Turritella terebra, and *Astarte multicostata?* as found at Bovevagh. The former is the characteristic shell at that place, and the only one at all plentiful. Some time since, I had the opportunity in company with two other geologists of examining the river-bank near the old church at Bovevagh, and we found a number of specimens of *Turritella*, but not in such abundance as we had been led to expect. The only other fossil we could find was one valve of *Venus gallina*.

The inaccuracies cited would no doubt have been avoided by relying more on the work of Portlock, and subsequent writers having a personal knowledge of the country and its geology, and less on that of a gentleman, who, however qualified in other respects, has not, I fear, had the advantage of personally examining the beds concerning which he wrote, and who has consequently not been in all cases as accurate as could be desired when treating of the drift of the North of Ireland. Mr. Howorth's argument is scarcely affected by the above corrections, but the slightest error should be avoided in such discussions. WILLIAM SWANSTON, F.G.S.

BELFAST, *5th March*, 1883.

HÆMATITE IN THE PERMIAN BRECCIAS.

SIR,—Can any of your readers inform me of any locality or localities where Hæmatite occurs *in situ* in the neighbourhood of the Longmynd or of other parts in the West of England or in Wales, whence these Breccias of Central England are considered to have been derived? Also, are the Hæmatites fossiliferous, and have they been commented upon or in any way referred to by geologists? If so, in what publications do they appear? W. S. GRESLEY.

OVERSEAL, ASHBY-DE-LA-ZOUCH.

RECENCY OF THE CLOSE OF THE GLACIAL PERIOD.

SIR,—As very little attention has been devoted to this subject in England, you would oblige by inserting extracts from a letter I received from the late Mr. Belt[1] a few years ago. "I am heartily with you about the comparative recentness of the Glacial Period. My earliest lessons in glaciation were in the north of England, where the freshness of the ice-tracks are most remarkable. All the arguments for putting it back are founded on theories which may be, and I think are, incorrect. . . . I shewed some time ago that the argument that had been founded on the cutting out of the gorge below the falls of Niagara, was a weak one, as only three miles, and that in the softer rocks, had been excavated since glacial times. Some of the American geologists, including Professor Hall, have visited Niagara since, and convinced themselves that my explanation is the right one."

Dr. J. W. Dawson, in his review of Wallace's "Continental and Island Life,"[2] remarks that "in Canada the character of the river-courses cut through the Glacial beds, and their very unformed and

[1] See an account of Mr. Belt's theory of the Glacial Period, with accompanying remarks, in the Presidential Address to the Geologists' Association (1874), by Henry Woodward, F.R.S., F.G.S. [2] Princetown Review for July, 1881.

imperfect excavations, would lead to the belief that only a few thousand years have elapsed since the glacial beds were laid down. The same conclusion can be drawn from the good preservation of the glaciated surfaces, and of the shells and bones on the terraces. Similar evidence is afforded by the rate of recession of coasts and waterfalls, and by the condition of eskers and lake ridges. If we adopt the shorter estimates afforded by these facts, it will follow that the submergences and emergences of land in the Glacial Age were more rapid than has hitherto been supposed, and that this would react on our estimate of time by giving facilities for more rapid denudation and deposition. Such results would render it less remarkable that no new species of animals seem to have been introduced since the Glacial Age." D. MACKINTOSH.

ON SILURIAN PLANTS FROM CENTRAL WALES.

SIR,—In the January Number of this MAGAZINE is a communication from Dr. Nathorst on the Silurian "Plants" of Central Wales, in which he disputes the conclusion expressed in my paper on the "Fossils from Central Wales,"[1] as to the nature of the plant-like structures there described. In his opinion the *Buthotrephis major*, *B. minor*, *Palæochorda tardifurcata*, and *Nematolites Edwardsii*, are no plants at all, but merely the "trails and burrows of Annelids" such as he has lately obtained from worms placed on a surface of mud and plaster.

It is difficult to understand how such a conclusion could be arrived at from my description; for taking first the species of *Nematolites*, these are described as "solid bodies of pale chocolate colour," perfectly separate from the dark shales in which they occur, and from which they can be readily removed with a penknife. Such a structure can be no mere impression nor the filling up of a trail of worms or crustaceans, and I can think of nothing more probable than the suggestion in my paper that it is a Coralline Alga. In the second species, *N. dendroidea*, the lateral branching is tree-like, diminishing in size in a way impossible for a worm track. Also the *Buthotrephis major* are no filled up tracks and trails. They are thin surface structures, or impressions on the shales and slates, very regular in their form and branching, and the main stem is straight and regular, about two or three inches long and in no case resembles or passes into an ordinary worm track. Also they do not generally occur in association with the worm markings which are so abundant in the grits. Many of these latter are, I have no doubt, tracks similar to those obtained by Dr. Nathorst, and to others which I have observed in the Cambridge slough-ponds at the coprolite diggings, but the *Nematolites* and *Buthotrephis* are quite distinct from these, and I can only refer them to the vegetable kingdom.

Lastly, referring to my new species *Myrianites Lapworthii*, I have no hesitation in maintaining that name, to designate a group of well-defined markings agreeing perfectly with each other, and very distinct from their nearest allies. WALTER KEEPING.

[1] GEOL. MAG. November, 1882, p. 485.