

## XI.—NOTES ON ORIENTAL DIPTERA.

### V.—DESCRIPTION OF A NEW SPECIES OF PSYCHODID OF THE GENUS *PHLEBOTOMUS*.

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Several records (*opp. post. cit.*) of the existence in India of blood-sucking flies of the family Psychodidæ have been published, but no species from the Oriental region appears as yet to have been described specifically. I have therefore thought it worth while to publish a description of the form most common in Calcutta, and have drawn up, in consultation with Mr. Brunetti, a diagnosis sufficiently detailed to ensure recognition of the species, adding certain notes on the scales and bristles.

*Phlebotomus argentipes*, Annandale and Brunetti, sp. nov.

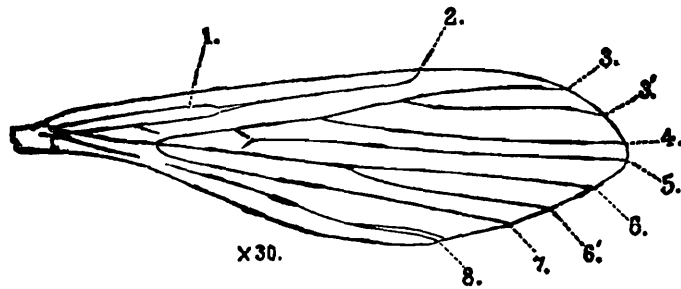
♂ ♀ Calcutta. Long. 1.5 mm.

Head (including mouth-parts), dorsum of thorax, abdomen blackish<sup>1</sup> or brown, the abdomen paler than the head and dorsum of the thorax; antennæ dark grey owing to the presence of long, flattened hairs and bearing spatulate scales on the two basal joints and on the proximal half of the first joint of the flagellum. First (basal) joint of the antenna conical, truncate distally; second joint sub-spherical, bearing a circle of about twelve slender, spatulate, curved scales and, nearer the base, a circle of alternating flattened bristles; first joint of the flagellum about four times as long as the preceding joint (*i.e.*, distal joint of the scape) and twice as long as the first of the remaining thirteen joints of the flagellum, the length of which gradually diminishes towards the tip of the antenna. Head small, eyes large, black, separated narrowly on the dorsal surface; rostrum stout, sausage-shaped; proboscis equally developed in the two sexes; the rostrum bearing several groups of upright curved bristles. Thorax tumid above, with a middorsal sulcation anteriorly, the dorsum bearing bunches of long, blackish, more or less erect, curved, flattened bristles, which are similar to those on the rostrum, but stouter, and arise from sockets provided with raised rims; these bristles exhibiting silvery reflections in certain lights. Pleuræ and sternum cream-coloured, devoid of bristles except at the base of the legs. Abdomen slender in both sexes, covered with long scattered, blackish bristles like those on the thorax but finer.

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<sup>1</sup> The exact tint of the darker part varies considerably. It is possible that individuals occur in which the head, thorax and abdomen are uniformly pale.

Legs very long, the hindermost being about three times as long as the thorax and abdomen together; femora much shorter than tibiae; metatarsi in all cases at least as long as the remaining joints of the tarsi together; legs grey with very strong reflections, which make the tibiae and tarsi appear silvery white in certain lights; femora bearing fine hairs and bristles similar to those on the abdomen but finer, also flattened spatulate scales; tibiae and tarsi covered with angularly bent scales and bearing, especially at the joints, stiff straight, slender hairs.



Wing of *Ph. argentipes* denuded of hairs and scales.

Wings<sup>1</sup> narrow, obtusely pointed at the tip, iridescent, silvery grey with a hoary fringe on the posterior border, immaculate. The fourth vein joins the third some distance in front of the apex of the upper anal cell and almost on a level with the bifurcation of the sixth vein. Ninth vein obsolete, indistinguishable from the anal furrow. Upper anal cell long and narrow; lower anal cell incomplete, its apex a considerable distance behind that of the upper cell. Cell formed by junction of first and second veins very long and narrow. Scales at base of wing only; halteres covered with scales.

Genital apparatus of the male conspicuous; the superior appendages long and stout, their distal joint bearing five long, stout, broadly arched, sickle-shaped chætæ, viz., a single chæta about a third of the distance between the two ends of the joints from its base, a pair of slightly unequal chætæ near the middle of the joint, and a terminal equal pair; the ventral surface of the basal joint deeply grooved and provided with a row of stiff hairs; inferior appendages long and rather slender, bearing a large bunch of stout bristles at the tip.

*Ph. argentipes* occurs not uncommonly in Calcutta, especially during the winter months. It is nocturnal in its habits and is often found in the basements of houses. Possibly it is identical with the species figured recently by Maxwell-Lefroy,<sup>2</sup> but its legs appear to be longer. The palpi of the species figured by Giles<sup>3</sup>

<sup>1</sup> The numbering of the veins follows the diagram published by Eaton in 1893 (*Ent. Mon. Mag.* (2), iv, p. 7). It has seemed best to use numbers for the veins rather than names. Schiner numbers the veins differently, but the venation of our species agrees with his description precisely.

<sup>2</sup> *Prel. Account of the Biting Flies of India*, pl. ii, fig. 4 (1907).

<sup>3</sup> *Gnats or Mosquitoes* (second ed.), p. 5, fig. 2 (1902).

as a *Phlebotomus* do not agree with Schiner's<sup>1</sup> and with Eaton's definition of the genus, while the "moth fly" described by Captain Franklin<sup>3</sup> appears, so far as it is possible to say, to belong to a very different genus probably allied to *Pericoma*.

#### NOTE ON THE SCALES, BRISTLES, ETC.

The scales are all very minute ; two kinds can be distinguished. Those on the antennæ, palpi, halteres, extreme base of the wings and the femora have a colourless, more or less cylindrical, short base, and a flattened, more or less expanded blade of much greater length in which a grey pigment appears to be suffused. They are solid but bear on the surface a number of very minute longitudinal striations. They vary considerably in breadth and in longitudinal curvature, but are always thin and spatulate and are never bent at anything approaching an angle. The scales on the tibiæ and tarsi, on the other hand, are colourless and are bent near their middle in such a way that the two halves form or nearly form an angle with one another. Moreover, these scales contain numerous very fine longitudinal tubules full of air, which produce the silvery appearance of the parts they clothe. Both kinds of scale are usually more or less imbricate, but those on the palpi are scattered, while those on the second joint of the antennæ alternate with bristles situated nearer the base of the segment. Those on the femora, halteres and third joint of the antenna lie nearly flat, while those on the palpi and antennæ slope outwards or upwards, and are curved inwards in different degrees. The peculiar scales on the tibiæ and tarsi are arranged more or less distinctly in annular series separated by circles of stiff hairs, this arrangement being most distinct on the distal joints of the tarsi.

The "flattened bristles" to which constant reference has been made, resemble scales in several particulars when examined minutely but appear on examination with a lens or a low power of the microscope so like ordinary bristles that we have described them as such ; it is difficult to draw any exact line between them and ordinary hairs. They have, however, like the scales, a short, more or less cylindrical colourless basal portion, but the distal portion is very long and only slightly flattened, always remaining relatively narrow but varying considerably in this respect. Like the blade of the scales of one type this flattened portion of the bristle apparently contains a dark pigment, but it is frequently, if not always, hollow and filled with air. Such bristles vary greatly in length and in degree of curvature. They are longest and stoutest on the thorax, to which they give an untidy, "unbrushed" appearance owing to the fact that they stand up and slope in different directions, always being more or less bent. Their sockets are

<sup>1</sup> *Fauna Austriaca*, ii, p. 630 (1864).

<sup>2</sup> *Ent. Mon. Mag.*, xli, p. 55 (1904).

<sup>3</sup> *Ind. Med. Gazette*, xli, p. 350, fig. 4 (1906).

very conspicuous on the dorsum of the thorax and have pear-shaped outlines, the stalk of the pear pointing in the direction towards which the bristle that arises from it slopes. The bristles on the genital apparatus of the male appear to have similar characters, but are straight or nearly so, and arise from circular sockets. The hairs on the wings, and many of those on the body and legs, are not provided with sockets with raised rims, but there are fine bristles on nearly all parts of the body with sockets whose rims are a little raised. The chætæ of the superior appendages of the male are flattened and have a yellowish colour. They have not depressed sockets, but arise from bases more or less clearly raised and differentiated from the general surface of the appendage to which they belong. The claws on the feet are very small and inconspicuous.

