

NOTES ON AUSTRALIAN MOSQUITOES (DIPTERA, CULICIDAE).

PART IV. THE GENUS THEOBALDIA, WITH DESCRIPTION OF A NEW SPECIES.

By D. J. LEE, B.Sc.

(Nine Text-figures.)

[Read 29th September, 1937.]

Five members of the genus *Theobaldia* have been described from Australasia, namely, *T. frenchi* Theo. and *T. hilli* Edw. from Victoria, *T. littleri* Tayl. and *T. weindorferi* Edw. from Tasmania, and *T. tonnoiri* Edw. from New Zealand. In this paper a new species is described from New South Wales. It is distinct from *T. hilli*, *T. frenchi* and *T. weindorferi* on characters of the terminalia, from *T. littleri* in having the upright scales of the head dark and the anterior pronotal lobes bare of scales or hairs, and from *T. tonnoiri* in not having the wings spotted. The presumed male of *T. littleri* is also described.

The larva of the new species is described and it is considered that its significant characters agree with those of the subgenus *Culicella* rather than with *Climacura*. The previously-described species were provisionally placed in the latter pending the discovery of their larvae.

THEOBALDIA INCONSPICUA, n. sp.

Head dark brown, covered with narrow curved golden scales, flat whitish ones laterally. Upright scales dark brown, paler at base, some yellowish ones in front. Proboscis dark brown with pale reflections beneath, especially at middle. Male palpi as long as proboscis, last two segments hairy. Female palpi one-eighth the length of proboscis, dark brown. Antennae of male shorter than proboscis, brown with blackish segmentation, plumes grey and creamy. Basal segment dark brown. Mesonotum bright brown with two medial paler bare lines and a pair of similar lateral spots. Scales narrow-curved and golden, fairly sparse. A few similar scales on scutellum. Border bristles 5 or 6 on each lobe. Postnotum creamy-yellow. Pleural chaetotaxy of female: Integument generally yellowish-brown. Anterior and posterior pronotal lobes devoid of scales or fine soft hairs. Four strong and several shorter bristles on anterior pronotum and 3-5 strong bristles on posterior pronotum. Two short fine spiracular hairs. No post-spiracular bristles. Sternopleura with a curved row of fine bristles and one strong one below it; patch of hairs and creamy lanceolate scales on lower part. Patch of pre-alar bristles. Two weak upper mesepimeral bristles, one strong lower one with a weaker one above it. Mesepimeron also bearing soft pale hairs, a few pale scales and a group of erect hairs on upper posterior part. Male similar to female in above characters but generally weaker in their representation. Wings: scales narrow curved, dark brown. Base of first fork cell proximal to second; r-m distal to m-cu by twice the length of m-cu. A group of hairs on base of radius beneath; fewer similar hairs in same position above. Length 3.8-4.0 mm. Abdomen unbanded, dark brown, violet reflections dorsally,

slightly paler beneath. Male terminalia: Coxite more than twice as long as broad, tapering; style with short terminal spine. Basal lobes very small and imperfectly separated from coxite, hairy at tip. Lobes of ninth tergite not prominent, with 7-10 curved bristles.

Type series bred through from larvae collected at Mittagong, N.S.W., 20/9/36, and on Tinderry Range at a height of 4,500 feet (10 miles east of Michelago, N.S.W.), 10/10/36.

Holotype ♂, allotype and paratype ♀ from Tinderry; two ♂ and one ♀ paratype from Mittagong. An additional male, from Oxford Falls, Sydney, 3/11/22, Mackerras, is in the Macleay Museum. Holotype and allotype in the museum of the Council for Scientific and Industrial Research, Canberra.

Presumed Male of *THEOBALDIA LITTLERI* Tayl.

Agrees with the description of the original female except in the following points. Palpi almost as long as proboscis, dark scaled. Basal segment of antenna light brown. Thorax: chaetae golden, except on scutellum where they are black. Scutellum with four border bristles on the lateral lobes and six on the central one. Wing: base of first fork cell about half the length of its cell, of second almost as long as its cell. Cross-veins r-m and m-cu equal in length but separated by only twice the length of m-cu.

Terminalia: Coxites elongated, almost three times as long as broad. Basal lobes two-thirds the length of the coxite, very distinct and well separated, giving the appearance of claspettes. A number of spines and hairs at tip. Aedeagus distinctly chitinized. Lobes of ninth tergite not very pronounced, with about 10 spines (only their points of attachment showing in specimen).

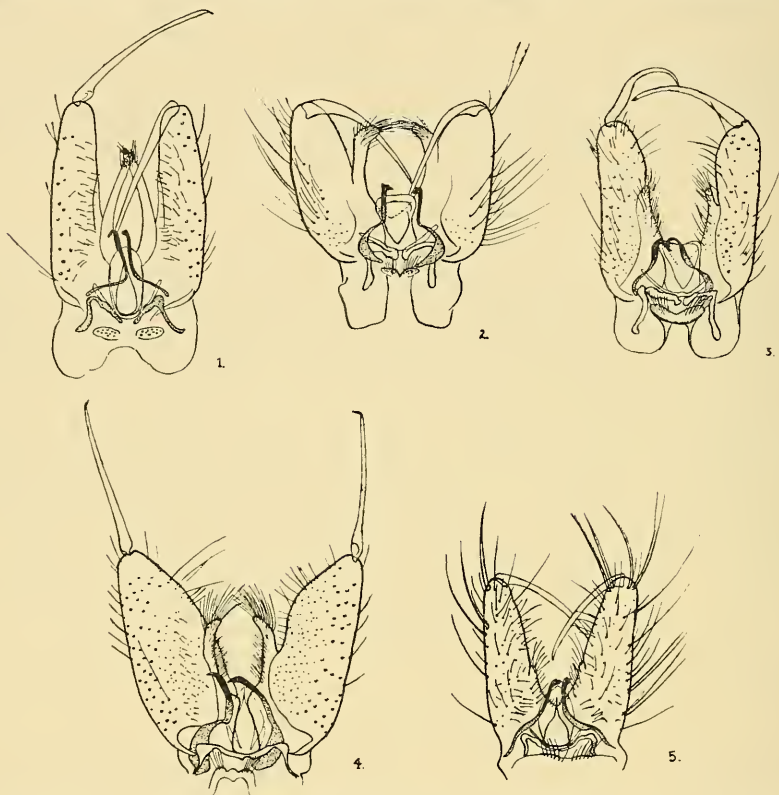
Specimen from Barrington Tops, N.S.W., Sydney University Zoological Expedition, January, 1925, in the Macleay Museum. Another specimen in the same museum, collected by I. M. Mackerras at National Park, N.S.W., 1/1/26, is identical, except that it has a darkened cloud on the wing membrane as in *T. frenchi*.

Notes on Other Species.

The male of *T. inconspicua*, n. sp., can readily be distinguished from the other species for which males have been described, namely, *T. frenchi*, *T. hilli* and *T. weindorferi*. As the terminalia of these species have only been verbally described, the opportunity is now taken to figure them. The terminalia of the type of *T. weindorferi* were remounted and drawn and the same was done with a specimen of *T. frenchi* determined by Edwards. The preparation of *T. hilli* was made from a specimen in the Macleay Museum from Beaconsfield, Victoria (G. F. Hill, 8/12/23). *T. littleri* is distinct from all the other species in having its basal lobes more fully developed and with a group of stout spines at the tip. In *T. hilli* the basal lobes reach almost to the tip of the coxite. *T. weindorferi* and *T. frenchi* have the basal lobes reaching slightly more than half-way, but they are more pronounced in the former, being more separated and hairy. The aedeagus is larger and more heavily chitinized in *T. frenchi* and the lobes of the ninth tergite bear a large number of hairs instead of a group of about 6 as in *T. weindorferi*. *T. inconspicua* has its basal lobes very greatly reduced, the lobes of the ninth tergite with 7-10 curved bristles and the aedeagus only chitinized at the tip.

The characters available for separating the females are not so satisfactory. *T. tonnoiri* is apparently unique in having the wing scales variable in colour, giving the wing a spotted appearance. *T. frenchi* has a darkened cloud on the

wing membrane, but it is considered that this character is of little value in distinguishing this species. The other species have clear wings with scales uniformly coloured. *T. tonnoiri*, *T. littleri*, *T. frenchi* and *T. hilli* all have either scales or hairs on the anterior pronotal lobes, but in *T. weindorferi* and



Text-figures 1-5.—1. Terminalia of presumed male of *T. littleri* Tayl. 2. Terminalia of *T. hilli* Edw. 3. Terminalia of *T. weindorferi* Edw. 4. Terminalia of *T. frenchi* Theo. 5. Terminalia of *T. inconspicua*, n. sp. (All figures drawn to same magnification.)

T. inconspicua these lobes are bare of scales or hairs. *T. weindorferi* and *T. inconspicua* may be distinguished by the number of scutellar bristles (the bristles taken into account are the border bristles arising from prominent dark basal rings). In *T. weindorferi* the lateral lobes have 6-8 bristles and the central lobe 8-10. *T. inconspicua* has 5-6 on each lobe. *T. littleri*, *T. hilli* and *T. frenchi* are more difficult to separate, but the first has only pale upright scales on the head, whereas in the other two species they are at least dark towards the neck. I have no definite females of *T. hilli* before me, so am unable to judge the usefulness of the characters given by Edwards (1926) which mainly concern the colour of the pleural integument.

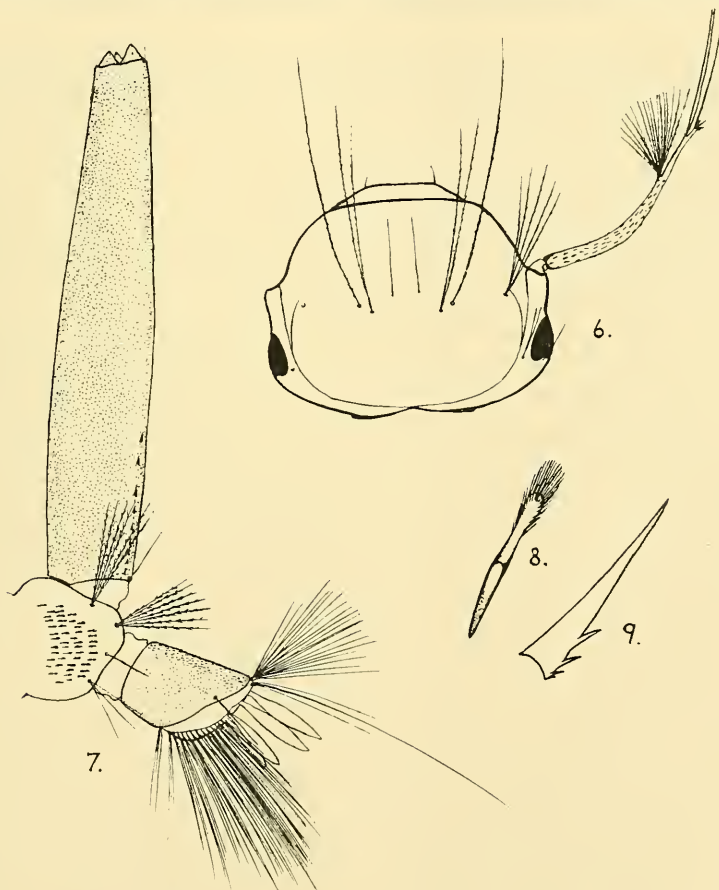
On the basis of the above characters the following key would serve to distinguish the females of the Australasian species of *Theobaldia*.

- | | |
|---|---|
| 1. No scales or hairs on anterior pronotal lobes | 2 |
| Anterior pronotal lobes with scales or fine hairs | 3 |

- 2. Scutellum with 6-8 border bristles on lateral lobes, 8-10 on central
 *T. weindorferi* Edw.
- Scutellum with 5-6 border bristles on each lobe *T. inconspicua*, n. sp.
- 3. Wing spotted *T. tonnoiri* Edw.
- Wing not spotted (may have darkened patch on membrane) 4
- 4. Upright scales of head all pale *T. littleri* Tayl.
- Upright scales of head dark at least towards neck *T. hilli* Edw.; *T. frenchi* Theo.
- No satisfactory characters have been established to separate *T. hilli* and *T. frenchi*.

The Larva of THEOBALDIA INCONSPICUA, n. sp.

Head large, pale; antennae long, curved, spinose, with tuft of plumose hairs at about two-thirds from the base, one long spine arising from the tip and a pair of similar length arising sub-apically. Some of the frontal hairs spinose, ante-antennal tuft plumose. Mouth brushes bushy, labial plate with 12 teeth on either side of apical one. *Thorax*: Hairs well developed, except the propleural group. Meso- and meta-pleural groups plumose. *Eighth abdominal segment*: Comb teeth



Text-figures 6-9.—Larva of *T. inconspicua*, n. sp. 6, Head; 7, Posterior end; 8, Comb tooth; 9, Pecten spine.

in a large patch, sub-siphonal and sub-anal tufts plumose. *Siphon* long (2 mm.), devoid of hairs except for a single one near base of pecten. Pecten a row of 9 serrate teeth on basal fourth of siphon. *Anal segment*: Outer dorsal hair with one long and two short branches. Anal papillae fairly long, pointed. Ventral beard of about 12 tufts of simple hairs and also 1 or 2 arising anteriorly to the barred area.

On the characters given by Edwards (1932) for the differentiation of the subgenera of *Theobaldia*, the larva of *T. inconspicua*, n. sp., belongs to the subgenus *Culicella*. It is distinct from *Climacura* in having only a single pair of hairs situated basally on the siphon, in the outer dorsal hair of the anal segment being branched, the papillae long and pointed and in having 1 or 2 tufts of the ventral beard before the barred area.

As the adult of *T. inconspicua*, n. sp., is evidently closely related to those of the previously-recorded species, it is considered probable that these will also be found to belong to the subgenus *Culicella* when their larvae are discovered.

Acknowledgements.

My thanks are due to Dr. I. M. Mackerras for advice in the preparation of this paper, and to Mr. K. E. W. Salter for the loan of specimens from the Macleay Museum, Sydney.

References.

- EDWARDS, F. W., 1924.—*Bull. Ent. Res.*, xiv, p. 363.
———, 1925.—*Bull. Ent. Res.*, xv, p. 258.
———, 1926.—*Bull. Ent. Res.*, xvii, pp. 110-111.
———, 1932.—Wytzman's *Genera Insectorum*, fasc. 194, pp. 101-106.
TAYLOR, F. H., 1914.—*Trans. Ent. Soc. London*, 1913, p. 702.
THEOBALD, F. V., 1901.—*Monog. Culicid.*, ii, p. 66.
-