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On Heptageniidae (Ephemeroptera) Fauna of Turkey I : A new species of the Genus *Afronurus* LESTAGE, 1924.

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This paper includes a description and figures of a new species of *Afronurus*, *Afronurus madli* n.sp. and a comparison with *Afronurus kugleri* DEMOULIN, 1973. Zoogeographical comment is also given.

Keywords: Ephemeroptera, *Afronurus madli*, taxonomy, Turkey

INTRODUCTION

The genus *Afronurus* LESTAGE, 1924 is known in the Ethiopian, Oriental and Palaearctic regions. Approximately 8 species were given from the Ethiopian and Oriental regions. The representatives of the Palaearctic region are *Afronurus kugleri* DEMOULIN, 1973 from Israel (DEMOULIN, 1973), Turkey (KAZANCI & BRAASCH, 1987), Iraq (ZUBAIDI *et al.*, 1987), Syria (KOCH, 1988) and *Afronurus zebratus* (HAGEN, 1864) from Corsica and Sardinia.

DESCRIPTION

Afronurus madli n. sp.

Male imago

Length of body: 9-10 mm; length of fore wings: 8-10 mm, length of cerci: 25-28 mm. Head and compound eyes blackish brown, frons lighter than other parts of head and distinctly protruded. Prothorax, meso- and metathorax blackish-brown, femora brown, wings transparent, yellowish with dark brown longitudinal and light brown cross veins, fields between C and Sc milky with parallel cross veins. Abdomen brown without distinct patterns. Cerci yellowish brown.

Styliger plate dark brown, with basal triangular white spot and with large basal protuberance. Anterior margin of styliger plate with small median convexity and very small lateral lobes (Fig. 1). First segment of styles blackish-brown, second segments brown, other segments light brown.

Penis stem with lateral notch, hardly sclerotized and wide, the pointed, apicolaterally concave and wide penis lobes contiguous in the middle and divergent in the apex (Figs 2, 6). The lateral and apical margins of each penis lobe fold dorsally (Figs 3, 7, 8). Titillators pointed.

Female imago

Length of body: 9-11 mm; length of fore wings: 9-12 mm. Similar to male imago in body and wing coloration. Subgenital plate with lateral concavity, with

brown stripe at the posterior half. Posterolateral margin gradually narrowing and posterior margin almost straight. Sternite 8 rounded at apex (Figs 4, 5).

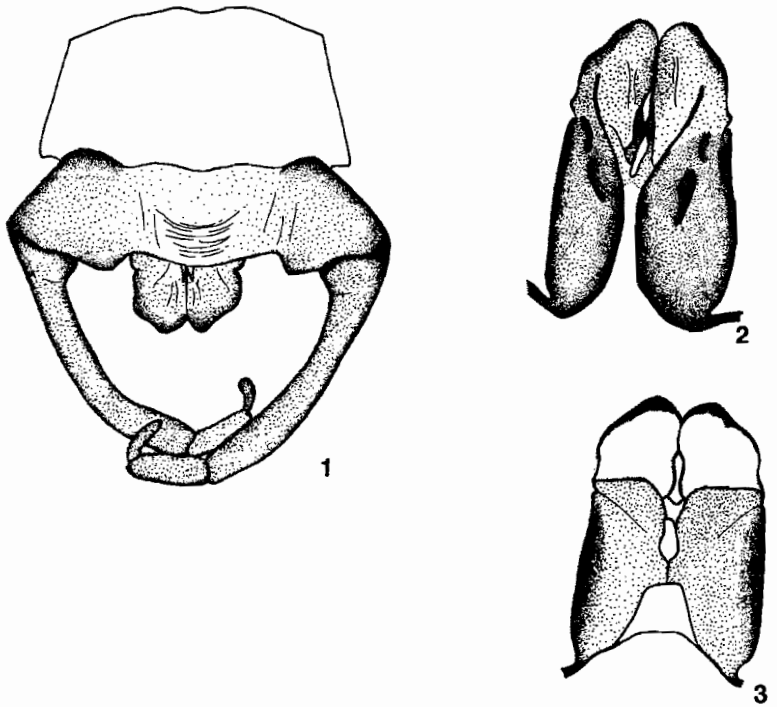
The nymph is not known.

Material.- Holotype: 1 male imago; paratypes 6 male imagines, 2 female imagines, 2 female subimagines: Diyarbakır, Karacadağ, 28.05.1987 (Leg. MADL, coll. KAZANCI).

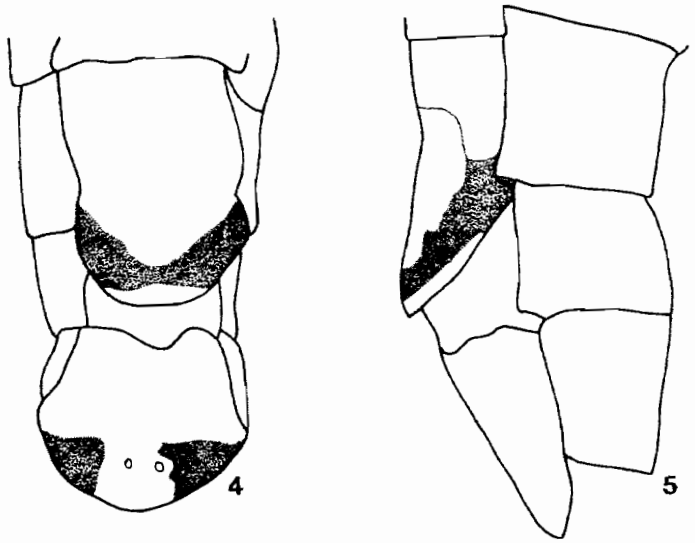
Derivatio nominis: I dedicate this new species to Dr. MADL (Austria) who kindly collected the material for this study.

AFFINITIES

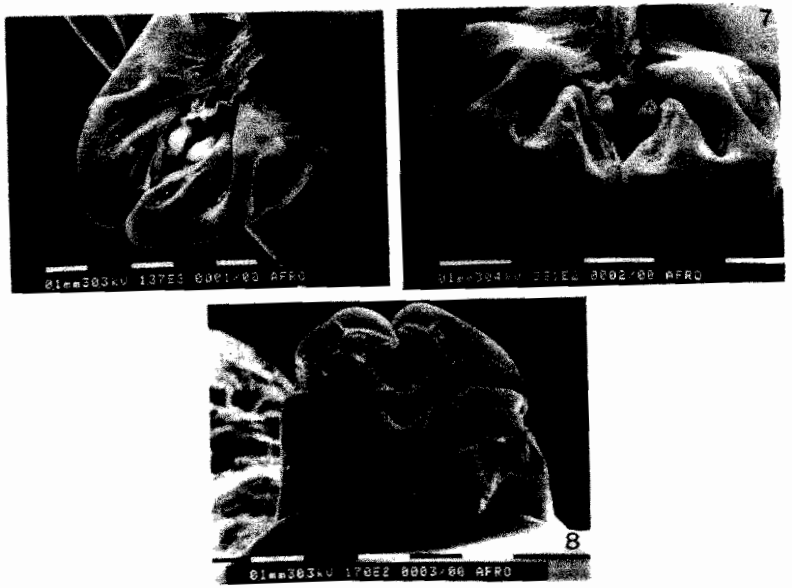
This new species evidently differs from all the known species of the genus *Afronurus* LESTAGE, 1924 in the shape of penis lobes. Compared to the other species of the genus the apical part of penis lobe is broad and rounded, apicolateral concavity of penis lobe is not very deep and each lobe have a rounded lateral protuberance. The penis stem has lateral notch.



Figs 1-3. *Afronurus madli* n. sp. Male imago. 1: Styliger plate and penis, ventral view, 2: Penis, ventral view, 3: Penis, dorsal view.



Figs 4-5. *Afronurus madli* n. sp. Female imago. 4: Subgenital plate and sternite 8,ventral view, 5: same, lateral view.



Figs 6-8. *Afronurus madli* n. sp. Male imago (SEM photographs). 6: Penis, ventral view. 7: Penis, caudal view, 8: Penis, dorsal view.

The other species of the genus have more pointed and narrower penis lobes, without lateral protuberances and the apico-lateral concavity of the penis lobes is deep. The penis stem without lateral notch. The other distinguishing characteristic is the subgenital plate of females with narrow posterior half and convex hind margin.

ZOOGEOGRAPHY

Even though Turkey can be included in the Palaearctic Region a number of faunistic elements of other zoogeographic regions occur in it (Kosswig, 1955). The pumping action of the glacial period and postglacial steppification of Anatolia had great importance for the mixing of Palaearctic elements with Ethiopian elements. The Ethiopian elements of Africa like the genus *Afronurus* had migrated to Southern and South Eastern Anatolia through the Sinai, Israel, Lebanon and Syria. Some of these elements which have wide ecological range were distributed across the whole of Anatolia even before they reached Europe.

According to intensive field work of authoress *Afronurus kugeri* Demoulin, 1973 is distributed in Middle, Eastern and South Eastern Anatolia but *Afronurus madli* n.sp. is known only in South Eastern Anatolia. Some of the collecting sites of *A. kugleri* are in the boundary of isolated areas with boreal climate while the other sites of *A. kugleri* and *A. madli* n.sp. are in the steppic regions of Middle, Eastern and South Eastern Anatolia.

RÉSUMÉ

Une nouvelle espèce d'Ephéméroptère, *Afronurus madli* n.sp., est décrite et illustrée de Turquie. Les principaux caractères la distinguant de *Afronurus kugleri* Demoulin, 1973 sont présentés, de même que quelques considérations zoogéographiques.

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Etude des larves de Chironomidae (Diptera) du Léman. 1. Systématique et faunistique

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Study of Chironomidae larvae (Diptera) in the Lake Geneva. 1. Systematic and faunistic analysis. - A total of 67 taxa of Chironomid larvae was identified in the Lake Léman between 1958 and 1985. The study concerns the whole area of the lake, from the shore to the deepest part of the lake. Upon these 67 taxa, 43 have not been previously recorded from the lake by earlier workers.

Keywords: Chironomidae, Lake Geneva, faunistic survey, species composition

INTRODUCTION

Les Chironomidés (Diptères) sont l'un des groupes d'insectes les plus abondants et diversifiés des eaux douces européennes (Illies, 1978). Avec plus de 1500 espèces, ils forment une importante composante de tous les types d'habitats aquatiques. Au sein du benthos lacustre, la famille des Chironomidés représente avec les Oligochètes la majeure partie de la macrofaune, colonisant tous les types de substrat (dalles, blocs, cailloux, macrophytes, débris, sable, limon...) et toutes les profondeurs; de plus, ils constituent une source importante de nourriture pour les poissons car leur biomasse au sein du benthos est toujours élevée.

Les problèmes taxonomiques, particulièrement avec les larves, ont empêché le développement d'études écologiques intensives. En outre, leur petite taille, leur similitude superficielle et leur grande diversité nécessite toujours un montage entre lames et lamelles et une examination au microscope pour l'identification des espèces. Les travaux récents de Ferrarese & Rossaro (1981), Cranston (1982), Wiederholm (1983), Ferrarese (1983), Moller Pillot (1984a,b), Nocentini (1985), Webb & Scholl (1985) ont ainsi permis une identification beaucoup plus précise et approfondie des larves de Chironomidés européennes.

Depuis le début du siècle, de nombreux auteurs du nord de l'Europe (Thienemann, 1925; Lundbeck, 1926; Berg, 1938; Brundin, 1949) ont utilisé les communautés de Chironomidés comme indicatrices du niveau trophique des lacs. Plus récemment, Saether (1975b, 1979, 1980) et Wiederholm (1980a, 1980b) ont mis au point un indice de qualité benthique basé sur les larves de Chironomidés des sédiments meubles . En Suisse, peu d'études faunistiques ont été entreprises sur les Chironomidés; seuls les Chironomidés des lacs de Constance (Reiss, 1968a), de Zürich (Schürch, 1985) ont fait l'objet de recherches approfondies. Quelques récoltes ont aussi été effectuées par Lenz (1954-62), Reiss (1968b), Ryser *et al.* (1980) et Wülker (1961) dans d'autres lacs alpins (lac des Quatre-Cantons, lac de Morat, lac de Thoune, lac de Sarnen, lac Majeur, lac de Sils, Greifensee, Aegerisee). Du point de