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Remarks on the Larval Chaetotaxy of the Subgenus *Melanoconion* (Diptera: Culicidae)

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The study of the chaetotaxy of culicine mosquito larvae has not attracted many workers in the past, despite the fact that numerous investigators have utilized from time to time some of the elements of the chaetotaxy other than that of the head and distal abdominal segments for the diagnosis of species. The recent contribution (Foote, 1952) on the complete chaetotaxy of the subgenus *Melanoconion* of *Culex* is a welcome addition to the information now being gathered in this field. It is unfortunate that Foote disregarded the earlier work (Belkin, 1951) in which an attempt was made to review the chaetotaxy of mosquito larvae, both anophelines and culicines, and to provide criteria for establishing homologies, and where the complete chaetotaxy of a culicine mosquito was figured. As a result a number of misinterpretations were made in the case of those hairs which do not always occur in a regular numerical sequence, although some changes in nomenclature introduced in Foote's paper were identical with those proposed by Belkin. Further work on the larval chaetotaxy and its homology with the chaetotaxy of the pupa (Belkin, 1952, 1953) has shown that the criteria for homologies and the interpretations proposed by me are generally consistent. Therefore, I wish to point out at this time some of the discrepancies in the interpretations of the chaetotaxy as well as some errors in observations made by Foote. My observations were made largely on *Culex* (*Melanoconion*) *erraticus* (Dyar and Knab), 1905 from Wilson Dam, Alabama.

It is stated by Foote that hair 2 is absent on the head capsule of the subgenus *Melanoconion*. My material shows a small tubercle with a minute bristle at the level and caudad of hair 1, in a position somewhat mesad of the homologous but better developed hair 2 in *Culex quinquefasciatus* Say, 1823, in which hair 3 is also present.

The thoracic chaetotaxy has not been studied comparatively in the culicines and all the present interpretations show glaring discrepancies between segments and with the abdomen, so that no comment can be made at present. On the abdomen, several discrepancies must be pointed out. Despite a statement to the contrary, hair 0 is present in the subgenus on segments II through VIII, as it is apparently in the larvae as well as pupae of all mosquitoes. In the species examined by me it is about one-fifth the length of the pilosity and is located in the usual position. It is figured and labelled by Foote as hair 1 on Segment VIII; on this segment it is considerably larger and more conspicuous. Hair 14 was also missed on segments III to VII and was labelled 13 (cephalic) on segment VIII, on which it is also more conspicuous. It is slightly smaller than hair 0 on the corresponding segments and is found in the normal anterior intersegmental position. On the venter of the abdomen, I question the interpretation of hair 13 on segments III through V. It is much more likely that the hair labelled 13 is actually 11, hair 12 is hair 13 and hair 11 is hair 12. The few pupal hairs of this group that I have seen *in situ* in the fourth instar larva support my interpretation; furthermore hair 13 is almost always well developed. It appears unlikely that Foote's interpretation of hairs 11 and 12 on segment I is correct for in many culicines, perhaps all, hair 11 on this segment is absent in the older instars although it is usually present in the first instar, and hair 13 is always present. One would expect therefore the two hairs to be 12 and 13 on this segment. On segments VII and VIII the interpretations are confused. It appears that some of my interpretations were followed, despite a statement to the contrary, on segment VII as well as elsewhere, while on segment VIII reliance was placed directly on

the interpretations of Root (1924), Martini (1929) and Hurlbut (1938). On segment VII, except for failure to identify hairs 0 and 14, the interpretation appears to be correct. On my figures of this segment (Belkin, 1951, fig. 6 and 7) hairs 11 and 12 are labelled incorrectly and the terminology should be reversed. On segment VIII none of Foote's interpretations are in agreement with the preceding segment and all appear incorrect. The first pentad (7) in many sabethines has the same position, as well as degree of development, as hair I of abdomen VII and it can be interpreted as the same hair in anophelines, particularly if the first instar larva is examined (Belkin, 1953). The second pentad (6) is probably hair 5, for it is retained in the pupa and in that stage Knight and Chamberlain (1948) have homologized it with the corresponding hair on the other segments. The third pentad (9) is almost without doubt hair 7; the evidence from the pupal chaetotaxy is quite clear and again in the first instar anopheline larva its position is quite similar to that of the corresponding hair on segment VII. The fourth pentad (11) is in all probability hair 10 as shown by the first instar larva. Finally, the fifth pentad (caudal 13) cannot be hair 13 since it is present in the first instar larva and hair 13 is missing in this stage; it is most probably hair 12 (Belkin, 1953). Since all these homologies are not completely clear, it would be preferable to use the arbitrary terminology, such as proposed by me, particularly since it appears that the first and second pentads are reversed in the culicines as compared to the anophelines. The remaining two hairs on this segment are 0 (1) and 14 (cephalic 13).

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