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A NEW SPECIES OF CAVE-DWELLING ANOPHELINE FROM THE FRENCH CAMEROONS

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During recent years three species of anopheline mosquitoes have been described from subterranean grottoes in the Belgian Congo. They are *Anopheles* (*Myzomyia*) *vanhoofi* from the Grande Grotte at Thysville (Wanson and Lebied, 1945), *A.* (*Myzomyia*) *rodhaini* from the Grotte de Kakontwe in the Jadotville region (Leleup and Lips, 1950), and *A.* (*Myzomyia*) *faini* from the Grotte Yolohafiri on Mont Hoyo in the Kibali-Ituri district (Leleup, 1952). To these it is now possible to add a fourth species, of which a unique female was taken by one of us (J.P.A.) in a subterranean tunnel at Oliga in the French Cameroons. A brief description of this specimen follows. It is hoped that it may be possible to augment it later when more material becomes available. The specimen has been marked as holotype and deposited in the British Museum.

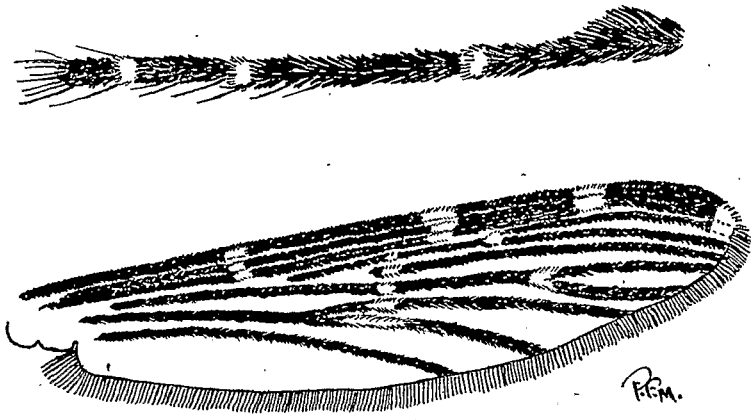
In the key to adults given by De Meillon (1947) the species would run down to *A. lovettae* Evans, from which, however, it differs in several details of wing marking, notably in the great reduction in size of the sector pale spot, the absence of the accessory sector spot, the largely dark third vein, and the wholly dark sixth vein. It is not improbable that, when the males and early stages of these two species are discovered, they may indicate a close relationship, for the occurrence of an East African element in the Cameroons fauna is well known, and Amani, the only locality recorded for *A. lovettae*, is the site of a small but distinct West African element in the East African fauna. Another possible relative is *A. jebudensis* Froud, and it is conceivable that both it and *A. lovettae* may prove to be cavernicolous when more is known about them. *A. jebudensis* was first found in the larval state in hill-foot seepages in Southern Nigeria, and there were indications that the larvae might have been washed down from higher up the hillside (Froud, 1944). Subsequently it was found, for the second and only other time, by one of us (P.F.M.) breeding in a deep, narrow, very densely shaded ravine (Mattingly, 1947). *A. lovettae* is known only from a unique female adult taken in a native hut (Evans, 1934).

From *A. faini* and *A. rodhaini*, which are not included in De Meillon's key, the present species can be distinguished as follows: from *A. faini* by the banded palps, the pale spots on the stems of the fork cells, the wholly dark vein 6, and the dark legs ; and from *A. rodhaini* by the dark-tipped palps, the presence of pale spots on the wing field, and the dark legs.

Anopheles (Myzomyia) rageaui sp. nov.

ADULT FEMALE. *Head.* Palps smooth, except at base, with three narrow pale bands at the apices of segments 2, 3 and 4 respectively. Segment 5 all dark (see fig.). Proboscis entirely dark. Frontal tuft large, whitish. Upright scales of vertex broad, some white,

others pale brown. Upright scales of occipital region broad, black. *Thorax.* Integument of mesonotum uniformly blackish. Semi-erect scales on anterior promontory narrow, pale brownish; those on shoulders black. Remaining scales of mesonotum very narrow, hairlike, dark with bronze reflection. *Abdomen* dark. Dorsum and venter apparently devoid of scales. *Legs* entirely dark, except for a slight pallor at the femoral and tibial joints. *Wings* (see fig.). Length about 3·5 mm. Outstanding scales relatively short and broad. Base of costa, proximal to the sector spot, dark. Sector spot present on costa, subcosta and vein 1, but very narrow. No accessory sector spot. Subcostal and pre-apical pale spots present on all three veins, but narrow. Apical pale spot very narrow, the fringe spot extending only to the level of the lower edge of vein 1. Small pale spots present on stems of fork cells, on vein 3 and on vein 5.1, together forming a narrow oblique stripe. A larger pale area present near the base of vein 5.2. Other small pale spots present at the bases of the upper and lower forks and at extreme tip of vein 2.1. Vein 6 entirely dark. Fringe entirely dark, except as mentioned above.



Anopheles rageaui sp. nov. Female palp and wing.

Male and Early Stages. Unknown.

Holotype female from Oliga, in the French Cameroons; in the British Museum. The holotype was found resting on the roof of an underground passage running horizontally. This tunnel, which is about 4 square metres in section and is lined with rough stonework, runs about 50 metres below a reservoir formerly used for the water-supply of the town of Yaunde. Some water runs along a gutter in the cemented floor, which is also covered in places by a slightly motile film of water, at most a few millimetres thick. The specimen was taken about 12 metres from the entrance. The temperature of the walls was 25·5° C. (about 78° F.), the temperature of the air in the tunnel was 24·5° C. (about 76° F.), and the relative humidity of the air was 88 per cent. The degree of illumination at the bottom of the tunnel was 2-5 Lux; outside it was 5,000 Lux. The tunnel and the reservoir above it are situated in a place called ' Les Sources ' in the small village of Oliga about six kilometres west of Yaunde. The height of Les Sources above sea level is 803 metres, and the reservoir is surrounded by high hills. In the same tunnel, but nearer to its mouth, were collected a fair number of adults of both sexes of *A. rhodesiensis* Theobald, a few larvae of which were found in the thin film of water on the floor of the tunnel. It is hoped that larvae of *A. rageaui* may also be found there after further search.

We have named this new species in token of our respect and friendship for Monsieur J. Rageau, of the Office de la Recherche Scientifique Outre-Mer, who was the first to undertake a systematic survey of the insects of medical importance of the French Cameroons, and who has added a number of new species to the known fauna of that territory during the last few years.

REFERENCES

De Meillon, B. (1947). The Anophelini of the Ethiopian geographical region. *Publ. S. Afr. Inst. Med. Res.*, **10**, 1.

Evans, A. M. (1934). Further notes on African anophelines, with a description of a new group of *Myzomyia*. *Ann. Trop. Med. Parasit.*, **28**, 549.

Froud, M. D. (1944). *Anopheles jebudensis* sp. nov., a new anopheline mosquito from Southern Nigeria. *Ibid.*, **38**, 73.

Leleup, N. (1950). Considérations sur l'éthologie et la dispersion actuelle des anophèles cavernicoles du Congo belge. *Rev. Zool. Bot. Afr.*, **43**, 353.

——— (1952). Un anophèle cavernicole nouveau du Kibali-Ituri : *Anopheles faini* n.sp. *Ibid.*, **46**, 151.

——— and Lips, M. (1950). Un anophèle cavernicole nouveau du Katanga : *Anopheles rodhaini* n.sp. *Ibid.*, **43**, 303.

——— ——— (1951). Notes descriptives complémentaires sur *Anopheles rodhaini*. *Ibid.*, **44**, 169.

Mattingly, P. F. (1947). Notes on the early stages of certain Ethiopian mosquitoes, with some locality records from British West Africa. *Ann. Trop. Med. Parasit.*, **41**, 239.

Wanson, M., and Lebied, B. (1945). Un nouvel anophèle cavernicole du Congo belge : *Anopheles* (*Myzomyia*) *vanhoofi* spec. nov. *Rev. Zool. Bot. Afr.*, **39**, 118.