TWO NEW MAYFLIES FROM JAPAN

By

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TWO NEW MAYFLIES FROM JAPAN

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The present article deals with the descriptions of two new species of Ephemeroptera from Japan: one belongs to the genus *Ephemera*, and the other to *Heptagenia*.

I wish to express my sincere thanks to Prof. M. Tsuda of Nara Women’s University for his guidance during the present study and to Dr. Y. Nakagawa of Rakuto High-school, Kyoto for the gift of specimens of *Heptagenia*.

*Ephemera* yoshinoensis n. sp.

<table>
<thead>
<tr>
<th>Measurements</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body, length</td>
<td>9.2 mm</td>
<td>8.0 mm</td>
</tr>
<tr>
<td>Fore wing, length</td>
<td>9.5 mm</td>
<td>9.0 mm</td>
</tr>
<tr>
<td>Cercus, length</td>
<td>9.5 mm</td>
<td>8.7 mm</td>
</tr>
</tbody>
</table>

Description. Male: General colour brownish. Head brownish, eyes greyish. Thorax brownish. Legs brownish; in the fore leg, tarsus paler in colour, femur

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*Ephemera* yoshinoensis n. sp.

Figs. 1-4 and 6: imago ♂; Fig. 5: imago ♀.
1. fore-wing. 2. hind-wing.
3. fore-leg. 4. hind-leg. 5. fore-leg. 6. end of abdomen, ventral view.
with a inconspicuous darker marking near its apex, femur: tibia = 5 : 6; tarsal joints rank 3, 2, 4, 5, 1 (Fig. 3); in the middle and hind legs tibia darker than femur and tarsus, each of the middle and hind femora with two dark flecks near its side; in the hind leg femur is longer than tibia, tibia: tarsus = 5 : 2 (Fig. 4). Wings hyaline, apical part of costal and subcostal area weakly brownish amber-colour, veins light brownish (Fig. 1).

Abdominal segments 1-6 semitransluscant, washed with pale brown, tergites 1-7 shaded with a median dark stripe, tergites 8-10 dark brownish; postero-lateral corners of the tergite 9 protruded into spines; sternites 1-7 shaded with smoky brown, sternites 8-9 dark brownish. Cerci and median caudal filament brownish, paler distally. Forceps brownish; second joint swollen on the inner apical margin, three times as long as wide. Penis-lobes brownish, separated apically (Fig. 6).

Female: Similar to the male; general colour dull brownish. Wing hyaline, coloration of veins as in the male. Abdomen above reddish brown to dull brownish, below paler; mid-dorsal pale streak obscure, postero-lateral corners of tergite 9 protruded in spines as in the male.

A nymph reported by Dr. K. Imanishi under the name of Ephemerrilla is the nymph of this species. I reared the nymph and got this imago in May, 1958.

Holotype: ♀, Gojo-shi, Nara Pref., 17. v. 1959 (K. Gose); allotype: ♂, the same locality; paratypes: 2♀♀, 6♂♀, Yoshino-gawa, Nara Pref., 17. v. 1959 (K. Gose); deposited in the Zoological Institute, Nara Women's University.

Distribution: Honshū, Kyushū, Shikoku.

Remarks: This species is similar to Ephemerrilla cryptomeria Imanishi, but is considerably larger than it and is also distinguishable from it by the ratio of femur to tibia in the fore leg, which is 5 : 6 in this new species.

**Heptagenia kyotoensis** n. sp.

Dr. Nakagawa reared the nymph "Heptagenia" described by Prof. Imanishi by nymph and gained subimagos 2♀♀, 2♂♂, which he gave me. Examining the specimens, I found them to be new. So, I give the description of the subimago.

<table>
<thead>
<tr>
<th>Measurements</th>
<th>Male (subimago)</th>
<th>Female (subimago)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body, length</td>
<td>12.5 mm</td>
<td>14.2 mm</td>
</tr>
<tr>
<td>Fore wing, length</td>
<td>13.8 mm</td>
<td>15.7 mm</td>
</tr>
<tr>
<td>Cercus, length</td>
<td>26.4 mm</td>
<td>28.3 mm</td>
</tr>
</tbody>
</table>

Description. Male (subimago): General colour brownish. Eyes and ocelli black. Pronotum brown, mesonotum dark olive brown, metanotum dark brown. Legs brown, in fore leg femur dark brownish; fuscous at its tip; femur: tibia: tarsus = 5.6 : 4.8 : 3.7, tarsal joints rank 2, 3, 4, 5, 1 (Fig. 9); in hind legs, femur: tibia: tarsus 4 : 3.5 : 1.5, tarsal joints rank 5=2, 3, 4, 1 (Fig. 11). Claws dissimilar in all legs (Fig. 10). Wings subhyaline (Fig. 7), pale; veins whitish brown. Abdomen dark olive brown. Each of the tergites 1-9 with a narrow brownish band on its posterior margin (Fig. 13); tergites 10 with broad (-)-shaped blackish brown markings; the posterior margin of tenth sternite incurved between the bases of the forceps. Penis-lobes large, yellowish brown, separated, dilated in wing-like
form, the inner margin curved outwards at the apex and bears a pair of large blackish spines near the separating point, near the tip of which there is a pair of smaller spines (Fig. 12). Cerci pale brownish.

Female (subimago): Similar to the male (subimago). Colouring likes to male (subimago), larger than male (subimago). In the fore leg, femur: tibia: tarsus = 4.5 : 4.2 : 2.0; tarsal joints rank 5, 2, 3, 4=1; claws dissimilar in all legs.

Holotype: ♂, Yamashina, Kyoto Pref., 2. vii. 1957 (Y. Nakagawa); allotype: ♀, the same locality; paratypes: 2♂, 2♀, Yamashina, Kyoto Pref., 2. vii. 1957 (Y. Nakagawa); deposited in the Zoological Institute, Nara Women's University.

Distribution: Honshū.

Remarks: This species is similar to Heptagenia kihada, but is distinguished by the

Heptagenia kyotoensis n. sp.

Figs. 7–13: subimago ♂. 7. fore-wing. 8. hind-wing. 9. fore-leg. 10. claws of the same. 11. hind-tarsus. 12. end of abdomen, ventral view. 13. abdomen, dorsal view.
different form of the penis-lobes. The penis-lobes are rather similar to the genus *Ecdyonurus*.

**Literature**


