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A NEW GENUS AND SPECIES OF BIBIONID DIPTERA.

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In an extensive collection of Tipulidae from British Columbia sent to me for identification by Professor G. J. Spencer, there was included a single specimen of a fly that I must consider as representing an undefined genus and species. It is confidently expected that this particular insect will result in much discussion as to its true systematic position. The general appearance is much like *Pachyneura* but in the venation the accepted characters of the Anisopodidae and Bibionidae are curiously combined.

Genus *Cramptonomyia* novum.

Rostrum and labial palpi relatively small; maxillary palpi elongate, about one-half the length of the antennae. Antennae 16-segmented; scapal segments small, the first a trifle larger; flagellar segments cylindrical, gradually decreasing in length outwardly, the terminal segment about one-third longer than the penultimate, pointed at apex; flagellar segments with delicate erect setulae and scattered verticils that are shorter than the segments. Ocelli three, forming a close triangle. Halteres elongate. Legs with the tibiae about one-half longer than the femora; tibial spurs longer than the diameter of tibia at apex. Wings (Figures 1 and 2) with Sc_1 ending opposite *r-m*, Sc_2 far from its tip, being placed just beyond origin of *Rs*; three branches of *R* reach the margin; free portion of R_2 lacking, in some lights apparently represented by a faint line bisecting the stigma; basal section of R_4 appearing as a strong transverse element that simulates a cross-vein, placed just before the level of proximal end of stigma; media with four branches reaching the margin, the anterior fork very deep, the vein M_{1+2} forking at or just beyond *r-m*; basal section of M_3 long and gently sinuous; cell 1st M_2 closed; main stem of *M* faint and subevanescent except immediately before its fork; a single anal vein. Apical cells of wing with scattered macrotrichia.

Genotype.—*Cramptonomyia spenceri* n. sp. (Western Nearctic Region).

It is with very great pleasure that I dedicate this genus to Dr. G. Chester Crampton, in recognition of his work on the phylogeny

and morphology of the Diptera. In the above discussion I have omitted detailed mention of the mouthparts, thoracic sclerites and genitalia, all of which will be described and figured in subsequent papers by Dr. Crampton.

Cramptonomyia spenceri n. sp.

Female.—Length about 11 mm.; wing 10.2 mm.; antenna about 3.5 mm.

Front and the reduced rostrum yellowish gray; palpi black. Antennae black throughout. Head gray, more infuscated on the anterior vertex. Ocellar triangle dusky.

Pronotum gray. Anterior lateral pretergites restrictedly bright yellow. Mesonotum brownish gray, the median region of the praescutum more infuscated, scutellum dark brown, obscure yellow beneath; postnotal mediotergite gray. Pleura uniform gray, the dorso-pleural membrane more buffy. Halteres obscure yellow. Legs with the coxae yellow, sparsely gray pruinose; trochanters yellow; femora obscure yellow; tibiae dark brown; tarsi black. Wings (Figures 1 and 2) yellowish, the oval stigma dark brown; weak dusky suffusions in base of cell *Sc* immediately beyond *h*; on cord; and as vague seams along the veins of the Medial, Cubital and Anal fields; veins chiefly dark. Sparse macrotrichia in the stigmal darkening and outer ends of cells R_2 to M_1 inclusive. Venation as described under the generic diagnosis.

Abdomen elongate; tergites bicolorous, their bases dark brown, the apices obscure yellow; sternites more uniformly obscure yellow; outer segments more uniformly darkened, the cerci blackish gray.

Habitat: British Columbia. *Holotype*: ♀, Vancouver, March 30, 1930 (*G. J. Spencer*). Type returned to Professor Spencer.

I take great pleasure in naming this species in honor of Professor G. J. Spencer, who collected the unique type.

As stated in the introductory paragraph, the present insect presents some very puzzling venational characters. The affinities of the fly would seem unquestionably to lie with *Plecia* Wiedemann (1828), *Pachyneura* Zetterstedt (1838) and *Hesperinus* Walker (1848). These three genera, and especially the two last, have caused much trouble in the past when the necessity arose to place them within definite families. The various positions assigned these genera are as follows:

Kertész (Cat. Dipteroorum, 1; 1902) recognized a subfamily Pachyneurinae in the Bibionidae to include *Pachyneura* and *Hesperinus*, *Plecia* being retained in the subfamily Bibioninae. Williston (Man. N. Amer. Dipt., Ed. 3: 142-143; 1908) recognized in the Bibionidae the subfamily Pachyneurinae, referring to it *Hesperinus* and *Hesperodes* Coquillett (Ent. News, 11: 429; 1900), as well as the Palaearctic *Pachyneura*. Johannsen (Maine Agr. Expt. Sta., Bull. 172: 216; 1909) considered the Pachyneurinae as being Mycetophilidae, correctly placed *Hesperodes* as a Ceroplatine Mycetophilid, and referred *Hesperinus* tentatively to the Boletophiline Mycetophilidae, though noting its resemblance to *Plecia* and definitely stating that it should be placed with the Bibionidae. Crampton (Ann. Ent. Soc. Amer., 18: 49-74; 1925), in a notable study of the thoracic sclerites of Nematocerous Diptera, indicates the close relationships existing between *Plecia* and *Hesperinus*. Edwards (Diptera, Fam. Protorhyphidae, Anisopodidae, Pachyneuridae, Trichoceridae. Genera Insectorum, Fasc. 190: 1-41, 2 pls.; 1928), following Handlirsch, has recognized the Pachyneuridae as a family and refers to it not only *Pachyneura* but also *Axymyia* McAtee (Proc. Ent. Soc. Washington, 23: 49; 1921). Edwards retains *Plecia* and *Hesperinus* in the Bibionidae. In his opinion, *Pachyneura* has more features in common with the Anisopodidae than with either the Bibionidae or the Mycetophilidae.

I am not fully convinced of the justification for placing *Pachyneura* in a family distinct from *Plecia* and *Hesperinus*. The discovery of the fly above described as new would tend to support this view. In the venation of the medial field, *Cramptonomyia* seems closer to the Anisopodidae, but the course of the branches of the radial sector is almost exactly as in *Pachyneura*, showing no tendency of the anterior branch to swing cephalad and finally to become fused apically with R_{1+2} , as is the case in the Anisopodidae. Likewise the downward curvature of the distal section of Cu_1 is a character of the Pachyneurine flies. The profound fork of M_{1+2} , together with the strong free basal section of vein R_4 , gives the genus *Cramptonomyia* a very distinctive appearance. A comparison of this fly with *Pachyneura*, especially in the light of the interpretation of the modification of the radial field of the Diptera as proposed by the writer (IV. Internat. Congress Ent., 2: 700-707, pl. 3, fig. 6; 1929) makes it seem possible that the element there held to be R_3 is really the free portion of R_2 before

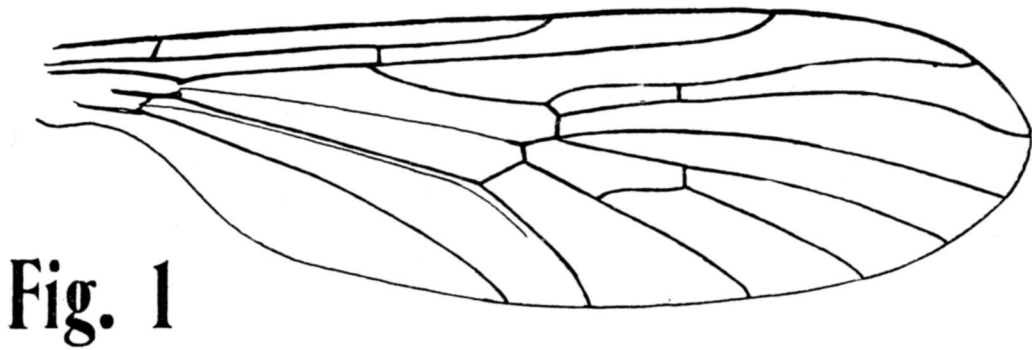


Fig. 1

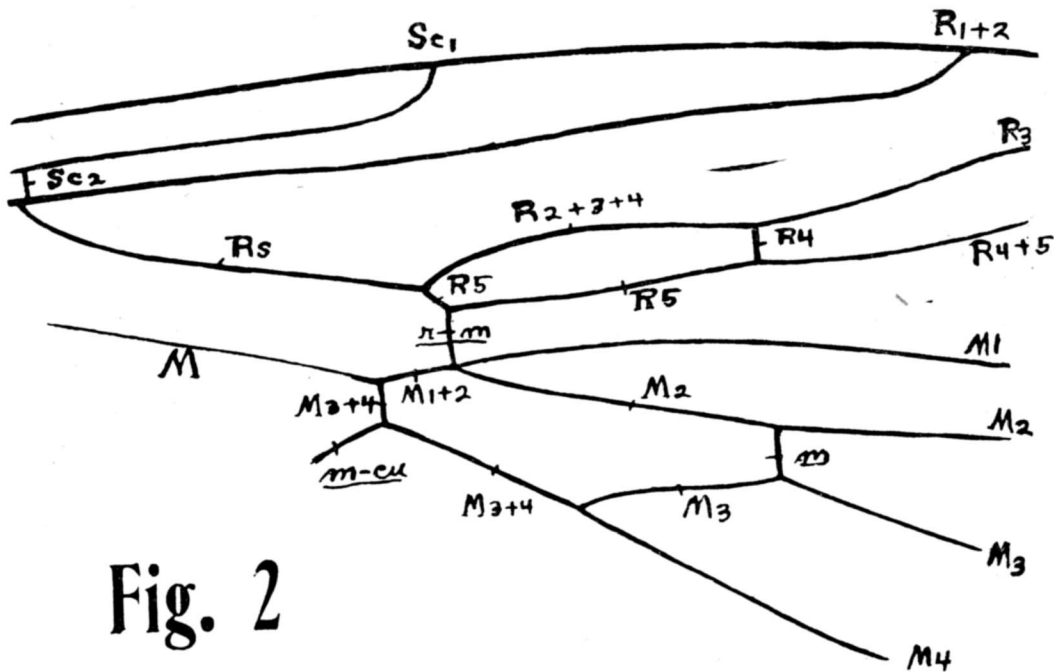


Fig. 2

EXPLANATION OF FIGURES.

Fig. 1. Wing-venation of *Cramptonomyia spenceri*, gen. et. sp. n.

Fig. 2. The same; details of radial and medial fields.

its apical fusion with R_1 and that the two main branches of the radial sector in *Pachyneura* should be interpreted as is done in the present paper for *Cramptonomyia*. Until more evidence is forthcoming, I am inclined to place the new genus in the near vicinity of *Pachyneura* but must also consider that *Plecia* and *Hesperinus* fall in the same general group.

The four genera may be separated as follows:

- I. Antennae with 16-18 segments 2
- Antennae with from 8 to 12 segments 3

2. Four branches of *R* and three of *M* reach the wing-margin.
Pachyneura Zetterstedt
Three branches of *R* and four of *M* reach the wing-margin.
Cramptonomyia nov.
3. Antennae with only 8 or 9 segments.....*Plecia* Wiedemann
Antennae with 12 segments.....*Hesperinus* Walker

The fly described by Garrett (Sixty-one New Diptera, privately printed, pp. 11-12; 1925) as *Hesperinus flagellaria*, likewise from British Columbia, seems undoubtedly to be correctly placed in *Hesperinus*.