

sonal communication) in Wayne County, Ohio during June and July, 1955. The Hydracarina discussed in this paper were identified by Dr. Crowell to whom the author is indeed grateful.

Uchida and Miyazaki (1935) have presented similar observations on water mites associated with species of the genus *Anopheles* in Japan; *Arrenurus madarski* Daday was reported with a 57 percent infestation rate when 219 *Anopheles* adults were examined.

In general the water mite belonging to the genus *Arrenurus* was quite host specific on species of *Anopheles*, even though larvae of *Culex erraticus* were often present in the same habitat. It is interesting to note that while *Culex* mosquitoes were often very abundant, these mites were never observed on *Culex* larvae or adults.

The reduction in mites during 1959, when precipitation was much greater, was probably attributable to the flushing of the stream during periods of heavy precipitation.

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SCIENTIFIC NOTES

A NEW DISTRIBUTION RECORD FOR *Culiseta* (*Culicella*) *minnesotae* BARR¹

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On July 9, 1963, during the second year of a special survey of potential eastern encephalitis mosquito vectors in Plainville, Connecticut, 13 larvae were obtained from stagnant swampy water at Maiden Lane; of these, 10 were reared to adults and identified as *Culiseta* (*Culicella*) *minnesotae* Barr, while the 3 remaining (preserved) larvae were identified tentatively as the same species. On September 28, one more larva was obtained from stagnant water at Stremleau Avenue, reared to adult, and identified as the same species.

This represents a first report of this species in Connecticut.

Although an intensive mosquito survey of all possible breeding sites had also been carried out during the previous year by the author, no *C.*

minnesotae were found. This has led to the belief that recent findings in Plainville are the result of current infestation.

This species was reported and described by Barr, in 1957, from scattered localities in Minnesota. It was later reported from Utah by Nielsen and Rees (1959). Additional collections have been made from Idaho and Montana, in 1962 (Nielsen, *et al.*, 1963).

Two possibilities are thus open to speculation: that this species has recently been transported from western states to its present eastern site, or it has been present in Connecticut for some time without being detected. The second possibility points to a scarcity of this species in Connecticut although further investigation may reveal it in other localities.

Published reports indicate that the larvae would be expected to occur in semi-permanent marshes. However, the author has found larvae in permanent stagnant swampy water caused by inundations from slowly moving rivers at a typical bend heavily overgrown with weeds and brush. The sites were about two miles apart, in two separate rivers, the Pequabuck and the Quin-nipiac.

In published reports on the biology of *C. minnesotae*, it is suggested that hibernation appears to be by adult females. Adults are attracted to light, and they have been taken from April to June and from September to October. The

¹This report is part of a research program conducted under the direction of Dr. William Stan-ziale, and submitted as a dissertation for the degree of Master of Arts, St. Joseph College, West Hartford, Connecticut.

finding of larvae in September by the author supports the view that this species occurs late in the mosquito season, and it may be noted that larvae were not found prior to July 9th.

Adults have not been obtained in hand catches, and published reports indicate that this mosquito may not feed readily on man. Further studies by the author in 1964 may add to this meagre information.

The eggs of this species are undescribed. The larva and pupa have been described by Price (1958). According to Price, the larva of *C. minnesotae* can be separated from *C. morsitans* (Theobald) by the number of branches in the upper head hairs (7-8 in *minnesotae* compared to 4-5 in *morsitans*), the number of branches in post-antennal tuft (9-12 in *minnesotae* compared to 6-8 in *morsitans*), and the number of tufts in the ventral brush (17-18 in *minnesotae* compared to 20 in *morsitans*).

The adult female is described by Barr (1957) as with dark wing scales and with pale bands on the abdominal terga covering the apex of one segment and the base of the next. The male terminalia differ from *C. morsitans* in the shape of the phallosome.

The author wishes to express his thanks to Dr. Alan Stone for his confirmation of the identification of this species.

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THE BREEDING SITE OF *Culicoides debilipalpis* LUTZ (DIPTERA: CERATOPOGONIDAE)

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While making a study of the distribution and biology of *Culicoides* in relation to poultry in Virginia, collections of decaying organic matter were made from hollow stumps and other suspected breeding sites of these insects. This material was brought to the laboratory and reared in ice cream cartons fitted with emergence cages.

On August 19, 1962, material was collected from the bottom of a stump hole in a woods known as the Simmers Tract near Mount Crawford in Rockingham County, Virginia. There was no standing water present, but the bits of wood and leaves taken were very wet. The stump was of a White Oak tree (*Quercus alba*) and the hole was about 18 inches deep and ten inches in diameter. This material was brought into the laboratory and kept at room temperature.

An adult *Culicoides* emerged from this substrate on September 3, 1962, and was subsequently identified as a male *C. debilipalpis* Lutz. This is the first known recorded breeding site of this tropical species. This breeding site conforms to the others that are known in its subgenus.

This relatively rare species has also been taken in light traps at Blacksburg (June 22, 1960, August 1, 1960), Ferrum (July 31, 1959, August 6, 1959) and Elkton (August 8, 1960). All of these specimens are female.