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A DESCRIPTION OF THE HITHERTO UNKNOWN LARVA OF *THEOBALDIA INDICA* EDWARDS (DIPTERA, CULICIDAE), WITH A KEY TO LARVAE OF THE PAKISTAN SPECIES OF *THEOBALDIA* NEVEU-LEMAIRE, 1902.

By M. QUTUBUDDIN, M.Sc.
(Malaria Institute of Pakistan, Karachi.)

THE larva of *Theobaldia indica* Edwards differs from those of *Theobaldia longiareolata* (Macq.) and *T. niveitaeniata* (Theo.) in the branching of the frontal setae, number of pecten teeth, shape of mentum, number of its teeth and siphonal index.

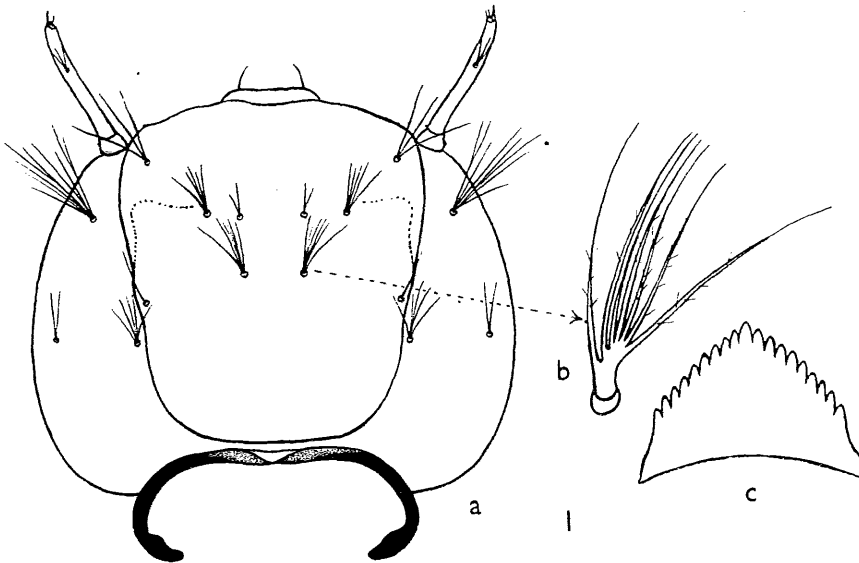


FIG. 1.—(a) Head (appearance in crushed pelt); (b) seta "C"; (c) mentum.

Length of crushed pelt about 9 mm. including *siphon*, which is 1.4-1.5 mm. long; *head* (fig. 1 shows appearance in crushed pelts) pale brown, with areas of varying shades of infuscation on the fronto-clypeus and epicranium. *Antenna* dark brown, proximal one-third being paler, comparatively short, rather slender and nearly straight, length about 0.3-0.32 mm., shaft smooth. *Antennal tuft* with 3-4 branches, situated at about 0.6 from the base. Of the two *terminal bristles* the outer one is stout, shorter, with a blunt end, the inner one is almost twice as long, thinner and pointed. *Sub-terminal bristles* both long and thin, the inner one as long as the inner *terminal* bristle and the outer a little shorter. Median portion of *mouth brushes* consists of *comb-toothed hairs*. Bases of setae "A," "B" and "C" almost in a straight line. Base of seta "d" inside and anterior to

that of "C." Seta "A" with 4-5 branches with very fine inconspicuous fraying. Base of seta "B" almost equidistant from those of "A" and "C." "B" and "C" with 11-17 branches with fraying. "d" small and 2-branched. Mentum with 8-9 teeth on either side of the large central tooth (which is truncated in one of the specimens).

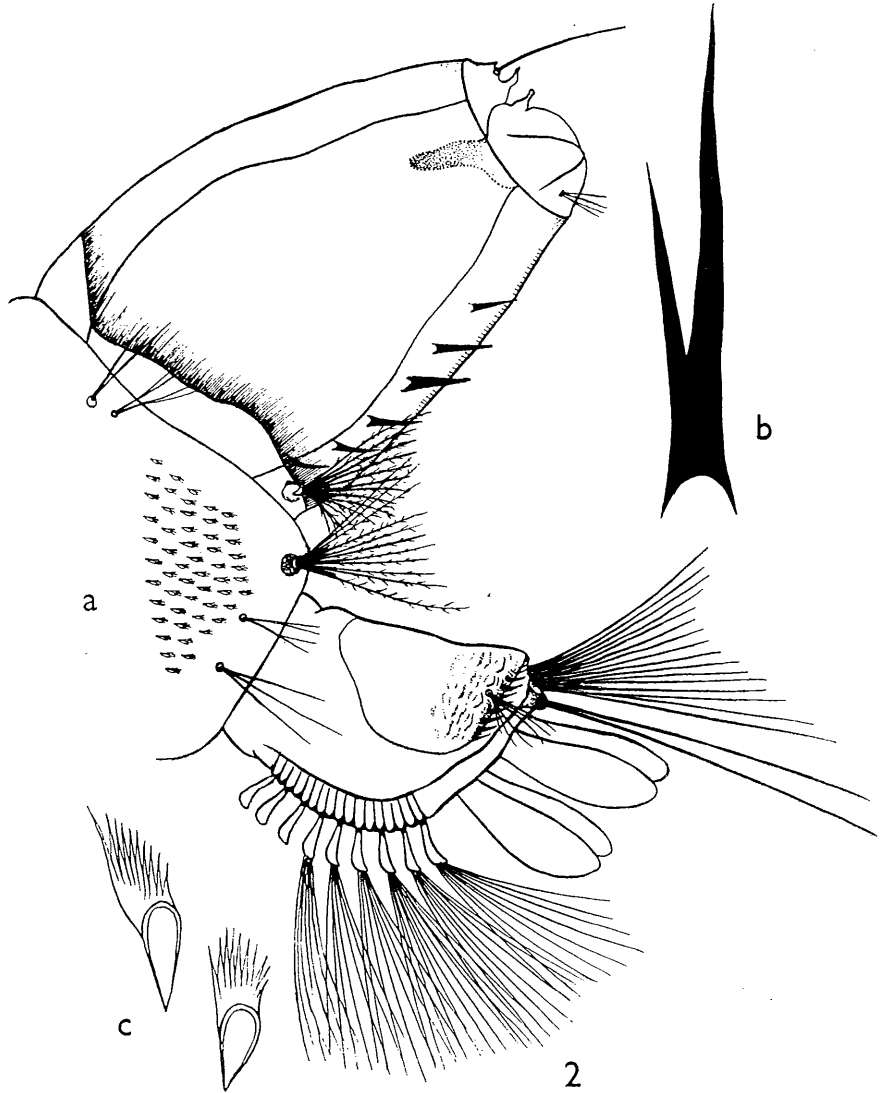


FIG. 2.—(a) Siphon (appearance in crushed pelt); (b) pecten spine; (c) comb scales.

Thorax: For describing the dorsal thoracic setae the chaetotaxy followed is that employed by Marshall (1938: 47).

Prothoracic setae: Seta 1 trifid, finely frayed, 2 single, frayed, 3 4-branched, frayed, seta O heavily branched. *Mesothoracic setae*: Seta 1 4-6 branched, 2 trifid or 4-branched, 3 single, 4-5 times as long as seta O, 4 trifid or 4-branched, 5 8-branched, minutely barbed,

6-7 both single, strong bristles with fraying. *Metathoracic setae*: Seta 1 long, 4-branched, 2 long, 6-7 branched, 3 13-16 branched, long and frayed, 4 short, 5-branched, 5 single, small, 6 single, very long. *Lateral tufted hairs* on thorax well developed, arising from large chitinized tubercles.

Abdomen: Lateral hairs on abdomen fairly long, especially on I-III that arise from chitinized bases. Segment VIII, "pentad hairs" (Marshall, *loc. cit.*: 49), α bifid, strong, frayed, branched almost at the base, beyond which in one specimen the shaft divides into 5 branches, β delicate, 4-branched, γ 9-11 sub-plumose branches, δ delicate, 4-branched, ϵ strong, trifid and of the form of a "trident." *Comb* of about 50-60 scale-like fringed teeth each with several sharp-pointed ends. *Siphon* (fig. 2 shows appearance in crushed pelts): Chitinization at base towards posterior margin irregular in outline, acus absent; pecten of about 5-7 fairly large widely spaced teeth (simple as well as with shorter denticles commencing from base), extending from base nearly to the apex; a few smaller teeth near the base with 1-4 denticles. *Siphonal tuft* arising from a more or less circular cleft in the irregular posterior margin of the basal chitinization, stellate with 11-14 sub-plumose branches, and about one-fourth to one-third the length of the siphon. *Sub-siphonal tuft* (γ) large, with 9-11 subplumose branches. *Siphonal index* 1 : 5 in the crushed pelts. Siphonal valves large. *Anal segment* with a number of strong spines on posterior border of saddle. Lateral seta fine and 4-8 branched. Upper (inner) caudal seta divided into a number of branches subequal in length. Lower (outer) caudal seta very long and strong, arising from a more highly chitinized base, divides a little above the base into two equally long setae with additional 1-2 fine branches at the point of bifurcation. *Ventral brush* with 18 tufts. *Anal papillae* pointed, varying from as long as the saddle to three-fourths of its length.

The material used was liaison pelts of three females of *Theobaldia indica* Edwards reared from larvae collected in November, 1949, from foul-smelling water in an unused masonry well at Kachai village, Kohat District, N.W.F.P., Pakistan. Several adults were, later on, taken from the same place.

Key to Larvae of the Pakistan Species of Theobaldia.

1. Frontal setae "B" and "C" single; acus absent . . . *longiareolata* Macquart.
2. Frontal setae "B" and "C" branched; acus may be present 3.
3. Frontal setae "A," "B" and "C" all equally developed, each with 3-10 branches; mentum with 11 teeth on either side of the central tooth; acus fairly large; pecten with 12-16 teeth; siphonal index about 3; siphonal tuft 8-10-branched; lateral hair on the anal segment fine with 3-4 branches *niveitaeniata* Theobald.
- Frontal setae "A," "B" and "C" not equally developed, "A" with 4-5 branches, "B" and "C" 11-17-branched; mentum with 8-9 teeth on either side of the central tooth; acus absent; pecten with 5-7 teeth; siphonal index about 1 : 5; siphonal tuft 11-14-branched; lateral hair on the anal segment very short, fine, with 4-8 branches *indica* Edwards.

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