

In truth, as Mr. Bonney has pointed out, the cirque form is the natural termination of a valley cut back far into the hills; and I think it might almost be said that the farther a valley is carried back amongst hard rocks, the more cirque-like does its termination become; rounded hollows certainly do occur at the head of such valleys, and these might even become broadly subcircular, if the lateral streams happened to be stronger than the terminal.

Finally, are not cirques more rationally accounted for in this way, than by crediting glaciers with the curious "tooth-drawing" propensity which Mr. Helland suggests, and thus investing them with even more wonderful powers than have yet been claimed for them by the most devoted glacialists?

A. J. JUKES BROWNE.

H.M. GEOLOGICAL SURVEY, SPILSBY.

#### FOREST-BED AT HAPPISBURGH.

SIR,—I am glad to see that a discussion has arisen in your pages, which may lead to a more strict inquiry into the age and position of the portion of a submerged forest at Happisburgh, or Hasbro. If I recollect rightly, upon my first visit to Norfolk, Mr. Gunn took me to the spot, and told me that the Forest-bed (meaning the pre-glacial one) was usually to be seen open here, but only occasionally so at other places on the coast. I at that time collected some fir-cones from it.

At a subsequent visit I thought that the Boulder-clay passed under it, although I could not perceive what the actual superposition was. For I could trace the Boulder-clay to the edge of the foreshore, very close up to the Forest-bed; and there was no indication of those "laminated beds" of sand and gravel, which intervene between the Cromer Forest-bed and the glacial series. I therefore concluded that the deposit at Happisburgh was not a continuation of the Cromer bed.

Mr. Gunn, in a paper, which he read at Norwich in the spring of 1868, remarked upon this bed, and seemed to think it was not exactly coeval with the Cromer bed, but belonged to an upper portion of it, "which remained dry land on the partial submersion of the subsiding forest." He likewise referred to the absence of the "laminated beds." He also stated that "metatarsal bones of sheep or the goat were discovered here by Mr. William Haughton. The elephants had at that period died off from the increasing cold." Now the goat is not included in the list of mammals belonging to the Cromer bed as given by Prof. Dawkins at p. 417 of the Quart. Journ. Geol. Soc.; nor I believe is it usually known to occur in the *earlier* Quaternary formations. If then the determination of that genus be correct, it is rather an argument on palæontological grounds for a later date for the Happisburgh deposit.

It is of some importance that its true age should be settled, because the vegetable remains from it have been much relied upon as indicating the climate of the Cromer forest period, which possibly may after all be different. Cannot the true relations of the "hard" clay in which the trees are rooted be determined by digging a pit of sufficient size, so as to find out on what the Forest-bed really rests?

It may be in your remembrance that I threw doubts upon the preglacial age of this deposit in the paper which I read at the meeting of the British Association at Norwich in 1868.<sup>1</sup>

HARLTON, CAMBRIDGE.

O. FISHER.

---



---

OBITUARY.

---

EDWARD WOOD, J.P., F.G.S.

BORN MAY 24, 1808. DIED AUGUST 16, 1877.

WE regret to record the death of Mr. Edward Wood, of Richmond, Yorkshire, President of the Mechanics' Institute, and of the Richmond Naturalists' Field-club, of which he was also the founder.

For more than thirty years Mr. Wood devoted his best efforts to the promotion of Natural Science, especially Geology, and he expended considerable sums of money and much personal labour in forming what is allowed to be the finest private collection of Mountain Limestone fossils in England. Many of the Brachiopoda have afforded the types for Mr. Thomas Davidson's splendid Monograph in the Palæontographical Society's publications. Prof. L. de Koninck, of Liège, has also figured many of his fine Carboniferous Crinoids, the best of which, perhaps, has been named after its discoverer *Woodocrinus*. To Mr. Wood's liberality is due the foundation of a Museum of Natural History in Richmond. For many years he undertook the pleasant and instructive task, at his own charge, of taking large parties of his fellow-townsmen to all the prominent geological localities within fifty miles. In promoting education among the young, Mr. Wood was always very active. In 1862, he took 100 poor boys from Richmond to London, and at his own expense conducted them daily to the Exhibition and elsewhere.

Mr. Wood was always most earnest and sincere in advocating the cause of Science; for many years he endeavoured, by the introduction of Science-lectures in his native town, to raise up a taste for intellectual pursuits among his fellow-townsmen. His loss will be greatly felt by a large circle of friends to whom he was endeared, not so much perhaps on account of his scientific attainments, as for his social worth and the kindness of his disposition to all, even the humblest of his fellows.

---

COLOURING OF OOLITIC ROCKS.—Mr. Judd has pointed out that when dug at great depths or otherwise obtained at points where they have not been exposed to atmospheric influences, all the Oolitic rocks exhibit an almost uniform deep-blue tint, which is apparently communicated to them by a diffusion through their substance of small quantities of sulphide of iron.—H. B. Woodward, *Geology of England and Wales*, p. 188.

ERRATUM.—In Mr. J. R. Dakyns's article, August number, p. 349, line 4, insert "seen" before "above."

<sup>1</sup> See *GEOL. MAG.* Vol. V. p. 544, and *Brit. Assoc. Rep. Norwich*, 1868.