

Do we have any evidence of the existence of bilaterian animals in the Ediacaran? New trace fossil data from the Ediacaran of western Mongolia

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Although a lot of arguments exist as to the existence or absence of bilaterians in the Ediacaran, no conclusive evidence has so far been obtained. There are a variety of trace fossils from the Ediacaran, but no deeply penetrative, or U-shape burrows have been discovered. Therefore, these Ediacaran traces should be made by protozoans or cnidarians. We found vertically penetrative burrows, presumably assigned to *Arenicolites*, from multiple horizons of the upper Ediacaran of western Mongolia. These presumably have U-shape form, and the animal that lived in the burrow should have longitudinally elongate form, probably assignable to bilaterian animals. Mongolia was located in low-latitude area in the late Ediacaran, and animal evolution is thus thought to have proceeded earlier than other areas.

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