

Excerpt from Canadian Entomologist, October, 1928.

EPHEMERID NOTES WITH DESCRIPTION OF A NEW SPECIES.*

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***Ephemerella cornuta* Morg.**

Ephemerella dorothea McDunnough (nec Needham) 1925, Trans. Roy. Soc. Can. XIX, 212.

In my paper on the Ephemeroptera of Covey Hill, Que., I recorded the species *E. dorothea* Needham as extremely common. In the summer of 1927 my assistant, Mr. G. S. Walley, took numerous full-grown nymphs in the Covey Hill brook at a time when the so-called *dorothea* were emerging, so that the association of nymph and adult is fairly safe. These nymphs, however, proved to agree excellently with the description of *cornuta* Morg. except for the somewhat smaller size, and a careful reading of Dr. Morgan's description of the male sub-imago (the only other stage known to her) made it evident that the Covey Hill species should be known as *cornuta* Morg. and not *dorothea* Needh.

Through the kindness of Dr. P. Claassen I have examined some slides of the original nymphal material of *dorothea* and this nymph is certainly quite distinct from that of *cornuta*, among other features there being no horns below the antennae. The adults are evidently quite similar; my first determination of the Covey Hill species was based on a study of the adult type material of *dorothea* in alcohol and the only distinction I noted was the paler color of the types. This, at the time, I supposed due to a teneral condition and to the immersion in alcohol, but it is evidently a natural feature; the genitalia of the Covey Hill males bear great similarity to Needham's figure of these parts in *dorothea* but show a row of small, dorsal spines at the base of each penis-lobe not given in Needham's figure and arranged much as in my figure of *invaria* Wlk. (op. cit. Pl. I, fig. 6).

***Ephemerella infrequens* McD.**

Ephemerella inermis Needham (nec Eaton), 1927, Ann. Ent. Soc. Am. XX, 114, fig. 1, T.

Judging by the figure of the male genitalia given by Needham as cited above his identification of *inermis* Eaton in his valuable paper on the Rocky Mt. species of *Ephemerella* was erroneous; the species before him was evidently *infrequens* McD. In the description of this latter species (Can. Ent. LVI, 223)

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I called attention to the fact that *inermis* showed no apical enlargement of the second joint of the forceps, my determination being based on a slide of the genitalia of one of the type lot of males from the Arkansas Canyon, Colo., received through the courtesy of Dr. Banks of the Cambridge Museum of Comparative Zoology; there is also a long series before me from the Platte Canyon, Colo., which agrees with this paratype.

Apart from the genitalic differences the two species are very similar but *inermis* is on the whole somewhat smaller and darker-colored, the thorax showing scarcely any of the ruddy tints found in *infrequens*; this species, I might incidentally note, was extremely common at Seton Lake Creek, Lillooet, B. C. in 1926.

Baetis pluto McD.

Baetis rusticans McD. 1925, Trans. Roy. Soc. Can. XIX, 217 (♀ nec ♂).

The type material of *pluto* consisted of a male from Covey Hill, Que. (holotype) and a male from the Ottawa region. During the summer of 1927 my assistant, Mr. G. S. Walley, was successful in securing a long series of both sexes of this species at Covey Hill which clearly shows that the females which I associated with *rusticans* in the description of this species actually belong to *pluto*. Typical *pluto* females, as distinguished from other *Baetis* females occurring in the same region, show an almost unicolorous chocolate-brown head, a deep brown abdomen, distinctly tinged with wine-color, and brown crossveins on the primaries; generally the intercalaries in the first interspace of primaries are wanting and there is one (occasionally two) intercalary on the secondaries between veins two and three as in the male sex; a further very useful character is found in the shape of the rear margin of the head which is bilobed with a distinct narrow median v-shaped indentation, whereas in allied species of *Baetis* from the same region this margin is gently sinuous with a shallow, broadly u-shaped, median excavation.

Cinygma ramaleyi Dodds.

Ecdyurus ramaleyi Dodds, 1923, Trans. Am. Ent. Soc., XLIX, 101.

Iron tollandi Dodds, 1923, Trans. Am. Ent. Soc., XLIX, 109.

These two names refer to a single species, *ramaleyi* having priority. The differences in male genitalia figured by Dodds are not actual but simply due to distortion of the parts; the normal position is that figured for *ramaleyi* (fig. 9) and if we imagine the penes twisted about 180° we can readily see how his figure 25 may result.

In dried or alcohol specimens such variation is common all through the group, as Needham has recently shown for *mimus* (Can. Ent., 1927, p. 134), but if slide material is made by treating the parts with a 10% solution of caustic potash, the normal position is resumed; typical material of *tollandi* received from Dodds and so treated has resulted in genitalia similar to those figured for *ramaleyi* and amongst my material of this species from the Canadian Rockies specimens have frequently occurred which match the *tollandi* figure excellently. The synonymy appears, therefore, to be reasonably sure, especially as the two so-called species came from exactly the same locality.

Rhithrogena anomala n. sp.

Male. Eyes (living) slate gray. Head, thorax and dorsum of abdomen deep brown; pleura brown tinged with ochreous at base of wings; sternum brown, tinged with ochreous laterally, especially around bases of legs; abdomen ventrally

paler than above, more ochreous brown. Legs yellow-brown with paler tarsi; femora with a small median purple brown spot, rather indistinct and not forming the longitudinal dark dash which is characteristic of most species in the group. First joint of fore tarsi about one-fifth the length of the second one. Wings hyaline with brown venation, the crossveins fine and not well-marked, especially in costal region; in the pterostigmatic area they anastomose as usual to form a network. Length of body and forewing 7 mm.

Holotype—♂, Knowlton, Que., June 22 (G. S. Walley); No. 2666 in the Canadian National Collection, Ottawa.

Paratype—♂, S. Bolton, Que., June 17 (W. J. Brown).

The species very much resembles *jejuna* Eaton (*fusca* Wlk.) and *impersonata* McD. but differs in the male genitalia, the penes possessing a short, blunt spine with slightly serrate edge, situated ventrally about midway between apex and base of each lobe; the inner apical edge of each penis-lobe is also distinctly serrate.
