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OCHLEROTATUS DAHLAE, A NEW MOSQUITO SPECIES FROM UTAH

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ABSTRACT. *Ochlerotatus dahlae*, a new mosquito species from the mountain valleys of Utah, is compared to its closest related species, *Ochlerotatus excrucians*, and the characteristics that separate the two species are delineated.

KEY WORDS Mosquitoes, *Ochlerotatus dahlae*, *Ochlerotatus excrucians*, Utah, tarsal claw

INTRODUCTION

My use of *Ochlerotatus* as the genus in describing this new species is based on many years of study of *Aedes* mosquitoes. My research of adult genitalia revealed characters in the subgenus *Ochlerotatus* that differed significantly from other *Aedes* subgenera. Larval differences were also noted, including an important study of the larval mouthparts of 4th instars of the *Aedes* subgenera. (The details of this study will be presented in a future publication.) The study included 87 larvae, of which nearly half were from areas outside of North America. Larvae of the subgenus *Ochlerotatus* proved to be a homogeneous group with distinctive character differences from other subgenera. I was, therefore, strongly supportive when Reinert (2000) elevated this large group of mosquitoes to generic status based on differences in characters in the male and female genitalia and the immature stages.

DISCUSSION

Collections of mosquitoes have been made by the author throughout large portions of the Holarctic region with special emphasis on the *Oc. excrucians* complex. Larval and adult specimens were collected throughout Canada, the northern United States, and northern Europe, and specimens were obtained from collectors in Russia.

Ochlerotatus excrucians (Walker) is a distinctive banded-legged species found throughout the northern forested regions of North America and the Palearctic region. Distribution records are best recorded for North America by Darsie and Ward (2005) and by Natvig (1948) for Europe and Gutsevich et al. (1974) for Russia and the eastern Palearctic.

During the course of the *Oc. excrucians* study it became apparent that a population in Utah warranted designation as a new species because of important differences in larval and adult characters and habitat preference. Because of the similarity of characters between the 2 species, however, a differential diagnosis is considered more appropriate than a detailed description of all stages.

Ochlerotatus dahlae Nielsen, new species

TYPES: Holotype female with associated larval and pupal skins, treeless pasture, 4,800 ft (1,440 m), 1 mi west of Mountain Green, Morgan County, Utah, April 29, 1982, L.T. Nielsen. Allotype male with associated larval and pupal skins, same data as holotype.

Paratypes: 4F, 3M, 5L, 2P; same data as holotype. 2F, 9M, 6L, 21 May 1964. 29F, 13M, May 2, 1985. All paratypes from same locality as holotypes.

Holotype, allotype, and above paratypes deposited in the R. M. Bohart Museum of Entomology, Davis, CA. 2F, 2M, 1L paratypes to the US National Museum, Washington, DC, and 14F, 9F, 11L, 2P paratypes to the Utah Mosquito Collection, Salt Lake City Mosquito Abatement District, collected in April 1969, 1972, 1980, and 1981.

Ochlerotatus dahlae is closely related to *Oc. excrucians*. There are no distinguishing differences in the male terminalia and pupal chaetotaxy.

LARVAE: Larvae are similar, but differences exist in the larval setae and siphon (Figs. 1A, 1B). Prothoracic seta 5-p is double in *Oc. dahlae*, usually single in *Oc. excrucians*. Lateral abdominal seta 6 is double on segments IV–VI in *Oc. dahlae* and single (rarely double) in *Oc. excrucians*. The siphonal index is about 4.0 in *Oc. dahlae* and the siphon not as strongly tapered distally as in *Oc. excrucians*, which has a siphonal index of 4.5–5.0 and is strongly tapered distally.

ADULT FEMALE: The most distinguishing feature of the adult female *Oc. dahlae* is the scaling on the proboscis. The entire proboscis is white scaled, with only a few scattered dark scales present. In *Oc. excrucians* the proboscis is dark scaled, with some specimens having an irregular smattering of a few pale scales. In other respects the scaling of the 2 species is very similar.

TARSAL CLAW: In *Oc. excrucians* (Fig. 1E), the claw is sharply bent with the subbasal tooth

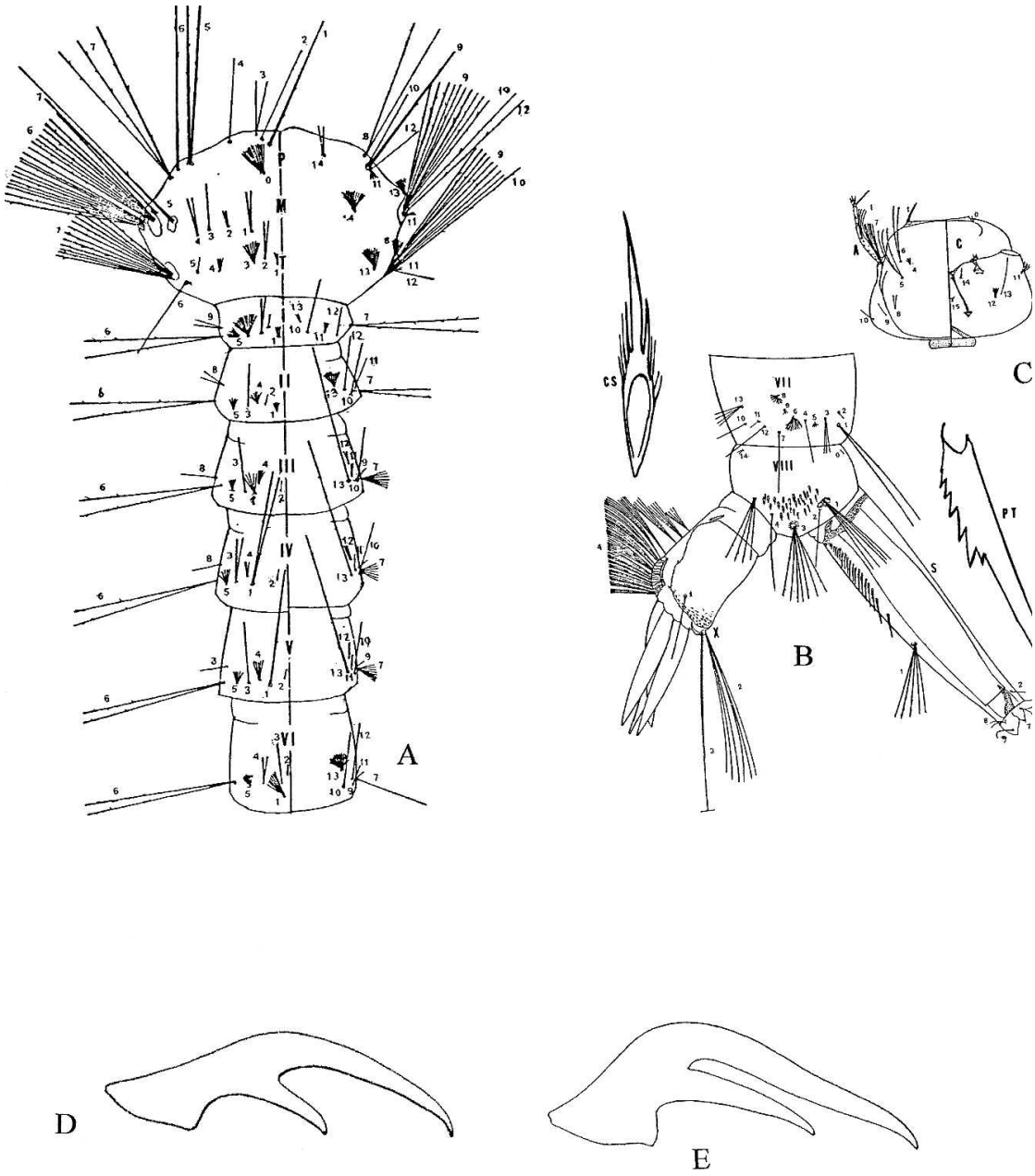

Fig. 1. Larva of *Ochlerotatus dahlae*. (A) Thorax and abdomen; (B) abdominal segments VII, VIII, X, and siphon, comb scale (CS), pectin tooth (PT); (C) head, female hind tarsal claw; (D) *Oc. dahlae*; (E) *Oc. excrucians*.

virtually parallel to the claw. This is true of the northernmost specimens. This includes the northern United States, Canada, and the northern Polearctic. Specimens collected from southern sites (southern Europe and the mountains of the western United States) have the tooth angled away from the main claw, which is referred to as the wide claw type (Dahl et al. 1984). In *Oc. dahlae* (Fig. 1D), the claw is similar to the wide claw type, but the main claw is not as strongly bent and the tooth is more severely angled away from the main claw.

HABITAT: *Ochlerotatus excrucians* and *Oc. dahlae* differ notably in habitat distribution. *Ochlerotatus excrucians* is strongly associated with northern coniferous or deciduous forests, rarely extending into the tundra regions. In the western United States, *Oc. excrucians* is confined to the mountains in forested areas usually above 2,500 m (7,500 ft). Larvae of *Oc. excrucians* are

usually found in deeper semipermanent or permanent pools, often with aquatic vegetation. This is particularly true in the western United States. Larvae of *Oc. dahlae* occur in nonpermanent pools flooded by spring precipitation or irrigation runoff in treeless pastures in the mountain valleys of northern Utah at elevations below 1,500 m (5,000 ft).

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