

2. That long premaxillæ are usually correlated with an occiput of the *B. primigenius* type, while short premaxillæ are usually correlated with an occiput of the *B. acutifrons* type.

3. That polled black Galloway cattle and polled white 'wild' Cadzow cattle are intimately related to the Urus, that flat-polled Aberdeen-Angus cattle probably include amongst their ancestors an ancient Oriental race now represented by, amongst others, a Syrian breed with rudimentary horns, and that round-polled cattle may belong to a still more ancient Oriental race descended from *B. acutifrons* of the Punjab Siwaliks.

### CORRESPONDENCE.

#### LATERITE IN BRITISH GUIANA.

SIR,—I notice with regret that there are several typist's errors in the last part of my laterite paper. Some uncorrected pages of type-script appear to have been sent to you in place of the corrected ones which I have here. The errors are all in the December Number, 1910.

- Page 559, line 20, *read it for them.*  
 p. 559, l. 27, *read tropics for Indies.*  
 p. 560, l. 18, *insert the nature before of which.*  
 p. 560, l. 38, *read alluvial for alkaline.*  
 p. 560, l. 41, *read and is resistant for which is resistant.*  
 p. 561, footnote, l. 2, *read rocks for rock.*  
 p. 561, footnote, l. 5, *insert boiled between recently and distilled.*  
 p. 561, footnote, l. 13, *delete then.*  
 p. 561, footnote, l. 14, *read and for or in.*  
 p. 561, footnote, l. 16, *read experiment for experiments.*  
 p. 561, footnote, l. 18, *read showed the action for show it.*  
 p. 562, l. 2, *read silica for silicate.*  
 p. 562, l. 3, *read into for with.*

I regret that these slips should have occurred in my MS.

J. B. HARRISON.

SCIENCE AND AGRICULTURE DEPARTMENT,  
 GEORGETOWN, DEMERARA, BRITISH GUIANA.  
*January 6, 1911.*

#### HIGH-LEVEL SHELLY GRAVEL.

SIR,—With reference to my letter in the GEOLOGICAL MAGAZINE for January, and a reply by Mr. Lamplugh in the February number, I hasten to assure Mr. Lamplugh that I have never regarded him as a "docile" glacialist. On the other hand, I have long been duly impressed with his restiveness; and if the phrase "docile glacialist" is to some extent a contradiction in terms, Mr. Lamplugh is quite justified in claiming that he has done his best to make it so.

I must, however, reassert my statement that the 'land-ice' glacialists, including himself, have advocated a conception of glacier-progression which is quite inadequate to explain the transportation of gravel to high levels. If I may again state this crude conception briefly, it is that the front of the ice-sheet is pushed bodily uphill, carrying morainic material with it. The fact that this has been seen

to take place on a small scale at the tip of a thin ice-lobe is, as Professor Bonney has remarked, not sufficient to justify the view that this is the manner in which gravels have been transported by ice to high levels.

Professor Bonney quotes Professor Kendall as saying that there is "no logical halting-place between an uplift of ten or twenty feet to surmount a *roche moutonnée*, and an equally gradual elevation to the height of Moel Tryfaen". Mr. Lamplugh is surely referring to the same bodily upbending of the front of an ice-sheet when he writes of "the characteristic upturning of the layers of ice at the end of one of the glacial lobes", as observed by Professor R. D. Salisbury in Greenland (York Address, Brit. Assoc. Rep., 1906, p. 543).

Nowhere in his writings, as far as I know, does Mr. Lamplugh recognize the importance of overthrust in ice-movement, as this has been described by Professor T. C. Chamberlin, and amplified later by Professors Garwood and Gregory (Q.J.G.S., vol. liv, 1898). I think Mr. Lamplugh cannot have read my letter with sufficient care, or he would not have considered it to be a mere repetition of views previously advanced and duly appreciated by him.

It seems to me that the land-ice hypothesis would get along much better if we heard rather less of "the characteristic upturning of the layers of ice at the end of the lobes", and rather more of the upthrust action in the main body of the ice, as demonstrated by Professors Chamberlin, Garwood, and Gregory; and I am pleased that I have been able to elicit from Mr. Lamplugh a plain repudiation of what is obviously a crude conception.

T. CROOK.

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## MISCELLANEOUS.

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### IRON-ORE IN RAASAY.<sup>1</sup>

The recent announcement of the discovery of a valuable deposit of iron-ore in the Island of Raasay has been received with the greatest interest in iron and steel trade circles in the West of Scotland. The deposit was originally discovered in 1893 by Mr. H. B. Woodward, F.R.S., F.G.S., of the Geological Survey, who contributed an instructive article on the subject to the *GEOLOGICAL MAGAZINE*<sup>2</sup>; but the credit of investigating it in the interests of commerce belongs to Mr. Wallace Thorneycroft, who has been engaged in preliminary exploring work in the island during the greater part of last year. It is reported that Messrs. William Baird & Co., Limited, iron-masters, of Gartsherric, have purchased the island from Mrs. Wood, the present proprietrix, with the view of further proving and developing the property. The deposit is situated at the junction of the Upper and Middle Lias, which corresponds approximately with the geological position of the Cleveland ironstone. On the eastern

<sup>1</sup> From the *Glasgow Herald*, December 31, 1910.

<sup>2</sup> "On a Bed of Oolitic Iron-ore in the Lias of Raasay": *GEOL. MAG.*, November, 1893, p. 493. See also British Association Reports, Section C (Geology), Nottingham Meeting.