



## ***Cryptochironomus* Kieffer from Lake Winnipeg, Canada, with a review of Nearctic species (Diptera: Chironomidae)**

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### **Abstract**

*Cryptochironomus imitans* sp. n. from Lake Winnipeg, Manitoba, Canada, is described in all stages and both sexes. Six additional species of *Cryptochironomus* Kieffer, 1918 are recorded from Lake Winnipeg. *C. stylifera* (Johannsen, 1908) is shown to be a senior synonym of *C. redekei* Kruseman, 1933. The immatures of *C. stylifera*, *C. digitatus* (Malloch, 1915), *C. ramus* Mason, 1985, and *C. curryi* Mason, 1985, the male of *C. ramus* and the female of *C. curryi* are described or redescribed, and additional information given on imagines of *C. stylifera*, *C. digitatus*, *C. curryi* and *C. blarina* Townes, 1945. The male of a variety of *C. ramus* is described, and a pupa of *C. eminentia* Mason, 1985 figured. Keys are given to Nearctic males, pupae and larvae of *Cryptochironomus*. The distribution of *Cryptochironomus* in Lake Winnipeg is mapped and discussed. The separation of larval instars is shown approximately to follow Dyar's rule.

**Key words:** Chironomidae, *Cryptochironomus*, new species, Lake Winnipeg, Nearctic

### **Introduction**

A limnological baseline survey of Lake Winnipeg were conducted in 1969 by the staff of the Freshwater Institute, Fisheries Research Board of Canada, in order to study the chemical limnology, phytoplankton, primary production, zooplankton and zoobenthos. The lake which is a remnant of Glacial Lake Agassiz has a surface area of 23,750 km<sup>2</sup>, mean depth of 10.6 m, maximum depth of 32 m, Secchi disc visibility of 5–50 cm in the south basin and 1–3 m in the north basin, is essentially isothermal during the open water season and receives high nutrient loading from the rivers which enters it. Brunskill (1973) reported that 5,000 metric tons of phosphorous and 62,000 tons of nitrogen were being added annually to the lake over the period 1968–1970. At least in the south basin, however, primary production appeared to be limited by turbidity rather than nutrient supply. Three basins are delineated by the shape of the lake (Fig. 1). The South Basin is shallower, with a mean depth of 9.7 m, than the larger North Basin (mean depth 13.3 m) and the two basins are separated by a Narrows section (mean depth 7.2 m) which is subject to strong currents associated with seiches.

The results from the benthic studies of the chironomids is presented in (Chang *et al.* 1993), while the results from light trap collections, emergence traps and rearings are given in Chang *et al.* 1994). The chironomid indicator communities in different areas of Lake Winnipeg are shown in Sæther (1979 fig. 3). (*Chironomus plumosus* f. *semireductus* Lenz has since been shown to be *Chironomus entis* Shobanov).

Although chironomids from Lake Winnipeg have been used as the base for several publications and species described or redescribed in a number of publications including revisions and monographies the new species remain to be described and other species are in need of redescription. The original intention was to do thus in a monograph dealing with the ecology and systematics of all aquatic insects of the lake or at least of all the chironomids. However, for different reasons this is no longer feasible. Among others the material of some groups sent for systematic confirmation to other specialists apparently are lost and although the descriptions exist cannot longer be compared with newer material. The systematic of some chironomid genera including some ecological data thus will be presented in several papers.