stance of the shell having in all cases perished. The most perfect of these hollow casts could not be distinguished from that of *Dentalina communis*, and I could venture to name other forms, but with less certainty.

As I am not aware that we have any recorded instances of Foraminifera of this modern type occurring so low down as the Lower Silurian in Britain, though they have been found in rocks of this age in Russia, I think the fact of sufficient interest to be noticed, giving us, as it does, so good an idea of the persistency of lowly-organized life from specimens in our own country. The slab is marked on the other side with the tracks of *Nereites Sedgwickei*, and is now in the Museum of the University College for Wales.

ABERYSTWITH, *November*, 1875. J. F. BLAKE.

RANGE OF *SACCAMMINA CARTERI*, BRADY.

SIR,—If Mr. Bennie had read the note he quotes in its proper association, I think he would not have written the letter which appears in the January Number of the GEOLOGICAL MAGAZINE, though we, its readers, might thereby have lost a valuable contribution to our knowledge of the distribution of *Saccammina*.

The text of my paper runs thus: "Nearly all the organisms which it was supposed characterized the Yoredales in Northumberland have now been found in the lower beds of the Carboniferous Series. . . ." Then comes the note: "Up to the present time, the well-marked foraminifer *Saccammina Carteri*, Brady, is apparently limited to a bed in the Upper or Yoredale part of the series, viz. the Four-fathom Limestone." (GEOL. MAG., 1875, Dec. II. Vol. II. pp. 542, 543.)

It will be seen that the words "in Northumberland" apply equally to the note and to the text. And *as Saccammina has never yet been found out of the Four-fathom Limestone in Northumberland*, the statement needs no correction.

If Mr. Bennie will turn to page 329 of the "Geological Record" for 1874, he will see an abstract of Mr. Young's paper on *Saccammina*, signed by myself. The explanation of Sheet 23 of the Geological Survey of Scotland has likewise been known to me ever since its issue, and the localities for *Saccammina* duly noted.

That the exact horizon of the Dunbar locality, which I had been given to understand was considered as doubtful, has been satisfactorily determined, I am exceedingly glad to hear; the more so as perhaps the most remarkable specimen of the fossil in question which has yet been found is one which was collected in that neighbourhood many years ago by Mr. F. M. Balfour, of Trinity College, Cambridge.

Far from imagining, as Mr. Bennie seems to imply, that *Saccammina* was limited to one horizon *out of Northumberland*, I have for the last few years followed with great interest the almost daily increase of its known range, both geographical and geological.

I think that when Mr. Bennie sees the list of localities in which

Saccammina has been found in the forthcoming Monograph on Carboniferous and Permian Foraminifera by my friend Mr. H. B. Brady, F.R.S., he himself will be surprised at their number.

College of Physical Science, G. A. Lebour.
Newcastle-on-Tyne, 9 *Jan.*, 1876.

THE ORIGIN OF LAKE BASINS.

Sir,—It is not my intention to reply to the detailed arguments produced by Mr. Judd in his attempt to prove that my theory "on the glacial origin of *certain* Lakes" is untenable by persons having an accurate knowledge of ordinary physical geological phenomena. Were I to do so, I should have to repeat old arguments used by me in reply to the objections long ago raised by the late Sir R. Murchison and Sir Charles Lyell, objections very similar to those used by Mr. Judd, and which seemed to me and others easily disposed of. If any one cares to look into that early history of the subject, he will find these replies in the volumes of the *Philosophical Magazine* for 1864 and 1865. To other objectors I paid no attention, partly because the late Professor Jukes and others, of their own accord, did it perfectly well for me, and partly because I can generally employ my time better than in geological controversy.

Two or three points, however, I will notice.

In the first place, from anything that appears in Mr. Judd's paper, the reader might suppose that I attributed the formation of *all* rock-bound lake-basins to the action of glaciers, in spite of a statement, in a note to the original memoir, that "many lie in craters of extinct volcanos, some, no doubt, in areas of special subsidence, and others may be due to causes of which I know nothing." In the same memoir I also in several places insist on the occurrence of moraine-dammed lakes, and also speak of others dammed up by irregular accumulation of the original drifts of the Glacial epoch.

The same facts are again insisted on in my "Physical Geology and Geography of Great Britain," with the addition of lakes dammed by eskars; and besides, to prevent all misconception, I mentioned the African lakes, alluded to by Mr. Judd, as probably, in my opinion, like the Caspian, being parts of old sea-bottoms. I should certainly never have been so wild as to attribute the hollow of the Dead Sea to glacial erosion, though Mr. Judd seems to think that some persons may do so, confining myself as I did, and do, to the "origin of certain lakes" in well-recognized glaciated regions.

Secondly, it seems strange to me that Mr. Judd should have selected Lake Balaton as a *crucial test* to the theory of ice erosion. I never knew any one who denied the well-known fact that lakes may be and have been formed by subsidence in volcanic areas. I have seen examples of such, and have read of and believed in many others, both in Europe and America. Earthquake shocks have also been known to produce changes of level that gave origin to lakes, and ordinary landslips do the same. That there are great areas of inland drainage full of salt lakes, some of them below the level of the sea, is another piece of popular knowledge, and I never heard of any one who attributed all of these hollows to glacial erosion.