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MICROSANIA, A GENUS OF THE PLATYPEZIDAE¹

BY A. L. MELANDER,
Pullman, Wash.

Microsania Zetterstedt, Isis, 1837, i. 30 [1837];
Ins. Lapp. 534, note [1838];
Dipt. Sc. i. 333 [1842];

Bigot, Ann. Soc. Ent. Fr. [6] ix. 123 [1889];

Melander, Williston's 3d. Man. 225 [1908];

Lundbeck, Dipt. Dan. Emp. iii. 18 [1910];

Wahlgren, Ent. Tidskr. xxxi. 43, 47 [1910]

Microcyrta Bigot.

Bigot, Ann. Soc. Ent. Fr. [3] v. 557, 564 [1857]; Coquillett, Proc.
Ent. Soc. Wash. v. 253 [1903];

Pachypeza Lioy, not Serville, Coleoptera, 1835; Lioy, Atti. Inst. Veneto
[3] ix. 723 [1863]; Coquillett, Proc. Ent. Soc. Wash. v. 255 [1903].

Platytelma Rondani.

Rondani, Dipt. Ital. Prodr. i. 138 [1856]; Coquillett, Proc. Ent.
Soc. Wash. v. 256, 261 [1903].

Small, hunchbacked species with open venation and inflexed hypopygium. Head rather globular, eyes bare, of the male entirely contiguous above the antennæ, the facets of the upper two-thirds large, of the female broadly separated, the facets uniform, the front of the female with one pair of vertical and two pairs of orbital bristles, the lower pair converging, and a pair of diverging supraantennal interfrontal bristles; face of the male deeply concave, its sides divergent below, of the female strongly convex below, almost nasiform; proboscis fleshy, short, not extending beyond the broad oral cavity, palpi very wide, disciform and appressed against the cheeks; occipital hairs sparse but stiff; antennæ short, basal joints small, the third joint orbicular, with a terminal tapering arista at whose base are two minute segments. Chaetotaxy of the thorax as follows: one humeral, two or more posthumeral, four to six notopleural

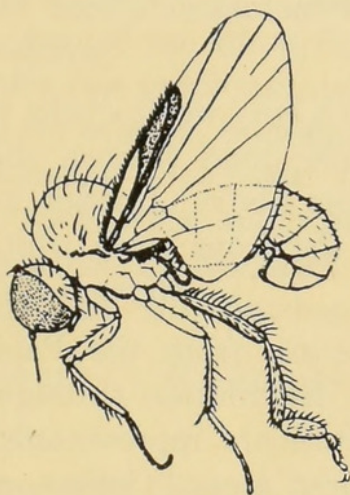
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arising as an oblique row, several supraalar, one postalar, four scutellar, about ten dorsocentral and a single median row of acrostichal bristles; pleuræ entirely bare. Abdomen cylindrical but curving downward in the male, the hairs of the male long, the eighth segment of the female retracted and blunt, the basal three ventral segments of the male inflated, the sixth and seventh segments forming a stout pedicel to the large globose inflexed hypopygium which bends forward under the abdomen. The hypopygium is bilaterally symmetrical and terminates in a pair of small bristly ovate valves and a subdorsal median prong. Legs rather short, the middle tibiæ with an apical flexor bristle, hind femora pectinate above, hind tibiæ somewhat compressed clavate, pectinate on the extensor edge, the posterior side tomentose like the swollen metatarsus. Wings very broad at the base, the anal angle very full and rectangular, costa abruptly thinned at the end of the first vein, two basal bristles present and also numerous costal setulæ but no hairs, auxiliary and first veins strong, the other veins very weak and almost straight and radiating, stigma very prominent and so sharply limited behind as to present an extra vein between the first and second veins, the second vein ending near the tip of the wing, anterior crossvein wanting, a terminal spur of the anterior fork of the fourth vein present, discal cell open, only a trace of the crossvein at the end of the minute second basal cell, anal cell short and apically acute, alula well developed and margined with long flattened scale-like hairs. Type species, *M. stigmatalis* Zetterstedt.

The genus *Microsania* includes very small, inconspicuous flies that are rarely observed by the general collector. Because of a superficial resemblance in the open venation to the species of *Bicellaria* (*Cyrtoma*) previous authors have been led to locate the genus in the Empididæ. A close inspection discloses that the resemblance gives way to far more significant differences, and that *Microsania* is not an empid but is closely related to *Platycnema* and *Opetia*, forming with them a group of the Platypezidæ characterized by an open discal cell and by the presence of a distinct humeral bristle. *Microsania* differs from *Platycnema* and *Opetia* in lacking the anterior crossvein and in

having a heavily thickened stigma formed about the shortened first vein.

Microsanía departs from all empid genera in possessing a large and inflexed hypopygium and a single median row of acrostichal hairs. The anal crossvein continues toward the hind margin of the wing forming a pointed anal cell and this important phyletic character thus suggests the Hybotinæ. *Micro-*



Microsanía pectipennis Meig.

Male x 20.

sanía differs from all the members of this subfamily in the interrupted setulose costa, open venation and short fleshy proboscis, and shows no evident relationship to this group.

The platypezid traits of *Microsanía* are as follows: The antennal excision of the eye is no stronger than in *Opetia*; strong interfrontal bristles are present; the arista has two basal joints; the proboscis is short and fleshy; the notopleural suture is very short and above it is a vertical row of notopleural bristles; posthumeral bristles are present; the middle tibiae have strong apical bristles; the hind tarsi are large, compressed and sericate within; the pedicel of the second and third veins is long, and a distinct alula is visible. Such differences as the large broad palpi, swollen clypeus of the female, more bristly thorax, rounder coxæ and pectinate hind legs, and short bristly costa and open neuration are no more empidine than platypezine.

Three species of *Microsanía* are known: *pallipes*, with light colored legs; *stigmatalis*, with minute costal setulæ; and *pecti-*

pennis, with longer costal setulæ. All three occur in Europe, the last two are here recorded also from America, where *stigmatalis* has been previously known under the name of *Platycnema imperfecta* Loew. The two American species are separable on the following characters:

First section of the costa with evident setulæ, second section with more than ten setulæ; hind femora pectinate above with long bristles, hind metatarsi setose above; bristles black; 2-2.25 mm. *pectipennis* Meigen.

First section of the costa with very weak setulæ, second section with less than ten setulæ; hind femora short-pectinate, hind metatarsi not setose above; bristles at least of the lower occiput and of the front coxæ whitish; 1-2 mm. *stigmatalis* Zetterstedt.

I have specimens of *pectipennis* from the Pacific slope, its range indicating a continuous distribution through to northern Europe. The following localities are represented: Yellowstone Park, Wyoming; Bovill, Coeur d'Alene, Collins, and Potlatch, Idaho; Olga, Pullman, Spokane, Tacoma and Woodland, Washington; Douglas, Alaska; and Eureka, California.

M. stigmatalis, as *P. imperfecta*, was described from the District of Columbia. There are no further records of its occurrence in America. I have specimens from the following widely separated localities, which have been compared with Dr. Loew's type of *imperfecta*, now located in the Agassiz Museum of Harvard University, and with European specimens of *stigmatalis*. Boston, Massachusetts; Cold Spring Harbor and Ithaca, New York; Philadelphia, Pennsylvania; Washington, D. C.; St. Augustine, Florida; Paris, Texas; Chicago, Illinois; Brookings, South Dakota; Lawrence, Kansas; Thompson, Montana; Coeur d'Alene and Potlatch, Idaho; Colfax, Friday Harbor, Index, Mount Rainier, Pullman and Quilcene, Washington; Nelson, British Columbia; and Panama.

Males of both species have been taken in a light trap at night. Most of the females were caught on windows in houses, a habit originally noted by Zetterstedt. On several occasions

the species have been found running about on a tent while in camp in the woods. Quite a few of the specimens are heavily parasitized by mites, of which several species are distinguishable, clustering on the underside of the abdomen.

Summary.

The genus *Microsanía*, hitherto assigned to the Empididæ, belongs to the Platypezidæ. There exist in America two species, identical with two of the three European species. One of these, *M. stigmatalis*, has previously been known from North America only through its original finding which was recorded under the name of *Platynema imperfecta*. The genus is widely distributed from Alaska to Florida and Central America and apparently from its prevalence in Northern Europe and the mountainous districts of Western America has a circumpolar range.

Bibliography of the Species of *Microsanía*.

pallipes Meigen.

C. Europe

Meigen, Syst. Bes. vi. 356 (1830) *Cyrtoma*

Macquart, Hist. Nat. Dipt. i. 360 (1834) *Cyrtoma*

Rondani, Dipt. Ital. Prodr. i. 138 (1856) *Platytelma*

Bigot, Ann. Soc. Ent. Fr. (3) v. 557 and 564 (1857)

Microcyrtia

Schiner, F. A. Dipt. i. 76 (1862) *Cyrtoma*

Lioy, Atti. Inst. Ven. (3) ix. 723 (1863) *Pachypeza*

pectipennis Meigen

C. and N. Europe; W. N. America

Meigen, Syst. Bes. vi. 356, pl. lxvi. f. 15, 16 (1830)

Cyrtoma

Zetterstedt, Dipt. Sc. i. 335 (1842) *pectinipennis*; viii.

3013 (1849) *pectinipes*

Wahlgren, Ent. Tidskr. xxxi. 47 (1910) *pectinipennis*

stigmatalis Zetterstedt N. Europe; and N. and Cent. America.

Zetterstedt, Lapp. 534 (1838) *Cyrtoma*

Dipt. Sc. i. 334 (1842); viii. 3013 (1849);

xiii. 4998 (1859);

Bonsdorff, Finl. tv. Ins. i. 157 (1861)

Lundbeck, Dipt. Dan. iii. 19, f. 3 (1910);

Wahlgren, Ent. Tidskr. xxxi. 47, f. 3 (1910);
Frey, Acta Fenn. xxxvii. (3) 8 (1913)

imperfecta Loew

Loew, Berl. Ent. Zts. ix. Cent. vi. 82 (1865) *Platycnema*
Aldrich, Cat. Dipt. 342 (1905) ? *Platycnema*.

NOTES ON THE BIOLOGY OF CERTAIN WASPS OF THE GENUS ANCISTROCERUS (EUMENIDÆ)¹

BY LELAND H. TAYLOR.

During the summer of 1921, while attempting to get some material for the study of the biology of the Chrysididæ, I was able to make some fragmentary observations on three species of Eumenidæ which I present here.

The biology of various species of Eumenids has received much attention from both European and American observers, whose work cannot be reviewed in this paper. Particular mention should be made of the observations of Fabre (1882, 1884, 1891), Ferton (1895, 1901-1921) and Roubaud (1916) among Europeans, and of the studies of such American workers as the Peckhams (1900, 1905), Hartman (1905), Hungerford and Williams (1912), Isley (1913) and the Raus (1918). With the exception of *Ancistrocerus capra* de Saussure, the species of Eumenidæ treated in this paper have not been studied, and it is hoped that these notes, if presenting nothing particularly new, will help to confirm previous observations on this highly interesting group.

The species which I have been permitted to observe are apparently those which are usually accustomed to nesting in suitable cracks and crevices of stone and wooden walls. Under ordinary circumstances, therefore, their workings are practically inaccessible, but by the use of artificial nesting places² it has

¹Contributions from the Entomological Laboratory of the Bussey Institution, Harvard University. No. 198.

²Both solitary wasps and bees have been induced by other investigators to nidificate in tubes of glass. See the papers of Fabre (1884) and Bordage (1912).



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