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NEW AMERICAN MOSQUITOES

(*Diptera, Culicidæ*)

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Aedes zoösoptus, new species.

Head and anterior half of mesonotum with dense scales of brassy yellowish, showing a faint brownish shade near the middle; posterior portion marked with dark brown, which begins squarely, is divided by a pair of whitish lines and reaches the root of wing. Abdomen black above with basal segmental white bands, divided into a small median portion and larger white triangular lateral patches; venter with the segments black at apices and white at bases, evenly divided. Wing scales wholly dark brown, dense on costa. Proboscis black. Legs bluish black scaled; femora with apical white spots, the hind femur with the basal half white; hind tarsi rather broadly white-ringed at the bases. Claws toothed.

Type, female, No. 21558, U. S. Nat. Mus.; Kerrville, Texas, August 19, 1909 (F. C. Pratt).

The species seems allied to *fluviatilis* Lutz and, like it, probably breeds in rock-holes along streams.

Aedes gonimus, new species.

Head and thorax with dense scales of brassy yellowish, the mesonotum with two very narrow, parallel, well separated brown lines, running from the front margin to the antescutellar space. Abdomen black above, with broad basal segmental white bands, scarcely widening on the sides, narrower posteriorly; venter white, with narrow apical segmental black bands. Wing-scales wholly dark. Proboscis black. Legs black, all

the femora whitish beneath nearly to the tips, without conspicuous knee-spots. Claws toothed.

Types, four females, No. 21559, U. S. Nat. Mus.; Kerrville, Texas, June 20, 1907, "in a deep canyon; bites fiercely" (F. C. Pratt).

Aedes niphadopsis, new species.

Head with white and brown scales intermixed, the white predominating on vertex and sides below; mesonotum with dark brown scales dorsally, a little intermixed with white, especially in narrower sublateral posterior lines, predominating on the sides and around antescutellar space. Abdomen black above, with very broad white basal segmental bands, more or less diffused and tending to form a dorsal white stripe, often distinct; last segment nearly wholly white; venter gray-white, with medio-ventral black spots at the bases of the segments. Legs black, the femora white nearly to tips, tibiae and even the first two tarsal joints with gray-white scales predominating. Wing-scales black, with many white ones intermixed on costa, first vein and the veins bordering the basal cell. Proboscis black with a sprinkling of white scales. Claws toothed.

Types, three females, No. 21560, U. S. Nat. Mus.; Salt Lake County, Utah, April 10 and 15, 1914 (C. T. Voorhies).

Aedes epinolus Dyar and Knab.

This was described from females from Peru (Ins. Insc. Mens., ii, 61, 1914). We have a male before us from Guayaquil, Ecuador (Dr. F. Campos R.).

Genitalia.—Side pieces long, cylindrical, with a triangular basal lobe, bearing a group of setae with tubercular bases. Clasp filament simple, but swollen at the basal third. Harpes conical, with small apical hooks. Unci cylindrical, thin, the tips incurved and approximate. Harpagones with slender columnar curved stems, finely pilose within; filament narrow, curved, pointed and with a sharp retrose spine on one side.

Aedes innuitus, new species.

Head and mesonotum black, in the male specimens before us without scales, but the setae long and unusually abundant;

in the females sparse dark brown scales persist, replaced by white ones low down on the sides. Abdomen above with dark brown, not black, scales and narrow basal segmental whitish bands. Legs black, the femora with whitish scales especially beneath. Wings hyaline, the veins dark brown, denuded in our specimens.

Genitalia.—Side pieces about three times as long as wide, tips rounded. Clasp filament slender, uniform, with long inserted terminal spine. Apical lobe of side piece conical, small, rugose, with few fine setæ; basal lobe high-conical, setose, the setæ long on the basal aspect, without a spine. Harpagones long, narrow, setose at base, narrowed at apical third; filament long, sickle-shaped, with a double angular membrane at the base as in *tahoënsis* and *altiusculus*. Harpes peculiarly modified, tubular, with angular open ends and thickened rims. Unci large, cylindrical, the tips pointed and inbent. Basal appendages moderate, with seven stout setæ.

Types, two males and two females, No. 21561, U. S. Nat. Mus.; Greenland (through Dr. F. Meinert). Two fresher specimens are very similar, but we do not venture to identify them positively without the male; Kangerdlooksoah, Inglefield Gulf, Greenland, August 9, 1908 (C. C. Craft).

These specimens agree in a general way with Zetterstedt's diagnosis of his *Culex nigripes* from Lapland. Possibly they are the same species; but with the generally local distribution of these *Aëdes*, we cannot make that assumption. The male genitalia of *nigripes* are unknown.

Theobald (Mon. Culic., ii, 93, 1901) gives the distribution of *nigripes* as "Lapland; Greenland; Virgin's Bay, Alaska (T. Kincaid); Hudson's Bay (Walker); Kashmir, India, 13000 feet." He gives the synonymy thus:

***Culex nigripes* Zetterstedt (Lapland).**

impiger Walker (Hudson's Bay).

implacabilis Walker (Hudson's Bay).

incidens Thomson (?) (California).

var. *sylvæ* Theobald (England).

Blanchard (Les Moust., 345, 1905) copies this synonymy, omitting the query after *incidens* and adds the locality "France;" but on page 391, he removes *incidens* to *Theobaldinella* (= *Culiseta*), its correct position.

As to *impiger* and *implacabilis*, they were described from females, evidently in bad condition and therefore undeterminable. Felt (Bull. 79, N. Y. State Mus., 316, 1904) identified *impiger* with specimens from northern New York, of which he had all stages. This was a somewhat bold action, as we have no knowledge whether the mosquito fauna of Hudson's Bay is identical with that of the Adirondacks of New York or not; but we have followed this restriction, and placed the unrecognizable *implacabilis* with it as a synonym (Howard, Dyar and Knab, Mosq. N. Am. and W. Ind., iv, 755, 1917).

Concerning *sylvæ*, F. W. Edwards says (The Entomol., 1912, p. 220) that it is probably *nemorosus*, a species with normal thoracic setæ. Edwards also remarks upon *nigripes*, saying: "It is extremely similar [to *nemorosus*], but the scales of the head and thorax are all very deep brown, except for a few in front of the wing base, which are whitish." Edwards does not mention the conspicuous bristles; but probably the specimens examined were misidentified. They were not types.

Theobald never accepted the separation of the American forms. His latest statement (Mon. Culic., v, 311, note, 1910) was: "American specimens *may* differ [from *nigripes*], but I cannot see a single character to separate them and do not believe they are separate." By American specimens, he presumably meant those before him from Hudson's Bay, Canada, and Virgin's Bay, Alaska. We are not familiar with the Canadian specimens in the British Museum, but neither Walker in describing *impiger* and *implacabilis*, nor Kirby in describing *punctor*, all from the same Hudson's Bay locality, make any mention of the long thoracic hairs, which would certainly have attracted their attention if they had been present. These bristles are not easily abraded. Both Giles and Theobald re-describe the types of *punctor* and make no mention of the long black bristles. In his description of *nigripes*, Theobald does specifically mention these, showing that it was a char-

acter which would draw his attention when present. It is probable that these hirsute forms occur only in the extreme north. A specimen before us from Labrador (St. Lewis Inlet, Labrador, July 12, 1906, through Prof. C. W. Johnson) does not show the character.

We have a good series from Virgin's Bay and elsewhere in Alaska. Two species are represented, a smaller one with the mesonotum all dark brown scaled, and a larger one with the mesonotum yellowish scaled with paired dark brown lines, the latter probably *borealis* Ludlow. There are no males for exact determination; but neither species could possibly be confused with *nigripes*, as the mesonotum is furnished with normal short setæ, entirely unlike the long dense ones described for *nigripes* and found also in our *innuitus*. It seems probable that Theobald, having included southern specimens among the true *nigripes*, based his conception of the species on these, or to include these, and so could no longer distinguish the Canadian and Alaskan specimens. That he did so is proved by his having described English *nemorosus* as variety *sylvæ* of *nigripes*. Blanchard's record from France is doubtless also *nemorosus*.