A NEW SPECIES OF MOSQUITO FROM MONTANA, WITH ANNOTATED LIST OF THE SPECIES KNOWN FROM THE STATE

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The discovery of a new species of mosquito in Montana is an unexpected and noteworthy event, not only because the State has been so often and so well explored for its mosquito fauna but because the species hitherto found have all an extended range outside of the State. That the present new species is confined to Montana is hardly to be expected, yet it has so far eluded intensive collecting elsewhere.

This discovery is due to the skill of G. Allen Mail, acting for the Bozeman Experiment Station under the direction of W. B. Mabee, extension entomologist. Mr. Mail formerly acted as assistant to Eric Hearle, the Canadian mosquito expert, during the campaign at Banff which was so satisfactorily carried out from the viewpoint of the visiting tourist.

AËDES SCHIZOPINAX, new species

Female.—Proboscis rather long, slender, uniform, black. Palpi short, about one-eighth the length of the proboscis, black. Occiput with bronzy brown narrow curved scales. Mesonotum with bronzy-brown scales; two broad darker brown bands are faintly relieved, lighter edged outwardly posteriorly, separated by a very narrow median bare line; posteriorly the scales and hairs are lighter, with a faint whitish tint. Abdomen black, with broad basal segmental sordid white bands, the last two segments very largely whitish; venter whitish scaled, with more or less developed median black dashes. Legs black, the femora pale beneath. Wing scales hairlike, all dark. A rather small species, about the size of *cataphylla*.

Male.—Palpi as long as the proboscis, the last joint slightly club-shaped, the penultimate joint with long hairs, black. General coloration as in the female, the vestiture of the mesonotum slightly more sparse and open. Hypopygium: Sidepiece slender, uniform, about three times as long as wide; apical lobe distinct, narrow, conical, with rather few fine, short, curved hairs; basal lobe broadly expanded, thin, dotted with tubercles bearing fine short setae; on the inner angle a slightly rounded prominence bears several long setae, the

in a rather shallow canyon in which are grassy spots surrounded by willows.

AËDES COMMUNIS DeGeer

Very abundant in the forests of Glacier National Park both in 1921 and 1926. The adults are very variable in size and ornamentation. I have examined bred specimens from Chestnut May 2, 1928, and Squaw Creek, May 6, 1928, both collections made by G. Allen Mail.

AËDES PIONIPS Dyar

Occasional in the forests of the Glacier National Park.[7] I also received specimens from W. B. Mabee collected on June 28, 1916, at Bozeman, Gallatin County, in a very shallow pool in a clover field where clover leaves practically covered the pool. The field is near the center of Gallatin Valley, some 4 or 5 miles from the nearest mountains. This is very unusual occurrence for the species (1388).

AËDES CATAPHYLLA Dyar

In the Glacier National Park in 1926 the "graybacks" were the first mosquito on the wing, but not in large numbers. Larvae had practically all passed at the time of my arrival and the adults disappeared soon also. The breeding places seem to be in the edges of large marsh pools. Worn females were found around the edges of one such, where they had evidently been ovipositing. The central part of these pools are permanent, but the edges go dry for long distances. G. Allen Mail bred a culture from Bridger Canyon, May 1, 1928, where they were associated with *Aëdes increpitus mutatus* Dyar.

AËDES IMPIGER Walker

This occurred in the Glacier Park with *Aëdes cataphylla*, the larvae having all passed by April 15, 1926; but a few undoubted adults were taken on the wing. Mr. Mabee transmitted bred specimens, but I have not the exact data before me (473).

AËDES NEARCTICUS Dyar

This is the "little black mosquito" frequenting all the higher passes of the Glacier Park in midsummer. In 1926 Park Ranger Paul Schoenberger went to the head of Swiftcurrent Pass and to the foot of the Grinnell Glacier for me and found this species breeding in large numbers together with *communis* and *pullatus*. The altitude is only about 5,300 feet, but the presence of the ice cools the region. Eric Hearle, at Banff, did not find this species breeding below 6,000 feet. As with the Californian high altitude form, *Aëdes ventrovittis* Dyar, the distribution appears to be upward, as found by Professor Freeborne.[8]

[7] Ins. Ins. Mens., vol. 10, p. 85, 1922.

[8] Univ. of Calif. Pubs., Tech. Bull. Coll. Agr., Agr. Exper. Station, vol. 3, p. 378, 1926. The females are not found biting in the forest.

AËDES DIANTAEUS Howard, Dyar, and Knab

Adults were taken by me in 1921 and larvae in several of the early spring pools in 1926 in the Glacier Park. Some bred adults were indistinguishable in coloration from *communis*, although the normal form also occurs in the park. I have no other Montana records.

AËDES INTRUDENS Dyar

Breeding in the Glacier Park with *diantaeus*, the larvae fully as rare in 1926. Owing to the habit of the adult of entering houses, specimens of this species were taken almost every day to the middle of July in the cabin of the North Fork Ranger Station, although apparently passed out of doors. Mr. Mabee submitted specimens bred at Darby, May 30, 1928, by Mrs. Dr. R. R. Parker from a shaded pool in woods. Adults issued on June 3.

AËDES PULLATUS Coquillett

Breeding in the early spring pools at higher elevations in the Glacier Park, but always a late inhabitant of them, the larvae lingering after the *communis* and *nearcticus* had long emerged. Mr. Mabee submitted specimens as follows: Chestnut, May 2, 1928 (G. Allen Mail); Karse, W. Gallatin, May 3, 1928 (G. Allen Mail); Squaw Creek, May 6, 1928 (G. Allen Mail); West Gallatin, May 24, 1928 (G. Allen Mail); Sedan, May 28, 1928 (G. Allen Mail); Ross' Peak Ranger Station, May 28, 1928 (G. Allen Mail); King's Hill, June 11, 1928 (G. Allen Mail); Darby, May 30, 1928 (Mrs. Dr. R. R. Parker).

AËDES TRICHURUS Dyar

This species was common in the North Fork ranger station of the Glacier National Park in the 1926 season. The station is on a high, dry bank, 100 feet above the Flathead River, and no mosquito breeding occurs in the vicinity. However, some 2 miles back at the foot of the Apgar Mountains a large marsh occurs. There is also a similar marsh across the river, outside of the park, near Lake Five. This also is about 2 miles from the station in a straight line. *Aëdes trichurus* from these two foci, but especially from the latter, were numerous, being the commonest mosquito at the station. Great swarms of males were seen, first noted a mile from the Lake Five marsh. The swarms broke up, crossed the river, and could be found here and there in the forest in the park for several days. They swarmed shortly before sunset, dispersing at dark. The females bit at all times, day and night, though their approach was timid, and they were easily driven away.

AËDES EXCRUCIANS Walker

This was the common ring-legged mosquito in the Glacier Park in 1926. Great numbers emerged from the marsh at the foot of the Apgar Mountains near the North Fork station. Females were flying till August. Mr. Mabee submitted specimens labeled "Central Park (flood water), June 5, 1928 (G. Allen Mail)."

CULICELLA IMPATIENS Walker

In the Glacier Park in 1926 overwintering adults were quite fond of entering the cabin in early spring, in company with *Anopheles maculipennis*. None were thus seen after June, and later larvae began to be found in cold spring pools after the snow water and river floods had wholly passed. Adults were very common at dusk at Many Glacier on the still evening of June 2. A still evening is rare at that spot, however. Mr. Mabee submitted specimens from Hamilton June 3, 1928 (Mrs. Dr. R. R. Parker).

CULICELLA INCIDENS Thomson

Not found in the Glacier Park in 1921, although it occurred in several isolated spots in 1926. The larvae inhabit late pools of a generally permanent character. They occurred in an old barrel partly filled with water at the North Fork station. Mr. Mabee submitted specimens from Hamilton June 3, 1928 (Mrs. Dr. R. R. Parker).

CULICELLA INORNATA Williston

Very frequent in warmer regions in the summer time, breeding in stagnant pools. Larvae were found abundantly in a water tank at Kalispell in 1926. Mr. Mabee has submitted specimens from the following localities: Three Forks, July 18, 1928 (G. Allen Mail); Skalkaho Canyon, June 3, 1928 (Mrs. Dr. R. R. Parker); Hamilton, July 6, 1928 (Mrs. Dr. R. R. Parker).

CULICELLA ALASKAENSIS Ludlow

Not hitherto recorded from the State. Mr. Mabee submitted a specimen from near Squaw Creek ranger station at about 6,000 feet altitude May 6, 1928 (G. Allen Mail).

CULEX TARSALIS Cequillett

Very common in the summer time in the warmer parts of the State, breeding with *Culicella inornata*. Mr. Mabee submitted specimens from the following localities: Skalkaho Canyon, June 3, 1928 (Mrs. Dr. R. R. Parker); Hamilton, June 3, 1928 (Mrs. Dr. R. R. Parker).

CULEX APICALIS Adams

The larvae were common in late summer in the Glacier Park in 1926 in all the cold spring pools. As this species does not bite warm-blooded animals, the adults are always inconspicuous and encountered only by beating.

ANOPHELES MACULIPENNIS Meigen

The "malaria mosquito" was rather common on the west side of the Glacier Park in 1926, hibernating adults entering the cabin in early spring. Larvae were found in the warmer algae-filled pools along the larger lakes and marshes. Mr. Mabee submitted bred specimens from Victor July 12, 1918 (R. R. Parker).

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