valley and a line joining its upper part with the outfall of the Avon into the Severn. It is assuredly, however, *a priori* almost necessary that if such a flood of waters once passed over this more southern zone, that it must have left abundant traces far beyond these limits, and that we ought to find such traces much further north and among those beds which have been hitherto left entirely in the hands of the Glacialists. I believe that such traces do in fact exist on a very notable scale, and that it is because the postulate of a Post-Glacial catastrophe has been overlooked by those who have examined them, that much which is obscure, difficult, and contradictory about these beds refuses to yield to explanation. I will now turn to them, and the next paper will deal with the Evidence of the Marine Drift.[1]

(*To be continued.*)

NOTICES OF MEMOIRS.

I.—Proceedings of the Cotteswold Naturalists' Field Club, for 1881-1882.

THIS part of the Proceedings of the Cotteswold Club commences their eighth volume, and includes accounts of the thirty-sixth and thirty-seventh annual meetings. At these meetings, held (in 1881 and 1882) at Gloucester, addresses were delivered by the President, Sir William V. Guise, Bart., F.L.S., F.G.S., etc. The losses sustained by the Club, by the death of John Jones (of Gloucester), Charles Moore (of Bath), and Dr. John Lycett (formerly of Minchinhampton), were duly mentioned, and accounts were given of the various excursions to places of interest, when the geology, natural history, and archæology were duly investigated. Geology seems to have monopolized the attention of the members at their evening meetings, for the separate papers printed in this part of the Proceedings are entirely devoted to that science. Mr. Handel Cossham discourses on the Cannington Park Limestone, from which he has obtained fossils that confirm its Carboniferous age. Mr. E. Wethered gives an account of the strata exposed in a railway cutting at Morse, near Drybrook, in which he identifies an outlier of Trias, yielding quartzite pebbles like those of Budleigh Salterton. Mr. W. C. Lucy contributes a list of the minerals of Gloucestershire, and of part of the adjacent counties of Somerset and Worcestershire; and also a list of derived rocks found in the northern drift gravel over the same area. Mr. E. Witchell describes the Pisolite and the basement beds of the Inferior Oolite of the Cotteswolds. He gives an interesting account of the "Pea Grit" or Pisolite, and shows by sections some of the changes that took place in the deposits of the Oolitic sea.

Dr. Wright describes a new species of Star-fish (*Uraster spinigera*) from the Forest Marble, near Road, Wiltshire; a new species of Brittle Star (*Ophiurella nereida*) from the Coral Rag of Weymouth, and a new Astacamorphous Crustacean (*Eryma Guisei*) from the Inferior Oolite of Leckhampton Hill. H. B. W.

[1] In the October number of the Magazine, p. 439, l. 12, *patent* ought to be *potent*.

II.—On the Carboniferous Limestone of the Western Sahara. By Dr. G. Stache. Proceedings of the Imper. Acad., Vienna, June 22, 1882.

In his journey from Morocco to Timbuctoo, Dr. O. Lenz collected many fossils characteristic of the Carboniferous Limestones. Four groups are distinguishable, namely—1. Productus-limestone of Fum-el-Kossan in the northern region of the West Sahara, and the calcareous zone of Wady-Draa. 2. The Spirifers in the sandstones of the middle region. 3. Corals and Crinoids at several localities along the Western Stony Desert. 4. Fossils in the marls and limestones with Crinoids at Igidi in the south part of the Carboniferous-limestone region.

These groups represent portions of a great Carboniferous-limestone fauna; and the lower unproductive subdivision of the Carboniferous system is by far the most extensive series of strata in the wide north region of depression in the Western Sahara. The Productus-limestone of the northern zone, and the Crinoidal marls with Productus of the southern zone, belong to a series corresponding with Gosselet's "Etage du Calcaire de Tournay," or the lower subdivision of the Carboniferous Limestone of Belgium. The Lower Carboniferous strata in the middle and eastern portion of the great area of depression in the North Sahara may possibly be of more importance than hitherto supposed.

It is probable that during the early part of the Carboniferous Period the sea limited the Mid-African Continent along an extensive East and West coast-line; and that during the same period there was an open communication between the North-African sea and that which was inhabited by the faunæ of the Belgian and South Alpine Carboniferous Limestones, both abounding in *Productus*.

Count M.

REPORTS AND PROCEEDINGS.

British Association, Southampton, August, 1882.

I.—The Geology of Cardigan Town. By Walter Keeping, M.A., F.G.S., Keeper of the York Museum. (Read before Section C.)

A few years ago, in the course of a geological investigation in South Wales searching for the base-line of the Llandovery group of rocks, I came to the town of Cardigan.

Now, seeing upon the Geological Survey Map the tract of country between Cardigan, Newport, and Dinas Head, in Pembrokeshire, marked, like the Aberystwyth Grits, 'b. 4,' *i.e.* Lower Llandovery, I came here in the full expectation of finding the rocks of the same Llandovery age.

But the first glance at the cliffs in Newport Bay showed that this was most unlikely to be the case; for the grit beds here are of quite a different type from those of Aberystwyth, namely, pale blue and grey felspathic grits, much less quartzose, and very ash-like in