

Two new species of Platygasteridae (Hymenoptera), reared from wheat gall midges (Diptera: Cecidomyiidae)

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Abstract: Two new Palearctic species of Platygasteridae are described, which were reared from gall midges on wheat. *Inostemma mosellanae* spec. nov. has been reared from *Sitodiplosis mosellana* (Géhin) and *Piestopleura laurae* spec. nov. has been reared from *Contarinia tritici* (Kirby).

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Introduction

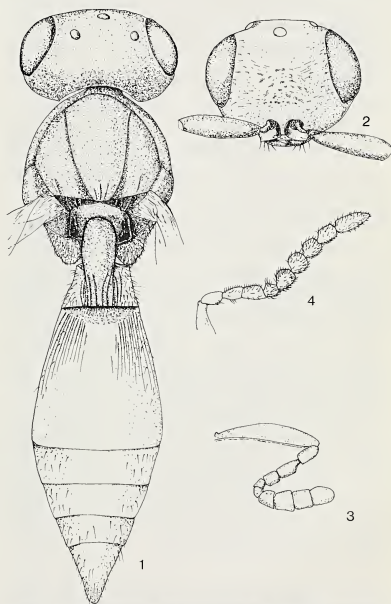
In a research program to select Platygasterids as biocontrol agents against wheat gall midges in Canada, F. Affolter (Commonwealth Institute of Biological Control, Delémont) recently reared six species of Platygasteridae from *Sitodiplosis mosellana* (Géhin) and *Contarinia tritici* (Kirby) on wheat from several localities in Europe. The complete species composition of these parasites will be published later by Affolter. Among these species two are considered new to science. *Inostemma mosellanae* spec. nov. is a short-horned *Inostemma* species, fitting the old Kieffer's concept of *Brachinostemma* (Kieffer, 1916) which has been recently synonymized with *Inostemma* (Masner & Huggert, 1989). *Piestopleura laurae* spec. nov. has been compared with the types of *Piestopleura mamertes* (Walker), *P. catilla* (Walker) and *P. seron* (Walker).

Inostemma mosellanae spec. nov.

(figs. 1-4)

Type material

Holotype: ♀, Neunkirch, Switzerland. Galls collected: summer, 1986. Laboratory emergence. Host: *Sitodiplosis mosellana* (Géhin). Paratypes: 2 ♂ (including allotype) and 4 ♀ with the same dates as holotype; 2 ♂: Buren-a-Aare (BE), Switzerland, galls collected summer, 1986, laboratory emergence; 2 ♂: Buren-a-Aare (BE), Switzerland, galls collected 6.vii. 1987, laboratory emergence; 1 ♀: Montezillon (NE), Switzerland, galls collected 20.vii. 1987, laboratory emergence; 7.viii. 1988. All paratypes with the



Figs. 1-4. *Inostemma mosellanae* spec. nov. 1, female; 2, head; 3, female antenna; 4, male antenna.

same host as holotype. All material leg. F. Affolter, CIBC, Delémont, Switzerland. 2 ♂ and 2 ♀ (paratypes) in coll. CIBC, Delémont, 1 ♂ and 1 ♀ (paratypes) in the collection of the Nationaal Natuurhistorisch Museum, Leiden, The Netherlands. Holotype, allotype and remainder of paratypes in the authors collection.

Description

Female (fig. 1): Head (fig. 2) entirely coriaceous; eyes bare; OOL:POL:LOL = 1 : 4 : 2; antennal toruli at inner border elevated and forming two tubercle-like structures; clypeus excavated; mandibles deeply incized. Antenna (fig. 3): Scape with fine longitudinal microsculpture, lower arc provided with a narrow brownish transparent lamella; pedicellus egg shaped; A3 and A4 slightly longer than broad; A5 and A6 very short; A7-A9 gradually broadened, forming a club together with A10.

Thorax: Notauli complete and broad; mesoscutum coriaceous, midlobe between notauli slightly striated apically; prescutellar suture crenulate; propleurae in upper half coriaceous, lower part smooth with some whitish setae in the lower corner; mesopleurae nearly smooth, with a longitudinal, arched impression, at both sides bordered by a deep pit; metapleurae with whitish setae; scutellum with crenulated furrows laterally. Horn on the first tergite slightly reaching over middle of the scutellum, striated in its basal half and crenulated in its apical half; second tergite dorsolateral with two deep transverse furrows basally, area between them smooth and laterally striated; this striation becoming faint apically; 3rd-6th tergite very finely microsculptured, laterally with finesetae. Wings hyaline, subcosta reaching to 1/3 of wing.

Colouration: Black, rather shiny species. Scape at extreme base brownish, rest of antenna black. Tibia of fore leg in its apical third brownish, tarsi yellowish brown, except last tarsal segment which is black. Middle tibia black, its apical third dark brown, tarsi as in fore leg. Hind femur entirely dark brown, tibia somewhat lighter and tarsi as in fore leg. Length of female 1.55 mm.

Male: Similar to female. Antenna (fig. 4): scape and pedicellus as in female; A3-A9 of equal width; A3 longer than broad, A4 at apex oblique. First tergite with strong longitudinal carinae. Colouration of legs much darker than in female. Length of male: 1.49 mm.

Measurements in mm (L = length, W = width, H = height): Female: W head: 0.43;

distance between eyes (dorsal): 0.25; POL: 0.153; LOL: 0.064; OOL: 0.036; L eye: 0.2; H eye: 0.21; L head: 0.237; H head: 0.362; W mesoscutum: 0.357; L mesoscutum: 0.31; W scutellum: 0.19; L horn from top to base at junction with T2: 0.277; W horn: 0.1; W T1: 0.23; L T1: 0.08; W T2: 0.373; L T2: 0.4; W T3: 0.36; L T3: 0.095; W T4: 0.3; L T4: 0.087; W T5: 0.232; L T5: 0.074; W T6: 0.16; L T6: 0.16.

Antenna: L scape: 0.254; W scape: 0.058; L A2: 0.063; W A2: 0.037; L A3: 0.05; W A3: 0.03; L A4: 0.048; W A4: 0.03; L A5: 0.027; W A5: 0.025; L A6: 0.025; W A6: 0.025; L A7: 0.045; W A7: 0.043; L A8: 0.05; W A8: 0.057; L A9: 0.05; W A9: 0.057; L A10: 0.065; W A10: 0.055.

Fore leg: femur: 0.19; tibia: 0.19; spur: 0.064; Tal: 0.105; Ta2: 0.035; Ta3: 0.024; Ta4: 0.024; Ta5: 0.05.

Middle leg: femur: 0.204; tibia: 0.3; Tal: 0.117; Ta2: 0.052; Ta3: 0.033; Ta4: 0.033; Ta5: 0.065.

Hind leg: femur: 0.253; tibia: 0.345; Tal: 0.2; Ta2: 0.068; Ta3: 0.05; Ta4: 0.04; Ta5: 0.075.

Male antenna: L scape: 0.27; W scape: 0.068; L A2: 0.074; W A2: 0.037; L A3: 0.061; W A3: 0.04; L A4: 0.064; W A4: 0.04; L A5: 0.04; W A5: 0.037; L A6: 0.065; W A6: 0.049; L A7: 0.058; W A7: 0.052; L A8: 0.055; W A8: 0.048; L A9: 0.06; W A9: 0.05; L A10: 0.093; W A10: 0.046.

Discussion

This species is closely related with two other described species with a short horn on the first tergite, *Inostemma brevicornu* Vikberg, 1965 and *Inostemma curtum* Szélnyi, 1938. It differs from *I. brevicornu* in the longer horn, and in the shorter female A3 and A4; differences can be found in the pattern of setae of the fore wing. It is separated from *I. curtum* in the colouration of the wings which are slightly fuscous in *I. curtum*. In *I. curtum* the horn on the first tergite is longer than in *I. mosellanae*.

Etymology

Inostemma mosellanae has been named after its host *Sitodiplosis mosellana*.

***Piostopleura laurae* spec. nov.**

(figs. 5-7)

Type material

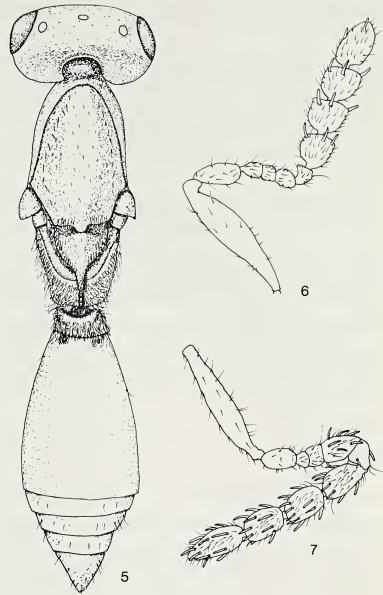
Holotype ♀: Büren-a-Aare (BE), Switzerland. Galls collected: 6.vii.1987. Lab. emergence. Host: *Contarinia tritici* (Kirby). Paratypes: 11 ♀ and 2 ♂ (including allotype) with the same dates as holotype; 7 ♀ and 4 ♂: Büren-a-Aare (BE), Switzerland, galls collected summer, 1986, lab. emergence; 1 ♀: Büren-a-Aare (BE), Switzerland, galls collected 3-vii. 1985; 1 ♂: Neunkirch, Switzerland, galls collected July-August, 1985. All paratypes reared from *Contarinia tritici* (Kirby). All material leg. F. Affolter, CIBC, Delémont, Switzerland. 2 ♂ and 2 ♀ (paratypes) in collection of CIBC, Delémont, 1 ♂ and 1 ♀ (paratypes) in the collection of the Nationaal Natuurhistorisch Museum, Leiden, The Netherlands. Holotype, allotype and remainder of paratypes in the authors collection.

Description

Female (fig. 5): Head entirely superficially coriaceous; vertex and occiput bent under an angle of 90°, without carina; area around anterior ocellus flattened; POL:LOL:OOL = 7 : 3 : 1; antenna (fig. 6) with a strong, four jointed club.

Mesoscutum faintly sculptured with moderately deeply implanted setae; notauli absent, posterior midlobe smooth and reaching scutellum; scutellum confluent with mesoscutum, smooth, laterally setose; spine short, slightly upcurved; propleurae in anterior half with very fine microsculpture, rest smooth, shiny; mesopleurae smooth shiny; metapleurae smooth, shiny, at their upper and lower margin with long pubescence; propodeum with long, fused keels, smooth antero-centrally, densely setose postero-laterally. First tergite smooth; second tergite anteriorly with a ring of pubescence, rest of tergite smooth; rest of tergites smooth, each with a central ring with fine microsculpture.

Colouration: Black species. Scape of antenna proximally brown, apically black; pedicellus proximally black and apically brownish; remainder of antenna black. Fore femur black, tibia reddish brown and tarsi yellowish brown; middle femur black, tibia proximally and apically brownish, tarsi yellowish red; hind femur and tibia black, tarsi yellowish red. Length of female: 1.1 mm.



Figs. 5-7. *Piostopleura laurae* spec. nov. 5, female; 6, female antenna; 7, male antenna.

Male: Similar to female, legs somewhat lighter. Antenna see fig. 7. Length of male: 0.9 mm.

Measurements in mm (L = length, W = width, H = height): Female: W head: 0.33; distance between eyes (dorsal): 0.22; POL: 0.153; LOL: 0.07; OOL: 0.023; L eye: 0.1; H eye: 0.165; L head: 0.19; H head: 0.027; W mesoscutum: 0.19; L mesoscutum: 0.333; W scutellum: 0.1; L scutellum 0.147; L spine: 0.02; L propodeal carinae: 0.069; H mesonotum: 0.208; L forewing: 1.0; W forewing: 0.344; L hindwing: 0.9; W hindwing: 0.144; W T1: 0.133; L T1: 0.05; W T2: 0.279; L T2: 0.362; W T3: 0.253; L T3: 0.048; W T4: 0.0221; L T4: 0.045; W T5: 0.0176; L T5: 0.047; W T6: 0.12; L T6: 0.1.

Antenna: L scape: 0.2; W scape: 0.42; L A2: 0.071; W A2: 0.031; L A3: 0.027; W A3: 0.017; L A4: 0.021; W A4: 0.017; L A5: 0.028; W A5: 0.02; L A6: 0.025; W A6: 0.024; L A7: 0.051; W A7: 0.043; L A8: 0.046; W A8: 0.05; L A9:

0.048; W A9: 0.048; L A10: 0.066; W A10: 0.043.

Fore leg: femur: 0.156; tibia: 0.17; spur: 0.059; Tal: 0.093; Ta2: 0.033; Ta3: 0.027; Ta4: 0.03; Ta5: 0.065.

Middle leg: femur: 0.168; tibia: 0.225; Tal: 0.105; Ta2: 0.034; Ta3: 0.034; Ta4: 0.032; Ta5: 0.052.

Hind leg: femur: 0.2; tibia: 0.3; Tal: 0.115; Ta2: 0.049; Ta3: 0.4; Ta4: 0.46; Ta5: 0.066.

Male antenna: L scape: 0.205; W scape: 0.05; L A2: 0.56; W A2: 0.037; L A3: 0.017; W A3: 0.027; L A4: 0.033; W A4: 0.039; L A5: 0.065; W A5: 0.045; L A6: 0.055; W A6: 0.041; L A7: 0.072; W A7: 0.053; L A8: 0.07; W A8: 0.05; L A9: 0.068; W A9: 0.046; L A10: 0.095; W A10: 0.042.

Discussion

Piastopleura laurae has been compared with the types of *P. mamertes* (Walker), *P. catilla* (Walker) and *P. seron* (Walker). It runs in the key on *Piastopleura* by Vlug (1985) to *P. seron*. It differs from that species in the shape of the mesoscutum, the spine of the scutellum and position of the ocelli. It differs from other known *Piastopleura* species in the sculpturing of the first tergite, different measurements of the mesoscutum, and the shape of the scutellum.

Etymology

This species is dedicated to my wife Laura.

Acknowledgements

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