

AN ENTOMOLOGICAL SURVEY OF DEHRA DUN VALLEY
(UTTAR PRADESH)

Part II : Description of *Culex (Culiciomyia) ramakrishnii* sp. n., and allotype
(♂) of *Uranotaenia maculipleura* Leicester, 1908.

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An entomological survey of haematophagous arthropods of Dehra Dun valley, Uttar Pradesh, was carried out in the first week of April, 1965 (Wattal and Tandon, 1965). The area was previously surveyed during September 1957 when eighteen new records of culicines including a new variety, *Aedes (Finlaya) aureostriatus* var. *doonii*, were reported (Wattal *et. al.*, 1958). During the present survey 102 specimens of adult mosquitoes were collected/bred out. Amongst the wild-caught mosquitoes there were five specimens (2♂♂, 3♀♀) of an hitherto unknown species and one ♂ (allotype) of *Uranotaenia maculipleura* Leicester, 1908 not described previously (Stone *et. al.*, 1959). The present paper includes description in respect of these two species. A report on the mosquito collection made during the survey will be published separately.

Culex (Culiciomyia) ramakrishnii† sp. n. *emend to ramakrishnani*

Types : holotype ♂ with terminalia on separate slide and allotype ♀, Lachhiwala reserve forest, Dehra Dun, India, 4.iv.1965, Bhola Ram. 1♂ and 2♀♀ paratypes with identical data, all in the collection of N.I.C.D., Delhi.

Subgenus *Culiciomyia* Theobald, 1907 is represented in the Oriental Region by 10 species of which 6 are known from the Indian subcontinent (Barraud, 1934; Stone *et al.*, 1959). *C. (Culi.) ramakrishnii* described here is close to *pallidothorax* Theobald but can be distinguished from it on the basis of the characters given in the key following the description of the species.

The description of the species which follows is based on the holotype and the allotype.

Adult ♂. **Head** : Dorsal surface covered with white flat scales with a central patch of narrow pale curved scales, extending from frons to vertex; other head scales particoloured, narrow, upright and forked, of these light yellow scales restricted to vertex anteriorly and dark brown distributed over posterior portion of vertex and

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† The species is named after Dr. S. P. Ramakrishnan currently Assistant Director, Health Services, World Health Organization, SEARO, New Delhi and formerly Director, National Institute of Communicable Diseases, Delhi for his keen interest and enthusiasm in the development of the discipline of Medical Entomology at the N.I.C.D.

nape; on nape up-right scales more numerous; a few long pale scales on vertex forming a tuft. Antenna with complete whorls of long dark brown hairs; toris bright yellow. Palp dark and longer than proboscis by the length of the apical segment. ~~last two segments with numerous hairs; long segment (III) with a row of six long pointed, centrally expanded and downwardly projected translucent scales (Fig. 1).~~ Proboscis slender, dark scaled and slightly expanded towards apex. *Thorax*: Integument of mesonotum dark brown, covered with brown narrow scales; extreme anterior promontory of mesonotum with white narrow scales extending to the posterior margins of fossae; anterior bristles weak; prescutellar and scutellar bristles long and strong. Scutellum with narrow pale scales on all lobes. Anterior pronotal lobe dark with many dark bristles; posterior pronotal dark with 4-5 bristles; 5 upper and 7-8 lower sternopleural bristles, 1st lower sternopleural bristle strong followed by weaker bristles; 4 upper and 1 lower mesepimeral bristles; propleuron with few bristles; pleural integument light yellow and devoid of scales; a dark integumental stripe beginning anteriorly from the posterior pronotal lobe and continuing to upper mesepimeron area and another dark area on the sternopleura; halteres dark. *Wing*: About 4 mm. long, membrane covered with microtrichiae, squama with numerous delicate, pale, long hairs; alula with few small narrow and pointed hair-like scales confined to fringe; scales of wing veins dark, dense and broad on costa, subcosta and vein 1 relatively long and narrow on other veins; remigium at the point of vein 1 with two spines; anterior forked cell slightly longer than stem. *Legs*: Fore, mid and hind coxae all with few hair-like bristles; all trochanters with fine hairs; all femora and tibiae dark scaled dorsally and pale venterally; hind femora with distinct knee spots; tarsal segments dark. *Abdomen*: Dorsum of abdomen covered with dark brown and pale scales; pale scales form straight basal bands on segments 2-7; 8th segment completely pale.

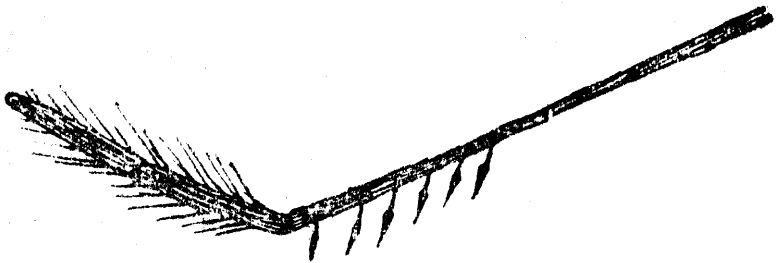


FIG. 1. *Culex (Culiciomyia) ramakrishnii* sp. n.
♂ palp showing translucent hairs.

Terminalia (Fig. 2): Basistyle (BS) about two and a half times as long as wide, covered with minute setae and spines; apical lobe absent; sub-apical lobe with a broad seta gradually tapering near the apex, apex blunt and slightly curved downwards; broad seta flanked on either side by two stout, pointed setae; a group of 14-15 smaller setae present behind these setae. Dististyle (DS) half the length of basi-

style, curved beyond middle and tapered gradually; crest of dististyle spiny. Tenth sternite (X-S) crowned with heavy spines, inner numerous and pointed, outer flat, blunt and slightly curved towards apex. Basal arm (XS-BA) long and drawn out with blunt end. Phallosome (Ph) dorso-laterally expanded, tapering apically to sharp curved points reaching to or slightly beyond comb of teeth sternite; inner surface with a row of 6-7 teeth.

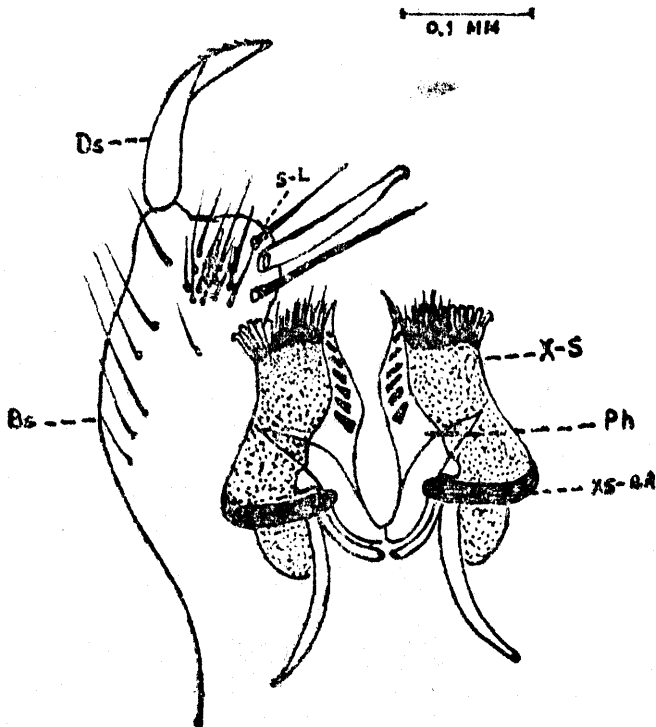


FIG. 2. *Culex (Culicomyia) ramakrishnii* sp. n.
♂ terminalia.

Adult ♀. Larger than male with similar colouration. *Head*: Scales similar to male. Antenna with deep brown torus, antennal integument dark, clothed with fine hairs. Proboscis dark. Palpi dark, about $1/5$ the length of the proboscis. *Thorax*: Mesonotum, pleurae, halteres, and legs similar to male. *Wing*: About 5 mm. long; anterior forked cell 3 times the length of the stem. *Abdomen*: Tergites dark scaled; patch of pale scales at the junction of tergites I and II; tergites III to VII with pale basal band; pale basal bands straight on III to V and slightly triangular on VI and VII; tergite VIII pale scaled.

Early stages and breeding places : Unknown.—

Distribution : India, Dehra Dun, Lachhiwala, type locality as recorded above.

The following key distinguishes *ramakrishnii* sp. n. from *pallidothorax* Theo.

Hind femur with distinct pale knee spot; apical portion of dististyle of ♂ tapering and not curved upward.....*ramakrishnii*.

Hind femur without knee spot, apical portion of dististyle of ♂ tapering and curved upward.....*pallidothorax*.

***Uranotaenia maculipleura* Leicester, 1908.**

Type : Allotype ♂ with terminalia mounted on a separate slide, Ramgarh forest, Dehra Dun, India, 2 : iv : 1965, Madan Kumar, in the collection of N.I.C.D., Delhi.

The following description of the species is based on the allotype. However in the N.I.C.D. collection there is a ♂ collected on 26-1-1935 from Vizag hills, Visakhapatnam without the terminalia. In India ♀♀ have previously been collected from Darjeeling District in West Bengal (Barraud *loc. cit.*). During the present survey 1♂ (allotype) and 1 ♀ was collected at Ramgarh forest and 2 ♀♀ from Kalsi forest.

Adult ♂ *Head* : Dorsal surface of the head covered with dark brown flat scales; scales bordering eye margins pale; other head scales upright, brown and markedly expanded. Toris dark brown; antenna with complete whorls of hairs; segments of the flagellum carry small hairs. Clypeus dark brown. Palpi dark brown, extremely short and slightly longer than clypeus. Proboscis dark brown about 1.6 mm. long with swollen tip, the tip with long hairs. *Thorax*: Integument of the mesonotum dark brown; scales on the mesonotum narrow and brown; no flat or pale scales along margins; strong bristles present. Scutellum dark scaled. Postnotum deep brown and bare. Pleural integument pale brown with dark brown patches; anterior pronotal lobe with pale flat scales, propleura with single bristle; posterior pronotal lobe dark with 1 bristle; 1 spiracular bristle; post spiracular absent; 1 prealar; several upper sternopleural, 2 upper and 1 lower mesepimeral bristles; sternoplura with few pale scales. *Wing* : About 2 mm. long; membrane covered with minute microtrichiae; wing scales dark, outer half of the costa with fine bristles directed forward; anterior forked cell about 1/3 length of stem. *Legs* : Slender and dark scaled. Femora of all legs equal to tibiae and covered with fine long hairs in the middle; these hairs less numerous on hind femora. *Abdomen*: Completely dark scaled without banding.

Terminalia (Fig. 3) : Basistyle (BS) about 2 times as long as wide, covered with fine hairs; a strong seta arising from the lobe towards innerside of the basistyle. Dististyle (DS) broad basally and tapered off apically and slightly bent; the apical portion bears minute hairs. A small claw (DS-C) present. Phallosome (Ph) divided into lateral plates bearing six teeth on each side on the posterior edge; tenth sternite membranous and without distinct paraprocts.

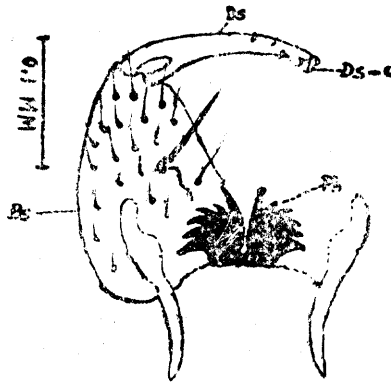


FIG. 3. *Uranotaenia maculipleura* Leicester
♂ terminalia.

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