

A critical new ankylosaur specimen from the Wessex Formation of the Isle of Wight

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Ankylosaurs (Dinosauria, Ankylosauria) have been known from the Lower Cretaceous English Wealden for over 170 years. Three Wealden ankylosaurian species are currently recognised: *Hylaeosaurus armatus* and *Polacanthus rudgwickensis* from the Wealden Sub-basin of Sussex, and *Polacanthus foxii* from both the Wessex Sub-basin of the Isle of Wight and the Wealden Sub-basin. Within recent years all have been interpreted as close relatives within the clade Polacanthidae or Polacanthinae, the monophyly of which is controversial. Most views of polacanthines as a whole are based on substantially better remains from North America. Despite the familiarity of *Hylaeosaurus* and *Polacanthus*, many questions remain about their anatomy, taxonomy and relationships and a thorough re-appraisal of the British taxa are needed.

We discuss a new ankylosaur discovered in 1994 in the Wessex Formation at Chilton Chine, Isle of Wight. This partial skeleton (including limb and limb girdle elements, vertebrae and osteoderms) is one of the most complete ankylosaurs ever found in the UK and has the potential to resolve many questions about these dinosaurs. It has been provisionally referred to *P. foxii* but differs in several respects from the holotype and referred specimens of this taxon.

Each bone has been recorded using photogrammetry and we have reconstructed the skeleton in 3D. The histology of the sacral shield shows a plywood-like structure with extensive, well ordered structural fibres, in contrast to previously reported *Polacanthus* specimens. Initial findings suggest that the specimen represents a new taxon. Its implications for Early Cretaceous ankylosaur diversity and taxonomy will be discussed.