Two new mosquito records from Japan
(Diptera: Culicidae)

Taxonomical and ecological studies on mosquitoes of Japan
(Part 13)

BY

Jun Hara

Taxonomical and ecological project on the mosquitoes of the northern parts of Honshu, Hokkaido and on the high mountainous regions of Japan have been carried out by the author and the members of his department, and since 1955 many surveys were done in Hokkaido, Towada District in Aomori Prefecture, Oze in Gumma Prefecture, and on Japan Alps. Many new records of distribution of the species found already in the certain part of Japan, such as Aedes (Ochlerotatus) punctarius at Oze and Culiseta kanayamensis at Oze and Kamikochi, were obtained by these surveys and new record species from Japan, such as Aedes (Aedes) ros- sicus (type locality: Ussuri Land, Siberia) was found in Towada District and the detail was reported by the author in 1958.

Successive survey was done from 13th to 25th of May, 1959 and two noteworthy

* Written in Japanese
species of *Aedes* (*Finlaya*) were found from tree holes of beech forest at Tsuta, Towada District. The examinations made by the author on the specimens collected has revealed the each of the two represents a new record species from Japan and one belongs to Group F, Subgroup VII *Auronitens* and other belongs to Group H, Subgroup IV (*Oreophilus*) of subgenus *Finlaya*. Detailed descriptions and discussions with plates are contained in this paper.

*Aedes* (*Finlaya*) *christophersi*

Edwards, 1922

(New Japanese name: Towada-Yabuka)

(Subgenus *Finlaya*, Group F, Subgroup VII, *Auronitens*)


Larva (Fig. 1)

**Head**: Almost rounded in shape. Preclypeal fairly long and slender. Outer clypeal single and fine. Postclypeal small tufty, 3 to 13 (usually 7) forked. Inner frontal 4 to 6 (5) forked. Middle frontal single and very long, longer than the head length (1.25 times). Outer frontal 7 to 10 (9) forked. Inner sutural 2 to 13 (5) forked and outer 2 to 8 (3) forked. Obital double. Ventrolateral 3 to 8 (5) forked and medial to eye 4 to 7 hairs, the outer 4 forked, and the inner approximately 6 forked and tufty. Inner and outer postmaxillary small and single. Postmental small and approximately 4 forked.

**Antenna**: Smooth, comparatively narrow. Antennal usually single and sometimes of 2 branched (each branch again occasionally split into two), at about middle. **Mouth part**: Ventral basal plate of labium with 23 to 27 teeth.

**Prothorax**: Inner shoulder hair double, very long. Middle shoulder hair single. Outer shoulder hair 3 to 6 (usually 5) forked.

**Eight segment**: Comb of 27 to 35 (usually 30) scales arranged in triangular patch, pectinate laterally as well as broadly rounded apical margin. Of the pentad hairs *a* is 2 to 3 forked, *b* 3 forked, *c* 2 to 4 forked, *d* single or double, and *e* 3 forked. Siphon narrow distally; siphonal index 3, pecten usually extending from the base of siphon to beyond its middle, with 19 to 27 (usually 22) evenly spaced spines, each of which has 2 denticles. Siphonal hair large, 3 forked, usually ventral to distal end of pecten.

**Anal segment**: Saddle not completely covering of anal segment, saddle hair double, at postero-lateral corner. Dorsal tuft consisting of a pair of single and a pair of fairly long 2 to 3 forked bristles. Ventral brush of 10 to 11 tufts, each tuft 2 to 5 forked, anterior two to four tufts outside barred area. Gill claviform dorsal pair two to two and half times as long as anal segment; ventral pair little shorter, as long as or little longer than anal segment. (Description based on 5 specimens collected)

**Adults**

(Based on Barraud’s description)

Female — **Head**: Dorsal surface covered
with narrow pale ochreous scales and scattered upright scales, latter chiefly towards nape. Tori brown, flagellum of antenna, clypeus, palpi, and proboscis black; palpi about 1/5 length of proboscis.

**Thorax**: A median line of yellowish scales, continued back from the frontal and dividing either side of antescutellar space, bordered on either side by a broader band of brownish-black scales; laterally on sides in front scales are all yellowish, each of these areas divided posterior into two lines of pale scales, one running to lateral lobe of scutellum and one to wing-root, space between brownish-black. Scutellar scales narrow and yellow. Postnotum and integment of pleurae dark brown or black. Some fairly broad white scales on *apn* and on lower part of *ppn*, narrow yellow scales on upper part of latter; irregular patches of broad silvery scales on pleurae. **Wing**: Dark scaled. **Leg**: Bluish-black, with white markings; all femora with white knee-spots and white scaling from base, chiefly posteriorly and ventrally; hind femur white on both sides for basal 1/2 or rather more. Tibiae dark, hind pair narrowly pale beneath at base. Tarsi with narrow basal white markings to first two segments on fore and mid-legs; similar but wider rings to first three segments on hind legs. **Abdomen**: Black, with basal white bands to tergites and sternites, latter with some apical white scaling also.

Male — Palpi black, little shorter than proboscis, the terminal segments not perceptibly swollen and with few outstanding hairs. Meso-notum almost entirely covered with ochreous scales, the dark stripes present in female being indistinct or absent. Other marking as in female. **Hypopygium**: Style and harpago as shown in Fig. 1, (6).


**DISCUSSION**

The larva of this species very similar to *A. (F.) greeni* and *A. (F.) alektorovi*, differing from former in the shape of the anal gills, the dorsal pair of which in *greeni* are only about the length of the anal segment, the ventral pair shorter, both with pointed ends. The siphonal tuft has usually 5 to 6 branches in *greeni*. But it is very hard to find the difference of character between the larva of *christophersi* and *alektorovi*, only differences are the shape of anal gills and siphonal index, the dorsal pair of which in *alektorovi* are 4.5 times of the length of anal segment instead of 2 to 2.5 times in the species; both gills of *alektorovi* with pointed ends. The siphonal index of *alektorovi* is 3.9 to 4.5 (average 4.1) and that of the species collected is approximately 3.4.

**Aedes (Finlaya) oreophilus** (Edwards, 1916)

(New Japanese name: Kushihige-Bunanokiyabuka)


**Larva** (Fig. 2, A)

(Description based on 99 specimens)

**Head**: Broader than long. Preclypeal slender and fairly long. Frontals outer, middle and postclypeal in a transverse row, slightly posterior to base of antennae. Postclypeal single or 2 to 5 forked (usually 3 forked) small. Inner frontals single, fairly long, (very rarely split into two); middle frontals 2 to 5 forked usually 3): outer frontals 2 to 7 forked (usually 3 to 4 forked). Inner sutureal single or 2 to 3 forked (usually single), outer single or 2 to 3 forked (usually double), obital single or 2 to 3 forked (usually double).

**Antenna**: Slender, smooth and darkly pigmented, a very few minute spinelets visible under high magnification; antennal represented by single hair (rarely split), attached rather near apex than base of shaft.

**Mouth part**: Median hairs of mouth brush with moderate sized teeth. This is only character differed from *A. bunanoki*. Mentum broadly triangular, with 18 to 24 teeth.

Lateral hairs of thorax and abdomen moderately developed, no special structure.

**Eighth segment**: Comb of 20 to 40 (usually
Two numerous upper saddle spines; 4-9 branches beyond base, occasional 1 or 2 (usually 4 to 5) forks.

Siphonal points: 29 denticles, 25 to 30) comparatively large fringed teeth in three or four rows in triangular patch. Of pentad hairs: a 2 to 7 (usually 3 to 5) forked, b and d single, c 4 to 9 (usually 5 to 7) forked and barbed, sometimes each branches split into two, e 2 to 7 (usually 4 to 5) forked.

Siphon: About 2.4 to 3 times length of diameter at base, slightly tapering, dark brown, apical 1/5 pale. Acus small. Pecten of 12 to 29 (20 to 26) teeth with one or two large denticles toward base and a few hair-like points, extending to near the middle of siphon. Siphonal hair long, barbed and 2 to 6 subplumose branches, arising near the middle of siphon beyond pecten. Anal segment: About as wide as long, nearly enclosed by chitinous saddle; upper apical part of the plate with numerous spines; saddle hairs large, single or 2 to 4 (usually 2 to 3) forked. Anal gill: Two pairs, the dorsal pair about as long as the segment, the ventral ones about 1/2 of the length of dorsal one. Ventral brush strong and dark, about 12 arising from barred area, each divided into 2 to 4 branches.

Adult (Fig. 2, B) (Based on 4 specimens)

It is very hard to find differences between oreophilus and bunanoki in both sexes (based on the descriptions of Barraud and Sasa et Ishimura). Observations using two males and females reared in the laboratory showed the specimens belong bunanoki and oreophilus.

Distribution: One of the common tree hole species of the subgenus in W. Himalayas, Nilgiri Hills, South India and Peiping, China (Feng, 1938).

DISCUSSION

The adult specimens, 2 males and 2 females, examined by the author satisfied the specific characters of the both species, bunanoki and oreophilus, and no differences were observed. Having comb-like teeth on the median hair of mouth brush, all 99 specimens showed that they belong to A. oreophilus, so that the author likes to assume the species is A. (F.) oreophilus and new record mosquito from Japan. The problem whether bunanoki and oreophilus are synonym, the author also likes to study in the future.

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LITERATURE

A new flea of the genus Nycteridopsylla (Siphonaptera)

BY

Kôhei Sakaguti 1 and E. W. Jameson, Jr. 2

From an unidentified species of bat collected in Hokkaido we have one pair of this interesting bat flea. These specimens were obtained by the effort of Mr. Shôzô Takatsu to whom we wish to express our most profound thanks.

1) 阪口浩平 Department of Parasitology, Research Institute for Microbial Diseases, Osaka University.
2) Department of Zoology, University of California, Davis.

Nycteridopsylla nipo po new species

MALE

Head and body: Head (Fig. 1) rounded, with small frontal tubercle just above genal teeth. Submarginal setae of frons weak. Genal teeth sharply pointed. Genal lobe bluntly truncate. Antenna with one long seta on second segment extending about four-fifths toward the tip of the antennal club. Eye faintly pigmented. Pronotum with a single vertical row of alternating long and short setae (Fig. 3). Pronotal...