

COUNTY: SHROPSHIRE

SITE NAME: LINLEY BIG WOOD

DISTRICT: SOUTH SHROPSHIRE

Status: Site of Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act 1981 (as amended).

Local Planning Authority: South Shropshire District Council

National Grid Reference: SO 3381 9492–SO 3414 9442      Area: 0.27 (ha.)

Ordnance Survey Sheet 1:50,000: 137      1:10,000: SO 39 SW

Date Notified (Under 1981 Act): 21 April 1998

Other Information:

A new site. A Geological Conservation Review (GCR) site.

Description and Reasons for Notification:

The site occupies a strip four metres wide on the west side of a forestry track, covering a distance of eight hundred metres in the northern half of Linley Big Wood, about six kilometres north of Bishop's Castle. The site consists of a low, overgrown bank containing sporadic exposures of the bedrock. A section was excavated by the then Nature Conservancy Council in the mid-1980's.

The section at Linley Big Wood provides exposures of the Habberley Formation. This consists of shales, siltstones and fine sandstones in the lower part of the section, and predominantly micaceous siltstones in the upper part of the section. The Habberley Formation represents the youngest known rocks of Tremadoc Series age in the Welsh Borderlands. These rocks are not preserved further east (Wrekin area) as they are cut out by the sub-Caradoc Series unconformity there. The Habberley Formation rests upon the Shineton Shale Formation (also part of the Tremadoc Series) and is overlain by the Stiperstones Formation of the Arenig Series.

Fossil faunas are relatively rare in the Habberley Formation, but several genera of trilobite including the olenids *Angelina*, *Leptoplastides*, *Parabolina* and *Peltocare* and the asaphid *Asaphus* are reported from the section. These may be associated with inarticulate brachiopods and nautiloid cephalopods. Diversity and compositional changes within the fossil fauna are reflected in the lithological variation. Olenid faunas are associated with laminated shales of the lower portion of the formation and the asaphid fauna occurs in the micaceous siltstones of the upper part.

The presence of an olenid fauna indicates that the lower portion of the Habberley Formation was deposited under conditions of low oxygenation while the fact of the preservation of the shale laminations suggest quiet conditions. The older portion of the Habberley Formation was deposited in a deep basin which was cut off from full oceanic circulation. Shallowing during the deposition of the upper part of the Habberley Formation resulted in increased oxygenation and more diverse faunas appeared. Shallowing and sedimentation was continuous, and ended with the deposition of the shallow water, sub-tidal sandstones of the Stiperstones Formation. A sea level drop during the close of Tremadoc Series times has been recognised in shallow water environments in various parts of the world. This drop in sea level is recognised in the faunal and sedimentological changes of the Habberley Formation and makes it possible to correlate this horizon across continents.

Linley Big Wood provides exposures of a horizon within the Tremadoc Series that is not preserved elsewhere in Britain. The lack of preservation resulted from non-deposition, the presence of an unconformity, or deposition in waters too deep to demonstrate shallowing.

The site is therefore of great importance for the study of Ordovician stratigraphy and palaeogeography in Britain.