from a long series of observations, that, in common with other slope drifts in England and Wales, the bulk of it is not a mere disintegration *in situ*, but the effect of lateral displacement in a great measure irrespectively of the form of the ground. D. MACKINTOSH.

BIRKENHEAD, 12*th Sept.*, 1868.

ON THE DISTURBANCE OF THE LEVEL OF THE LAND NEAR YOUGHAL, ON THE SOUTH-EAST OF IRELAND.

SIR,—In your May number, which has just reached me, I find Colonel Greenwood considers me in "error" when supposing depression of the land necessary to account for facts observed at Youghal; but in the remarks which follow this I fail to see that the author of "Rain and Rivers," while admitting one of my propositions, proves the other wrong.

If it be granted that as the sea erodes a line of coast *at rest* the beach may travel landward, surely while the sea erodes "the *whole* line of coast," the peat beneath the travelling beach ought to be eroded also, and dispersed instead of being submerged. The peat under Youghal Bay, however, not having been eroded and dispersed, we may conclude that the land there was not at rest during the submergence of the peat.

But the gist of Colonel Greenwood's argument lies in his assertion that "the stream or the rain valley cuts its estuary far deeper [how much?] even than low-water-mark," forming an arm of the sea.

Applied to the case in point, that is to say, that the rain valley excavated its estuary as much lower than sea level as is the surface upon which the first peat was formed, now far out under Youghal Bay. This point must be at a considerable depth, if my memory and information be correct, for I have seen from three to five fathoms water marked upon a chart somewhere about the place indicated by fishermen as the outer limit of where peat is known to occur. To this depth must be added the unknown thickness of the peat, which in parts of Ireland not uncommonly exceeds 20ft. However, taking it at 10ft., we have thus a rain-and-river valley excavated by these agencies to a depth of from 28ft. to 38ft., or, it may be, 40ft. or 50ft., below the level of the sea at low water!

Depression not being admitted, is it not fair to ask whether the beach of that period may have been of this height, and what kept the sea out of the valley before the beach was thrown up by some storm, so that peat could grow behind it? I may also, I trust, be excused for asking, if the stratified sand, gravel, and clay, with flints, which forms Clay Castle Hill, was thrown up to a greater height than 91ft. by storm, or ordinary waves, or otherwise, how does it come to contain sea shells at such a considerable elevation as it does?

I must here confess that "*raised beach*" is not an expressive term for such a local accumulation as that of Clay Castle, and was only used for want of a better. All low ground gradually elevated from the sea would, at one time or another, have formed its beach (as was once remarked to me by Professor Jukes), therefore one locality has no better claim than another to the name, used in a general sense.

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The materials of this hill differ considerably from those of the lower, clean-rolled, and cast-up-beach in its vicinity, though they were, doubtless, accumulated under water and disturbed by waves, when they formed the shore or beach, while being elevated to their present position. Had I the means of reference here, I dare say it would be easy to show, from heights upon the Ordnance six-inch map, that the slope of the boggy valley is gradual from higher levels inland towards the sea, and, probably, charts of the coast would permit nearly the same slope to be carried out beneath Youghal Bay. Upon such a slope peat could be formed when the land stood higher, and if depression occurred the results would be exactly those which now appear; without the necessity for so strong an assumption as that the valley was cut down by rain and rivers to 30ft. or 40ft. below sea level at low water, during a period at which sea water was obliging enough to forego the law of seeking its own level in order to allow a deep growth of peat to accumulate.

I regret to add that I have no copy of "Rain and Rivers" to which I might refer for answers to the above questions; one of the old edition was lent to me a long time ago, but I have, unfortunately, never been able to obtain the last, although I have made several efforts to do so.

The Chalk flints may be quite according to rule, but their occurrence is peculiar in this, that they are not usually found in the detrital deposits of the south of Ireland, or other parts of the coast. How far they extend from Youghal eastwards is not, so far as I am aware, as yet discovered. A. B. Wynne.

Bhooj Kutch, Western India, *July 25th*, 1868.

FOSSILS FROM BUFFALO RIVER, BRITISH KAFFRARIA.

Sir,—Permit me to explain the seeming discrepancy which occurs at pages 202 and 204 of the May number of the Geological Magazine. At page 202, under the heading "Explanation of Geological Sections," the 800 feet refers to the height at which marine shells have been *observed*, (viz., St. Luke's Mission Station, Newlands, British Kaffraria). At page 204, under the heading "List of Fossils," the 220 feet refers to the height at which the *specimens sent* were *obtained*, (viz., Panmure, British Kaffraria). Geo. M'Kay.

East London, Cape of Good Hope,
26th June, 1868.

THE PLEISTOCENE FRESHWATER DEPOSIT AT HACKNEY DOWNS.

Sir,—My attention has only just been directed to a statement by Mr. Alfred Tylor, which appeared in the Geological Magazine, August, 1868, p. 392, in reply to which I can only say that Mr. Tylor must have been misinformed, as I never received the series of specimens referred to from Mr. Skertchly, nor have I the pleasure of knowing that gentleman. The species of Land and Fresh-water Mollusca enumerated in the Natural History Repertory, were collected by myself in company with my friend, Mr. J. W. Bailey, of Fenchurch-street.

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