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Myriapods and Arachnids from the Upper Silurian Ludlow Bone Bed, UK: the Earliest Land Animals

by

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Fragments of arthropods have been recovered from siltstones a few centimetres above the famous Ludlow Bone Bed (Upper Silurian: Ludlow-Přídolí boundary) of the type locality, using hydrofluoric acid. Many of the fragments are very dark brown in colour, thus making study in transmitted light difficult, but a combination of incident and transmitted light microscopy has revealed their morphology. Scolecodonts (polychaete jaws) and other animal remains are present, as well as common land plant cuticles. The sedimentology suggests the accumulation of a mixture of marine and terrestrial fauna in a shoreline concentration deposit.

The arthropod fauna consists of three main types. Commonest are serially arranged subspherical segments which are interpreted as kampecarid myriapods. These poorly known myriapods are known from other Silurian localities; their terrestrial provenance is questionable. Numerous long podomeres bear characteristic serrate carinae, flexible tarsi, single claws, femora with a wide angle of movement distally; these and other features suggest a scutigeromorph type. Similar, but undescribed, podomeres are known from the Middle Devonian of Gilboa, New York. A few dark fragments, including a nearly complete body of a trigonotarbid arachnid have been recovered. Trigonotarbids are closely related to spiders, have book-lungs, and are known from all of the three important fossil sites for Devonian terrestrial faunas.

This fauna includes the earliest known terrestrial animals, pre-dating the Rhynie Chert by about 15 million years, and comes from within the most rigorously dated stratigraphic sequence in the Palaeozoic. A more complete preliminary description of the fauna is given in JERAM et al. (1990).

Literature:

JERAM, A.J., P.A. SELDEN & D. EDWARDS (1990): Land animals in the Silurian: arachnids and myriapods from Shropshire, England. — *Science* **250**: 658 - 661.

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