

FIRST RECORD OF THE NON-BITING MIDGE, *Zavreliella marmorata* (WULP.) (CHIRONOMIDAE: DIPTERA), FROM SASKATCHEWAN

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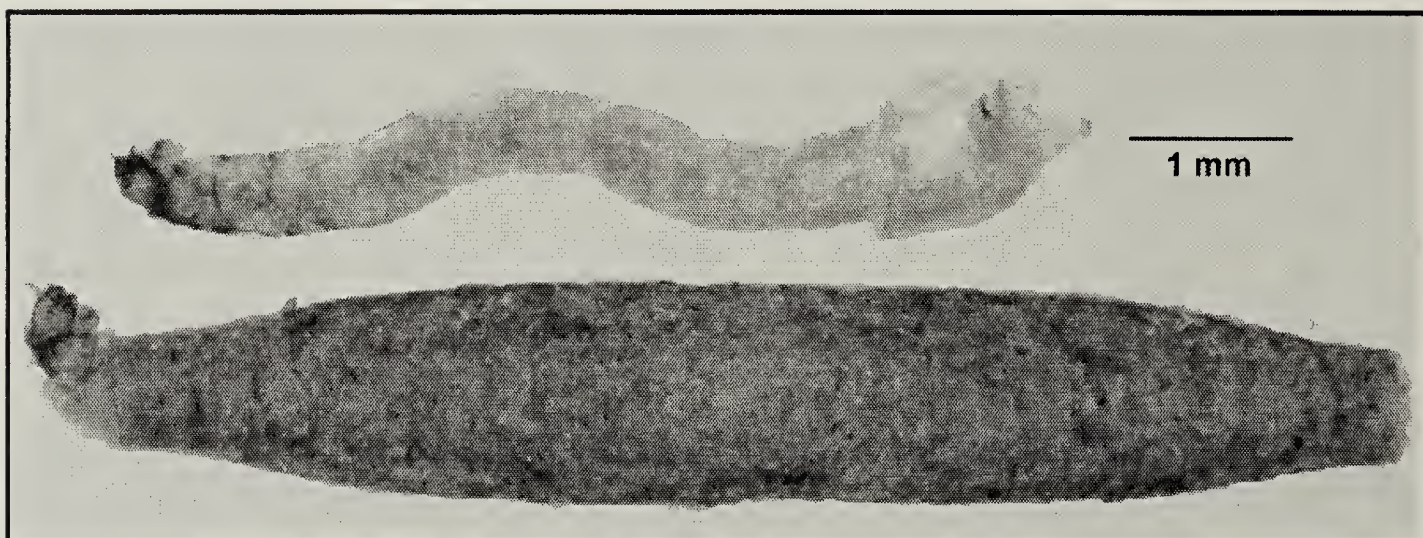


Figure 1: Larvae and larval case of *Zavreliella marmorata*.

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Larvae and pupae of a case-dwelling, non-biting midge or chironomid (Figure 1) were collected on July 7, 2004 in bottom samples from a pond 8 km sw of Regina, near Rowatt, Saskatchewan (104° 39' 42" W; 50° 19' 52" N). The pond covers an area of 700 m² and has a maximum depth of 2 m. It is ringed with cattails, willows and dogwoods. The substrate is fine silt and clay, littered with decaying vegetation. Representative specimens of the chironomid were prepared for microscopic examination by digesting the body tissues with 10% potassium hydroxide and 95% glacial acetic acid followed by dehydration in 100% alcohol. The cleared specimens were then mounted on microscope slides in Canada balsam (Figure 2).

The larvae and pupae were identified as *Zavreliella marmorata* (Wulp.).^{1,2,6,7} *Zavreliella* is superficially similar to another chironomid genus, *Lauterborniella*, in the larval and pupal stages. *Zavreliella* can be separated from this genus in the larval stage by a circular case opening, long lateral tubules, presence of a frontoclypeal apotome and simple setae subdentalis and setae submentis. *Lauterborniella* has a slit-like case opening, short lateral tubules, a clypeus, toothed setae subdentalis and feathered setae submentis.^{2,7} In the pupal stage, *Zavreliella* has longitudinal point patches on abdominal segments II to VI, four-branched thoracic horns and three lateral setae on segment VI. *Lauterborniella* has transverse point

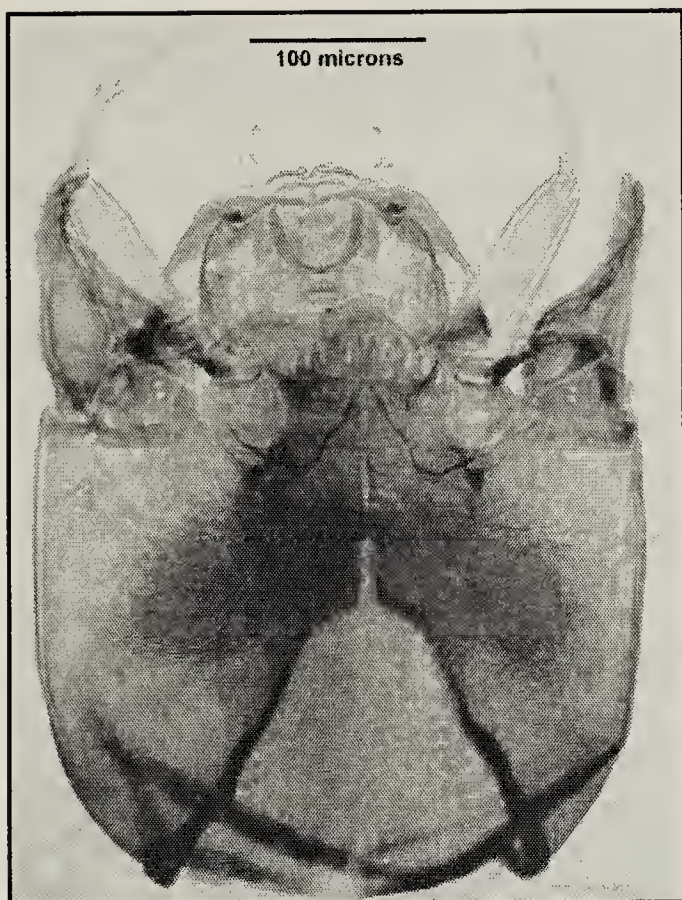


Figure 2: Cleared larval head capsule of *Zavreliella marmorata*.

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patches on abdominal segments II to VI, two-branched thoracic horns and four lateral setae on segment VI.⁶ The adult males of *Zavreliella* have unique longitudinal setal brushes on the abdominal segments and dark markings on the wings.¹

Zavreliella marmorata is a new record for Saskatchewan.^{3,4,5} This species is distributed throughout most of the world and is the only species of the genus known from North America.² It has previously been reported from Ontario and Quebec, south to Florida and New Mexico.⁵ *Z. marmorata* inhabits weedy, enriched marshes, ponds and lakes and slow moving reaches of rivers and streams.⁵

Many chironomid larvae make stationary retreats, but larvae of *Z. marmorata* construct silk cases that they drag around with them in a manner similar to micro-caddisflies

(Hydroptilidae).^{2,7} The cases averaged 7.16 mm long (range 6.9 to 7.5, n = 10) and 1.27 mm wide (dorsal-ventral width, range 1.1 to 1.4, n = 10). All cases were slightly laterally flattened, except at the ends, and were covered in a film of clay from the pond substrate. Microscopic examination of the larval digestive tracts revealed their diet to be mainly detritus and diatoms.

Collections made on July 7, 2004, consisted mostly of mature larvae and pupae. Pupation occurs within the larval case. Many of the pupae contained adults almost ready to emerge, which suggests adults emerge in July. Some European populations of *Z. marmorata* are apparently parthenogenic.^{2,7} However, the pupae and pre-emergent adults examined in the Saskatchewan population were of both sexes.

This record of *Z. marmorata* adds to the over 190 species of chironomids already reported from Saskatchewan.^{3,4,5} Chironomids are one of the most ecologically important and diverse groups of aquatic insects in the province. In most aquatic habitats larvae function as one of the main recyclers of decomposing material and are preyed upon by predatory aquatic insects, fish and waterfowl. Adult chironomids are also important food for insectivorous birds. Unfortunately, species level research on the family has been undertaken in only a few habitats in Saskatchewan. It is expected that further collecting in different regions and habitats will add more species to the provincial records and possibly some new to science.

Acknowledgements

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CHRISTMAS GIFT

The day before Christmas while
walking the dog farther than usual
on a cold, clear, windy morning
threaded my way through willows
following our joyous dog's trail
on into calm young aspen woods
glad to finally be out of the wind
then stopped, entranced, staring
awed by the serene beauty of
smooth grey-green aspen trunks
wrapped about with bright light.

Bob Nero