



A taxonomy of iguanodontians (Dinosauria: Ornithopoda) from the lower Wealden Group (Cretaceous: Valanginian) of southern England

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Abstract

This short review discusses current understanding of the history, anatomy and taxonomy of the lower Wealden Group-aged (Valanginian ~141–137Ma) iguanodontian dinosaurs from southern England.

English Wealden iguanodontian taxonomy has been the subject of comment and scrutiny since the latter half of the 19th century. As proposed over two decades ago, iguanodontians recovered from quarries across this geographic region can be subdivided into anatomically and chronologically distinct assemblages. A review of the lower Wealden Group (Valanginian) assemblage (formerly understood to comprise the relatively poorly known and understood taxa *Iguanodon dawsoni*, *Iguanodon fittoni* and *Iguanodon hollingtoniensis*) establishes the presence of two diagnosable taxa: *Barilium dawsoni* (Lydekker, 1888) **comb. nov.** and *Hypselospinus fittoni* (Lydekker, 1889) **comb. nov.** The upper Wealden Group (Hauterivian–Lower Aptian) assemblage comprises *Iguanodon bernissartensis* and *Mantellisaurus atherfieldensis*.

Recent suggestions concerning the creation of additional new Wealden Group taxa reflect systemic misunderstandings of the actual skeletal material. A detailed taxonomic review of all Wealden Group iguanodontians is in preparation.

Key words: Dinosaur, Ornithischian, Lower Cretaceous, England, *Iguanodon*, New genera

Introduction

In 1825 Gideon Algernon Mantell described and illustrated (Fig. 1) a range of large and unusual fossil teeth collected from quarries located around Whiteman's Green in the village of Cuckfield, Sussex. The general area in which these quarries lie was referred to as Tilgate Forest (Mantell 1825) and stretched across much of the central, and originally heavily forested, area that cut across the counties of Sussex, Surrey and Kent in southeast England. This area, also known as "The Weald", derives its name from the Anglo-Saxon word for forest and is preserved in the ubiquitous geological usage of Wealden for the dominant sedimentary sequences in this part of the country. Mantell (1825) offered a formal scientific name *Iguanodon* for the teeth that he illustrated in this article; this represented the culmination of a long period of investigation of the geology of Sussex during which Mantell had collected and reported the existence of large fossilized teeth, fragments of rib and limb bones of a large and hitherto unrecognised fossil reptile (Mantell 1822).

The strata exposed in the, long-since abandoned, quarries at Whiteman's Green belong to the Grinstead Clay Member, a diachronous lithological unit within the Tunbridge Wells Sand Formation (which represents the uppermost part of the Hastings Sub-Group: Rawson 2006). Underlying the Tunbridge Wells Sandstone Formation is the Wadhurst Clay Formation; these two Formations correspond to the entire Valanginian stage (141–137 Ma) in more recent correlation tables (Rawson 2006: fig. 15.5). The Grinstead Clay Member is therefore generally regarded as upper Valanginian.

Though iconic, given its position in the history and general understanding of dinosaurs (Norman 2005), this material cannot disguise the fact that, as with much historically important fossil material, these early-described remains though clearly unusual and distinctive at the time have proved to be inadequate for the