

## Ichneumon Sub-families

This page describes the different sub-families of the Ichneumonidae. Their ecology and life histories are summarised, with references to more detailed articles or books. Yorkshire species from each group can be found in the Yorkshire checklist. An asterix indicates that a foreign-language key has been translated into English.

One method by which the caterpillars of moths and sawflies which are the hosts of these insects attempt to prevent parasitism is for them to hide under leaves during the day and emerge to feed at night. A number of ichneumonoids, spread through several subfamilies of both ichneumons and braconids, exploit this resource by hunting at night. Most ichneumonoids are blackish, which makes them less obvious to predators, but colour is not important in the dark and many of these nocturnal ones have lost the melanin that provides the dark colour, so they are pale orange. They have often developed the large-eyed, yellowish-orange appearance typical of these nocturnal hunters and individuals are often attracted to light. This key to British species is a draft:

<http://www.nhm.ac.uk/resources-rx/files/keys-for-nocturnal-workshop-reduced-109651.pdf>

Subfamily **Pimplinae**. The insects in this subfamily are all elongate and range from robust, heavily-sculptured ichneumons to slender, smooth-bodied ones. Many of them have the 'normal' parasitoid life-cycle (eggs laid in or on the host larvae, feeding on the hosts' fat bodies until they are full-grown and then killing and consuming the hosts) but there are also some variations within this subfamily. Some species search in leaf litter for prepupae - fully-grown larvae which are preparing to pupate -which they paralyse before lay one or more eggs on each. The ichneumon grubs feed on this store of meat, acting more like predators than parasitoids. Others attack very dangerous hosts - they parasitise spiders! Some are solitary ectoparasitoids and a grub can be seen wrapped around the cephalothorax of an immature spider with its mouthparts embedded in the host, sucking nutriment from it. Others lay their eggs in spider egg-cocoons, which involves taking on the mother spiders first. Their grubs eat the eggs and developing spiderlings, and often the paralysed female as well.

Pimplines can be identified by reference to:

- Fitton, M.G., Shaw, M.R. & Gauld, I.D. (1988) Pimpline Ichneumon-flies. *Handbooks for the Identification of British Insects* Vol 7, Part 1.
- Shaw, M.R. (2006) Notes on British Pimplinae and Poemeniinae (Hymenoptera, Ichneumonidae), with additions to the British List. *British Journal of Entomology & Natural History* 19, p217-38
- Shaw, M. R., Jennings, M. T., Quicke, D. L. J. (2011) The identity of *Scambus planatus* (Hartig, 1838) and *Scambus ventricosus* (Tschek, 1871) as seasonal forms of *Scambus calobatus* (Gravenhorst, 1829) in Europe (Hymenoptera, Ichneumonidae, Pimplinae, Ephialtini) *Journal of Hymenoptera Research* 23: 55–64.

Information on Pimpline ichneumons in Yorkshire is:

- Ely, W.A. (1987) The Pimplinae (Hymenoptera, Ichneumonidae) of Askham Bog. *YNU Bulletin* 8, p23-5
- Ely, W.A. (1992) The Ichneumons of South Yorkshire. 1. Pimplinae. *Sorby Record* 28, p7-13
- Ely, W.A. (2000) Ichneumons of the Sorby Area: Update on Pimplinae. *Sorby Record* p44-48
- Mayhew, P.J., Dytham, C., Shaw, M.R. & Fraser, S.E.M. (2009) Collections of ichneumonid wasps (subfamilies Diacritinae, Diplazontinae, Pimplinae and Poemeniinae) from woodlands near York and their implications for conservation planning. *Naturalist* 134, p 3-24

Until recently the subfamily **Poemiinae** was included within the Pimplinae. Identification and Yorkshire occurrences are included in the references above.

Until recently the subfamily **Rhyssinae** was included within the Pimplinae. Identification and Yorkshire occurrences are included in the references above.

Until recently the subfamily **Diacritinae** was included within the Pimplinae. Identification and Yorkshire occurrences are included in the references above.

The single British species has been found in Yorkshire.

The subfamily **Tryphoninae** are ectoparasitoids whose eggs are anchored into the skin of the host larvae but do not hatch until those larvae pupate, and the ichneumon grubs feed on the developing pupae. The larvae of sawflies and moths are attacked.

Most recent research on this subfamily has been carried out in Russia, led by D.R.Kasparyan and there is little other identification literature in English:

- Fitton, M.G. (1978) A Review of the British Species of *Tryphon* Fallen. *Entomologist's Monthly Magazine* 110, p153-71
- Fitton, M.G. & Ficken, L (1990) British ichneumon-flies of the tribe Oedomopsini (Hymenoptera: Ichneumonidae). *The Entomologist* 109 (4), p200-214.
- Horstmann, K. (2006) Revisionen von Schlupfwespen-Arten IX (Hymenoptera, Ichneumonidae). *Mitteilungender Münchner Entomologischen Gesellschaft* 95, 75-86. \*
- Kasparyan, D. R. 1973 [Fauna of the USSR Hymenoptera Vol.III Number 1. Ichneumonidae (Subfamily Tryphoninae) Tribe Tryphonini.] Leningrad: Nauka Publishers [in Russian, English translation published by Amerind Publishing Co. Ltd., New Delhi, 1981 \*
- Kasparyan, D. R. (1977) [A review of the Ichneumon flies of the genus *Eclytus* Holmgren (Hymenoptera, Ichneumonidae).] *Entomologicheskoe Obozrenie* 56, 156-170;[in Russian, English translation in *Entomological Review* 56, 116-129]. \*
- Kasparyan, D. R. (1994) Review of Palearctic Species of Wasps of the Genus *Phytodietus* Grav. (Hymenoptera, Ichneumonidae). *Entomological Review* 73 (7): 56-79.
- Kasparyan, D. R. & Shaw, M. R. (2008) British and European *Phytodietus* Gravenhorst (Hymenoptera: Ichneumonidae, Tryphoninae) in the National Museums of Scotland, with a key to European species of the subgenus *Neuchorus* Uchida and descriptions of three new species. *Entomologist's Gazette* 59, 184-198.
- Kerrich, G.J. (1952) A Review, and a Revision in Greater Part, of the Cteniscini of the Old World. *Bulletin of the British Museum (Natural History)*. *Entomology* II, 6

Ichneumons in the subfamily **Adelognathinae** are small insects with short antennae with only 14 or 15 segments. They are ectoparasitoids of sawfly larvae. The most recent British publication has been superseded by research in Russia:

- Fitton, M.G., Gauld, I.D. & Shaw, M.R. (1982) The taxonomy and biology of the British Adelognathinae (Hymenoptera: Ichneumonidae). *Journal of Natural History* 16, 275-83.
- Kasparyan, D. R. (1990) [Fauna of USSR. Insecta Hymenoptera. Vol. III (2). Ichneumonidae. Subfamily Tryphoninae: Tribe Exenterini. Subfamily Adelognathinae.] Leningrad: Nauka Publishers [in Russian] 342pp. \*

The subfamily **Xoridinae** contains insects which are ectoparasitoids of the larvae of wood-boring beetles. They can be identified by reference to:

- Gauld, I.D. & Fitton, M.G. (1981) Keys to the British Xoridine parasitoids of wood-boring beetles (Hymenoptera: Ichneumonidae). *Entomologist's Gazette* 32, 259-67

The subfamily **Agriotypinae** is parasitic on caddis-fly larvae. The single British species has been found in Yorkshire and is described in:

- Perkins, J.F. (1960) Hymenoptera Ichneumonoidea Ichneumonidae, subfamilies Ichneumoninae II, Alomyinae, Agriotypinae and Lycorininae. *Handbooks for the Identification of British Insects* Vol VII, 2 (iii)

The subfamily **Cryptinae** is one of the larger groups and much of the recent research has been carried out in Germany and Scandinavia. The following key (to the world fauna!) allows us to sort specimens into their tribes, subtribes and genera. It has been the stimulus to much recent research and large parts of the generic keys have been replaced by European ones:

- Townes, H. K. (1969) The genera of Ichneumonidae, Part 2. *Memoirs of the American Entomological Institute* 12, 1-537.
- Horstmann, K. (1976) Nachträge zu Revisionen der europäischen Arten der *Dichrogaster* (Hymenoptera, Ichneumonidae, Phygadeuontinae). \*
- Horstmann, K. (1978) Revision der Gattungen der *Mastrina* Townes (Hymenoptera, Ichneumonidae, Hemitelinae). *Zeitschrift der Arbeitsgemeinschaft Österreichischer Entomologen* 30, 65-70. \*
- Horstmann, K. (1980) Revision der europäischen Arten der Gattung *Aclastus* Förster (Hymenoptera, Ichneumonidae). *Polskie Pismo Entomologiczne* 50, 133-158. \*
- Horstmann, K. (1986) Die westpaläarktischen Arten der Gattung *Gelis* Thunberg, 1827, mit macropteren oder brachypteren Weibchen (Hymenoptera, Ichneumonidae). *Entomofauna* 7, 389-424. \*
- Horstmann, K. (1991) Revisionen einiger Gattungen und Arten der Phygadeuontini (Hymenoptera, Ichneumonidae, Cryptinae). *Entomofauna* 12 \*
- Horstmann, K. (1993) Nachträge zu Revisionen der Gattungen *Aclastus* Förster, *Ceratophygadeuon* Viereck, *Chirotica* Förster und *Gelis* Thunberg (Hymenoptera, Ichneumonidae, Cryptinae). *Nachrichtenblatt der Bayerischen Entomologen* 42, 7-15.
- Horstmann, K. (1993) Revision der brachypteren Weibchen der westpaläarktischen Cryptinae (Hymenoptera, Ichneumonidae). *Entomofauna* 14, 85-148. \*
- Horstmann, K. (1993) Die europäischen Arten von *Gnotus* Förster und *Uchidella* Townes (Hymenoptera, Ichneumonidae, Cryptinae). *Zeitschrift der Arbeitsgemeinschaft Österreichischer Entomologen* 45, 35-45. \*
- Horstmann, K. (1995) Die europäischen Arten von *Arotrephes* Townes, 1970 und *Pleurogyrus* Townes, 1970 (Hymenoptera, Ichneumonidae, Cryptinae). *Entomofauna* 16, 261-275.
- Horstmann, K. (1998) Revisionen einiger Gattungen und Arten der Phygadeuontini II (Hymenoptera, Ichneumonidae, Cryptinae). *Entomofauna* 19, 433-460. \*
- Horstmann, K. (2000) Die westpaläarktischen Arten von *Ethelurgus* Förster, 1869 und *Rhembobius* Förster, 1869 (Hymenoptera, Ichneumonidae, Cryptinae). *Entomofauna* 21, 65-76. \*
- Horstmann, K. (2001) Revision der bisher zu *Iselixa* Förster gestellten westpaläarktischen

Arten von *Phygadeuon* Gravenhorst (Insecta, Hymenoptera, Ichneumonidae, Cryptinae). *Spixiana* 24, 207-229. \*

- Horstmann, K. (2009) Revision der europäischen Arten von *Isadelphus* Förster, 1869 (Hymenoptera, Ichneumonidae, Cryptinae). *Entomofauna* 30, 473-492. \*
- Horstmann, K. (2010) Revision der europäischen Arten von *Stibeutes* Förster, 1850 (Hymenoptera, Ichneumonidae, Cryptinae). *Entomofauna* 31, 229-264. \*
- Jussila, R. (1979) A revision of the genus *Atractodes* (Hymenoptera, Ichneumonidae) in the Western Palaearctic region. *Acta Entomologica Fennica* 34, 1-44.
- Jussila, R. (1983) Addition to the revision of the genus *Atractodes* (Hymenoptera: Ichneumonidae) of the Western Palearctic region I. *Contributions of the American Entomological Institute* 20, 201-204.
- Jussila, R. (1987) Revision of the genus *Stilpnus* (Hymenoptera, Ichneumonidae) of the western Palaearctic Region. *Annales Entomologici Fennici* 53, 1-16.
- Jussila, R. (1994) Additions to the revision of the genus *Atractodes* (Hymenoptera, Ichneumonidae) of the Western Palaearctic region. II. *Entomologica Fennica* 5: 129-134.
- Jussila, R. (1999) Additions to the revisions of the genus *Stilpnus* (Hymenoptera, Ichneumonidae) of the Palaearctic Region. I. *Entomologica Fennica* 10, 107-112.
- Jussila, R. (2001) Additions to the revision of the genus *Atractodes* (Hymenoptera: Ichneumonidae) of the Palaearctic Region. III. *Entomologica Fennica* 12, 193-216.
- Jussila, R. & Sääksjärvi, I. E. (2010) Revision of the genus *Mesoleptus* (Hymenoptera: Ichneumonidae) of the western Palaearctic Region.
- Sawoniewicz, J. (1980) Revision of European species of the genus *Bathythrix* Foerster (Hymenoptera, Ichneumonidae). *Annales Zoologici* 35, 1-47.
- Sawoniewicz, J. (1985) Revision of European species of the subtribe Endaseina (Hymenoptera, Ichneumonidae), I. *Annales Zoologici* 39, 131-145.
- Sawoniewicz, J. & Luhman, J. C. (1992) Revision of European species of the subtribe Endaseina, III genus: *Endasys* Foerster, 1868. *Entomofauna* 13, 1-94.
- Schwarz, M. (1995) Revision der westpaläarktischen Arten der Gattungen *Gelis* Thunberg mit apteren Weibchen und *Thaumatogelis* Schmiedeknecht (Hymenoptera, Ichneumonidae). Teil 1. *Linzer Biologische Beiträge* 27, 5-105.
- Schwarz, M. (1998) Revision der westpaläarktischen Arten der Gattungen *Gelis* Thunberg mit apteren Weibchen und *Thaumatogelis* Schmiedeknecht (Hymenoptera, Ichneumonidae). Teil 2. *Linzer Biologische Beiträge* 30, 629-704.
- Schwarz, M. & Shaw, M. R. (2000) Western Palaearctic Cryptinae (Hymenoptera: Ichneumonidae) in the National Museums of Scotland, with nomenclatural changes, taxonomic notes, rearing records and special reference to the British checklist. Part 3. Tribe Phygadeuontini, subtribes Chiroticina, Acrolytina, Hemitelina and Gelina (excluding *Gelis*), with descriptions of new species. *Entomologist's Gazette* 51, 147-186.

The subfamily **Stilbopinae** is very small and British species can be recognized by reference to:

- Fitton, M.G. (1984) A Review of the British Collyrinae, Eucerotinae, Stilbopinae and Neorhacodinae. *Entomologist's Gazette* 35, p185-95

The subfamily **Banchinae** consists of medium-sized ichneumons. Much of the recent work has been carried out in France and Russia but a Royal Entomological Society handbook dealing with the British fauna is in preparation.

They can be identified by reference to:

- Aubert, J.F. (1978) Les ichneumonides ouest-paléarctiques et leurs hôtes 2. Banchinae et Suppl. aux Pimplinae. *Laboratoire d'Evolution des Etres Organises, Paris & EDIFAT-OPIDA, Echauffour*. \*
- Fitton, M.G. (1985) The ichneumon-fly genus *Banchus* (Hymenoptera) in the old world. *Bull. Br. Mus. nat. Hist. (Ent.)* 51, 1-60

The subfamily **Ctenopelmatinae** has been very little studied in Yorkshire recently. Only the nocturnal species are readily identifiable (see link at the top of this page).

- Hinz, R. (1991) The Palaearctic Species of the Genus *Sympherta* Förster (Hymenoptera: Ichneumonidae). *Spixiana* 14 (1): 27-43 \*
- Idar, M. (1983) Revision of European *Synomelix* Förster (Hymenoptera: Ichneumonidae) with description of *S. faciator* n. sp. *Entomologica Scandinavica* 14, 168-172.
- Kasparyan, D. R. (2000) [Palaearctic ichneumonid wasps of the genus *Mesoleius* (s. str.) Holmgren (Hymenoptera, Ichneumonidae): I.] *Entomologicheskoe Obozrenie* 79, 150-179. [in Russian, English translation in *Entomological Review* 80, 144-168]. \*
- Kasparyan, D. R. (2003) [Palaearctic species of the ichneumonid-wasp genus *Campodorus* Foerster (s.str.) (Hymenoptera, Ichneumonidae) with pectinate claws]. *Entomologicheskoe Obozrenie* 82, 758-766. [in Russian, English translation in *Entomological Review* 83, 584-591]. \*
- Kasparyan, D. R. (2004) [A review of Palaearctic species of tribe Ctenopelmatini (Hymenoptera, Ichneumonidae). The genera *Ctenopelma* Holmgren and *Homaspis* Foerster]. *Entomologicheskoe Obozrenie* 83, 437-467. [in Russian, English translation in *Entomological Review* 84, 332-357]. \*
- Kasparyan, D. R. (2011) A Review of the Palaearctic Species of the Genus *Hadrodactylus* Förster (Hymenoptera: Ichneumonidae, Ctenopelmatinae) with a Description of Five New Species. *Entomological Review* 91 (7): 866-888.
- Kasparyan, D. R. & Shaw, M. R. (2003) A preliminary key to the European species of the genus *Saotis* Förster, 1869, with a list of British species (Ichneumonidae: Ctenopelmatinae: Mesoleiini). *Zoosystematica Rossica* 11, 351-355.
- Kasparyan, D. R. & Shaw, M. R. (2009) A new species of *Hadrodactylus* Foerster (Hymenoptera: Ichneumonidae, Ctenopelmatinae, Euryproctini) from Britain and mainland Europe, with a review of material of the genus in the National Museums of Scotland. *Entomologist's Gazette* 60, 251-258.

The single species in the Subfamily **Lycorininae** has been found in Yorkshire and is described in:

- Perkins, J.F. (1960) Hymenoptera Ichneumonoidea Ichneumonidae, subfamilies Ichneumoninae II, Alomyinae, Agriotypinae and Lycorininae. *Handbooks for the Identification of British Insects* Vol VII, 2 (aii)

Much of the recent research into the subfamily **Campopleginae** has been carried out in Germany, following on from the key to world genera:

- Townes, H.T. (1969): Genera of Ichneumonidae, Part 3 (Lycorininae, Banchinae, Scolobatinae, Porizontinae (=Campopleginae)). *Memoirs of the American Entomological Institute* 13: 1-307.
- Horstmann, K. (1969) Typenrevision der europäischen Arten der Gattung *Diadegma*

- Foerster (syn. *Angitia* Holmgren (Hymenoptera: Ichneumonidae). *Beiträge zur Entomologie, Berlin* 19, 413-72. \*
- Horstmann, K. (1971) Revision der europäischen Arten der Gattung *Lathrostizus* Foerster (Hymenoptera: Ichneumonidae). *Essays of the German Entomological Society* 30, 8-12, 16-18. \*
  - Horstmann, K. (1973) Nachtrag zur Revision der europäischen *Diadegma*-Arten (Hymenoptera: Ichneumonidae). *Beiträge zur Entomologie, Berlin* 23, 131-50. \*
  - Horstmann, K. (1974) Revision der westpaläarktischen Arten der Schlupfwespen-Gattungen *Bathyplectes* und *Biolyisia* (Hymenoptera: Ichneumonidae). *Entomologica Germanica* 1, 58-81. \*
  - Horstmann, K. (1978) Bemerkungen zur Systematik einiger Gattungender Campopleginae II (Hymenoptera, Ichneumonidae). *Mitteilungen der Münchner Entomologischen Gesellschaft* 67, 65-83. \*
  - Horstmann, K. (1980) Neue westpaläarktische Campopleginnen-Arten (Hymenoptera, Ichneumonidae). *Mitteilungen der Münchner Entomologischen Gesellschaft* 69, 117-132.
  - Horstmann, K. (1985) Revision der mit *difformis* (Gmelin, 1790) verwandten westpaläarktischen Arten der Gattung *Campoplex* Gravenhorst, 1829 (Hymenoptera, Ichneumonidae). *Entomofauna* 6, 12: 129-163. \*
  - Horstmann, K. (1987) Die europäischen Arten der Gattungen *Echthronomas* Förster und *Eriborus* Förster (Hymenoptera, Ichneumonidae). *Nachrichtenblatt der Bayerischen Entomologen* 36, 57-67.
  - Horstmann, K. (1994) Nachtrag zur Revision der westpaläarktischen *Nemeritis*-Arten (Hymenoptera, Ichneumonidae, Campopleginae). *Mitteilungen der Münchner Entomologischen Gesellschaft* **84**, 79-90.
  - Horstmann, K. (2009) Revision of the western Palearctic species of *Dusona* Cameron (Hymenoptera, Ichneumonidae, Campopleginae). *Spixiana* 32,1, 45-110.
  - Shaw, M.R & Horstmann, K. (1997) An Analysis of Host Range in the *Diadegma nanus* group of Parasitoids in Western Europe, with a Key to Species (Hymenoptera, Ichneumonidae, Campopleginae). *Journal of Hymenoptera Research* 6, 2, 273-96.
  - Sanborne, M. (1984) A revision of the world species of *Sinophorus* (Ichneumonidae). *Memoirs of the American Entomological Institute* 38, 1-403.
  - Šedivý, J. (2004) European species the genus *Phobocampe* Förster (Hymenoptera: Ichneumonidae). *Acta Universitatis Carolinae Biologica* 48, 203-235.

The subfamily **Cremastinae** is a very small group of insects which superficially resemble the previous subfamily. They can be identified by reference to:

- Fitton, M. G. & Gauld, I. D. (1980) A review of the British Cremastinae (Hymenoptera: Ichneumonidae), with keys to the species. *Entomologist's Gazette* 31, 63-71.

The subfamily **Tersilochinae** contains small insects which are parasitoids of beetles. It now includes the very small and compact insects which were previously considered to be the separate subfamily **Phrudinae**. The European fauna can be identified through:

- Horstmann, K. (1971) Revision der europäischen Tersilochinen I (Hymenoptera: Ichneumonidae). *Veröffentlichungen der Zoologischen Staatssammlung (München)* 15, 47-138. \*
- Horstmann, K. (1981) Revision der europäischen Tersilochinen II (Hymenoptera, Ichneumonidae). *Spixiana Supplement* 4 (1980), 1-76. \*

- Shaw, M. R. (1991) *Phrudus badensis* Hilpert (Hym., Ichneumonidae) new to Britain. *Entomologist's Monthly Magazine* 127, 157-158.
- Vikberg, V. & Koponen, M. (2000) On the taxonomy of *Seleucus* Holmgren and the European species of Phrudinae (Hymenoptera: Ichneumonidae). *Entomologica Fennica* 11(4), 195-228

The subfamily **Ophioninae** is that of the archetypal 'yellow ichneumon', though several others contain similarly-coloured species. They can be identified by reference to:

- Brock, J. P. (1982) A systematic study of the genus *Ophion* in Britain (Hymenoptera, Ichneumonidae). *Tijdschrift voor Entomologie* 125, 57-97.

(Also see link to nocturnal ichneumonoids at the top of this page)

Ichneumons of the subfamily **Mesochorinae** are typified by a diamond-shaped areolet in the forewing, a long ovipositor in the female and long, rod-like claspers in the male. The following literature will sort out the genera and some species:

- Lawton, F.D. (1981) An introduction to the Mesochorinae (Hymenoptera, Ichneumonidae). *Proc Trans Br. Ent Nat Soc.* 14, 93-97
- Fitton, M. G. (1985) The British species of *Cidaphus* (Hymenoptera: Ichneumonidae). *Entomologist's Gazette* 36, 293-297

The subfamily **Metopiinae** is characterised by a smooth, convex face and very strongly developed limbs. Most of the latest literature on them is in French:

- Aeschlimann, J.-P. (1973) Revision des espèces Ouest-Paléarctiques du genre *Trieceus* (Hym. Ichneumonidae). *Annales de la Société Entomologique de France* (N.S.) 9, 4, 975-87.
- Aeschlimann, J.-P. (1973) Revision des espèces ouest-paléarctiques du genre *Triclistus* Foerster (Hymenoptera, Ichneumonidae) *Mitt. Schw. Ent. Ges.* 46 (4) \*
- Aeschlimann, J.-P. (1975) Revision des espèces Ouest-Paléarctiques du genre *Chorinaeus* Holmgren (Hymenoptera : Ichneumonidae). *Annales de la Société Entomologique de France* (N.S.) 11, 4, 723-42. \*
- Aeschlimann, J.-P. (1981) Une addition et deux corrections au genre *Chorinaeus* Holmgren (Hymenoptera : Ichneumonidae). *Annales de la Société Entomologique de France* (N.S.) 17, 1, 3-6.
- Aeschlimann, J.-P. (1983) Note sur les Metopiines Ouest-Paléarctiques, avec description de deux espèces nouvelles (Hymenoptera, Ichneumonidae). *Annales de la Société Entomologique de France* (N.S.) 19, 1, 3-6.
- Aeschlimann, J.-P. (1989) Revision des espèces Ouest-Paléarctiques du genre *Hypsicera* Latreille (Hymenoptera : Ichneumonidae). *Annales de la Société Entomologique de France* (N.S.) 25, 1, 33-39.
- Broad, G.R. & Shaw, M.R. (2005) The species of four genera of Metopiinae (Hymenoptera: Ichneumonidae) in Britain, with new host records and descriptions of four new species. *Journal of Natural History* 39, 2389-2407.
- Tolkantitz, V.I. (2007) Ichneumon flies of the genus *Exochus* Gravenhorst (Hymenoptera, Ichneumonidae: Metopiinae) of the fauna of Palaearctic region. *Russian Entomol. J.* 16 (3): 339-358. [in Russian] \*

The subfamily **Cylloceriinae** is one of those separated out from the Oxytorinae, which has been used to include quite a diverse assemblage of insects. These ichneumons are small and slender.

- Humala, A.E. (2002) [A Review of Parasitic Wasps of the Genera *Cylloceria* Schiodte, 1838 and *Allomacrus* Forster, 1868 (Hymenoptera, Ichneumonidae) of the Fauna of Russia.] *Entomologicheskoe Obozrenie* 81, 370-385.[in Russian, English translation in 2003, *Entomological Review* 82, 301-313]
- Rossem, G. van (1990) Key to the genera of the Palaearctic Oxytorine, with descriptions of three new genera (Hymenoptera, Ichneumonidae). *Zoologische Mededelingen* 63, 23, 309-20.

The subfamily **Anomaloninae** contains very elongate ichneumons. The females use their long, flexible gaster to reach their hosts, which are leaf-rolling moth caterpillars. They can be identified by reference to:

- Gauld, I.D. (1977) Ichneumonidae Orthopematinae & Anomaloninae. *Handbooks for the Identification of British Insects* Vol 7, Part 2(b)

The subfamily **Oxytorinae** has been used to accommodate a range of ichneumons that are not really very closely related. Almost all of them have been transferred to new subfamilies or moved to the Orthocentrinae. Only *Oxytorus* itself is left.

- Kerrich, G. J. (1939) Systematic Notes on the Oxytorina (Hym., Ichneumonidae, Mesoeptini Auctt.). *Opuscula Entomologica* 4, 126-28.
- Rossem, G. van (1990) Key to the genera of the Palaearctic Oxytorine, with descriptions of three new genera (Hymenoptera, Ichneumonidae). *Zoologische Mededelingen* 63, 23, 309-20.

The subfamily **Microleptinae** is one of those previously included in the Oxytorinae and contains the single genus *Microleptes*.

- Rossem, G. van (1988) A revision of Palaearctic Oxytorine Genera. Part VII (Hymenoptera, Ichneumonidae). *Tijdschrift voor Entomologie* 131, 111.
- Rossem, G. van (1990) Key to the genera of the Palaearctic Oxytorine, with descriptions of three new genera (Hymenoptera, Ichneumonidae). *Zoologische Mededelingen* 63, 23, 309-20.

Much of the recent research on the subfamily **Orthocentrinae** has been in France and there is no current British literature. Most of the genera previously included in the Oxytorinae has been transferred to this subfamily.

- Aubert, J.-F. (1978) Révision préliminaire des ichneumonides *Orthocentrinae* Européennes (Hym. Ichneumonidae). *Revista Espaniola de Entomología* LII, 7-28.
- Aubert, J.-F. (1981) Révision des ichneumonides *Stenomacrus* sensu lato. *Mitt. Münch. Ent. Ges.* 71, 139-59.
- Broad, G.R. (2010) Status of *Batakomacrus* Kolarov (Hymenoptera: Ichneumonidae: Orthocentrinae), with new generic combinations and description of a new species. *Zootaxa*



2394, 51-68.

- Horstmann, K. (1994) Die europäischen Arten von *Picrostigeus* Förster (Hymenoptera, Ichneumonidae, Orthocentrinae). *Zeitschrift der Arbeitsgemeinschaft Österreichischer Entomologen* 46, 111-120. \*
- Humala, A. E. (2004) Review of the Palaearctic species of the genus *Eusteryx* Förster, 1868 (Hymenoptera, Ichneumonidae) with descriptions of new species. *Proceedings of the Russian Entomological Society* 75, 1, 64-72.
- Rossem, G. van (1980) A revision of some Western Palaearctic Oxytorine Genera. Part II (Hymenoptera, Ichneumonidae). *Tijdschriftvoor Entomologie* 131, 103-112. Rossem, G. van (1985) A revision of Palaearctic Oxytorine Genera. Part V (Hymenoptera, Ichneumonidae). *Spixiana* 8, 2, 145-52.
- Rossem, G. van (1987) A revision of Palaearctic Oxytorine Genera. Part VI (Hymenoptera, Ichneumonidae). *Tijdschriftvoor Entomologie* 130, 49-108.
- Rossem, G. van (1988) A revision of Palaearctic Oxytorine Genera. Part VII (Hymenoptera, Ichneumonidae). *Tijdschriftvoor Entomologie* 131, 103-112.
- Rossem, G. van (1990) Key to the genera of the Palaearctic Oxytorine, with descriptions of three new genera (Hymenoptera, Ichneumonidae). *Zoologische Mededelingen* 63, 23, 309-20.
- Rossem, G. van (1991) New Oxytorinae from Siberia, with revised keys to *Plectiscidea* Viereck and *Eusterinx* Förster s.l. (Hymenoptera, Ichneumonidae). *Zool. Med. Leiden* 63, 3, 25-38.

The tiny subfamily **Orthopematinae** parasitises the gall wasp that causes Robin's Pincushion galls on rose leaves. They can be identified by reference to:

- Gauld, I.D. (1977) Ichneumonidae Orthopematinae & Anomaloninae. *Handbooks for the Identification of British Insects* Vol 7, Part 2(b)

The two British species in the subfamily **Collyriinae** are parasitoids of stem-mining sawflies. The British species can be recognized by reference to:

- Fitton, M.G. (1984) A Review of the British Collyrinae, Eucerotinae, Stilbopinae and Neorhacodinae. *Entomologist's Gazette* 35, p185-95

Both British species have been found in Yorkshire:

- Ely, W.A. (2001) The Collyrinae (Hymenoptera, Ichneumonidae) of Yorkshire. *Naturalist* 126, p185-7

The subfamily **Diplazontinae** parasitises hoverfly larvae and is characterised by having the upper mandible of the adult divided into two teeth. The following will allow most of them to be identified but a new key is in preparation:

- Beirne, B.P. (1941) British species of Diplazontini (Bassini auctt.) with a study of the genital and postabdominal segments of the male (Hym.: Ichneum.). *Transactions of the Royal Entomological Society of London* 91 (13).
- Fitton, M. G. & Rotheray, G. E. (1982) A key to the European genera of diplazontine ichneumon-flies, with notes on the British fauna. *Systematic Entomology* 7, 311-320.
- Fitton, M. G. & Boston, M. (1988) The British species of *Phthorima* (Hymenoptera: Ichneumonidae). *Entomologist's Gazette* 39, 165-170.
- Rotheray, G. E. (1990) A new species of *Bioblapsis* (Hymenoptera: Ichneumonidae) from Scotland parasitising a mycophagous hoverfly, *Cheilosa longula* (Diptera: Syrphidae).

*Entomologica Scandinavica* 21, 277-280.

- Thirion, C. (1987) *Diplazon scutatorius* Teunissen, 1943 (Hymenoptera: Ichneumonidae) new to Britain. *Entomologist's Gazette* 38, 55-56.

Information on Diplozontine ichneumons in Yorkshire is:

- Mayhew, P.J., Dytham, C., Shaw, M.R. & Fraser, S.E.M. (2009) Collections of ichneumonid wasps (subfamilies Diacritinae, Diplazontinae, Pimplinae and Poemeniinae) from woodlands near York and their implications for conservation planning. *Naturalist* 134, p 3-24

The **Ichneumoninae** is a large subfamily of insects with a 5-sided areolet in each wing and a distinctly petiolate gaster (the apparent 'abdomen'). Identification is by the following though, as much research has been carried out in Europe over the last half century, the comments about additional species are particularly relevant:

- Perkins, J.F.(1959) Hymenoptera Ichneumonoidea Ichneumonidae, key to subfamilies and Ichneumoninae - I. *Handbooks for the Identification of British Insects* Vol VII, 2 (ai)
- Perkins, J.F.(1960) Hymenoptera Ichneumonoidea Ichneumonidae, subfamilies Ichneumoninae II, Alomyinae, Agriotypinae and Lycorininae. *Handbooks for the Identification of British Insects* Vol VII, 2 (aii)
- Hilpert, H. (1992) Zur Systematik der Gattung *Ichneumon* Linnaeus in der Westpalaearktis (Hymenoptera, Ichneumonidae, Ichneumoninae). *Entomofauna*, Supplement 6, 1-389. \*
- Riedel, M. (2008) Revision der westpaläarktischen Platylabini 1. Die Gattung *Platylabus* Wesmael, 1845 (Hymenoptera, Ichneumonidae, Ichneumoninae). *Spixiana* 31, 105-172.
- Riedel, M. (2012) Revision der westpaläarktischen Arten der Gattung *Coelichneumon* Thomson (Hymenoptera: Ichneumonidae: Ichneumoninae) *Linzer biol. Beitr.* 44/2, 1477-1611.
- Selfa, J. and Diller, E. (1994) Illustrated key to the Western Palearctic genera of Phaeogenini (Hymenoptera, Ichneumonidae, Ichneumoninae). *Entomofauna* 15: 237-251.

The two British species of **Alomyinae** can be identified by reference to:

- Perkins, J.F.(1960) Hymenoptera Ichneumonoidea Ichneumonidae, subfamilies Ichneumoninae II, Alomyinae, Agriotypinae and Lycorininae. *Handbooks for the Identification of British Insects* Vol VII, 2 (aii)

The Yorkshire checklists of the sub-families of the Ichneumonidae show the following details:

Species name

Date range for which records exist

Vice-counties where the species has been recorded

Frequency. The columns show the number of records, not sites, so multiple records from one site count the same as an equal number of records from multiple sites. The columns could have been labelled 'Rare', 'Scarce', 'Rather Uncommon', 'Frequent', 'Common' and 'Very Common'. It is immediately apparent that the majority (2/3) of the ichneumons reported from Yorkshire are 'Rare' and half of the rest are 'Scarce', so very few of them are commonly recorded in the county. This is, of course, a reflection on the small amount of study that is expended on these animals but this pattern is repeated with other groups as well as wildlife in general. The totals at the bottom of each subfamily and at the end of the list are to save you from having to count them yourself!