

New Late Cretaceous pachyrhizodontid and enchodontoid fishes and associated ichthyofauna from the Northwest Territories, Canada

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Abstract

Two new genera and species, *Aquilopiscis wilsoni* (Crossognathiformes: Pachyrhizodontidae) and *Ornatipholis sahtu* (Aulopiformes: Enchodontoidei), are described from upper Lower Turonian marine deposits at Lac des Bois, Northwest Territories, Canada. Associated with these new taxa is a diverse osteichthyan assemblage, including an unidentified caturid (Amiiformes) and several teleosts, *Ichthyodectes ctenodon* (Ichthyodectiformes), *Osmeroides* sp. (Elopiformes), *Avitosmerus canadensis* (Euteleostei incertae sedis), and three Aulopiformes, *Enchodus gladiolus*, *E. petrosus*, and *Cimolichthys* sp. These articulated vertebrates were associated with an invertebrate fauna of ammonites, inoceramid clams and squid, indicating a fully marine, open water paleoenvironment near the northern continental limits of the Western Interior Seaway. These new crossognathiform and aulopiform taxa, plus the euteleost *Avitosmerus* previously described from this locality, indicate that the northern portions of the Seaway were more than reasonable habitat for the evolution and diversification of teleosts in the early Late Cretaceous.

Introduction

Fossil fishes were first discovered in the Cretaceous deposits at Lac des Bois by an oil exploration geologist working for V. Zay Smith Associates of Calgary, Alberta in 1968. These specimens were described in a paper by WALDMAN (1969), and served as impetus for a large-scale collection made at the same locality (GSC Loc. 84342) by David BARDACK in 1969. Some of this vertebrate material, primarily derived from mudstone concretions, was described by C. FIELITZ (1996, 2002); JELETZKY (in COOK & AITKEN 1971, YORATH & COOK 1981) identified associated invertebrates to ascertain a biostratigraphic correlation for the assemblage. In the late 1970s at least one other specimen was collected from BARDACK's locality by C. J. YORATH of the Geological Survey of Canada (GSC Loc. C-76662). This specimen was figured, and identified in a brief report by M. V. H. WILSON (in YORATH & COOK 1981).

To date, published records of vertebrates from the locality include a variety of actinopterygian taxa. WALDMAN (1969) reported two genera of fishes from the small sample available to him: *Ichthyodectes*, based on a skull; and *Holcolepis*, based on scales and isolated skull bones. This latter genus is considered a junior synonym of *Osmeroides* (WOODWARD 1901). WILSON identified a latex peel of YORATH's specimen as probably being a species of *Osmeroides* (YORATH & COOK 1981). FIELITZ (1996) described several taxa: a possible caturid; *Ichthyodectes ctenodon*; cf. *Osmeroides* sp.; a euteleost incertae sedis; an indeterminate aulopiform; *Enchodus* sp., *E. gladiolus* and *E. petrosus*; and *Cimolichthys* sp., from BARDACK's large collection. FIELITZ later (2002) described the euteleost as *Avitosmerus canadensis*, leaving its systematic position as incertae sedis.

The new taxa described here are from the collection made by David BARDACK at Lac des Bois in 1969, and are part of our larger research project on the faunas and paleoenvironments of the northern and eastern portions of the Late Cretaceous Western Interior Seaway.

The whole contribution can be purchased as PDF file.

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