

MAYFLIES

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Mayflies are appreciated most by trout, trout fishermen, bridge nesting swallows, a handful of Ephemeropterists, and maybe by other mayflies. In general, they are loathed by collectors because they are hard to identify and because there are few insects less attractive than a shrivelled and faded mayfly impaled on a pin in a collection. This is a result of their delicate and fragile structure and, as a consequence, they are less well studied than some other insect groups of comparable size (approximately 500 North American species).

An adult mayfly in nature is a work of art and their transient beauty has inspired poets to write in many languages of the ephemeral nature of all living things, including ourselves. The popular conception of the short life of mayflies (*Ephemeroptera*) is, however, somewhat of a misrepresentation. Some do live but a day in the adult stage, such as our *Ephoron album* which are like a summer snowstorm as they emerge over the Saskatchewan River on August evenings, their reduced legs indicating how little time is spent on a solid surface. Then there is the more extreme case of female *Lachlania saskatchewanensis*, where the legs of the females are completely useless, probably decreeing that to alight is to die; I have seen adults of this species only as windrows of dead mayflies along the river shore. It is also true that the mouthparts of adult mayflies are reduced and functionless and they probably take no food or water as adults. But it must be remembered that the nymphal stage has lasted for months or in some cases years beneath the water surface.

This paper has two purposes, the first is to provide a means of identifying families of adult mayflies of North America (nymphs can be identified by using Lehmkuhl, 1975c), and,

second, to introduce the mayflies of Saskatchewan (See also Lehmkuhl, 1970). Identification of adults to family is considered difficult in some cases even by professional entomologists because all adults look quite similar (Figs. 1 and 2 illustrate two extremes) and the family characteristics are found in details of wing venation. I have departed from the usual "key" method of identification and have attempted to use in Table 1 and Figures 6-21 a modified Peterson Field Guide technique. There is no easy road to adult identification, so I would suggest that the first step is to use a 10X hand lens and sketch the major arrangement of veins in the specimen at hand. It may be necessary to remove the wing from the specimen to get clear view. Next, compare the drawing with the six categories in Figures 6-21 and select the correct one. Finally, go to the proper category in Table 1 which will lead you to the family name. A list of Saskatchewan families, genera, and known species is found in Table 2.

The mayflies of Saskatchewan present a most unusual and fascinating situation. While the number of identified species is about 60 (with a dozen or so yet to be identified), the number of genera (that is, major types) is about 35, and 12 of the 15 North American families can be collected in the province. Such diversity in a northern inland locality is unusual when compared, for example, to the "poor" fauna of Dragonflies, Damselflies and Alderflies.^{6,7} This variety of mayflies is not readily explained, but it probably has to do with the immigration from east, west, north and south, in combination with the glacial history and climate of the area. In terms of origin, our mayfly fauna invaded from all directions after the decline of the ice age. Based on current distributions,

