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Notes

XXIII.—Remarks on the Existence of the *Anoplotherium* and *Palæotherium* in the Lower Freshwater Formation at Binstead, near Ryde, in the Isle of Wight.

By SAMUEL PEACE PRATT, Esq., F.G.S. F.L.S.

[Read November 17, 1830.]

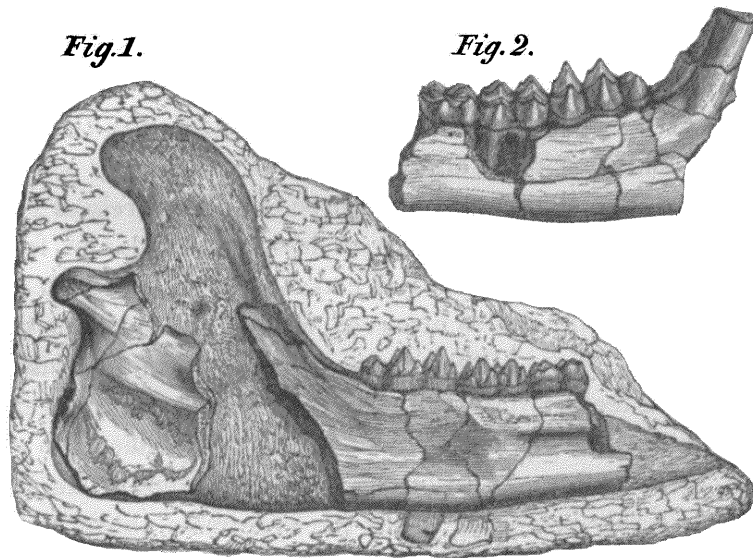
MR. LYELL, in his very valuable work on the Principles of Geology*, has expressed a doubt whether a tooth of an *Anoplotherium* in the possession of Mr. Allan, and described by Dr. Buckland in the “Annals of Philosophy†”, had actually been found in the Isle of Wight, as its label indicated. As this doubt appears to have arisen in consequence of the tooth being the only instance in which such remains had been observed in that locality, it will be satisfactory to geologists to be informed, that during the late summer I discovered at Binstead, near Ryde, among other interesting remains, not only a tooth of an *Anoplotherium*, but also two teeth of two distinct species of the allied genus *Palæotherium*; thus, not only removing the chief grounds of Mr. Lyell’s doubts, but likewise more fully establishing the identity of the formations of the two basins of the Isle of Wight and Paris.

The quarries at Binstead are, as is well known, situated in the lower freshwater formation, and consist of alternating beds of compact siliceous limestone, sand, and whitish shelly marl, composed almost entirely of comminuted freshwater shells. The marls are more or less indurated, and form several distinct beds, separated by thin seams of clay, the lower of which contain the principal part of the fossil remains observed, although indications of the same may be seen in all the beds. These remains consist of numerous fragments of bones, scales, and teeth. Most of the fragments of bone have been rounded, and they are generally so much injured as to make it difficult to class them. One specimen, however, appears to be the head of a humerus, another a bone of a foot, both probably belonging to the *Pachydermata* above mentioned, as they were found in connexion with the teeth. The greater number of the

* Vol. i. p. 153, note, First Edition. In the subsequent editions the correctness of Mr. Allan’s label is acknowledged.

† New Series, November 1825, vol. x. p. 360.

bones may be identified with those of the freshwater turtle, consisting principally of remains of the Carapax; and two genera, at least, the Emys and Trionyx, have been observed, corresponding with those described by Cuvier as found in the Paris basin. Of the teeth, one is a molar of *Palæotherium magnum*, another agrees with the first molar of *Palæotherium minimum*, and the third is apparently part of a molar of *Anoplotherium commune*. Several plates were found, which have proved to be the enamel plates of teeth of the same class of animals, separated from their bony connexion; and, as many of these plates were observed, it is probable that the animals to which they belonged were numerous, although so few of their other remains have been found. This may be partly accounted for from the marls in which they occur being in general extremely fragile, and rarely containing a perfect shell; so that it is difficult to separate the fossils from the marls without destroying the former. I was also informed by a quarryman that he had several times observed large bones, which had not been preserved, in consequence of their rotten state. I have reason, however, to hope that in future such interesting remains will not be lost to science, and that other genera of Mammalia may be discovered. As proof of the justness of this expectation, I will next advert to part of the lower jaw of a species of Ruminantia which was found in the lowest bed of the marl, together with a single molar tooth belonging to another similar animal.



This jaw appears to be closely allied to the genus *Moschus*; but the loss of the anterior portion renders it difficult to class the fossil correctly, and the greater width of the coracoid process distinguishes it from any described

species of that order *. This circumstance induced Cuvier (to whom a cast of the specimen had been sent) to suppose it to belong to the genus *Anoplotherium*, and he had named it *Anoplotherium dichobunes*; but as it was not possible to determine the structure of the fossil from an examination of the cast, I was induced to compare the single tooth above mentioned, with the specimens of the Paris *Pachydermata* preserved in the Museum of Natural History, and also with the jaws and teeth of all the small Ruminants in the same collection. This was done with the assistance of M. de Blainville, who, after the most careful examination, acknowledged that it was impossible to decide positively without having a more perfect jaw; and he was induced to leave the specimen amongst the *Pachydermata*, rather because Cuvier had so placed it, than on account of any decisive character. The texture of the tooth approaches, in my opinion, nearer to the Ruminants, while the general form of the jaw gives it the character belonging to the *Anoplotherium*. It is therefore very desirable to procure more perfect specimens, that this interesting question should be determined, as it is a remarkable circumstance that the teeth of two genera so very different should be so closely allied in form. A species of deer is mentioned by Cuvier, as having been found in the fresh-water limestone of Montebusard near Orleans, but it differs essentially from the jaw described, which appears to have belonged to a full-grown animal, from the muscular ridges being well pronounced, although the perfect and little-worn appearance of the teeth seem to indicate that they had not been much used.

* The following observations were made by the author during a visit to Paris in 1833.