

SCIENTIFIC NOTE

DISCOVERY OF *CULEX (NEOCULEX) ARIZONENSIS* IN TEXAS (DIPTERA, CULICIDAE)

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ABSTRACT. A population of *Culex arizonensis* was found in Guadalupe Mountains National Park, Culberson County, TX. A new state record, this extends the range of this species eastward by 828 km. The essential diagnostic characters of the 4th-stage larva are given.

KEY WORDS *Cx. arizonensis*, Texas, new record

The subgenus *Neoculex*, genus *Culex* in the Nearctic Region was revised by Bohart (1948). He described *Culex (Neoculex) arizonensis* Bohart from collections near Prescott, AZ. It was redescribed by Carpenter and LaCasse (1955). Identification keys and collection records from Pima, Santa Cruz, and Yavapai Counties, AZ, were provided by McDonald et al. (1973) and noted in Dar-

sie and Ward (1981). Vargas and Martinez Palacios (1955) and Vargas (1956) recorded it from 5 states in Mexico.

Six 4th-stage larvae of *Cx. arizonensis* were collected in Dog Spring, a well-spring located on the western limestone wall of dry wash Upper Dog Canyon on the northern border of the Guadalupe Mountains National Park, Culberson County, TX



Fig. 1. The northwestern section of Texas showing the location of the Guadalupe Mountains National Park, Culberson County, TX.

(31°58'N, 104°50'W) at an elevation of 2,084.8 m on March 21, 2002 (see Fig. 1), by the senior author. The spring is approximately 2 m wide and appears to be open to a cave. The bottom was lined with dead leaves that gave the water a brown color. There was no flow out of the spring and the area was shaded by trees. The collection site is 828 km east of the known Arizona distribution and, according to Vargas (1956), the closest to the collection site in Mexico, 1,254 km south of Guanajuato. Previously, a total of 18 species in the genus *Culex* were listed in Texas by Darsie and Ward (1981). The Guadalupe Mountains find brings the total to 19. The specimens were slide mounted and deposited in the collections of the Florida Medical Entomology Laboratory and the Department of Entomology, Clemson University.

The larvae are recognized by the very long, rather stout, subequal, usually double, setae 5, 6-C, whose range and mode are as follows: 5, 2-4 (2); 6, 2-3(2); the long seta 1a-S, whose length is 1.5 times or more the distance from its alveolus to the siphonal base (Texas larvae measured 1.6-2.2 \times , mean 1.86 \times), seta 1-M with 4-6 branches and more than 0.5 length of antennae; thorax aculeate; siphon with narrow, dark band at base and index of 4.9-5.5, mean 5.2. This disagrees with Bohart (1948), who recorded the siphon index as 7.0. The difference can be explained by the Texas larvae having siphons basally flared, thus wider than larval siphons in the Arizona population (see Bohart's Fig. 21). Pecten spines are fringed with 1-3 subapical denticles in addition to a large basal denticle.

The Texas *Cx. arizonensis* larvae taken from a spring represent a previously unrecorded habitat for this species. Bohart (1948) and subsequent authors (Carpenter and La Casse 1955, McDonald et al. 1973) mention only shaded creek bed pools that are associated with riparian forests.

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REFERENCES CITED

- Bohart RM. 1948. The subgenus *Neoculex* in America north of Mexico (Diptera, Culicidae). *Ann Entomol Soc Am* 41:330-345.
- Carpenter SJ, LaCasse WJ. 1955. *Mosquitoes of North America (north of Mexico)*. Berkeley, CA: University of California Press.
- Darsie RF Jr, Ward RA. 1981. *Identification and distribution of the mosquitoes of North America, north of Mexico*. Fresno, CA: American Mosquito Control Association.
- McDonald JL, Sluss TP, Lang JD, Roan CC. 1973. *Mosquitoes of Arizona*. Arizona Agricultural Experiment Station Technical Bulletin 205. Tucson, AZ: Arizona Agricultural Experiment Station.
- Vargas L. 1956. Especies y distribución de mosquitos mexicanos no anophelinos (Insecta, Diptera). *Rev Inst Salubr Enferm Trop* 16:19-36.
- Vargas L, Martinez Palacios A. 1955. Mosquitos comunes a Mexico y a los Estados. *Bol Epidemiol (Mexico)* 17: 129-134.