



Genus: *Hammerschmidtia*



Hammerschmidtia ferruginea male habitus

(© Sander Bot)

Genus: *Hammerschmidtia* Fallén, 1817

Family: Syrphidae

Subfamily: Eristalinae

Tribe: Brachyopini

Number of species of this genus found in Europe: 2

Description

Head

The face is brownish with an indistinct facial tubercle in the male that is absent in the female. The face projects strongly antero-ventrally. The antenna is short, the basoflagellomere has a small round sensory pit. The hairs of the arista are long, and are approximately half as long as the width of the basoflagellomere. The eyes are bare, and the eyes of the male touch at one point.

Thorax

The scutum is brownish and is moderately shiny with two wide dust stripes (these are best seen obliquely from behind). The hairs on the scutum of the male are predominantly black. When compared with the male, the hairs on the scutum of the female are less erect and white at the front, along the sides and on the longitudinal streaks. The postpronotum is hairy, the pleurae are brownish with grey dusting, and the posterior anepisternum has longer black or yellow bristles on the postero-dorsal corner. The katepisternum has dorsal and ventral pile patches that are separated.

Wings

The wings are brownish tinged and have a light brown pterostigma. Vein R_{4+5} is straight, and crossvein r-m lies in the basal 1/3 of cell dm. Vein M_1 is perpendicular to vein R_{4+5} , and cell r_1 is open.

Legs

The legs are brownish, with predominantly black hairs and many black bristles. The femora are slightly swollen, at least 2.2 times thicker than the width of the tibiae.

Abdomen

The abdomen is usually dark red-brown, but can be almost black. At the posterior margin of tergite 1 and the anterior margin of tergite 2 there is a narrow black cross band which (especially in the male) is wedge-shaped drawn backwards in the middle. The abdomen of the female is more brownish-orange with more limited black markings in comparison with the male.



*Hammerschmidtia
ferruginea* female abdomen



Hammerschmidtia ingrlica
female abdomen

General comments on identification to species level

Differential diagnosis

Hammerschmidtia comprises medium to large (8-12 mm) orange-brown species. The face protrudes strongly anteriorly, with the facial tubercle and mouth edge protruding as one entity. The arista has very long hairs. The scutum is brownish-orange with grey

dust stripes and strong yellow and black bristles along the its margin. The postpronotum is hairy. Vein M_1 lies perpendicular to vein r_{4+5} . The legs are orange-brown with the femora slightly enlarged. The hairs on all legs are predominantly black but there are also black bristles present, especially on the ventral surface of the femora. The abdomen is brownish-orange coloured (it can darken a bit with age), elongate and parallel sided.

Adults of *Hammerschmidtia* spp. superficially resemble dung-flies (Scatophagidae) and some Dryomyzidae, Psilidae, Anthomyiidae and Muscidae, but all those have a very different wing venation. They differ from other syrphids by their colour and habitus, with the exception of *Brachyopa* spp., a genus with brownish-orange coloured species that are also easily mistaken for calyprate or acalyprate flies. *Hammerschmidtia* can be differentiated from *Brachyopa* spp. by the following: In *Hammerschmidtia* spp. vein M_1 is perpendicular to the vein R_{4+5} and the abdomen is straight and almost parallel-sided. In *Brachyopa* spp. vein M_1 ends obliquely to vein R_{4+5} and the abdomen is conical; its widest point lies at the posterior part of tergite 2, and obviously narrows gradually towards the end of the abdomen. All femora in *Hammerschmidtia* spp. are enlarged and thicker than 2.2 times the width of the tibiae. In *Brachyopa* spp. the femora are only slightly enlarged and not much wider than 1.5 times the width of the tibiae. The hind tibiae of *Hammerschmidtia* spp. have short stout black setae posteromedially whereas those of *Brachyopa* spp. have only a normal short pile. Males of *Hammerschmidtia* spp. have a facial tubercle, which the males of *Brachyopa* spp. lack.



Hammerschmidtia ferruginea head lateral



Hammerschmidtia ingrlica male head lateral



Hammerschmidtia ferruginea male antenna



Hammerschmidtia ingrlica male antenna



Hammerschmidtia ferruginea male
habitus



Hammerschmidtia ingrlica male
habitus



Brachyopa bilocor male habitus

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Geographical distribution and global diversity

The genus is recorded from the Nearctic and the Palearctic. There are around 6 species described, of which two occur in the western palaeartic. Of the two European species *H. ferruginea* is widespread and is found from northern Norway south to the Pyrenees, and from central France east through the Alps, the Balkan peninsula and Poland towards European Russia. It is also known from Scotland. Beyond Europe, it is present in Georgia and further east in the Russian Far East (van Steenis et al. 2020). The other species, *H. ingrlica*, is widespread in European Russia and Siberia, and into the Russian Far East. It is also known from one locality in southeast Finland, collected in 2011; its origin is uncertain and may be the result of introduction with wood transport.

Presence in Europe

Austria, Belarus, Bulgaria, Czech Republic, Estonia, Finland, France, Germany, Hungary, Italy, Latvia, Lithuania, Moldova, Montenegro, North Macedonia, Norway, Poland, Romania, Russian Federation - European Russia, Serbia, Slovakia, Slovenia, Sweden, Switzerland, Ukraine, United Kingdom.

Biology

Adult behaviour and flower preferences. Adult *H. ferruginea* inhabit pine and birch taiga and mixed forests with large stands of *Populus tremula* whilst those of *H. ingrica* are found in mixed boreal forests with over-mature deciduous trees. Adults of *H. ferruginea* can fly long distances from breeding sites and may be found at *Sorbus aucuparia* flowers well-away from any aspen stands. Mark-release-recapture studies have shown that they can locate fallen trunks at least 4 km away (Rotheray et al. 2009).

Adults visit flowers of a wide range of Apiaceae, and also shrubs and trees such as *Crataegus* spp., *Cornus alba*, *Prunus padus*, *Pyrus communis*, *Rosa* spp., *Rubus fruticosus*, *Salix* spp. and *Sorbus aucuparia*.

Reproduction and larval biology. *H. ferruginea* larvae inhabit fermenting sap accumulations in recently fallen logs of *Populus tremula* or in sap-runs on standing trees. They develop over two to three years. Adults are highly mobile and have been shown to be able to detect suitable habitat at a distance of at least 4 km (Rotheray et al. 2009)

The larvae of *H. ingrica* are found in sap accumulations under the bark of *Juglans*, *Populus tremula* and *Ulmus*.

Seasonal life cycle. They fly in May-June, and both species are univoltine.



Type species: *Hammerschmidtia vittata* Schummel, 1834 =
ferruginea Fallén

Common names:

FI - haapamahlaset;

NB - barkblomsterfluer;

SV - barkblomflugor

List of species found in Europe:

1. *Hammerschmidtia ferruginea* (Fallén, 1817)
2. *Hammerschmidtia ingraca* Stackelberg, 1952

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