

in your current number, says, "Mr. Jukes has described Glacial Striæ in Devonshire;" referring, of course, to the letter by that Geologist, which appeared in the GEOLOGICAL MAGAZINE in October, 1865.

Being quite inclined to believe in "the existence of land-ice at comparatively recent geological periods, even in the south of England," and delighted at the prospect of a fact so confirmatory, I took an early opportunity, in company with Mr. W. Vicary, F.G.S., of Exeter, of visiting the valley of the Exe, for the purpose of carefully studying the mouldings and striæ alluded to.

We found that, so far as it goes, Mr. Jukes' description is very correct and, indeed, graphic; but we found also that he could not have seen anything like all the facts. In short, we were fully satisfied that the mouldings were not produced by any kind of ice action.

Yours, &c.,

WM. PENGELLY.

TORQUAY, November 8th, 1866.

ICE-MARKS ON THE MENDIP HILLS.

To the Editor of the GEOLOGICAL MAGAZINE.

SIR,—While lately comparing the forms of cliffs and rocks among the Mendip Hills with phenomena now produced by oceanic waves and currents, I saw, in the midst of an assemblage of perforated rocks, two stones, one of which (Fig. 1) did not seem altogether like any rock-surface I have yet noticed on the sea-coast. This stone is between two and three feet in diameter, and appears to be a looser and somewhat displaced portion of the underlying Mountain-lime-strata.

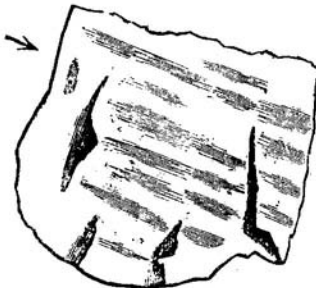


FIG. 1.

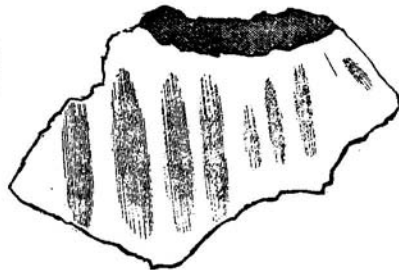


FIG. 2.

The marks seem as if they had been forcibly grooved out in the direction of the arrow by a cause preserving a nearly uniform level and direction. The face of the stone now dips in the direction of the darker marks, which look like shallow cracks enlarged by water. The spot is near the summit of the hill to the north of Axbridge; and from the Shute-shelf road several footpaths lead to it through a wood. Considering the great interest ice-marks

are now exciting in Britain, Ireland, and Scandinavia, I lose no time in sending you the above rough sketches.¹

D. MACKINTOSH.

TAUNTON.

P.S.—I see the Rev. O. Fisher, in your last number, has arrived at a conclusion in support of which I have been collecting facts during the last eighteen months, namely, that the superficial angular debris, earth, and loam, from which our slopes and hills partly derive their smooth and rounded forms, is not principally a disintegration *in situ*, but has been *carried or driven along* by a simultaneously *wide-spread* agency,

MARINE DENUDATION AND TIDAL CURRENTS.

To the Editor of the GEOLOGICAL MAGAZINE.

SIR,—Without wishing to unduly prolong the discussion on this subject, which has recently occupied so much of your space, may I briefly notice a point in the letter of my friend, Mr. Mackintosh, in which, I think, he seems to reverse the order of cause and effect? Admitting the influence which the form of the coast-line has on the direction and localization of tidal currents, the difficulty on the marine theory, still remains unexplained, as to the original excavation of these inlets and channels, before they could determine the direction of the eroding sea-line.

The phenomena exhibited in shallow seas in the constant shifting of sand- and mud-banks, and the ploughing up and re-deposition of matter, such as is now going on in the German Ocean, and is so well exemplified in both the internal structure and surface-contour of much of the marine drift, seem to afford the strongest evidence of the changeable character and want of local persistency of small marine currents,

As regards deep seas, the difficulty in accounting for the marine excavation of continuous valleys, may be briefly stated thus: If the whole was done simultaneously, it would involve—in the case of many of the Swiss valleys—(having a range of altitude of 7000 or 8000 feet)—a depth of action far beyond what is known to be the lower limit of marine currents; and if progressively by coast action, a persistency of position which seems incompatible with the entire change of contour during emergence or submergence, to an extent equal to the range of altitude of the valley.

A friend, who has recently been in Norway, informs me that the Fjords invariably terminate in a valley; admitting that the cliff-girt sides of the Fjords are the result of marine erosion, does it not seem more probable that this was superadded to a previously existing subaerial valley, than that the junction of the Fjord with the valley prolongation was a matter of accidental coincidence? And if the

¹ Fig. 2 is very regularly grooved, and the whole surface smoothed.