Taxonomical Studies on Platygastrinae (Hym. Proctotrupoidea)

By Lars Huggert

Skolgatan 100, S-902 46 Umeå, Sweden

Abstract

Huggert, L. Taxonomical studies on Platygastrinae (Hym. Proctotrupoidea). — Ent. Tidskr. 94: 97—108. 1973.

Hypocampsis compressicornis Th. and *H. hyalinata* Th. are redescribed and transferred to *Platygaster* Latr. *P. longiventris* Th. is redescribed and *P. lamelliformis* described as a new species. For the latter and *P. compressiventris* (Ashm.) the new subgenus *Parallelogaster* is erected. *P. longiventris* (Ashm.), *P. pini* Fouts and *P. laticeps* (Ashm.) are given the new names *P. ashmeadiana*, *P. foutsi* and *P. latifrons* respectively. The species *Misocyclops crevecoeuri* Maneval is regarded as a synonym of *M. ruborum* Kieff., which is transferred to *Platygaster*. Lectotypes have been selected for *H. compressicornis* Th., *H. hyalinata* Th. and *P. longiventris* Th.

Acknowledgements

I want to thank Prof. C. H. Lindroth and F. K. Roy Danielsson, Lund, for helpful comments and for supporting me with material from coll. Thomson. Likewise I am much indebted to Dr. T. Nyholm, Stockholm, for sending me material from coll. Boheman.

Platygaster compressicornis (Th.) comb.n.

Hypocampsis compressicornis Th. 1859: 82

♀. Length 1.8 to 2.1 mm. Colour dark brown to black with apex of gaster, antennae and legs slightly lighter.

Head from above with a moderately strong excavation and rather weak occipital carina posteriorly; about 2.3 times as wide as long with temples rounded about as long as an eye; vertex alutaceous, more rugose towards temples and occipital carina (fig. 1); POL: OOL = 16: 5. Head from the side with eye 1.5 times the length of head; width of eye about the same as gena below it; eyes with very short, sparse hairs. Head from in front shiny and finely alutaceous with a short depressed line in front of median ocellus and some fine transverse wrinkles above antennal toruli; about 1.3 times as wide as long with few setae; scape weakly sinuate, slender, about 6.1 times as long as wide with greatest width about 2/6 to 3/6 from apex; about 1.3 times the width of frons and as long as the last three antennal segments; pedicel and the following segments very slender; pedicel about 3.6 times as long as wide, as long as segment seven; third segment about 2.3 times as long as wide, closely united to segment four, which is about 3 times as long as wide; segments five and six as long as four and slightly wider; segments seven to ten forming an indistinct clava, which is slightly longer than segments two to six and only slightly wider than the others; each claval segment laterally depressed, about 3.5 times as long as wide and somewhat wider at apex with rather weak hyaline spine posterolaterally (fig. 2).

Thorax not quite as wide as head (35: 39), slightly higher than wide with collar neck

clearly protruding; pronotum bordered by a sharp scutal suture; mesonotum greatly damaged by the pin but notaulices distinct throughout and in other specimens seen the sculpture on mid lobe is scaly reticulate to alutaceous, weaker so on side lobes which are smooth exteriorly (fig. 1); mesonotum with sparse short setae; scutellum semicircular in outline, convex and finely alutaceous with short sparse setae, separated by a distinct bare scutellar fovea and half as long as mid lobe; propodeum covered with rather dense white hairs; propleura with sparse hairs and alutaceous on upper part; mesopleura smooth with a convex semicircular portion on lower part; metapleura covered with not too dense whitish hairs.

Legs rather slender with hind tarsi slightly longer than tibiae; hind metatarsus as long as the three following segments together; fore tarsi with spur as in fig. 3. Fore wing with rather short marginal cilia and not too dense setae on disc with a rather large almost bare portion basally (fig. 1), about 2.5 times as long as wide and as long as gaster; hind wing with rather short marginal cilia, bare basally in slightly more than 1/3, about 4.8 times as long as wide, as long as collar neck to end of second gastral segment.

Gaster (fig. 1) longer than head plus thorax (110: 67), 3.3 to 3.8 times as long as wide; first tergite 2.1 to 2.3 times as wide as long with a median ridge and two longer ones laterally to it; laterally to these longer ridges a shorter one and between these more prominent ridges several finer ones; a transverse depression medially but mid part hump-like; second tergite separated by a distinct fovea, 1.2 to 1.5 times as long as wide, with rather small and shallow basal foveae, about 1/8 the length of tergite; first tergite with some hairs laterally, second with short hairs in basal fovea; rather weak and short striation to middle of second tergite, which, like the others, has a fine alutaceous sculpture; third tergite tapering to the next one, about 1.4 times as wide as long; tergites four and five about equal, almost as long as wide, the fourth slightly wider anteriorly; sixth tergite tapering to apex, about 1.7 times as long as wide; tergites three plus six with a dorsal depression. If the gastral segments have been telescoped the gaster is much shorter (fig. 4) and only about 2.2 times as long as wide.

♂. Length about 1.5 mm. Differs from female in having scape as long as width of frons (fig. 5), only 5.6 times as long as wide with greatest width in the middle and as long as two and a half of the last three antennal segments; pedicel shorter and wider, 1.7 times as long as wide; third segment very short and bell-shaped; fourth slightly wider than pedicel, about 1.3 times as long as wide; segments five to nine about equal, 1.8 times as long as wide; segment ten 2.5 times as long as wide; all segments with sparse and short hairs.

Gaster (fig. 6) about 2.1 times as long as wide, broadly spatulate; first tergite slightly narrower than in female; second tergite slightly more than 1.1 times as long as wide otherwise as in female; third to sixth tergites about equal in length, tapering to the apex; these segments with rather clearly visible rows of transverse punctures in the middle, bearing short setae. These punctures with setae may also with some difficulty be seen in the female.

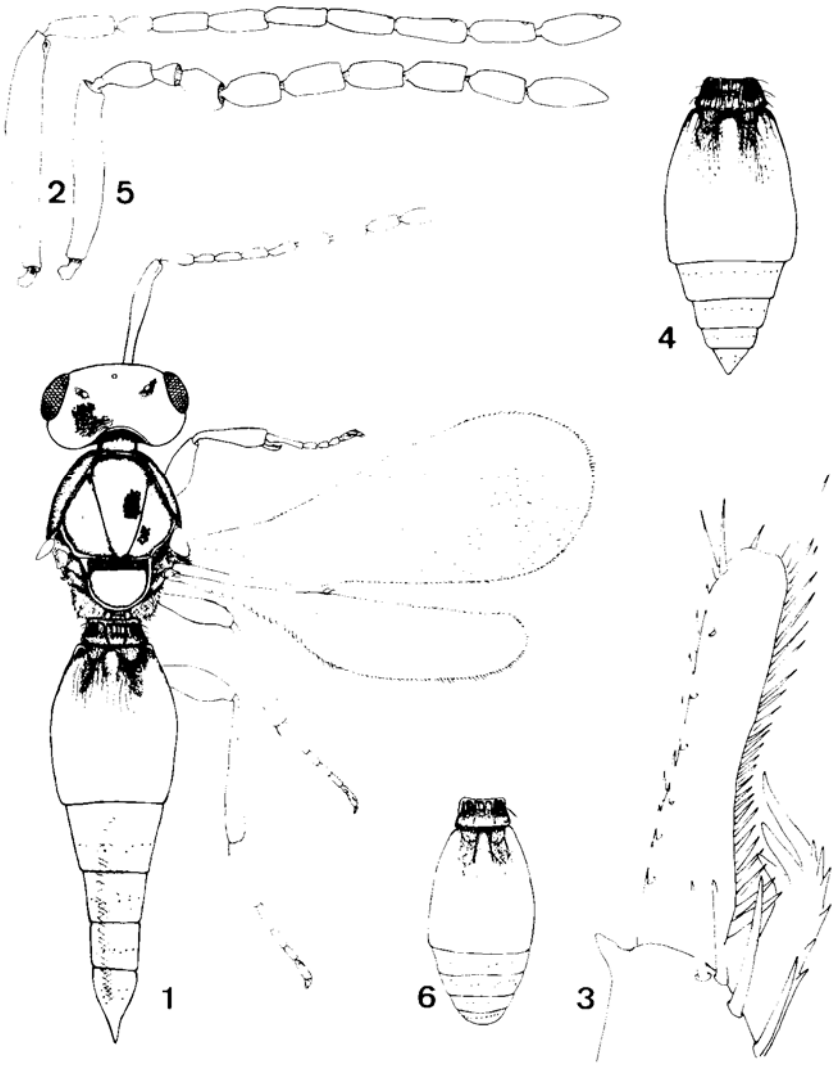
Specimens examined:

In coll. Boheman, Riksmuseum, Stockholm.

Lectotype ♀. The specimen, remounted by me on a card, is in good condition, except for the absence of the last two antennal segments, and the thorax, which is damaged in the middle by the pin. It is labelled "V.G." (Västergötland), "Bhn." (Boheman). Bearing my lectotype and determination labels and a label in A. Jansson's handwriting with "Belong to *Misocyclops* Kff." in Swedish. Two ♀♀, remounted by me, labelled "V.G.", "Bhn.": the left antenna of one of them mounted on a microslide, which is on the pin.

In coll. Thomson, Lund.

One ♀, labelled "Ö" (Öland) and "♀", remounted by me; the left antenna on a



Figs. 1–6. *Platygaster compressicornis* (Th.). Female in dorsal view (1); antenna (2), front spur (3) and telescoped gaster of female (4); antenna (5) and gaster of male (6).

microslide. One ♀, labelled "Gt." (Gotland), "Bhn." and remounted by A. Jansson on a card. One ♀ labelled "Deg." (Degeberga) and "compressicornis" in Thomson's handwriting. One ♂, labelled "Deg." and "♂", remounted by me; the left antenna on a microslide.

In coll. Huggert, Umea.

One ♀, Gotska Sandön 8–10.VIII.1969 (L. Huggert). Swept from *Calluna vulgaris* in the pine forest, which covers most of the island.

In his description of *H. compressicornis* Thomson says that the third segment of the antennae is as long as the fourth. This is not the case in any of the specimens examined by me. In fact it is much shorter than segment four. Here Thomson must have made a mistake. Probably he has mixed up *H. hyalinata* with *H. compressicornis* concerning this detail, because in the former species these segments are of about equal

length, or simply, he thought that he saw a suture between these two closely united segments which in fact was not the true one.

This species most probably has been described later by e.g. J. J. Kieffer under various names. Because I have not seen any of his types I do not want to sink any of them here but I believe that at least his *Misocyclops pini*, *M. leucanthemi* and *M. sambuci* ought to be conspecific.

Platygaster foutsi nom.n.

Platygaster pini Fouts 1924: 99

Because this name is preoccupied by *P.* (*Misocyclops*) *pini* (Kieff.) 1916 comb.n. I propose this new name for Fouts' species.

Platygaster ruborum (Kieff.) comb.n.

Misocyclops ruborum Kieff. 1916: 578
Misocyclops crevecoeuri Maneval 1936: 53 syn.n.

In 1940 G. Szelényi gave a thorough discussion on *M. ruborum* based on specimens reared from the Cecidomyiid *Lasioptera rubi* Heeg. from Germany and Hungary. His conclusion was, in short, that Kieffer had overlooked that the second tergite really has striation basally in the middle and that the fifth tergite has a strong longitudinal rugose sculpture. My specimens reared from the same host in Sweden match Szelényi's opinion of *M. ruborum* and Maneval's species *M. crevecoeuri*, which obviously was unknown to Szelényi. The latter species is without any doubt conspecific with Szelényi's and my specimens, so I have to sink it as a synonym. As Maneval's species from Belgium also was reared from the same host, it seems very unprobable that Kieffer's species should be something else. However, it is strange that he never noticed the sculpture on the fifth tergite.

Specimens examined:

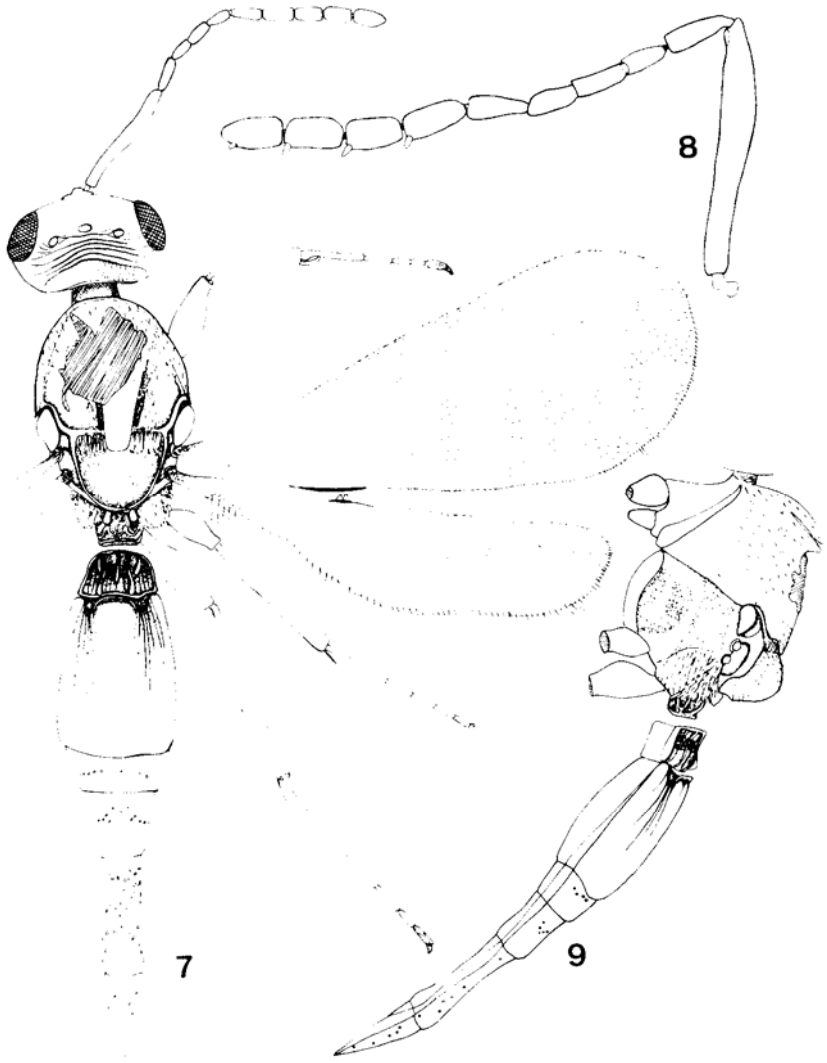
Sweden, Västergötland, Mölndal 26.XII. 1970. 14 ♂♂, 28 ♀♀ (L. Huggert). Reared from *Lasioptera rubi* on *Rubus idaeus*. Halland, Öströö 14.I.1973. 2 ♂♂, 5 ♀♀ (L. Huggert). From the same host and plant.

Platygaster hyalinata (Th.) comb.n.

Hypocampsis hyalinata Th. 1859: 82

♀. Length 2.6 mm. Colour black except for antennae and legs, which are dark testaceous with lighter first four segments of tarsi.

Head from above with a weak excavation and occipital carina posteriorly, about twice as wide as long; temples rounded, about as long as an eye; vertex behind median ocellus with about six strong transverse ridges or wrinkles and between the posterior ones and occipital carina, an area covered with short hairs (fig. 7); POL: OOL = 17: 4. Head from the side with eye about twice the length of head; width of an eye slightly more than that of gena below it. Head from in front slightly wider than long; eyes without hairs; frons and face shiny, finely alutaceous, coarser towards lower face and inner orbits, a fine depressed line in front of median ocellus to middle of face and some transverse wrinkles above antennal toruli; scape weakly sinuate, slender, about 6.5 times as long as wide with greatest width 2/5 from apex, about 1.5 times the width of frons (fig. 8), as long as last four segments of antennae; pedicel as well as the other segments slender, about 3 times as long as wide; segment three about 2.2 times as long as wide, closely united to segment four, which is almost 3 times as long as wide; segment five slightly wider, 2.2 times as long as wide; segment six almost twice as long as wide, more bell-shaped; segments seven to ten forming a thin clava with segments about equal in length and breadth (10: 8) and having a



Figs. 7–9. *Platygaster hyalinata* (Th.). Female in dorsal view (7); antenna (8) and thorax plus gaster in lateral view of female (9).

hyaline spine posterolaterally. Especially the last four segments rather strongly laterally depressed.

Thorax as wide as head, about as wide as high with collar neck clearly visible; pronotum bordered by a indistinct scutal suture; mesonotum greatly damaged by the pin, but it seems to have been alutaceous and shiny with notaulices broad and shallow at least in the posterior half and probably missing in the anterior half; side lobes with coarser alutaceous sculpture interiorly; mid lobe at least in the posterior half very finely alutaceous, with the truncate tongue over scutellar fovea almost bare and shiny; mesonotum with clearly visible setae and yellow tufts over scutellar fovea; scutellum smooth, convex, elevated and semi-circular in outline, covered with whitish hairs except for in the middle (fig. 7); scutellum from

anterior margin of scutellar fovea to apex half the length of mesonotum from collar neck to apex of tongue of mid lobe; propodeum densely covered with whitish hairs; propleura with setae absent in lower median part, otherwise covered; mesopleura smooth with a semi-circular depression medially and lower part slightly longitudinally convex; metapleura densely covered with white hairs (fig. 9).

Legs slender with tarsi clearly longer than tibiae; hind metatarsus about as long as the three last segments together. Wings rather wide; fore wing with short marginal cilia and a bare strip basally; hind wing bare in its basal 1/3 with rather long marginal cilia and a row of about six prominent setae near base; fore wing slightly longer than gaster; hind wing as long as gastral segments two to six combined.

Gaster elongate, in lateral view rather convex (fig. 9), about 1.5 times as long as head plus thorax and about 4.2 times as long as wide; first tergite about 1.7 times as wide as long with a median transverse depression; one more or less prominent median longitudinal ridge anteriorly and two longer ones laterally to this; between these there are finer ones; second tergite as long as fore tarsus, about 1.3 times as long as wide with a small hump at its base and separated from tergite one by a distinct fovea; tergite two basally with two rather short foveae about 1/8 as long as tergite with very strong longitudinal striae extending to 3/4 the length of tergite; tergite three about 2.5 times as wide as long, tapering to tergite four and 1/4 the length of tergite two, with a slightly bent row of punctures transversally; tergite four tapering to the fifth, as long as wide, about 2.2 times as long as the second, with a more irregular row of punctures; tergite five 3 times as long as wide, slightly longer than tergite three plus four and finely longitudinally alutaceous except for posterior 1/3; posteriorly and anteriorly with some irregular punctures; sixth tergite pointed apically, about twice as long as wide with scattered punctures. Tergites four to six forming a tail, which is slightly longer than tergites one to three.

Specimen examined:

In coll. Boheman, Riksmuseum, Stockholm.

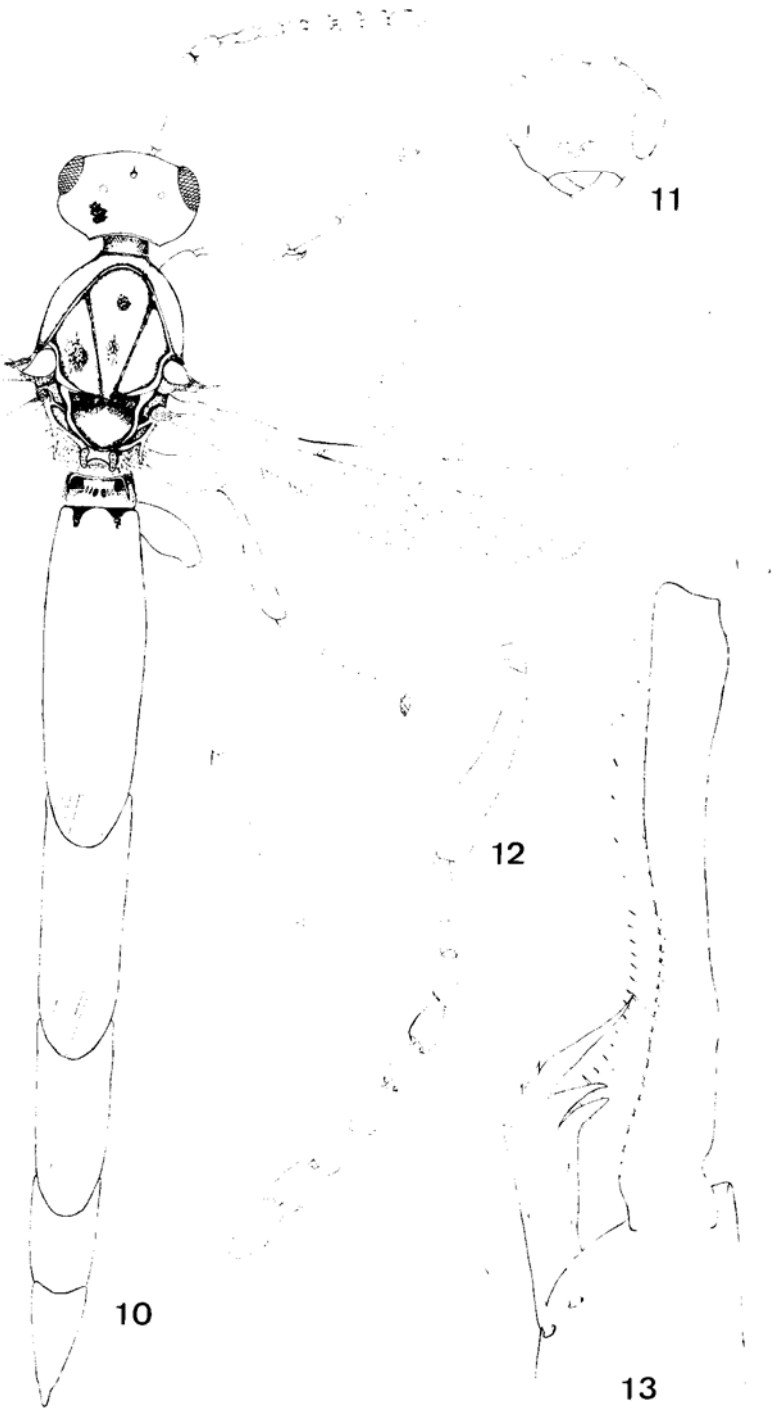
Lectotype ♀. The specimen has been remounted by me on a card and is bearing my lectotype label. The left antenna has been mounted on a microslide, which is on the pin. This specimen in fact ought to be the holotype. It is labelled "Sm." (Smaland), "Bhn." (Boheman), "Type", and also bears a label in A. Jansson's handwriting with "Belong to *Prosactogaster* Kff. A. J." in Swedish.

This is the only specimen I have been able to find in coll. Boheman and in coll. Thomson. Under *Hypocampsis hyalinata* Th. in the latter collection there stood only one female of *H. compressicornis* Th. with a rather extended gaster.

Platygaster lamelliformis sp.n.

♀. Length about 3.9 mm. Colour dark testaceous to almost black; an ovale spot at hind margin of tergites brownish (fig. 10); scape and pedicel dirty yellow, rest of antennae darker; legs dirty yellow with last tarsal segment darker, femora darker at dilated part and tibiae darker posteriorly; tegulae brownish; coxae dark brown.

Head from above slightly excavated posteriorly with fine occipital carina; frons slightly convex; head about 1.5 times as wide as long with temples broad and sinuate, slightly longer than the length of an eye; POL: OOL = 15: 6; width of an eye as wide as that of genae below eye; length of head from edge of oral fossa to vertex 1.8 times the length of an eye. Head from in front (fig. 11) about 1.2 times as wide as long; eyes without hairs; frons and face shiny, finely alutaceous, towards vertex punctate reticulate; head with a few setae at sides of lower face and inner orbits; in front of median ocellus a fine impressed line. Scape



Figs. 10–13. *Platygaster lamelliformis* sp.n. Female in dorsal view (10); head from in front (11), antenna (12) and front spur of female (13).

sinuate, as long as width of frons and slightly longer than the next four segments (fig. 12), as long as segments four to seven; scape 5.4 times as long as wide; pedicel 2.1 times as long as wide, about 3.6 times the length of scape; segment three small, narrower than pedicel and closely united to segment four, which is slightly shorter than pedicel; segments five and six almost equal, about 1.5 times as long as wide, slightly bell-shaped; segments seven to ten forming a not too distinct clava with each of its segments having a hyaline spine posterolaterally; segments seven to nine equal in width but successively shorter; segment ten about twice as long as wide. Antennae with sparse hairs.

Thorax slightly wider than head, about as wide as high with collar neck clearly protruding; pronotum bordered by a distinct scutal suture, rather smooth and shiny with a reticulate rugose spot laterally and with sparse setae; notaulices complete and distinct; mid lobe alutaceous in the posterior half and successively more reticulate anteriorly; lateral lobes interiorly and anteriorly near the scutal suture reticulate, exteriorly more alutaceous to almost smooth on the exterior half. Scutellum almost smooth and shiny, separated from mesonotum by a deep bare fovea, about 1/3 the length of mid lobe (13: 35), convex, not elevated, semi-circular in outline and bordered laterally by sinuate ridges, unarmed apically; sides of propodeum rather densely hairy with parallel carinae of metanotum strongly reticulate on their tops and with a smooth excavation between them; sides of thorax shiny except for metapleurae, which are covered with not too dense white hairs.

Legs showing no peculiarities, femora moderately dilated, spur of fore leg as in fig. 13, hind metatarsus as long as the following three segments together. Fore wing rather thickly hairy almost to its base, as long as the three first tergites together and rather narrow, marginal cilia short. Hind wing as long as length from scutellar fovea to hind margin of second tergite, rather thickly hairy except for its basal third, with about twice as long marginal cilia as in front wing.

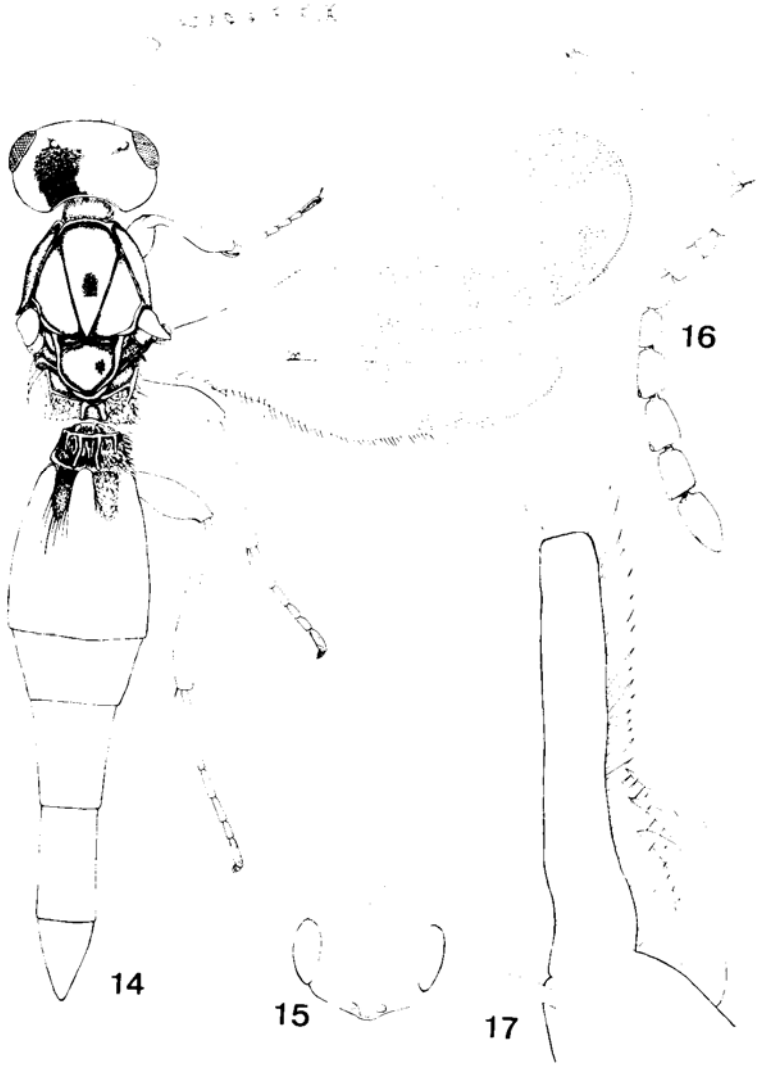
Gaster remarkably elongate (fig. 10), in lateral view thin like a knife blade, almost three times as long as head plus thorax, 9.6 times as long as wide and smooth like a mirror; first tergite about 2.4 times as wide as long, strongly elevated anteriorly and sloping posteriorly, in its middle with two bigger longitudinal grooves and some smaller ones laterally to them; anterolaterally to the elevated part an excavation bordered laterally by a ridge with some short hairs; second tergite separated from the first by a not too distinct fovea and basally with two short, shallow and bare foveae extending only to 1/18 the length of tergite; second tergite 3.0 to 3.6 times as long as wide, as long as tergite four to six combined (messured medially); tergite three 0.6 times the length of tergite two; tergite four about 0.7 times the length of tergite three; tergite five about half as long as tergite four and sixth, slightly longer than fifth, pointed apically; tergites two to five are remarkable because of their very broadly rounded hind margins, each of which covering anterior part of the following tergite; the whole gaster is unusually parallel.

Holotype ♀. Sweden: Västergötland, Tore mosse at Halleberg 28.VII.1968 (L. Huggert). Swept from *Carex* spp. at the edge of the bog. In Riksmuseum, Stockholm.

Paratypes. Sweden: Västerbotten, Skatan, Berglundasjön 10.VII.1972. 3 ♀♀ (L. Huggert). Swept mainly from *Carex lasiocarpa* and *C. rostrata* on a small bog at the shore of the lake. In coll. Huggert.

Biology. Not known but the species is probably associated with Cecidomyiid-hosts on *Carex* spp.

This is indeed a very striking species and I do know of only one described Platygastrin with this shape of the gaster, viz. *P. compressiventris* (Ashm.) from Washington, District of Columbia. These two species seem to be very close to each other and ought to have the same bionomics, replacing each other in the New and the Old World. The



Figs. 14—17. *Platygaster longiventris* Th. Female in dorsal view (14); head from in front (15), antenna (16) and front spur of female (17).

following differences may be noticed: In *P. compressiventris* the head seen from above is twice as wide as long; the first tergite is only a little less than twice as wide as long; second one only 2.5 times as long as wide with basal foveae covered with short white hairs; the gaster is only 2.5 times as long as the head plus thorax.

I believe, that when more is known about the heterogenous genus *Platygaster* Latr., as understood up till now, it will be split up in several genera or at least subgenera. Thus, for these two species I want to propose the new subgenus *Parallelogaster*.

L. Masner (in litt.) told me that this species was well known to him. He had a female without head in his collection in Prague, and the late A. Sundholm also discussed this species with him, obviously on the basis of specimens from Sweden.

Platygaster longiventris Th.

Platygaster longiventris Th. 1859: 86

♀. Length 2.3 to 2.6 mm. Colour black with brownish antennae and light brown legs, except for the dark last tarsal segment.

Head from above with a weak occipital carina but a strong posterior excavation (fig. 14), about twice as wide as long with temples broadly rounded and sparsely hairy, about 1.3 times as long as an eye; POL: OOL = 18: 5; vertex rather shiny, strongly punctate reticulate, more transversally reticulate behind posterior ocelli. Head from the side with the eye 1.3 times the length of head; width of eye slightly less (6: 8) than gena below it and without hairs. Head from in front shiny with face slightly convex and a short depressed smooth line from median ocellus (fig. 15); sculpture with larger meshes, more transversally reticulate than on vertex and about 1.6 times as wide as long, with no hairs; scape slightly sinuate, about as long as width of frons, about 6.2 times as long as wide and as long as the last four segments of antennae (fig. 16); pedicel 2.5 times as long as wide, about as long as the last segment; third segment small, bell-shaped, slightly longer than wide and closely united to segment four, which is about 1.7 times as long as wide; segments seven to ten slightly wider, forming a clava with the three first segments about equal, slightly bell-shaped, about 1.5 times as long as wide; posterolaterally with a well pronounced hyaline spine and tenth segment longer, 2.3 times as long as wide with a smaller spine; antennae with short hairs.

Thorax narrower than head (35: 40), about as high as wide with collar neck clearly protruding; pronotum bordered by a sharp scutal suture; notaulices strongly impressed throughout; median parts of mid lobe and side lobes with a distinct scaly reticulation, becoming more irregular at margins of lobes and more longitudinal on posterior part of mid lobe (fig. 14); mesonotum with no hairs, separated from scutellum by a bare distinct scutellar fovea; scutellum about half as long as mesonotum, slightly tapering posteriorly; anterior half of scutellum scaly reticulate and posterior part smooth with short setae; lateral parts of propodeum with rather dense and long hairs, smooth medially with the two longitudinal ridges smooth and rather long; propleura scaly reticulate on upper part and with sparse setae in posterior 2/3; mesopleura shiny and smooth with a convex lower part and an arched depression in the middle; metapleura covered with long dense whitish hairs.

Legs rather slender with hind tarsi clearly longer than tibiae, as long as the last two gastral segments; spur of fore leg as in fig. 17. Fore wing about 3 times as long as wide, as long as the first five segments of gaster with rather short marginal cilia and basally bare in about 1/3 of its length (45: 130); hind wing rather long and narrow, about 6 times as long as wide, twice as long as the two first gastral segments; marginal cilia rather short, basally bare in about 1/3 of its length (40: 110).

Gaster long, almost twice as long as head plus thorax (150: 77), about 4.2 times as long as wide, smooth and shiny; first tergite twice as wide as long; its median part smooth, bordered by two prominent longitudinal ridges and laterally to these one shorter ridge at each side; between these ridges smaller ones; posteriolaterally covered with long dense hairs; second tergite about 1.3 times as long as wide, as long as tergites three to four, basally with a median low hump, bordered by two basal foveae about 1/3 the length of tergite; these foveae covered with hairs and from them rather strong longitudinal striation to about middle of tergite; third tergite transverse, tapering to tergites four to six, forming a tail; third tergite about 2.2 times as wide as long, about half as long as tergite five; tergite four about 1.4 times as long as wide; fifth slightly narrower and longer, about twice as long as wide; sixth

tergite about 1.3 times as long as wide, pointed. In some specimens tergites four to six are finely alutaceous.

Specimens examined:

In coll. Thomson, Lund.

Lectotype ♀. Bearing a small square green label and my lectotype label. In good condition, except that the last three tarsal segments of the left fore leg are missing. This leg and the left antenna mounted on a microslide, which is on the pin. The specimen remounted on a card by me. I have not been able to find any specimens from the type-locality, Ringsjön, but the specimen selected has that small green label, which might indicate it to be from that locality, the only finding-place mentioned by Thomson. In taking this step I am following A. Sundholm's opinion (1967), when he selected the lectotype for *Trimorus varicornis* (Th.). One ♀ labelled "L-d" (Lund) and one ♀ labelled "?Ys" (Ystad). Both specimens in rather good condition and remounted on cards, probably by A. Sundholm.

In coll. Boheman, Stockholm.

Two ♀♀ with the same small green labels as the lectotype, one of them also with two small labels reading "07" and "38". The latter remounted by me and the other by A. Jansson on cards.

In coll. Huggert, Umea.

Västergötland, Tore mosse 28.VII.1968 one ♀, (L. Huggert). Swept from marsh-vegetation, mainly *Carex* spp. at the edge of the bog.

Platygaster ashmeadiana nom.n.

Isocypus longiventris Ashm. 1887: 130

Platygaster longiventris (Ashm.) Fouts 1924: 90

In this connection I want to give a new name for this species, because the existing name is preoccupied by *P. longiventris* Th. 1859.

Platygaster latifrons nom.n.

Polygnotus laticeps Ashm. 1893: 301

Platygaster laticeps (Ashm.) Fouts 1924: 88

In 1859 Thomson described his *Platygaster laticeps*, so I have to give Ashmead's species a new name.

References

Ashmead, W. H. 1893. A monograph of the North American Proctotrypidae. — Bull. U.S. natn. Mus. 45: 1—472.

Debauche, H. R. 1947. Scelionidae de la Faune belge. — Bull. Annls Soc. r. ent. Belg. 83: 255—285.

Fouts, R. M. 1924. Revision of the North American wasps of the subfamily Platygasterinae. — Proc. U.S. natn. Mus. 63 (15): 1—145.

Kieffer, J. J. 1926. Scelionidae. — Tierreich 48: 1—885. Berlin, Leipzig.

Kozlov, M. A. 1970. Supergeneric groupings of Proctotrupoidea (Hymenoptera). — Rev. Ent. RSS. 49: 203—226. (In Russian).

— 1971. Proctotrupoids (Hymenoptera, Proctotrupoidea) of the USSR. — Horae Soc. ent. ross. 54: 3—67. (In Russian).

Macgown, M. W. 1971. A new species of Platygaster (Hymenoptera: Proctotrupoidea, Platygastridae) associated with shortleaf pine, Pinus echinata. — Can. Ent. 103: 1637—1638.

— et Osgood, E. A. 1971. Two new species of Platygaster (Hymenoptera: Proctotrupoidea, Platygastridae) parasitic on balsam gall midge, Dasineura balsamicola (Diptera: Cecidomyiidae). — Can. Ent. 103: 1143—1146.

Maneval, H. 1936 a. Nouveau genre et nouvelles espèces de Platygasterinae (Hym.) de la faune Franco-Belge. — Bull. Annls Soc. r. ent. Belg. 76: 45—58.

— 1936 b. Note rectificative concernant le nouveau genre Paracyclops (Hym. Platygasterinae). — Bull. Annls Soc. r. ent. Belg. 76: 142.

Masner, L. 1956. First preliminary report on the occurrence of genera of the group Proctotrupoidea (Hym.) in ČSR. (Firts part-family Scelionidae). — Acta faun. ent. Mus. natn. Pragae 1: 99—126.

— et MUESEBECK, C. F. W. 1968. The types of Proctotrupoidea (Hymenoptera) in the United States National Museum. — Bull. U.S. natn. Mus. 270: 1—143.

SUNDHOLM, A. 1967. Prosacantha Nees. sensu Thomson, selection of lectotypes (Hym. Proct. Scelionidae) — Opusc. ent. 32: 131—134.

SZELÉNYI, G. 1940. Ein Beitrag zur Kenntnis parasitischer Hymenopteren an Hand einiger Zuchtergebnisse. (Hym. Proctotrupoidea). — Arb. morphol. taxon. Ent. Berl. 7: 226—236.

— 1958. Über einige durch Zucht erhaltene Scelioniden und Bethyliden (Hymenoptera). — Annls hist.-nat. Mus. natn. hung. 50: 261—270.

THOMSON, C. G. 1859. Sveriges Proctotruper. Tribus VII. Platygastrini. — Öfvers. K. VetenskAkad. Förh. 16: 69—87.