



Genus: *Brachypalpus*



Brachypalpus laphriformis male habitus

(© Sander Bot)

Genus: *Brachypalpus* Macquart, 1834

Family:

Syrphidae

Subfamily:

Eristalinae

Tribe:

Milesiini

Number of species of this genus found in Europe: 3

Description

Head

The head often has an unusually long pile, and is sub triangular in frontal view. The face is non-carinate and concave in profile. The scape and pedicel of the antennae are slightly elongate. The arista is brownish to yellowish white and is slightly longer than the antenna length. The eyes are relatively small; in the male, they are normally holoptic with a relatively short eye contiguity but in *B. valgus* they are slightly separated. The genae and postocular orbits are broad.

Thorax

The thorax is covered with moderate to very long pile. The scutum has faint patterns of anterior medial longitudinal vittae of shiny and shagreened areas. The scutellum is short and broad. The metasternum is pubescent.

Wings

Vein M_1 beyond posterior apical corner of cell r_{4+5} is nearly straight, but is curved to slightly sigmoidal at the apex. The wing is hyaline to slightly infuscated with a distinct pattern composed of infuscation at the forking of veins and distinct subapical infuscation.

Legs

There is a broad conical tubercle on the ventral surface of the hind trochanter. The hind femur is moderately to strongly thickened with the broadest part near the middle,

and there are rows, or a zone of strong to very strong black setulae ventrally. The hind tibia is often strong, and can vary in shape from relatively straight to strongly arcuate or even angularly bent near middle, often with a rounded to sharply pointed ventral apex. Some, (not all) species have an unusual aggregation of setulae or strong setae on the apico-ventral surface of the middle tibia.

Abdomen

The abdomen is elongate with tergites 2 and 3 almost parallel-sided, although tergite 2 is slightly widened posteriorly. Tergite 4 narrows posteriorly. Tergite 1 is dull but the lateral margins can be completely shiny. Tergite 2 is usually dull with large sub quadrangular to trapezoidal lateral shiny patches, whilst the posterior margin is also sometimes shiny. Tergite 3 is more or less like tergite 2 or more extensively shiny.

General comments on identification to species level

Differential diagnosis

These are medium- to large (10-14 mm), often robust and usually hairy species with the head sub triangular in frontal view. They have a simple concave face. The basal segments of the antennae are slightly elongated. There are short hairs on the metasternum and a conical tubercle on the ventral surface of the hind trochanter. All species have strongly modified hind femora and characteristic male genitalia.

Adults can be confused with *Chalcosyrphus eunotus*, some *Myolepta* spp. (*M. vara* and *M. obscura*) and some *Criorhina* spp. (*C. asilica* and *C. pachymera*).

Brachypalpus spp. differ from *C. eunotus* because the metasternum has short pubescence (in *C. eunotus* it is long haired); they also lack the longitudinal grey dusted stripes on the scutum that are present on *C. eunotus*. Furthermore, in *C. eunotus*

spines are confined to the apico-ventral section whereas in *Brachypalpus* spp. there are spines on most of the ventral surface of the hind femora.

Male *Brachypalpus* spp. lack a facial tubercle, which is present in *Myolepta* spp.. In both sexes of *Brachypalpus* spp. crossvein r-m is positioned in the outer half of the cell dm whereas in *Myolepta* spp. crossvein r-m is situated in the basal half of wing cell dm.

Criorhina asilica and *C. pachymera* resemble *Brachypalpus* spp. but the face has a tubercle, whereas in *Brachypalpus* the face is concave and lacks a tubercle. The katepimeron of *Criorhina* spp. is bare whereas it is hairy in *Brachypalpus* spp. Furthermore, in *Criorhina* spp. there are hairs on the ventral surface of the hind femora whereas in *Brachypalpus* spp. the hind femora also have short bristles.

The frons of female *Brachypalpus*, when measured at the level of the ocellar triangle, is one quarter as wide as the width of the head. The hind trochanter of the female lacks a conical tubercle. The hind femur is usually less modified and thickened than in male, and the ventral spines are less well developed. The hind tibiae lack a rounded to sharply pointed ventral apex.



Brachypalpus laphriformis male head lateral



Myolepta vara male head lateral



Criorhina asilica male head lateral

Geographical distribution and global diversity

The genus occurs only in the Palearctic and Nearctic, with six species in each region. There are three species in Europe, but in the Nordic countries there is only one species.

In the Palearctic, the genus is mainly restricted to Europe, where it is known from southern Fennoscandia, south to the Pyrenees and central Spain; Ireland and northern France eastwards through central Europe and northern Italy. Also found in mountainous parts of central Europe including Poland, the Czech Republic, Slovakia, Ukraine (Carpathian region), Schwarzwald, through the Alps (France, Germany, Switzerland, Liechtenstein, Austria) and eastwards into the former Yugoslavia, Romania, Turkey and Caucasian parts of Russia (Speight 2020).

Presence in Europe

Austria, Andorra, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Moldova, Montenegro, Netherlands, North Macedonia, Norway, Poland, Portugal, Romania, Russian Federation - European Russia, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine, United Kingdom.

Biology

Adult behaviour and flower preferences. *Brachypalpus* species inhabit deciduous and coniferous forests with old trees in varying stages of decomposition. This includes conifer forest; open *Abies/Picea* forest with overmature trees, from the upper limit of *Fagus*, up to the *Larix/Pinus mugo* zone. Also found in old *Fagus* and *Quercus* forest

with overmature trees and fallen rotten timber. Sometimes in old cherry (*Prunus*) orchards with overmature trees.

Adults are usually arboreal but can be seen flying around flowering shrubs such as *Salix* and *Sorbus aucuparia*. They also settle on cut tree trunks of *Larix* and *Picea* and on low-growing vegetation, around the edges of clearings in forest. Some males engage in rapid, zigzag flight along the trunks of fallen and felled deciduous trees, in clearings, not infrequently settling on the bark of living and standing trees or on dead leaves, in the sun. Females can be found investigating fallen trees, but they do not settle on them in the sun - on occasion they can be found on the cut end of a felled tree or walking around the periphery of a tree hole, or settled on the foliage of trees at upwards of 2 m from the ground; both sexes visit the flowers of certain trees.

Flowers visited include umbellifera and *Centaurea*, *Crataegus*, *Crocus*, *Eriophorum vaginatum*, *Helleborus niger*, *Petasites albus*, *Ranunculus*, *Salix*, *Sorbus aucuparia*, *Tussilago*, *Berberis*, *Photinia*, *Prunus serotina*, *Anemone nemorosa*, *Euphorbia*, *Prunus mahaleb*, *P. spinosa*, *Ranunculus*, male *Salix* and *Scilla bifolia*.

Reproduction and larval biology. The larva of *B. chrysites* was described and figured by Schmid and Moertelmaier (2007), from larvae reared to last instar in a mixture of damp rotten wood of *Acer*, *Alnus* and *Picea*, into which a captive female laid eggs. The larva of *B. laphriformis* is described and figured by Rotheray (1991) from a larva collected from exudates of a rot-hole in the trunk of *Taxus* and another from sappy water in a sub-bark cavity on the trunk of a live *Quercus*. From the habits of the adults, it is likely that the larvae of *B. laphriformis* may also be associated with *Acer*, *Castanea* and *Prunus*. According to Bartsch et al (2009b), this species may be associated with *Pinus* in Sweden. The larva of *B. valgus* is described and figured by Dusek and Laska (1988), from larvae collected from a wet fissure in the trunk of *Alnus glutinosa*. This species has also been reared from a trunk cavity of *Quercus suber*.

Seasonal life cycle. The adults fly in April/June, plus July at higher altitudes.



Type species: *Brachypalpus tuberculatus* Macquart, 1834

Common names:

FI - mehiläispuuharit;

NB - råtevedblomsterfluer

List of species found in Europe:

1. *Brachypalpus chrysites* Egger, 1859
2. *Brachypalpus laphriformis* (Fallén, 1816)
3. *Brachypalpus valgus* (Panzer, 1798)

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