

A GIANT TRILOBITE FROM THE LYNTON FORMATION, NORTH DEVON, INDICATES A LATE EMSIAN AGE

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A large and unusually well-preserved trilobite pygidium collected *in situ* from the Lynton Formation at Lynton, north Devon, is identified as that of the homalonotid *Digonus gigas* (Roemer), and indicates a late Emsian age for the oldest Devonian strata on the North Devon coast.

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INTRODUCTION

The Lynton Formation is displayed in well-exposed, but often inaccessible cliffs around the town in North Devon that gives the formation its name. These rocks comprise a folded sequence of clastic rocks estimated at between 300 and 400 metres thick (Edmonds *et al.*, 1985; Leveridge, 2011), with the lower part dominated by thick-bedded sandy and silty strata, but with argillaceous beds becoming more prominent higher in the sequence. Since Simpson (1964), the Lynton Formation has been accepted as the oldest marine Devonian exposed along the North Devon coast, lying at the centre of the Lynton Anticline, and surrounded by the prominent sandstones of the Hangman Grits. Despite strenuous attempts to retrieve fossils, the palaeontological evidence bearing on the age of the Lynton Formation has remained scrappy, and the long list of fossils in Edmonds *et al.* (1985, pp.7–8) includes predominantly tentative determinations. Marine fossils collected from the argillaceous beds are generally not well preserved, and are dominated by molluscs with long stratigraphic ranges. None of the standard Rhenish ammonoid zone fossils have been discovered. The best-preserved brachiopods were described by Evans (1983) who indicated a late Emsian assemblage, improving upon an Emsian-Eifelian age, close to the Lower to Middle Devonian boundary, previously tentatively suggested by House *et al.* (1977, table 1, column SW 3). Other than an unlocalised “*Phacops* sp.” of little stratigraphical significance, trilobites had never been recorded. The discovery of a well-preserved pygidium of a very large trilobite was both unexpected and stratigraphically important. The specimen in question was excavated from bedrock, and was brought to The Natural History Museum, London, in 2016, coming in as an enquiry to the Angela Marmont Centre, from where Fiona Fernhead quickly brought it to the attention of the authors. The new trilobite discovery and its stratigraphical implications are the subject of this short paper.

TRILOBITE OCCURRENCE AND ORIGIN

The trilobite pygidium was recognised as a fossil and collected during construction work excavated into a fine sandstone bedrock towards the top of the hill at Lynton, high above the left bank of the West Lyn River (SS 73010 48975). The trilobite was brought into the Natural History Museum by its discoverer, Dr Frederika Holmes, and comprises part and counterpart of a very large pygidium, which was immediately recognisable as belonging to a homalonotid. Dr Holmes very kindly donated the specimen to the Museum for scientific study after consultation with her family. The comparatively fine preservation of this specimen contrasts with the indifferent condition of fossils from the argillaceous sediments known previously from the same formation. The coarser matrix evidently preserved the trilobite from the cleavage and tectonic distortion that affected the associated shalier rocks. Some further preparation of the hard sandstone was necessary to extract buried parts of the flanks of the specimen and the terminal pygidial spine. The preservation is sufficiently good to retain some details of the surface sculpture, and allows a determination, even without the discovery of corresponding cephalic sclerites.

Pound and Chapman (2004) have argued that some of the folding in the Lynton Formation was penecontemporaneous with its deposition, and recognised therein a submarine slide of considerable magnitude, using structural and cleavage criteria as evidence. The direction of movement of the slide was deduced by these authors to be “towards the SSW”, that is, away from the Bristol Channel. This slumped structure includes sandstone beds similar to those that yielded the trilobite fossil. It seems plausible to us that the large homalonotid trilobite was entrained in a similar slide, accounting for its basin-ward emplacement from an originally shallower site. Large early Devonian homalonotids are typically found in shallow-water clastic deposits in the Rhenish ‘magnafacies’, and indeed over a