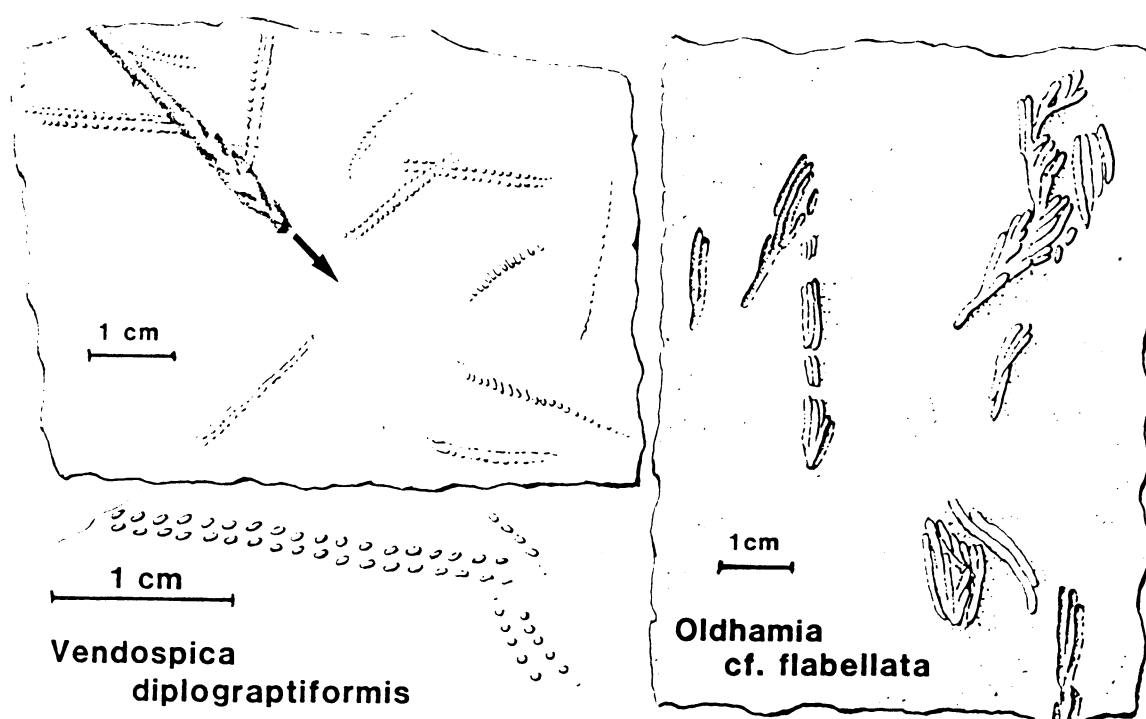


TRACE FOSSILS FROM THE LATE PROTEROZOIC OF NORTH CAROLINA: EARLY CONQUEST OF DEEP-SEA BOTTOMS

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The trace fossil *Oldhamia* reflects systematic strip mining of an infaunal, worm-like sediment feeder. It is known from many parts of the world in Cambrian complexes, whose flysch-like and accreted character suggests deposition on a deep continental slope. In similar rocks of the North Carolina Slate Belt, *Oldhamia* is associated with rare specimens of the Ediacara-type body fossil *Pteridinium*, as well as tool marks of a problematic stiff organism reminiscent of graptolite stipes (*Vendospica*).



This occurrence (1) extends the stratigraphic range of *Oldhamia* into the Late Proterozoic. It also reminds us that, by that time, worm-like, endobenthic bilaterians (2) had become behaviorally specialized and (3) had colonized shelf and deep-sea bottoms well before the Cambrian evolutionary explosion. (4) Since bioturbators were small and did burrow strictly along bedding planes, their mixing effect was as yet negligible. (5) The new tool-mark fossils tell us that complex, organic-walled and perhaps colonial organisms were around in addition to sand-corals (Psammocorallia), possibly sponges and the probably plasmodial Vendobionta.