scutellata Konow

Iran; U.S.S.R. (Turkmen S.S.R.).

Xyphidria scutellata Konow 1897 Ent. Nachr. 23: 301, 303-304, 310. 6. "Turkmenia transcaucasica" (Eberswalde, 6). -- Konow 1898 Ent. Nachr. 24: 327 (9; Talysch). -- Konow 1905 Z. system. Hymenopt. Dipteroi. 5: 42, 45-47. -- Konow 1907 Genera Insect. 28: 4. -- Gussakovskij 1935 Fauna SSSR, Insects Hym. 2, 1: 35, 36, 43, 335, 336, fig. 20. -- Hedické 1938 Hym. Cat. 7: 12. -- Maa 1949 Notes Ent. chin. 13: 167.

sulcata Maa

U.S.S.R. (Sakhalin).

Xyphidria sulcata Maa 1949 Notes Ent. chin. 13: 56-57, 168. 6. "Sachalin: Tomarlik-shi, Shisuka" (Taipei, 6).

tegulata Maa

China (Fukien).

Xyphidria tegulata Maa 1949 Notes Ent. chin. 13: 52, 168, fig. 76, 77. 6. "Fukien: Ta-Chu-Lan, Shaou Hsien" (Maa coll., 6) (originally a paratype of *Exyphidria atriceps* Maa).

tibialis Say

Canada (Nova Scotia, New Brunswick, Ontario, Québec); U.S. (Connecticut, District of Columbia, Illinois, Kansas, Maine, Maryland, Massachusetts, Michigan, Missouri, New Hampshire, New Jersey, New York, North Carolina, Ohio, Pennsylvania, Vermont, Virginia, West Virginia, Wisconsin).

Xyphidria tibialis Say 1824 in Keating, Narr. Long's Exped. 2: Appendix, p. 312. 9. "Pennsylvania" (lost; neotype by Rohwer 1918, Washington, 9). -- Leconte 1859 Writ.

T. Say 1: 208. -- Norton 1864 Proc. ent. Soc. Philad. 3: 16 (*Xyphidria*). -- Norton 1869 Trans. Am. ent. Soc. 2: 353-354 (*Xyphidria*). -- Harrington 1893 Trans. R. Soc. Can., section IV: 137. -- Dalla Torre 1894 Cat. Hym. 1: 397. -- Konow 1897 Ent. Nachr. 23: 303, 308, 311. -- Ashmead 1900 in Smith, Insects New Jers., Rep. New Jers. Dep. Agric. 1899, 27: 600. -- Konow 1905 Z. system. Hymenopt. Dipteroi. 5: 44, 56. -- Konow 1905 Genera Insect. 28: 4. -- MacGillivray 1910 in Smith, Rep. New Jers. Dep. Agric. 1909, 593 (N.J.). -- MacGillivray 1916 Bull. Conn. St. geol. nat. Hist. Surv. 22: 168, 169. -- Rohwer 1918 Ent. News 29: 106, 110 (neotype from "New Jersey"). -- Rohwer 1928 in Leonard, Mem. Cornell Univ. agric. Exp. Stn 101: 874 (N.Y.). -- Hedické 1938 Hym. Cat. 7: 12. -- Ries 1951 in Muesebeck, et al., Agriculture Monogr. 2: 86 (syn.). -- *xythrogaster* Ashmead: hosts a-g). -- Smith 1976 Trans. Am. ent. Soc. 102: 106, 122-123, fig. 6, 17, 28, 29 (hosts a-n).

Xyphidria attenuata: Patton 1879 Can. Ent. 11: 14-15 (parasite; host 1). -- Packard 1890 Rep. U.S. Ent. Commis. 5: 483-484 (host 1). -- Harrington 1893 Trans. R. Soc. Can., section IV: 137 (9 only; host 1). -- Dimmock 1893 Psyche, Camb. 4: 286 (host 1). -- MacGillivray 1916 Bull. Conn. St. geol. nat. Hist. Surv. 22: 168, 169 (host e).

Xyphidria melitae: Harrington 1892 Can. Ent. 14: 225.

Xyphidria xythrogaster Ashmead 1900 in Smith, Insects New Jers., Rep. New Jers. Dep. Agric. 1899, 27: 600 (nomen nudum). -- Ashmead 1903 Can. Ent. 35: 253. d. "Avalon, N.J." (Washington, 9). -- MacGillivray 1910 in Smith, Rep. New Jers. Dep. Agric. 1909: 593 (N.J.). -- MacGillivray 1916 Bull. Conn. St. geol. nat. Hist. Surv. 22: 168, 169. -- Rohwer 1918 Ent. News 29: 106, 107, 108 (neotype unnecessarily designated; host h). -- Rohwer 1928 in Leonard, Mem. Cornell Univ. agric. Exp. Stn 101: 874 (N.Y.; host h). -- Hedické 1938 Hym. Cat. 7: 7.

Hosts: a) *Ulmus* sp., elm; b) *Carpinus* sp., c) *Crataegus* sp., d) *Rhus typhina*; e) *Betula* sp., birch; f) *Fagus* sp., beech; g) *Acer* sp., maple; h) *Carpinus caroliniana*; i) *Betula nigra*; j) *Ulmus americana*; k) apple; l) *Quercus* sp., oak; m) *Tilia americana*; n) cherry branches.

Genus XIPHYDRIOLA Semenov-Tian-Shanskij

Xyphidriola Semenov-Tian-Shanskij 1921 (1917) Russk. ent. Obozr. 17: 82.

Type-species: *Xyphidriola amurensis* Semenov-Tian-Shanskij (Original designation). -- Gussakovskij 1935 Fauna SSSR, Insects Hym. 2, 1: 32, 44, 333, 337. -- Benson 1935 Zool. Meded., Leiden 18: 171 (key to 4 spp., most of which are now placed in other genera). -- Hedické 1938 Hym. Cat. 7: 13. -- Maa 1949 Notes Ent. chin. 13: 63 (divided into subgenera).

amurensis Semenov-Tian-Shanskij

U.S.S.R. (Amur; Primorski Krai).

Xyphidriola amurensis Semenov-Tian-Shanskij 1921 (1917) Russk. ent. Obozr. 17: 82-83. 9. "Sibiria orientalis prov. Amurensis: sec. curs. med. 2) tl. Amur" (Leningrad, 9). -- Semenov-Tian-Shanskij & Gussakovskij 1935 Annls soc. ent. Fr. 104: 122 (Ussur.). -- Gussakovskij 1935 Fauna SSSR, Insects Hym. 2, 1: 44-45, 337. -- Benson 1935 Zool. Meded., Leiden 18: 171. -- Hedické 1938 Hym. Cat. 7: 13. -- Maa 1949 Notes Ent. chin. 13: 63, 168. -- Stroganova 1968 Horntails of Siberia: 24, 112-113 (host a).

Hosts: a) birch.

Subfamily DERECYRTINAE

Derecyrtrinae: Ashmead 1898 Can. Ent. 30: 180. -- Rohwer 1911 Proc. ent. Soc. Wash. 13: 217 (Derecyrtrinae (1)). -- Maa 1949 Notes Ent. chin. 13: 25. -- Benson 1934 Trans. R. ent. Soc. Lond. 105: 157 (divided into 2 tribes). -- Brachyrrhinae: Maa 1949 Notes Ent. chin. 13: 25 (part).

Tribe DERECYRTINI

Derecyrtrini: Benson 1934 Trans. R. ent. Soc. Lond. 105: 157.

Genus DERECYRTA Smith

Derecyrtia Smith 1860 Ann. Mag. nat. Hist. (3) 6: 255.
Type-species: *Derecyrtia platipennis* Smith (Monotypic). -- Norton 1869 Trans. Am. ent. Soc. 2: 351. -- Westwood 1874 Thesaurus ent. Oxon.: 121 (syn.). *Brachytrix* Westwood. -- Tschitscherine 1894 Hor. Soc. ent. Ross. 28: 439. -- Dalla Torre 1894 Cat. Hym. 1: 398. -- Konow 1897 Ent. Nachr. 23: 297, 310 (key to and list of species). -- Ashmead 1898 Can. Ent. 30: 180. -- Konow 1905 Z. system. Hymenopt. Dipt. 5: 35-40 (key to and descriptions of species). -- Konow 1905 Genera Insect. 28: 2-3. -- Hedricke 1938 Hym. Cat. 7: 15-16. -- Maa 1949 Notes Ent. chin. 13: 25. -- Benson 1954 Trans. R. ent. Soc. Lond. 105: 157. -- Riek 1955 Aust. J. Zool. 3: 281.
Brachytrix Westwood 1874 Thesaurus ent. Oxon.: 121 (nomen nudum).

andrei Konow

Ecuador.
-- Konow 1905 Genera Insect. 28: 3. -- "Ecuadori" (Eberswalde, 9).
35, 37-38. -- Hedricke 1938 Hym. Cat. 7: 15.

Jakowlewii Tschitscherine

Derecyrtia jakowlewii Tschitscherine 1894 Hor. Soc. ent. Ross. 28: 436-439. 9.
"Amérigue mér.: Colombien" (Leningrad, 9). -- Semenov-Tian-Shanskij 1901 Russk. ent. Obozr. 1: 185 (separation from related species). -- Konow 1905 Z. system. Hymenopt. Dipt. 5: 36, 39. -- Konow 1905 Genera Insect. 28: 3. -- Benson 1950 Ann. Mag. nat. Hist. (10) 6: 620 (9, British Guiana). -- Hedricke 1938 Hym. Cat. 7: 15. -- Benson 1955 Proc. R. ent. Soc. Lond. (B) 24: 112 (9; Bolivia).

lugubris Westwood

Derecyrtia lugubris Westwood 1874 Thesaurus ent. Oxon.: 122, pl. 23, fig. 3. 9.
"Brazil" ("Mus. Reg. Holm. (F. Schlegel) etiam in Mus. W. W. Saunders." 9). -- Tschitscherine 1894 Hor. Soc. ent. Ross. 28: 436. -- Dalla Torre 1894 Cat. Hym. 1: 398. -- Konow 1897 Ent. Nachr. 23: 298, 299, 310. -- Konow 1905 Z. system. Hymenopt. Dipt. 5: 36, 38-39. -- Konow 1905 Genera Insect. 28: 3. -- Hedricke 1938 Hym. Cat. 7: 15.

patagiata Konow

Derecyrtia patagiata Konow 1899 Ent. Nachr. 25: 148-149. 9. "Peru (Callanga, Cuzco)" (Eberswalde, 9). -- Konow 1905 Genera Insect. 28: 3. -- Konow 1905 Z. system. Hymenopt. Dipt. 5: 35, 36-37. -- Hedricke 1938 Hym. Cat. 7: 15.

prictipennis Smith

Derecyrtia prictipennis Smith 1860 Ann. Mag. nat. Hist. (3) 6: 255-256. 9. "Ega, Brazil" (London, 9). -- Norton 1869 Trans. Am. ent. Soc. 2: 351. -- Westwood 1874 Thesaurus ent. Oxon.: 122, pl. 23, fig. 2. -- Kirby 1882 List Hym. Brit. Mus. 1: 368, pl. 14, fig. 13. -- Tschitscherine 1894 Hor. Soc. ent. Ross. 28: 438. -- Dalla Torre 1894 Cat. Hym. 1: 398. -- Konow 1897 Ent. Nachr. 23: 298, 299, 310. -- Konow 1905 Z. system. Hymenopt. Dipt. 5: 35, 38. -- Konow 1905 Genera Insect. 28: 3. -- Benson 1950 Ann. Mag. nat. Hist. (10) 6: 620 (antennae). -- Hedricke 1938 Hym. Cat. 7: 16.

porteri Brèthes

Derecyrtia porteri Brèthes 1919 Revta chil. Hist. nat. 23: 49-50. 9. "les provinces centrales du Chili" (Buenos Aires (?), 9).

rugifrons Cameron

Derecyrtia rugifrons Cameron 1883 Biologia cent.-am. 1: 68-69, pl. 3, fig. 13. 9. "Costa Rica, Irazu, 6000 to 7000 feet" (London, 9). -- Dalla Torre 1894 Cat. Hym. 1: 398. -- Konow 1897 Ent. Nachr. 23: 298, 299, 310. -- Konow 1905 Z. system. Hymenopt. Dipt. 5: 35, 36. -- Konow 1905 Genera Insect. 28: 3. -- Hedricke 1938 Hym. Cat. 7: 16.

striatifrons Malaise

Derecyrtia striatifrons Malaise 1942 Ent. Tidskr. 63: 119. 9. "Ecuador, east of the Cordilleras (Napo, 450 m.)" (Stockholm, 9).

varipennis Rohwer

Derecyrtia varipennis Rohwer 1941 Proc. U.S. natn. Mus. 41: 378. 9. "San Bernardino, Paraguay" (Washington, 9). -- Hedricke 1938 Hym. Cat. 7: 16.

Genus STEIROCEPHALA Benson

Steirocephala Benson 1954 Trans. R. ent. Soc. Lond. 105: 157-158.
Type-species: *Derecyrtia reedii* Kirby (Original designation).

flavipes (Philippi)

Chile (Valdivia).
Brachytrix flavipes Philippi 1871 Stettin. ent. Ztg. 32: 287, pl. 3, fig. 2. 9. "Prov. Valdivia" (Ithaca, 9). -- Westwood 1874 Thesaurus ent. Oxon.: 121 (9).
Derecyrtia flavipes: Westwood 1874 Thesaurus ent. Oxon.: 205 (9). -- Kirby 1881 Trans. R. ent. Soc. Lond.: 50. -- Kirby 1882 List Hym. Brit. Mus. 1: 369. -- Kirby 1883 Trans. R. ent. Soc. Lond.: 202-203 (9, 9). -- Dalla Torre 1894 Cat. Hym. 1: 398. -- Konow 1897 Ent. Nachr. 23: 298, 299, 310. -- Konow 1905 Z. system. Hymenopt. Dipt. 5: 36, 39. -- Konow 1905 Genera Insect. 28: 3. -- Porter 1916 Revta chil. Hist. nat. 20: 15 (listed). -- Rohwer 1925 Revta chil. Hist. nat. 29: 44-45 (9 type described; 9). -- Hedricke 1938 Hym. Cat. 7: 15.
Steirocephala flavipes: Benson 1954 Trans. R. ent. Soc. Lond. 105: 158.

reedii (Kirby)

Chile.
Derecyrtia reedii Kirby 1882 List Hym. Brit. Mus. 1: 369, pl. 14, fig. 15. 9. "Chili" (London, 9). -- Dalla Torre 1894 Cat. Hym. 1: 398. -- Konow 1897 Ent. Nachr. 23: 298, 299, 310. -- Konow 1905 Z. system. Hymenopt. Dipt. 5: 36, 40 (reedii). -- Konow 1905 Genera Insect. 28: 3 (reedii). -- Porter 1916 Revta chil. Hist. nat. 20: 15 (reedii; listed). -- Hedricke 1938 Hym. Cat. 7: 16 (reedii).
Steirocephala reedii: Benson 1954 Trans. R. ent. Soc. Lond. 105: 158.

ruficeps (Brèthes)

Chile (Aconcagua).
Derecyrtia ruficeps Brèthes 1915 Revta chil. Hist. nat. 19: 69. 9. "La Ligua (Aconcagua)" (Buenos Aires, 9). -- Porter 1916 Revta chil. Hist. nat. 20: 15 (listed). -- Hedricke 1938 Hym. Cat. 7: 16.
Steirocephala ruficeps: Benson 1954 Trans. R. ent. Soc. Lond. 105: 158.

Genus AUSTROCYRTA Riek

Austrocyrtia Riek 1955 Aust. J. Zool. 3: 282.
Type-species: *Austrocyrtia australiensis* Riek (Original designation).

australiensis Riek

Australia (Queensland, Victoria).
Austrocyrtia australiensis Riek 1955 Aust. J. Zool. 3: 282-283, fig. 2. 9. 9. "Brisbane, Qld." (Canberra, 9) (Allotype from Beaconsfield, Victoria, at Melbourne). -- Riek 1970 in C.S.I.R.O., Insects Aust.: 889, fig. 37.17, f.

Tribe BRACHYXIPHINI

Brachyixiphini: Benson 1954 Trans. R. ent. Soc. Lond. 105: 157.

Genus BRACHYXIPHUS Philippi

Brachytrix Philippi 1871 Stettin. ent. Ztg. 32: 285-287.
Type-species: *Brachytrix grandis* Philippi (Designated by Kirby 1881). -- Kirby 1881 Trans. R. ent. Soc. Lond.: 50. -- Kirby 1882 List Hym. Brit. Mus. 1: 368-369. -- Tschitscherine 1894 Hor. Soc. ent. Ross. 28: 439. -- Dalla Torre 1894 Cat. Hym. 1: 398. -- Konow 1897 Ent. Nachr. 23: 297, 299, 310. -- Ashmead 1898 Can. Ent. 30: 180. -- Schrottky 1902 An. Mus. nac. Hist. nat. B. Aires 8: 91 (*Brachytrix* and *Derecyrtia* merged to one genus). -- Konow 1905 Z. system. Hymenopt. Dipt. 5: 40-41 (1 species). -- Konow 1905 Genera Insect. 28: 3. -- Hedricke 1938 Hym. Cat. 7: 14-15. -- Maa 1949 Notes Ent. chin. 13: 25.

grandis Philippi

Argentina (Chubut); Chile (Valdivia).

Brachycephalus grandis Philippi 1871 Stettin. ent. Ztg. 32: 287, pl. 3, fig. 1, 11.
 9. "Prov. Valdivia" (Ithaca, 9). -- Westwood 1874 Thesaurus ent. Oxon.: 121. -- Kirby 1881 Trans. R. ent. Soc. Lond.: 50. -- Kirby 1882 List Hym. Brit. Mus. 1: 369. -- Dalla Torre 1894 Cat. Hym. 1: 398. -- Konow 1897 Ent. Nachr. 23: 300, 310. -- Schrottky 1902 An. Mus. nec. Hist. nat. B. Aires 8: 91 (Chubut). -- Konow 1905 Z. system. Hymenopt. Dipteroi. 5: 40-41. -- Konow 1905 Genera Insect. 28: 3. -- Portier 1916 Revta chil. Hist. nat. 20: 15 (listed). -- Hedicke 1938 Hym. Cat. 7: 14-15.

Dereagryta grandis: Westwood 1874 Thesaurus ent. Oxon.: 205 (syn.: *brachylopa* Westwood; *grandis* described from ♂, not ♀).

Brachycephalus grandis grandis: Rohwer 1925 Revta chil. Hist. nat. 29: 42-43 (♀ type redescr. ibid.).

Dereagryta brachylopa: Westwood 1874 Thesaurus ent. Oxon.: 121, pl. 23, fig. 1. ♂. "Chilii" (Oxford, ♂).

hyalinus Kirby

Chile (Magallanes).

Brachycephalus hyalinus Kirby 1882 List Hym. Brit. Mus. 1: 369, pl. 14, fig. 9, ♂. "Chilii" (London, ♂). -- Dalla Torre 1894 Cat. Hym. 1: 398. -- Konow 1897 Ent. Nachr. 23: 300, 310 (as syn. of *grandis*).

Brachycephalus grandis hyalinus: Rohwer 1925 Revta chil. Hist. nat. 29: 43-44 (♀, Punta Arenas, Chile). -- Hedicke 1938 Hym. Cat. 7: 15.

Family PARORYSSIDAE

Paroryssidae: Martynov 1925 Izv. Akad. Nauk SSSR (4) 19: 755-756. -- Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 191, 218-219 (key to genera and species). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 27, 76 (key to genera and species).

An extinct family of the Jurassic period, placed as an archaic member of the Orussioidea by Rasnitsyn (1969).

Genus PARORYSSUS Martynov

Paroryssus Martynov 1925 Izv. Akad. Nauk SSSR (4) 19: 756.

Type-species: *Paroryssus extensus* Martynov (Monotypic). -- Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 219 ("P. *gracilis* Martynov" given as type-species, but there is no such species in *Paroryssus*). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 17, 76.

extensus Martynov

U.S.S.R. (Kazakh S.S.R.) (Jurassic)

Paroryssus extensus Martynov 1925 Izv. Akad. Nauk SSSR (4) 19: 756-757, fig. 15, 16, ♀. "Jurassic slates near Galkino, East Karatau" (Leningrad, 9). -- Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 219, fig. 25. -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 17, 76, fig. 15 (in key).

Genus PRAEORYSSUS Rasnitsyn

Praeoryssus Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 219-220.

Type-species: *Praeoryssus venosus* Rasnitsyn (Original designation). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 76 (key to species).

gracilis Rasnitsyn

U.S.S.R. (Kazakh S.S.R.) (Jurassic)

Praeoryssus gracilis Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 220, fig. 27. "Yuzhnei Kazakhstan, khrebet Karatau, mestonakhozhdenie Mikhailovka" (PIN, Moscow,). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 17, 76, fig. 125 (in key).

venosus Rasnitsyn

U.S.S.R. (Kazakh S.S.R.) (Jurassic)

Praeoryssus venosus Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 220, fig. 26. "Yuzhnei Kazakhstan, khrebet Karatau, mestonakhozhdenie Mikhailovka" (PIN, Moscow,). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 17, 76, fig. 124 (in key).

Genus MICROORYSSUS Rasnitsyn

Microoryssus Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 221.

Type-species: *Microoryssus brachyurus* Rasnitsyn (Original designation). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 76 (key to species).

antennatus Rasnitsyn

U.S.S.R. (Kazakh S.S.R.) (Jurassic)

Microoryssus antennatus Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 221, fig. 32. "Yuzhnei Kazakhstan, khrebet Karatau, mestonakhozhdenie Mikhailovka" (PIN, Moscow,). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 17, 76, fig. 129 (in key).

brachyurus Rasnitsyn

U.S.S.R. (Kazakh S.S.R.) (Jurassic)

Microoryssus brachyurus Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 221, fig. 28. "Yuzhnei Kazakhstan, khrebet Karatau, mestonakhozhdenie Mikhailovka" (PIN, Moscow,). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 17, 76, fig. 126 (in key).

crassipes Rasnitsyn

Microxyasus crassipes Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 222, fig. 30. "Yuzhnei Kazakhstan, khrebet Karatau, mestonakhozhdenie Mikhailovka" (PIN, Moscow,). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 17, 76, fig. 130 (in key).

U.S.S.R. (Kazakh S.S.R.) (Jurassic).

minus Rasnitsyn

Microxyasus minus Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 224, fig. 33. "Yuzhnei Kazakhstan, khrebet Karatau, mestonakhozhdenie Mikhailovka" (PIN, Moscow,). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 17, 76, fig. 131 (in key).

U.S.S.R. (Kazakh S.S.R.) (Jurassic).

robustus Rasnitsyn

Microxyasus robustus Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 223, fig. 31. "Yuzhnei Kazakhstan, khrebet Karatau, mestonakhozhdenie Mikhailovka" (PIN, Moscow,). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 17, 76, fig. 127 (in key).

U.S.S.R. (Kazakh S.S.R.) (Jurassic).

subtilis Rasnitsyn

Microxyasus subtilis Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 222, fig. 29. "Yuzhnei Kazakhstan, khrebet Karatau, mestonakhozhdenie Mikhailovka" (PIN, Moscow,). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 17, 76, fig. 126 (in key).

U.S.S.R. (Kazakh S.S.R.) (Jurassic).

Family XELOLOMIDAE

Xyelotomidae: Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 191, 224-225 (key to genera). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 25, 55-56 (key to genera).

A small extinct family of the Jurassic period, questionably placed as an archaic member of the Tenthredinoidea by Rasnitsyn (1969).

Genus XELOLOMA Rasnitsyn

Xyelotoma Rasnitsyn 1969 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 225.

Type-species: *Xyelotoma nigricornis* Rasnitsyn (Original designation).

nigricornis Rasnitsyn

Xyelotoma nigricornis Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 225, fig. 34. "Yuzhnei Kazakhstan, khrebet Karatau, mestonakhozhdenie Mikhailovka" (PIN, Moscow,). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 17, 56, fig. 81 (in key).

U.S.S.R. (Kazakh S.S.R.) (Jurassic).

Genus XELOCERUS Rasnitsyn

Xyelocerus Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 226.

Type-species: *Xyelocerus admirandus* Rasnitsyn (Original designation).

admirandus Rasnitsyn

Xyelocerus admirandus Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 226-227, fig. 35, pl. 24, fig. 11. "Yuzhnei Kazakhstan, khrebet Karatau, mestonakhozhdenie Mikhailovka" (PIN, Moscow,). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 17, 56, fig. 5 (in key).

U.S.S.R. (Kazakh S.S.R.) (Jurassic).

Genus PSEUDOXVELA Rasnitsyn

Pseudoxvela Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 227.

Type-species: *Pseudoxvela heteroclita* Rasnitsyn (Original designation).

heteroclita Rasnitsyn

Pseudoxvela heteroclita Rasnitsyn 1968 in Jurassic Insects Karatau, Otd. Obsh. Biol. Akad. Nauk SSSR: 227-228, fig. 36, pl. 24, fig. 12. "Yuzhnei Kazakhstan, khrebet Karatau, mestonakhozhdenie Mikhailovka" (PIN, Moscow,). -- Rasnitsyn 1969 Trudy paleont. Inst. 123: 17, 56, fig. 82 (in key).

U.S.S.R. (Kazakh S.S.R.) (Jurassic).

Family BLASTICOTOMIDAE

Blasticotominae: Thomson 1871 Hym. Scand. i: 13, 294-296 (tribe).
Blasticotomidae: André 1881 Spec. Hym. Eur. Alg. i: 464-465, cat. p. 59 (as tribe).
--- MacGillivray 1906 Proc. U.S. natn. Mus. 29: 648. --- Rohrer 1911 Proc. ent. Soc. Wash. 13: 220. --- Gussakovskij 1935 Fauna USSR, Insects Hym. 2, i: 217-221, 393 (Palearctic). --- Benson 1938 Trans. R. ent. Soc. Lond. 87: 369. --- Takeuchi 1939 Tenthredo 2: 393-397 (Japanese Empire). --- Benson 1951 Handbk Ident. Br. Insects 6(2a): 34-35 (Britain). --- Maxwell 1955 Can. Ent. suppl. 1, 87: 38-39 (Internal larval anatomy). --- Lorenz and Kraus 1957 Larval Syst. Blattwesp.: 251-253 (larva). --- Ermolenko 1972 Fauna Ukraine 10, 2: 179-184. --- Móczár & Zombori 1973 Fauna Hung. XI, Hym. 1, 2: 98-100.
Blasticotomini: Konow 1890 Dt. ent. Z. 34: 227, 229 (tribe). --- Konow 1904 Z. system. Hymenopt. Dipteroi. 4: 367-368. --- Konow 1905 Genera Insect. 27: 23.
Blasticotominae: Dalla Torre 1894 Cat. Hym. i: 399. --- Schmiedeknecht 1907 Hym. Mittel Eur.: 767. --- Nielsen & Henriksen 1915 Danm. Fauna 18: 26. --- Enslin 1917 Tenthredo. Mittel Eur.: 626-627. --- Schmiedeknecht 1930 Hym. Nord-Mittel Eur.: 30-31. --- Hediche 1930 Tierwelt Mittel Eur.: 51(2): 15.

This is a small family of Tenthredinoidea found in the Palearctic Region, though one fossil form has been found in North America. Hosts are ferns in which the larva is a stem borer. Eight species or subspecies in three genera are known.

Genus BLASTICOTOMA Klug

Blasticotoma Klug 1834 Jb. Insect. i: 251-252.
Type-species: *Blasticotoma filicet* Klug (Monotypic). --- Hartig 1837 Fam. Blattwesp. Holzresp.: 74-75. --- Herrich-Schäffer 1840 Nomencl. Ent. 2: 34, 85. --- Thomson 1871 Hym. Scand. i: 294-295. --- André 1881 Spec. Hym. Eur. Alg. i: 465, cat. p. 59. --- Kirby 1882 List Hym. Br. It. Mus. i: 53 (in subfamily Hyctoninae). --- Schöyen 1887 Ent. Tidsskr. 8: 113 (in key). --- Dalla Torre 1894 Cat. Hym. i: 399. --- Konow 1904 Z. system. Hymenopt. Dipteroi. 4: 368. --- Konow 1905 Genera Insect. 27: 23. --- Schmiedeknecht 1907 Hym. Mittel Eur.: 767. --- Enslin 1917 Tenthredo. Mittel Eur.: 626-627. --- Hediche 1930 Tierwelt Mittel Eur.: 51(2): 15. --- Schmiedeknecht 1930 Hym. Nord-Mittel Eur.: 31. --- Gussakovskij 1935 Fauna USSR, Insects Hym. 2, i: 219, 393 (Palearctic). --- Takeuchi 1939 Tenthredo 2: 393-395 (Japanese Empire). --- Maxwell 1955 Can. Ent. suppl. 1, 87: 38-39 (Internal larval anatomy). --- Lorenz & Kraus 1957 Larval Syst. Blattwesp.: 252 (larva). --- Okutani 1964 Sci. Rep. Hyogo Univ. Agric., Ser. Agric. Biol. 6: 44 (larva). --- Ermolenko 1972 Fauna Ukraine 10, 2: 179-184. --- Móczár & Zombori 1973 Fauna Hung. XI, Hym. 1, 2: 99.

atra Zhelokhovtsev

Blasticotoma atra Zhelokhovtsev 1934 Sb. Trud. gos. zool. Mus. i: 154, 9, 15. Sicha-Alin: Stekljanucha (Sichotom distr.)" (Moscow, 9). --- Gussakovskij 1935 Fauna USSR, Insects Hym. 2, i: 219, 220-221, 393. --- Takeuchi 1939 Tenthredo 2: 393-394 (Honsu; Siberia; conspecific with *pacifica* 93). --- Togashi 1965 Kontyû 33: 231 (rectal papillae). --- Okutani 1967 Jap. J. appl. Ent. Zool. 11: 46 (host a).

Hosts: a) *Pteridium aquilinum*.

filiceti filiceti Klug

Austria; Denmark; England; Finland; Germany; Norway; Hungary; Netherlands; Sweden; U.S.S.R. (Ukrainian S.S.R.).

Blasticotoma filicet Klug 1834 Jb. Insect. i: 251-252, pl. 2, fig. 9, l. 9. "Am Ufer des Sees beim Dorfe Tegel hiesiger Gegend, im Frühjahr auf Farnkräutern" (Berlin, 9). --- Hartig 1837 Fam. Blattwesp. Holzresp.: 75. --- Herrich-Schäffer 1840 Nomencl. Ent. 2: 85. --- Haliday 1855 Nat. Hist. Review 11, 1855 proc.: 60, pl. 2, fig. 2. --- Taschenberg 1866 Hym. Deutschl.: 12. --- Kirchner 1867 Cat. Hym. Eur.: 2. --- Thomson 1871 Hym. Scand. i: 295 (*filicet* (!)). --- Sparre Schneider 1880 in Stäbke, Enun. Insect. Norway. 5: 26 (Norway). --- André 1881 Spec. Hym. Eur. Alg. i: 465, pl. 22, fig. 4, cat. p. 59. --- Kirby 1882 List Hym. Br. It. Mus. i: 33. --- Kriechbauer 1884 Klug's ges. Aufs. Blattwesp.: 297, pl. 22, fig. 9, l. --- Konow 1890 Dt. ent. Z. 34: 242. --- Dalla Torre 1894 Cat. Hym. i: 399. --- Schriener 1901 Allg. Z. Ent. 6: 280

(Berlin vicinity). --- Konow 1904 Z. system. Hymenopt. Dipteroi. 4: 368 (host b). --- Konow 1905 Genera Insect. 27: 23, fig. 3, 10, 17. --- Schmiedeknecht 1907 Hym. Mittel Eur.: 767 (host b). --- Ghigi 1909 Annuar. Ist. Mus. Zool. Univ. Napoli (n.s.) i: 25 (Germany). --- Meljere 1911 Tijdschr. Ent. 54: 86-95, pl. 5, fig. 1, pl. 6, fig. 12 (larva, biol.; host b). --- Nielsen & Henriksen 1915 Danm. Fauna 18: 29, 30 (Denmark; host b). --- Enslin 1917 Tenthredo. Mittel Eur.: 626-627. --- Forsius 1919 Acta Soc. Fauna Flora fenn. 46: 22 (Lojo-Gebete). --- Forsius 1924 Notul. ent. 4: 92-96 (larva; host c). --- Hediche 1930 Tierwelt Mittel Eur.: 51(2): 15. --- Schmiedeknecht 1930 Hym. Nord-Mittel Eur.: 31 (host c). --- Malaise 1931 Zool. Anz. 94: 212 (separation from *pacifica*). --- Benson 1934 Entomologist's mon. Mag. 70: 203-204 (England; hosts c, d, g). --- Forsius & Hällén 1935 Enun. Insect. Fenn. 2: 1. --- Gussakovskij 1935 Fauna USSR, Insects Hym. 2, i: 219-220, 393 (hosts b, c). --- Stritt 1935 Mitt. bad. Landesver. Naturk. 3: 189 (Baden; host c). --- Hoop 1941 Bombus 17: 141 (Westholstein). --- Hällén 1943 Notul. ent. 23: 71 (Finland). --- Kloet & Hinks 1945 Checklist Brit. Insects: 221. --- Francke-Grosman 1951 Ent. Tidsskr. 72: 81-82 (Sweden; host c). --- Benson 1951 Handbk Ident. Br. Insects 6(2a): 35 (England; hosts c, d, e). --- Benson 1955 Entomologist's mon. Mag. 89: 304 (England; hosts c, d, e). --- Zingröbl 1954 Mitt. Pollichia 11 (2): 119 (Pfalz). --- Maxwell 1955 Can. Ent. suppl. 1, 87: 38-39 (Internal larval anatomy; host i). --- Kontunien 1960 Suom. Eläim. 9: 59 (Finland; hosts c, d, g, j, k). --- Stritt 1960 Beitr. naturk. Forsch. Schwedt. 19: 188 (Germany; host c). --- Zingröbl 1964 Mitt. Pollichia 3(11): 205-206 (saw illustrated and compared with other Symphyta). --- Ermolenko 1964 Pratsi Inst. Akad. Nauk Ukrain. RSR 20: 106-108, fig. 8, 9 (Ukrainian SSR). --- Kontunien 1965 Suom. hyöht. Aikak. 31: 257 (Finland). --- Lindqvist 1966 Notul. ent. 46: 93 (s. Finland; host b). --- Zombori 1968 Folia ent. hung. 21(22): 335-337 (Hungary; distribution; hosts a, b, c, d, e). --- Hoop 1968 Schr. naturw. Ver. Schlesw.-Holst. 58: 51 (Schleswig-Holstein). --- Weiffenbach 1967 Ent. Jber 77: 99 (Germany; host f). --- Norfvea 1971 Suom. hyöht. Aikak 37: 184 (Wolinien, s. Finland). --- Ermolenko 1972 Fauna Ukraine 10, 2: 181-184, fig. 193-195 (adult, larva; hosts c, d, f, g, j). --- Zombori 1973 Mitt. Mus. Komitates Veszprem 12: 473 (Hungary; host a). --- Móczár & Zombori 1973 Fauna Hung. XI, Hym. 1, 2: 100 (Hungary; hosts c, d, f, g). --- Schedl 1973 Mitt. Abt. Landesmus. Joanneum 2: 46-47 (Austria; distribution; hosts c, d, e). --- Schedl 1974 (1973) Z. Joanneum. 8st. Ent. 25: 114-117 (Austria; review of literature and history in Europe; hosts a, c, d, e, g).

Hosts: a) *Pteridium aquilinum*; b) *Aspidium filix-mas*; c) *Adiantum feline-femina*; d) *Matteucia struthiopteris*; e) *Dryopteris filix-mas*; f) *Polystichum* sp.; h) *Pteris aquilina*; i) Filicales; j) *Pteridium* sp.; k) *Matteucia* sp.

filiceti pacifica Malaise

Japan; U.S.S.R. (Kurile Islands, Primorski Krai).

Blasticotoma filicet var. *pacifica* Malaise 1931 Zool. Anz. 44: 212. "Japan (Hakodate) .. Wladivostok (Kangas)" (Stockholm,). --- Gussakovskij 1935 Fauna USSR, Insects Hym. 2, i: 219, 220, 393. --- Takeuchi 1939 Tenthredo 2: 393 (Hokkaido, Honshu; Siberia). --- Takeuchi 1935 Insecta matsum. 19: 11 (Kurile Is.). --- Okutani 1959 in Kawada, et al., Illus. Insect Larvae Japan: 555 (larva). --- Okutani 1967 Jap. J. appl. Ent. Zool. 11: 46 (hosts a, b, c).

Hosts: a) *Matteucia struthiopteris*; b) *Adiantum aquilinum*; c) *Osmunda cinnamomea*.

nipponica Takeuchi

Blasticotoma nipponica Takeuchi 1939 Tenthredo 2: 393, 394-395, fig. 11, 9, d. "Kibune near Kyoto" (Osaka, 9). --- Togashi 1965 Kontyû 33: 231 (rectal papillae).

Genus PAREMPHYTUS Brues

Parempytus Brues 1908 Bull. Mus. comp. Zool. Harv. 51: 264-265, 273 (in Tenthredinidae).

Type-species: *Parempytus ostentus* Brues (Monotypic). --- Rohrer 1908 Bull. An. Mus. nat. Hist. 24: 526 (in Tenthredinidae). --- Benson 1942 Psyche, Camb. 49: 47-48 (in Blasticotomidae). --- Smith 1973 Proc. ent. Soc. Wash. 77: 99 (syn.: *Ranzania* Malaise).
Ranzania Malaise 1931 Zool. Anz. 94: 212-213.

Type-species: *Rumaria reducta* Malaise (Monotypic). -- Gussakovskij 1935 Fauna USSR, Insects Hym. 2, 1: 221, 393 (Palearctic). -- Takeuchi 1939 Tenthredo 2: 393, 395-397 (Japanese Empire). -- Okutani 1964 Sci. Rep. Hyogo Univ. Agric., Ser. Agric. biol. 6: 44 (larvae).

Flavipes (Takeuchi)

Rumaria flavipes Takeuchi 1939 Tenthredo 2: 396-397, fig. 12. ♀. "Kibune near Kyoto" (Osaka, ♀). -- Okutani 1954 Sci. Rep. Hyogo Univ. Agric., Ser. Agric. biol. 1: 75 (Sasayama). -- Iwata 1958 Mushi 31: 49, 51 (varies). -- Togashi 1965 in Asahina, et al., Iconogr. Insect. Japon. 3: 245, fig. 5. -- Okutani 1967 Jap. J. appl. Ent. Zool. 11: 46 (hosts a, b). -- Togashi 1972 Mushi 46: 131 (seasonal occurrence on Mt. Hiko). -- Togashi 1974 Trans. Shikoku ent. Soc. 12: 15 (Shikoku). *Paramphytus flavipes*: Smith 1975 Proc. ent. Soc. Wash. 77: 99.

Hosts a) *Dryopteris erythrosora*; b) *Athyrium japonica*.

ostentus Brues

Paramphytus ostentus Brues 1908 Bull. Mus. comp. Zool. Herv. 51: 265, 273. ♀. "Florissant, Col." Miocene (Cambridge, Mass., ♀). -- Benson 1942 Psyche, Camb. 49: 47-48 (Miocene; in Blasticotomidae).

Rumaria ostenta: Zhelokhovtsev & Rasnitsyn 1972 Psyche, Camb. 79: 315, 317, fig. 2 (Oligocene).

reductus (Malaise)

Rumaria reducta Malaise 1931 Zool. Anz. 94: 213. ♀. "Yunnakawa, Hakodate, Japan" (Stockholm, ♀) (host a). -- Gussakovskij 1935 Fauna USSR, Insects Hym. 2, 1: 221, 393 (host a). -- Takeuchi 1939 Tenthredo 2: 396 (Honsu, Hokkaido). -- Okutani 1954 Sci. Rep. Hyogo Univ. Agric., Ser. Agric. biol. 1: 75 (Sasayama). -- Togashi 1965 Kontyû 33: 231 (rectal papillae).

Paramphytus reductus: Smith 1975 Proc. ent. Soc. Wash. 77: 99.

Hosts: a) *Pteridium aquilinum*.

Genus BOHEA Maa

Bohea Maa 1944 Biol. Bull. Fukien Christ. Univ. 4: 58-59.

Type-species: *Bohea abrupta* Maa (Original designation).

abrupta Maa

Bohea abrupta Maa 1944 Biol. Bull. Fukien Christ. Univ. 4: 59-60. ♂. "Ta-Chu-Lan, alt. ca. 1500 m., Shaown Hsien, NW. Fukien" (author's coll., ♂) (found on herbage near a stream).

Family PERGIDAE

Tenthredinidae, Stirps 2, Stirps 3: Leach 1817 Zool. Misc. 3: 115, 118.
Tenthredinidae, Div. h, Div. 1: Lepelletier 1823 Monogr. Tenthred.: 115, 118.
Cimbicinae (pt.): Kirby 1882 List Hym. Brit. Mus. 1: 18-33, 89-97 (subfamily Cimbicinae (pt.), Loboceratinae, Pterygophorinae, Lophyrinae). -- Cameron 1883 Biologia cent.-am., Hym. 1: 51-67 (subfamily Syzygonia, Perreyina). -- Froggatt 1890 Proc. Linn. Soc. N.S.W. (2): 690-696 (catalogue). -- Dalla Torre 1894 Cat. Hym. 1: 304-309, 347-351 (subfamily Lophyrinae (pt.), Pterygophorinae, Loboceratinae, Cimbicinae (pt.)). -- Konow 1905 Genera Insect. 29: 10-12, 30-41 (subfamily Cimbicinae, Loboceratinae, subfamily Lophyrinae). -- MacGillivray 1906 Proc. Edinb. Mus. 29: 638, 636 figs. 80-84 (wings). -- Tillyard 1926 Insect. Aust. and N. Zealand 263-265.
Perreyidae: Ashmead 1898 Can. Ent. 30: 225. -- Rohwer 1911 Proc. ent. Soc. Wash. 13: 220. -- Malaise 1955 Ent. Tidsskr. 76: 121.
Pterygophoridae: Ashmead 1898 Can. Ent. 30: 229. -- Rohwer 1911 Proc. ent. Soc. Wash. 13: 225. -- Benson 1934 Trans. R. ent. Soc. Lond. 82: 462.
Loboceridae: Rohwer 1911 Proc. ent. Soc. Wash. 13: 226. -- Benson 1934 Trans. R. ent. Soc. Lond. 82: 462. -- Malaise 1955 Ent. Tidsskr. 76: 117.
Pergidae: Rohwer 1911 Proc. ent. Soc. Wash. 13: 226. -- Wheeler & Mann 1923 Psyche, Camb. R. ent. Soc. Lond. 82: 462. -- Benson 1935 Mem. Qd Mus. 10: 222-224 (key to subfamilies). -- Benson 1938 Trans. R. ent. Soc. Lond. 87: 376-382 (classification and key to subfamilies). -- Lima 1960 Insetos do Brasil, v. 11, Hym. 1: 349-352. -- Riek 1970 J. Aust. ent. Soc. 9: 217-218 (key to Australian subfamilies). -- Riek 1970 in C.S.I.R.O., Insect. Aust.: 890-892 (key to Australian subfamilies).
Acorduleceridae: Ross 1937 Illinois biol. Monogr. 15: 55. -- Malaise 1949 Ark. Zool. 42A: 13.

The Pergidae are found in the Australian and Neotropical regions with a few species extending north into the Nearctic Region. It is the dominant sawfly group in Australia. About 146 species are known from Australia and 177 in the New World, but the fauna of the Neotropics is not as well known as that of other regions, and it may double when more collections are made and studied. Related genera belonging to the same subfamilies such as the Pergulinae, Philomastiginae, and Perreyinae represent examples of the close relationships of the Neotropical and Australian faunas.

Because of the very different forms found in the Pergidae such as differences in the structure of the antennae and wing venation, some subfamilies have been given family status in the past. However, the group as a whole is definable as shown by Benson (1938 Trans. R. ent. Soc. Lond. 87: 376-382).

Subfamily PERGINAE

Tenthredinidae, Stirps 2: Leach 1817 Zool. Misc. 3: 115.
Tenthredinidae, Div. h: Lepelletier 1823 Monogr. Tenthred.: 40.
Cimbicinae (pt.): Kirby 1882 List Hym. Brit. Mus. 1: 18-31. -- Froggatt 1890 Proc. Linn. Soc. N.S.W. (2): 691-695. -- Dalla Torre 1894 Cat. Hym. 1: 349-351.
Perginae: Ashmead 1898 Can. Ent. 30: 231-232. -- Benson 1935 Mem. Qd Mus. 10: 223. -- Benson 1938 Trans. R. ent. Soc. Lond. 87: 379. -- Benson 1939 Aust. Zool. 9: 329-330 (key to genera).
Syzygoniidae (pt.): Konow 1905 Genera Insect. 29: 11-12. -- Konow 1905 Z. syst. Hym. Dipt. 5: 255-264, 313-328, 377-385 (key to spp., in genera *Perga* and *Heptaacta*).
Pergidae: Rohwer 1911 Proc. ent. Soc. Wash. 13: 226. -- Benson 1934 Trans. R. ent. Soc. Lond. 82: 462.

Tribe CEREAICINI

Lobocerinae (pt.): Ashmead 1898 Can. Ent. 30: 229.
Lobocerotides (pt.): Konow 1905 Genera Insect. 29: 35.
Cereaicini: Benson 1939 Aust. Zool. 9: 326.

Genus CEREALES Kirby

Cereales Kirby 1882 List Hym. Brit., Mus., 1: 30-31.
Type-species: *Cereales scutellata* Kirby (Monotypic). -- Konow, 1905 Genera Insect.
29: 35. -- Morrice 1919 Trans. ent. Soc. Lond. 1918: 287 (2 spp.). -- Benson 1939 Aust.
Zool. 9: 329-330 (1 sp.). -- Benson 1958 Proc. Linn. Soc. N.S.W. 83: 289 (legends for
figures in 1939 paper).

scutellata Kirby

Australia (New South Wales; Victoria;
A.C.T.; South Australia).

Cereales scutellata Kirby 1882 List Hym. Brit. Mus. 1: 31, pl. 2, fig. 15. δ .
"South Australia" (London, δ). -- Dalla Torre 1894 Cat. Hym. 1: 349. -- Konow 1905 Genera
Insect. 29: 35. -- Forsius 1927 Rec. S. Aust. Mus. 3: 299-300 (?). -- Forsius 1929
Notul. ent. 9: 82. -- Benson 1939 Aust. Zool. 9: 329-330 (syn.: *agathiformis* Kirby;
distribution). -- Maxwell 1955 Can. Ent. (Suppl. 1) 87: 26 (internal larval anatomy;
host a). -- Morrow, et al. 1976 Oecologia 24: 193-206 (*Eucalyptus* oils in the defen-
sive oval discharge of larva; host b).

Cereales agathiformis Kirby 1893 Ann. Mag. nat. Hist. (6) 12: 42-43. δ . "Melbourne"
(London, δ).

Hosts: a) *Eucalyptus* sp.; b) *Eucalyptus pauciflora niphophila*.

Genus XILOPERGA Shipp

Xyloperga Shipp 1894 Entomologist 27: 339, 340.

Type-species: *Perga halidayi* (!) Westwood (Original designation). -- Morrice 1919 Trans.
ent. Soc. Lond. 1918: 261-266 (syn.: *Heptacola* Konow; spp. included in key to *Perga*
spp.). -- Benson 1939 Aust. Zool. 9: 326, 330-333 (key to spp.). -- Benson 1958 Proc.
Linn. Soc. N.S.W. 83: 289-290 (legends for figures in 1939 paper).

Neoperga Ashmead 1898 Can. Ent. 30: 232. N. syn.

Type-species: *Perga amenaida* Kirby (Original designation). -- Konow 1905 Genera Insect.
29: 11 (as syn. of *Perga*). [Although the type-species has been placed in *Xyloperga*,
the synonymy of the genus has not before been indicated.]

Heptacola Konow 1905 Z. syst. Hym. Dipt. 5: 167-168.

Type-species: *Heptacola buyssoni* Konow (Designated by Rohwer 1911). -- Konow 1905
Genera Insect. 29: 12. -- Konow 1905 Z. syst. Hym. Dipt. 5: 378-385 (key to and de-
scriptions of spp.).

amenaida (Kirby)

Australia (New South Wales; South Australia).

Perga amenaida Kirby 1882 List Hym. Brit. Mus. 1: 28, pl. 2, fig. 10. δ . "Adelaide",
South Australia" (London, δ). -- Dalla Torre 1894 Cat. Hym. 1: 349.

Neoperga amenaida: Ashmead 1898 Can. Ent. 30: 232.

Heptacola amenaida: Konow 1905 Genera Insect. 29: 12 (syn.: *xyloperga* Kirby).

Xyloperga amenaida: Forsius 1927 Rec. S. Aust. Mus. 3: 285. -- Benson 1939 Aust.
Zool. 9: 330.

Perga xyloperga Kirby 1882 List Hym. Brit. Mus. 1: 29, pl. 2, fig. 12. δ . "Adelaide",
South Australia" (London, δ). -- Dalla Torre 1894 Cat. Hym. 1: 351.

aurulenta (Morrice)

Australia (Queensland; Northern Territory).

Perga (Xyloperga) aurulenta Morrice 1919 Trans. ent. Soc. Lond. 1918: 278-279. δ .
"Central Australia - Hermannsburg" (London, δ).

Xyloperga aurulenta: Benson 1939 Aust. Zool. 9: 332 (distribution).

dentata (Kirby)

Australia (South Australia).

Perga dentata Kirby 1882 List Hym. Brit. Mus. 1: 29, pl. 2, fig. 13. δ . "Adelaide",
South Australia" (London, δ). -- Dalla Torre 1894 Cat. Hym. 1: 349.

Heptacola dentata: Konow 1905 Genera Insect. 29: 12.

Xyloperga dentata: Benson 1939 Aust. Zool. 9: 332.

forsiusi Benson

Australia (New South Wales; A.C.T.;
Victoria).

Xyloperga forsiusi Benson 1939 Aust. Zool. 9: 332-333. δ . "Victoria" (Brisbane, δ).

(Also other records). -- Quinlan 1974 Bull. Br. Mus. nat. Hist. (Ent.) 30: 252 (type
at Brisbane, not Melbourne as stated by Benson). -- Morrow, et al. 1976 Oecologia 24:
193-196 (*Eucalyptus* oils in the defensive oral discharge of larva; hosts a, b).

Hosts: a) *Eucalyptus stellulata*; b) *Eucalyptus pauciflora niphophila*.

halidayi (Westwood)

Australia (Victoria; South Australia).

Perga halidayi Westwood 1880 Proc. zool. Soc. Lond. 377, pl. 37, fig. 5. δ .
"Adelaide" (Oxford, δ). -- Dalla Torre 1894 Cat. Hym. 1: 350 (*halidayi*).

Xyloperga halidayi: Shipp 1894 Entomologist 27: 340 (*halidayi*). -- Benson 1939
Aust. Zool. 9: 331 (syn.: *jurnetii* Westwood).

Heptacola halidayi: Konow 1905 Genera Insect. 29: 12.

Perga jurnetii Westwood 1880 Proc. zool. Soc. Lond.: 378, pl. 37, fig. 6. δ . "Aus-
tralia, Melbourne" (Oxford, δ) (Also unnamed var. from "Swan River"). -- Dalla Torre
1894 Cat. Hym. 1: 350.

Plagioperga jurnetii: Shipp 1894 Entomologist 27: 340.

lata (Kirby)

Australia (New South Wales; Victoria;
Tasmania).

Perga lata Kirby 1893 Ann. Mag. nat. Hist. (6) 12: 41-42. δ . "Melbourne" (London, δ).

Xyloperga lata: Shipp 1894 Entomologist 27: 340. -- Benson 1939 Aust. Zool. 9: 331
(syn.: *buyssoni* Konow).

Heptacola buyssoni: Konow 1905 Z. syst. Hym. Dipt. 5: 168. δ . "Tasmania" (Paris,
). -- Konow 1905 Genera Insect. 29: 12.

leachii (Westwood)

Australia (New South Wales; Victoria).

Perga leachii Westwood 1880 Proc. zool. Soc. Lond.: 377. δ . "Melbourne" (London,
 δ). -- Kirby 1882 List Hym. Brit. Mus. 1: 30, pl. 2, fig. 11. -- Dalla Torre 1894 Cat.

Hym. 1: 350.

Heptacola leachii: Konow 1905 Genera Insect. 29: 12.

Xyloperga leachii: Benson 1939 Aust. Zool. 9: 331.

moesaryi (Konow)

Australia (New South Wales).

Heptacola moesaryi Konow 1905 Z. syst. Hym. Dipt. 5: 168. δ . "N.S. Wales"

(Budepest, δ). -- Konow 1905 Genera Insect. 29: 12.

Xyloperga moesaryi: Benson 1939 Aust. Zool. 9: 331.

perkinsi Benson

Australia (South Australia; West Australia).

Xyloperga perkinsi Benson 1935 Mem. Qd Mus. 10: 221-229. δ . "West Australia:
Cunderdin" (Brisbane, δ). -- Benson 1939 Aust. Zool. 9: 332 (S. Aust.).

semiumpurata Morrice Australia (West Australia).

Xyloperga semiumpurata Morrice 1919 Trans. ent. Soc. Lond. 1918: 280-281. δ . "S.W.
Australia - Yallingup" (London, δ).

Xyloperga semiumpurata var. *melanaspis* Morrice 1919 Trans. ent. Soc. Lond. 1918:
281. δ . "S.W. Australia - Yallingup" (London, δ) (A smaller form, an aberration?).

univittata (Kirby)

Australia (Queensland).

Perga univittata Kirby 1882 List Hym. Brit. Mus. 1: 29, pl. 2, fig. 7. δ . "Australia"
(London, δ). -- Dalla Torre 1894 Cat. Hym. 1: 351. -- Turner 1900 Proc. Linn. Soc.
N.S.W. 25: 517 (in forest country). -- Konow 1905 Genera Insect. 29: 12 (as syn. of

Perga nematit Westwood).

Xyloperga univittata: Benson 1939 Aust. Zool. 9: 331.

Tribe PERGINI

Pergini: Benson 1939 Aust. Zool. 9: 333.

Genus PERGA Leach

Perga Leach 1817 Zool. Misc. 3: 115.

Type-species: *Perga dorsalis* Leach (Designated by Shipp 1984). -- Westwood 1880 Proc. zool. Soc. Lond.: 359-379. -- Shipp 1984 Entomologist 27: 336-340 (division into additional genera). -- Konow 1905 Z. syst. Hym. Dint. 5: 255-264, 313-328, 377-378 (key to spp., descriptions of spp.). -- Morice 1919 Trans. ent. Soc. Lond. 1918: 265-288 (key to spp.). -- Benson 1939 Aust. Zool. 9: 333-340 (genus defined; key to spp.). -- Leach 1946 N. Qd Nat. 13 (78): 1-2 (sp. feeding on *Synacris proceza* in Qd.). -- Togashi 1970 Mushi 43 (Suppl.): 46 (*Perga* sp., internal reproductive organs). -- *Compiloperga* Shipp 1894 Entomologist 27: 339, 340. N. syn. Type-species: *Perga aresonitzi* Westwood (Original designation). *Pergadopsis* Shipp 1894 Entomologist 27: 339, 340. N. syn. Type-species: *Perga dahlbomi* Westwood (Original designation). *Plagioperga* Shipp 1894 Entomologist 27: 339, 340. N. syn. Type-species: *Perga mayrzi* Westwood (Original designation). [Although the type-species of Shipp's genera have been placed in *Perga*, the synonymy of the genera has not before been stated.]

affinis affinis Kirby

Australia (Queensland; New South Wales; A.C.T.; Victoria; South Australia). *Perga affinis* Kirby 1882 List Hym. Brit. Mus. 1: 19-20, pl. 1, fig. 13, 14. ♀, ♂. "Victoria, Tasmania" (London, ♂). -- Dalla Torre 1894 Cat. Hym. 1: 349. -- Konow 1905 Genera Insect. 29: 11. -- Forsius 1927 Rec. S. Aust. Mus. 3: 301 (a var. of *dorsalis*). -- Benson 1939 Aust. Zool. 9: 334-335 (syn.: *interpuncta* Morice; biol. notes; distribution). -- Evans 1943 Insect Pests and Their Control: 137 (host a; this may apply to subsp. *insularis*). -- Jolivet 1955 Bull. Brüssels. Inst. R. des Sci. Nat. de Belg. 31(17): 18 (faceted organ on wing). -- Carne 1959 Aust. Mus. Mag. 13: 65-68. -- Riek 1962 Proc. Linn. Soc. N.S.W. 87: 92-95 (a trigonalid parasite). -- Robertson 1968 Aust. J. Zool. 16: 140-142 (venom apparatus). -- Meyer-Rochow 1974 J. Insect Physiol. 20: 1565-1591 (structure and function of larval eye; host e). -- Morrow, et al. 1976 Oecologia 24: 193-206, fig. 10-D, 2A-D (*Eucalyptus* oils in the defensive oral discharge of larva; host m).

Perga affinis affinis: Riek 1961 Proc. Linn. Soc. N.S.W. 86: 238, 239-240 (separation from *dorsalis*; division into subspecies). -- Carne 1962 Aust. J. Zool. 10: 1-34 (biology; hosts b, c, d). -- Tait 1962 Aust. J. Zool. 10: 652-683 (anatomy). -- Carne 1965 Aust. J. Zool. 13: 593-612 (distribution; hosts b, c, d, f, g, h - 1). -- Carne 1966 Proc. ecol. Soc. Aust. 1: 75-78 (social behavior). -- Carne 1969 Aust. J. Zool. 17: 113-141 (population dynamics). *Perga interpuncta* Morice 1919 Trans. ent. Soc. Lond. 1918: 267. ♀. "Queensland and Adelaide" (London, ♀).

Hosts: a) young gum trees; b) *Eucalyptus blakelyi*; c) *Eucalyptus camaldulensis*; d) *Eucalyptus melioidora*; e) eucalypt trees; f) *Eucalyptus bridgiana*; g) *Eucalyptus rubida*; h) *Eucalyptus maculosa*; i) *Eucalyptus elaeophora*; j) *Eucalyptus sideroxylon*; k) *Eucalyptus polyanthemus*; l) *Eucalyptus bicosata*; m) *Eucalyptus viminalis*.

Notes: *P. dorsalis* and *P. affinis* were confused in the early literature and it was not until Benson (1939) and Riek (1961) when the taxonomy was clarified. Caution should be used when interpreting the early literature.

affinis atrata Riek

Perga affinis atrata Riek 1961 Proc. Linn. Soc. N.S.W. 86: 238, 240. ♀. "Sleaford Bay, S. Aust." (Canberra, ♀).

affinis insularis Riek

Perga affinis insularis Riek 1961 Proc. Linn. Soc. N.S.W. 86: 238, 240. ♀, ♂. "Flinders Island, Tasmania" (Melbourne, ♀). -- Martyn, et al. 1970 Tas. Dept. Agric., Insect Pest Survey No. 2, 168/69: 17 (host a). -- Martyn, et al. 1971 Tas. Dept. Agric., Insect Pest Survey No. 3, 169/70: 21 (host b). -- Martyn, et al. 1972 Tas. Dept. Agric., Insect Pest Survey No. 5, 171/72: 22 (host b).

Hosts: a) *Eucalyptus ficifolia*; b) *Eucalyptus* sp. *agnata* Morice *Perga agnata* Morice 1919 Trans. ent. Soc. Lond. 1918: 266, 284. ♀, ♂. "Victoria" (Australia (Victoria)).

(London,). -- Morrow, et al. 1976 Oecologia 24: 193-206 (*Perga* nr. *agnata*; *Eucalyptus* oils in the defensive oral discharge of larva; host a; N.S.W.).

Hosts: a) *Eucalyptus pauciflora niphophila*.

bradleyi Benson

Perga bradleyi Benson 1939 Aust. Zool. 9: 339-340. ♀. "Blue Mountains, N.S. Wales" (Sydney, ♀). Australia (New South Wales).

brevipipes Forsius

Perga brevipipes Forsius 1927 Rec. S. Aust. Mus. 3: 302-303. ♀. "Yeelanna and Kangaroo Island, S. Aust." (Adelaide, ♀). Australia (South Australia).

brevitarsis Morice

Perga brevitarsis Morice 1919 Trans. ent. Soc. Lond. 1918: 268. ♀. "S.W. Australia, Swan River" (London, ♀). -- Forsius 1927 Rec. S. Aust. Mus. 3: 285 (S. Aust., W. Aust.). -- Benson 1939 Aust. Zool. 9: 337 (S. Aust.). Australia (South Australia; West Australia).

brullei Westwood

Perga brullei Westwood 1880 Proc. zool. Soc. Lond.: 364, pl. 34, fig. 6. ♂. "Australia australiore" (Oxford, ♂). -- Dalla Torre 1894 Cat. Hym. 1: 349. -- Turner 1900 Proc. Linn. Soc. N.S.W. 25: 517 (in forest country, Qd.). -- Konow 1905 Genera Insect. 29: 11 (syn.: *aresonitzi* Westwood). -- Benson 1939 Aust. Zool. 9: 337 (syn.: *ritesmae* Westwood; *dubia* Kirby; *vacillans* Morice). -- Benson 1958 Proc. Linn. Soc. N.S.W. 83: 289 (Victoria).

Perga ritesmae Westwood 1880 Proc. zool. Soc. Lond.: 365, pl. 34, fig. 7. ♂. "Adelaidam" (Oxford, ♂). -- Kirby 1882 List Hym. Brit. Mus. 1: 27 (*ritesmae*). -- Dalla Torre 1894 Cat. Hym. 1: 351 (*ritesmae*). -- Konow 1905 Genera Insect. 29: 12 (*ritesmae*).

Perga aresonitzi Westwood 1880 Proc. zool. Soc. Lond.: 368, pl. 37, fig. 1. ♀. "Swan River" (Oxford, ♀). -- Dalla Torre 1894 Cat. Hym. 1: 349. -- Forsius 1927 Rec. S. Aust. Mus. 3: 285, 303 ("on mal lee").

Camptoperga aresonitzi: Shipp 1894 Entomologist 27: 340.

Perga dubia Kirby 1882 List Hym. Brit. Mus. 1: 27-28, pl. 2, fig. 9. ♂. "Swan River, West Australia" (London, ♂). -- Dalla Torre 1894 Cat. Hym. 1: 350. -- Konow 1905 Genera Insect. 29: 11 (as syn. of *brullei* Kirby).

Perga vacillans Morice 1919 Trans. ent. Soc. Lond. 1918: 272. Australia (London, ♀).

christii Westwood

Perga christii Westwood 1880 Proc. zool. Soc. Lond.: 366-367, pl. 37, fig. 2. ♀. "Swan River" (Oxford, ♀). -- Dalla Torre 1894 Cat. Hym. 1: 349. -- Konow 1905 Genera Insect. 29: 11 (as syn. of *Perga foenatara* Westwood). -- Forsius 1927 Rec. S. Aust. Mus. 3: 225, 303 (antennae). -- Benson 1935 Mem. Qd. Mus. 10: 227. -- Benson 1939 Aust. Zool. 9: 337 (Queensland).

Perga dahlbomi Westwood 1880 Proc. zool. Soc. Lond.: 371, pl. 35, fig. 3, 4. ♀, ♂. "Australasia" (Oxford, ♀). -- Dalla Torre 1894 Cat. Hym. 1: 349. -- Konow 1905 Genera Insect. 29: 11 (*dahlbomi*). -- Benson 1939 Aust. Zool. 9: 338 (Queensland). -- Moore 1961 Proc. R. zool. Soc. N.S.W. 1958-1959: 94 (host a).

Pergadopsis dahlbomi: Shipp 1894 Entomologist 27: 340.

Hosts: a) *Angophora antemedica*.

dorsalis dorsalis Leach

Australia (Queensland; New South Wales; Victoria; South Australia (?))

Perga dorsalis Leach 1817 Zool. Misc. 3: 117, pl. 148, fig. 1. ♂. "Australasia" ("Mus. Macleay, Nott, ♂"; London; Canberra ex Macleay Museum, Sydney ?, ♂). -- Lepelletier 1823 Monogr. Tenthred.: 41. -- Klug 1834 Jb. Insect. 1: 229. -- Westwood 1880 Proc. zool. Soc. Lond.: 362-363 (syn.: *scutellata* Westwood; *eucalypti* Bennett and Scott). -- Kirby 1882 List Hym. Brit. Mus. 1: 18, pl. 1, fig. 11, 12. -- Krichbaum 1884 Klug's ges. Aurs. Blattwespen: 282. -- Froggatt 1890 Proc. Linn. Soc. N.S.W. (2) 5: 284-285 (biology; hosts d, e). -- Dalla Torre 1894 Cat. Hym. 1: 349-350. -- Froggatt 1901 Agric.

Gaz. N.S.W. 12: 1068 (steel blue sawfly; host d). -- Konow 1902 Z. syst. Hym. Dipt. 2: 49 (host d). -- Konow 1905 Genera Insect. 29: 11 (syn., *scotché* Bennett). -- Froggatt 1918 Proc. Linn. Soc. N.S.W. 43: 668-670 (steel blue sawfly; biology; host c). -- Morrice 1919 Trans. ent. Soc. Lond. 1918: 267 (type (a d) in B.M.W.). -- Allen 1920 Aust. Nat. 4: 159 (transformation; on gum tree). -- Forsius 1927 Rec. S. Aust. Mus. 3: 285, 301 (S. Aust.). -- Tas., N.S.W.: *affinis* a var. of *dorsalis*. -- Ross 1929 Vict. Nat. Melb. 46: 21 (habits of larvae). -- Raff 1930 Vict. Nat. Melb. 46: 215-217 (host g). -- Raff 1934 Proc. R. Soc. Vict. (n.s.) 47: 54-77 (biology). -- Evans 1934 Trans. R. ent. Soc. Lond. 82: 455-460 (behavior of larval communities; hosts a, h) [Benson 1939 believed this reference pertains to *affinis*; but Carne 1962 attributed it to *dorsalis*]. -- Benson 1939 Aust. Zool. 9: 334 (distribution). -- Leask 1944 Vict. Nat. Melb. 60: 150-151 (emergence). -- Leask 1944 Vict. Nat. Melb. 60: 191-193 (mixed colonies with *Pezomachus grandior*; hosts a, b). -- Leask 1946 N. Qd Nat. 15 (78): 1 (hosts c, e, f, k, l). -- Maxwell 1955 Can. Ent. (Suppl. 1) 87: 25 (internal larval anatomy). -- Moore 1961 Proc. R. Zool. Soc. N.S.W. 1958-1959: 93 (f. *dorsalis*; host l). -- Moore 1972 Aust. Zool. 17: 33 (host j). -- Seymour 1974 J. Insect Physiol. 20: 2447-2457 (convective and evaporative cooling in sawfly larvae).

Perya dorsalis dorsalis: Riek 1961 Proc. Linn. Soc. N.S.W. 86: 238-239 (separation from *affinis*; division into subspecies).

Perya sauteletata Westwood 1832 in Griffith & Pidgeon, Animal Kingdom arranged by Cuvier, Insects 15: 402, pl. 66, fig. 2, pl. 106, fig. 3a-e. Australia (). -- Guérin 1845 Icon. Règne Anim. 7, Insectes: 359, pl. 64, fig. 2. -- Brullé 1846 in Lepelletier, Hist. Nat. Insectes, Hym. 4: 671, pl. 46, fig. 1.

Perya eucaulypis Bennett & Scott 1859 Proc. Zool. Soc. Lond.: 211-212, pl. 62, f. larva. New South Wales (). (Biology, host f, also recorded on *Callistemon*). -- Dalla Torre 1894 Cat. Hym. 1: 350.

Perya scotchii Bennett 1860 Gatherings Nat. Aust.: 268. Australia (). -- Dalla Torre 1894 Cat. Hym. 1: 351.

Hosts: a) *Eucaulypis nostrata*; b) *Eucaulypis sidemouli*; c) *Eucaulypis novae-angliae*; d) *Eucaulypis corymbosa*; e) *Eucaulypis obtusiflora*; f) *Eucaulypis cetriflora*; g) *Eucaulypis*; h) *Eucaulypis obtusa*; i) *Eucaulypis amentoides*; j) *Eucaulypis granata*; k) *Eucaulypis gumifera*; l) *Eucaulypis camulienensis*.

Notes: See note under *P. affinis*.

dorsalis nitida Riek

Perya dorsalis nitida Riek 1961 Proc. Linn. Soc. N.S.W. 86: 238, 239, f. "Little Desert, Victoria" (Melbourne, 9).

dorsalis rustica Smith, new name

Perya dorsalis rustica Smith 1961 Proc. Linn. Soc. N.S.W. 86: 239, f. d. "Ballarat, Victoria" (Canberra, 9) (Preoccupied by *Perya castanea* Kirby, 1882).

kirbyi Leach

Perya kirbyi Leach 1817 Zool. Misc. 3: 117-118, d. "Australasia" (London, d). -- Lepelletier 1823 Monogr. Tenthréd.: 41. -- Westwood 1880 Proc. Zool. Soc. Lond.: 371, pl. 37, fig. 4. -- Kirby 1882 List Hym. Brit. Mus. 1: 21, pl. 2, fig. 2. -- Dalla Torre 1894 Cat. Hym. 1: 350 (*kirbyi*). -- Konow 1905 Genera Insect. 29: 11 (*kirbyi*). -- Benson 1939 Aust. Zool. 9: 337 (f. distribution). -- Forsius 1927 Rec. S. Aust. Mus. 3: 285 (S. Aust., N.S.W.).

klugii Westwood

Perya klugii Westwood 1880 Proc. Zool. Soc. Lond.: 363, pl. 34, fig. 1, 2, 9, d. "Australasia (Albany, etc.)" (Oxford, d). -- Dalla Torre 1894 Cat. Hym. 1: 350. -- Konow 1905 Genera Insect. 29: 11. -- Benson 1939 Aust. Zool. 9: 336 (S.W. Aust.).

kolli Konow

Perya kolli Konow 1905 Z. syst. Hym. Dipt. 5: 166-167, 9, d. "Port Denison, Queensland" (Wien,). -- Konow 1905 Genera Insect. 29: 11. -- Benson 1939 Aust. Zool. 9: 338 (syn.: *thomsoni* Benson; distribution). -- Benson 1939 Proc. Linn. Soc. N.S.W. 83: 289 (Victoria).

Perya thomsoni Benson 1935 Mem. Qd Mus. 10: 226-227, 9. "Tooloom, N.S. Wales" (Brisbane, 9). -- Quinlan 1974 Bull. Br. Mus. Hist. (Ent.) 30: 243 (type-locality is Tooloomba [Queensland], not Tooloom, N.S.W.).

Konowi Benson
Perya konowi Benson 1939 Aust. Zool. 9: 338-339, f. d. "Euston [Wallee scrub], N.S. Wales" (London, 9) (Host a).

Hosts: a) *Eucaulypis transcontinentalis*.

leaski Benson

Perya leaski Benson 1958 Proc. Linn. Soc. N.S.W. 83: 288-289, f. "Clunes, Victoria" (London, 9) (Bred from larvae, but host not given).

magyri Westwood

Perya magyri Westwood 1880 Proc. Zool. Soc. Lond.: 378, pl. 37, fig. 6, 9. "Svan River" (Oxford, 9). -- Dalla Torre 1894 Cat. Hym. 1: 351 (*magyri*). -- Konow 1905 Genera Insect. 29: 12 (*magyri*). -- Morrice 1919 Trans. ent. Soc. Lond. 1918: 271 (syn.: *blaseata* Kirby). -- Forsius 1927 Rec. S. Aust. Mus. 3: 285, 303 (od. [?]).

Plagioperya magyri: Sharp 1894 Entomologist 27: 340.

Perya blaseata Kirby 1882 List Hym. Brit. Mus. 1: 23, pl. 2, fig. 4, 9. "N.W. coast of Australia" (London, 9). -- Dalla Torre 1894 Cat. Hym. 1: 349. -- Konow 1905 Genera Insect. 29: 11.

schiodtei Westwood

Perya schiodtei Westwood 1880 Proc. Zool. Soc. Lond.: 364, pl. 34, fig. 3, 4, 9, d. "Australasia, Adelaide" (Oxford, d). -- Dalla Torre 1894 Cat. Hym. 1: 351. -- Konow 1905 Genera Insect. 29: 12. -- Morrice 1919 Trans. ent. Soc. Lond.: 267, 284 (9, d; S.W. Aust., Swan River). -- Forsius 1927 Rec. S. Aust. Mus. 3: 285, 301-302 (redescription).

tristis Forsius

Perya tristis Forsius 1935 Notul. ent. 15: 14-15, 9. "Wte, Victoria" (Genova, 9). -- Benson 1939 Aust. Zool. 9: 326 (unable to place generically).

vollenhovi Westwood

Perya vollenhovi Westwood 1880 Proc. Zool. Soc. Lond.: 365, pl. 34, fig. 5, d. "Australasia" (Oxford, d). -- Dalla Torre 1894 Cat. Hym. 1: 351 (*vollenhovi*). -- Konow 1905 Genera Insect. 29: 12 (*vollenhovi*). -- Benson 1939 Aust. Zool. 9: 338 (syn.: *walkei* Westwood; distribution).

Perya walkei Westwood 1880 Proc. Zool. Soc. Lond.: 366-369, pl. 36, fig. 5, 9. "Nova Hollandia, Sydney" (Oxford, 9). -- Dalla Torre 1894 Cat. Hym. 1: 351 (*walkei*). -- Konow 1905 Genera Insect. 29: 12 (*walkei*).

walkei Forsius

Perya walkei Forsius 1927 Rec. S. Aust. Mus. 3: 303-305, 9. "Murray River, S. Aust." (Adelaide, 9). -- Benson 1939 Aust. Zool. 9: 337 (*walkei*).

Genus PERGAGRAPTA Benson

Pergagraptia Benson 1939 Aust. Zool. 9: 340 (key to spp.).

Type-species: *Perya bella* Newman (Original designation). -- Benson 1958 Proc. Linn. Soc. N.S.W. 83: 290 (legends for figures in 1939 paper).

Pseudoperya Ashmead 1898 Can. Ent. 30: 232 (Preoccupied by *Pseudoperya* Guérin, 1845). N. syn. [Though the type-species was placed in *Pergagraptia* by Benson (1939), the generic synonymy has not been indicated.]

Type-species: *Perya polita* Leach (Original designation). -- Konow 1905 Genera Insect. 29: 11 (as syn. of *Perya* Leach).

bella (Newman)

Perya bella Newman 1841 Entomologist 1: 89-90, 9. "New Holland... Adelaide" (lost). -- Westwood 1880 Proc. Zool. Soc. Lond.: 373. -- Sharp 1893 Entomologist 26: 264 (*blazei*, Smith, "nomen nudum"). -- Dalla Torre 1894 Cat. Hym. 1: 350. -- Morrice 1919 Trans. ent. Soc. Lond. 1918: 277, 285 (distribution: type lost).

Pergagraptia bella: Benson 1939 Aust. Zool. 9: 343 (syn.: *foersteri* Westwood; *atoua-ricata* Kirby; *rubripes* Rohwer; *montana* Forsius). -- Benson 1958 Proc. Linn. Soc. N.S.W. 83: 289 (syn.: *nigra* Benson; *rosea* Benson; *rothwey* Benson). -- Meyer-Rochow 1974 J.

Insect Physiol. 20: 1565-1591 (structure and function of larval eye; host b).
Perga foenestera Westwood 1880 Proc. zool. Soc. Lond.: 368, pl. 36, fig. 1, δ .
 "Nova Hollandia" (Oxford, δ). -- Froggatt 1890 Proc. Linn. Soc. N.S.W. (2) 5: 288 (biol.); larva; host a). -- Dalla Torre 1894 Cat. Hym. 1: 350. -- Konow 1902 Z. syst. Hym. Dipt. 2: 49 (host a). -- Konow 1905 Genera Insect. 29: 11.
Perga divaricata Kirby 1893 Ann. Mag. nat. Hist. (6) 12: 39-40, δ , δ , "Melbourne" (London, δ). -- Morice 1919 Trans. ent. Soc. Lond. 1918: 269, 283 (type δ treated as syn. of *austanea* Kirby; δ described by Kirby as *divaricata* treated as a syn. of *belli*).
Pergadopsis ? *divaricata*: Shipp 1894 Entomologist 27: 340.
Pergagraptia divaricata: Leask 1946 N. Qd Nat. 13 (78): 1 (host c).
Perga rubripes Rohrer 1910 Ent. News 21: 467. δ , "Tasmania" (London, δ).
Perga belli var. *rubripes*: Forsius 1927 Rec. S. Aust. Mus. 3: 285, 306 (S. Aust.).
Perga montana Forsius 1935 Notul. ent. 15: 12-14, δ . "Wentworth, Blue Mountains, Australia" (Basel, δ).
Pergagraptia nigra Benson 1939 Aust. Zool. 9: 347. δ . "Cumberland, N.S.W." (London, δ).
Pergagraptia rosea Benson 1939 Aust. Zool. 9: 347-348, δ . "Windsor, Victoria" (Melbourne, δ).
Pergagraptia rohweri Benson 1939 Aust. Zool. 9: 348-349, δ . "Adelaide, S. Aust." (London, δ).

Hosts: a) *Eucalyptus corymbosa*; b) eucalypt trees; c) *Eucalyptus gumifera*.

bicolor (Leach)

Australia (New South Wales; Victoria; South Australia).

Perga bicolor Leach 1817 Zool. Misc. 3: 116, pl. 148, fig. 5, δ . "Australasia" (London, δ). -- Lepelletier 1823 Monogr. Tenthred.: 41. -- Blanchard 1840 Hist. Nat. Anim. Art. 3: 228. -- Westwood 1880 Proc. zool. Soc. Lond.: 371. -- Dalla Torre 1894 Cat. Hym. 1: 349. -- Konow 1905 Genera Insect. 29: 11 (syn.: *chalybea* Froggatt). -- Morice 1919 Trans. ent. Soc. Lond.: 276 (distribution).
Pergagraptia bicolor: Benson 1939 Aust. Zool. 9: 343. -- Moore 1961 Proc. R. zool. Soc. N.S.W. 1958-1959: 93 (host b).

Perga chalybea Froggatt 1890 Proc. Linn. Soc. N.S.W. (2) 5: 285-286, δ , larva. "S. Australia" (Canberra ex Macleay Museum, Sydney, δ) (biol.; host a). -- Dalla Torre 1894 Cat. Hym. 1: 349. -- Konow 1902 Z. syst. Hym. Dipt. 2: 49 (host a).

Hosts: a) *Eucalyptus corymbosa*; b) *Eucalyptus amenioides*.

castanea (Kirby)

Australia (New South Wales; Victoria).
Perga castanea Kirby 1882 List Hym. Brit. Mus. 1: 20-21, pl. 1, fig. 6, δ . "Sydney, N.S.W." (London, δ). -- Dalla Torre 1894 Cat. Hym. 1: 349. -- Konow 1905 Genera Insect. 29: 11.

Pergagraptia castanea: Benson 1939 Aust. Zool. 9: 341.

Pergagraptia condei Benson 1939 Aust. Zool. 9: 344-345, δ . "Adelaide, S. Aust."

(London, δ).

esenbeckii (Westwood)

Perga esenbeckii Westwood 1880 Proc. zool. Soc. Lond.: 365-366, pl. 35, fig. 5, δ . "Swan River" (Oxford, δ). -- Dalla Torre 1894 Cat. Hym. 1: 350. -- Konow 1905 Genera Insect. 29: 11.

Pergagraptia esenbeckii: Benson 1939 Aust. Zool. 9: 342.

glabra (Kirby)

Australia (Queensland; New South Wales; Victoria).

Perga glabra Kirby 1882 List Hym. Brit. Mus. 1: 23, pl. 2, fig. 5, δ . "Sydney, N.S.W." (London, δ). -- Dalla Torre 1894 Cat. Hym. 1: 350. -- Turner 1900 Proc. Linn. Soc. N.S.W. 25: 517 (in forest country). -- Konow 1905 Genera Insect. 29: 11.

Pergagraptia glabra: Benson 1939 Aust. Zool. 9: 342. -- Benson 1958 Proc. Linn. Soc. N.S.W. 83: 289 (syn.: *malaisei* Benson).

Pergagraptia malaisei Benson 1939 Aust. Zool. 9: 346-347, δ . "Windsor, Victoria" (Melbourne, δ).

gravenhorstii (Westwood)

Perga gravenhorstii Westwood 1880 Proc. zool. Soc. Lond.: 366, pl. 35, fig. 7, δ .

"Australasia" (Oxford, δ). -- Dalla Torre 1894 Cat. Hym. 1: 350. -- Turner 1900 Proc. Linn. Soc. N.S.W. 25: 517 (in forest country, Qd). -- Konow 1905 Genera Insect. 29: 11 (*gravenhorstii*; syn.: *peletieri* (1) Westwood). -- Morice 1919 Trans. ent. Soc. Lond. 1918: 285 (δ).

Pergagraptia gravenhorstii: Benson 1939 Aust. Zool. 9: 342 (syn.: *hartigii* Westwood). -- Leask 1944 Vict. Nat. Melb. 60: 150-151 (emergence; as *Pergagraptia* sp.). -- Leask 1944 Vict. Nat. Melb. 60: 191-193 (biology; hosts a, b; Leask questionably refers his specimens to this species; mixed colony with *Perga donaldiae*). -- Carne 1962 Aust. J. Zool. 10: 24 (mixed colonies with *P. tumens* and *Perga affinis*). -- Carne 1969 Aust. J. Zool. 17: 117 (coexistence with *Perga affinis*; parasitism).

Perga hartigii Westwood 1880 Proc. zool. Soc. Lond.: 369-370, δ . "Nova Hollandia" (Oxford, δ). -- Dalla Torre 1894 Cat. Hym. 1: 350. -- Konow 1905 Genera Insect. 29: 11. -- Morice 1919 Trans. ent. Soc. Lond. 1918: 276 (valid sp.). -- Forsius 1929 Notul. ent. 9: 82-83 (*hartigii*; δ).

Perga peletieri Westwood 1880 Proc. zool. Soc. Lond.: 370, pl. 35, fig. 6, δ . "Nova Hollandia" (Oxford, δ). -- Dalla Torre 1894 Cat. Hym. 1: 351 (*peletieri*).

Hosts: a) *Eucalyptus rostrata*; b) *Eucalyptus sideroxylon*.

latreillii (Leach)

Australia (Queensland; New South Wales; Victoria; South Australia).

Perga latreillii Leach 1817 Zool. Misc. 3: 116-117, pl. 148, fig. 2, δ . "Australasia" (London, δ). -- Lepelletier 1823 Monogr. Tenthred.: 41 (*latreillii*). -- Lepelletier & Serville 1828 Ency. Méth. Insect. 10: 65 (*latreillii*). -- Westwood 1880 Proc. zool. Soc. Lond.: 372, pl. 36, fig. 3. -- Kirby 1882 List Hym. Brit. Mus. 1: 25, pl. 2, fig. 8 (*latreillii*). -- Dalla Torre 1894 Cat. Hym. 1: 350 (*latreillii*). -- Konow 1905 Genera Insect. 29: 11 (*latreillii*; syn.: *dalmatini* Westwood).

Pergagraptia latreillii: Benson 1939 Aust. Zool. 9: 344 (syn.: *titshaaki* Forsius). -- Morrow, et al. 1976 Oecologia 24: 193-206 (*Eucalyptus* oils in the defensive oral discharge of larva; host a).

Perga dalmatini Westwood 1880 Proc. zool. Soc. Lond.: 369, pl. 36, fig. 2, δ . "Nova Hollandia" (Oxford, δ). (Also unnamed var. from Melbourne). -- Dalla Torre 1894 Cat. Hym. 1: 349 (*dalmatini*).

Perga titshaaki Forsius 1929 Notul. ent. 9: 85, δ . "Hachkirch, Victoria" (Hamburg, δ).

Hosts: a) *Eucalyptus perminiana*.

polita (Leach)

Perga polita Leach 1817 Zool. Misc. 3: 115-116, pl. 148, fig. 3, δ . "Australasia" (London, δ). -- Lepelletier 1823 Monogr. Tenthred.: 40-41. -- Lepelletier & Serville 1828 Ency. Méth. Insect. 10: 65. -- Blanchard 1840 Hist. Nat. Anim. Art. 3: 228. -- Westwood 1880 Proc. zool. Soc. Lond.: 363. -- Kirby 1882 List Hym. Brit. Mus. 1: 21, pl. 2, fig. 1 (type δ). -- Froggatt 1890 Proc. Linn. Soc. N.S.W. (2) 5: 285 (larva; biol.; host a). -- Dalla Torre 1894 Cat. Hym. 1: 351. -- Turner 1900 Proc. Linn. Soc. N.S.W. 25: 517 (in forest country). -- Konow 1902 Z. syst. Hym. Dipt. 2: 49 (host a). -- Konow 1905 Genera Insect. 29: 12, pl. 1, fig. 8, a, b, c. -- Raff 1934 Proc. R. Soc. Vict. (n.s.) 47: 54-77 (biology). -- Forsius 1927 Rec. S. Aust. Mus. 3: 285 (Qd, S. Aust.).

Pseudoperga polita: Ashmead 1898 Can. Ent. 30: 232.

Perga sp.: Raff 1930 Vict. Nat. Melb. 46: 215-217 (biology; host b).

Pergagraptia polita: Benson 1939 Aust. Zool. 9: 341. -- Moore 1972 Aust. Zool. 17: 33 (host c).

Hosts: a) *Eucalyptus corymbosa*; b) *Eucalyptus* sp.; c) *Eucalyptus grandis*.

spinolae (Westwood)

Australia (Queensland; Victoria).

Perga spinolae Westwood 1880 Proc. zool. Soc. Lond.: 371-372, pl. 36, fig. 4, δ . "Australasia" (Oxford, δ). -- Dalla Torre 1894 Cat. Hym. 1: 351. -- Konow 1905 Genera Insect. 29: 12.

Pergagraptia spinolae: Benson 1939 Aust. Zool. 9: 344. -- Leask 1946 N. Qd Nat. 13 (78): 1 (host b).

Perga latreillii: Froggatt 1890 Proc. Linn. Soc. N.S.W. (2) 5: 285 (larva; biol.; host a). [According to Benson 1939, Froggatt's reference belongs to *spinolae*.] -- Konow 1902 Z. syst. Hym. Dipt. 2: 49 (host a) [Konow's information is based on Froggatt 1890].

Hosts: a) *Eucalyptus corymbosa*; b) *Eucalyptus gumifera*.

turneri Benson

Australia (Queensland; New South Wales; Victoria; A.C.T.).

Pezomachus turneri Benson 1939 Aust. Zool. 9: 345. ♀, "Mackay, Queensland" (London, 9). -- Benson 1958 Proc. Linn. Soc. N.S.W. 83: 289 (syn.: *hackeri* Benson). -- Carne 1962 Aust. J. Zool. 10: 24 (mixed colonies with *P. grandior* and *P. affinis*). -- Meyer-Rochow 1974 J. Insect Physiol. 20: 1565-1591 (structure and function of larval eye; host a).

Pezomachus turneri: Meyer-Rochow 1972 Z. Tierpsychol. 30: 451-455 (communication of larvae; host a).

Pezomachus hackeri Benson 1939 Aust. Zool. 9: 346. ♀, ♂, "Melbourne, Victoria" (London, 9). -- Moore 1972 Aust. Zool. 17: 33 (host c).

Pezomachus hackeri: Moore 1961 Proc. R. Zool. Soc. N.S.W. 1956-1959: 94 (host b).

Hosts: a) *Eucalyptus*; b) *Angophora intermedia*; c) *Eucalyptus grandis*.

Genus PSEUDOPERGIA Guérin

Perga subg. *Pseudoperga* Guérin 1845 Icon. Règne Anim. 7, Insectes: 398. Type-species: *Perga lewisii* Westwood. (Designated by Shipp 1894). -- Dalla Torre 1894 Cat. Hym. 1: 349 (as syn. of *Perga* Leach).

Pseudoperga: Benson 1939 Aust. Zool. 9: 353-355 (key to spp.). -- Benson 1958 Proc. Linn. Soc. N.S.W. 83: 290 (legends for figures in 1939 paper). -- Morrow, et al. 1976 Oecologia 24: 193-206 (*Pseudoperga* sp., *Eucalyptus* oils in the defensive oral discharge of larvae; on *Eucalyptus risdonii*, *E. marginifera maculosa*, and *E. nicholii*).

belinda (Kirby)

Australia (New South Wales; Victoria; Tasmania; South Australia).

Perga belinda Kirby 1882 List Hym. Brit. Mus. 1: 27, pl. 2, fig. 3. ♀, "S. Australia" (London, 9). -- Dalla Torre 1894 Cat. Hym. 1: 349. -- Konow 1905 Genera Insect. 29: 11.

Pseudoperga belinda: Benson 1939 Aust. Zool. 9: 354 (distribution; syn.: *memoriae* Wilson; *conjugata* Forsius). -- Martyn, et al. 1971 Tas. Dep. Agric. Insect Pest Survey No. 3, 169/70: 21 (host a).

Perga memoriae Wilson 1932 Vict. Nat. Melb. 49: 43-45, fig. 9, ♂ "Victoria - Wonga Park" (Melbourne), ♀, -- Raff 1934 Proc. R. Soc. Vict. (n.s.) 47: 54-77 (biol.).

Perga sp.: Raff 1930 Vict. Nat. Melb. 46: 215-217 (biol.; host a).

Perga conjugata Forsius 1935 Notul. ent. 15: 11-12. ♀, "Sydney, Australia" (Genova, 9). Hosts: a) *Eucalyptus* sp.

ferruginea (Leach)

Australia (Queensland; New South Wales; Victoria).

Perga ferruginea Leach 1817 Zool. Misc. 3: 119, pl. 148, fig. 4. ♀, "Australasia" (Mus. Macleay, Nost. 9, London?; Canberra ex Macleay Museum, Sydney?, 9). -- Lepelletier 1923 Monogr. Tentred.: 44. -- Westwood 1880 Proc. Zool. Soc. Lond.: 374 (type ♂ at Oxford). -- Kirby 1882 List Hym. Brit. Mus. 1: 24, pl. 2, fig. 6 (type in B. M.). -- Dalla Torre 1894 Cat. Hym. 1: 350. -- Konow 1905 Genera Insect. 29: 11 (syn.: *scabra* Newman). -- Morrice 1919 Trans. ent. Soc. Lond. 1918: 274 (syn.: *neumanni* Westwood; *bellata* Kirby; *progratta* Rohwer; type of *ferruginea* in B. M.).

Pseudoperga ferruginea: Benson 1939 Aust. Zool. 9: 354.

Perga scabra Newman 1846 Zoologist 4: 1274. "Australia" (). -- Westwood 1880 Proc. Zool. Soc. Lond.: 376. -- Dalla Torre 1894 Cat. Hym. 1: 351.

Perga neumanni Westwood 1880 Proc. Zool. Soc. Lond.: 370. ♂, "Australia" (Oxford, 9). -- Dalla Torre 1894 Cat. Hym. 1: 351 (*neumanni*). -- Konow 1905 Genera Insect. 29: 12. *Perga bellata* Kirby 1893 Ann. Mag. nat. Hist. (6) 12: 40-41. ♂, "Melbourne" (London, 9). *Perga progratta* Rohwer 1910 Ent. News 21: 468. ♀, "New South Wales" (London, 9).

guerinii (Westwood)

Australia (Queensland; New South Wales; Victoria; South Australia).

Perga guerinii Westwood 1880 Proc. Zool. Soc. Lond.: 367, pl. 35, fig. 1. ♂, "Aus-

tralia" (Oxford, 9). -- Dalla Torre 1894 Cat. Hym. 1: 350. -- Konow 1905 Genera Insect. 29: 12 (as syn. of *lewisii* Westwood). -- Morrice 1919 Trans. ent. Soc. Lond. 1918: 273, 274, 284 (syn.: *smithii* Westwood, *sericea* Kirby). -- Forsius 1927 Rec. S. Aust. Mus. 3: 285 (N.S.W., S. Aust.). -- Wilson 1932 Vict. Nat. Melb. 49: 45-46 (*guerinii*).

Pseudoperga guerinii: Shipp 1894 Entomologist 27: 340.

Pseudoperga guerinii: Benson 1939 Aust. Zool. 9: 354. -- Leach 1944 N. Od Nat. 11 (70): 2 (host a). -- Morrow, et al. 1976 Oecologia 24: 193-206, fig. 1A-B (*Eucalyptus* oils in the defensive oral discharge of larvae; N.S.W., hosts b, c).

Perga smithii Westwood 1880 Proc. Zool. Soc. Lond.: 375-376, pl. 36, fig. 6. ♀, "Australasia" (Oxford, 9). -- Dalla Torre 1894 Cat. Hym. 1: 351. -- Konow 1905 Genera Insect. 29: 12 (as syn. of *ventralis* Guérin).

Pseudoperga smithii: Shipp 1894 Entomologist 27: 339.

Perga sericea Kirby 1893 Ann. Mag. nat. Hist. (6) 12: 40. ♂, "Melbourne" (London, 9). *Pseudoperga sericea*: Shipp 1894 Entomologist 27: 340.

Hosts: a) *Eucalyptus* sp.; b) *Eucalyptus pauciflora niphophila*; c) *Eucalyptus stellulata*.

lewisii (Westwood)

Australia (Queensland; Victoria; Tasmania; South Australia).

Perga lewisii Westwood 1836 Trans. ent. Soc. Lond. 1: 234. ♀, "Australasia" (Oxford, 9). -- Lewis 1836 Trans. ent. Soc. Lond. 1: 232-234 (Tasmania; maternal attendance; host c). -- Lewis 1839 Trans. ent. Soc. Lond. 2: XLIV. -- Westwood 1841 Arcana Ent. 1: 23, pl. 7, fig. 1. -- Guérin 1845 Icon. Règne Anim. 7, Insectes: 398. -- Westwood 1880 Proc. Zool. Soc. Lond.: 374. -- Brittlebank 1888 Vict. Nat. Melb. 5: 57-58 (oviposition, maternal attendance; host d). -- Froggatt 1890 Proc. Linn. Soc. N.S.W. (2) 5: 286-287 (larva; biology; host a). -- Dalla Torre 1894 Cat. Hym. 1: 351. -- Froggatt 1901 Agric. Gaz. N.S.W. 12: 1068-1069 (the brown sawfly; biology; host a). -- Konow 1902 Z. syst. Hym. Dipt. 2: 49 (host a). -- Konow 1905 Genera Insect. 29: 12 (syn.: *mylaeana* Blanchard). -- Blackbourn 1930 Vict. Nat. Melb. 47: 25 (guarding of eggs and larvae; host b). -- Wilson 1932 Vict. Nat. Melb. 49: 45-46. -- Leach 1946 N. Od Nat. 13 (78): 1 (host f). -- McKean 1951 Aust. Zool. 11: 326 (host e).

Pseudoperga lewisii: Shipp 1894 Entomologist 27: 339. -- Benson 1939 Aust. Zool. 9: 354-355 (♀, ♂; distribution). -- Evans 1943 Insect Pests and their Control: 137 (habits; host b).

Tentredo (*Perga*) *mylaeana* Blanchard 1849 in Cuvier, Règne Anim., Ed. 3, Insect. 2, pl. 108, fig. 2 (antenna figured only, no further data). -- Dalla Torre 1894 Cat. Hym. 1: 351.

Hosts: a) *Eucalyptus corymbosa*; b) gum; c) *Eucalyptus* sp.; d) peppermint; e) snow gum; f) *Eucalyptus gumifera*.

lucida (Rohwer)

Australia (New South Wales; West Australia).

Perga lucida Rohwer 1910 Ent. News 21: 468-469. ♀, "New South Wales" (London, 9). -- Forsius 1927 Rec. S. Aust. Mus. 3: 285 (S. Aust., W. Aust.).

Pseudoperga lucida: Benson 1939 Aust. Zool. 9: 354 (♀, ♂; West Aust.).

moricei (Forsius)

Australia (West Australia).

Perga moricei Forsius 1927 Rec. S. Aust. Mus. 3: 305-306. ♀, "Boulder, W. Aust." (Adelaide, 9).

Pseudoperga moricei: Benson 1939 Aust. Zool. 9: 354.

Perga mylaeana Forsius 1927 Rec. S. Aust. Mus. 3: 306-308. ♀, ♂, "Ardrossan and Kangaroo Island, S. Aust." (Adelaide, 9).

Pseudoperga mylaeana: Benson 1939 Aust. Zool. 9: 353 (West Aust.).

ventralis (Guérin)

Australia (Tasmania).

Perga (*Pseudoperga*) *ventralis* Guérin 1845 Icon. Règne Anim. 7, Insectes: 399. "Terra van Diemenii" (). -- Westwood 1880 Proc. Zool. Soc. Lond.: 376. -- Dalla Torre 1894 Cat. Hym. 1: 351. -- Konow 1905 Genera Insect. 29: 12.

Genus PARAPERGA Ashmead

Paraperga Ashmead 1898 Can. Ent. 30: 232.
Type-species: *Periga juanada* Kirby (Original designation). -- Konow 1905 Genera Insect. 29: 11 (as syn. of *Periga* Leach). -- Benson 1939 Aust. Zool. 9: 349-350 (1. sp.). -- Benson 1958 Proc. Linn. Soc. N.S.W. 83: 290 (legends for figures in 1939 paper).

Jucunda (Kirby)

Periga juanada Kirby 1882 List Hym. Brit. Mus. 1: 30, pl. 2, fig. 14. ♀. "Perth, West Australia" (London, ♀). -- Dalla Torre 1894 Cat. Hym. 1: 350. -- Morice 1919 Trans. ent. Soc. Lond. 1918: 280 (Swan River, W. Aust.).

Paraperga juanada: Ashmead 1898 Can. Ent. 30: 232. -- Benson 1939 Aust. Zool. 9: 349-350.

Heptaocia juanada: Konow 1905 Genera Insect. 29: 12.

Genus ANTIPERGA Benson

Antiperga Benson 1939 Aust. Zool. 9: 350 (key to spp.).
Type-species: *Periga antiopea* Morice (Original designation).

antiopea (Morice)

Periga antiopea Morice 1919 Trans. ent. Soc. Lond. 1918: 270, 283. ♀, ♂. "S.W. Australia, Yallingup and Kalamunda" (London, ♀).

Antiperga antiopea: Benson 1939 Aust. Zool. 9: 350.

clarki Benson

Antiperga clarki Benson 1939 Aust. Zool. 9: 352. ♀. "Perth, W. Aust." (Brisbane, ♀).

enslini Benson

Antiperga enslini Benson 1939 Aust. Zool. 9: 351-352. ♀, ♂. "Perth, W. Aust." (London, ♀) (Host a).

Hosts: a) "on *Metaleuca*".

Genus ACANTHOPERGA Shipp

Acanthoperga Shipp 1894 Entomologist 27: 338.

Type-species: *Periga cameroni* Westwood (Original designation). -- Benson 1939 Aust. Zool. 9: 355-356 (key to spp.). -- Benson 1958 Proc. Linn. Soc. N.S.W. 83: 290 (legends for figures in 1939 paper). -- Benson 1965 Ann. Mag. nat. Hist. (13) 8: 48 (revision of couplet 2 of 1939 key).

cameronii (Westwood)

Periga cameroni Westwood 1880 Proc. zool. Soc. Lond.: 367, pl. 37, fig. 3. ♀. "Australia" (Oxford, ♀). -- Dalla Torre 1894 Cat. Hym. 1: 349. -- Froggatt 1901 Agric. Gaz. N.S.W. 12: 1068 (host a). -- Konow 1905 Genera Insect. 29: 11.

Acanthoperga cameroni: Shipp 1894 Entomologist 27: 339 (*cameroni*). -- Benson 1939 Aust. Zool. 9: 355 (distribution).

Hosts: a) bloodwood.

leucomelaena (Rohwer)

Periga leucomelas Rohwer 1910 Ent. News 21: 467-468. ♀. "Kuranda, Queensland" (London, ♀). -- Morice 1919 Trans. ent. Soc. Lond.: 275 (as syn. of *cameroni*).
Acanthoperga leucomelas: Benson 1939 Aust. Zool. 9: 355.

marlatti Benson

Acanthoperga marlatti Benson 1939 Aust. Zool. 9: 356. ♀. "E. Dorriggo, Brooklands, N.S. Wales" (Sydney, ♀).

melanocera Benson

Acanthoperga melanocera Benson 1965 Ann. Mag. nat. Hist. (13) 8: 48. ♀. "New Guinea, S.E., Mt. Giluwe, 2500 m." (Honolulu, ♀).

Subfamily PHYLACTEOPHAGINAE

Lobocerotides (pt.): Konow 1905 Genera Insect. 29: 36.

Phylacteophaginae: Rohwer 1911 Proc. ent. Soc. Wash. 13: 226. -- Benson 1935 Mem. Qd. Mus. 10: 223. -- Benson 1963 J. R. Soc. W. Aust. 46: 84 (1 genus). -- Riek 1970 J. Aust. ent. Soc. 9: 215.

Genus PHYLACTEOPHAGA Froggatt

Phylacteophaga Froggatt 1899 Proc. Linn. Soc. N.S.W. 24: 130.

Type-species: *Phylacteophaga eucalypti* Froggatt (Monotypic). -- Konow 1905 Genera Insect. 29: 36. -- Riek 1955 Aust. J. Zool. 3: 95-98 (key to spp.; biol. notes). -- Benson 1963 J. R. Soc. W. Aust. 46: 84 (1 sp.; key to 4 subspp.).

eucalypti eucalypti Froggatt

Australia (A.C.T.; Victoria).

Phylacteophaga eucalypti Froggatt 1899 Proc. Linn. Soc. N.S.W. 24: 131-132. "Melbourne, Victoria" (Canberra, ex Macleay Museum Sydney ?) (host a). -- Konow 1905 Genera Insect. 29: 36. -- Forsius 1927 Rec. S. Aust. Mus. 3: 284 (host c; N.S.W.; may apply to subspp. *froggatti*).

Phylacteophaga eucalypti eucalypti: Riek 1955 Aust. J. Zool. 3: 96-97 (hosts a, b). -- Benson 1963 J. R. Soc. W. Aust. 46: 84.

Hosts: a) *Eucalyptus globulus*; b) *Eucalyptus grandis*; c) *Eucalyptus* leaves.

eucalypti froggatti Riek

Phylacteophaga froggatti Riek 1955 Aust. J. Zool. 3: 97-98. ♀, ♂. "Schofields, N.S.W." (Canberra, ♀). -- Moore 1961 Proc. R. zool. Soc. N.S.W. 1958-1959: 88 (host a). -- Moore 1966 Aust. Zool. 13: 341, 344 (hosts a, c - j; biol. notes). -- Moore 1972 Aust. Zool. 17: 55 (hosts a, b).

Phylacteophaga eucalypti: Froggatt 1901 Agric. Gaz. N.S.W. 12: 1071, figures adult, larva (the blister leaf sawfly, a leaf miner; biol.; host k). -- Anonymous 1950 Agric. Gaz. N.S.W. 61: 470-471 (hosts c, e, f, g, 1). -- Hadlington 1954 Tech. Notes Div. Wood. Technol. N.S.W. For. Comm 8(1): 16-19 (biology; hosts c - j).

[According to the illustration with these references, they pertain to the subspecies *froggatti*, not *eucalypti*.]

Phylacteophaga eucalypti froggatti: Benson 1963 J. R. Soc. W. Aust. 46: 84 (Queensland).

Hosts: a) *Eucalyptus saligna*; b) *Eucalyptus grandis*; c) *Eucalyptus botryoides*; d) *Eucalyptus citricidona*; e) *Eucalyptus aladonalya*; f) *Eucalyptus ficifolia*; g) *Eucalyptus globulus*; h) *Eucalyptus maculata*; i) *Eucalyptus robusta*; j) *Eucalyptus sideroxylon*; k) *Eucalyptus*; l) *Tristania conferta*.

eucalypti occidentis Benson

Australia (West Australia)

Phylacteophaga eucalypti occidentis Benson 1963 J. R. Soc. W. Aust. 46: 84. ♀, ♂. "Nollamara, W. Aust." (Perth, ♀) (Leaf miner; host a).

Hosts: a) *Eucalyptus marginata*.

eucalypti tasmanica Riek

Australia (Tasmania).

Phylacteophaga eucalypti tasmanica Riek 1955 Aust. J. Zool. 3: 97. ♀. "St. Helens, Boat Harbour, Tasmania" (Canberra, ♀) (Leaf miner; host a).

Hosts: a) *Acacia sophorae* (though may have been *Eucalyptus*).

Genus LEPTOPERGA Riek

Leptoperga Riek 1970 J. Aust. ent. Soc. 9: 215-217.

Type-species: *Leptoperga brunnea* Riek (Original designation).

brunnea Riek

Australia (Queensland).

Leptoperga brunnea Riek 1970 J. Aust. ent. Soc. 9: 215-217. ♀. "Bunya Mts., Queensland" (Canberra, ♀).

Subfamily PTERYPERGINAE

Pteryperginae: Benson 1938 Trans. R. ent. Soc. Lond. 87: 381.

Genus PTERYPERGA Benson

Pteryperga Benson 1938 Ann. Mag. nat. Hist. (11) 1: 622-623.
Type-species: *Pteryperga gallia* Benson (Original designation).

bitasciata (Brullé)

Australia (Tasmania).

Pteryperghomus bitasciatus Brullé 1846 in Lepelletier, Hist. Nat. Insectes, Hym. 4: 660-661, pl. 46, fig. 1. ♀. "La terre de Van Diemen" (lost). -- Dalla Torre 1894 Cat. Hym. 1: 308. -- Konow 1905 Genera Insect. 29: 37.
Pteryperga bitasciata: Benson 1938 Ann. Mag. nat. Hist. (11) 1: 625 (probably belongs in *Pteryperga*; type lost).

gallia Benson

Australia (Queensland; New South Wales).

Pteryperga gallia Benson 1938 Ann. Mag. nat. Hist. (11) 1: 623-625, ♀. "Weed River, N.S.W." (Canberra, ♀). -- Riek 1970 in C.S.I.R.O., Insect. Aust.: 890 (Od., host a).
Pteryperghomus bitasciatus: Froggatt 1918 Proc. Linn. Soc. N.S.W. 43: 670-671 (♀, ♂; reared from cocoons imbedded in soft wood in a tree; N.S.W.). -- Froggatt 1919 Aust. Nat. 4(8): 102, 112 (bred from cocoons in wood). -- Morice 1919 Trans. ent. Soc. Lond. 1918: 290 [According to Benson 1938: 625, these references belong to *gallia*, not *bitasciata*.]

Hosts: a) *Elaeagnus cyanus*.

Subfamily PTERYGOPHORINAE

Tenthredinidae, Stipps 3: Leach 1817 Zool. Misc. 3: 118.

Tenthredinidae, Div. 1: Lepelletier 1823 Monogr. Tenthred., 50.

Pterygophorinae: Cameron 1878 Fauna Scotland 1: 2. -- Kirby 1882 List Hym. Brit. Mus. 1: 81-83. -- Froggatt 1890 Proc. Linn. Soc. N.S.W. 5: 695-696. -- Dalla Torre 1894 Cat. Hym. 1: 307-308. -- Ashmead 1898 Can. Ent. 30: 229-231 (pt.). -- Rohwer 1911 Proc. ent. Soc. Wash. 13: 225. -- Benson 1938 Trans. R. ent. Soc. Lond. 87: 382. -- Benson 1938 Ann. Mag. nat. Hist. (11) 1: 610-625 (key to genera).

Pterygophorides: Konow 1898 Ent. Nachr. 24: 248. -- Konow 1905 Genera Insect. 29: 36-37.
Pterygophoridae: Benson 1934 Trans. R. ent. Soc. Lond. 82: 463. -- Ross 1937 Illinois Biol. Monogr. 15: 56.

Genus PTERYGOPHORUS Klug

Pterygophorus Klug 1814 Mag. Ges. nat. Fr. Berl. 6: 276-278.

Type-species: *Pterygophorus cinctus* Klug (Designated by Ashmead 1898). -- Dalla Torre 1894 Cat. Hym. 1: 307-308. -- Konow 1905 Genera Insect. 29: 37. -- Konow 1907 Z. syst. Hym. Dipt. 7: 217 (key to spp.). -- Morice 1919 Trans. ent. Soc. Lond. 1918: 289-293 (key to spp.). -- Benson 1938 Ann. Mag. nat. Hist. (11) 1: 614-618 (key to spp.).

bitot Mocsáry

Papua New Guinea.

Pterygophorus bitot Mocsáry 1909 Annls. hist.-nat. Mus. natn. hung. 7: 9, ♂. "Nova-Guinea: Sattelberg (Huon Gulf)" (Budapest, ♂).

cinctus Klug

Australia (Queensland; New South Wales; Victoria; Tasmania).

Pterygophorus cinctus Klug 1814 Mag. Ges. nat. Fr. Berl. 6: 278-279, pl. 7, fig. 1, 2, ♀, ♂. "Neuholland" (Berlin?). -- Leach 1817 Zool. Misc. 3: 119, pl. 148, fig. 6. -- Lepelletier 1823 Monogr. Tenthred.: 51. -- Lepelletier & Serville 1828 Encyc. Méth. Insect. 10: 236. -- Boisduval 1835 Voyage l'Australie, Zool. 11, 6: 657, pl. 12, fig. 6. -- Blanchard 1840 Hist. Nat. Anim. Art. 3: 230. -- Guérin 1845 Icon. Règne Anim. 7, Insectes: 401, pl. 64, fig. 9. -- Kriechbaumer 1884 Klug's ges. Aufz. Blattwes. 44. -- Froggatt

1890 Proc. Linn. Soc. N.S.W. (2) 5: 694 (host b). -- Dalla Torre 1894 Cat. Hym. 1: 308. -- Froggatt 1901 Agric. Gaz. N.S.W. 12: 1069-1070 (the annulated sawfly; adults collected on *Angophora* flowers). -- Konow 1905 Genera Insect. 29: 37, pl. 3, fig. 3 a, b, 4 a, b. -- Rohwer 1910 Ent. News 21: 469 (*axetius* (1)). -- Morice 1919 Trans. R. ent. Soc. Lond. 1918: 291, 293 (*distinctus*, *insignis*, *zonalis* not separable from *cinctus*; distribution). -- Forsius 1927 Rec. S. Aust. Mus. 3: 284, 287 (agrees with Morice that other forms are aberrative specimens of *cinctus*). -- Gibbons 1935 Ann. ent. Soc. Amer. 28: 47-56, pl. 1, fig. 1 (first cubital cell). -- Rayment 1935 A Cluster of Bees: 200 (Victoria; on flowers of *Grevillea zizyphifolia*). -- Benson 1938 Ann. Mag. nat. Hist. (11) 1: 614, 616 (a flowers of *Grevillea zizyphifolia*). -- McKinnon 1942 Aust. Insect. 1: 169 (host a). -- Martyn, et al., 1973 Tas. Dep. Agric., Insect Pest Survey No. 5, 171/72: 23 (host c; parasite).
Tenthredo (*Pterygophorus*) *cinctus*: Blanchard 1849 in Cuvier, Règne Anim., Ed. 3, Insect. 2, pl. 108, fig. 8.

Hosts: a) *Rumex*; b) *Leptocarpum*; c) *Melaleuca ericifolia*.

distinctus Rohwer

Australia (New South Wales).

Pterygophorus distinctus Rohwer 1910 Ent. News 21: 469-470, ♀. "Woodford, N.S.W." (London, ♀).

facielongus Benson

Australia (Queensland; New South Wales; Victoria).

Pterygophorus facielongus Benson 1938 Ann. Mag. nat. Hist. (11) 1: 616-618, ♀, ♂. "Woodford, N.S.W." (London, ♀).

insignis Kirby

Australia (Queensland).

Pterygophorus insignis Kirby 1894 Ann. Mag. nat. Hist. (6) 14: 45-46, ♀. "Mackay Queensland" (London, ♀). -- Turner 1900 Proc. Linn. Soc. N.S.W. 23: 517, 518 (on blossoms). -- Rohwer 1910 Ent. News 21: 469 (as syn. of *cinctus* "*axetius*" Klug). -- Benson 1938 Ann. Mag. nat. Hist. (11) 1: 616 (valid species).
Pterygophorus cinctus var. *insignis*: Forsius 1927 Rec. S. Aust. Mus. 3: 284 (Od. Tas.).

turneri Rohwer

Australia (Queensland).

Pterygophorus turneri Rohwer 1910 Ent. News. 21: 470, ♀. "Cairns, Queensland" (London, ♀).

Genus LOPHYROTOMA Ashmead

Lophyrotoma Ashmead 1898 Can. Ent. 30: 230.

Type-species: *Pterygophorus interruptus* Klug (Original designation). -- Rohwer 1910 Ent. News 21: 469 (as syn. of *Pterygophorus* Klug). -- Benson 1958 Proc. R. ent. Soc. Lond. (B) 27: 15 (valid genus; syn.: *Platyspectra* Benson).

Pterygophorus Ashmead 1898 Can. Ent. 30: 230, N. SYN.

Type-species: *Pterygophorus analis* Costa (Original designation).

Platyspectra Benson 1938 Ann. Mag. nat. Hist. (11) 1: 614, 618. (key to spp.).
Type-species: *Pterygophorus analis* Costa (Original designation). -- Leach 1943 N. Od Nat. 11 (69): 2 (species close to *leachii* (Kirby) taken on low scrub, Astrolabe Range, Papua).

analis (Costa)

Australia (Queensland; Victoria; West Australia).

Pterygophorus analis Costa 1864 Annuar. Ist Mus. Zool. Univ. Napoli 2: 66, ♀. "Australia" (Napoli, ♀). -- Kirby 1884 Ann. Mag. Nat. Hist. (5) 13: 403. -- Dalla Torre 1894 Cat. Hym. 1: 307-308. -- Konow 1905 Genera Insect. 29: 37. -- Rohwer 1910 Ent. News 21: 469 (syn.: *gauldis* Konow). -- Forsius 1927 Rec. S. Aust. Mus. 3: 284 (Tas., S. Aust.).

-- Forsius 1929 Notul. ent. 9: 81. -- McKinnon 1942 Aust. Insect. 1: 169 (host a).
Pterygophorus analis: Ashmead 1898 Can. Ent. 30: 230.

Platyspectra analis: Benson 1938 Ann. Mag. nat. Hist. (11) 1: 620-621 (hosts b, c).
Lophyrotoma analis: Benson 1958 Proc. R. ent. Soc. Lond. (B) 27: 15.

Pterygophorus gauldis Konow 1907 Z. syst. Hym. Dipt. 7: 218, 219, ♀, ♂. "Australia" (Ebensvalde, ♀).

Hosts: a) ironbark trees; b) *Rumex* sp.; c) *Emex australis*.

Notes: See *interrupta* (Klug) for some of the references previously attributed to *analisa*.

cidibiformis Benson
Lophytoma atabelliformis Benson 1958 Proc. R. ent. Soc. Lond. (B) 27: 15-16. ♀, ♂.
 "New Guinea, W.C.: Wisselmeren, Panial, 1750 m." (Leiden, ♀).

cyanea (Leach)
 Australia (New South Wales; Victoria).
Pterygophorus cyaneus Leach 1817 Zool. Misc. 3: 119. ♀, ♂. "Australasia" (Mus. Macleay, ♂ et ♀, Kirby ♀, London ♀, Canberra ex Macleay Museum, Sydney ♀). -- Lepelletier 1823 Monogr. Tenthred.: 148. -- Lepelletier & Serville 1828 Ency. Méth. Insect. 10: 236. -- Blanchard 1840 Hist. Nat. Anim. Art. 3: 321. -- Dalla Torre 1894 Cat. Hym. 1: 308. -- Konow 1905 Genera Insect. 29: 37. -- Morice 1919 Trans. ent. Soc. Lond. 1918: 292 ("Type in B.M."). -- Forsius 1927 Rec. S. Aust. Mus. 3: 284 (Od., N.S.W., S. Aust.).
Platyseetza cyanea: Benson 1938 Ann. Mag. nat. Hist. (11) 1: 620 (distribution).
Platyseetza cyanea: Benson 1938 Ann. Mag. nat. Hist. (11) 1: 620 (distribution).
 Leach 1944 N. Qd Nat. 11 (70): 2 (hosts a, b).
Lophytoma cyanea: Maxwell 1955 Can. Ent. (suppl. 1) 87: 26 (internal larval anatomy; host a). -- Benson 1958 Proc. R. ent. Soc. Lond. (B) 27: 15.

Hosts: a) *Eucalyptus* sp.; b) *Eucalyptus australiana*.

cygnus (Kirby)
 Australia (West Australia).
Pterygophorus cygnus Kirby 1882 List Hym. Brit. Mus. 1: 81, pl. 6, fig. 10. ♂.
 "Swan River, West Australia" (London, ♂). -- Dalla Torre 1894 Cat. Hym. 1: 308. -- Konow 1905 Genera Insect. 29: 37. -- Forsius 1927 Rec. S. Aust. Mus. 3: 284 (N.S.W. [?]).

Platyseetza cygnus: Benson 1938 Ann. Mag. nat. Hist. (11) 1: 619.
Lophytoma cygnus: Benson 1938 Proc. R. ent. Soc. Lond. (B) 27: 15.

interrupta (Klug)

Australia (Queensland; New South Wales; Victoria; Tasmania; South Australia).
Pterygophorus interruptus Klug 1814 Mag. Ges. nat. Fr. Berl. 6: 279-280. pl. 7, fig. 3. ♀. "Nedholland" (Berlin ?). -- Leach 1817 Zool. Misc. 3: 118. -- Lepelletier 1823 Monogr. Tenthred.: 50. -- Lepelletier & Serville 1828 Ency. Méth. Insect. 10: 236. -- Blanchard 1840 Hist. Nat. Anim. Art. 3: 230. -- Dalla Torre 1894 Cat. Hym. 1: 308. -- Turner 1900 Proc. Linn. Soc. N.S.W. 25: 517, 518 (on blossoms). -- Froggatt 1901 Agric. Gaz. N.S.W. 12: 1070 (the orange colored sawfly; biology; host a). -- Konow 1905 Genera Insect. 29: 37. -- Forsius 1927 Rec. S. Aust. Mus. 3: 284 (S. Aust., N.S.W., Tas., Qd.). -- Roberts 1937 Rep. Agric. Stk Qd 1936-1937: 141 (outbreak among cattle).
Platyseetza interrupta: Benson 1938 Ann. Mag. nat. Hist. (11) 1: 619 (a species complex; syn.: *queenslandicus* Forsius). -- Seddon 1952 (1951) Serv. Publics Dep. Hlth Aust. Vet. Hyg. 7: 183-188 (biol., hosts b, c, d, g - m). -- Roberts 1952 Insect. affecting livestock with special reference to important spp. in Aust.: 56-57 (habits; fatalities among cattle after ingestion of larvae; hosts b, c, h, n). -- Callow 1955 Qd Agric. J. 81: 155-161 (article based on Roberts, 1932).

Lophytoma interrupta: Ashmead 1898 Can. Ent. 30: 230. -- Benson 1958 Proc. R. ent. Soc. Lond. (B) 27: 15.
Pterygophorus analis: Froggatt 1918 Proc. Linn. Soc. N.S.W. 43: 671 (fed larvae congregate at bases of trees where cattle may lick them up; may cause death to cattle; host a). -- Tryon 1921 Qd Agric. J. 16: 208 (larvae injurious to cattle when eaten with foliage). -- Roberts 1932 Qd Agric. J. 37: 41-52 (death in cattle; hosts b, c, d, g - l). [These references pertain to *interrupta*, not *analisa*.]
Pterygophorus interruptus var. *queenslandicus* Forsius 1929 Notul. ent. 9: 81. ♂.
 "Westwood, Queensland" ("Wilson coll.", Melbourne ? ♂, ♂).

Hosts: a) *Eucalyptus* sp.; b) *Eucalyptus melanophloia*; c) *Angophora intermedia*; d) *Acacia excelsa*; e) narrow-leaved ironbark; f) grey ironbark; g) *Eucalyptus siderophloia* var. *glauca*; h) *Eucalyptus arebata*; i) *Eucalyptus rostrata*; j) *Eucalyptus populifolia*; k) *Eucalyptus hemiphloia*; l) *Eucalyptus corymbosa*; m) *Angophora melanoxylon*; n) *Eucalyptus penicillata*.

leachii (Kirby)

Australia (Queensland).
Pterygophorus leachii Kirby 1882 List Hym. Brit. Mus. 1: 82, pl. 6, fig. 9. ♀, ♂.
 "Port Bowen, Queensland" (London, ♀). -- Dalla Torre 1894 Cat. Hym. 1: 308. -- Turner 1900 Proc. Linn. Soc. N.S.W. 25: 517-518 (on dead saplings; blossoms). -- Konow 1905 Genera Insect. 29: 37.
Platyseetza leachii: Benson 1938 Ann. Mag. nat. Hist. (11) 1: 612, 620 (host a).
Lophytoma leachii: Benson 1958 Proc. R. ent. Soc. Lond. (B) 27: 15.

Host: a) *Eucalyptus*.

nigripes (Benson)

Australia (Victoria).
Platyseetza nigripes Benson 1938 Ann. Mag. nat. Hist. (11) 1: 621-622. ♀. "Studley Park, Victoria" (Melbourne, ♀).
Lophytoma nigripes: Benson 1958 Proc. R. ent. Soc. Lond. (B) 27: 15.

optima (Konow)

Australia (New South Wales; Victoria).
Pterygophorus optima Konow 1908 Z. syst. Hym. Dipt. 8: 83. ♀. "N.S. Wales" (Eberswalde, ♀).
Platyseetza optima: Benson 1938 Ann. Mag. nat. Hist. (11) 1: 620.
Lophytoma optima: Benson 1958 Proc. R. ent. Soc. Lond. (B) 27: 15.

ramosa (Benson)

Australia (Victoria).
Platyseetza ramosa Benson 1938 Ann. Mag. nat. Hist. (11) 1: 622. ♀. "Melbourne, S. Yarra, Victoria" (London, ♀).
Lophytoma ramosa: Benson 1958 Proc. R. ent. Soc. Lond. (B) 27: 15.

uniformis (Kirby)

Australia (Queensland).
Pterygophorus uniformis Kirby 1894 Ann. Mag. nat. Hist. (6) 14: 46. ♀, ♂. "Mackay, Queensland" (London, ♀). -- Turner 1900 Proc. Linn. Soc. N.S.W. 25: 517, 518 (scrub insect). -- Rohrer 1910 Ent. News 21: 469 (Konow's 1907 reference to *analisa* belongs here). -- Forsius 1927 Rec. S. Aust. Mus. 3: 284 (N.S.W. [?]).
Pterygophorus analis: Konow 1907 Z. syst. Hym. Dipt. 7: 218.

Platyseetza uniformis: Benson 1938 Ann. Mag. nat. Hist. (11) 1: 612, 620 (feeds on a creeper in the jungle).
Lophytoma uniformis: Benson 1958 Proc. R. ent. Soc. Lond. (B) 27: 15.

zonalis (Rohrer)

Australia (Queensland).
Pterygophorus zonalis Rohrer 1910 Ent. News 21: 470-471. ♀. "Mackay, Queensland" (London, ♀).
Platyseetza zonalis: Benson 1938 Ann. Mag. nat. Hist. (11) 1: 618.
Lophytoma zonalis: Benson 1958 Proc. R. ent. Soc. Lond. (B) 27: 15.

Subfamily EURYINAE

Lophyrinae (pt.): Kirby 1882 List Hym. Brit. Mus. 1: 94-97. -- Froggatt 1890 Proc. Linn. Soc. N.S.W. (2) 5: 696.

Lophyrinae (pt.): Dalla Torre 1894 Cat. Hym. 1: 306-307.

Perreyiidae (pt.): Ashmead 1898 Can. Ent. 30: 225-227.

Eurytides: Konow 1898 Ent. Nachr. 24: 248.

Perreyides (pt.): Konow 1905 Genera Insect. 29: 38-40.

Eurinae: Rohrer 1911 Proc. ent. Soc. Wash. 13: 226 (tribes Diphamorphini and Eurilini). -- Rohrer 1922 Bull. Brooklyn ent. Soc. 27: 91-94 (Eurilini, key to genera).

Euryinae: Benson 1934 Trans. R. ent. Soc. Lond. 82: 463. -- Benson 1938 Trans. R. ent. Soc. Lond. 87: 382. -- Benson 1963 J. R. Soc. W. Aust. 46: 81-82 (key to genera).

Genus EURYS Newman

Eury Newman 1841 Entomologist 1: 90.

Type-species: *Eury aenaeus* Newman (Monotypic). -- Kirby 1882 List Hym. Brit. Mus. 1: 94 (syn.: *Dictyna* Westwood). -- Dalla Torre 1894 Cat. Hym. 1: 306. -- Konow 1905 Genera Insect. 29: 38. -- Rohrer 1910 Ent. News 21: 471 (key to spp.). -- Morice 1919 Trans. ent. Soc. Lond. 1918: 294-297 (syn.: *Euryopsis* Kirby; key to spp.). -- Rohrer 1922 Bull. Brooklyn ent. Soc. 17: 91 (notes on genus). -- Benson 1934 Trans. R. ent.

Soc. Lond. 82: 466-468 (key to spp.). -- Benson 1963 J. R. Soc. West. Aust. 46: 81 (genus defined in key).

Dictynna Westwood 1841 Arcana Ent. 1: 24.

Type-species: *Dictynna laeta* Westwood (Monotypic). -- Westwood 1843 Arcana Ent. (Addenda) 1: 191 (may be identical with *Eurygma* Newman).

Eurygma Kirby 1882 List Hym. Brit. Mus. 1: 95.

Type-species: *Eurygma nitens* Kirby (Monotypic). -- Dalla Torre 1894 Cat. Hym. 1: 306. -- Benson 1905 Genera Insect. 29: 39. -- Rohrer 1910 Ent. News 21: 472 (key to spp.). -- Konow 1905 Genera Insect. 29: 39. -- Rohrer 1910 Ent. News 21: 472 (key to spp.).

aeratus Newman

Eurygma aeratus Newman 1841 Entomologist 1: 90. "New Holland.... Adelaide" (lost ?).

-- Dalla Torre 1894 Cat. Hym. 1: 306. -- Konow 1905 Genera Insect. 29: 39. -- Benson 1934 Trans. R. ent. Soc. Lond. 82: 467 (syn.: *decepta* Rohrer).

Eurygma decepta Rohrer 1910 Ent. News 21: 471-472. ♀, ♂. "Melbourne, Victoria" (London, ?).

agata Benson

Eurygma agata Benson 1963 J. R. Soc. W. Aust. 46: 82-83. ♀. "Yanchep, W. Aust." (Perth, ?).

bellus (Rohrer)

Eurygma bellus Rohrer 1910 Ent. News 21: 472. ♀, ♂. "near Sydney" (London, ?).

calliphengus Benson

Eurygma calliphengus Benson 1938 Ann. Mag. nat. Hist. (11) 2: 360. ♀. "Strathbrooke Island, Queen." (Brisbane, ?) ("Possibly a subsp. of *nitidus* Kirby. ").

chloe Benson

Eurygma chloe Benson 1938 Ann. Mag. nat. Hist. (11) 2: 359-360. ♀, ♂. "Mt. Kosciusko, N.S.W., 5000 ft." (Canberra, ?) ("Possibly a high mountain form of *laeta* Westw. ").

laetus (Westwood)

Australia (New South Wales; Victoria; Tasmania).

Dictynna laeta Westwood 1841 Arcana Ent. 1: 24, pl. 7, fig. 4. "Tierra Van Diemen!" (Oxford, ?).

Eurygma laeta: Kirby 1882 List Hym. Brit. Mus. 1: 94. -- Dalla Torre 1894 Cat. Hym. 1: 306. -- Konow 1905 Genera Insect. 29: 39. -- Forsius 1927 Rec. S. Aust. Mus. 3: 284 (Tas., S. Aust., Vict.). -- Benson 1934 Trans. R. ent. Soc. Lond. 82: 466, 468 (distribution: *nitens* Kirby as a syn.: *Dictynna* (?) *laeta*). -- Benson 1963 J. R. Soc. West. Aust. 46: 82, fig. 1-3 (mouthparts).

nitens (Kirby)

Australia (South Australia).

Eurygma nitens Kirby 1882 List Hym. Brit. Mus. 1: 95, pl. 7, fig. 5. ♂. "Adelaide, South Australia" (London, ?). -- Dalla Torre 1894 Cat. Hym. 1: 306. -- Konow 1905 Genera Insect. 29: 39. -- Benson 1934 Trans. R. ent. Soc. Lond. 1918: 295. -- Benson 1934 Trans. R. ent. Soc. Lond. 82: 466, 468 (as syn. of *laeta*). -- Benson 1938 Ann. Mag. nat. Hist. (11) 2: 360 (probably a valid sp.).

nitidus Kirby

Australia (Queensland; New South Wales; Victoria).

Eurygma nitidus Kirby 1882 List Hym. Brit. Mus. 1: 94-95, pl. 7, fig. 4. ♀. "Australia" (London, ?). -- Dalla Torre 1894 Cat. Hym. 1: 306. -- Konow 1905 Genera Insect. 29: 39. -- Benson 1934 Trans. R. ent. Soc. Lond. 82: 467 (distribution). -- Benson 1938 Ann. Mag. nat. Hist. (11) 2: 360 (*calliphengus* possibly subsp. of *nitidus*).

pulcher Benson

Eurygma pulcher Benson 1934 Trans. R. ent. Soc. Lond. 82: 468. ♀. "nr. Mittagong, N.S.W." (Canberra, ?).

rutilis Morice

Eurygma rutilis Kirby 1882 List Hym. Brit. Mus. 1: 94 (♀, South Australia, Adelaide). -- *Eurygma rutilis* Morice 1919 Trans. ent. Soc. Lond. 1918: 296. No locality. (London, ?).

(Described from Kirby's specimen of *caerulea*). -- Benson 1934 Trans. R. ent. Soc. Lond. 82: 467 (S. Aust.).

Genus MARRA Benson

Marra Benson 1934 Trans. R. ent. Soc. Lond. 82: 465, 470-471 (key to spp.).

Type-species: *Clarissa froggatti* Rohrer (Original designation). -- Benson 1938 Ann. Mag. nat. Hist. (11) 2: 359. -- Benson 1963 J. R. Soc. W. Aust. 46: 82 (genus defined in key).

anomocera (Rohrer)

Australia (New South Wales).

Clarissa anomocera Rohrer 1922 Bull. Brooklyn ent. Soc. 17: 93. ♀, ♂. "Moree, N.S.W." (Washington, ?).

Marra anomocera: Benson 1934 Trans. R. ent. Soc. Lond. 82: 471.

froggatti (Rohrer)

Australia (New South Wales).

Clarissa froggatti Rohrer 1922 Bull. Brooklyn ent. Soc. 17: 92-93. ♀, ♂. "Warrah district, N.S.W." (Washington, ?).

Marra froggatti: Benson 1934 Trans. R. ent. Soc. Lond. 82: 471.

Genus CLARISSA Kirby

Clarissa Kirby 1894 Ann. Mag. nat. Hist. (6) 14: 46.

Type-species: *Clarissa divergens* Kirby (Monotypic). -- Morice 1919 Trans. ent. Soc. Lond. 1918: 299-300 (key to spp.). -- Forsius 1927 Rec. S. Aust. Mus. 3: 288-289 (*Clarissa* and *Neodixys* congeneric). -- Benson 1934 Trans. R. ent. Soc. Lond. 82: 465, 468-469 (key to spp.). -- Benson 1935 Mem. Qd Mus. 10: 215-216 (key to spp.). -- Benson 1938 Ann. Mag. nat. Hist. (11) 2: 358-359. -- Benson 1963 J. R. Soc. W. Aust. 46: 82 (genus defined in key).

antenna Benson

Australia (Queensland).

Clarissa antenna Benson 1935 Mem. Qd Mus. 10: 215, 217. ♂. "Tamborine Mountain, Queensland" (Brisbane, ?).

atrata Turner

Australia (Queensland).

Clarissa atrata Turner 1900 Proc. Linn. Soc. N.S.W. 25: 516-517. ♀, ♂. "Mackay, Q." (London, ?) (Taken on flowering shrubs, growing at the edge of the scrub.).

bensoni Smith, new name

Australia (Queensland).

Clarissa obesa Benson 1935 Mem. Qd Mus. 10: 216, 218. ♂. "Tamborine Mountain, Queensland" (Brisbane, ?) (Preoccupied by *Clarissa varicabula* var. *obesa* Forsius, 1927).

diana Benson

Australia (Queensland).

Clarissa diana Benson 1935 Mem. Qd Mus. 10: 215, 216. ♂. "Manango District, Queensland" (Brisbane, ?).

divergens Kirby

Australia (Queensland).

Clarissa divergens Kirby 1894 Ann. Mag. nat. Hist. (6) 14: 46. ♀. "Mackay, Queensland" (London, ?). -- Turner 1900 Proc. Linn. Soc. N.S.W. 25: 516 (description: taken on blossoms of a small tree or shrub growing at the edge of the scrub). -- Benson 1935 Mem. Qd Mus. 10: 215 (♂).

flammea Benson

Australia (Queensland).

Clarissa flammea Benson 1935 Mem. Qd Mus. 10: 214-215. ♀. "Queensland Natl. Park" (Brisbane, ?).

flavicornis Benson

Australia (Queensland).

Clarissa flavicornis Benson 1934 Trans. R. ent. Soc. Lond. 82: 469. ♀. "Eidsvoid, Queensland" (Canberra, ?).

hebe Benson

Australia (West Australia).

Clarissa hebe Benson 1963 J. R. Soc. W. Aust. 46: 83-84. ♀, ♂. "Tambrey, W. Aust." (Perth, ?).

- Lucida* Benson
Australia (New South Wales).
10: 215, 216-217. ♂. "Tooloom, N. S. Wales" (Brisbane, ♂).
- ruficollis* Benson
Australia (A.C.T.).
1934 Trans. R. ent. Soc. Lond. 82: 470. ♀. "Federal Capital Territory, Blundells" (Canberra, ♀).
- thoracica* Morice
Australia.
1919 Trans. ent. Soc. Lond. 1918: 300. ♀. "Australia" (Oxford, ♀).
- willsoni* Benson.
Australia (New South Wales).
1938 Ann. Mag. nat. Hist. (11) 2: 360-361. ♀. "Mt. Wilson, N. S. Wales" (Melbourne, ♀).

Genus NEOEURYS Rohwer

- Neoeurys* Rohwer 1910 Ent. News 21: 472-473.
Type-species: *Neoeurys metalliza* Rohwer (Original designation). -- Morice 1919 Trans. ent. Soc. Lond. 1918: 297-299 (key to spp.). -- Forsius 1927 Rec. S. Aust. Mus. 3: 286-289 (possibly same as *Clartessa*). -- Benson 1934 Trans. R. ent. Soc. Lond. 82: 465, 474-476 (key to ♀). -- Benson 1938 Ann. Mag. nat. Hist. (11) 2: 359 (additional spp.). -- Benson 1963 J. R. Soc. W. Aust. 46: 82 (genus defined in key).
- affinis* Forsius
Australia (South Australia).
1927 Rec. S. Aust. Mus. 3: 295-296. ♀. "Port Lincoln, S. Aust." (Adelaide, ♀).
- aurora* Benson
Australia (Queensland).
1935 Mem. Qd Mus. 10: 220-222. ♀. "Stanthorpe, Queensland" (Brisbane, ♀).
- brevivalvis* Benson
Australia (Queensland).
1935 Mem. Qd Mus. 10: 220. ♀. "Brisbane, Queensland" (Brisbane, ♀).
- carbonarius* (Forsius)
Australia (New South Wales).
1927 Rec. S. Aust. Mus. 3: 289-290. ♀. "Forest Reefs, N.S. Wales" (Adelaide, ♀).
- caudatus* Morice
Australia (Victoria; Tasmania).
1919 Trans. ent. Soc. Lond. 1918: 298-299. ♀, ♂. "Tasmania" (London,). -- Benson 1934 Trans. R. ent. Soc. Lond. 82: 476 (Vict.).
- erectus* Benson
Australia (West Australia).
1938 Ann. Mag. nat. Hist. (11) 2: 365. ♀, ♂. "Dongarra, W. Aust." (London, ♀) (Taken from flowers of *Acacia* sp.).
- evansi* Benson
Australia (Tasmania).
1938 Ann. Mag. nat. Hist. (11) 2: 362-364. ♀. "National Park, Tasmania" (London, ♀).
- fuscus* Benson
Australia (New South Wales).
1934 Trans. R. ent. Soc. Lond. 82: 477. ♀. "Botany Bay, N.S.W." (Washington, ♀ [type not located, lost ?]).
- inconspicuus* (Kirby)
Australia (Queensland; South Australia).
1894 Ann. Mag. nat. Hist. (6) 14: 47. ♀. "Mackay, Queensland" (London, ♀). -- Turner 1900 Proc. Linn. Soc. N.S.W. 3: 517.
- Clartessa inconspicuus*: Morice 1919 Trans. ent. Soc. Lond. 1918: 300.
Neoeurys inconspicuus: Benson 1934 Trans. R. ent. Soc. Lond. 82: 468, 474, 476.

- leai* Forsius.
Australia (Victoria; South Australia).
1927 Rec. S. Aust. Mus. 3: 393-395. ♀. "Ooida, S. Aust." (Adelaide, ♀). -- Benson 1934 Trans. R. ent. Soc. Lond. 82: 475 (Vict.).
- leptocoleum* Benson
Australia (Tasmania).
1938 Ann. Mag. nat. Hist. (11) 2: 361-362. ♀. "Mount Wellington, Tasmania" (Adelaide, ♀).
- metallicus* Rohwer
Australia (Victoria).
1910 Ent. News 21: 473. ♀. "Heborne, Victoria" (London, ♀). -- Forsius 1929 Notul. ent. 9: 84 (♂).
- niger* Benson
Australia (New South Wales; A.C.T.).
1934 Trans. R. ent. Soc. Lond. 82: 476-477. ♀. "Mount Kosciusko, N.S.W." (Canberra, ♀).
- pusillus* Forsius
Australia (Victoria; South Australia).
1927 Rec. S. Aust. Mus. 3: 292-293. ♀. "Mount Lofly Ranges, S. Aust." (Adelaide, ♀). -- Forsius 1929 Notul. ent. 9: 84 (Vict.).
- scutellatus* Forsius
Australia (Tasmania).
1927 Rec. S. Aust. Mus. 3: 296-297. ♀. "Hobart, Tasmania" (Adelaide, ♀).
- tasmanicus* Rohwer
Australia (Tasmania).
1918 Ann. Mag. nat. Hist. (9) 2: 439-440. ♀, ♂. "Mt. Wellington, Tasmania" (London, ♀). -- Rohwer 1922 Bull. Brooklyn ent. Soc. 17: 94 (separation from *caudatus*).
- trochilus* Benson
Australia (West Australia).
1938 Ann. Mag. nat. Hist. (11) 2: 364. ♀. "Nongarra, W. Aust." (London, ♀) ("From flowers of *Acacia* sp." Type locality probably a misspelling of Dongarra).
- turneri* Benson
Australia (West Australia).
1938 Ann. Mag. nat. Hist. (11) 2: 365. ♀, ♂. "Dongarra, W. Aust." (London, ♀) ("From flowers of *Acacia* sp.").
- variabilis* (Forsius)
Australia (Queensland; Victoria; South Australia).
1927 Rec. S. Aust. Mus. 3: 290-291. ♀, ♂. "Mt. Lofly, S. Aust.; Brisbane, Queensland" (Adelaide,).
- Neoeurys variabilis*: Benson 1934 Trans. R. ent. Soc. Lond. 82: 474 (a variable species; syn.: *collaris* Forsius, *oboeura* Forsius, *sternalis* Forsius).
Clartessa variabilis var. *collaris* Forsius 1927 Rec. S. Aust. Mus. 3: 291. ♀. "Kangaroo Island, Melbourne, S. Aust." (Adelaide, ♀).
- Clartessa variabilis* var. *oboeura* Forsius 1927 Rec. S. Aust. Mus. 3: 291-292. ♀, ♂. "Melrose, S. Australia" (Adelaide,).
- Clartessa variabilis* var. *sternalis* Forsius 1929 Notul. ent. 9: 83. ♀. "Gramplains, Victoria" ("Wilson coll." Melbourne?, ♀).
- ventralis* Forsius
Australia (Tasmania).
1927 Rec. S. Aust. Mus. 3: 298-299. ♀. "Cradle Mountain, Tasmania" (Adelaide, ♀).

Genus DIPHAMORPHOS Rohwer

- Diphamorphos* Rohwer 1910 Ent. News 21: 473.
Type-species: *Diphamorphos nigraeana* Rohwer (Original designation). -- Morice 1919 Trans. ent. Soc. Lond. 1918: 294 (key to spp.). -- Tillyard 1926 Insects Aust. and N. Zealand: 265 ("Velvety larvae are found feeding on dead leaves, under bark, etc."). -- Benson 1934 Trans. R. ent. Soc. Lond. 82: 465, 471 (key to spp.). -- Benson 1938 Ann.

Mag. nat. Hist. (11) 2: 358-359. -- Benson 1963 J. R. Soc. W. Aust. 46: 82 (genus defined in key).

apicalis Forsius

Diphomorphus apicalis Forsius 1927 Rec. S. Aust. Mus. 5: 287-288, fig. d. "Mcunt
Lofty and Adelaide, S. Aust." (Adelaide,).

minor Rohwer

Diphomorphus minor Rohwer 1910 Ent. News 21: 474, fig. d. "Cairns, Queensland" (London,).

nigrescens Rohwer

Diphomorphus nigrescens Rohwer 1910 Ent. News 21: 474, fig. d. "Victoria" (London, fig. d).
-- Forsius 1929 Notul. ent. 9: 83 (d).

pallicornis Benson

Diphomorphus pallicornis Benson 1935 Mem. Qd Mus. 10: 218-219, fig. d. "Tooloom, N.S.W." (Brisbane, fig. d).

Genus POLYCLONUS Kirby

Polyclonus Kirby 1882 List Hym. Brit. Mus. 1: 97.

Type-species: *Polyclonus atratus* Kirby (Monotypic). -- Dalla Torre 1894 Cat. Hym. 1: 307. -- Konow 1905 Genera Insect. 29: 40 (as syn. of *Angyloneura*). -- Konow 1907 Z. syst. Hym. Dipt. 7: 174-176 (*Angyloneura* and *Cladomacra* congeneric with *Polyclonus*). -- Rohwer 1918 Ann. Mag. nat. Hist. (9) 2: 439 (a good genus). -- Morice 1919 Trans. ent. Soc. Lond. 1918: 257. -- Forsius 1927 Rec. S. Aust. Mus. 5: 288 (*Polyclonus*). *Angyloneura* and *Cladomacra* are separate genera). -- Forsius 1935 Ann. naturh. Mus. Wien 46: 47 (a valid genus). -- Benson 1938 Ann. Mag. nat. Hist. (11) 2: 358-359 (in Eurymae). -- Benson 1963 J. R. Soc. W. Aust. 46: 81 (genus defined in key).

atratus Kirby

Polyclonus atratus Kirby 1882 List Hym. Brit. Mus. 1: 97, pl. 7, fig. 3, d. "Australia" (London, d).

"Australia" (London, d). -- Dalla Torre 1894 Cat. Hym. 1: 307. -- Rohwer 1918 Ann. Mag. nat. Hist. (9) 2: 439 (fig. 2). -- Morice 1919 Trans. ent. Soc. Lond. 1918: 257 (Rohwer's fig. lost). -- Moore 1957 Proc. R. Zool. Soc. N.S.W. 1955-1956: 74-76 (adult, larva; biol.); hosts a - f). -- Moore 1961 Proc. R. Zool. Soc. N.S.W. 1958-1959: 90, 94, 95 (larvae reared on dying leaves of felled trees, hosts a, d, f). -- Moore 1972 Aust. Zool. 17: 33 (hosts d, g).

Angyloneura atrata: Konow 1905 Genera Insect. 29: 40. -- Konow 1907 Z. syst. Hym. Dipt. 7: 175 (the d of *Angyloneura nigripes*).

Hosts: a) *Euclalyptus amentoides*; b) *Euclalyptus ptilularis*; c) *Euclalyptus resinifera*; d) *Euclalyptus saligna*; e) *Angophora costata*; f) *Angophora inermis*; g) *Euclalyptus grandis*.

Genus ANCYLONEURA Cameron

Ancyloneura Cameron 1877 Trans. ent. Soc. Lond. 1: 91-92.

Type-species: *Ancyloneura varipes* Cameron (Monotypic). -- Cameron 1882 Entomologist's Mon. Mag. 19: 132 (fig. 9 of *Cladomacra* Smith). -- Dalla Torre 1894 Cat. Hym. 1: 306 (as syn. of *Cladomacra*). -- Konow 1905 Genera Insect. 29: 40. -- Konow 1907 Z. syst. Hym. Dipt. 7: 174-176 (*Ancyloneura*, *Polyclonus*, *Cladomacra* congeneric). -- Rohwer 1918 Ann. Mag. nat. Hist. (9) 2: 437-438 (a good genus; key to spp.). -- Forsius 1926 Notul. ent. 6: 114-115 (3 spp., a good genus; key to spp.). -- Forsius 1927 Rec. S. Aust. Mus. 5: 288 (a good genus). -- Forsius 1935 Ann. naturh. Mus. Wien 46: 47 (notes on genus). -- Benson 1934 Trans. R. ent. Soc. Lond. 82: 465, 471-472 (key to fig. type-species as *Angyloneura nigripes* (Smith) (1)). -- Benson 1938 Proc. R. ent. Soc. Lond. (B) 27: 16-17 (key to spp.). -- Benson 1963 J. R. Soc. W. Aust. 46: 81 (genus defined in key).

annulicornis Benson

Ancyloneura annulicornis Benson 1934 Trans. R. ent. Soc. Lond. 82: 473-474, fig. d. "New Guinea" (London, fig. d). -- Benson 1958 Proc. R. ent. Soc. Lond. (B) 27: 16 (Salwatty, New Guinea).

brevisetosa Benson

Ancyloneura brevisetosa Benson 1934 Trans. R. ent. Soc. Lond. 82: 473, fig. d. "South East, Moroka, Loria, New Guinea" (Geneva, fig. d). -- Benson 1958 Proc. R. ent. Soc. Lond. (B) 27: 17 (Papua, Owen Stanley Range, 1300 m.).

frontalis Benson

Ancyloneura frontalis Benson 1965 Ann. Mag. nat. Hist. (13) 8: 45-46, d. "Vogelkop: Bomberl, 700-900 m." (Honolulu, d) (Also from Fak Fak, S. coast of Bomberl; Manokwerl.).

fuscipennis Benson

Ancyloneura fuscipennis Benson 1934 Trans. R. ent. Soc. Lond. 82: 472-473, fig. d. "New Guinea" (Geneva, fig. d). -- Benson 1958 Proc. R. ent. Soc. Lond. (B) 27: 17 (Humboldt Bay, Salwatty, Waigeu Is.).

nigripes (Smith)

Cryptocampus nigripes Smith 1861 J. Linn. Soc. Zool. 5: 136, fig. d. "Dory" [New Guinea] (London, fig. d).

Angyloneura nigripes: Kirby 1882 List Hym. Brit. Mus. 1: 95, pl. 7, fig. 7. -- Konow 1905 Genera Insect. 29: 40. -- M. Waido 1916 Brit. O. U. Exped. Dutch New Guinea 1(10): 16. -- Benson 1934 Trans. R. ent. Soc. Lond. 82: 472 (Arc; New Guinea; *varipes* Cameron and *volatans* Rohwer as syn.). -- Benson 1958 Proc. R. ent. Soc. Lond. (B) 27: 17 (Mt. Pania, 6000 ft., Salwatty, Papua; Tafa, 8500 ft.).

Cladomacra nigripes: Dalla Torre 1894 Cat. Hym. 1: 306.

varipes Cameron

Angyloneura varipes Cameron 1877 Trans. ent. Soc. Lond. 1: 92, fig. 9. "Arcu" (London, fig. 9). -- Kirby 1882 List Hym. Brit. Mus. 1: 96, pl. 7, fig. 6. -- Konow 1905 Genera Insect. 29: 40. -- Benson 1934 Trans. R. ent. Soc. Lond. 82: 472 (as syn. of *nigripes* Smith; syn.: *volatans* Rohwer). -- Benson 1958 Proc. R. ent. Soc. Lond. (B) 27: 16 (a valid sp., Humboldt Bay; Arcu Is.; Japan Is., New Guinea).
Cladomacra varipes: Dalla Torre 1894 Cat. Hym. 1: 307.
Ancyloneura volatans: Rohwer 1918 Ann. Mag. nat. Hist. (9) 2: 438, fig. d. "Waka River, New Guinea" (London, fig. d).

Subfamily STYRACOTECHYINAE

Styracotechyinae: Benson 1935 Mem. Qd Mus. 10: 223. -- Benson 1938 Trans. R. ent. Soc. Lond. 87: 381.

Genus STYRACOTECHYS Benson

Styracotechys Benson 1935 Mem. Qd Mus. 10: 224-225.
Type-species: *Styracotechys dioelyma* Benson (Monotypic).

dicelyma Benson

Styracotechys dioelyma Benson 1935 Mem. Qd Mus. 10: 225-226, fig. d. "Tooloom, N.S.W." (Brisbane, fig. d).

Subfamily PERGULINAE

Pergulinae: Benson 1934 Trans. R. ent. Soc. Lond. 82: 463. -- Benson 1938 Trans. R. ent. Soc. Lond. 87: 381.

Genus PERGULA Morice

Pergula Morice 1919 Trans. ent. Soc. Lond. 1918: 256, 288.
Type-species: *Pergula turneri* Morice (Monotypic).

turneri Morice

Pergula turneri Morice 1919 Trans. ent. Soc. Lond. 1918: 288-289, d. "N.S.W. Australia, Yallingup (near Cape Naturaliste)" (London, d).

Genus HAPLOSTEGUS Konow

Haplostegus Konow 1901 Természetr. Füz. 24: 68, 70.
Type-species: *Haplostegus epimeles* Konow (Designated by Rohwer 1911). -- Konow 1905 Genera Insect. 29: 34. -- Conde 1936 Rev. Ent., Rio de J. 9: 120 (key to spp.).

bicoloripes Malaise
Brazil (Rio de Janeiro).

Haplostegus bicoloripes Malaise 1949 Ark. Zool. 42A: 17-18, d. "Est. Rio de Janeiro, Nova Friburgo, 900 m." (Stockholm, d.).

cataphractus Konow

Haplostegus cataphractus Konow 1901 Természetr. Füz. 24: 71, g. "Brasília (Pernambuco)" (Budapest, g.). -- Konow 1905 Genera Insect. 29: 34.

clitellarius Konow

Haplostegus clitellarius Konow 1901 Természetr. Füz. 24: 71, g. "Amazon (Itaituba)" (Budapest, g.). -- Konow 1905 Genera Insect. 29: 34.

discalis Konow

Haplostegus discalis Konow 1902 Z. syst. Hym. Dipt. 2: 103, g. "Peru (Vilcanota)" (Eberswalde, g.). -- Konow 1905 Genera Insect. 29: 34.

epimeles Konow

Haplostegus epimeles Konow 1901 Természetr. Füz. 24: 70-71, g, d. "Brasília (Minas Gerais, Espírito Santo)" (Budapest, g.). -- Konow 1905 Genera Insect. 29: 34. --

Benson 1940 Bull. ent. Res. 30: 463 (Pernambuco; host a). -- Pyenson 1940 Bull. ent. Res. 30: 467-468 (gregarious guava sawfly; biol.); Pernambuco; host a). -- d'Araújo e Silva

et al., 1968 Quarto Catálogo dos Insetos do Brasil, pt. II, 10 tomo: 622 (host b; distribution).
Haplostegus epimeles Malaise 1942 Ent. Tidsskr. 63: 116.

Hosts: a) *Peridium guajava*; b) goiabeira.

epimeles rufithorax Malaise

Haplostegus epimeles rufithorax Malaise 1942 Ent. Tidsskr. 63: 116, d. "Santa Catharina, Nova Bremen, Rio Laeiss" (Stockholm, d.).

humeralis Malaise

Haplostegus humeralis Malaise 1942 Ent. Tidsskr. 63: 115, g. "Brazil (Bahia)" (Stockholm, g.).

luteolus Conde

Haplostegus luteolus Conde 1936 Rev. Ent., Rio de J. 6: 120, 124, fig. 1, 2, g. "S. Paulo, Pedreiros; Ypiranga; Victoria, Botucatu" (S. Paulo, g.) ("Ist vielleicht nur eine Farbenvarietät von *epimeles* Knw.").

mexicanus Rohwer

Haplostegus mexicanus Rohwer 1911 Proc. U.S. natn. Mus. 41: 378-379, d. "Cordoba, Mexico" (Washington, d.). -- Conde 1936 Rev. Ent., Rio de J. 6: 122 (?) syn. of *discalis* Konow.

nigriscrus Conde

Haplostegus nigriscrus Conde 1936 Rev. Ent., Rio de J. 6: 120, 124, d. "Ypiranga, S. Paulo" (S. Paulo, d.).

ruficollis (Cameron), n. comb.

Corynophylus ruficollis Cameron 1883 Biologia cent.-am., Hym. 1: 53-54, g. "Panama, Bugaba" (London, g.). -- Dalla Torre 1894 Cat. Hym. 1: 348. -- Konow 1905 Genera Insect. 29: 34.

scutator Conde

Haplostegus scutator Conde 1936 Rev. Ent., Rio de J. 6: 121, 122-123, fig. 3, g, d. "S. Paulo, Espírito Santo" () (Biol. notes; larva; host a). -- d'Araújo e

Silva, et al., 1968 Quarto Catálogo dos Insetos do Brasil, pt. II, 10 tomo: 622 (host b; distribution).

Hosts: a) *Peridium guajava* ("guayava"); b) goiabeira.

subclavatus Malaise

Haplostegus subclavatus Malaise 1942 Ent. Tidsskr. 63: 114-115, g, d. "Santa Catharina, Nova Teufonia; Ecuador, Loja" (Stockholm,).

wygodzinskyi Malaise

Haplostegus wygodzinskyi Malaise 1949 Ark. Zool. 42A: 17, g. "Est. Rio de Janeiro, Nova Friburgo, 900 m." (Stockholm, g.).

Subfamily PHILOMASTIGINAE

Pterygophorinae (pt.): Froggatt 1890 Proc. Linn. Soc. N.S.W. (2) 5: 696. -- Ashmead 1898 Can. Ent. 30: 231.

Pterygophorides (pt.): Konow 1898 Ent. Nachr. 24: 248. -- Konow 1905 Genera Insect. 29: 37.

Philomastiginae: Rohwer 1911 Proc. ent. Soc. Wash. 13: 224. -- Benson 1935 Mem. Od Mus. 10: 224. -- Benson 1938 Trans. R. ent. Soc. Lond. 87: 379.

Genus PHILOMASTIX Froggatt

Philomastix Froggatt 1890 Proc. Linn. Soc. N.S.W. (2) 5: 487-488.

Type-species: *Philomastix nanacarrowi* Froggatt (Designated by Rohwer 1911). -- Dalla Torre 1894 Cat. Hym. 1: 308. -- Konow 1898 Ent. Nachr. 25: 248-249. -- Konow 1905 Genera Insect. 29: 37. -- Schulz 1906 Spolia Hym.: 81-84. -- Morice 1919 Trans. ent. Soc. Lond. 1918: 287-288 (key to spp.). -- Benson 1935 Mem. Od Mus. 10: 224. -- Benson 1938 Trans. R. ent. Soc. Lond. 87: 379-380.

macleai (Westwood)

Ferga macleai Westwood 1880 Proc. zool. Soc. Lond.: 372-373, pl. 35, fig. 2, g. "Australasia" (Oxford, g.). -- Dalla Torre 1894 Cat. Hym. 1: 351 (*macleayi*).
Heptacola macleayi: Konow 1905 Genera Insect. 29: 12.

Philomastix macleayi: Froggatt 1918 Proc. Linn. Soc. N.S.W. 43: 671 (syn.: *glabra* Froggatt).

Philomastix glabra Froggatt 1890 Proc. Linn. Soc. N.S.W. (2) 5: 489-490, g, d. "d. Australasia; d and g Dunoon, Richmond River, N.S.W." (Canberra, ex Macleay Museum, Sydney) (host a). -- Froggatt 1892 Proc. Linn. Soc. N.S.W. (2) 7: 201. -- Froggatt 1901 Agric. Gaz. N.S.W. 12: 1070, fig. adult, larva (bramble sawfly; host b).

Hosts: a) wild raspberry; b) *Rubus moluccanus*.

nancarrowi Froggatt

Philomastix nancarrowi Froggatt 1890 Proc. Linn. Soc. N.S.W. (2) 5: 488-489. "Cairns, N. Queensland" (Canberra, ex Macleay Museum, Sydney,). -- Dalla Torre 1894 Cat. Hym. 1: 308 (*nancarrowi*). -- Konow 1905 Genera Insect. 29: 37 (*nancarrowi*). -- Leask 1943 N. Q. Nat. 11 (69): 2 (host a). -- Leask 1944 N. Q. Nat. 11 (72): 1-3 (biol., hosts a, b). -- Forslius 1927 Rec. S. Aust. Mus. 5: 283 (N.S.W. [?]).

Hosts: a) *Rubus rosaeifolius*; b) *Rubus hillii*.

Genus CEROSPASTUS Konow

Cerospastus Konow 1899 An. Mus. nac. Hist. nat. B. Aires 6: 404-405.

Type-species: *Cerospastus volupia* Konow (Monotypic). -- Konow 1905 Genera Insect. 29: 37. -- Benson 1938 Trans. R. ent. Soc. Lond. 87: 379 (questionably placed in Philomastiginae). [I have seen specimens of this genus and believe it is best placed in the Philomastiginae.]

Cerospastus Schulz 1906 Spolia Hym.: 84. (Emendation).

volupis Konow

Chile (Valdivia; Maulé);
Argentina (Neuquén).
Geopagastus volupis Konow 1899 An. Mus. nac. Hist. nat. B. Aires 6: 405. ♀. "Chile
(Valdivia)" (Eberswalde?, ♀). -- Konow 1905 Genera Insect. 29: 37.

Subfamily PERREYINAE

Lophyrinae (pt.): Kirby 1882 List Hym. Brit. Mus. 1: 89-94.
Perreyina: Cameron 1885 Biologia cent.-am., Hym. 1: 60.
Lophyrinae (pt.): Dalla Torre 1894 Cat. Hym. 1: 304-306.
Perreyidae: Ashmead 1898 Can. Ent. 30: 225-227. -- Malaise 1925 Ent. Tijdschr. 76: 12.
Lophyridae: Konow 1898 Ent. Nachr. 24: 248.
Pterygophorinae (pt.): Ashmead 1898 Can. Ent. 30: 230.
Perreyides (pt.): Konow 1898 Ent. Nachr. 24: 248. -- Konow 1905 Genera Insect. 29: 38-40.
Perreyiinae: Rohwer 1911 Proc. ent. Soc. Wash. 13: 220 (as subfamily of Perreyiidae).
-- Benson 1934 Trans. R. ent. Soc. Lond. 82: 463. -- Benson & Conde 1938 Rev. Ent., Rio de J. 9: 121-154 (revision). -- Benson 1938 Trans. R. ent. Soc. Lond. 87: 382. --
Malaise 1937 Ent. Tijdschr. 36: 60.

Genus CLADOMACRA Smith

Cladomacra Smith 1860 Ann. Mag. nat. Hist. (3) 6: 256-257.
Type-species: *Cladomacra macropus* Smith (Monotypic). -- Dalla Torre 1894 Cat. Hym. 1: 306. -- Konow 1907 Z. syst. Hym. Dipt. 7: 174-176 (congeneric with *Anzyloneura* and *Polyleloneura*). -- Forsius 1926 Notul. ent. 6: 114 (a good genus). -- Forsius 1927 Rec. S. Aust. Mus. 3: 288 (a good genus). -- Benson 1965 Ann. Mag. nat. Hist. (13) 8: 46-47 (key to spp.).
Macroclada Konow 1905 Genera Insect. 29: 46 (Emendation).

macropus Smith

Indonesia (Celebes; West Irian); Papua
New Guinea.

Cladomacra macropus Smith 1860 Ann. Mag. nat. Hist. (3) 6: 257. d. "Celebes" (London, d). -- Smith 1865 J. Linn. Soc. Zool. 8: 62, pl. IV, fig. 1. -- Kirby 1882 List Hym. Brit. Mus. 1: 96, pl. 7, fig. 8. -- Dalla Torre 1894 Cat. Hym. 1: 306. -- Benson 1965 Ann. Mag. nat. Hist. (13) 8: 47 (Celebes; W. New Guinea).
Macroclada macropus: Konow 1905 Genera Insect. 29: 46.

nigriceps Benson

Papua New Guinea.
Cladomacra nigriceps Benson 1965 Ann. Mag. nat. Hist. (13) 8: 46-47. d. "New Guinea: Papua, Owen Stanley Range, Goliata: Bomey, 1950 m." (Holotype, ♂) (Also from Finisterre Range; Mt. Kaindi; Moite; Tombe, slopes of Mt. Hagen; Mt. Giluwe.).

Genus PERREYIA Brullé

Perreyia Brullé 1846 in Lepelletier, Hist. Nat. Insectes, Hym. 4: 661.
Type-species: *Perreyia lepidia* Brullé (Monotypic). -- Dalla Torre 1894 Cat. Hym. 1: 304. -- Konow 1905 Genera Insect. 29: 40. -- Benson & Conde 1938 Rev. Ent., Rio de J. 9: 126, 150 (1 sp., syn.: *Paraperreyia* Schrottky).
Paraperreyia Schrottky 1915 Societas Ent. 30: 5.
Type-species: *Paraperreyia grandis* Schrottky (Monotypic). -- Rohwer 1921 Proc. U.S. natn. Mus. 59: 163 (as syn. of *Lophyrinidae*).

lepidia Brullé

Venezuela; Bolivia; Brazil (São Paulo;
Rio Grande do Sul; Santa Catarina);
Paraguay.

Perreyia lepidia Brullé 1846 in Lepelletier, Hist. Nat. Insectes, Hym. 4: 661, pl. 46, fig. 2. ♀ ? "Amérique méridionale" (). -- Dalla Torre 1894 Cat. Hym. 1: 304. -- Konow 1905 Genera Insect. 29: 40. -- Benson & Conde 1938 Rev. Ent., Rio de J. 9: 150 (distribution; syn.: *vittellina* Westwood; *dorsanura* Konow; *peruvialis* Konow; *extensoria* Konow; *alutina* Konow; *grandis* Schrottky).

Brachytoma vittellina Westwood 1874 Thesaurus Ent. Oxon.: 110, pl. 20, fig. 5. ♀.
"Brazilia" (Oxford, ♀). -- Konow 1905 Genera Insect. 29: 41, pl. 3, fig. 2.
Perreyia vittellina: Kirby 1882 List Hym. Brit. Mus. 1: 91. -- Dalla Torre 1894 Cat. Hym. 1: 305.

Perreyia dorsanura Konow 1899 An. Mus. nac. Hist. nat. B. Aires 6: 407. ♀. "Brasilila (Santos, Sta. Catharina, Rio Grande do Sul)" ().
Brachytoma dorsanura: Konow 1905 Genera Insect. 29: 41, pl. 3, fig. 1. -- Enderlein 1919 Sber. Ges. naturf. Freunde Berl.: 126 (d, Santa Catharina).
Lophyrinidae dorsanura: Rohwer 1921 Proc. U.S. natn. Mus. 59: 164.
Paraperreyia dorsanura: Cameron 1956 Rio Grande do Sul, Bol. Dir. Prod. Anim. 13: 23 (larva; causes death of pigs when eaten by them). -- Lima 1960 Insetos do Brasil 11, Hym. 1: 351 (hosts a, b, c).
Perreyia parasilis Konow 1899 An. Mus. nac. Hist. nat. B. Aires 6: 407. ♀. "Brasilila (Santos)" ().
Brachytoma parasilis: Konow 1905 Genera Insect. 29: 41.

Perreyia extensoria Konow 1899 An. Mus. nac. Hist. nat. B. Aires 6: 408. ♀. "Venezuela (Mérida)" ().

Brachytoma extensoria: Konow 1905 Genera Insect. 29: 41.
Perreyia alutina Konow 1899 An. Mus. nac. Hist. nat. B. Aires 6: 408. ♀. "Brasilila (Sta. Catharina)" ().

Brachytoma alutina: Konow 1905 Genera Insect. 29: 41.

Paraperreyia grandis Schrottky 1915 Societas Ent. 30: 5. ♀. "Puerto Cantera, Paraguay" (La Plata ?; ♀ [type may have been destroyed]).

Lophyrinidae grandis: Rohwer 1921 Proc. U.S. natn. Mus. 59: 163.

Hosts: a) *Senecia brasiliensis*; b) *Baccharis* sp.; c) *Baccharis dracunculifolia*.

Genus PERREYELLA Conde

Perreyella Conde 1937 in Malaise, Ent. Tijdschr. 58: 60, 62.
Type-species: *Lophyrus melanopterus* Pertry (Original designation). -- Benson & Conde 1938 Rev. Ent., Rio de J. 9: 123-124 (key to spp.).

melanoptera (Pertry)

Brazil (Amazonas, Espírito Santo).
Lophyrus melanopterus Pertry 1830 Dialect. Anim. Artic. Brasil: 130-131, pl. 26, fig. 7. "Amazonum flumen" (München, d).

Brachytoma melanoptera: Westwood 1874 Thesaurus Ent. Oxon.: 110. -- Konow 1905 Genera Insect. 29: 41.

Perreyia melanoptera: Kirby 1882 List Hym. Brit. Mus. 1: 91. -- Dalla Torre 1894 Cat. Hym. 1: 304.

Perreyella melanoptera: Conde 1937 in Malaise, Ent. Tijdschr. 58: 60. -- Benson & Conde 1938 Rev. Ent., Rio de J. 9: 123, 131-132 (♀, d; Amazonas, Espírito Santo, Sta. Thereza; as *melanoptera* (T) on p. 123).

melanoptera nigra (Konow)

Brazil (Rio Grande do Sul).
Perreyia nigra Konow 1903 Z. syst. Hym. Dipt. 3: 166. ♀. "Brasilila (R. Grande do Sul)" (Eberswalde, ♀). -- Konow 1905 Genera Insect. 29: 40, pl. 2, fig. 9 a, b, 10 a, b.
Perreyella melanoptera nigra: Benson & Conde 1938 Rev. Ent., Rio de J. 9: 132 (♀ syn. of *melanoptera*).

pseudonigra Benson & Conde

Peru.
Perreyella pseudonigra Benson & Conde 1938 Rev. Ent., Rio de J. 9: 123. d. "Peru, Callanga (Cuzco)" (Eberswalde, d).

Genus HETEROPERREYIA Schrottky

Heteroperreyia Schrottky 1915 Societas Ent. 30: 5.

Type-species: *Anzyloneura joergenseni* Schrottky (Original designation). -- Benson & Conde 1938 Rev. Ent., Rio de J. 9: 151-154 (key to spp.).

Heteroperreyia subg. *Deacoperreyia* Benson & Conde 1938 Rev. Ent., Rio de J. 9: 152. Type-species: *Heteroperreyia (Deacoperreyia) pseudoleptus* Benson & Conde (Designated by Malaise 1935).

Temipipermyia Malaise 1955 Ent. Tidskr. 76: 122. N. syn.
Type-species: *Heteropipermyia costata* Rohwer (Original designation).

costata Rohwer

Heteropipermyia costata Rohwer 1921 Proc. U.S. natn. Mus. 59: 165. ♀. "São Paulo, Brazil" (London, ♀). -- Benson & Conde 1938 Rev. Ent., Rio de J. 9: 152 (♀, ♂).
Temipipermyia costata: Malaise 1955 Ent. Tidskr. 76: 122.

hubrichti Malaise

Heteropipermyia hubrichti Malaise 1955 Ent. Tidskr. 76: 123. ♀, ♂. "Argentina, Prov. Rosario (Sta. Fé)" (München, ♀).
Argentina (Santa Fé).

Jorgenseni (Jörgensen)

Axaylonera jorgenseni Jörgensen 1913 (Oct.) An. Mus. nac. Hist. nat. B. Aires 24: 264-266. ♀, ♂. "Bonpland (Misiones)" (La Plata, ♀) (Biol. host a). [Schrottky was intended to be the author, but Jörgensen's description predates that of Schrottky's.]
Axaylonera jorgenseni Schrottky 1913 (Nov.) Dt. ent. Z. 6: 703. ♀. "Bonpland" (La Plata, ♀).

Heteropipermyia jorgenseni: Schrottky 1915 Societas Ent. 30: 5. -- Benson & Conde 1938 Rev. Ent., Rio de J. 9: 153 (♀, ♂; host a). -- Malaise 1955 Ent. Tidskr. 76: 123 (Paraguay).

Hosts: a) *Sciurus molle*.

nigerrima Benson & Conde

Heteropipermyia (Decapipermyia) nigerrima Benson & Conde 1938 Rev. Ent., Rio de J. 9: 154. ♂. "Espírito Santo, Sta. Thereza" (Eberswalde, ♂).
Brazil (Espírito Santo).

pseudoleprieuri Benson & Conde

Heteropipermyia (Decapipermyia) pseudoleprieuri Benson & Conde 1938 Rev. Ent., Rio de J. 9: 153-154. ♀. "Espírito Santo bei Sta. Thereza" (Eberswalde, ♀).
Heteropipermyia (Decapipermyia) pseudoleprieuri var. *flavissima* Benson & Conde 1938 Rev. Ent., Rio de J. 9: 154. No further data. N. syn.

Genus CAMPTOPRIUM Spinola

Camptoprium Spinola 1840 Anns Soc. ent. Fr. 9: 134-136.

Type-species: *Camptoprium leprieuri* Spinola (Monotypic). -- Dalla Torre 1894 Cat. Hym. 1: 305. -- Konow 1905 Z. syst. Hym. Dipt. 3: 163-164 (key, 3 spp.). -- Konow 1905 Z. syst. Hym. Dipt. 5: 161 (notes). -- Konow 1905 Genera Insect. 29: 39. -- Rohwer 1921 Proc. U.S. natn. Mus. 59: 162 (description). -- Benson & Conde 1938 Rev. Ent., Rio de J. 9: 127-131 (Key to spp.).

albiflabre Benson & Conde

Camptoprium albiflabre Benson & Conde 1938 Rev. Ent., Rio de J. 9: 129-130, fig. 15. ♂. "S. Paulo, Campos de Jordao, Brasilien" ("Mus. Paulista", ♂). -- Quinlan 1974 Bull. Br. Mus. nat. Hist. (Ent.) 30: 231 (type not located, but slide preparation made from holotype is at Eberswalde).

atriceps Konow

Camptoprium atriceps Konow 1905 Z. syst. Hym. Dipt. 5: 162. ♂. "Brasilien" (Eberswalde, ♂). -- Benson & Conde 1938 Rev. Ent., Rio de J. 9: 131 ("Cuba" [?]).
Brazil (Santa Catarina); Paraguay.

fusciventre (Mocsáry)

Brachytoma fusciventris Mocsáry 1909 Anns hist.-nat. Mus. natn. hung. 7: 10-11. ♀. "Bolivia: S. Antonio" (Budapest, ♀).
Camptoprium fusciventris Benson & Conde 1938 Rev. Ent., Rio de J. 9: 129, fig. 11 (lancet; ♀ of *nigripennis*?).
Bolivia.

leprieuri Spinola

Camptoprium leprieuri Spinola 1840 Anns Soc. ent. Fr. 9: 134, 136-137, pl. 7, fig. 2. ♂. "Cayenne" (Paris ? ♂). -- Kirby 1882 List Hym. Brit. Mus. 1: 91 (*leprieuri*). -- Dalla Torre 1894 Cat. Hym. 1: 305. -- Konow 1905 Z. syst. Hym. Dipt. 3: 164 (*leprieuri*, *flavipes*).

♀). -- Konow 1905 Z. syst. Hym. Dipt. 5: 161-162 (*leprieuri*). -- Konow 1905 Genera Insect. 29: 39. -- Benson & Conde 1938 Rev. Ent., Rio de J. 9: 128 (*leprieuri*, ♀ ♂, distribution, syn.: *paraguayensis* Brèthes).
Lophyroides paraguayensis Brèthes 1927 Ent. Mitt. 16: 335. "Villarrica, Paraguay" (Eberswalde ?).

malaisi Benson & Conde

Camptoprium malaisi Benson & Conde 1938 Rev. Ent., Rio de J. 9: 130. ♀. "Bahia" (Stockholm, ♀).
Brazil (Bahia).

nigripenne (Fabricius)

Tenthredo nigripennis Fabricius 1804 Syst. Pleat. 38. ♂. "America meridionali" (Coll. Fabricius, ♂). -- Klug 1819 Zool. Mag. 1: 82, pl. 2, fig. 6.
Monophadus nigripennis: Kirby 1882 List Hym. Brit. Mus. 1: 180 (?). -- Dalla Torre 1894 Cat. Hym. 1: 164.
Valdheimia nigripennis: Konow 1905 Genera Insect. 29: 88.
Camptoprium nigripennis: Malaise 1937 Ent. Tidskr. 58: 65. -- Benson & Conde 1938 Rev. Ent., Rio de J. 9: 130 (*nigripenne*; syn.: *longicauda* Konow; ♂ Bolivia).
Camptoprium longicauda Konow 1903 Z. syst. Hym. Dipt. 3: 164-165. ♂. "Bolivia (Chaco)" (Eberswalde, ♂). -- Konow 1905 Genera Insect. 29: 39.

subviolaceum Mocsáry

Camptoprium subviolaceum Mocsáry 1909 Anns hist.-nat. Mus. natn. hung. 7: 9-10. ♀. "Peru: Pebas ad Amazonas" (Budapest, ♀). -- Benson & Conde 1938 Rev. Ent., Rio de J. 9: 137.

westwoodii (Brullé)

Diethyma westwoodii Brullé 1846 in Lepeletier, Hist. Nat. Insectes, Hym. 4: 662-663. ♂. "Je Brésil (prov. de Rio-Grande)" (Paris, ♂).
Decameria westwoodii: Kirby 1882 List Hym. Brit. Mus. 1: 94 (possibly in *Camptoprium*). -- Dalla Torre 1894 Cat. Hym. 1: 306. -- Konow 1905 Genera Insect. 29: 40. (*westwoodii*).
Camptoprium westwoodii: Benson & Conde 1938 Rev. Ent., Rio de J. 9: 127 (Santa Catarina).

Genus LOPHYROIDES Cameron

Lophyroides Cameron 1882 Entomologist's mon. Mag. 19: 132.

Type-species: *Lophyrus tropicus* Norton (Original designation). -- Dalla Torre 1894 Cat. Hym. 1: 307. -- Konow 1905 Genera Insect. 29: 40 (as syn. of *Permyia*). -- Rohwer 1911 Tech. Ser. Bur. Ent. U.S. 20: 103 (syn.: *Lophyrida* Ashmead). -- Rohwer 1921 Proc. U.S. natn. Mus. 59: 163. -- Malaise 1937 Ent. Tidskr. 58: 61 (syn.: *Brachytoma* Westwood). -- Benson & Conde 1938 Rev. Ent., Rio de J. 9: 133-137 (key to spp.).
Brachytoma Hartig 1837 Fam. Blattwesp. und Holzwesp. nebst Einleitung Naturgesen. Hym. 88 (nomen nudum).

Brachytoma Westwood 1874 Thesaurus Ent. Oxon. 109 (Preoccupied by *Brachytoma* Swainson 1840).

Type-species: *Brachytoma fumipennis* Westwood (Designated by Ashmead 1898). -- Dalla Torre 1894 Cat. Hym. 1: 307. -- Konow 1905 Genera Insect. 29: 40 (as syn. of *Permyia*).
Lophyrida Ashmead 1898 Can. Ent. 30: 225.

Type-species: *Lophyrus tropicus* Norton (Original designation).

Discozenota Malaise 1937 Ent. Tidskr. 58: 61. N. syn.

Type-species: *Brachytoma nigripennis* Westwood (Original designation).

flavipes (Konow)

Brazil (Rio Grande do Sul, Paraná, Santa Catarina); Argentina (Buenos Aires).
"Argentina resp. (Buenos Aires, Chacabuco) et Brasilia Mer. (Rio Grande do Sul, Paraná)" ().
Brachytoma flavipes: Konow 1905 Genera Insect. 29: 41. -- Jörgensen 1913 An. Mus. nat. Hist. B. Aires 24: 266.
Lophyroides flavipes: Benson & Conde 1938 Rev. Ent., Rio de J. 9: 135.

fumipennis (Westwood)

Brachytoma fumipennis Westwood 1874 Thesaurus Ent. Oxon. 110, pl. 20, fig. 3. ♂. "Amazonia" (Oxford, ♂).

Peru: Brazil (Amazonas, Pará).

Perreyia fumipennis: Kirby 1882 List Hym. Br. It. Mus. 1: 91. -- Dalla Torre 1894 Cat. Hym. 1: 304. -- Konow 1905 Genera Insect. 29: 40.

Lophyroides fumipennis: Benson & Conde 1938 Rev. Ent., Rio de J. 9: 136 (♀ ♂; distribution; syn. *Fulva* Mocsány).

Perreyia fulva Mocsány 1909 Annls. hist.-nat. Mus. natn. hung. 7: 10. ♀. "Peru: Pacht-tea" (Budapest, ♂).

melangaster Rohwer

Perreyia ruficollis Cameron 1911 Timbrl. 1: 329. ♀. British Guiana (London, ♀)

(Preoccupied by *Lophyroides ruficollis* Cameron, 1883).

Lophyroides melangaster Rohwer 1921 Proc. U.S. natn. Mus. 59: 163. ♀. "British Guiana" (London, ♀). -- Benson & Conde 1938 Rev. Ent., Rio de J. 9: 134 (syn.: *ruficollis* Cameron; *melangaster* (1))

modestus Rohwer

Lophyroides (?) *modesta* Rohwer 1921 Proc. U.S. natn. Mus. 59: 164-165. ♀. "Balzapambo, Ecuador" (Berlin, ♂).

nigriceps (Westwood)

Brachycoma nigriceps Westwood 1874 Thesaurus Ent. Oxon.: 109-110, pl. 20, fig. 2. "Amazonia" (Oxford).

Perreyia nigriceps: Kirby 1882 List Hym. Br. It. Mus. 1: 91. -- Dalla Torre 1894 Cat. Hym. 1: 304. -- Konow 1905 Genera Insect. 29: 40.

Discozerota nigriceps: Malaise 1937 Ent. Tidsskr. 58: 61.

Lophyroides nigriceps: Benson & Conde 1938 Rev. Ent., Rio de J. 9: 133-134 (♀, ♂; distribution).

piceus (Westwood)

Brachycoma picea Westwood 1874 Thesaurus Ent. Oxon.: 110, pl. 20, fig. 6. "Amazonia" (Oxford).

Perreyia picea: Kirby 1882 List Hym. Br. It. Mus. 1: 90. -- Dalla Torre 1894 Cat. Hym. 1: 304. -- Konow 1905 Genera Insect. 29: 41.

Lophyroides piceus: Benson & Conde 1938 Rev. Ent., Rio de J. 9: 134 (♂, nec Kirby ♀; perhaps syn. of *fumipennis*).

tropicus (Norton)

Mexico (Veracruz); Salvador; Guatemala; Costa Rica; Panama; Ecuador; Peru; Bolivia; Argentina.

Lophyrus tropicus Norton 1869 Trans. Am. ent. Soc. 2: 322. ♀. "Cordova, t.c. Mexico" (Geneve, ♂). -- Smith 1971 Trans. Am. ent. Soc. 97: 524 (notes on type).

Brachycoma tropicus: Cameron 1882 Entomologist's mon. Mag. 19: 132.

Lophyroides tropicus: Cameron 1882 Entomologist's mon. Mag. 19: 133 (syn.: *amazonia* Kirby). -- Cameron 1883 Biologia cent.-am., Hym. 1: 61, pl. 3, fig. 10 (Mexico, Panama).

-- Dalla Torre 1894 Cat. Hym. 1: 307. -- Benson & Conde 1938 Rev. Ent., Rio de J. 9: 136-137 (distribution; syn.: *cordovensis* Norton; *ruficollis* Cameron; *melanopyga* Konow; *inegrita* Konow).

Perreyia tropica: Konow 1905 Genera Insect. 29: 41. -- Enderlein 1919 Sber. Ges. naturf. Freunde. Berl.: 125.

Lophyrus cordovensis Norton 1869 Trans. Am. ent. Soc. 2: 323. ♀. "Cordova, t.c. Mexico" (). -- Smith 1971 Trans. Am. ent. Soc. 97: 524 (type not located).

Brachycoma cordovensis: Cameron 1882 Entomologist's mon. Mag. 19: 132.

Lophyroides cordovensis: Cameron 1882 Biologia cent.-am., Hym. 1: 62. -- Dalla Torre 1894 Cat. Hym. 1: 307.

Perreyia cordovensis: Konow 1905 Genera Insect. 29: 40.

Perreyia (?) *amazonia* Kirby 1882 List Hym. Br. It. Mus. 1: 90, pl. 6, fig. 13, 15.

"Mexico, Orizaba" (London, ♀). -- Dalla Torre 1894 Cat. Hym. 1: 90, pl. 6, fig. 14, 9.

Lophyroides anomala: Cameron 1883 Biologia cent.-am., Hym. 1: 61.

Lophyroides ruficollis Cameron 1883 Biologia cent.-am., Hym. 1: 62, pl. 3, fig. 11.

Perreyia ruficollis: Konow 1905 Genera Insect. 29: 41.

Perreyia melanopyga Konow 1899 An. Mus. nat. B. Aires 6: 409. ♀.

"Argentina resp. (Rioja); Bolivia (Yungas)" ().

Brachycoma melanopyga: Konow 1905 Genera Insect. 29: 41. -- Jørgensen 1913 An. Mus. nec. Hist. nat. B. Aires 24: 232. -- Enderlein 1919 Sber. Ges. naturf. Freunde Berl.: 126.

Lophyroides melanopyga: Rohwer 1921 Proc. U.S. natn. Mus. 59: 164.

Perreyia insignita Konow 1899 An. Mus. nat. B. Aires 6: 409. ♀. "Peru (Callang)" ().

Lophyroides fulva: Rohwer 1921 Proc. U.S. natn. Mus. 59: 165.

Genus DECAMERIA Lepelletier & Serville

Decameria Lepelletier & Serville 1828 Ency. Méth. 10 (2): 571 (no species included).

Type-species: *Decameria tasitosa* Kirby (included and designated by Kirby 1882). -- Dalla Torre 1894 Cat. Hym. 1: 305-306 (syn.: *Acherodacera* Kirby). -- Konow 1905 Genera Insect. 29: 39-40. -- Rohwer 1921 Proc. U.S. natn. Mus. 59: 162-163.

Acherodacera Kirby 1882 List Hym. Br. It. Mus. 1: 92-93.

Type-species: *Acherodacera fumipennis* Kirby (Monotypic). -- Malaise 1937 Ent. Tidsskr. 58: 61. -- Benson & Conde 1938 Rev. Ent., Rio de J. 9: 121-124 (key to spp.).

Type-species: *Trystegus mimasius* Konow (Monotypic). -- Rohwer 1921 Proc. U.S. natn. Mus. 59: 162.

Endecaria Malaise 1937 Ent. Tidsskr. 58: 62. N. syn.

Type-species: *Decameria rufiventris* Cameron (Original designation).

Type-species: *Perreyia amazonia* Kirby (Original designation).

atilis (Konow) n. comb.

Acherodacera atilis Konow 1906 Z. syst. Hym. Dipt. 6: 371-372. ♀. "Surinam" (Eberswalde, ♂). -- Benson & Conde 1938 Rev. Ent., Rio de J. 9: 138 (♀).

amazonia (Kirby) n. comb.

Perreyia amazonia Kirby 1882 List Hym. Br. It. Mus. 1: 91, pl. 6, fig. 17. ♀. "Amazonas" (London, ♀). -- Dalla Torre 1894 Cat. Hym. 1: 304. -- Konow 1905 Genera Insect. 29: 40.

Hemiteperreyia amazonia: Malaise 1937 Ent. Tidsskr. 58: 63.

Acherodacera amazonia: Benson & Conde 1938 Rev. Ent., Rio de J. 9: 143 (? syn.: *godmani* Cameron).

Lophyroides godmani Cameron 1883 Biologia cent.-am., Hym. 1: 62. ♀. "Guatemala, Las Mercedes 3000 teeth" (London, ♀). -- Dalla Torre 1894 Cat. Hym. 1: 307.

Perreyia godmani: Konow 1905 Genera Insect. 29: 40.

annulicornis (Benson & Conde) n. comb.

Acherodacera annulicornis Benson & Conde 1938 Rev. Ent., Rio de J. 9: 138. ♀. "Espírito Santo, Sta. Theresia" (Eberswalde, ♂).

capitulum (Norton) n. comb.

Perreyia capitulum Norton 1867 Trans. Am. ent. Soc. 1: 223. ♀. ♀. "Mexico" (Philladelphia, ♂). -- Cameron 1883 Biologia cent.-am., Hym. 1: 63, pl. 3, fig. 7. -- Dalla Torre 1894 Cat. Hym. 1: 304. -- Cresson 1928 Mem. Am. ent. Soc. 5: 4 (type). -- Smith 1971 Trans. Am. ent. Soc. 97: 525 (notes on type).

Brachycoma capitulum: Konow 1905 Genera Insect. 29: 41.

Acherodacera capitulum: Benson & Conde 1938 Rev. Ent., Rio de J. 9: 147 (♀, ♂).

carbo (Malaise) n. comb.

Endecaria carbo Malaise 1937 Ent. Tidsskr. 58: 63-64. ♀. "W. Ecuador, Mindo" (Stockholm, ♀).

Acherodacera carbo: Benson & Conde 1938 Rev. Ent., Rio de J. 9: 145.

chalybeata (Mocsány) n. comb.

Brachycoma chalybeata Mocsány 1909 Annls. hist.-nat. Mus. natn. hung. 7: 10. ♀. "Peru: Marcapata, in altitude 1000 metrum" (Budapest, ♀).

Acherodacera chalybeata: Benson & Conde 1938 Rev. Ent., Rio de J. 9: 144.

- championi (Cameron) n. comb.
Pezomyza championi Cameron 1883 Biologia cent.-am., Hym. 1: 64, pl. 4, fig. 6.
 δ. "Guatemala, Perula" (London, δ). -- Dalla Torre 1894 Cat. Hym. 1: 304.
Braconichneumon championi: Konow 1905 Genera Insect. 29: 41.
Acheilodacnusa championi: Benson & Conde 1938 Rev. Ent., Rio de J. 9: 142 (δ & δ; distribution; syn. *geminata* Enderlein).
Braconichneumon championi Enderlein 1919 Sber. Ges. naturf. Freunde Berl.: 126-127
 9. "Costa Rica" (Warsaw, ♀).
 Mexico (Veracruz).
compta (Norton) n. comb.
Pezomyza compta Norton 1867 Trans. Am. ent. Soc. 1: 223. δ. "Mexico" (Genève, δ).
 -- Cameron 1883 Biologia cent.-am., Hym. 1: 63. -- Rohrer 1921 Proc. U.S. natn. Mus. 59: 166. -- Smith 1971 Trans. Am. ent. Soc. 97: 523 (type).
Acheilodacnusa compta: Benson & Conde 1938 Rev. Ent., Rio de J. 9: 147.
 cordovensis (Norton)
 Mexico (Colima, Veracruz); Guatemala;
 Panama.
Diatrypa cordovensis Norton 1872 Trans. Am. ent. Soc. 4: 81. 9. "Cordova, Mexico" (Philadelphia, ♀). -- Cresson 1880 Trans. Am. ent. Soc. 8: 30. -- Cresson 1928 Mem. Am. ent. Soc. 5: 5 (type). Smith 1971 Trans. Am. ent. Soc. 97: 524 (notes on type).
Decameria cordovensis: Kirby 1882 List Hym. Brit. Mus. 1: 94 (*cordovensis*). -- Cameron 1883 Biologia cent.-am., Hym. 1: 66. -- Dalla Torre 1894 Cat. Hym. 1: 305. -- Konow 1905 Genera Insect. 29: 37.
Acheilodacnusa cordovensis: Benson & Conde 1938 Rev. Ent., Rio de J. 9: 141 (syn. *politus* Norton; *fumipennis* Kirby; *nigripennis* Cameron; *facialis* Cameron).
Diatrypa politus Norton 1872 Trans. Am. ent. Soc. 4: 81. δ. "Cordova, Mexico" (Philadelphia, δ). -- Cresson 1880 Trans. Am. ent. Soc. 8: 36. -- Cresson 1928 Mem. Am. ent. Soc. 5: 8 (type). -- Smith 1971 Trans. Am. ent. Soc. 97: 523 (notes on type).
Decameria politus: Kirby 1882 List Hym. Brit. Mus. 1: 94. -- Cameron 1883 Biologia cent.-am., Hym. 1: 66. -- Dalla Torre 1894 Cat. Hym. 1: 306. -- Konow 1905 Genera Insect. 29: 40.
Acheilodacnusa fumipennis Kirby 1882 List Hym. Brit. Mus. 1: 93, pl. 7, fig. 7. 9. "Mexico, Orizaba" (London, ♀).
Decameria fumipennis: Cameron 1883 Biologia cent.-am., Hym. 1: 66. -- Dalla Torre 1894 Cat. Hym. 1: 305. -- Konow 1905 Genera Insect. 29: 40.
Decameria nigripennis Cameron 1883 Biologia cent.-am., Hym. 1: 65, pl. 3, fig. 9. 9. "Penama, Volcan de Chiriqui 2000 to 3000 feet" (London, ♀). -- Dalla Torre 1894 Cat. Hym. 1: 305. -- Konow 1905 Genera Insect. 29: 40.
Decameria fasciata Cameron 1883 Biologia cent.-am., Hym. 1: 66-67. "Guatemala, Tamahu" (London, ♀). -- Dalla Torre 1894 Cat. Hym. 1: 305. -- Konow 1905 Genera Insect. 29: 40.
 fabulosa (Benson & Conde) n. comb.
Acheilodacnusa fabulosa Benson & Conde 1938 Rev. Ent., Rio de J. 9: 148. δ. "Espirito Santo, Brasilien, Sta. Theresa and Leopoldina; Rio de Janeiro (Sta. Theresa Repressa Ciganos bei Rio)" (Budapest and Warsaw, δδ). -- Quinlan 1974 Bull. Br. Mus. nat. Hist. (Ent.) 30: 224 (2 ♂ syntypes, only 2 found, 1 at Budapest and 1 at Polish Acad. Sci.).
 Florida Konow.
Decameria florida Konow 1906 Z. syst. Hym. Dipt. 6: 372. 9. "Peru (Callanga, Cuzco)" (Eberswalde, ♀).
Acheilodacnusa florida: Benson & Conde 1938 Rev. Ent., Rio de J. 9: 140.
 geminimacula (Majaise) n. comb.
Endeacra geminimacula Majaise 1937 Ent. Tidsskr. 58: 64-65. ♀. "Brasilien, Sta. Catharina, Hansa Humboldt" (Stockholm, ♀).
Acheilodacnusa geminimacula: Benson & Conde 1938 Rev. Ent., Rio de J. 9: 144.
 horni (Benson & Conde) n. comb.
Acheilodacnusa horni Benson & Conde 1938 Rev. Ent., Rio de J. 9: 137. 9. "Bolivien, Mapiri" (Eberswalde, ♀).
 humeralis (Kirby) n. comb.
Campoplex humeralis Kirby 1882 List Hym. Brit. Mus. 1: 92, pl. 6, fig. 16. δ. Brazil (Pará).

- "Amazons, Santarem" (London, δ). -- Dalla Torre 1894 Cat. Hym. 1: 305. -- Konow 1903 Z. syst. Hym. Dipt. 3: 164. -- Konow 1905 Genera Insect. 29: 39.
Acheilodacnusa humeralis: Benson & Conde 1938 Rev. Ent., Rio de J. 9: 144.
 interrupta (Fabricius)
 Brazil (Santa Catarina); Argentina (Misiones).
Hylotoma interrupta Fabricius 1804 Syst. Piez.: 21. δ. "America meridional" (Coli. Fabricius, δ). -- Klug 1819 Zool. Mag. 1: 68. -- Majaise 1937 Ent. Tidsskr. 58: 65 (syn.: *testacea* Kirby).
Lophyrus interruptus: Lepelletier 1823 Monogr. Tenthr.: 57. -- Lepelletier & Serville 1828 Ency. Méth., Insect. Hym. 10: 972. -- Dalla Torre 1894 Cat. Hym. 1: 294.
Decameria interrupta: Konow 1905 Genera Insect. 29: 40.
Acheilodacnusa interruptus: Benson & Conde 1938 Rev. Ent., Rio de J. 9: 139 (syn.: *tricolor* Jørgensen; host a).
Decameria testacea Kirby 1882 List Hym. Brit. Mus. 1: 93-94, pl. 7, fig. 2. "Amazon" (London, δ). -- Dalla Torre 1894 Cat. Hym. 1: 306. -- Konow 1905 Genera Insect. 29: 40.
Decameria tricolor Jørgensen 1913 An. Mus. nat. Hist. nat. B. Aires 24: 263-264. δ. "Monte de Bonpland" (La Plata, δ) (Host a).
 Hosts: a) *Sida densiflora*.
 Leucophaena Konow
Decameria leucophaena Konow 1906 Z. syst. Hym. Dipt. 6: 372-373. ♀. "Peru (Marcapata)" (Eberswalde, ♀).
Acheilodacnusa leucophaena: Benson & Conde 1938 Rev. Ent., Rio de J. 9: 146.
 luederwaldti (Benson & Conde) n. comb.
Acheilodacnusa luederwaldti Benson & Conde 1938 Rev. Ent., Rio de J. 9: 145. δ. "Sao Paulo, Jpiranga, Rio Grande" (Mus. Paulista, δ). -- Quinlan 1974 Bull. Br. Mus. nat. Hist. (Ent.) 30: 224 (type not located; paratype in London).
 malaisei (Benson & Conde)
Acheilodacnusa malaisei Benson & Conde 1938 Rev. Ent., Rio de J. 9: 149. δ. "Alter do Chão bei Santarem" (London, δ).
 Mapiri (Konow) n. comb.
Tristegus mapirius Konow 1906 Z. syst. Hym. Dipt. 6: 371. δ. "Bolivia (Mapiri)" (Eberswalde, δ).
Acheilodacnusa mapirius: Benson & Conde 1938 Rev. Ent., Rio de J. 9: 150.
 multiannulata (Benson & Conde) n. comb.
 Mexico (Colima); Guatemala; Salvador; Costa Rica.
Acheilodacnusa multiannulata Benson & Conde 1938 Rev. Ent., Rio de J. 9: 150. δ. "Costa Rica, San José, Mexico" (Warsaw and Budapest, δδ) (Also in Mexico). -- Quinlan 1974 Bull. Br. Mus. nat. Hist. (Ent.) 30: 224 (23 ♂ syntypes, 9 located in two museums).
Pezomyza tropica: Enderlein 1919 Sber. Ges. naturf. Freunde Berl.: 125.
 nigriceps (Kirby)
Campoplex (?) *nigriceps* Kirby 1882 List Hym. Brit. Mus. 1: 92, pl. 6, fig. 18. "Mexico, Orizaba" (London, δ).
Decameria nigriceps: Cameron 1883 Biologia cent.-am., Hym. 1: 64. -- Dalla Torre 1894 Cat. Hym. 1: 305. -- Konow 1905 Genera Insect. 29: 40.
Acheilodacnusa nigriceps: Benson & Conde 1938 Rev. Ent., Rio de J. 9: 146.
 rufiventris Cameron
 Mexico (Guerrero); Costa Rica.
Decameria rufiventris Cameron 1883 Biologia cent.-am., Hym. 1: 65. δ. "Costa Rica, Irazu 6000 to 7000 ft." (London, δ). -- Dalla Torre 1894 Cat. Hym. 1: 306. -- Konow 1905 Genera Insect. 29: 40. -- Rohrer 1921 Proc. U.S. natn. Mus. 59: 163.
Endeacra rufiventris: Majaise 1937 Ent. Tidsskr. 58: 62.
Acheilodacnusa rufiventris: Benson & Conde 1938 Rev. Ent., Rio de J. 9: 140 (♀, δ; Mexico, Costa Rica).
 sandaracata Konow
Decameria sandaracata Konow 1906 Z. syst. Hym. Dipt. 6: 373. δ. "Brasililia (Santos)"

(Eberswalde, d.).

Acherocerus sandanacatus: Benson & Conde 1938 Rev. Ent., Rio de J. 9: 139.

unicolor (Rohwer) n. comb.

Ferreya unicolor Rohwer 1921 Proc. U.S. natn. Mus. 59: 166-167, d. "Bollivia, Mapir" (Berlin?, d.).

Acherocerus unicolor: Benson & Conde 1938 Rev. Ent., Rio de J. 9: 142.

varipes Cameron

Decameria varipes Cameron 1883 Biologia cent.-am., Hym. 1: 66, d. "Guatemala, Cerro Zunil 4000 to 5000 ft." (London, d.). -- Dalla Torre 1894 Cat. Hym. 1: 306 (*varipēs*). -- Konow 1905 Genera Insect. 29: 40.

Acherocerus varipes: Benson & Conde 1938 Rev. Ent., Rio de J. 9: 146.

Guatemala.

Genus BARILLOCHIA Malaise

Barillochia Malaise 1955 Ent. Tidskr. 76: 123-124.

Type-species: *Barillochia brunneovirens* Malaise (Original designation).

brunneovirens Malaise

Barillochia brunneovirens Malaise 1955 Ent. Tidskr. 76: 124, ♀, "Argentina, Prov. Rio Negro (San Carlos de Barilloche)" (Stockholm, ♀).

Argentina (Rio Negro).

Subfamily CONOCOXINAE

Loboceratinae (pt.): Kirby 1882 List Hym. Brit. Mus. 1: 81. -- Dalla Torre 1894 Cat. Hym. 1: 309.

Lobocerotides (pt.): Konow 1905 Genera Insect. 29: 35.

Conocoxini: Rohwer 1911 Proc. ent. Soc. Wash. 13: 226.

Conocoxinae: Benson 1938 Trans. R. ent. Soc. Lond. 87: 382.

Genus CONOCOXA Rohwer

Conoaxa Rohwer 1911 Proc. U.S. natn. Mus. 41: 379.

Type-species: *Conoaxa dhatchipoda* Rohwer (Monotypic).

Gagana Malaise 1942 Ent. Tidskr. 63: 112, N. syn.

Type-species: *Gagana armatipes* Malaise (Original designation).

armatipes (Malaise) n. comb.

Gagana armatipes Malaise 1942 Ent. Tidskr. 63: 112-114, fig. 9 B, D, E, H, ♀, d. "Central Chile, Conitupo" (Berlin, ♀).

Chile (Arauco?).

Conoaxa dhatchipoda Rohwer 1911 Proc. U.S. natn. Mus. 41: 379-380, fig. 1, ♀, d. "Chubut, Patagonia" (Washington, ♀).

Argentina (Chubut); Chile

Genus NITHULEA Rohwer

Nithulea Rohwer 1911 Proc. U.S. natn. Mus. 41: 380.

Type-species: *Nithulea nigrita* Rohwer (Monotypic).

nigrita Rohwer

Nithulea nigrita Rohwer 1911 Proc. U.S. natn. Mus. 41: 380-381, fig. 2, ♀, "Chubut, Patagonia" (Washington, ♀).

Argentina (Chubut).

Genus AULACOMERUS Spinola

Aulacomerys Spinola 1840 Annls Soc. ent. F. 9: 137-140.

Type-species: *Aulacomerys buqueti* Spinola (Monotypic). -- Dalla Torre 1894 Cat. Hym. 1: 309. -- Konow 1905 Genera Insect. 29: 35.

buqueti Spinola

Aulacomerys buqueti Spinola 1840 Annls Soc. ent. F. 9: 140-141, pl. 7, fig. 1, d. "Geyenne" (Paris?, d.). -- Dalla Torre 1894 Cat. Hym. 1: 309. -- Konow 1905 Genera Insect. 29: 35 (*Buqueti*).

French Guiana.

Genus LYSCOELES Konow

Lyscoeles Konow 1905 Z. syst. Hym. Dipt. 5: 159-160.

Type-species: *Lyscoeles herbsti* Konow (Monotypic). -- Konow 1905 Genera Insect. 29: 34. -- Enderlein 1919 Sber. Ges. naturf. Freunde Berl.: 125.

herbsti Konow

Lyscoeles herbsti Konow 1905 Z. syst. Hym. Dipt. 5: 160, ♀, "Chile (Concepcion)" (Eberswalde, ♀). -- Konow 1905 Genera Insect. 29: 34. -- Enderlein 1919 Sber. Ges. naturf. Freunde Berl.: 125 (d). -- Malaise 1942 Ent. Tidskr. 63: 112, 113, fig. 9A, C, F, G. (Enderlein's d is a ♀).

Chile (Concepción; Curicó).

Porteri Brèthes

Lyscoeles porteri Brèthes 1919 Revta chil. Hist. nat. 23: 50, d. "Las provincias centrales de Chile" (Buenos Aires, d) ("Serait-ce le mâle de L. Herbsti Konow?").

Chile.

Subfamily LOBOCERATINAE?

Loboceratinae (pt.): Kirby 1882 List Hym. Brit. Mus. 1: 79-80. -- Dalla Torre 1894 Cat. Hym. 1: 309.

Lobocerotides (pt.): Cameron 1883 Biologia cent.-am., Hym. 1: 54-57.

Lobocerinae: Ashmead 1898 Can. Ent. 30: 228-229 (in part). -- Benson 1938 Trans. R. ent. Soc. Lond. 87: 381.

Lobocerotides (pt.): Konow 1898 Ent. Nachr. 24: 248. -- Konow 1905 Genera Insect. 29: 33-34.

Loboceridae: Rohwer 1911 Proc. ent. Soc. Wash. 13: 226. -- Benson 1934 Trans. R. ent. Soc. Lond. 82: 462. -- Malaise 1955 Ent. Tidskr. 76: 117 (in part).

Genus LOBOCERAS Kirby

Loboceras Kirby 1882 List Hym. Brit. Mus. 1: 79.

Type-species: *Loboceras mactacum* Kirby (Designated by Rohwer 1911). -- Dalla Torre 1894 Cat. Hym. 1: 309. -- Malaise 1949 Ark. Zool. 42A: 16 (type-species as *hippolyte* Kirby).

Loboceras Konow 1901 Természett. Füzt. 24: 68 (emendation). -- Konow 1905 Genera Insect. 29: 33.

atriventris Malaise

Loboceras atriventris Malaise 1955 Ent. Tidskr. 76: 117, d. "Argentina, Prov. Salta (Angostura de Arios); Prov. Jujuy (Los Perales)" (Stockholm, d).

Argentina (Salta, Jujuy).

binotatum (Konow)

Loboceras binotatum Konow 1906 Z. syst. Hym. Dipt. 6: 368, ♀, "Brasilila (obidos)" (Eberswalde, ♀).

Brazil (Pará).

calcar (Norton)

Cephalocera calcar Norton 1867 Trans. Am. ent. Soc. 1: 51, ♀, "Cordova, t.c. Mexico" (Geneve, ♀). -- Smith 1971 Trans. Am. ent. Soc. 97: 524 (type not located). The type has recently been found at Geneve.]

Mexico (Veracruz).

Corynophylus calcar: Kirby 1882 List Hym. Brit. Mus. 1: 32.

Loboceras calcar: Cameron 1882 Entomologist's mon. Mag. 19: 133. -- Cameron 1883 Biologia cent.-am., Hym. 1: 56, pl. 1, fig. 12. -- Dalla Torre 1894 Cat. Hym. 1: 309.

Loboceras calcar: Konow 1905 Genera Insect. 29: 33.

* Because the type-genus is *Loboceras*, the family-group name should have the stem Lobocerat- and the genus must be neuter.

- ecuadortense Enderlein
Loboceros ecuadortensis Enderlein 1919 Sber. Ges. naturf. Freunde Berl.: 124. ♀.
 "Ecuador, Bucay" (Warsaw, ♀).
- enderleini Smith, new name
Aulacomeris nigriceps Enderlein 1919 Sber. Ges. naturf. Freunde Berl.: 125. ♀.
 "Südbrasilien, Santa Catharina" (Warsaw, ♀) (Preoccupied by *Loboceros nigriceps*
 Cameron 1883, now placed in *Anathulaea*).
- frater (Konow)
Loboceros frater Konow 1903 Z. syst. Hym. Dipt. 3: 169-170. ♀, ♂. "Peru (Vilcanota)"
 (Eberswalde, ♀). -- Konow 1905 Genera Insect. 29: 33, pl. 2, fig. 8a, b.
- fuscipenne Cameron
Loboceros fuscipenne Cameron 1883 Biologia cent.-am., Hym. 1: 57, pl. 1, fig. 6.
 ♀. "Panama, David" (London, ♀). -- Dalla Torre 1894 Cat. Hym. 1: 309.
Loboceros fuscipennis: Konow 1905 Genera Insect. 29: 33.
- geraesinum Malaise
Loboceros geresinum Malaise 1949 Ark. Zool. 42A: 16-17. ♂. "Brazil (Minas Geraes)"
 (Stockholm, ♂).
- gibbifrons (Konow)
Loboceros gibbifrons Konow 1901 Természetr. Füz. 24: 69-70. "Bolivia" (). --
 Konow 1905 Genera Insect. 29: 33.
- hippolyte Kirby
Loboceros hippolyte Kirby 1882 List Hym. Brit. Mus. 1: 80, pl. 6, fig. 6. ♀. "Amazons"
 (London, ♀). -- Dalla Torre 1894 Cat. Hym. 1: 309. -- Benson 1930 Ann. Mag. nat. Hist.
 (10): 621 (British Guiana).
Loboceros hippolyte: Konow 1905 Genera Insect. 29: 33.
- klugii Cameron
Loboceros klugii Cameron 1883 Biologia cent.-am., Hym. 1: 55, pl. 1, fig. 1. ♀.
 "Guatemala, San Gerónimo; Panama, Bugaba" (London, ♀). -- Dalla Torre 1894 Cat. Hym.
 1: 309.
Loboceros klugii: Konow 1905 Genera Insect. 29: 33.
- konowi Malaise
Loboceros konowi Malaise 1949 Ark. Zool. 42A: 16. ♂. "Brazil (Minas Geraes, Cam-
 buquira)" (Stockholm, ♂).
- lucidum Kirby
Loboceros lucidus Kirby 1882 List Hym. Brit. Mus. 1: 80, pl. 6, fig. 5. ♀. "Amazons"
 (London, ♀). -- Dalla Torre 1894 Cat. Hym. 1: 309.
Loboceros lucidus: Konow 1905 Genera Insect. 29: 33.
- mexicanum Kirby
Loboceros mexicanus Kirby 1882 List Hym. Brit. Mus. 1: 80, pl. 6, fig. 4. ♀.
 "Orizaba, Mexico" (London, ♀). -- Cameron 1883 Biologia cent.-am., Hym. 1: 56. --
 Dalla Torre 1894 Cat. Hym. 1: 309.
Loboceros mexicanus: Konow 1905 Genera Insect. 29: 33.
- retusicornie (Konow)
Loboceros retusicornis Konow 1901 Természetr. Füz. 24: 69. ♀. "Peru" (Budapest, ♀).
 -- Konow 1905 Genera Insect. 29: 33.
- saussurii Cameron
Loboceros saussurii Cameron 1883 Biologia cent.-am., Hym. 1: 56. ♂. "Mexico, Orizaba"
 (Genève, ♂). -- Dalla Torre 1894 Cat. Hym. 1: 309 (*saussurei*).
Loboceros saussurei: Konow 1905 Genera Insect. 29: 33.

trimaclatum Rohwer
Loboceros trimaclatus Rohwer 1911 Proc. U.S. natn. Mus. 41: 381. ♀. "Piedros Negras,
 Costa Rica" (Washington, ♀).

trinitatum (Konow)
Loboceros trinitatus Konow 1906 Z. syst. Hym. Dipt. 6: 346. ♀. "Brasília (Oyapock)"
 (Eberswalde, ♀).

varicorne Cameron
Loboceros varicorne Cameron 1883 Biologia cent.-am., Hym. 1: 54-55. "Panama, Volcan
 de Chiriqui 4000 to 6000 feet" (London, ♀). -- Dalla Torre 1894 Cat. Hym. 1: 309.
Loboceros varicornis: Konow 1905 Genera Insect. 29: 33.

xanthostigmum Cameron
Loboceros xanthostigmus Cameron 1883 Biologia cent.-am., Hym. 1: 56-57. "Panama,
 Bugaba" (London, ♂). -- Dalla Torre 1894 Cat. Hym. 1: 309.
Loboceros xanthostigmus: Konow 1905 Genera Insect. 29: 33.

Genus HYPEROCEROS Konow

Hyperoceros Konow 1906 Z. syst. Hym. Dipt. 6: 369-370.
 Type-species: *Hyperoceros peruanus* Konow (Monotypic).

peruanus Konow
Hyperoceros peruanus Konow 1906 Z. syst. Hym. Dipt. 6: 370. ♀. "Peru (Marcapata)"
 (Eberswalde, ♀).

Genus SKELOSZYGONIA Malaise

Skeolosygonia Malaise 1935 Ent. Tidskr. 56: 161-162.
 Type-species: *Skeolosygonia spinipes* Malaise (Original designation). -- Greenbaum
 1974 Proc. ent. Soc. Wash. 76: 60-65 (key to spp.).

simplicica Greenbaum
Skeolosygonia simplicica Greenbaum 1974 Proc. ent. Soc. Wash. 76: 61-63. ♀.
 "Pucallpa, 200 m., Loreto, Peru" (Los Angeles, ♂).

spinipes Malaise

Skeolosygonia spinipes Malaise 1935 Ent. Tidskr. 56: 162, fig. 2. ♂. "Brazil,
 Rio de Janeiro (border of Minas Geraes)" (Hamburg, ♂). -- Conde 1939 Mitt. dt. ent.
 Ges. 9: 49 (dubius record from "Tex.", U.S.?). -- Lima 1960 Insetos do Brasil
 11, Hym. 1: 350, fig. 62. -- Greenbaum 1974 Proc. ent. Soc. Wash. 76: 61, 63-64,
 fig. 10, 11. (♂ genitalia fig.; São Paulo).

Subfamily SYZYGONINAE

Cimbicinae (pt.): Kirby 1882 List Hym. Brit. Mus. 1: 31-32. -- Dalla Torre 1894 Cat.
 Hym. 1: 347-348.

Syzygonides: Cameron 1883 Biologia cent.-am., Hym. 1: 52.

Lobocerinae (pt.): Ashmead 1898 Can. Ent. 30: 229.

Phrygophorinae (pt.): Ashmead 1898 Can. Ent. 30: 230.

Syzygonitides (pt.): Konow 1905 Genera Insect. 29: 10-11.

Loboceritides (pt.): Konow 1905 Genera Insect. 29: 34.

Cimbicinen (pt.): Mallach 1929 Dt. ent. Z. 4: 285.

Loboceridea (pt.): Malaise 1955 Ent. Tidskr. 76: 117.

Syzygoninae: Benson 1934 Trans. R. ent. Soc. Lond. 82: 224. -- Benson 1938 Trans.
 R. ent. Soc. Lond. 87: 381.

Genus SYZYGNIA Klug

Syzygnia Klug 1824 Ent. Monogr.: 177-178.

Type-species: *Syzygnia cyanocephala* Klug (Designated by Ashmead 1898). -- Dalla Torre 1894 Cat. Hym. 1: 348. -- Konow 1905 Genera Insect. 29: 10. -- Rohrer 1911 Tech. Ser. Bur. Ent. U.S. 20: 102 (syn.: *Berytana* Konow).

Syzygnia Brullé 1846 in Lepelletier, Hist. nat. Insectes, Hym. 4: 671 (Emendation?).

Type-species: *Syzygnia cyanea* Brullé (Original designation). -- Rohrer 1911 Tech. Ser. Bur. Ent. U.S. 20: 102.

Berytana Konow 1899 An. Mus. nac. Hist. nat. B. Aires 6: 397-399.

Type-species: *Syzygnia cyanocephala* Klug (Original designation).

Cyanocephala Klug

Brazil (Piauí; Minas Gerais; Rio de Janeiro; São Paulo); Argentina.

Syzygnia cyanocephala Klug 1824 Ent. Monogr.: 180. ♀. "Brasilian" (Berlin, ♀). -- Klug 1834 Jb. Insect. 1: 229, pl. 2, fig. 6. -- Kriechbaumer 1884 Klug's Ges. Aufz. Blattwesp.: 243, 282, pl. 11, fig. 6. -- Dalla Torre 1894 Cat. Hym. 1: 348.

Berytana cyanocephala: Konow 1899 An. Mus. nac. Hist. nat. B. Aires 6: 397-399 (♂). -- Konow 1905 Z. Syst. Hym. Dipt. 5: 252 (syn.: *cyanea* Brullé; Argentina). -- Konow 1905 Genera Insect. 29: 10. -- Conde 1932 Rev. Ent., São Paulo 2: 437, fig. 1 (lanceet; Rio Grande, São Paulo). -- Azvedo Marques 1933 Min. Agric. Inst. Biol. Defesa Agr.: 1-11 (biol.; larva; host a, c). -- d'Araújo e Silva, et al. 1968 Quarto Catálogo dos Insetos do Brasil, pt. 11, 1. tomo: 622 (Minas Gerais; hosts a, b, c).

Syzygnia caena Pertty 1830 Delict. Anim. Artific. Brasil: 130, pl. 26, fig. 3. ♂. -- Província Piahiensis (München, ♂). -- Dalla Torre 1894 Cat. Hym. 1: 348. -- Konow 1905 Genera Insect. 29: 10. N. syn.

Parasyzygnia caena: Rohrer 1911 Tech. Ser. Bur. Ent. U.S. 20: 102.

Syzygnia (?) *cyanea* Brullé 1846 in Lepelletier, Hist. Nat. Insectes, Hym., Atlas, pl. 48, fig. 2 (caption under figure only, not mentioned in text, p. 671; in legends for the figures, p. 16 of Atlas, Brullé stated that the caption on the plate should be *Syzygnia cyanocephala* - "Par erreur sur la planche"). "Brasilian" N. syn.

Syzygnia cyanea: Ashmead 1898 Can. Ent. 30: 230. -- Rohrer 1911 Tech. Ser. Bur. Ent. U.S. 20: 101-102 (Brullé's figure stands as description of *cyanea*, it does not agree with any described species).

Hosts: a) *Tribouchina*; b) *Tribouchina mimbilis*; c) *Tribouchina mutabilis*.

Genus PARASYZYGNIA Rohrer

Parasyzygnia Rohrer 1911 Tech. Ser. Bur. Ent. U.S. 20: 102

Type-species: *Syzygnia cyanocephala* Klug (Original designation). -- Mallach 1929 Dt. ent. Z. 4: 288 (key to spp.).

Cyanoptera (Klug)

Brazil (Rio de Janeiro, São Paulo, Paraná, Santa Catarina).

Syzygnia cyanoptera Klug 1824 Ent. Monogr.: 179-180. ♀ "Brasilian" (Berlin, ♀). -- Pertty 1830 Delict. Anim. Artific. Brasil: 130, pl. 26, fig. 4. -- Lepelletier 1833 Anals Soc. ent. Fr. 2: 456, pl. 16, fig. 1-3. -- Klug 1834 Jb. Insect. 1: 179. -- Kriechbaumer 1884 Klug's Ges. Aufz. Blattwesp.: 243, 282. -- Dalla Torre 1894 Cat. Hym. 1: 348. -- Konow 1905 Genera Insect. 29: 10, pl. 1, fig. 7 a, b, c.

Parasyzygnia cyanoptera: Rohrer 1911 Tech. Ser. Bur. Ent. U.S. 20: 102.

Syzygnia (?) *cyanoptera*: Jollivet 1955 Bull. Brussels Inst. R. des Sci. Nat. de Belg. 31(17): 17 (faceted organ on wing).

Parasyzygnia rufosternalis Mallach 1929 Dt. ent. Z. 4: 288. ♂. "Petropolis, Brasilien" (Berlin, ♂). -- Conde 1932 Rev. Ent., São Paulo 2: 438, fig. 2, 3. (São Paulo, Ypiranga; ♂ genitalia fig.). N. syn.

Pallditor Malaise

Parasyzygnia pallditor Malaise 1939 Ent. Tidsskr. 60: 26. ♀. "Brasil, Santa Catharina, Hansa Humboldt" (Stockholm, ♀).

Genus INCALIA Cameron

Incailia Cameron 1878 Trans. ent. Soc. Lond.: 143-144.

Type-species: *Incailia hartzmanni* Cameron (Monotypic). -- Dalla Torre 1894 Cat. Hym. 1: 347. -- Konow 1905 Genera Insect. 29: 34. -- Malaise 1955 Ent. Tidsskr. 76: 117-119 (key to spp.).

americana (Linnaeus)

Panama; Colombia; Bolivia; Surinam; Brazil (Amazonas, Bahia).

Tentipedia americana Linnaeus 1758 Syst. Nat., Ed. 10: 555. "Americana" (Stockholm, ♀). -- Linnaeus 1767 Syst. Nat., Ed. 12: 992. -- DeGeer 1773 Mem. Serv. Hist. Insect. 3: 598, pl. 30, fig. 21. -- Müller 1775 Linné: Vollst. Naturyst. 2: 824. -- Gaze 1780 Abh. Gesch. Insect. 5: 383, pl. 50, fig. 21. -- Fabricius 1781 Spec. Insect. 1: 413.

-- Retzius 1783 Gen. Spec. Insect. 1: 72. -- Fabricius 1787 Mant. Insect. 1: 255. -- Villiers 1789 C. Linnéi Ent. 3: 82, pl. 7, fig. 15. -- Gmelin 1790 Linn. Syst. Nat. Ed. 13: 2658. -- Christ 1791 Naturg. Insect. 439. -- Fabricius 1793 Ent. Syst. 2: 109.

Hyloetoma americana: Fabricius 1804 Syst. Piez.: 24. -- Klug 1812 Mag. Ges. nat. Fr. Berl. 6: 300, 308 (Surinam). -- Lepelletier 1823 Monogr. Tentred.: 49 (Surinam). -- Kriechbaumer 1884 Klug's Ges. Aufz. Blattwesp.: 66.

Ptenusa americana: Kirby 1882 List Hym. Brit. Mus. 1: 51 (Bahia). -- Dalla Torre 1894 Cat. Hym. 1: 323. -- Konow 1905 Genera Insect. 29: 25.

Incailia americana: Malaise 1935 Ent. Tidsskr. 56: 163. -- Malaise 1955 Ent. Tidsskr. 76: 119 (syn.: *hartzmanni* Cameron; type).

Incailia hartzmanni Cameron 1878 Trans. ent. Soc. Lond.: 144-145. ♀. "Ega, Brazil" (London, ♀). -- Cameron 1881 Trans. ent. Soc. Lond.: 563. -- Kirby 1882 List Hym. Brit. Mus. 1: 52, pl. 2, fig. 16. -- Cameron 1883 Biologia cent.-am., Hym. 1: 53, pl. 5, fig. 6 (Panama; Amazonas (Ega)). -- Dalla Torre 1894 Cat. Hym. 1: 347. -- Konow 1905 Genera Insect. 29: 35. -- Enderlein 1919 Sperr. Ges. naturf. Freunde Berl.: 125 (Colombia).

Fulviventris Malaise

Colombia.

Incailia fulviventris Malaise 1955 Ent. Tidsskr. 76: 119. ♂. "Colombia (Bogotá)" (Paris, ♂).

ulimajor Malaise

Peru.

Incailia ulimajor Malaise 1955 Ent. Tidsskr. 76: 119. ♀. "Peru (Changemayo, 1300 m.)" (Stockholm, ♀).

Subfamily PARALYPTINAE

Cimbiciniæ (pt.): Kirby 1882 List Hym. Brit. Mus. 1: 32-33. -- Dalla Torre 1894 Cat. Hym. 1: 347.

Loboceriniæ (pt.): Cameron 1883 Biologia cent.-am., Hym. 1: 53.

Pterogonophoriniæ (pt.): Ashmead 1898 Can. Ent. 30: 229.

Lobocerotiniæ (pt.): Konow 1905 Genera Insect. 29: 34-35.

Paralyptiniæ: Benson 1935 Mem. Qd Mus. 9: 224. -- Benson 1938 Trans. R. ent. Soc. Lond. 87: 381.

Genus PARALYPTIA Kirby

Paralypia Kirby 1882 List Hym. Brit. Mus. 1: 33.

Type-species: *Paralypia picipes* Kirby (Monotypic). -- Dalla Torre 1894 Cat. Hym. 1: 347. -- Konow 1905 Genera Insect. 29: 35.

lacetosa Konow

Brazil (Pará).

Paralypia laetosa Konow 1906 Z. syst. Hym. Dipt. 6: 368-369. ♂. "Brasil (Pará)" (Eberswalde, ♂).

picipes Kirby

Brazil (Pará).

Paralypia picipes Kirby 1882 List Hym. Brit. Mus. 1: 33, pl. 2, fig. 17. ♀. "Santa-rem, Amazonas" (London, ♀). -- Dalla Torre 1894 Cat. Hym. 1: 347. -- Konow 1905 Genera Insect. 29: 35.

Genus LAGIDEUS Konow

Lagideus Konow 1905 Z. syst. Hym. Dipt., 5: 160.

Type-species: *Lagideus armitatus* Konow (Monotypic). -- Konow 1905 Genera Insect. 29: 35-56. -- Malaise 1942 Ent. Tidskr. 63: 111-112.

albitarsis Malaise

Lagideus albitarsis Malaise 1942 Ent. Tidskr. 63: 110-111, fig. 8 A, B. δ. "Brazil, Santa Catharina, Nova Teutonia" (Stockholm, δ).

crinitus Konow

Lagideus crinitus Konow 1905 Z. syst. Hym. Dipt., 5: 161. ♀. "Rep. Argentina" (Eberswalde, ♀). -- Konow 1905 Genera Insect. 29: 35.

wygodzinskyi Malaise

Lagideus wygodzinskyi Malaise 1949 Ark. Zool. 42A: 18-19. ♀. "Est. Rio de Janeiro (Nova Friburgo, 900 m.)" (Stockholm, ♀).

Genus GILADEUS Brèthes

Giladeus Brèthes 1919 Revta chil. Hist. nat. 23: 50.

Type-species: *Giladeus gastricus* Brèthes (Monotypic).

gastricus Brèthes

Giladeus gastricus Brèthes 1919 Revta chil. Hist. nat. 23: 51. ♀. "les provinces centrales du Chili" (Buenos Aires, ♀).

Genus CORYNOPHILLUS Kirby

Corynophillus Kirby 1882 List Hym. Brit. Mus. 1: 32 (New name for *Cephaloocera* Klug). -- Dalla Torre 1894 Cat. Hym. 1: 348. -- Konow 1905 Genera Insect. 29: 34.

Cephaloocera Klug 1834 Jb. Insect. 1: 252 (Preoccupied by *Cephaloocera* Latreille 1829).

Type-species: *Cephaloocera pumila* Klug (Monotypic).

pumilus (Klug)

Cephaloocera pumila Klug 1834 Jb. Insect. 1: 252, pl. 2, fig. 10. δ. "Brasilien" (Berlin, δ). -- Kriechbaumer 1884 Klug's ges. Aufz. Blattwes. 297, pl. 11, fig. 10, m. *Corynophillus pumilus*: Kirby 1882 List Hym. Brit. Mus. 1: 32. -- Dalla Torre 1894 Cat. Hym. 1: 348. -- Konow 1905 Genera Insect. 29: 34.

Genus ACORDULOCERTIDEA Rohwer

Acordulocertidea Rohwer 1912 Smithson. misc. Collins 59: 5.

Type-species: *Acordulocertidea compressicornis* Rohwer (Original designation).

compressicornis Rohwer

Acordulocertidea compressicornis Rohwer 1912 Smithson. misc. Collins 59: 5-6. δ. "Taboga Island, Panama" (Washington, δ).

Genus SALTIA Malaise

Saltia Malaise 1955 Ent. Tidskr. 76: 119-120.

Type-species: *Saltia fuscoapicalis* Malaise (Original designation).

fuscoapicalis Malaise

Saltia fuscoapicalis Malaise 1955 Ent. Tidskr. 76: 120-121. ♀. "Argentina (Prov. Salta, Angostura de Arias)" (Stockholm, ♀).

Genus RIOANA Malaise

Rioana Malaise 1949 Ark. Zool. 42A: 13-14.

Type-species: *Rioana atriceps* Malaise (Original designation).

atriceps Malaise

Rioana atriceps Malaise 1949 Ark. Zool. 42A: 15. δ. "Rio de Janeiro (Corcovado)" (Stockholm, δ).

ruficeps Malaise

Rioana ruficeps Malaise 1949 Ark. Zool. 42A: 15. δ. "Rio de Janeiro (Corcovado)" (Stockholm, δ).

Subfamily ACORDULECERINAE

Cimbicinae (pt.): Kirby 1882 List Hym. Brit. Mus. 1: 31. -- Dalla Torre 1894 Cat. Hym. 1: 348.

Loboceratinae (pt.): Kirby 1882 List Hym. Brit. Mus. 1: 79. -- Dalla Torre 1894 Cat. Hym. 1: 308-309.

Lobocerides (pt.): Cameron 1883 Biologia cent.-am., Hym. 1: 58-60.

Lobocerinae (pt.): Ashmead 1898 Can. Ent. 30: 229.

Lobocerotides (pt.): Konow 1898 Ent. Nachr. 24: 248. -- Konow 1905 Genera Insect. 29: 32-33.

Acordulecerini: Rohwer 1911 Proc. ent. Soc. Wash. 13: 226.

Acordulecerinae: Ross 1937 Illinois biol. Monogr. 15: 55. -- Malaise 1949 Ark. Zool. 42A: 13.

Acordulecerinae: MacGillivray 1906 Proc. U.S. natn. Mus. 29: 638. -- Benson 1938 Proc. R. ent. Soc. Lond. 87: 380. -- Ross 1951 in Muesebeck, et al., Agriculture Monogr. 2: 12.

Genus ACORDULECERA Say

Acordulecera Say 1836 Boston J. nat. Hist. 1: 209.

Type-species: *Acordulecera dansalis* Say (Monotypic). -- Dalla Torre 1894 Cat. Hym. 1: 348. -- Middleton 1922 Proc. U.S. natn. Mus. 61: 28 (larvae, Nearctic). -- Yuasa 1925 Illinois biol. Monogr. 7: 103 (larvae, Nearctic). -- Ross 1937 Illinois biol. Monogr. 15: 55. -- Malaise 1942 Ent. Tidskr. 63: 116 (syn.: *Thulea* Say). -- Schaffner & Middleton 1949 in Craighead, Misc. Publs U.S. Dep. Agric. 657: 55 (description and habits of some N. Amer. larvae). -- Ross 1951 in Muesebeck, et al., Agriculture Monogr. 2: 12 (cat., N. Amer.).

Thulea Say 1836 Boston J. nat. Hist. 1: 213.

Type-species: *Thulea magna* Say (Monotypic). -- Dalla Torre 1894 Cat. Hym. 1: 348. -- Konow 1905 Genera Insect. 29: 33.

Pezantheria Westwood 1874 Thesaurus ent. Oxon.: 109.

Type-species: *Pezantheria pumilio* Westwood (Monotypic). -- Dalla Torre 1894 Cat. Hym. 1: 308-309.

Acordulecera Konow 1898 Ent. Nachr. 24: 250 (Emendation). -- Konow 1905 Genera Insect. 29: 32 (syn.: *Pezantheria* Westwood).

Acordulecera Enderlein 1919 Sber. Ges. naturf. Freunde Berl.: 121 (misspelling).

alboclypeata Enderlein

Acordulecera (!) *alboclypeata* Enderlein 1919 Sber. Ges. naturf. Freunde Berl.: 123. ♀. "Südbrasilien, Santa Catharina" (Marsaw, ♀).

arcticornis (Konow)

Acordulecera arcticornis Konow 1903 Z. syst. Hym. Dipt. 3: 167-168. ♀, δ. "Peru (Vilcanota)" (Eberswalde, ♀). -- Konow 1905 Genera Insect. 29: 32.

bigrammata (Konow)

Acordulecera bigrammata Konow 1906 Z. syst. Hym. Dipt. 6: 342-343. ♀, δ. "Brasilien (Pará)" (Eberswalde, ♀).

calceolata (Konow)

Acorduleceros calceolatus Konow 1906 Z. syst. Hym. Dipt. 6: 339. ♀. "Brasilia (Oyapock)" (Eberswalde, ♀).

cervicata (Konow)

Acorduleceros cervicatus Konow 1906 Z. syst. Hym. Dipt. 6: 344. ♀. "Brasilia (Itai-tuba)" (Eberswalde, ♀).

ceata (Konow)

Acorduleceros ceata Konow 1906 Z. syst. Hym. Dipt. 6: 337. ♀. "Brasilia (Pará, Oyapock)" (Eberswalde, ♀).

dorsalis Say

Canada (Quebec, Ontario); U.S. (Maine south to Florida west to Iowa, Oklahoma, Texas).

Acorduleceros dorsalis Say 1836 Boston J. nat. Hist. 1: 210. ♀, ♂. "Indiana" (lost). -- Leconte 1859 Writ. Thomas Say: 672. -- Norton 1867 Trans. Am. ent. Soc. 1: 49. -- Cameron 1883 Biologia cent.-am., Hym. 1: 58 (Mexico [probably misidentification]). -- Harrington 1893 Can. Ent. 25: 58 (syn.: *saginata* Provancher). -- Dalla Torre 1894 Cat. Hym. 1: 348. -- Dyar 1895 Can. Ent. 20: 208 (larva, host a). -- Yuasa 1923 Illinois biol. Monogr. 7: 104 (larva, host f). -- Ross 1951 in Muesebeck et al., Agriculture Monogr. 2: 12-13 (syn.: *brachyus* Konow; *media* MacGillivray; *mutua* MacGillivray; *maxima* MacGillivray; *mutua* MacGillivray; *maxima* MacGillivray; *mutua* MacGillivray; *foveata* Rohwer; *caerulea* Rohwer; *portia* Rohwer; *flavipes* Rohwer; *nigriventris* Rohwer; *melaea* MacGillivray; *mutua* MacGillivray).

Acorduleceros dorsalis: Konow 1898 Ent. Nachr. 24: 251. -- Konow 1905 Genera Insect. 29: 33.

Acorduleceros saginata Provancher 1882 Naturaliste can. 13: 290. ♀. Quebec (St. Foy, ♀). -- Provancher 1883 Faune ent. Can., Hym. 737. -- Provancher 1888 Addit. Corr. Faune ent. Can. Hym. 346. -- Dalla Torre 1894 Cat. Hym. 1: 348. -- Gahan & Rohwer 1917 Can. Ent. 49: 304 (type). -- Smith 1975 Naturaliste can. 102: 301 (type).

Acorduleceros biellius Konow 1905 Genera Insect. 29: 33.

Acorduleceros saginata: Konow 1905 Genera Insect. 29: 33. (Eberswalde, ♀). -- Konow 1905 Genera Insect. 29: 33, pl. 2, fig. 7 a, b, c. -- Smith 1973 Proc. ent. Soc. Wash. 75: 30 (lectotype).

Acorduleceros media MacGillivray 1908 Can. Ent. 40: 168. ♀. "Algonquin, Ill." (Urbana, Ill., ♀). -- Frison 1927 Bull. 111. St. nat. Hist. Surv. 16: 236 (type).

Acorduleceros mutua MacGillivray 1908 Can. Ent. 40: 168. ♀. "Edge Hill, Pa., Ithaca, N.Y." (Urbana, Ill., ♀). -- Frison 1927 Bull. 111. St. nat. Hist. Surv. 16: 236 (type from Edge Hill, Pennsylvania).

Acorduleceros maxima MacGillivray 1908 Can. Ent. 40: 168. ♀. "Ithaca, N.Y." (Urbana, Ill., ♀). -- Frison 1927 Bull. 111. St. nat. Hist. Surv. 16: 236 (type).

Acorduleceros maxima MacGillivray 1908 Can. Ent. 40: 168. ♀. "North Mt., Pa., Ames, Iowa; Ithaca, N.Y." (Urbana, Ill., ♀). -- Middleton 1922 Proc. U.S. natn. Mus. 61: 31 (larva; host b). -- Frison 1927 Bull. 111. St. nat. Hist. Surv. 16: 235 (type from North Mountain, Pennsylvania).

Acorduleceros maxima MacGillivray 1908 Can. Ent. 40: 170. ♂. "Salineville, Ohio" (Urbana, Ill., ♂). -- Frison 1927 Bull. 111. St. nat. Hist. Surv. 16: 235 (type).

Acorduleceros minima MacGillivray 1908 Can. Ent. 40: 169. ♀. "Ithaca, N.Y." (Urbana, Ill., ♀). -- Frison 1927 Bull. 111. St. nat. Hist. Surv. 16: 236 (type).

Acorduleceros antennata Rohwer 1912 Proc. U.S. natn. Mus. 43: 246. ♂. "Newington, Fairfax Co., Va." (Washington, ♂). -- Ross 1951 in Muesebeck et al., Agriculture Monogr. 2: 13. N. syn.

Acorduleceros foveata Rohwer 1912 Proc. U.S. natn. Mus. 43: 247. ♀, ♂. "Great Falls Va.; Dixie Landing Va." (Washington, ♀) (The type is from Great Falls, Va.). -- Middleton 1922 Proc. U.S. natn. Mus. 61: 28 (larva, host c).

Acorduleceros erythrogaster Rohwer 1912 Proc. U.S. natn. Mus. 43: 248. ♀. "Great Falls, Va.; Ga." (Washington, ♀) (The type is from Great Falls, Va.). -- Ross 1951 in Muesebeck et al., Agriculture Monogr. 2: 13. N. syn.

Acorduleceros parva Rohwer 1912 Proc. U.S. natn. Mus. 43: 248. ♂. "Fort Lee, N.J., VanCortlandt Park, N.Y." (Washington, ♂) (The type is from Ft. Lee, N.J.). -- Ross 1951 in Muesebeck et al., Agriculture Monogr. 2: 13. N. syn.

Acorduleceros axyga Rohwer 1912 Proc. U.S. natn. Mus. 43: 248. ♂. "Fort Lee, N.J." (Washington, ♂). -- Dyar 1895 Can. Ent. 27: 340 (larva, as "Gün"; host d).

Acorduleceros nigra Rohwer 1912 Proc. U.S. natn. Mus. 43: 249. ♀. "Swanmore R., Black Mts., N.C.; Castle Rock, Delaware Co., Pa." (Washington, ♀) (The type is from Black Mts., N.C.). -- Ross 1951 in Muesebeck et al., Agriculture Monogr. 2: 13. N. syn.

Acorduleceros portia Rohwer 1912 Proc. U.S. natn. Mus. 43: 249. ♀. "Newington, Fairfax Co., Va." (Washington, ♀).

Acorduleceros baerigra Rohwer 1912 Proc. U.S. natn. Mus. 43: 250. ♀. "Jacksonville and Enterprise, Fla.; Kansas" (Washington, ♀) (The type is from Jacksonville, Fla.). -- Ross 1951 in Muesebeck et al., Agriculture Monogr. 2: 13. N. syn.

Acorduleceros flavipes Rohwer 1912 Proc. U.S. natn. Mus. 43: 250. ♀. "D.C. (?) (Ala.)" (Washington, ♀) (host d) (The type is from D.C.?).

Acorduleceros nigriventris Rohwer 1912 Proc. U.S. natn. Mus. 43: 250. ♀. "Newington, Fairfax Co., Va.; Brown's Mill Junction, N.J.; Michigan; Long Island" (Washington, ♀) (The type is from Newington, Fairfax Co., Va.). -- Middleton 1922 Proc. U.S. natn. Mus. 61: 31 (larva; host e).

Acorduleceros querax Rohwer 1912 Proc. U.S. natn. Mus. 43: 251. ♀. "N.Y. (?) (Washington, ♀) (host f). -- Ross 1951 in Muesebeck et al., Agriculture Monogr. 2: 13. N. syn.

Acorduleceros hiacinae Rohwer 1917 Proc. U.S. natn. Mus. 53: 157. ♀. "Charter Oak, Pa." (Washington, ♀) (host d). -- Middleton 1922 Proc. U.S. natn. Mus. 61: 30 (larva; host g).

Acorduleceros melaea MacGillivray 1921 Bull. Brooklyn ent. Soc. 16: 23. ♂. "Ithaca, N.Y." (Urbana, Ill., ♂). -- Frison 1927 Bull. 111. St. nat. Hist. Surv. 16: 236 (type).

Acorduleceros mutua MacGillivray 1921 Bull. Brooklyn ent. Soc. 16: 23. ♂. "Ithaca, N.Y." (Urbana, Ill., ♂). -- Yuasa 1923 Illinois biol. Monogr. 7: 104 (larva; host d).

Acorduleceros dorsalis: Konow 1905 Genera Insect. 29: 33.

Hosts: a) black oak; b) *Castanea dentata*; c) *querax alba*; d) hickory; e) *querax maritima*; f) *querax*; g) *hiacina*.

enderleinii Mallach

Acorduleceros enderleinii Mallach 1934 Mitt. dt. ent. Ges. 5: 16 (new name for *vittatus* Konow 1898).

Acorduleceros globulicornis Konow 1903 Z. syst. Hym. Dipt. 3: 169. ♂. "Peru (Vilcanota)" (Eberswalde, ♂). -- Konow 1905 Genera Insect. 29: 33.

Acorduleceros globulicornis Konow 1903 Z. syst. Hym. Dipt. 3: 169. ♂. "Peru (Vilcanota)" (Eberswalde, ♂). -- Konow 1905 Genera Insect. 29: 33.

Acorduleceros globulicornis Konow 1903 Z. syst. Hym. Dipt. 3: 169. ♂. "Peru (Vilcanota)" (Eberswalde, ♂). -- Konow 1905 Genera Insect. 29: 33.

Acorduleceros globulicornis Konow 1903 Z. syst. Hym. Dipt. 3: 169. ♂. "Peru (Vilcanota)" (Eberswalde, ♂). -- Konow 1905 Genera Insect. 29: 33.

Acorduleceros globulicornis Konow 1903 Z. syst. Hym. Dipt. 3: 169. ♂. "Peru (Vilcanota)" (Eberswalde, ♂). -- Konow 1905 Genera Insect. 29: 33.

Acorduleceros globulicornis Konow 1903 Z. syst. Hym. Dipt. 3: 169. ♂. "Peru (Vilcanota)" (Eberswalde, ♂). -- Konow 1905 Genera Insect. 29: 33.

Acorduleceros globulicornis Konow 1903 Z. syst. Hym. Dipt. 3: 169. ♂. "Peru (Vilcanota)" (Eberswalde, ♂). -- Konow 1905 Genera Insect. 29: 33.

Acorduleceros globulicornis Konow 1903 Z. syst. Hym. Dipt. 3: 169. ♂. "Peru (Vilcanota)" (Eberswalde, ♂). -- Konow 1905 Genera Insect. 29: 33.

Acorduleceros globulicornis Konow 1903 Z. syst. Hym. Dipt. 3: 169. ♂. "Peru (Vilcanota)" (Eberswalde, ♂). -- Konow 1905 Genera Insect. 29: 33.

Acorduleceros globulicornis Konow 1903 Z. syst. Hym. Dipt. 3: 169. ♂. "Peru (Vilcanota)" (Eberswalde, ♂). -- Konow 1905 Genera Insect. 29: 33.

Acorduleceros globulicornis Konow 1903 Z. syst. Hym. Dipt. 3: 169. ♂. "Peru (Vilcanota)" (Eberswalde, ♂). -- Konow 1905 Genera Insect. 29: 33.

Acorduleceros globulicornis Konow 1903 Z. syst. Hym. Dipt. 3: 169. ♂. "Peru (Vilcanota)" (Eberswalde, ♂). -- Konow 1905 Genera Insect. 29: 33.

Acorduleceros globulicornis Konow 1903 Z. syst. Hym. Dipt. 3: 169. ♂. "Peru (Vilcanota)" (Eberswalde, ♂). -- Konow 1905 Genera Insect. 29: 33.

Acorduleceros globulicornis Konow 1903 Z. syst. Hym. Dipt. 3: 169. ♂. "Peru (Vilcanota)" (Eberswalde, ♂). -- Konow 1905 Genera Insect. 29: 33.

Acorduleceros globulicornis Konow 1903 Z. syst. Hym. Dipt. 3: 169. ♂. "Peru (Vilcanota)" (Eberswalde, ♂). -- Konow 1905 Genera Insect. 29: 33.

Acorduleceros globulicornis Konow 1903 Z. syst. Hym. Dipt. 3: 169. ♂. "Peru (Vilcanota)" (Eberswalde, ♂). -- Konow 1905 Genera Insect. 29: 33.

Acorduleceros globulicornis Konow 1903 Z. syst. Hym. Dipt. 3: 169. ♂. "Peru (Vilcanota)" (Eberswalde, ♂). -- Konow 1905 Genera Insect. 29: 33.

- knabi Rohwer
Acordulecera knabi Rohwer 1911 Proc. U.S. natn. Mus. 41: 383-384. ♀, ♂. "Cordoba, Vera Cruz, Mexico" (Washington, ♀).
- titurata (Konow)
Acordulecera tituratus Konow 1906 Z. syst. Hym. Dipt. 6: 340. ♀. "Brasililia (Oyapock)" (Eberswalde, ♀).
- longicornis Enderlein
Acordulecera (!) longicornis Enderlein 1919 Sber. Ges. naturf. Freunde Berl.: 124. ♀. "Südbrasilien. Santa Catharina" (Warsaw, ♀).
- longimanus (Konow)
Acordulecera longimanus Konow 1899 Ent. Nachr. 25: 308. ♀. "Peru (Callanga, Cuczo)" (Eberswalde, ♀). -- Konow 1905 Genera Insect. 29: 33.
- tuederwaldti Enderlein
Acordulecera (!) tuederwaldti Enderlein 1919 Sber. Ges. naturf. Freunde Berl.: 122. ♀. "Südbrasilien. Santa Catharina" (Warsaw, ♀).
- turidnota Enderlein
Acordulecera (!) turidnotum Enderlein 1919 Sber. Ges. naturf. Freunde Berl.: 122-123. ♀. "Südbrasilien. Santa Catharina" (Warsaw, ♀).
- turidstigma Enderlein
Acordulecera (!) turidstigma Enderlein 1919 Sber. Ges. naturf. Freunde Berl.: 122. ♀, ♂. "Südbrasilien. Santa Catharina" (Warsaw, ♀).
- maculata MacGillivray
U.S. (New York, Pennsylvania west to Illinois).
Acordulecera maculata MacGillivray 1908 Can. Ent. 40: 169. ♀, ♂. "Ithaca, N.Y." (Urbana, Ill., ♀). -- Frison 1927 Bull. Ill. St. nat. Hist. Surv. 16: 235 (type ♀ from Slatteryville-Caroline, New York, not Ithaca). -- Ross 1951 in Muesebeck et al., Agriculture Monogr. 2: 13.
- megacephala (Benson)
Brazil (Pernambuco).
Acordulecera megacephalus Benson 1940 Bull. ent. Res. 30: 463-464. ♂. "Pernambuco. Brazil." (London, ♂) (Biol., Host a). -- Pyenson 1940 Bull. ent. Res. 30: 468 (Guava shoot-boring sawfly; damage, biol., a stem boring larva; host a; Matta and Litoral zones of Pernambuco). -- Maxwell 1955 Can. Ent. (Suppl. 1) 87: 24 (internal larval anatomy). -- d'Araújo e Silva et al., 1968 Quarto Catálogo do Insetos do Brasil, pt. 11, p. 622 (host b).
- Hosts: a) *Psidium guajava*; b) goiabeira.
- mellina MacGillivray
U.S. (New Hampshire, Connecticut south to Virginia, west to Iowa, Oklahoma).
Acordulecera mellina MacGillivray 1908 Can. Ent. 40: 169. ♀. "Mt. Washington, N.H." (Urbana, Ill., ♀). -- Frison 1927 Bull. Ill. St. nat. Hist. Surv. 16: 236 (type). -- Ross 1951 in Muesebeck et al., Agriculture Monogr. 2: 13 (syn.: *maculata* MacGillivray).
Acordulecera minuta MacGillivray 1908 Can. Ent. 40: 169. ♀, ♂. "Mo.; Iowa; Pa.; Ohio; ♀ from Columbia, Missouri).
- nigra (Say) n. comb.
Mutilla nigra Say 1836 Boston J. nat. Hist. 1: 214 "Mexico" (lost). -- LeConte 1859 Writ. Thomas Say 2: 625. -- Norton 1867 Trans. Am. ent. Soc. 1: 49. -- Cameron 1883 Biologia cent.-am., Hym. 1: 60. -- Dalla Torre 1894 Cat. Hym. 1: 348. -- Konow 1905 Genera Insect. 29: 33. -- Malaise 1942 Ent. Tidskr. 63: 116 (antenna fig.).
- nigricoma (Konow)
Peru.
Acordulecera nigricoma Konow 1903 Z. syst. Hym. Dipt. 3: 168-169. ♂. "Peru (Villcanota)" (Eberswalde, ♂). -- Konow 1905 Genera Insect. 29: 32.
- nigripennis Enderlein
Brazil (Santa Catarina).
Acordulecera (!) nigripennis Enderlein 1919 Sber. Ges. naturf. Freunde Berl.: 121-122. ♀. "Südbrasilien. Santa Catharina" (Warsaw, ♀).
- palpada (Konow)
Acordulecera palpada Konow 1906 Z. syst. Hym. Dipt. 6: 345. ♂. "Brasililia (Obidos)" (Eberswalde, ♂).
- pellucida (Konow)
U.S. (Massachusetts south to Alabama west to Nebraska, Kansas).
Acordulecera pellucida Konow 1898 Ent. Nachr. 24: 253. ♀. "Texas (Dallas)" (Eberswalde, ♀). -- Konow 1905 Genera Insect. 29: 32. -- Smith 1973 Proc. ent. Soc. Wash. 75: 50 (notes on type; syn.: *minuta* MacGillivray; *scutellata* Rohwer).
Acordulecera pellucida: Ross 1951 in Muesebeck et al., Agriculture Monogr. 2: 13.
Acordulecera minuta MacGillivray 1908 Can. Ent. 40: 169. ♀. "Ames, Iowa" (Urbana, Ill., ♀). -- Frison 1927 Bull. Ill. St. nat. Hist. Surv. 16: 236. -- Ross 1951 in Muesebeck et al., Agriculture Monogr. 2: 13.
Acordulecera scutellata Rohwer 1912 Proc. U.S. natn. Mus. 43: 247. ♀, ♂. "West Point, Nebr.; Onaga, Kans., Sheffield, Ala." (Washington, ♀) (The type is from West Point, Nebraska). -- Ross 1951 in Muesebeck et al., Agriculture Monogr. 2: 13.
- pumilio (Westwood)
Brazil.
Perantharia pumilio Westwood 1874 Thesaurus Ent. Oxon.: 109, pl. 20, fig. 1. "Anazonia" (Oxford.). -- Dalla Torre 1894 Cat. Hym. 1: 309.
Acordulecera pumilio: Konow 1898 Ent. Nachr. 24: 252. -- Konow 1905 Genera Insect. 29: 32.
- pupulus (Konow)
Peru.
Acordulecera pupulus Konow 1903 Z. syst. Hym. Dipt. 3: 168. ♂. "Peru (Marcapata)" (Eberswalde, ♂). -- Konow 1905 Genera Insect. 29: 32.
- ricata (Konow)
Peru.
Acordulecera ricata Konow 1906 Z. syst. Hym. Dipt. 3: 343. "Peru (Pachitea)" (Eberswalde,).
- rudis (Konow)
Brazil (Pará).
Acordulecera rudis Konow 1906 Z. syst. Hym. Dipt. 6: 341. ♀. "Brasililia (Obidos)" (Eberswalde, ♀).
- ruficeps (Konow)
Peru.
Acordulecera ruficeps Konow 1899 Ent. Nachr. 25: 308. ♀, ♂. "Peru (Callanga, Cuczo)" (Eberswalde,). -- Konow 1905 Genera Insect. 29: 32.
- russata (Konow)
Brazil (Pará, Amapá, Amazonas).
Acordulecera russata Konow 1906 Z. syst. Hym. Dipt. 6: 342. ♀, ♂. "Brasililia (Pará, Obidos, Oyapock, Tabatinga)" (Eberswalde,).
- sahlbergi (Forsius)
Brazil.
Acordulecera sahlbergi Forsius 1925 Ark. Zool. 17A: 23-24. ♀. "Südbrasilien" (Stockholm, ♀).
- schrottkyi (Konow)
Paraguay.
Acordulecera schrottkyi Konow 1906 Z. syst. Hym. Dipt. 6: 345-346. ♀. "Paraguay (Villa Encarnación)" (Eberswalde, ♀).
- silvatica (Jörgensen)
Brazil (Santa Catarina); Argentina (Misiones).
Acordulecera silvatica Jörgensen 1913 An. Mus. nac. Hist. nat. B. Aires 24: 262-263. ♀. "Monte de Bonpland" (La Plata, ♀).
- spatulata (Konow)
Brazil (Amapá).
Acordulecera spatulata Konow 1906 Z. syst. Hym. Dipt. 6: 338-339. ♂. "Brasililia (Oyapock)" (Eberswalde, ♂).

stigmatica (Konow)

Acorduleceros stigmaticus Konow 1906 Z. syst. Hym. Dipt., 6: 340. ♀. "Brasililia (Pará)" (Eberswalde, ♀).

tegularis (Konow)

Acorduleceros tegularis Konow 1906 Z. syst. Hym. Dipt., 6: 344. ♀. "Brasililia (Barcellos)" (Eberswalde, ♀).

thoracalis (Konow)

Acorduleceros thoracalis Konow 1906 Z. syst. Hym. Dipt., 6: 337-338. ♀, ♂. "Brasililia (Pará)" (Eberswalde, ♀).

trux (Konow)

Acorduleceros trux Konow 1899 Ent. Nachr., 25: 361. ♀. "Brasil (Rio Grande do Sul)" (Eberswalde, ♀). -- Konow 1905 Genera Insect., 29: 33.

ventralis (Konow)

Acorduleceros ventralis Konow 1898 Ent. Nachr., 24: 252-253. ♀. "America centralis (Guatemala)" (Eberswalde, ♀). -- Konow 1905 Genera Insect., 29: 33.

vericulata (Konow)

Acorduleceros vericulatus Konow 1899 Ent. Nachr., 25: 307-308. ♀, ♂. "Peru (Callanga, Cuzco)" (Eberswalde, ♀). -- Konow 1905 Genera Insect., 29: 33.

viridipes (Konow)

Acorduleceros viridipes Konow 1899 Ent. Nachr., 25: 360. ♀. "Peru (Callanga, Cuzco)" (Eberswalde, ♀). -- Konow 1905 Genera Insect., 29: 33.

westwoodi (Cameron) n. comb.

Peranttheria westwoodi Cameron 1883 Biologia cent.-am., Hym., 1: 58-59, pl. 3, fig. 12. ♀, ♂. "Panama, Bugaba 800 to 1500 feet" (London, ♀). -- Dalla Torre 1894 Cat. Hym., 1: 309.

Acorduleceros westwoodi: Konow 1898 Ent. Nachr., 24: 252. -- Konow 1905 Genera Insect., 29: 33.

Anathulea westwoodi: Malaise 1942 Ent. Tidsskr., 63: 116.

Unidentified species

Acordulecerus sp.: Wille 1943 Lima, Peru, Estac. Expt. Agric. de la Molina: 325 (larva, adult, host a). -- Munro 1954 FAO Plant Prot. Bull., 2(12): 187 (damaging potato foliage in south central Bolivia). -- Carrasco 1967 Revista peru. Ent., 10: 64-65 fig. 2, 3 (Peru; biol.; host a).

Hosts: a) potato.

Unidentified species

Acordulecerus spp.: Raizenne 1957 Publs. Dep. Agric. Can., 1009: 7. (hosts a-c). *Acordulecerus* sp.: Maxwell 1955 Can. Ent. (Suppl. 1) 87: 23-24 (internal larval anatomy; host a).

Hosts: a) *Quercus alba*; b) *Quercus borealis*; c) *Carya ovata*.

Genus ANATHULEA Malaise

Anathulea Malaise 1942 Ent. Tidsskr., 63: 116.

Type-species: *Anathulea nigripes* Malaise (Original designation).

bimaculata (Cameron)

Peranttheria bimaculata Cameron 1883 Biologia cent.-am., Hym., 1: 59-60, pl. 3, fig. 8. ♀. "Guatemala, Panama" (London, ♀). -- Dalla Torre 1894 Cat. Hym., 1: 308.

Anathulea bimaculata: Konow 1901 Természetr. Füzet., 24: 68. -- Konow 1905 Genera Insect., 29: 33.

Anathulea bimaculata: Malaise 1942 Ent. Tidsskr., 63: 118.

fatima (Kirby)

Peranttheria fatima Kirby 1882. 1st Hym. Brit. Mus., 1: 79, pl. 6, fig. 7. ♂. "Amazonas" (London, ♂). -- Dalla Torre 1894 Cat. Hym., 1: 308. -- Konow 1898 Ent. Nachr., 24: 251.

Anathulea fatima: Konow 1901 Természetr. Füzet., 24: 68. -- Konow 1905 Genera Insect., 29: 33.

Anathulea fatima: Malaise 1942 Ent. Tidsskr., 63: 118.

Konow Smith, new name

Anathulea nigripes Konow 1901 Természetr. Füzet., 24: 68-69. ♀. "Brasililia (S. Leopoldo)" (Budapest, ♀) (Preoccupied in *Anathulea* by *nigripes* Cameron 1883). -- Konow 1905 Genera Insect., 29: 33.

Anathulea nigripes: Malaise 1942 Ent. Tidsskr., 63: 118.

nigripes (Cameron) n. comb.

Loboaceras nigripes Cameron 1883 Biologia cent.-am., Hym., 1: 57. ♀. "Mexico" (London, ♀). -- Dalla Torre 1894 Cat. Hym., 1: 309.

Loboaceras nigripes: Konow 1905 Genera Insect., 29: 33.

nigripes Malaise

Anathulea nigripes Malaise 1942 Ent. Tidsskr., 63: 118-119. ♀, ♂. "Brazil (Nova Teutonia)" (Stockholm, ♀).

Genus CERATOPERIA Enderlein

Ceratoperia Enderlein 1919 Sber. Ges. naturf. Freunde Berl.: 120-121.

Type-species: *Ceratoperia musciaeformis* Enderlein (Original designation).

musciaeformis Enderlein

Ceratoperia musciaeformis Enderlein 1919 Sber. Ges. naturf. Freunde Berl.: 121. ♀. "Südbrasilien, Santa Catharina" (Warsaw, ♀).

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