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(From the Eijkman Institute, Batavia-C.)

NOTES ON MOSQUITOES FROM THE NETHERLANDS INDIES.

Two new *Mansonia*-larvae from Borneo  
 by  
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In August 1937 I received a collection of *Mansonia*-mosquitoes from the interior of Borneo (Long Iram, Upper Mahakam River) through kindness of doctor OEY DJOEN HOAT. They belonged to the species *Mansonia (M) annulata* LEICESTER (3 ♀♀) and *Mansonia (M) longipalpis* VAN DER WULF (4 ♀♀). They were caught in a Dayak village where the population was well infected with *Microfilaria malayi*. A few weeks later doctor OEY sent another twelve *Mansonia*'s all collected on men. These *Mansonia*'s proved to be *Mansonia (M) indiana* EDWARDS (6 ♀♀), *Mansonia (M) longipalpis* VAN DER WULF (2 ♀♀) and *Mansonia (C) crassipes* VAN DER WULF (4 ♀♀). Shortly after several full grown *Mansonia* larvae were received, also larvae in less advanced stages. Part of the full grown larvae and all the younger larvae belonged to the subgenus *Coquillettidia* (1).

The remaining larvae could not be identified with any of the known *Mansonioides* (*indiana* (2), *uniformis* (1), (3) and *annulifera* (2)) from this country. The larvae were

collected in a small lake, near the roots of a common vegetable (*Ipomoea spec.*). Usually this lake is entirely covered with *Eichhornia crassipes*. Never however in this lake were any larvae found near the roots of this plant.

On my request doctor OEY started breeding *Mansonia* larvae in test tubes, he used the *Ipomoea* as a host plant. Through this experiment he bred a whole series of *Mansonioides longipalpis* and *Coquillettidia crassipes*. I take the opportunity here given to thank doctor OEY for his co-operation in this research-work and for the interesting material he presented to the laboratory of the Eijkman Institute.

#### Description of the larvae.

*Mansonia (Mansonioides) longipalpis* VAN DER WULP (fig. 1).

*Head* much broader than long, over  $1\frac{1}{2}$  times, rounded; clypeal spines dark-brown. *Antennae* longer than the head, as in other *Mansonioides*, with the apical extension a little less than  $\frac{1}{3}$  of the entire length. Basally from the subapical hairs the antennae are covered with short conspicuous spines. A distinct brown band at the base and around the implantation of the antennal hair. *Antennal* hair well developed with about 18—20 long branches, haired on one side only. Subapical hairs as long as antennal hair, near apex a leaflike appendage, a spine and two hairs, much shorter than subapical hairs.

*Head hairs*: A with 9 moderately long, very flat hairs (fig. 1a), lateral hairs also much flattened at base; B short with 6 hairy branches; C weak, 5 simple branches, d very small, 3-branched, e delicate, about as long as C, 2-branched.

*Comb of the eighth segment* with two long blunt teeth. *Airtube* cone-shaped, not quite twice as long as wide, apical third black, provided with an apparatus to pierce tissue of aquatic plants, a two-branched hair about the middle of the tube, over half as long as it; a single strong lateral hair present a little distance from base of black portion; and dorsally; about the same distance from this black part two flexible long curved spines. No acus. *Anal segment* with complete chitinous ring, the whole segment shorter than the airtube, the chitinous ring twice as long as broad. No apical spines present. Lateral hair short, 4-branched, some distance from apical margin; 4 ventral hairs piercing the ring with 2 or 3 branches, all rather weak, about as long as anal segment is broad. Ventral brush with about 8 long hairs, longer than segment, each hair with 3 or 4 naked branches; inner submedian hair with 12 naked branches from longer than to about half as long as anal segment, outer submedian hair with 8 naked branches all equal in length, over  $1\frac{1}{2}$  times as long as segment. Anal gills four, very slender and longer than segment.

*Mansonia (Coquillettidia) crassipes* VAN DER WULP (fig. 2).

*Head* a little broader than long, slightly angular, clypeal spines long and slender. *Antennae* very long, much more elongated than in the subgenus *Mansonioides*, for two reasons: the part from base to subapical spines is much longer (longer than the head) and the elongation itself alone is already much longer than the rest of the antennae.

*Antennal* hair closer to subapical hairs than to base with 30 hairy branches, shorter than basal part of antenna, subapical hairs short, stiff; apical extension very long and delicate, with pointed flexible apex, a hair and a short leaflet, bulbous in appearance. This extension has the peculiar habit in the dead larva of curling up permanently like a corkscrew as soon as it is exposed to the air. From base to subapical spines the antennae are moderately covered with spines. Basal part up to implantation of antennal hair pigmented.

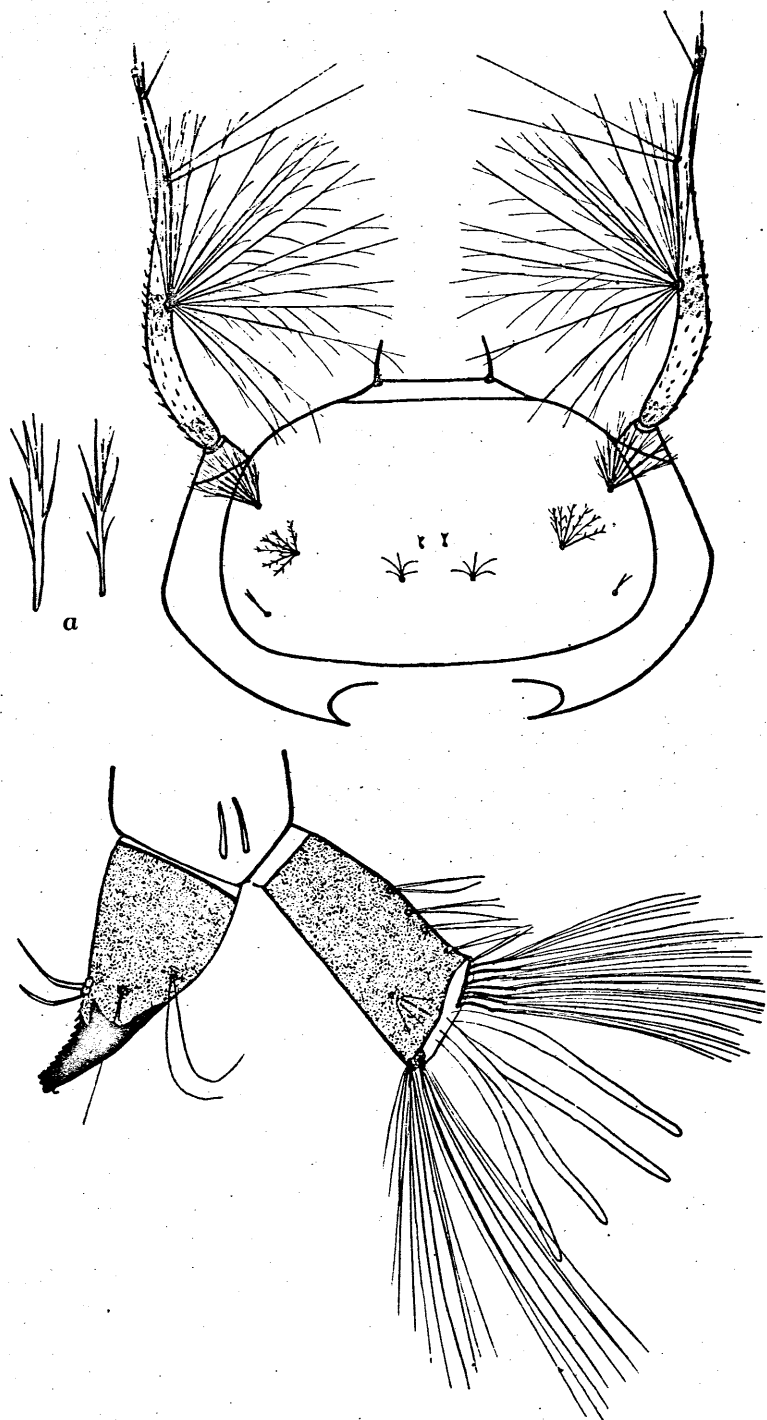


Fig. 1. Head and details of larva of *Mansonia (M.) longipalpis*.



*Head hairs* : A moderately long, well developed, 9 hairy branches, B shorter than A, 7 hairy branches, C a little shorter than B, 6 hairy branches, d though shorter again than C, still very well developed with 5 naked branches, e two-branched, slender.

*Comb of the 8th segment* with 8 long slender, sharp teeth, the points of the teeth easily breaking off. *Air-tube* very short, cone-shaped, provided with an apparatus to pierce tissue of aquatic plants, this apparatus black, slender, a little shorter than rest of air-tube with a very distinct sharp saw. At its base laterally a single stiff hair, dorsally at its base two flexible spines about as long as lateral hair. About the middle of the air-tube, which is  $1\frac{1}{4}$  times as long as wide there is a 4-branched hair, a little longer than half the width of the tube at base, moved away from the ventral line. No acus. *Anal segment* distinctly covered with very fine delicate hairs, slightly longer than air-tube, completely ringed by chitin, this chitinous ring about  $2\frac{1}{2}$  times as long as wide. Inner submedian hair with about 12 naked branches, the longest much longer than segment, the shortest shorter than width of segment at base; outer submedian hairs with 10 naked branches equal in length, nearly twice as long as anal segment. Lateral hair delicate, 4 or 5-branched, inserted a little distance from apical margin, half as long as width of air-tube at place of insertion; ventral brush very well developed, with 8 seven-branched naked hairs. No ventral hairs piercing the chitinous ring as in *Mansonioides*. Anal gills four, longer than segment, slender with blunt apex.

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### THE CHOLERA-EL TOR PROBLEM

by

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From recent investigations carried out in British India by TAYLOR and PASRICHA with their collaborators it appears that the *V. cholerae* should no longer be serologically diagnosed by its agglutinability with the ordinary immune serum, containing both „H” and „O” agglutinins, but that its identification should be based exclusively on its agglutinability with the „O” immune serum of group I (Inaba) of GARDNER and VENKATRAMAN. By this procedure a sharp line is, rightly, drawn between the typical *V. cholerae* and the numerous vibrios with the same „H” but with a different „O” antigen that can be isolated not only from rivers and others water sources, but also from the stools of healthy carriers and of those suffering from diseases with or without choleraic symptoms.

This differentiation, however, does not hold good where *V. cholerae* and *V. El Tor* are concerned, as both possess the same specific „O” component. As *V. El Tor*, however, contrary to *V. cholerae*, according to GARDNER and VENKATRAMAN possesses haemolytic power, it should presumably be sufficiently distinguishable. This point of view is endorsed