F.G.S., who has retired from the office of honorary secretary, which he has ably filled during several years; and to Professor Morris, who has presided over the Association with so much honour to himself and advantage to the members for the past three years, was warmly supported by several speakers, and heartily accorded by the meeting. Professor Morris and Mr. Cumming returned thanks in their usual felicitous manner. The newly-elected President, the Rev. Thomas Wiltshire, M.A., F.G.S., F.R.A.S., etc., having taken the chair, which had been vacated by Professor Morris, Caleb Evans, Esq., F.G.S., read the second part of a very able and interesting paper "On the Geology of the Neighbourhood of Portsmouth and Ryde." The first part of this paper, read at a previous meeting, gave the results of an exploration of the beds of Lower Eocene Age, recently exposed by the excavations for the docks now in course of construction at Her Majesty's Dockyard, Portsmouth. The second part of the paper, which was very long, dwelt more particularly on the Middle and Upper Eocene Formations of Hampshire and the Isle of Wight, and gave a clear and succinct description of the interesting Fluvio-marine deposits, which are found only in this part of Great Britain. A fine collection of fossils from the localities mentioned in the paper, which had all been collected by the author, was exhibited. In the course of the long and interesting discussion which followed the reading of the paper, Professor Morris directed attention to the fallacy so prevalent amongst young geologists of regarding formations containing different assemblages of fossils as necessarily of different epochs, and strongly urged extreme caution in determining the relative ages of formation in different localities, since dissimilar local conditions may have had so great an influence on the life of the period of deposition, as to change very considerably the character of the fauna of two synchronous formations. We strongly recommend those wishing to obtain a practical acquaintance with the geological features of the South of England, to seek admission to the Geologists' Association, as visits to several localities of interest will be paid by the Association during the present year.

J. Logan Lobley, Hon. Sec.

## CORRESPONDENCE.

Sir,—Will you allow me to correct a slight inaccuracy in a very interesting paper by Mr. C. E. de Rance on "The Glacial Phenomena of West Lancashire and Cheshire," published in No. 105 of the Quarterly Journal of the Geological Society. Referring to a paper of mine, published more than ten years ago, on the Glacial Phenomena of the Lake District, he states, incorrectly, that it is to be found in the pages of the "Edinburgh Philosophical Magazine." The correct reference is the "Edinburgh New Phil. Jour.," vol. xi. (1860.)

It is from this paper that the illustration of the *rôche moutonnée* in the valley of the Rotha, near Ambleside, given in Lyell's "Antiquity of Man," p. 269, is copied, accompanied by a correct reference.

As much is now being written on the glacial phenomena of this

part of England, perhaps some of the authors of these communications may feel inclined to refer to the observations I have recorded; and I only regret that all my spare copies have long since been used up.

GEOLOGICAL SURVEY OFFICE, DUBLIN,
*16th February*, 1871. EDWARD HULL.

## GLACIATION OF THE LAKE-DISTRICT.

SIR,—Allow me to make a few more remarks on the question of the glaciation of these dales—I think they will be my last.

Let not Mr. Mackintosh suppose that Mr. Rutley and I have combined to make out a case of "The Queen *v.* Mackintosh." I differ from them both. A friend of mine, accustomed to the aiguilles and horns of the Alps, remarked that our hills looked like great heaps of rubbish shot out of a cart; and "a distinguished personage" once said to me with characteristic vehemence—"The whole of Cumberland is one vast *rôche moutonnée*."

Is not this the result we should expect from a thick sheet of ice moving across the whole country, leaving its marks in boulders and glaciated rocks near the Tarns of Busco at a height of 2,300 feet, in scratches across the water-shed between Grasmere and Loughrigg Tarn, in boulders on Silver How, in scratches across the water-sheds of Kentmere and Long Sleddale, and finally, as Mr. Croll suggests, in the erratics of Stainmoor?

If, as the climate grew warmer, this sheet of ice shrank into glaciers of the Alpine type, should we not then have such scratchings and roundings as we find in the bottoms and along the sides of the dales?

These scratches in the valleys would then be more recent than those across the water-sheds.

I do not understand how the want of parallelism in some of the scratches is any bar to our supposing them to be the product of land-ice. When two ice-currents meet, the stronger will deflect the course of the weaker; and if its strength vary ever so little, according to the season, so also will the direction of the scratches.

Let not Mr. Mackintosh say:

"Proveniebant oratores novi, stulti adolescentuli."

I speak only of what I have seen in the last three years in the valleys reaching from Little Langdale to Long Sleddale, and in the Green Slate area. The rest of his paper I leave to those who know the country he treats of.

GEOLOGICAL SURVEY, GRASMERE,
*16th February*, 1861. GEO. HYDE WOLLASTON.

## THE SUPPOSED THERMAL SPRINGS IN CAMBRIDGESHIRE.

SIR,—The explanation which the Rev. O. Fisher suggests as to the cause of the heated water in the fen wells, to which I called attention at Liverpool, is that which, when I first heard of the circumstance, occurred to my own mind.

I am quite disposed to accept it, if it can be made to square with the facts, as I confess I am unable satisfactorily to explain the