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/ by H.G. Seeley.**

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ON EVIDENCE OF A BIRD FROM THE  
WEALDEN BEDS OF ANSTY LANE.

43-X

*On EVIDENCE of a BIRD from the WEALDEN BEDS of ANSTY LANE,  
near CUCKFIELD.* By Prof. H. G. SEELEY, F.R.S., F.L.S., F.G.S.

ON a visit to Ansty Cross made by the London Geological Field Class, I identified a fragment of bone found embedded in the sandstone by Mr. Neville Jones, as probably the distal end of the femur of a bird. It was unfortunately extracted from the matrix, and subsequently it was left with me for determination.

The fragment is  $\frac{3}{4}$  inch long, compressed from back to front, with the bone of the shaft thick and enclosing a small medullary cavity. At the proximal fracture the bone is  $\frac{1}{4}$  inch wide and  $\frac{1}{8}$  inch thick. The width at the distal articulation is  $\frac{9}{20}$  inch; and the bone becomes bent downward and is thickened inferiorly with development of the condyles, though not to quite the extent seen in most existing birds.

The inner side of the bone is narrower than the outer side. As the narrow, rounded inner side of the shaft is prolonged distally, it becomes flattened, with a slight median convexity; and is thickened, partly owing to a superior marginal ridge, and partly in consequence of the thickening of the inner condyle.

The outer side of the bone is thicker, but not so thick as in the femur of *Enaliornis*; nor is the external side flattened so much as in that genus. An inflation on its middle part defines a superior lateral oblique area, below which there is an imperfect groove. This defines a thickening of the outer side of the large external condyle, quite on the type of *Enaliornis* and *Colymbus*.

The external condyle is not only larger and deeper, but is more prolonged distally. This is perhaps the most distinctive avian character; for though in a Dinosaur the inner side of the distal end may be flattened, and the outer side angular, it is the inner condyle which is usually the larger. And in no case is the external condyle produced distally, except apparently in *Hypsilophodon*, exceptionally according to Hulke's figure. The condyles are well rounded. The external surface of the bone, in consequence of the size of the outer condyle, has the appearance of extending obliquely outward, making a slight approximation to the condition seen in *Colymbus* and its allies.

The superior surface of the bone does not widen so rapidly at the distal articulation as in *Enaliornis*; but there is a similar shallow groove on it which widens to the distal extremity, extending laterally over the condyles. The groove becomes prolonged into the notch between the condyles on the distal extremity of the bone.

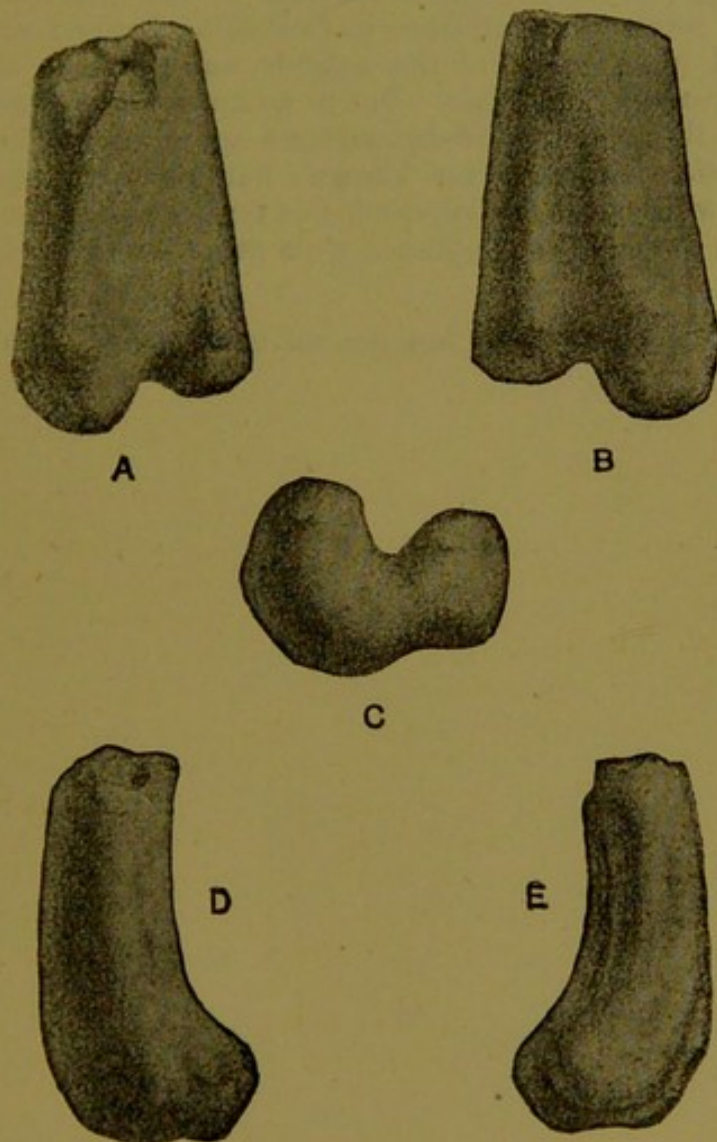
The inferior surface of the shaft is concave in length and also from side to side, being bounded laterally by slightly-developed rounded ridges, which extend proximally from the condyles. The notch between the condyles is narrower and deeper than in *Enaliornis*, owing chiefly to the well-rounded form of the condylar surfaces on the under side of the bone.



*Colymbus* is the only existing bird to which the fossil makes any approximation; but the resemblance is distant, and is not suggestive of near affinity. It is interesting that the Cretaceous birds show so marked an affinity with that type.

The resemblances of the dinosaurian and crocodilian femora with this type are such that almost every individual feature of the

*Left femur of bird (?) : distal end, twice nat. size.*



B. Seeley del.

A = Posterior aspect; B = Anterior aspect; C = Distal articular surface;  
D = External aspect; E = Internal aspect.

bone can be paralleled in some fossil referable to those groups. No British dinosaurs, however, are known of such small size, or with the shaft of the bone so compressed, with the condyles at once so well rounded and limited to the inferior surface. Nor am I aware of a dinosaur in which the shaft of the bone widens externally in harmony with the condyle produced distally. Even in *Hypsi-*

*lophodon*,<sup>1</sup> in which the external side of the bone is deeper and produced distally in the condyle, there is practically a flat external surface to the bone and no inferior development to the condyles.

The character of the fossil which, in view of its partial approximation to *Colymbus*, might be regarded as least avian, is the deep notch between the condyles on the inferior surface, and this somewhat Iguanodont character is replaced in *Hypsilophodon* by a broad open notch which is much more bird-like. Some of the Crocodilia closely approach this femur in the form of the distal end. There are many points of resemblance in *Crocodylus Spenceri*, especially in the distal prolongation of the condyle, and the same character is seen in *Crocodylus sivalensis*. But in no known crocodiles, recent or fossil, are the inferior condylar surfaces so much developed. The femur of *Heterosuchus* is not known: but it is probably the only crocodile which might so approach this type of animal as to suggest caution in unqualified acceptance of its avian interpretation.

<sup>1</sup> Hulke, Phil. Trans. Roy. Soc. vol. clxxiii (1882) pl. lxxviii.