

Species Feces: A Detailed Look at *Ophiomorpha borneensis*

K.L. Earle, T.D.A. Saunders, S.G. Pemberton

Historically, *Ophiomorpha borneensis* has been considered to be one of the least common forms of the trace fossil *Ophiomorpha*. However, *Ophiomorpha borneensis* is both abundant and well preserved in Upper Cretaceous Horseshoe Canyon Formation outcrops near Drumheller, Alberta, Canada.

Ophiomorpha borneensis is uniquely configured with burrow walls characterized by regularly distributed, densely packed, bilobate spheroids. Both the burrow walls and burrow fills of specimens collected from these outcrops contain fecal pellets that belong to the genus *Palaxius*. Coprolites of the genus *Palaxius* are believed to have been deposited by thalassinidean shrimp of the Axiidae family. As such, it is possible that the *Axius* tracemaker, also considered to be quite rare, may be a better modern analogue than the *Calianassa* or the *Upogebia* for Upper Cretaceous *Ophiomorpha* of the Western Canadian Sedimentary Basin, and perhaps elsewhere.

Determining that an ancestor of *Axius* created these burrows provides insight into the particular habits and habitats of these organisms during the Cretaceous. As *Ophiomorpha* has commonly been considered to be a good paleo-environmental indicator of beach or neritic sands, information about the exact trace-maker and its lifestyle greatly increases our knowledge base of shallow clastic depositional systems.