

Notes on the Distribution of Alaskan Mosquitoes¹

William E. Bickley, Department of Entomology,
University of Maryland, College Park 20742

ABSTRACT

The known distribution of *Aedes aboriginis* Dyar, *Ae. beklemishevi* Denisova (= *barri* Rueger), *Ae. campestris* Dyar and Knab, *Ae. cataphylla* Dyar, *Ae. ventrovittis* Dyar, *Ae. vexans* (Meigen), and *Culiseta particeps* (Adams) in Alaska is discussed.

A study of specimens in the U. S. National Museum of Natural History, Smithsonian Institution, has resulted in some new locality records for Alaska. Within the last few years collections from the Arctic Health Research Center, Fairbanks, Alaska and specimens from other sources have been added to older material all of which is now under the care of the Medical Entomology Project. The number of males in the newer material is relatively small. On the other hand there are over 6,000 slides of larvae most of which were prepared under the supervision of Dr. W. C. Frohne, and there are from 1 to 4 specimens on each slide. Some of these specimens had not been identified. In the years following publication of the handbook on Alaskan mosquitoes by Gjullin et al. (1961), several papers concerning the Alaskan fauna have appeared. A record of these papers up to 1974 was published by Carpenter (1968, 1970, and 1974). These lists are very useful.

This report, with a few exceptions, deals with previously unpublished distribution data.

Aedes (Ochlerotatus) aboriginis Dyar

Adult females of *Ae. aboriginis* cannot be distinguished from some forms of *Ae. punctor* (Kirby). *Ae. aboriginis* is common near Juneau and at other Panhandle points according to Frohne and Sleeper (1951). They collected larvae in May, June, and July at Juneau, Ketchikan, Wrangell and Petersburg. Additional localities where Frohne collected larvae that were not previously identified were Seward, June 1949; Mendenhall Glacier, Herbert Glacier, and Peterson Creek, June 1952; and Chitina, May 1954.

¹Scientific Article No. 2221, Contribution No. 5207 of the Maryland Agricultural Experiment Station, Department of Entomology, Project H-104.

Tulloch (1934) collected *Ae. aboriginis* at Fairbanks. The identification of specimens from Seward and Chitina provides additional evidence that this species is not confined to the Panhandle.

A study of a series of specimens from Washington and British Columbia identified by H. G. Dyar suggests that the following may be useful diagnostic larval characters: antennal tuft reaching near end of antenna; seta 5-C (upper head hair) not more than 5 - branched; seta 6-C (lower head hair) often only 2 - branched; comb scales each with strong median spine but many similar to those of *Ae. pullatus*; distal pecten teeth robust compared with those of *Ae. pullatus*; seta 1-X (lateral hair of anal segment) longer than plate.

Aedes (Och.) *beklemishevi* Denisova

Danilov (1974) synonymized *Ae. barri* Rueger, 1958 with *Ae. beklemishevi* Denisova, 1955. Nielsen and Horsfall (1973) reported that this species was collected in late July, 1969 from the Chena River Valley near Fairbanks. Adult females closely resemble those of *Ae. excrucians*, *Ae. fitchii* and *Ae. stimulans*. Male genitalia of *Ae. beklemishevi* (= *barri*) and *Ae. excrucians* appear to be indistinguishable. Larvae of *Ae. beklemishevi* have pecten teeth extending well beyond the middle of the siphon, usually to the outer third, with the siphonal tuft inserted distal to the last tooth. In *Ae. excrucians* the pecten teeth do not extend beyond the middle of the siphon, and the tuft is inserted near the middle. The usual number of detached teeth in *Ae. beklemishevi* is 3-4, but in *Ae. excrucians* it is 1-2. The spine on each valve of the siphon is larger, longer, and much more strongly curved in *Ae. excrucians* (Brust and Kalpage 1967).

Aedes (Och.) *campestris* Dyar and Knab

Ae. campestris was recorded from Alaska by Dyar (1922). This record was based on a female collected by Dyar at Skagway, June 25, 1919. This specimen appears to be *Ae. campestris*, although it is possibly the only representative of the species from Alaska. Gjullin et al. (1961) omitted *Ae. campestris* from their handbook.

Aedes (Och.) *cataphylla* Dyar

Gjullin et al. (1961) reported that *Ae. cataphylla* is found in central Alaska from Anchorage north to Fairbanks and west to Teller. In the U.S.N.M. are 3 females labelled Umiat. Two were collected by K. L. Knight and G. Schultz, July 12, 1948, and the third specimen was collected by W. C. Frohne, July 12, 1949. The known distribution of this species is thus extended north of the Brooks Range. Carpenter (1974) indicated that Graham (1969) had reported *Ae. cataphylla* from Alaska, but an examination of Graham's paper fails to detect Alaskan records.

Aedes (Och.) ventrovittis Dyar

A larva labelled *Aedes* sp., collected by W. C. Frohne at Cantwell, July 5, 1954 has been identified as *Ae. ventrovittis*. This specimen is on a slide with a larva of *Ae. hexadontus* Dyar. The adult female, but not the larva, of *Ae. ventrovittis* was described by Dyar (1916). The female of *Ae. fisheri* was described by Dyar (1917) and the larva by Dyar (1920). *Ae. fisheri* was synonymized with *Ae. ventrovittis* by Dyar (1924). Two larval skins (Summit, Calif. 1920) and 1 skin (Lake Tahoe, Calif. 1921) were collected by Dr. Dyar and were undoubtedly used in preparing the description of the larva of *Ae. ventrovittis* (= *fisheri*). These were compared with Frohne's specimen from Cantwell. Other U.S.N.M. larvae of *Ae. ventrovittis* from Alpine County, California (Bohart 1950) were studied. Although the anal gills are missing there seems to be no question about the identity of the single larva collected at Cantwell. Using the key, description, and figure of Carpenter and La Casse (1955) it is easily recognized.

The known range of *Ae. ventrovittis* is thus extended to another state. Carpenter (1963) reported in some detail on the biology of this species.

Aedes (Aedimorphus) vexans (Meigen)

Ae. vexans is listed here because it was not discovered in Alaska until after the publication of the handbook by Gjullin et al. (1961). Apparently this species has been collected only once; 2 females were taken 9.5 mi. southeast of Fairbanks in September 1967 by Sommerman (1968).

Culiseta (Culiseta) particeps (Adams)

One larva of *C. particeps* was collected by Frohne at Ketchikan July 27, 1949. This previously unreported record is not surprising since Ketchikan is less than 100 miles south of Wrangell.

ACKNOWLEDGMENT

I thank Dr. Ronald A. Ward, Walter Reed Army Institute of Research and the Medical Entomology Project, Smithsonian Institution, for his valuable help in initiating and conducting this investigation.

REFERENCES CITED

- Bohart, R. M. 1950. Observations on snow mosquitoes in California (Diptera: Culicidae). Pan-Pac. Entomol. 26: 111-118.
- Brust, R. A. and K. S. Kalpage. 1967. New records for *Aedes* species in Manitoba. Mosquito News 27(1): 117-118.
- Carpenter, S. J. 1963. Observations on the distribution and ecology of mountain *Aedes* mosquitoes in California IX. *Aedes ventrovittis* Dyar. Calif. Vector Views 10(2): 5-10.
- Carpenter S. J. 1968. Review of recent literature on mosquitoes of North America. Calif. Vector Views 15(8): 71-98.
- Carpenter, S. J. 1970. Review of recent literature on mosquitoes of North America Supplement I. Calif. Vector Views 17(6): 39-65.
- Carpenter, S. J. 1974. Review of recent literature on mosquitoes of North America Supplement II. Calif. Vector Views 21(12): 74-169.
- Carpenter, S. J. and W. J. La Casse. 1955. Mosquitoes of North America. Univ. of Calif. Press, Berkeley and Los Angeles. 360 pp.
- Danilov, V. N. 1975. On the possible identity of the mosquitoes, *Aedes* (*Ochlerotatus*) *beklemishevi* Denisova and *A. (O.) barri* Rueger (Diptera, Culicidae). Parazitologiya 9(1): 61-63. In Rus., Engl. Sum.
- Dyar, H. G. 1916. New *Aedes* from the mountains of California (Diptera, Culicidae). Ins. Ins. Mens. 4: 80-90.
- Dyar, H. G. 1917. The mosquitoes of the mountains of California (Diptera, Culicidae). Ins. Ins. Mens. 5: 11-21.
- Dyar, H. G. 1920. The *Aedes* of the mountains of California and Oregon. Ins. Ins. Mens. 8: 165-173.
- Dyar, H. G. 1922. The mosquitoes of the United States. Proc. U. S. Nat. Mus. 62(1): 1-119.
- Dyar, H. G. 1924. Notes on *Aedes ventrovittis* Dyar (Diptera: Culicidae). Ins. Ins. Mens. 12: 181-182.
- Frohne, W. C. and D. A. Sleeper. 1951. Reconnaissance of mosquitoes, punkies, and blackflies in southeast Alaska. Mosquito News 11(4): 209-213.
- Graham, P. 1969. Observations on the biology of the adult mosquitoes (Diptera: Culicidae) at George Lake, Alberta, Canada. Quaestiones Entomol. 5(4): 309-339.
- Gjullin, C. M., R. I. Sailer, A. Stone, and B. V. Travis. 1961. The mosquitoes of Alaska. U. S. Dept. Agric. Agric. Handbook 182: 1-98.

Nielsen, L. T. and W. R. Horsfall. 1973. The occurrence of *Aedes barri* Rueger in Alaska with notes on its distribution. Mosquito News 33(2): 243.

Sommerman, K. M. 1968. Notes on Alaskan mosquito records. Mosquito News 28(2): 233-234.

Tulloch, G. S. 1934. Mosquito investigations in Alaska. Psyche 41: 201-210.