

ANOPHELES (ANOPHELES) KYONDAWENSIS  
n. sp., from Lower Burma.

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Among larvae received in December 1943 from Burma for identification, I encountered a few specimens distinct from others. The larvae were not accompanied by adults of the same batch, and continued efforts at securing them from same source were fruitless. The specimens were first collected on November 30th, 1943, from a village known as Kyondaw by the side of a river, also of the same name, in Lower Burma near Burma-Siam border.

The larva shows closer resemblance to *Anopheles sintoni*, *A. culiciformis* and *A. insulaestorum* than to any other species. It differs, however, in certain characters which appear to me sufficiently distinct to justify its being considered a new species. It is proposed to call it *A. kyondawensis* after the name of the village from where it was collected and is easily distinguished by the reduced frontal hairs together with the subantennal hair having branches coming off right from the base, branched antennal hair, and lateral hairs on abdominal segments IV to VI, long and simple and on segment III with barb-like branches.

BRIEF DESCRIPTION OF LARVA.

The following description is based on examination of eleven specimens of which seven are fourth instar larvae. Fourth instar, about 6 mm long.

Preclypeal. Rather long, stout and simple. (Fig. 1)

Inner anterior clypeal. Simple, long (a trifle longer than half the length of Frontoclypeus) with their bases touching each other. Average length 0.34 mm.

Outer anterior clypeal. Simple, about quarter the length of the inner; the distance between inner and outer about half the length of the outer. Average length 0.08 mm.

Posterior clypeal. Simple, as long as the outer anterior but finer placed slightly external to them. Average length 0.08 mm.

Frontal hairs. Short and branched from near the base. Outer: most split into 4 to 6 branches. Intermediate split into 3 to 6 branches. Innermost split into 3 to 6 branches.

Sutural. Short, simple.

Trans-sutural. Shorter, simple.

Subantennal. Thick with numerous long branches from base to apex.

Antenna. Spinous projections present in moderate numbers on the dorsal and internal surface. Average length 0.25 mm, breadth 0.03 mm. Antennal hair arises from the dorso-internal surface about one-seventh to one-eighth the length of the antenna from its base and is about the same length as the width of the antenna. It splits near its base into 3 to 5 branches. The transparent cone-shaped piece at the tip of the antenna is about twice as long as the short finger-shaped process. Terminal hair, rather short and branched into 5 to 8.

#### THORAX.

Submedian prothoracic. Inner, placed farther away from central than usual, with 5 to 8 branches. Central, with 8 to 13 branches and a conspicuous root. Outer, simple, short. (Fig. 2)

Innermost hair (no. 13 of Puri) on the ventral surface of the prothorax slender, split into 3 to 5 branches. Hair no. 14 of Puri with 4 to 6 branches. Metathoracic palmate, with 9 to 11 lanceolate leaflets.

Pleural hairs on all the three segments are simple with the exception of the ventral hair of the posterior pair, which is bifid near the tip on prothorax and metathorax in some specimens. The dorsal hair of the posterior pair on prothorax is very short and on meso and meta-thorax minute. (Figs. 3 3a and 3b).

#### ABDOMEN. (Figs. 4 and 4a).

Abdominal palmate. (hair no. 1). On segment I, is not transformed into a palmate hair, and is very short and simple. On segment II, is developed into a palmate hair with 8 to 15 lanceolate leaflets, the filaments being not differentiated. On segments III to VII, is well developed with 12 to 22 leaflets. The filaments are well differentiated, long and pointed and without pigmentation. (Fig. 5).

Lateral hair. On segments I and II, long, stout and feathered. On segment III, less stout and has only 7 to 10 short scattered barb-like branches. On segments IV, V and VI, long, slender and simple.

Post-spiracular hair, with 6 to 9 branches.

Saddle hair, simple.

Tergal plates are of moderate size.

*A. kyondawensis* is distinguished from *A. culiciformis* and *A. sintoni* by the antennal hair and antennal terminal hair being branched, the subantennal hair having long branches arising right from the base and the pleural hairs (with rare exception) and lateral hairs on segments IV to VI being simple.

From *A. insulaeflorum* it is readily differentiated by the simple posterior clypeal hairs, reduced frontal hairs and by the lateral hairs on abdominal segments IV to VI being long and simple and on segment III having short barb-like branches.

#### BREEDING PLACE.

The larvae were collected from small shallow pools of clear water, under shade, along the sides of streams in hilly jungle.

During the course of survey for about ten days, twenty larvae are reported to have been obtained in five collections from three similar breeding places. Other species of *Anopheles* recovered at the same time from the same breeding place are *A. aitkeni* var *bengalensis* and *A. leucosphyrus*.

Type specimen has been forwarded to the British museum.

Paratypes are deposited among the mosquito collections of College of Medicine, Singapore. All the specimens are preserved as permanent mounts in Gater's medium.

Type locality, Kyondaw, Lower Burma.

#### ACKNOWLEDGEMENT.

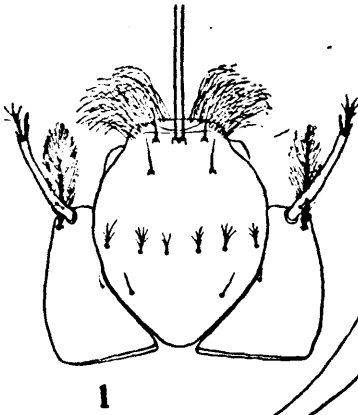
I wish to record my indebtedness to Dr. G. V. Allen, Principal, College of Medicine, Singapore, for permission to publish this article and to Dr. A. A. Sandosham, Acting Professor of Biology, College of Medicine, Singapore, for his valuable suggestions in connection with the same. My thanks are also due to Mr. N. Chandran of the Public Health Museum, Singapore, who helped me in the execution of the drawings.

#### REFERENCE.

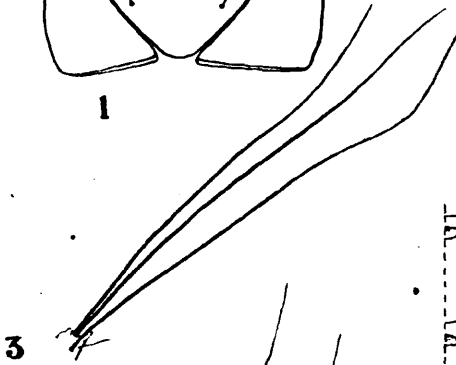
- Christophers, S. R. 1933. Fauna of British India. Diptera, Vol. IV Family Culicidae, Tribe Anophelini, Taylor and Francis, London.
- Gater, B. A. R. 1934. Aids to identification of Anopheline larvae in Malaya, Government Printing Office, Singapore.
- Puri, I.M. 1931. Larvae of Anopheline mosquitoes with full description of those of the Indian species. Ind. Med. Res. Mem. 21. Thacker, Spink and Co., Calcutta.

#### EXPLANATION OF FIGURES. (on page 176).

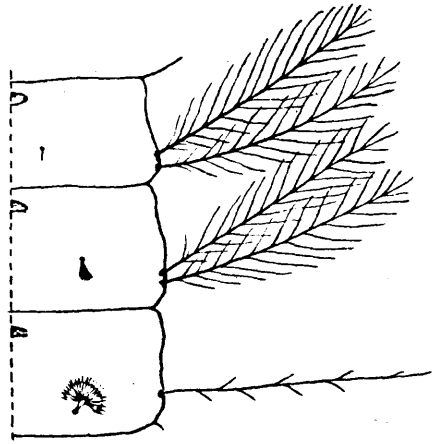
1. Dorsal view of head.
2. Submedian prothoracic hairs of right side, dorsal.
3. Prothoracic pleural hairs of right side.
- 3a. Mesothoracic pleural hairs of right side.
- 3b. Metathoracic pleural hairs of right side.
4. Abdominal segments I to III, right dorsal half showing palmate and lateral hairs.
- 4a. Abdominal segment VI right dorsal half showing palmate and lateral hairs.
5. Part of palmate hair from abdominal segment IV.



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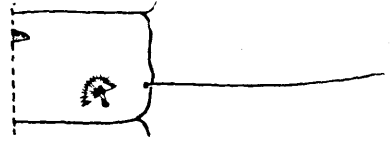
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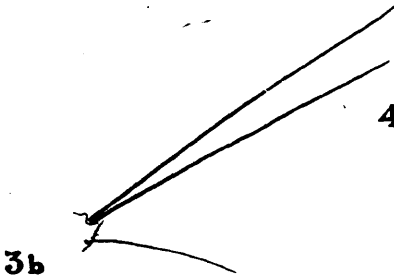
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3a



4a



3b

5

