

NEW RECORDS OF MOSQUITO SPECIES (DIPTERA : CULICIDAE) IN ROMANIA

BY

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In the paper are recorded six mosquito species newly found in Romania during 1980 — 1987 period: *Aedes (Ochlerotatus) duplex*, *Aedes (Rusticoides) refiki*, *Culex (Culex) torrentium*, *Culex (Neoculex) martinii*, *Culiseta (Culicella) ochroptera* and *Coquillettidia (Coquillettidia) buxtoni*. The presence of these species in Romania was related to the distribution areas of the mosquito species in Europe presented in *Limnofauna Europaea* (1978).

The abundant Culicid fauna in Romania comprises species of six genera: *Anopheles*, *Aedes*, *Culex*, *Culiseta*, *Coquillettidia* and *Uranotaenia*.

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MATERIAL AND METHODS

The biological material was represented by larvae and adults (females) collected in the field or by adults reared in the laboratory from larvae collected in the field during 1980—1987 period. The species were identified by their morphological features according to MARTINI (1931), MOHRIG (1969) and GUTSEVICH *et al.* (1970). The nomenclatures of the species are those included in the catalog of the mosquitoes of the world (KNIGHT and STONE, 1977) and in its second supplement (WARD, 1984).

The presence of these species in Romania was related to the distribution areas of the mosquito species in Europe presented by DAHL and WHITE (1978) according to the distribution zones established by ILLIES in *Limnofauna Europaea* (1978).

RESULTS AND DISCUSSIONS

The mosquito species recorded are included in the Table 1.

Aedes (Ochlerotatus) duplex MARTINI 1926

We identified a male of *Aedes duplex* (Figure 1) resulted from larvae collected in the field and reared in the laboratory. The fourth instar lar-

Table 1

New records of mosquito species in Romania during 1980—1987 period

No.	Species	The collecting site	The collecting date	Stage of development	Collected and identified by	Observations
1	<i>Aedes (Ochlerotatus) duplax</i> MARTINI 1926	Snagov Forest	April 1981	larvae	NICOLESCU G., VELEHORSCHI N., GIURCĂ I.	Identified on a male obtained in the laboratory from larvae captured in the field
2	<i>Aedes (Ruslicoides) refuli</i> MEDSCHUD 1928	Gomana Forest	July and August 1987	adults (females)	NICOLESCU G., VELEHORSCHI N., GIURCĂ I.	—
3	<i>Culex (Culex) torrentium</i> MARTINI 1925	Black Sea Shore from Năvodari to Neptun	October 1980; May-October 1981; June-September 1982	larvae	NICOLESCU G., VELEHORSCHI N., GIURCĂ I.	Males and females obtained in the laboratory from larvae captured in the field
4	<i>Culex (Neoculex) martinii</i> MEDSCHUD 1930	Călugăreni Forest	September-October 1984	adults (females)	NICOLESCU G., VELEHORSCHI N., GIURCĂ I., GIURCĂ I., GIOLPAN O.	—
		Danube Delta-Maliuc	June 1985			
		Cernica Forest	July 1986			
		Comana Forest	August 1987			
5	<i>Caliseta (Calicella) ochropicta</i> PEES 1935	Cumpătu Mountain (Sinaia)	June 1988	female	NICOLESCU G., VELEHORSCHI N.	—
6	<i>Coquillettia (Coquillettia) burstoni</i> EDWARDS 1923	Cernica Forest	February 1982	larvae	NICOLESCU G., VELEHORSCHI N., GIURCĂ I.	GIURCĂ <i>et al.</i> , 1983
		Black Sea Shore-Neptun	June 1987	females	NICOLESCU G., VELEHORSCHI N., GIOLPAN O.	—

vae were captured in a transient ground pool located on the edge of Snagov Forest (36 km North of Bucharest) in April 1981.

Regarded as a doubtful species by GUTSEVICH *et al.* (1970), *A. duplex* was registered by KNIGHT and STONE (1977) and by DAHL and WHITE (1978) as a Easteuropean species present undoubtedly in the zone of East-european Plain including Moldavia. We found this species in the Pontic area comprising the Danube Plain.



Fig. 1.—*Aedes duplex* — male genitalia
(Ob. 10×, Oc. 10×)

Aedes (Rusticoidus) refiki MEDSCHID 1928

We captured two females of *A. refiki* in Comana Forest (30 km South of Bucharest) on July and August, 1987. The collections were completed on human bait in daytime.

A. refiki (own subgenus *Rusticoidus* by SHEVCHENKO and PRUDKINA, 1973) is a Westpalaeartic species presumably present in most part of Romania (DAHL and WHITE, 1978). We found this species till now in the Danube Plain.

Culex (Culex) torrentium MARTINI 1925

Culex torrentium was identified as larvae and adults (males and females). All the adults resulted from larvae collected in the field and reared in the laboratory. The species was recorded on the Black Sea Shore between Năvodari and Neptun from May until October. The larvae were found together with those of *Culex pipiens* in great variety of natural and man made breeding sites : lakes, marshy areas, perennial ponds with plant associations as *Typha*, *Phragmites*, *Lemna* etc., swamps, occasional water accumulations by rain, stagnant water in ditches, container habitats (man made) as water purifying reservoirs etc. They were developed in eutrophic and oligotrophic habitats with fresh or rather salty water.

This european species was likely to be found in Romania according to DAHL and WHITE (1978).

Culex (Neoculex) martinii MEDSCHID 1930

The identified females of *Culex martinii* (Figure 2) were captured in the leaf woods: Călugăreni (30 km South of Bucharest), Maliuc — the Danube Delta, Cernica (near Bucharest) and Comana. In each area the females were collected by only one of the following methods: collection from tree hollows, collection with the entomological net or with the light trap and on the human bait, in spite of the use of several methods every time.

This South Central palaeartic and East mediterranean species was likely to be found in the West Plain of Romania (DAHL and WHITE, 1978); until now we found it in the Danube Plain and the Danube Delta.

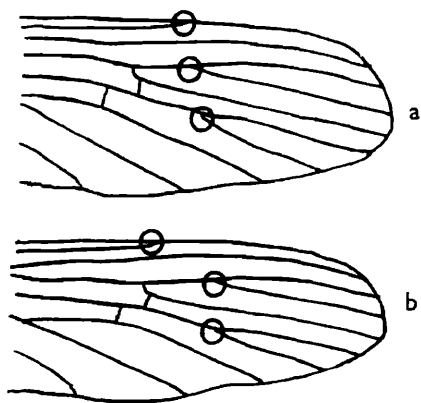


Fig. 2. — Wings of *Culex modestus* (a) and *C. martinii* (b) (after MOHRIG, 1969)

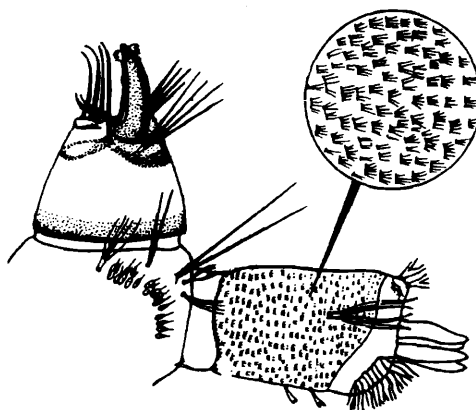


Fig. 3. — *Coquillettidia burtoni* — fourth instar larva (after GUTSEVICH *et al.*, 1970)

Culiseta (Culicella) ochroptera PEUS 1935

In June 1986, a female of *Culiseta ochroptera* was captured on human bait in a mostly coniferae forest on the Cumpătu Mountain near Sinaia, at an altitude of 1100 m.

The presence of this palaeartic species (*silvestris* Shingarev nomina dubia, DAHL and WHITE, 1978; WARD, 1984) in the Carpathian Mountains is in accordance with DAHL and WHITE (1978).

Coquillettidia (Coquillettidia) burtoni EDWARDS 1923

Two third instar larvae and one fourth instar (Figure 3) were found in February 1982, under an ice cover 8 cm thick, in Tinganu stream, a nearly standing water forming a pond in Cernica Forest, with plant association of *Typha latifolia* and *Lemna minor* (GIURCĂ *et al.*, 1983).

In June 1987, three females of *Coquillettidia burtoni* were collected on human bait in Neptun, 500 m from Tatlageac Lake where *Phragmites communis* have developed.

This mediterranean species, identified also in the South of the East-european Plain (DAHL and WHITE, 1978), was recorded by us in the Pontic area including the Danube Plain and the Black Sea Shore.

CONCLUSIONS

1. Six mosquito species were newly recorded in Romania these last years: *Aedes (Ochlerotatus) duplex*, *Aedes (Rusticoidus) refiki*, *Culex (Culex) torrentium*, *Culex (Neoculex) martinii*, *Culiseta (Culicella) ochroptera* and *Coquillettidia (Coquillettidia) burtoni*.

2. *Aedes refiki*, *Culex torrentium* and *Culiseta ochroptera* were recorded in areas where their presence was undoubtedly according to *Limnofauna Europaea* (1978).

3. *Aedes duplex*, *Culex martinii* and *Coquillettidia burtoni* presumably present in some distribution areas of Romania (DAHL and WHITE, 1978), were recorded by us in other areas for which no data are available in *Limnofauna Europaea* (1978).

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NOUVEAU ENREGISTREMENTS D'ESPÈCES DE MOUSTIQUES (DIPTERA: CULICIDAE) EN ROUMANIE

Résumé

Dans cet article l'on enregistre de nouvelles espèces de moustiques trouvées en Roumanie dans la période 1980—1987: *Aedes (Ochlerotatus) duplex*, *Aedes (Rusticoidus) refiki*, *Culex (Culex) torrentium*, *Culex (Neoculex) martinii*, *Culiseta (Culicella) ochroptera* et *Coquillettidia (Coquillettidia) burtoni*.

La présence de ces espèces en Roumanie est mise en liaison avec les aires de distribution des espèces de moustiques en Europe présentées par « *Limnofauna Europaea* » (1978).