

A REVISION OF THE CULICINE
MOSQUITOES OF INDIA.

BY

P. J. BARRAUD, F.E.S., F.Z.S.

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Part III.

*Notes on certain Indian species of the genus Finlaya, Theo. and
descriptions of new species.*

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I HAVE lately devoted some time to the study of what may be called the *gubernatoris* group of species of the genus *Finlaya*. The following notes are published as a preliminary to other papers now in preparation upon this genus.

Finlaya gubernatoris (Giles).

Culex gubernatoris, Giles, Jour. Bombay Nat. His. Soc., Vol. xiii, 1901 (May), page 607.

Culex gubernatoris, Giles, The Entomologist, Vol. xxxiv, 1901 (July), page 194.

Stegomyia gubernatoris (Giles), Theobald, Mon. Cul., Vol. 1, 1901, page 314.

Stegomyia gubernatoris, Giles, Handbook of the Gnats or Mosquitoes, Second Edition, 1902, page 380.

Phagomyia gubernatoris (Giles), Theobald, Mon. Cul., Vol. iv, 1907, page 223; and Mon. Cul., Vol. v, 1910, page 224.

The following have, at one time or another, been sunk under this species by Edwards:—*Finlaya melanoptera*, Giles; *Lepidotomyia magna*, Theo.; *Pseudocarrollia lophoventralis*, Theo.; (Bull. Ent. Res., Vol. iv, 1913 (November), page 226); and *Stegomyia assamensis*, Theo. (Ind. Jour. Med. Res., Vol. x, No. 2, 1922 (October), page 465). *F. melanoptera*, and *F. (P.) lophoventralis*, were subsequently restored as valid species by the same authority (Bull. Ent. Res., Vol. vii, part 3, 1917 (January), page 214). In a paper forwarded to the Bull. Ent. Res. in December 1922, which included descriptions of six new species in this genus, I pointed out that *Finlaya assamensis* (Theo.) is also a distinct species.

After further study of original descriptions, and the examination of a number of specimens, it appears to me that there is considerable doubt whether *Finlaya magna* (Theo.) is the same species as *F. gubernatoris* (Giles). It is now known that there are a number of closely allied species in this group, which was not realised some years ago. The figures given by Giles (Handbook Plate xiv, fig. 7), and by Theobald (Mon. Cul. Vol. 1, fig. 97, page 315), of the markings of the mesonotum of *F. gubernatoris* appear to indicate quite a distinct species from the one described later by Theobald as *Lepidotomyia magna*. Giles also mentions the presence of a third white ring on the front tarsi. The female only of *F. gubernatoris* has been described, and all the descriptions are apparently based on a single specimen from Government House Garden, Allahabad, July (probably 1900). It has occurred to me that possibly the type specimen now in the British Museum is not the original specimen from which Giles described and figured the species, as he states, in his Handbook, "The single type specimen of this very distinct species was unfortunately damaged after description." Edwards, in his earlier paper referred to above, writes, 'His (Giles') figure of the species is inaccurate as the white markings on the front of the thorax are of an altogether different shape.' If the type is not the original specimen it is very probably another species from the one Giles described.*

* NOTE. Since writing the above Mr. F. W. Edwards has very kindly informed me that "Giles' type female of *F. gubernatoris* bears the label, Govt. House, Allahabad, July, which agrees with what he says in his original description. The specimen is rather badly damaged, having lost most of its legs, and also most of its scutellar scales". There seems to be no doubt therefore that the type is the specimen from which Giles described the species, and it is possible that *F. magna*, or some other species in the genus, should be sunk under *F. gubernatoris*.

I have not up to the present seen any specimens which agree with the original description, the identity of the species therefore remains in doubt.

***Finlaya magna* (Theo.).**

Lepidotomyia magna, Theobald, Mon. Cul. Vol. iv, 1907, page 250.

I have examined a number of specimens in the Central Malaria Bureau, Kasauli, collection which were bred by the isolation method from larvae obtained during my collecting tour in the Bombay Presidency in 1921. These specimens agree with Theobald's description, and as far as I can arrive at any conclusion, they are the same species. In a separate paper forwarded to this Journal I have described and figured the larva together with those of *F. deccana*. sp. n. described below, and *F. assamensis* (Theo.). These larvae all show specific differences.

In the adult the female of *F. magna* differs from other species I have seen in the following particulars:—Tarsi of fore leg with a narrow basal white band to the second segment (usually also some white scales at the apex of the first segment); hind tarsi with white rings over the joints between the tibia and first tarsal, first and second, and second and third, the last always very narrow. There is a good deal of variation in the markings of the mid tarsi, usually, as Theobald described, there is a basal white ring to the first segment, a black ring on the basal half and a white apical ring, always broad. In some specimens the black ring is much reduced, and in others the whole segment is white, and the second segment nearly all white-scaled also. The white patch on the front of the mesonotum is always strongly indented on the posterior border, sometimes almost divided into two lateral patches. Mid lobe of scutellum clothed with black and whitish lanceolate scales, the latter often predominating so that the lobe appears pale scaled. The scales are somewhat loosely arranged and when separated and examined under a high power are seen to be about three times as long as the greatest width. The scales on the lateral lobes are mostly black and appear to be rather longer and narrower.

The male agrees with the female in the marking of the mesonotum, and in the variation in the banding of the mid tarsi, but differs in the absence of a second ring on the fore tarsi and a third ring on the hind tarsi. The head is more extensively paled scaled than in the female.

Specimens have been collected from the following places:—Surroundings of Bombay Harbour and Islands; Belgaum, and other places in the Bombay Deccan.

Finlaya deccana. sp. n.

This resembles *F. magna* (Theo.) very closely, but differs in the adult of both sexes in the scaling of the scutellum, in the female in the leg markings, and in the larva. The larva is described in a separate paper.

Scutellum clothed with blackish brown scales on all the lobes, those on the mid lobe flat and rather broad, a little more than twice the length of the greatest width; scales of lateral lobes narrower. Tarsi of the fore leg of the female without a second white ring, and those of the hind leg without a third white ring. White rings on mid tarsi always much narrower than in *F. magna*. Posterior edge of white patch on the front of the mesonotum with a small indentation or slightly undulating. The male very closely resembles that sex of *F. magna* except in the scaling of the scutellum.

Type male and female and other specimens in the Central Malaria Bureau collection, Kasauli. These were found in the same places and situations as *F. magna* mentioned above.

Finlaya lepchana. sp. n.

Male. Differs from *Finlaya albotaeniata* (Theo.) (*Danielsia*) in having a median, but indistinct, pale band on the proboscis, and lateral and basal rectangular white markings on the sixth and seventh abdominal tergites instead of apical white spots, and in other details. It is possibly the male of *Finlaya mikirana* Edw. (*Aedes (Finlaya) mikiranus*, Edwards, Ind. Jour. Med. Res., Vol. x, No. 1, 1922 (July), page 269), but the ornamentation of the mesonotum is so different I think it is more probably distinct.

Head; mainly flat scaled and white, a few black scales on either side towards the front; proboscis with an indistinct and incomplete median pale ring, scattered pale scales between this and the base. Antennal hairs and those on the terminal segments of palpi yellowish, Mesonotum with a broad white area in front spreading on to the proepimera, and continued posteriorly as a broad median band to the middle of the mesonotum, here it is produced laterally into two roundish patches in front of the wing roots, leaving an isolated oval dark area on either side towards the front; a median white line continues back to the ante-scutellar space where it divides. Scutellum with long and narrow whitish scales on all the lobes. Proepimera with narrow pale scales on

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the upper part, flat white scales below. Legs; fore and mid pairs, femora pale ventrally except for a basal black ring, otherwise deep blackish brown, tibiae narrowly white posteriorly for the whole length, fore pair with a few pale scales dorsally at the extreme base and tip. First and second tarsal segments with pale scaling at the base tending to form narrow rings otherwise dark scaled, remaining segments dark except for a small dorsal pale mark at base of third segment on mid leg. Hind legs, femora dorsal edge dark from base to apex, anterior surface with two pale scaled areas, one along the middle half, the other at the apex; tibiae pale ventrally at the base; first four tarsal segments with rather narrow basal white rings. Abdomen blackish with silvery white basal bands to tergites and sternites, sixth and seventh tergites with lateral rectangular white markings from the base to near the apex.

Type male and two other males in the Central Malaria Bureau collection, Kasauli, from Tindharia, Darjeeling Hills, bred from larvae taken from bamboo stumps, October 1922 (Barraud).

***Finlaya uncineta*, Edw.**

Aedes (Finlaya) uncinatus, Edwards, Ind. Jour. Med. Res., Vol. x, No. 1, 1922 (July).

This was described from a single male. I have now obtained further material including both sexes, and a short description of the female is here given. There is a slight mistake in the original description of the leg markings of the male.

The female differs from the male as follows:—Mesonotum black with the pale yellowish scales arranged in somewhat ill-defined lines; a median single line, a pair of lateral lines running from the front to the lateral lobes of the scutellum, these lateral lines are much broader rather before the middle of the mesonotum and are connected with lateral pale scaled areas reaching to the sides, another area of similar scales in front of each wing root. Front tarsi dark as in the male (not with a white ring at the base of the first segment as indicated in the original description, the white marking being at the apex of the tibia). The mid and hind tarsi agree with those of the male in having one white ring only, at the base of the first segment.

Type female, and other specimens of both sexes, from Kurseong, Darjeeling Hills, September 1922, larvae from tree-holes (Barraud).

Finlaya stevensoni. sp.n.

Differs from *F. magna* (Theo.) and allied species in having a banded proboscis, and basally banded tarsi, from *F. mikirana* Edw. and *F. lepchana* mihi, in having a small white patch or spot in the middle of the mesonotum in front.

A strongly marked black and white species of moderate size Female. Head, vertex with flat and some upright black scales, a narrow rim of white scales to the eyes wider in the middle in front and tending to form a median line in some specimens. Palpi black. Proboscis black with a rather wide median dull white band. Mesonotum black with a very small round white patch, or spot, in the middle in front; a small oval white patch in front of each wing root. Proepimera entirely covered with silvery white flat scales; prothoracic lobes with similar scales. Scutellum denuded in most of the specimens but in one there are some black flat scales on the mid lobe. Abdomen, dorsum black, except the eighth segment which is conspicuously white; tergites with lateral basal silvery markings, sternites with basal white bands. Legs; fore femora black anteriorly, posteriorly with a small ventral white streak at apex; mid pair similar but with an apical white streak ventrally on the anterior surface in addition; hind pair with a median white mark on both surfaces, and a ventral white streak at apex. Fore tibiae white at base ventrally, and at apex dorsally; mid and hind tibiae black except for a small basal white mark ventrally. Tarsi of fore and mid legs with narrow basal white rings to the first and second segments, those on the mid leg being a little wider than those on the fore; hind tarsi with basal white rings to the first, second and third segments, the last two about equal in width, and wider than the first. Some specimens show traces of a fourth ring.

Male. Mesonotum and leg markings as in the female. Proboscis with a narrower white ring. Palpi about the length of the proboscis, terminal segments turning downwards and bearing tufts of yellowish hairs, antennal plumes brownish yellow. Scutellum partially denuded, some broad white scales on the mid lobe in one specimen. Abdomen with basal white bands on dorsum as well as venter.

Structural details will be given in a following part of this Revision.

Type male and female, and one other of each sex, Nagargali, Bombay Deccan, August 1921, three other females from Kadra, North Kanara, September 1921, all bred from larvae taken from bamboo stumps (Barraud).