

catch basins were treated in an area extending over 212 city blocks. Satisfactory control of caged adult females exposed for 3 hours averaged 14.2 weeks over the treated area. Larval infestations of basins were greatly reduced after treatment and remained at a low level through the remainder of the season. The activity pattern of newly emerged adults and their greater susceptibility to dichlorvos vapor indicate that the efficacy of this control measure against this species in practice may well exceed the 14-week period reported.

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VARIATIONS IN SOME MORPHOLOGICAL CHARACTERS IN ANOPHELINE LARVAE

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The following variations in some fundamental morphological characters were observed during the examination of anopheline larvae collected in Egypt, U.A.R. and Jordan.

Clypeal Hairs

1. In a fourth stage larva of *A. pharoensis* collected from a breeding place near Cairo, doubling of the right inner clypeal hair was noted (Fig. 1). Thus two inner clypeal hairs occurred on the right side instead of one, each with a separate pit and the two hairs lying parallel and almost touching each other. The length of the

two hairs and their branching at the tip was identical with that of the normal left side.

2. In *A. sergenti* larvae from the oases of the Libyan Desert, e.g. Siwa, Bahria, Kharga and Dakhla, it is typical to find all clypeal hairs simple. In some specimens, however, splitting of the outer and posterior hairs was encountered. Usually the splitting is simple but occasionally it is repeated so that up to four branches are produced (Fig. 2).

Fronto-clypeal Markings

1. The usual pattern of the fronto-clypeal

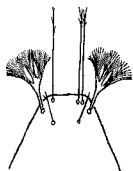


Fig. 1

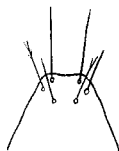
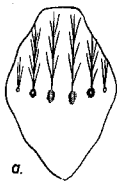


Fig. 2



a.



b.



Fig. 3



d.



e.



a.



b.

Fig. 4



c.



a.



b.

Fig. 5

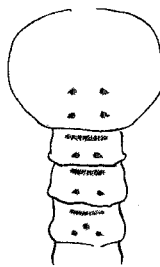


Fig. 6



a.



b.

Fig. 7

region in *A. multicolor* is that either the head is not too dark and in this case with 2 or 4 dark spots around the bases of the inner or inner and middle frontal hairs (Fig. 3a), or that the head is entirely black and hence no spots are visible (Fig. 3e). This latter condition is often used in the field to guess the identification of *A. multicolor* larvae.

In some *multicolor* larvae collected from the same breeding place in Fayoum U.A.R., other patterns of the fronto-clypeal markings were recorded. Thus, specimens with pale heads were found to have, in addition to the 2 or 4 dark spots around the bases of the frontal hairs, 1 median and 2 lateral dark spots (Fig. 3b & c). These spots occasionally fuse laterally producing a more or less continuous transverse band (Fig. 3d).

2. *A. turkhu* larvae were collected from the Yarmuk-Jordan Valley in July 1956 (the first record of this species in Jordan). Numerous striking variations were observed in the pigmentation of the fronto-clypeal region ranging from extensively dark spotting to almost entirely pale specimens (Fig. 4a-c). Moreover, it was noticed that the reduction in pigmentation was always associated with reduction in the branching of the frontal hairs, thus 7-8 branches were usually found in the dark specimens while only 2-3 branches in the pale ones.

Tergal Plates

1. Normally, in *A. sergenti* larvae in Egypt, the anterior tergal plate is of moderate to somewhat large size, the median

rounded plate is present on segments 3 to 7 (occasionally on segment 2), but paired accessory tergal plates are not known to occur in this species. However, in six specimens out of a few hundred larvae collected from Siwa and Bahria Oases, paired accessory plates were found on segments 3-7 or 4-7. In some specimens, the anterior tergal plate is exceptionally large in size with the posterior edge straight or convex so that the rounded median plate is either touching the posterior border of the anterior plate or becomes totally enclosed in it. This happens irrespective of the occurrence of the paired accessory plates which are, when present, free from the anterior plate (Fig. 5a & b).

2. In *A. dthali* larvae collected from southern Sinai, paired accessory tergal plates, which usually occur on segments 3-7, were found to exist on the first and second abdominal segments as well. In one specimen accessory tergal plates were seen extending to the thorax and 2 pairs were found lying in the regions corresponding to the meta and mesothoracic segments (Fig. 6).

Palmate Hairs

Abdominal palmate hairs in *A. multicolor* larvae in Egypt are, as a rule, present on segments 2-7, each hair consisting of about 12 untoothed smooth gradually sloping leaflets (Fig. 7b). In a few larvae collected from Dakhla Oasis and El-Tor (on Suez Gulf) abdominal palmate hairs were shouldered, each leaflet consisting of a broad basal part and a narrow filamentous part (Fig. 7a).