



## ***Glyptotendipes* Kieffer and *Demeijerea* Kruseman from Lake Winnipeg, Manitoba, Canada, with the description of four new species (Diptera: Chironomidae)**

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### **Abstract**

*Glyptotendipes* Kieffer and *Demeijerea* Kruseman from Lake Winnipeg, Manitoba, Canada, are recorded, described or redescribed. *Demeijerea spinulata* **sp. n.**, *Glyptotendipes* (*G.*) *paratestaceus* **sp. n.**, *G.* (*G.*) *paulisensus* **sp. n.**, and *G.* (*G.*) *sensilis* **sp. n.** are described as male imagines and *G.* (*G.*) *paulisensus* also as female imago. Partial redescriptions are given of: *Demeijerea brachialis* (Coquillett), *Glyptotendipes* (*G.*) *barbipes* (Staeger), *G.* (*G.*) *paripes* (Edwards), *G.* (*G.*) *lobiferus* (Say), and *G.* (*Caulochironomus*) *dreisbachi* Townes. A male probably belonging to *G.* (*Caulochironomus*) *scirpi* (Kieffer) is described. Keys are given to Nearctic males of *Glyptotendipes* subgen. *Glyptotendipes* and to known females of the subgenus.

**Key words:** Chironomidae, *Glyptotendipes*, new species, keys to immatures, Lake Winnipeg

### **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 enter 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, 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) 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).

Larvae of *Glyptotendipes* and *Demeijerea* occur in detritus-rich littoral sediments, in “Aufwuchs” of lakes, ponds and running water, and often as miners or “semi-miners” in colonies of Bryozoa, sponges, leaves or stems of submerged or floating plants. Certain species also mine in wood and especially under the bark layer. As the Lake Winnipeg benthic sampling did not include the shallow littoral zone only a single larva was found.

As shown by Heyn (1992) the taxonomy of the genus *Glyptotendipes* Kieffer has been confused since its establishment. Heyn divided the genus into three subgenera, *Glyptotendipes* *s. str.* (including the previous *Phytotendipes* Goetghebuer), *Caulochironomus* Heyn and *Trichotendipes* Heyn, and regarded *Demeijerea* Kruseman as a separate genus. However, as shown by Spies & Sæther (2004) the name *Trichotendipes* is preoccupied by *Trichotendipes* Guha *et al.* (1985) and was replaced by *Heynotendipes* Spies *et* Sæther. Contreras-Lichtenberg (1996, 1997, 1999, 2000, 2001) revised the West-Palaeartic species of the genus. However, as shown by Spies & Sæther (2004) several nomenclatorial issues in these papers had to be rectified.