

Notes on Platygastriinae reared from *Cirsium arvense* (L.) in Denmark (Hymenoptera, Platygastriidae)

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Fire arter af Platygastriinae rapporteres for første gang som parasitoider på galmyg i blomster af agertidsel. En af arterne, *Platygaster walli* Buhl, er ny for Danmark. Noglekarakterer angives for flere af arterne og for *Platygaster cirsicola* Buhl & Jørgensen, der tidligere er rapporteret fra agertidsel. Fra agertidsel blev der desuden klækket en art af Ceraphronidae, som kunne identificeres, og mange arter tilhørende Chalcidoidea, som interesserede specialister tilbydes til videre studier.

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All the new material mentioned below were collected by JJ, identified by PNB, and it is preserved in the Zoological Museum in Copenhagen. As indicated in one of our earlier contributions about reared platygastriids (Buhl & Jørgensen 2011) thistles have only been poorly investigated for this subject. Below we report the presence of further four taxa of these tiny parasitoids of gall midges (Cecidomyiidae) in flower heads of *Cirsium arvense*, one of the species being new to the Danish fauna. A recurrent problem in the determination of reared platygastriids is to decide whether very similar taxa from different hosts are conspecific. A proposed solution for this is to rear large series of specimens from different hosts. If there are morphological overlaps, they will be presumed to



Fig. 1 The locality (garden) at Doktorvejen 47 on Læsø with the population of *Cirsium arvense* in the background between the pond and the trees. Photo from the autumn of 2012 taken by Ingegerd Bilving Jørgensen.

be conspecific (however, similarity in the more visible characters does not prove that they are conspecific). But another problem arises even if specimens from different host are clearly dissimilar, because there could be host-dependent differences within the same species. Still, continued rearing work can only contribute further to elucidate the relationships between these complex taxa.

Inostemma cf. *walkeri* Kieffer, 1914

10 females, 3 males: Denmark, NEJ, Læsø, Doktorvejen 47, in flower heads of *Cirsium arvense* collected 9.vii.-14.viii.2011, reared from 7. to 20.viii.2011.

The existing keys and descriptions to species of *Inostemma* are brief and contradictory, but this species runs to *I. walkeri* in Kozlov's (1978) key and should further be identified by the following female characters: Head in dorsal view twice as wide as long; A3 1.75 times as long as wide; A4 1.4 times as long as wide, 0.75 times as long as A3; wings clear; horn of T1 in lateral view just reaching posterior ocellus; T3-T5 of equal length, T6 1.75 times as long as wide; antennae and legs blackish; trochanters brown; knees, most of anterior tibiae, basal 0.3 of mid and hind tibiae, and segments 1-4 of tarsi lighter brownish.

Platygaster athamas Walker, 1835

2 females, 1 male: Denmark, NEJ, Læsø, Doktorvejen 47, in flower head of *Cirsium arvense* collected 9.vii.-14.viii.2011, reared from 7. to 20.viii.2011.

A rather common and variable species also reared from midges on *Senecio jacobaea* L., *Euphorbia esula* L., *Rosa* sp., *Veronica longifolia* L., *Artemisia vulgaris* L. and in terminal buds on *Salix*, but behind the morphological variation cryptic species can not be outruled. Cf. taxonomic remarks in Vlug (1985).

Platygaster cirsiicola Buhl & Jørgensen, 2011

A few further specimens of *P. cirsiicola* have been reared from *Cirsium arvense* on the type locality since the original description by Buhl & Jørgensen (2011). *P. cirsiicola* can be incorporated in couplet 98 of the key to Danish species of *Platygaster* by Buhl (2006) in the following way (along with a further species recorded from Denmark since 2006, *P. robiniae* Buhl & Duso, 2008):

98 Head 1.6 times as wide as long; A1-A5 and legs yellow

..... *P. clavata* Buhl, 1994

– Head at least 1.9 times as wide as long; antennae and legs dark 98b

98b Female antennal segments 7-10 forming a distinct clava, A9 1.3 times as wide as long; male A4 hardly twice as long as A3, ending in a distinct spinose projection; female metasoma as wide as mesosoma

..... *P. robiniae* Buhl & Duso, 2008

Head twice as wide as long; T3 rarely with more than a couple of punctures with setae.

– Female antennal clava sub 5-segmented (A6 almost as large as A7), A9 very slightly wider than long; male A4 fully twice as long as A3, without a spinose projection; female metasoma distinctly narrower than mesosoma 98c

98c Head at most twice as wide as long; female A4 widened; T2 weakly striated to half of length, medially to one-third of length; T3 without punctures, only two on T4 *P. misella* Buhl, 2006

Scutellum only laterally with setae; female fore wing about 0.85 times as long as entire body; T1 hardly twice as wide as long.

– Head 2.2 times as wide as long; female A4 not wider than A5; T2 with slightly longer and stronger striation; T3 with about 12 punctures, 14-16 on T4 . *P. cirsiicola* Buhl & Jørgensen, 2011

Scutellum evenly setose; female fore wing about 0.7 times as long as entire body; T1 about 2.3 times as wide as long.

The three species *P. misella*, *P. robiniae* and *P. cirsiicola* seem to be forming a group of closely related species differing in minute details as well as in bionomics, the gall midge host of *P. cirsiicola* living on *Cirsium*, that of *P. robiniae* on *Robinia*, while that of *P. misella* seems to be living especially in grey dune communities; it has been reared from *Salix cinerea oleifolia* (Sm.) Macreight with larvae of *Rhabdophaga* sp.

Platygaster demades Walker, 1835-group

1 female: Denmark, NEJ, Læsø, Doktorvejen 47, in flower head of *Cirsium arvense* collected 9.vii.-14.viii.2011, reared from 7. to 20.viii.2011.

A very variable species or a number of cryptic ones known to parasitise midges on widely different plants in e.g. Rosaceae (apple) and Ericaceae as well as on *Artemisia vulgaris* from the same family as *Cirsium* (Asteraceae). Cf. taxonomic remarks in Vlug (1985). I have seen specimens of the present morphotype also from Finland.

Platygaster walli Buhl, 2010

1 female: Denmark, NEJ, Læsø, Doktorvejen 47, in flower head of *Cirsium arvense* collected 9.vii.-14.viii.2011, reared from 7. to 20.viii.2011.

This species was hitherto known only from the German holotype (Buhl 2010) without information on bionomics. It is distinctly different from *P. cirsiicola* e.g. in the more elongate female antenna, longer notauli and more pointed metasoma. *P. walli* can be incorporated in couplet 95 of the key to Danish species of *Platygaster* by Buhl (2006) in the following way:

95 Frons striated above antennal insertions; occiput strongly striated; scutellum strongly convex; female T6 basally more than twice as wide as long
P. equestris Spittler, 1969

– Frons without striae; occiput finely striated; scutellum at most slightly higher than mesoscutum; female T6 less than 1.5 times as wide as long 95b

95b Female A4-A6 combined only 0.6 times as long as A7-A9 combined
..... *P. singularis* Buhl, 2006

Body length 1.6 mm; marginal cilia of hind wing about 0.15 width of wing; T2 striated in and between basal foveae to 0.4 the length of tergite.

- Female A4-A6 combined 0.75 times as long as A7-A9 combined

..... *P. walli* Buhl, 2010

Body length hardly 1.1 mm; marginal cilia of hind wing about 0.3 width of wing; T2 without striation between basal foveae.

Microhymenoptera such as platygastriids have by some been termed »nano-hornets«, in reference to their aggressive parasitism. However, in *Cirsium* they are definitely not dominant. Among the microwasps of several other families in the present material reared from flower heads of *Cirsium arvense* in Denmark we identified only *Aphanogmus tenuicornis* Thomson, 1858 (Ceraphronidae), but especially rich in the material are species of Chalcidoidea, and the authors will be very happy to place our material (also from other host plants) at disposal to specialists for identification.

References

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