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MAYFLIES OF TWO TROPICAL GENERA, *LACHLANIA* AND *CAMPSURUS*, FROM CANADA WITH DESCRIPTIONS.

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Two interesting mayflies, one a *Lachlania* and the other a *Campsurus* have been sent recently to the author, the former from Saskatchewan and the latter from Manitoba. Both are apparently new species and are described in this paper.

The *Lachlania*, represented by a single female individual in alcohol, was collected by J. E. Moore and J. S. Thompson in connection with a survey of the fauna of several saline lakes in the aspen poplar parkland country of Saskatchewan. The specimen was taken floating on the surface of the water of Stoney Lake near Humbolt. Mr. Moore has kindly supplied the following information about the lake. It has an area of one and one-half square miles and a maximum depth of five and one-half metres and has one intermittent stream as inlet and no outlet. The maximum temperature of the water which has been recorded is 21.2°C. at the surface in midsummer. The water has a pH of 8.7 and is quite saline with 8,500 parts per million of solid content in September in which magnesium and sulphate are the predominant ions. The altitude is approximately 1850 feet above sea level.

The genus *Lachlania* is neotropical, with three species described as follows, *L. lucida* Etn. from Guatemala, *L. abnormis* Hag. from Cuba, and *L. pallipes* Etn. from Ecuador. While no *Lachlania* have been taken north of these localities, *Oligoneuria ammophila* Spieth, a member of the family Oligoneuridae to which *Lachlania* belongs, has been described from the nymphs taken in the White River at Decker, Indiana (Spieth 1938). This nymph is quite unlike the nymph of a *Lachlania* species described by Needham and Murphy, 1924.

***Lachlania saskatchewanensis* n. sp.**

Female imago (in alcohol). Length 7.5 mm., wings 10 mm., caudal filaments 5 mm. (fig. 1.).

Head pale brown above with darker infuscation about the ocelli and a dark brown band extending in a curve between the lateral ocelli. On the vertex another dark brown patch in the form of a V. Antennae with dark brown ring on the second segment, and the flagellum dark brown. Frons extended as a hood over the mouth parts.

Thorax. Pronotum dark umber brown with narrow pale median line, some pale colour on lateral flanges. Mesonotum dark umber brown with pale areas across anterior border and at bases of wings. In addition a roughly H-shaped pale marking on dorsum as in figure, this pale area being continuous posteriorly with pale lines which run out on the border of a peculiar flange

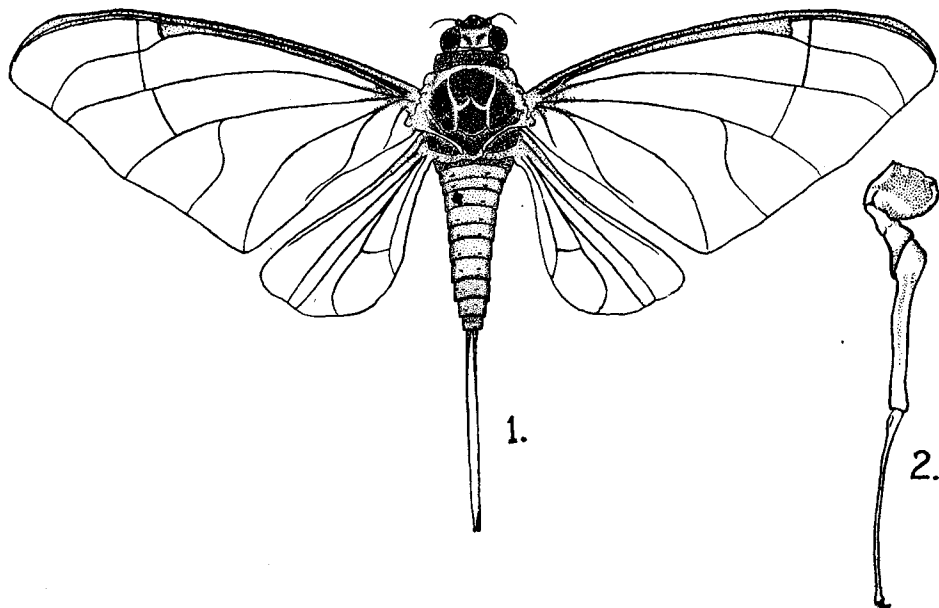


Fig. 1. Female imago of *Lachlania saskatchewanensis* n. sp.

Fig. 2. Left metathoracic leg of *L. saskatchewanensis* n. sp.

developed laterally on the mesonotum. Metanotum piceous, somewhat paler than the mesonotum.

Abdomen piceous, the overlapping of the segments appearing as darker brown transverse bands. On the anterior segments, lateral paramedial darker brown strokes nearer the posterior than anterior margin of the segment. In the posterior segments which are somewhat darker than the anterior, these dark brown strokes are replaced by pale dots. There is a very faint indication on some segments of a median pale line.

Caudal filaments (2) dark brown basally, with a pale patch on the medial surface. Distally the segments separated by pale rings with a gradual dilution of the intensity of the brown colour towards the tip.

Ventrally the abdomen is somewhat paler in colour than dorsally. On the anterior segment there is a very distinct paramedial dark brown stroke posteriorly and a more extensive sinuate dark line anteriorly. The venter of segment seven is produced posteriorly and has an excavated border. On this segment are vestiges of the nymphal gills in the form of minute curved appendages.

Legs pale amber with brown infuscation on femora and with coxae dark brown. All legs similar, twisted and atrophied distally and probably non-functional (fig. 2).

Wings. Venation as in figure. In alcohol the membrane is translucent whitish with no evidence of the bluish reflection which is mentioned in the descriptions of other species in the dried condition.

Holotype, ♀, Stoney Lake, near Humbolt, Saskatchewan. September 5, 1940, J. E. Moore and J. S. Thompson. In the collection of the Royal Ontario Museum of Zoology, Toronto.

This species is apparently close to *L. abnormis*, agreeing in size with this species and being smaller than the other species described. The description of *L. abnormis* by Eaton, 1888, is rather inadequate, but special features of the colour pattern which are striking in this new species are not mentioned in the description, and it is not probable that they would have escaped the notice of Hagen in his original description. The greater curvature distally of the longitudinal veins in this species provides another basis of separation.

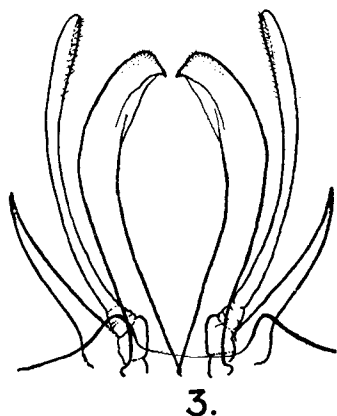


Fig. 3. Male genitalia of *Campsurus manitobensis* n. sp.

The *Campsurus*, represented by seven male imagoes, was collected by Dr. W. E. Ricker at Cartier, Manitoba, on the Assiniboine River. The genus *Campsurus* has twenty-seven described species and is confined to the new world. Five of these have been recorded from the United States and the remainder are neotropical. One species, *C. primus* McD., was taken at Grand Tower, Illinois (McDunnough 1924). The present species is apparently new and is the most northerly record for this genus to date.

***Campsurus manitobensis* n. sp.**

Male imago (dried). Length 11 mm., wing 12 mm., caudal filaments 31 mm.

Head. Eyes dark purplish brown, vertex and basal segment of antenna paler piccous; remainder pale yellowish.

Thorax. Prothorax hyaline yellowish; meso- and metathorax pale brownish yellow.

Abdomen pale yellowish, somewhat more opaque yellowish in oblique blotches below the pleural fold. Caudal filaments whitish.

Legs. Forelegs with pale yellowish coxae and femora, tibia faintly stained and tarsi somewhat more deeply stained with purplish brown. Meso- and metathoracic legs pale yellowish, less than half the length of the forelegs and atrophied. These legs are, however, less reduced than in *Campsurus segnis* Needham as described by Morgan, 1929.

The genitalia as in figure 3.

This species is close to *C. incertus* Traver from which it may be distinguished by the lack of dark marking on the abdomen and the lack of the greyish colour of the costal region of the forewings, both of which are characteristic of *C. incertus*. The tubercle distally on the medial surface of the penes of this species is lacking in *C. incertus*.

C. puella Pictet, from the incomplete description, apparently has dark marks on the abdomen which are lacking in this species.

Holotype, ♂, Assiniboine River, Cartier, Manitoba, August 2, 1935, W. E. Ricker. Royal Ontario Museum of Zoology, Toronto.

Paratypes, 5 ♂, same data; 4 in the Royal Ontario Museum of Zoology, Toronto; 1 in the Canadian National Collection, Division of Entomology, Ottawa.

Both of these species belong to southern groups and belong to genera which are confined to the New World. Most of the *Campsurus* species are South and Central American, the number diminishing northward through the United States. The species described in this paper ranges furthest north of the known species as far as the records go. *Lachlania* would seem to have a more continuous distribution than *Campsurus*, species persisting in South and Central America, in Cuba, and in this northern outpost. While no records of its occurrence in the United States have been made, it is possible that, with more collecting in the midwest, species of this genus will be found bridging this apparent gap in geographical distribution. If this does not prove to be the case, this northern species must be regarded as a relict of a time when the genus was more continuously spread over North America. The factors which favour its survival in its present habitat in Saskatchewan may possibly be a combination of climatic conditions and the saline water in which it lives.

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