

STUDIES ON INDIAN ITONIDIDAE (CECIDOMYIDAE : DIPTERA)¹.

IV.—EIGHT NEW MIDGES.

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The new species of midges described in this paper were mostly caught by Mons. Vitale Menasché's Entoray machine, which was recently tried in Calcutta. The catches contain several well known genera not previously recorded from India. I have also included the descriptions of two other species, one found swarming in the laboratories of the Imperial Agricultural Research Institute, New Delhi, and the other bred from the univalve galls of *Eagle marmelos*.

Lestremia calcuttaensis, sp. nov.

Female.—Length 1.75 mm. Orange. Palpus moderately setose; not counting the palpiger segments four; first segment rather stout, of a length about twice its diameter; second segment nearly equal in length to the first but more slender; third and fourth segments more slender, probably equal to each other and about twice the length of the second segment, differing in these respects from *L. indica* Kieff.² in which fourth palpal segment is twice the length of third. Length of terminal antennal segment about four times its diameter, with a more or less distinct constriction at basal fourth. Mesonotum dark brown. Anterior metatarsus about as long as the next three tarsal segments combined. Posterior tibia one and one fourth times the combined length of the first two tarsal segments. Claws simple, slender, slightly curved. Empodium very short. Terminal lamellae of ovipositor subquadrate, broadly rounded apically, length about one and one fourth the breadth, densely setose.

Holotype.—One female dissected on a slide in the collections of the Zoological Survey of India, Indian Museum, Calcutta, No. 1311/H6. Trapped by 'Entoray', Portland Park, Calcutta, 13-vii-1936.

This new species differs from the two other Indian species *L. indica* Kieff. and *L. ceylonica* Kieff.³ mainly in the length of palpal segments, short, subquadrate terminal lamellae of ovipositor and much longer terminal antennal segment.

Micromyia indica, sp. nov.

Male.—Length about 1.5 mm. Palpus triarticulate; first segment much stouter and shorter than the rest, its thickness nearly equal to length; second more slender, twice the length of first, stouter apically

¹ Part III of this series was published in *Rec. Ind. Mus.*, XXXVIII, pp. 193-197, (1936).

² Kieffer, *Rec. Ind. Mus.*, III, p. 29, (1909).

³ Kieffer, *Spol. Zeyl.*, VIII, p. 29, (1912).

than basally; terminal segment nearly one and one third times the first, subfusiform and somewhat stout apically. Antennae somewhat less than one fifth the length of body, reduced apically; segments 10; third and fourth segments globose; fifth pyriform; sixth, seventh and eighth subcylindrical and with a distinct stem, about half the enlargement; ninth and tenth segments fused together. Mesonotum dark brownish to black. Scutellum brown, post scutellum lighter. Abdomen grey above and paler below and at the sides. Claws slender, long, sickle-shaped. Basal clasp segment of genitalia stout, short. Terminal clasp segment subfusiform, about one third the basal segment, apically armed with a short, slightly curved, sharp spine. Dorsal plate somewhat longer than basal clasp segment, apically bilobed and emarginate.

Holotype.—One male dissected on a slide No. 1312/H6.

Paratypes.—Several examples in spirit No. 1323/H6. Genitalia of one example is mounted on a slide.

Holotype in the collections of the Zoological Survey of India, Indian Museum, Calcutta and paratypes in the collections of the Zoological Survey and the Imperial Agricultural Research Institute, New Delhi.

Received from the Imperial Entomologist, New Delhi, with the label: 'Found swarming in laboratory compound, Coll. H. L. Bhatia, 28-ii-1937, I. A. R. I., New Delhi.'

***Neolasioptera variipalpis*, sp. nov.**

Female.—Length of body varies between 1-2 mm. Bright reddish brown in colour. Palpus densely scaled, quadriarticulate; first segment short; second about twice longer and somewhat stouter; third more slender, either equal to or one and a half times the second, intermediate proportions are met with in a larger series of individuals; fourth either about twice the third or almost equal to (sometimes slightly longer than) the third; usually, however, the third and fourth are nearly equal and each about one and a half times the second. Occasionally the second, third and fourth are all equal. Antenna about half the length of body, segments 19, moderately hairy; fifth segment about three fourths the fourth, which latter is equal to third; terminal segment subglobose and slightly longer than the penultimate segment. Mesonotum dark reddish brown. Scutellum lighter than mesonotum. Wings about two and a half times as long as broad; third vein reaching costa at about basal two thirds. Claws long, slender, unidentate; tooth long, evenly curved; empodium much shorter than claws. Abdomen reddish brown. Ovipositor longer than body.

Holotype.—One female in spirit in the collections of the Zoological Survey of India, Indian Museum, Calcutta, No. 1313/H6.

Paratypes.—Several examples mounted in canada balsam in the collections of the Zoological Survey of India, Indian Museum, Calcutta, Nos. 1314-H/6.

Trapped by 'Entoray', Portland Park, Sahapur Yard, Gun Foundry, Cossipur and Sonarpur, Calcutta, 19-vi-1931 to July 1936.

This species resembles *N. crataevae* Mani¹ in colour of body, in the absence of scaly spots and markings on abdomen and costa, but differs in the fewer antennal segments and more slender claws. From *N. cephalandrae* Mani², which it resembles in the number of palpal segments, it is readily distinguished by the unspotted abdomen and wings, fewer antennal segments and relatively longer third vein, which unites with costa well beyond the basal half of wing. There is a considerable variation in the relative proportions of the third and fourth palpal segments, size of body and wings.

***Asphondylia menaschéi*, sp. nov.³**

Male.—Length about 2 mm. Reddish brown, Palpi triarticulate ; first segment short, subquadrate ; second segment of a length about two and a half times its diameter ; third segment twice the second, with moderately dense, long and slender setae. Antennae reddish brown ; third segment of a length about four to five times its diameter ; fourth segment somewhat longer than third ; fifth segment of a length about three and a half times its diameter. Mesonotum dark reddish brown. Genitalia moderately setose, dark brown ; basal clasp segment stout ; apical clasp segment very short, basally swollen very much and bidentate apically ; the teeth short, black and greatly diverging. Claws as long as empodium.

Female.—Length about 2.5 mm. Reddish brown. Palpi triarticulate ; first segment short, stout ; second segment longer, somewhat stouter apically than basally, with long straight, stiff setae ; third segment about twice the length of second, more slender, also with long stiff setae. Fifth segment of antennae of a length about five times its diameter and also about five sixths that of fourth. Mesonotum dark brown. Dorsal basal pouches of ovipositor moderately large. Claws as long as empodium.

Holotype.—One male dissected on a slide No. 1315/H6.

Allotype.—One female dissected on a slide No. 1316/H6.

Paratype.—One male dissected on a slide No. 1317/H6. In the collections of the Zoological Survey of India, Indian Museum, Calcutta. Trapped by 'Entoray', Portland Park, Calcutta, 13—17-vii-1936.

This species runs with *A. pongamiae* Felt in my key⁴ to the Indian species of *Asphondylia*, agreeing with it in the terminal clasp segment of male genitalia but differing in the following characters: second palpal segment of a length slightly greater than twice its diameter ; third palpal segment just twice the second, without stout but slender, moderately dense setae ; fifth antennal segment of a length about four and half times its diameter.

¹ Mani, *Rec. Ind. Mus.*, XXXVI, p. 399, (1934).

² Mani, *Ibid.*, p. 397.

³ I have great pleasure in associating with this species the name of Mons. Vitale Menasché, the inventor of the Entoray, which trapped many gall midges.

⁴ Mani, *Rec. Ind. Mus.*, XXXVI, pp. 408-409, (1934).

Hormomyia calcuttaensis, sp. nov.

Female.—Length 2.5 mm. Reddish brown. Palpi short, segments (including palpiger) three, the terminal segment somewhat longer than the rest and broadly rounded apically, the other segments are equal. Antennae about half the length of body; segments 14; third segment with a subcylindrical enlargement having a length about six times its diameter, stem about one sixth the length of the enlargement; fifth segment with a stem about four fifths the length of the segment, the enlargement of a length about four times its diameter; terminal segment sharply constricted in its apical third, forming a small oval part about half the length of the rest of the segment. Circumfili in two irregular whorls, the basal whorl is usually more irregular than the apical. Mesonotum dark reddish brown. Halteres long, the club much longer than the pedicel. Legs dark reddish brown. Claws simple, long, moderately stout, about three fourths the length of empodium. Abdomen reddish brown. Ovipositor long, terminal lamellae of a length about two and a half times its breadth, narrowly rounded apically.

Holotype.—One female dissected on a slide No. 1318/H6.

Paratypes.—Three females dissected on slides Nos. 1319/H6. One claw of one of the paratypes is abnormal, being forked to a short length.

In the collections of the Zoological Survey of India, Indian Museum, Calcutta. Trapped by 'Entoray', Portland Park, Calcutta, 4—9-vii-1936.

This species differs from the two other Indian species, *H. ischaemi* Felt¹ and *H. subaptera* Felt² in the antennal segments of female having only two instead of three whorls of circumfili, agreeing, however, in the number of antennal segments. The species is also further distinguished from *H. subaptera* by the wings being long and narrow as is usual in the genus *Hormomyia*.

Trishormomyia indica, sp. nov.

Female.—4 mm. long. Reddish. Palpi triarticulate (including the palpiger); second segment nearly equal to the basal but more slender; third segment slender and about twice the second. Antennae reddish brown; segments 15 (?); third segment distinctly constricted a little below the basal half, with a stem about one-fifth the subcylindrical enlargement, circumfili in two whorls; fourth segment about three fourths the length of third, its stem equal to that of third; fifth segment equal to fourth, with apparently only two whorls of circumfili, the basal whorl situated between the basal one fourth to basal half and the apical whorl near the tip of enlargement; sixth segment somewhat shorter than the fifth, its stem equal to that of the fifth. Mesonotum dark reddish brown. Scutellum lighter than mesonotum. Legs dark reddish brown. Claws stout, evenly curved, simple, somewhat shorter than or equal to the narrow, long empodium. Abdomen long,

¹ Felt, *Pusa Bull.*, No. 89, p. 46, (1920).

² Felt, *Mem. Dept. Agri. Ind. Ent. Ser.*, IX, p. 224, (1926).

deep reddish orange. Ovipositor long, terminal lobes moderately broad, short and oval.

Holotype.—One female dissected on a slide in the collections of the Zoological Survey of India, Indian Museum, Calcutta, No. 1320/H6. Trapped by 'Entoray', Portland Park, Calcutta, 14-vii-1936.

***Orseoliella bengalensis*, sp. nov.**

Male.—Length about 2.75-3 mm. General colour dark brown. First palpal segment short, stout, subglobose; second segment more slender than others, about twice the length of first; third segment about one and one fourth the length of second; fourth nearly equal to third and broadly rounded apically; all segments moderately clothed with long setae. Antennal segments 14; fifth segment with a basal globose and an apical subcylindrical enlargement, the latter of a length about twice its diameter, more or less distinctly constricted in the middle; stems about one and a half to twice their diameters; apical subcylindrical enlargement of seventh and the following segments often constricted in the middle so that these segments appear trinodose. Mesonotum dark brown or dark reddish brown. Legs densely hairy. Claws moderately stout, evenly curved, much longer than the empodium. Abdomen yellowish to brownish, densely hairy. Genitalia densely hairy; dorsal plate heavily chitinised, deeply bilobed, lobes with rounded apical angles; ventral plate longer than dorsal plate, broadly rounded apically and somewhat narrowly emarginate at sides and subapically; basal clasp segment about twice as long as the ventral plate, with a large, obtuse, basal inner lobe; terminal clasp segment about half to three fourths the length of the basal clasp segment, moderately stout, slightly reduced and curved apically; style as long as or longer than ventral plate.

Holotype.—One male dissected on a slide in the collections of the Zoological Survey of India, Indian Museum, Calcutta, No. 1321/H6. Trapped by 'Entoray', Portland Park, Calcutta, 20-vi-1936.

Paratypes.—Two examples on slides, Nos. 1324-25/H6.

This species has a general resemblance to *O. aphudae* Felt¹ but is readily distinguished by the smaller size and free dorsal and ventral plates.

***Cecidomyia dattai*, sp. nov.²**

Female.—Length 1.75-2 mm. General colour of body reddish brown. Palpi long, quadriarticulate, moderately setose; first segment short, quadrate; second segment over twice the length of first, somewhat stout; third segment nearly equal to second; fourth segment about one and a half times the length of third, somewhat slender. Antennae about half the length of body, with 14 cylindrical segments; third and

¹ Felt, *Mem. Dept. Agric. Ind.*, Ent. Ser., VII, p. 8, (1920).

² *Cecidomyia* is employed here as a group name and not in the sense of *Itonida* Meig. Vide Felt, *Bull. N. Y. St. Mus.*, No. 257, p. 15, (1925); *Mem. Dept. Agric. Ind. Ent.*, Ser., VII, pp. 11, 27, (1920-1); X, pp. 2-3, (1927); Mani, *Rec. Ind. Mus.*, XXXVIII, p. 196, (1936). I associate with this species the name of my friend and colleague Mr. M. N. Datta, who reared the midge from its galls.

fourth segments fused together ; fifth segment of a length about twice its diameter, stem about one fifth the length of segment ; sixth to twelfth segments nearly equal ; thirteenth segment somewhat shorter than twelfth, its stem nearly equal ; terminal segment somewhat longer than thirteenth, with an apical prolongation about two seventh the total length. Mesonotum black, submedian lines scarlet, thickly haired. Wings hyaline, neither narrow nor broad, with three longitudinal veins, third vein uniting with costa beyond apex, fourth vein obsolete, fifth vein faint apically. Legs pale brown, densely hairy. Claws simple on all legs, not strongly curved, slightly shorter than empodium. Abdomen reddish brown. Ovipositor exerted, long ; terminal lamellae ovate.

Holotype.—One female dissected on a slide in the collections of the Zoological Survey of India, Indian Museum, Calcutta. No. 1322/H6. Coll. M. S. Mani and M. N. Datta, Pulta Pumping Station, near Barrackpore, Calcutta, 5-vi-1936.

Notes.—This species produces the univalve galls on the leaflets of *Eagle marmelos* Corr. described in an earlier paper¹. When mature, the larvae escape from the gall through the slit-like opening, wander about and drop to the ground. They enter the soil and pupate in cocoons at depths varying from half to two inches from the surface. The adults emerge from the ground in five to seven days. Before they burrow into the soil, the larvae are subject to attacks of enemies, the most common one being the Indian house sparrow. It picks off the larvae from the ground and thus destroys a large number of them.

¹ Mani, *Rec. Ind. Mus.*, XXXVII, p. 444, (1935).