

currents which, in conjunction with the disintegrating power of frost and the oscillations of the northern land, has been operating since the dawn of geological time in the great and continuous transference of sediment from the arctic towards the temperate and tropical regions, and which has been so largely instrumental in building up the successive formations of our continents, and has been equally efficient in the distribution of the materials of Post-pliocene clays and gravels, and of the sand-stones and conglomerates that make up Palæozoic mountains.

With reference to the erosive power of the modern Arctic currents I may state that my inferences from the materials obtained by soundings on the American banks, have been confirmed by the recent dredgings undertaken under the auspices of the United States Government, as reported by Prof. Verrill in *Silliman's Journal* (advance sheets of February number). With reference to the St. George's Bank, for example, he says that the bottom on the edge of the bank is composed of sand or gravel and broken shells, and that the former, while boreal, is identical with that found in the Bay of Fundy, in regions swept by strong currents.

Perhaps I should add that I by no means deny the existence of *local* glaciers in the hills of Eastern America in the Post-pliocene period; but I find no evidence of a continental glacier covering the plains.

J. W. DAWSON.

McGILL COLLEGE, *January, 1873.*

FOREST OF WYRE COAL-FIELD.

SIR,—In a paper on the Correlation of the Carboniferous deposits of Cornbrook, Brown Clee, and Coalbrookdale, published in the *GEOLOGICAL MAGAZINE*, Vol. VIII. No. 8, Aug., 1871, I endeavoured to show that at Harcott, near Kinlet, there was a patch of the older coal-measures containing workable and good coals allied to the lower beds of the Coalbrookdale coal-field, underlying the Upper Coal-measures of that part of the Forest of Wyre coal-field. The extent of this underlying patch of older coals is a matter of some importance in these days of scarce and dear coal. It can only be ascertained by actual proof by sinking or boring, since its boundaries are all covered over by the Upper Coal-measures. I do not expect that it is more than an old island, so to speak, of older coal-measures, as are the coal patches of Brown Clee, Shirlot, and Cornbrook, but it may be an island or patch spared from denudation of many hundred acres in extent, and I have every reason to believe that it extends under the whole of Kinlet Park. I am favoured with a communication from Mr. William Birchley, of Billingsby, from which it appears that he has reached these older coals at about 250 yards east of "The Cape of Good Hope" Inn, Billingsby, at a depth of 160 yards. I expect full details of this section in due time, which I shall be happy to communicate for the benefit of your readers. Mr. Birchley says, "At no great depth we came upon a white rock, very hard, and containing streaks of crystal-like substance, which the sinkers call 'Later.' This rock was about 29 yards thick, and under it clunch

and a rider coal (sulphur), about 9 inches thick; then more clunch, etc., and at about 88 yards a stratum of sulphur coal, of very good quality of its kind, and more than a yard thick. We then had many different measures of clunch clay, etc., etc., and several rocks, and then the measures were:

	FT.	IN.		FT.	IN.
Rider of Smut Coal	0	4	Brown Clod, with light-coloured		
Brown Fireclay	2	0	balls of Ironstone	5	0
Grey Rock	24	0	Smut Coal	2	0
Strong Blue Binds	12	0	Black Clod, with dark-coloured		
Dark Fireclay	5	0	balls of Ironstone	5	0
Bat.	1	6	Smut Coal (good)	3	4
Batty Coal	1	0	Dark Clod	2	0
Smut Coal (very good)	4	0	Smut Coal (good)	3	6

Some of the above measurements (he says), may not be exactly correct, but they are given as near as I at present know them." Any one looking at this section will see the importance of the deposits and their total dissimilarity from the younger Coal-measures.

ALBRIGHTON, WOLVERHAMPTON,
Feb. 5th, 1873.

DANIEL JONES, F.G.S.

CYCLAS CLAY.

SIR,—In describing the Post-glacial deposits of West Lancashire, Mr. C. E. De Rance repeats in your last Number the statement that the peat of the lower plain or that below the 25 feet contour line rests on "Cyclas and Scrobicularia Clays." As the whole of the deposit—which is of considerable thickness—had been previously described by him as "Cyclas Clay," I am at a loss to know whether the Scrobicularia Clay alluded to is that intercalated in the peats; or whether he has changed his views on the subject, and considers the deposit to be of a mixed fresh-water and marine character. If he has changed his views, it is due to the public that such should be stated, otherwise they may be misled by his previous papers and by the geological sheets of the district, in which the peat of the lower plain is stated to rest on "Cyclas Clay."

Having searched in vain for Mr. De Rance's "Cyclas Clay" ever since I read his interesting paper in the Journal of the Geological Society (1870, p. 665), I consider myself entitled to speak on the subject. For the details of my investigations I must refer those interested to my paper on "The Post-glacial Geology of the Mersey Estuary" in the GEOLOGICAL MAGAZINE of March, 1872, and to the more detailed description, with map and sections, in the Transactions of the Liverpool Geological Society, 1872. In these communications I have proved by the most ample evidence that the whole of the beds in question are of *marine origin*, and have named them the "Formby and Leasowe marine-beds." Until the facts brought forward by me are disproved, it is vain to go on repeating that the peat is underlain by "Cyclas Clay"; and unless this is done, the mis-description in the Geological Map 90° S.E. ought to be at once corrected.

T. MELLARD READE, C.E., F.G.S.

HEATH HOUSE, BLUNDELLSANDS, LIVERPOOL,
6th February, 1873.