

like the others faulty, from the absence of direct proofs as to, 1st, the exact stratigraphical horizon; 2nd, the age of the deposit; and, 3rd, the mode by which the information was obtained" (*op. cit.* p. 73). In addition, Mr. C. Reid (*loc. cit.*) and Mr. Horace B. Woodward (*GEOL. MAG.* 1879, p. 235) both show very plainly that this Cheshire tooth is really valueless in the discussion. HENRY H. HOWORTH.

DERBY HOUSE, ECCLES,

July 5th, 1883.

CHALK MASSES IN THE CROMER DRIFT.

STR.—Mr. Searles Wood gives Professor H. G. Seeley, writing in 1864, as an authority that the old Hythe Pinnacle of chalk figured by Sir Charles Lyell in his *Elements*, p. 129, is not chalk, "but only re-constructed chalky drift full of all sorts of rocks." As Lyell in a letter to Sir Charles Bunbury in 1864 states that it, "the grandest erratic in the world," had at that time "*totally disappeared*,"¹ it is difficult to understand how Prof. Seeley *in the same year* was justified in making such a statement. It is rather common now to assume that the late generation of geologists made incorrect observations, but I shall require better evidence before I can believe that Sir Charles could not, in common parlance, distinguish chalk from cheese—or say, "chalky drift full of all sorts of rocks."

But we will assume for the sake of argument that the pinnacle was of re-constructed chalk. What then becomes of Mr. Searles Wood's statement that "when the masses of re-constructed chalk were brought and sunk deep into the substance of the sea-bed, the whole of this county was submerged"?

Deep indeed they would have had to be sunk, as the pinnacle in question is shown reposing upon the "pan" immediately overlying the chalk, with its base imbedded in Till, and the whole upper part surrounded and covered with contorted drift. The boulder figured by me (p. 231, *Q.J.G.S.*, 1882) is undoubtedly of real chalk, and it is not interstratified with the drift. It is also true that there are other included masses intermediate between chalk and chalky drift, but no hard and fast line in their mode of occurrence can be drawn between them. The phenomena are connected, as is well shown² by Mr. H. B. Woodward in his description of the "disturbed chalk at Trowse."

To conclude this correspondence, I cannot accept hypothetical ice-sheets as an explanation of the disappearance of what otherwise, by Mr. Searles Wood's theory, we ought to find, and I think I have a *right* to complain that he has a habit, unintentional no doubt, of putting among his facts what are in reality only opinions or inferences from his own theories. T. MELLARD READE.

July 5th, 1883.

¹ Life of Lyell, vol. ii. p. 441. Mr. Seeley speaks of pinnacles, whereas Sir Charles merely refers to one.

² Memoir of the Geology of the Country about Norwich.

ERRATUM.—*GEOL. MAG.* July, 1883, p. 332, line 7 from bottom of page for *alternation* read *attenuation*.