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NEW SPECIES OF NORTH AMERICAN EPHEMEROPTERA III*

BY J. MCDUNNOUGH.

Ottawa, Ontario.

Through the kindness of Dr. Needham I have been enabled to examine specimens of a *Leptophlebia* species from Modoc Co., California, which we both agree comes closer to Eaton's description of *gregalis* than does any species before us. This species, to which we are now applying the name, *gregalis* Eat., runs very close in male genitalia to *invalida* McD. as I already hinted might be the case when I described this latter species (1926, Can. Ent. LVIII, 297); there are, however, sufficient points of distinction of minor character evident to indicate that both names may be retained. The species which I had previously been regarding as *gregalis* Eat. now appears to be unnamed and I describe it as follows:

***Leptophlebia clara* n. sp.**

Male (in alcohol). Thorax brown; abdomen dorsally deep black-brown, paling into lighter brown on the posterior segments, with blackish marking in the spiracular region; ventrally pale brownish, hyaline on first seven segments with a small blackish patch in the postero-lateral corner of each segment; last two segments deeper brown, opaque; genitalia light brown. Wings hyaline with light brown longitudinal veins; crossveins pale, indistinct. Forelegs brown, others missing. Length of body 6 mm.; of forewings 7 mm.

Holotype—♂, Los Gatos, Santa Clara Co., Calif., (C. H. Kennedy); No. 3610 in the Canadian National Collection, Ottawa.

Paratypes—4 ♂, same data.

The male genitalia (fig. 1) show no basal enlargement of the first joint of the forceps; the apices of the penes are broad and blunt with a small circular excavation between them; the stimuli are ribbon-like, sinuate and terminating in blunt points.

***Blasturus pacificus* n. sp.**

Male. Head, thorax and abdomen dorsally deep blackish; the pleura tinged with ruddy brown and the intersegmental areas of the abdomen showing narrow brown rings on both dorsal and ventral surfaces, traces of pale lunate subdorsal marks on anterior portion of each segment; abdomen ventrally somewhat paler than dorsally; forceps light brown tinged apically with deeper brown; setae blackish. Forelegs deep black-brown; mid and hind legs paler, with more of a ruddy tinge on the femora and with the tibiae shading into light brown, tarsi tinged with smoky. Wings hyaline with a broad black-brown terminal border on forewing, occupying fully one-third of the wing-length and with an irregular inner margin; hind wing similarly tinged in apical half; veins and crossveins fine, deep brown, the latter strongly anastomosed in the pterostigmatic area. Length of body 14 mm.; of forewing 12.5 mm.

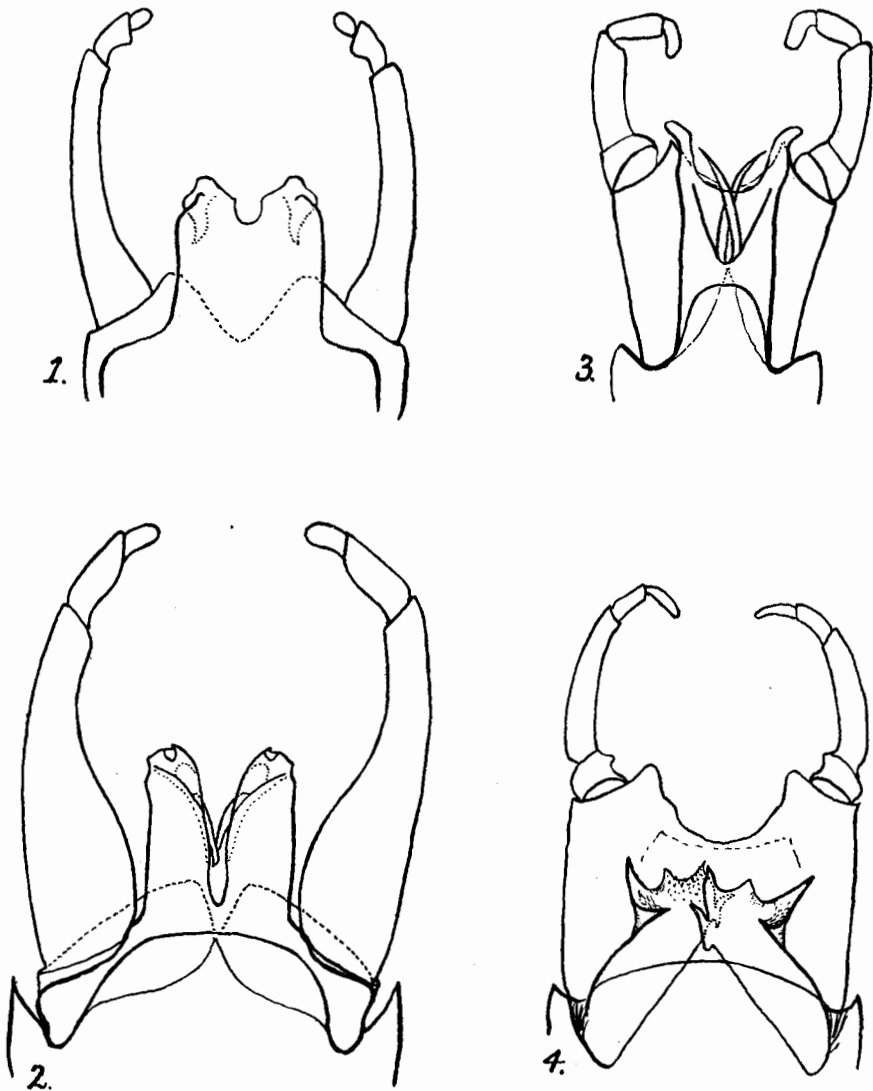
Holotype—♂, Corvallis, Ore., April 8, 1932, (D. Prentiss); No. 3613 in the Canadian National Collection, Ottawa.

Paratypes—2 ♂, same locality, April 24, 27, 1932, (J. Roaf); one of these in the collection of the Oregon State Agricultural College.

In a number of specimens collected in early April, 1933, by R. E. Dimmick and sent me through the courtesy of the collector the broad blackish ter-

*Contribution from the Division of Systematic Entomology, Entomological Branch, Dept. of Agric., Ottawa.

minimal area of the wings has been reduced to a narrow dark band crossing the apical third of primaries obliquely. As there seems to be no genitalic difference between the two forms, I imagine the reduction of dark coloration can scarcely be regarded as having specific value; without, at least, knowledge of the early stages it would appear unwise to name both forms. The females, judging by a couple of specimens of this sex before me, which presumably belong to this species, are without the dark shades on the wings. In the male genitalia attention might be called to the long second joint of the forceps as compared with eastern species; the penes are rather truncate apically with the stimuli ribbon-like and ending in a blunt point.



Male genitalia of 1. *Leptophlebia clara* n. sp. 2. *Blasturus pacificus* n. sp. 3. *Ameletus vancouverensis* n. sp. 4. *Ameletus oregonensis* n. sp.

Ameletus vancouverensis n. sp.

Male. Head and thorax deep mahogany-brown, the scutellum of the mesothorax light yellow brown from which two lateral arms of the same color extend forward, the whole forming an irregular U-shaped patch; pleura tinged with paler brown shades. Abdomen with first segment similar in color to thorax, segments II-VII dorsally light yellowish brown, semihyaline, rather shiny, with the posterior margin of each segment narrowly deep brown and with slight diffuse brown shade over posterior half of segment; segments VIII-X opaque, deep mahogany-brown; with slight yellow-brown tinge anteriorly. Ventrally segments II-VIII light ochreous suffused somewhat with dull brownish, IX rather bright ochre-brown centrally with dark brown base and sides. Forceps and apices and sides of basal plate mahogany-brown, central area of plate ochre-brown as on preceding segment; penes tinged with brown, bent upward slightly at apex, with two long, sharply pointed stimuli. Setae deep smoky with fine, darker intersegmental rings. Forelegs deep smoky brown; mid and hind legs paler, more umber brown, with traces of an apical ruddy band on femora. Wings strongly and entirely tinged with umber brown with the pterostigmatic area still deeper brown; veins and crossveins deep brown, the latter very numerous, those of the pterostigmatic area forming a reticulation of minute cells along the costa with larger cells below them. Length of body 9 mm.; of forewing 10 mm.

Subimago duller in color than the adult with deep smoky wings.

Holotype—♂, Courtney, Vancouver Island, B. C., May 1, 1931, (J. D. Gregson); No. 3611 in the Canadian National Collection, Ottawa.

Paratypes—5 ♂, same data.

The species is readily recognizable by the dark-tinged wings and the long stimuli of the genitalia which in the figure are represented as crossed, although this is probably not always the case.

Ameletus oregonensis n. sp.

Male. Head and thorax blackish with a few paler ruddier shades on the pleura. Abdomen dorsally with segment II largely suffused with smoky brown, III-VI pale semihyaline whitish yellow with posterior edge narrowly brown, expanding into triangular patches in the posterior lateral angles and sending forward two subdorsal narrow brown stripes which almost attain the anterior margin; in certain lights the brown color shows a ruddy tinge; segments VII-IX opaque with essentially similar maculation but the brown color deeper, more black-brown; segment X largely brown with a pale posterior margin. Ventrally pale whitish yellow, semihyaline on first six segments, opaque with slight brown suffusion on posterior ones; genital plate pale, forceps deep smoky; setae pale smoky without rings. Forelegs deep black-brown; mid and hind legs light ochreus with femora largely suffused with ruddy brown. Wings hyaline with a very faint amber tinge in costo-basal area; forewing with a sepia brown suffusion along anal veins at base of wing and a similar tinge in pterostigmatic area; hind wing with whole basal area prominently brown, the color extending along costa half way to apex; veins and crossveins brown, the latter numerous, clear-cut and forming the usual reticulation in pterostigmatic area of small costal cells with larger ones beneath them. Length of body 10 mm.; of forewing 11 mm.

Holotype—♂, Rock Cr. Philomath, Oregon, March 19, (R. E. Dimmick);

No. 3612 in the Canadian National Collection, Ottawa.

Paratypes—4♂, same data; two of these deposited in the collection of the Oregon State Agricultural College.

The brown basal suffusion on the wings together with the distinctive genitalia render the species readily recognizable.

TWO NEW SCARABEIDAE (COLEOP.)

BY LAWRENCE W. SAYLOR.

Berkeley, California.

Dichelonyx arizonensis n. sp.

Holotype male. Medium sized, rather elongate; head, prothorax and underside piceous or rufo-piceous, each elytron with a basal and sub-apical dark area much as in *subvittata*, the remainder of the body testaceous or slightly darker. Head densely, moderately, variolately punctate, rather densely clothed with yellowish hair; clypeal suture slightly impressed, clypeus rather strongly reflexed, truncate at apex, the angles broadly rounded, sides faintly convergent apically, surface closely, coarsely punctate. Antennal club not quite equal to funicle. Thorax not twice as broad as long, with the distinct median longitudinal sulcus densely clothed with yellowish hair, a smooth area each side of the sulcus and near the hind angles; disc very sparsely coarsely punctate, the remainder more closely punctured; basal marginal line very distinct; sides obtusely angulate just before the middle, feebly rounded anteriorly, straight posteriorly, the hind angles very obtuse and broadly rounded. Elytra not quite twice as long as broad (measured at the widest point), over three times as long as the prothorax; moderately rugose, densely clothed with yellowish hair, vittae obsolete. Spurs of the hind tibiae unequal, the outer rounded at apex and about three times as wide as the inner spiniform spur; all tarsal claws cleft. Underside densely covered with white pile of medium length.

Allotype female. A little more robust, clypeus less reflexed, antennal club much shorter than funicle, hind tibial spurs spiniform and equal, otherwise same as the male. Length—9. to 10.7 mm. Width—3.7 to 4.5 mm. at widest point. The types are from the Grand Canyon, Arizona, collected by Mr. C. D. Duncan, and bear the date June 16, 1921; others from the same locality bear date June 16, 1930, and these, collected by Mr. D. G. Kelly on the North Rim, remain in the author's collection. One paratype in the Van Dyke Collection bears the label June 14, 1916, On Pinon Pine, Alt. 7,400 ft., otherwise as above. Holotype, allotype and paratype have been deposited in the collection of the Academy of Sciences in San Francisco; a paratype has also been sent to Mr. H. C. Fall for his collection.

Easily distinguished from its nearest ally, *sulcata*, by the testaceous elytra with the basal and subapical dark spots, the pale legs and clypeus, and by the much less evident elytral vittae, so evident in most specimens of *sulcata*. It is surprising how much alike the two sexes appear; in the ten specimens at hand, there is no color variation.

There is some variation in the puncturation of the disc of the prothorax; in eight males, four have the small impunctate area each side of the median sulcus, and the other four differ in having this area closely coarsely punctate. The allotype has the impunctate area while the other female has the same area