

In this paper the author reviewed the evidence already cited by himself and others (especially Professor E. D. Cope) in favour of the ornithic affinities presented by the Dinosauria, and discusses at length the recently ascertained facts which bear upon this question, some of the most important of which are derived from the species described by him in the preceding paper under the name of *Hypsilophodon Foxii*. He summed up his paper by a comparison of the different elements of the pelvic arch and hind limb in the ordinary reptiles, the Dinosauria and Birds, and maintained that the structure of the pelvic bones (especially the form and arrangement of the ischium and pubis), the relation between the distal ends of the tibia and the astragalus (which is perfectly ornithic), and the strong enseminal crest of the tibia and the direction of its twist, furnish additional and important evidence of the affinities between the Dinosauria and Birds.

DISCUSSION.—Sir Roderick Murchison, who had taken the Chair, inquired as to the habits of the *Hypsilophodon*.

Mr. Hulke mentioned that Mr. Fox had two blocks containing remains of a large portion of the *Hypsilophodon*, all procured from a thin band of sandstone near Cowleaze Chine. On one the pelvis is almost entire, as well as the right femur, the tibia, which is longer than the femur, four long metatarsal bones, and an astragalus. All the long bones are hollow. Portions of at least eight individuals have been found in the same bed.

Mr. Seeley doubted whether these animals should be called Reptiles at all, as they seemed to him to form a group distinct alike from reptiles, birds, and mammals, but occupying an intermediate position. In the hinder limbs of *Pterodactylus* the analogies were closer with mammals than with birds. He thought it possible that the peculiar structure of the hinder limbs of the Dinosauria was due to the functions they performed rather than to any actual affinity with birds.

The President, in reply, stated that *Hypsilophodon*, from the character of its teeth, probably subsisted on hard vegetable food. He expressed a hope that Mr. Fox would allow a closer examination of his specimens to be made. He was unable to agree with Mr. Seeley's views. He was inclined to think that the progress of knowledge tended rather to break down the lines of demarcation between groups supposed to be distinct than to authorize the creation of fresh divisions.

CORRESPONDENCE.

THE CHESIL BANK.

SIR,—The letter of Colonel Greenwood "On the Formation of the Chesil Bank," in the last number of the *GEOLOGICAL MAGAZINE*, is so discursive, and takes up so many points not immediately treated of in *our*¹ paper on the subject, that it is somewhat difficult to answer briefly.

As far as we can gather, the two chief objects Col. Greenwood has in view are:—1stly, to complain that we have appropriated the term "natural groin" used by him in reference to Portland, and to which he reserves the exclusive right; and, 2ndly, to assert that less is known on the subjects on which he has written than we are willing to allow.

Not taking into account collateral issues raised by the Colonel

¹ I feel bound to notice the strange way in which Col. Greenwood has so often used my name alone in his letter, without any reason, as the paper he notices is the joint work of Mr. Bristow and myself.—W. WHITAKER.

and confining ourselves as closely as possible to the main subject, we may state that, if we had thought that the raised beach at Portland Bill had been in any way connected with the Chesil Bank, we should have said so in our paper; but we have no doubt but that the former is far older (a part, indeed, of that so often found at the same height, as near Torquay); and we see no reason to *imagine* either sinking or rising of the land to explain the formation of the latter.

As to the "adoption" of the term "natural groin"—if one is bound to put in inverted commas any two words that have been printed together before, the articles in the *GEOLOGICAL MAGAZINE* will be little else than a mass of quotation. Such a term is so simple that it might at once occur to any one, as well as to the author of "Rain and Rivers," and might be used without any thought of appropriation.

We have distinctly stated in our paper that with the question of the heaping up of the beach we had nothing to do, and that it has been fully gone into by others; therefore it is absurd to tax us with avoiding that question.

The "*assumed* current" that Col. Greenwood speaks of is also well known, of course going along with "the prevalence of south-west winds."

We do not consider "the shingle of the Chesil beach to be in an *anomalous* position" simply because "it is longer than other beaches," etc., as a careful reader of our paper would see at once, but because it is differently placed to any other mass of shingle in the kingdom, having the sea on both sides and joining what would else be an island to the mainland.

We must emphatically dissent from the statement that the travelling of sea-beach is "a subject on which profound ignorance prevails:" were Col. Greenwood as ready to refer to other authorities as he is to find fault with writers who do not refer to him he would hardly have made such a statement. We may particularly draw attention to the papers by Mr. Redmann (on the south-eastern coast)¹ and to the older essay by Colonel Reid,²—to Mr. Coode's paper we have already referred.

Col. Greenwood seems to have lost sight of the chief aim of our paper, which is to show that the Chesil beach may have been formed where it now stands, but against the land, which being then worn away by the small streams, etc., the beach became isolated,—a theory which we venture to say has not been broached in any work, not even in "Rain and Rivers;" and we may as well state that this idea occurred to one of us whilst mapping the Dorset country more than twenty years ago, long before Col. Greenwood's work was published; although not then having the clue to the phenomena of subærial denudation,³ it went no farther than conversation.

H. W. BRISTOW. W. WHITAKER.

¹ Published in the Proc. Inst. Civ. Eng.

² Published in the Papers of the Royal Engineers. We are away from books, and so cannot give references exactly; indeed, we have not even a copy of our own paper with us, nor of "Rain and Rivers."

³ We readily acknowledge the good work done by Col. Greenwood in illustration of this subject.