



## Research on the mosquitoes of Angola (*Diptera: Culicidae*)

II—Some new culicine records

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# Research on the mosquitoes of Angola (Diptera: Culicidae)

## II—Some new culicine records

H. RIBEIRO (1)

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### 1.—INTRODUCTION

A. F. GÂNDARA (1956) (1) summarized our knowledge of the culicine mosquitoes of Angola, presenting records of 73 taxa.

C. BROOK WORTH and H. E. PATERSON (1961) (2) added 10 new taxa to the presumed list.

In this paper, considering that any contribution to this matter should be of interest, we present 6 culicine taxa not yet recorded in Angola.

All these new records are based on specimens collected in the course of a malaria survey carried out in the Lobito-Catumbela region, during 1963-64 (3).

The microscope slides were prepared using the mounting medium and technique we proposed in another paper (4).

### 2.—TAXONOMIC AND ECOBIOLOGICAL NOTES

#### 2.1.—*Aedeomyia africana* Neveu-Lemaire, 1906

Seven larvae of *A. africana* were collected, four of which in March and three in September.

The larvae were always found, highly dispersed, breeding in large open collections of clear water with dense aquatic vegetation. The water of the breeding-places varied in salt-content from 0,18 to 0,35 g/l.

Figure 1 shows a photograph taken of the terminal segments of a fourth stage larva.

No adults of *A. africana* could be caught during the entire survey, nor man was bitten when exposed near its breeding-places.

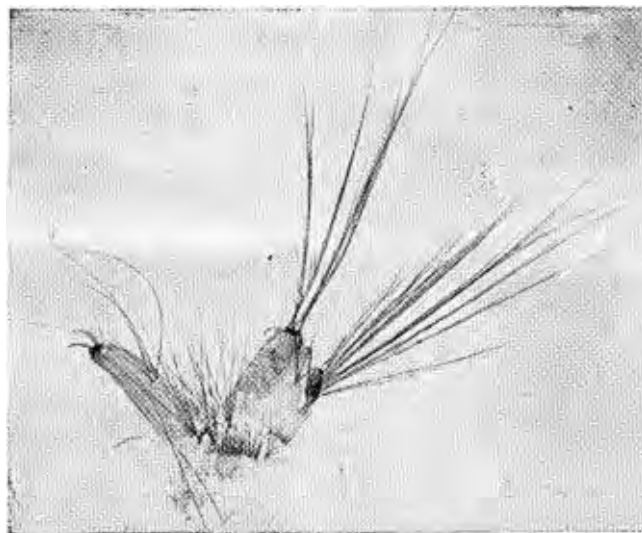


Fig. 1 — Terminal segments of a fourth stage larva of *Aedeomyia africana* from Lobito

#### 2.2.—*Aedes (Aedimorphus) durbanensis* (Theobald, 1903)

Twenty seven larvae of this species were collected, one in March and the others in May.

The breeding-places were either permanent open pools or slow flowing irrigation canals with clear water and somewhat shaded by emergent vegetation. The salt-content, measured in two breeding-places, was 1.26 and 0.30 g/l. In the last one, the organic-matter content was 40 mg of oxygen per liter.

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One engorged female was caught in houses in September, as well as three others, two of which engorged, in March.

Females were never found biting man outdoors.

Figure 2 shows a photograph taken of the terminalia of a laboratory-reared male.



Fig. 2 — Male terminalia of *Aedes durbanensis* from Lobito

2.3. — *Culex (Culex) bitaeniorhynchus* Giles, 1901

A. F. GÁNDARA (1) has already recorded some larvae from Lobito and Mulondo attributable either to *C. bitaeniorhynchus* or to *C. ethiopicus*.

The larvae we could find always bred in slow flowing or neglected irrigation canals with green filamentous algae and variably shaded by emergent vegetation. The salt-content of the breeding-water, measured in three instances, gave figures of 0.23, 0.29 and 0.58 g/l.

The determination of our material was possible through the examination of 16 adults, 5 males and 11 females emerged from laboratory-reared larvae, as well as from one female caught when biting man outdoors.

Figure 3 shows a photograph taken of the basal parts of a male terminalia.

2.4. — *Culex (Culex) tritaeniorhynchus* Giles, 1901

Only one larva of this species was identified, as well as a single male emerged from a larval pool collected in the same breeding-place.



Fig. 3 — Basal parts, side view, of the male terminalia of *Culex bitaeniorhynchus* from Lobito

The larvae bred in a shallow grassy-edged pool of turbid water with vegetable debris.

From the morphological viewpoint, our larva agree with the HOPKINS's description (5), except that it has a shorter siphon (siphonal index 5.3. in the mounted specimen).

Figures 4 and 5 show photographs taken of a coxite and of the basal parts of the male terminalia.

2.5. — *Culex (Culex) univittatus* var. *neavei* Theobald, 1906

Besides the numerous *univittatus* larvae collected during the survey, five adults (3 engorged females and 2 males) were house-caught in March.

When examining this material, we verified that our adults exhibited a variable combination of characteristics belonging either to «typical» *univittatus* or to var. *neavei*.

In fact, our males have unbanded abdominal tergites, a few small post-spiracular scales, dark scales on venter, somewhat evident pale longitudinal stripes on legs and no pale scales on lower edge of costa at base, the terminalia being of the *neavei* type in one instance (figure 6) and, in the other, with a structure much as in the «typical» form (figure 7).

All the females have a pale venter and no pale longitudinal stripes on legs. In two of them, a few small post-spiracular scales are present, but they are absent in the other. One female has pale scales at lower edge of costa at base, these scales being absent in the other two.

It would seem that, in the surveyed region, we are dealing with an intermediate population, similar

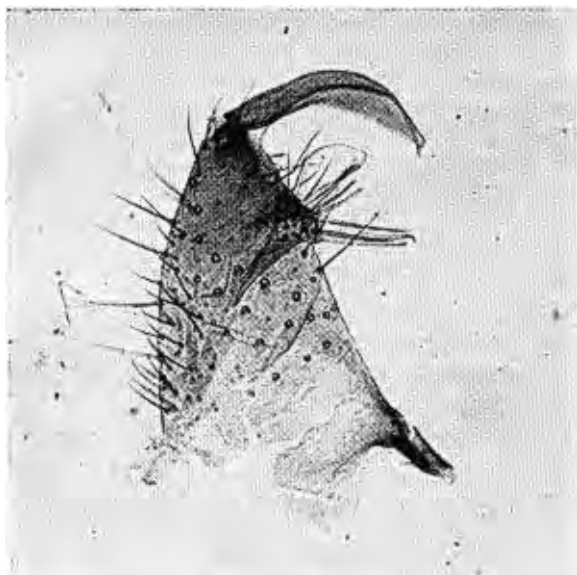


Fig. 4 — Coxite of the male terminalia of *Culex tritaeniorhynchus* from Lobito



Fig. 6 — Coxite of a male from the Lobito's *Culex univittatus* var. *neavei* population



Fig. 5 — Basal parts, side view, of the male terminalia of *Culex tritaeniorhynchus* from Lobito

to that from Lake Albert and Ruchuru, mentioned by EDWARDS (6) as «variation» under *univittatus* var. *neavei*.

2.6. — *Ficalbia (Mimomyia) mimomyiaformis* (Newstead, 1907)

Twenty four larvae of this species were collected, five of them in March and the others in May.

Larvae of *F. mimomyiaformis* bred, highly dispersed, in large ponds and slow flowing irrigation

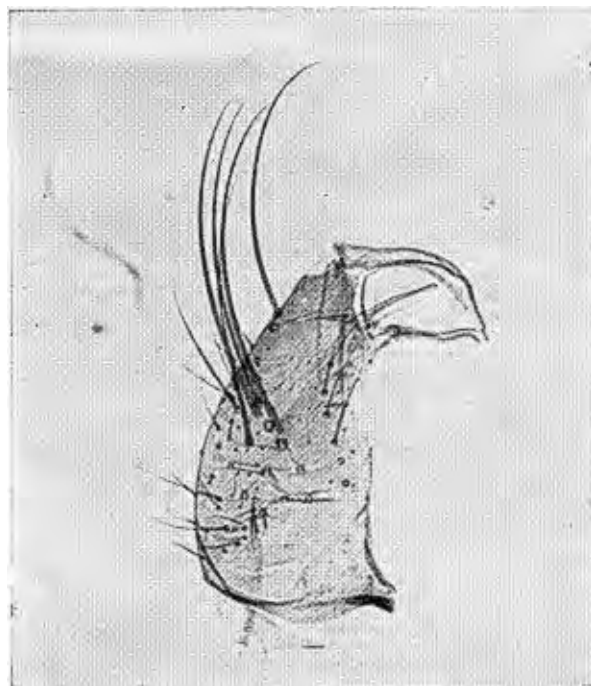


Fig. 7 — Coxite of another male from the Lobito's *Culex univittatus* var. *neavei* population

canals with clear water and dense aquatic vegetation. The salt-content of the breeding-places was a low one giving, in one instance, a figure of 0.29 g/l.

Figure 8 shows a photograph taken of the terminal segments of a fourth stage larva.

Though we have no adults, our larvae appear to be similar to that associated by HOPKINS (5) and by PETERS (7) with adults of var. *pincerna*.

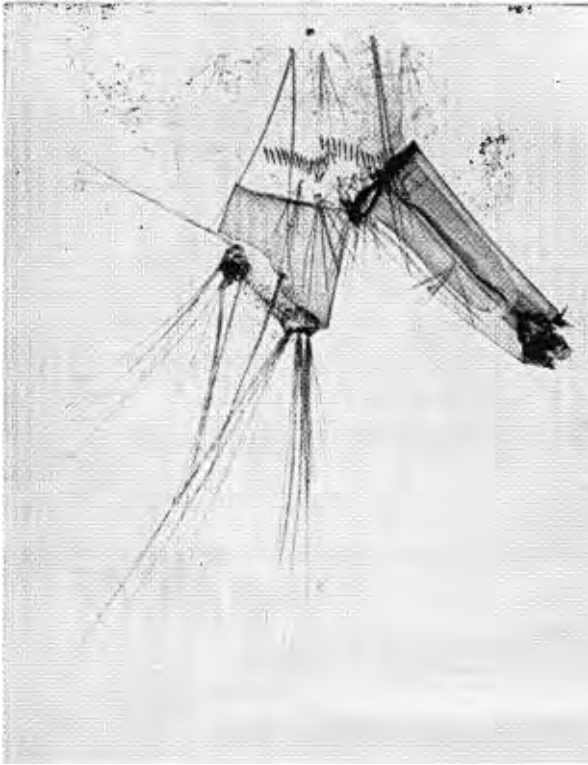


Fig. 8 — Terminal segments of a fourth stage larva of *Ficalbia mimomyiaformis* from Lobito

The main features exhibited by our larvae and supporting this point of view are: the number of the comb spines (13-17 instead of 6-7); the presence of 1-3 similar spines distal to the main row; the greater number of pecten spines (3-7), and the shorter siphon (siphonal index 2.5 in the mounted specimens).

Other morphological data regarding our larvae are: antennal tuft with 11-14 branches; setae A, B and C with 10-13, 3-4 and 5-6 branches, respectively; mentum with 6-7 teeth each side of the centre; subventral tuft of the siphon with 5-6 branches; caudal setae with 6-8 and 3 branches, respectively, and lateral seta thrice length of saddle.

Though ALAN STONE *et al.* (8) regard var. *pincerna* as synonym of *mimomyiaformis*, we give here these details, as we did under 2.5, considering that they may prove useful when comparing population of different provenances.

### 3 — SYNOPSIS

In this paper, based on material from the Lobito-Catumbela region, we add 6 to the 73 culicine taxa previously recorded in Angola.

Besides, some taxonomic and ecobiological data concerning the new records are presented.

### 4 — RESUMO

Neste trabalho, baseado em material proveniente da região Lobito-Catumbela, são apresentados 6 culicíneos, pela primeira vez assinalados em Angola, a juntar aos 73 previamente inventariados.

Por outro lado, apresentam-se também alguns dados taxonómicos e ecobiológicos interessando aqueles taxa.

### 5 — RÉSUMÉ

Dans ce travail, basé sur le matériel provenant de la région Lobito-Catumbela, nous présentons 6 culicinés, signalés pour la première fois à l'Angola, à ajouter aux 73 précédemment y reconnus.

En outre, on présente aussi quelques données taxonomiques et écobiologiques concernant ces taxa.

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