

VI. THE GENUS FIDENA WALKER.

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Genus *Fidena* Walker, 1850

Genotype *Pangonia leucopogon* Wied. 1828

The generic synonymy of the species belonging to the old genus *Pangonia* is highly involved, and the various names proposed for segregates from it have been for the most part based on rather trivial characters. A short bibliography will be found at the end of this paper listing most of the papers dealing with the problem. Lutz' treatment of the Brazilian species is in some ways the most satisfactory, and his groupings apply fairly well to the Panama species. The eventual solution may well consist in the use of some of his names in a subgeneric sense. Thus of the species here treated, *pyrausta*, *gracilis*, and *rhizophora* could be placed in *Epipsila*, *schildi* in *Neopangonia*, and the rest in *Fidena* s. s. (*Erephopsis* Lutz, nec Rondani). However, it seems unwise to make wholesale changes with a very limited fauna as a basis, and for the present all the Panama species will be considered as belonging to *Fidena*.

In Panama the species are rare and local, and with the exception of *F. isthmiae*, confined to areas of heavy forest, mostly at higher elevations.

KEY TO FEMALES OF FIDENA

1. Legs entirely dark, at most the fore tibiae and tarsi somewhat brownish. 2
 Legs bicolored, the tibiae and tarsi very much lighter than the femora and coxae. Basal part of wing to the apex of basal cells darkened. 4
2. Beard white. Apices of basal cells very slightly darker than rest of wing. Thorax and abdomen dark brown in ground color, scutellum reddish. 2nd to last abdominal tergites and sternites with golden or orange red hairs. Clypeus with stiff hairs or bristles. **howardi**
 Beard brown or black. 3
3. Large species, generally over 18 mm. long. Face much produced, snout-like, black. Antennae blackish. Wings yellowish fumose, the apices of the basal cells not darkened. Abdomen dark brown to black, the sides of the second, fifth and sixth tergites with tufts of white hairs. Clypeus with stiff hairs or bristles. **isthmiae**
 Small species, less than 15 mm. long. Face rather short, yellow. Antennae yellow. Wings but lightly greyish fumose, the apices of the basal cells darker. Abdomen black. The second tergite with tufts of white hairs

- laterally, and the last three tergites with sparse but complete white posterior bands. All sternites narrowly white margined. Clypeus without stiff hairs. *schildi*
4. Beard white. Sides of mesonotum with a fine line of white hairs from shoulder to scutellum. Abdomen black, the second to fourth tergites with small white mid-dorsal triangles, the second, fifth and sixth with white tufts on the posterior lateral angles. *gracilis*
5. Beard dark, brown to black. 5
5. Abdomen black, or very dark brown. 6
- Abdomen reddish, entirely golden yellow haired. *fulvosericæ*
6. Sides of second tergite with white hairs, fifth, sixth and seventh tergites wholly golden yellow or rufous orange haired. Sternites 2, 3 and 4 with white sublateral tufts, 5 to 7 yellow or orange haired. *pyrausta*
- Sides of second tergite with white hairs, and second, third and fourth tergites with small mid-dorsal tufts of white hairs, 2nd sternite with white hairs laterally, otherwise abdomen all dark haired, or with the terminal segments orange rufous haired. *rhinophora*

Fidena howardi n. sp.

(Figs 5, 5a, 5b)

Female—Length 16.20 mm., of wing, 14–18 mm.

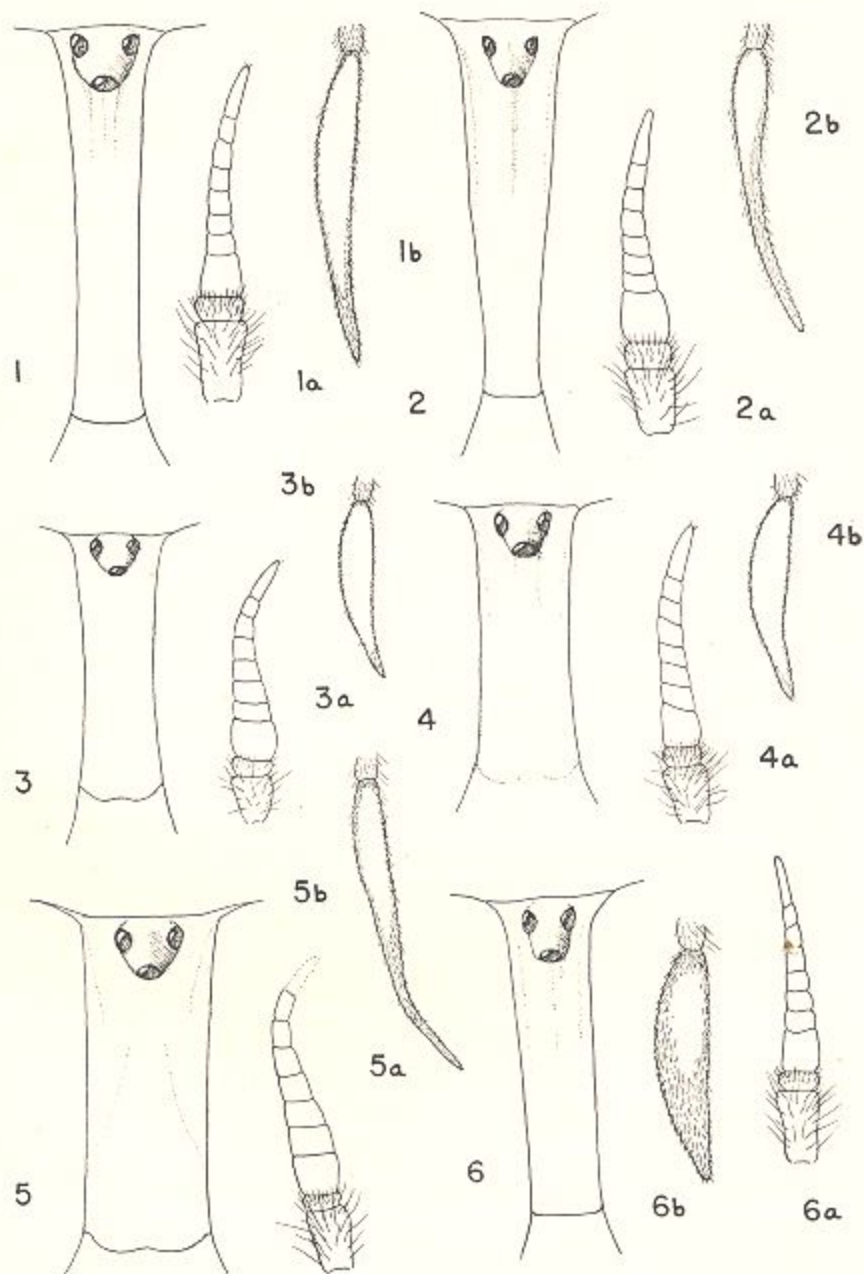
Frons a little less than three times as high as wide, narrower in the middle, dark gray pollinose. Ocelli large, yellow. Face produced, snout-like, grey pollinose dorsally, black and shiny on the sides and beneath. Clypeus with stout hairs. Antennae blackish, the third segment slender. Palpi of two subequal segments, the terminal very slender, as long as antennae, dark brown, black haired. Proboscis very long, longer than head and thorax, black, shiny, the labium obscurely annulate, the labellae small, about one-nineteenth of total length. Beard snow white.

Thorax dark brown, brown pollinose and black haired. Pleura and coxae black haired, except a tuft of white hairs before the wing bases, and a few white hairs mixed with the black just above the wing insertion. Scutellum reddish. Wings brownish yellow fumose, first posterior cell closed and short petiolate in three specimens, narrowly open in the fourth. Upper branch of third vein forming a sharp angle at base, but no appendix.

Legs entirely black, black haired, except ventral surface of fore tarsi, and to a less extent, fore tibiae, which are clothed with short bright rufous pile. Abdomen dark brown, the posterior margins somewhat lighter, clothed with black hair. From the second segment on, the tergites and sternites are clothed with an increasing amount of golden yellow or orange red hair, so that the terminal two or three segments are wholly of this color. The material is not in the best state of preservation, being rather rubbed, but this appears to have been the original condition. Three of the specimens have yellow hair, one orange red hair.

Holotype ♀ and 3 ♀ Paratypes, Cerro Horqueta, 6,000 ft., Boquete, Chiriqui Prov., Panama. June, 1940 (T. T. Howard coll.).

This species seems closest to *Fidena bicolor* Kröb. from Costa Rica, but that species differs in having a paler abdomen and black beard.



Figs. 1, 1a, 1b. *Fidena isthmiae* sp. nov. Holotype. Figs. 2, 2a, 2b. *Fidena auripes* Ricardo. Figs. 3, 3a, 3b. *Fidena gracilis* Kröber. Figs. 4, 4a, 4b. *Fidena pyrausta* (Osten Sacken). Figs. 5, 5a, 5b. *Fidena howardi* sp. nov. Holotype. Figs. 6, 6a, 6b. *Fidena isthmiae* var.

Figures are of frons, antenna and palpus of female specimens, and are all drawn to the same scale.

Fidena isthmiae n. sp.

(Figs. 1, 1a, 1b)

Female—Length 20–23 mm., of wing, 20–21 mm.

Frons narrow, about five to five and one-half times as high as basal width, broadest at vertex, clothed with brownish pollen and with a more or less well marked median ridge in the upper half. Face much produced, snout-like, equalling or exceeding the apex of the antennae, covered with greyish pollen, except the clypeus which is shiny and with numerous short bristles. Antennae slender, brown, the first joint about twice as long as wide, the third joint evenly tapering from base to apex. Palpi with the two joints subequal, the terminal joint long, about equal to antennae, widest on basal half, thence narrowing to a fine point, dark brown, black haired. Proboscis black at base, yellow at apex, about as long as head and thorax together. Labellae slender, yellow, shiny, about one-eighth length of proboscis. Beard dark brown to black, occasionally with a few grey hairs.

Thorax dark chocolate brown, the scutellum lighter, clothed with brownish pollen and sparse black hairs. Pleura and coxae dark brown, black haired. In three specimens there is a prominent tuft of white hairs before the wing bases, and a less noticeable tuft behind the wing insertion. In another specimen, only the post-alar tuft is white, while in the remaining specimen both tufts are dark. Legs dark brown to black, black haired, the fore tarsi with prominent golden red pubescence beneath. Wings dusky, yellowish in the discal area. First posterior cell closed and petiolate in all specimens; no appendix on third vein.

Abdomen very dark brown to black, highly polished and with sparse black hairs. The posterior corners of tergites 2, 5, and 6 bear prominent tufts of silvery white hairs in four of the specimens. In the other specimen (Boquete), which is somewhat worn, these tufts are barely visible and the palpi are shorter and stouter. Beneath, the sternites are like the tergites, with the white hair tufts, when well developed, carried over, and in one specimen there is a sparse transverse posterior band of white hairs on the second tergite.

Holotype ♀, Canal Zone Forest Reserve, Oct. 23, 1939; 2 ♀ Paratypes, El Real, Darien, Aug. 15, 1930 (L. H. Dunn coll.) (det. as *Sackenimyia venosa* by Kröber); 1 ♀, no locality, but undoubtedly from Panama; 1 ♀, Cerro Horqueta, 6,000 ft., Boquete, Chiriqui Prov., Panama, June, 1940. In addition I have seen 1 ♀, upper Pequeni River, March 31, 1909 (Jennings coll.); 1 ♀ Old Panama, Sept., 1936 (Komp coll., feeding on *Boa* sp. in Old Panama Zoo); 1 ♂, Cano Saddle, Gatun, C. Z., July, 1923 (Close coll.); and 1 ♀, Barro Colorado Is., C. Z., June 14, 1939 (Zetek coll.) which agree with the present species, though unfortunately they are not before me, but in the U. S. Nat. Mus. Another specimen in the same institution from

Ecuador lacks the white prealar spots and has somewhat more slender palpi, but may well be the same species. In the Hine Collection, at Columbus, Ohio, there is a lot of 5 ♀ and 1 ♂ from Cano Saddle, C. Z., June and July (Shannon coll.) and 7 other females from Mexico, Costa Rica, British Guiana, Panama (Bohio, C. Z.) and Brasil (S. Paulo). Of these, the Panama and Costa Rican specimens are probably the present species, the others in most cases are quite distinct. All are labelled *Erephopsis niger* Ric. The ♂ is like the females in coloration, but holoptic, and the eye facets all of one size. A final female specimen before me (Figs. 6, 6a, 6b) differs a good deal, in that the palpi are much shorter and blunter, the thorax lacks any trace of white, as does the 2nd tergite, while the hairs on the 5th and 6th tergites are straw colored rather than white. I believe it to be but a local variant of the present species, but the differences are such that I have excluded it from the type series. The specimen is from Vic. Compostela, Nayarit, Mexico, July, 1934. The Paratype from Boquete approaches this last specimen, and in some respects forms a connecting link between it and the other types.

It is with some hesitation that this species is described as new in the face of Kröber's and Hine's determinations, but it differs from the descriptions of *Sackenimyia venosa* (Wied.) and *Erephopsis niger* Ric. in several respects. Wiedemann's original description (Auss. Zweifl. Insekt., I, p. 87, 1828) is not sufficiently detailed to tell much, but the wing veins are said to be brown margined, which is not the case in my specimens. Kröber's redescription is also rather brief, but it and the figures, in part at least taken from the types, show a more blunt palpus and broader frons, while the yellow haired abdomen is very different. Lutz' description and figure (1909, Zool. Jahrb., X, 4, p. 631, Pl. I, fig. 4) is also different. Ricardo's species has much more white hair, the beard and sides of thorax being extensively white. I have a male and female from Bartica, British Guiana (Figs. 2, 2a, 2b), which I believe are her species. It seems probable that *auripes* Ric. is but the female of *niger* Ric.

In addition I have examined the descriptions of *penicillata* Bigot 1892 and *castanea* Surc. 1921, but they do not seem to agree with the present species. *P. laterina* Rond, 1850 (Central America) I do not know, but it may have been this species.

Fidena schildi (Hine)

Erephopsis schildi Hine 1925, Occ. Pap. Mus. Zool. Univ. Michigan, No. 162, pp. 11-12 (♀; La Suiza de Turrialba, Costa Rica).

Fidena schildi Kröber, 1933, Arch. Naturgeschichte (N. S.) II, 2, p. 260; 1934, Rev. Ent., IV, 2, p. 250.

A Topotype (Turrialba, Costa Rica, Aug. 5, 1927. W. J. Hamilton) in my possession has been compared with the types in Columbus, Ohio. The first posterior cell is open in both wings of my specimen, closed in one, open in the other wing in the Paratype, and closed in both wings in the Holotype. The species is so far known only from Costa Rica, but may well occur also in the mountains of western Panama. The figures given for *gracilis* will serve equally well for the present species.

Fidena gracilis Kröber

(Figs. 3, 3a, 3b)

Melpia gracilis Kröber, 1930, Mitt. Zool. Mus. Hamburg, XLIV, p. 181 (♂, ♀; Brasil; Colombia, Chiriqui).

Fidena gracilis Kröber, 1934, Rev. Ent., IV, 3, p. 247.

Kröber does not state which of his specimens came from which localities, and his statement that his males have dark beards, while that of the female is snow white, arouses the suspicion that more than one species is included. A female specimen before me from Restrepo, Dept. Meta, Colombia, 500 meters, (J. Bequaert coll.) agrees well with his description of the female. I have included the species on the basis of Kröber's Chiriqui citation.

Fidena pyrausta (Osten Sacken)

(Figs. 4, 4a, 4b)

Pangonia pyrausta Osten Sacken, 1886, Biol. Cent. Amer., Dipt. I, pp. 43-44 (♀; Volcan de Chiriqui, Panama). Williston, 1901, Op. Cit., Suppl., p. 253 (Mexico, Tepic, Mazatlan); 1894, Kansas Univ. Quart., III, p. 189 (Mexico).

Diatomineura pyrausta, Surcouf, 1921, Gen. Insect., p. 131, Ricardo, 1900, Ann. Mag. Nat. Hist., (7) V, p. 172.

Melpia pyrausta Enderlein, 1925, Mitt. Zool. Mus. Berlin, XI, 2, p. 275. Kröber, 1930, Mitt. Zool. Mus. Hamburg, 44, p. 178 (Peru, Ecuador, Colombia).

Fidena pyrausta Kröber, 1934, Rev. Ent., IV, 2, p. 250.

Malpia auricauda Enderlein, Mitt. Zool. Mus. Berlin, XI, 2, p. 276 (♀; Colombia, Venezuela). Kröber, 1930, Mitt. Zool. Mus. Hamburg, 44, p. 179, fig. 128.

Fidena auricauda Kröber, 1934, Rev. Ent., IV, 2, p. 246.

Osten Sacken's description fits the present species perfectly. Of my two Panama specimens, both taken on the same day at the same place, one has the fifth to last abdominal tergites clothed with orange red hair, the other has these tergites clothed with pale straw colored hair. In both the first posterior cell is open. A specimen from Aragua, Venezuela, differs from

mine only in having the first posterior cell closed. I do not see how Enderlein's species can be separated from *pyrausta*. The characters he uses are quite variable.

Distribution: Mexico (Williston), Panama to Peru (Kröber).

Panama records: 3 ♀, Volcan de Chiriqui (Osten Sacken), 2 ♀, El Valle, Coclé Province, May 21, 1939.

Fidena rhinophora (Bellardi)

Pangonia rhinophora Bellardi, 1859, Ditt. Mess., I, p. 46, Pl. 2, fig. 1 (♀; Mexico).

Osten Sacken, 1886, Biol. Cent. Amer., Dipt., I, p. 44; 1887, Cat. N. Amer. Dipt., p. 52. Kertész, 1900, Cat. Taban., p. 23. Williston, 1901, Biol. Cent. Amer., Dipt., I, Suppl. p. 251.

Diatomineura rhinophora Ricardo, 1900, Ann. Mag. Nat. Hist., (7) 5, p. 169. Surcouf, 1921, Gen. Insect., p. 131.

Erephopsis rhinophora Hine, 1925, Occ. Pap. Mus. Zool., Univ. Michigan, No. 162, p. 10.

Melpia rhinophora Enderlein, 1925, Mitt. Zool. Mus. Berlin, XI, 2, p. 275. Kröber, 1930, Mitt. Mus. Hamburg, 44, pp. 179-180 (Orizaba, Mexico; Bolivia).

Fidena rhinophora Kröber, 1934, Rev. Ent., IV, 2, p. 250 (Mexico).

A specimen from Osten Sacken's collection, identified by him, is before me. It agrees perfectly with Bellardi's description except that the terminal segments of the abdomen are dark brown haired, rather than "vivissime rufo-croceo," a fact noted by Osten Sacken on the label. I believe, however, that not too much weight should be attached to the color of these hairs, as they seem to vary considerably, as noted under *pyrausta*. The specimen is labelled merely "Mex." It is doubtful if this species occurs in Panama, or that Kröber's Bolivian record refers to this species, but as it has been confused with *pyrausta*, I have included it for the sake of completeness. The frons, palpi and antennae are practically indistinguishable from those of *pyrausta*.

Fidena fulvosericæ Kröber

1931, Zool. Anz., 95, pp. 26-27, fig. 11 (♀; Darien, Colombia); 1934, Rev. Ent., IV, 2, p. 247.

I have seen no specimens of this species, but it should be recognizable on account of the wholly golden haired abdomen and black beard. Kröber's specimen was probably collected prior to the separation of Panama from Colombia.

Distribution: Known only from the type locality.

Panama records: Darien (Kröber).

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