

the broadest part of the outer whorl would be some three inches across. In the upper part of the fossil bed he found two species of *Lingula*. Lower down, two species, at least, of *Chonetes*; some four species of *Goniatites*; one species of *Inoceramus*? one *Pecten*; *Posidonia*, one species; *Productus*, one species; *Spirifer Urii*; *Nucula* or *Ctenodonta*, two if not three species; *Aviculopecten*, at least two species; *Axinus carbonarius*; *Strophomena*? *Pleurotomaria*, *Orthoceras*, and *Anthracosia*. In the same shales I found a solitary fish-tooth. Mr. Ward thinks it is a *Cladodus* tooth—but if so, the base of it is flatter and much broader than any teeth of this fish that I have seen.

But what increases the interest and importance of these beds of marine shells, is the fact that a considerable number of the species obtained from them are identical with those I obtained a few years ago, from a bed of shale in the Farewell Rock series of the South Wales Coal-basin. The bed in question crops out in the Llanelly valley, a mile or so beneath the town of Brynmawr, and appears to occupy a position midway between the lowest seam of coal, and the Carboniferous Limestone. Thus the fossils which in Wales are found considerably below the lowest bed of coal, are, in North Staffordshire, found high up in the lower thick measures. I am informed by gentlemen practically acquainted with the district, that the lowest seam of coal in this field is at least eight hundred yards below the bed containing the above fossils. The natural inference is—that either the species of shells which I have obtained from the two localities of Staffordshire and Wales, had an immense range in time—or else that the Coal-measures of North Staffordshire extend much lower in the series of Carboniferous rocks than do those of Wales. In either case the facts are both instructive and interesting.

In closing this brief notice, I may just remark, that about forty yards *beneath* the beds referred to by Mr. Molyneux, Mr. Amison was fortunate enough to detect another bed containing marine shells, but in less numbers than the upper bed, both with regard to species and individuals. What is most important, is that all the species which we obtained from the lower bed are different from those obtained from the upper one, and appear to have been a great deal worn before deposited. Among those we found was a very small *Nautilus*, two species of *Nucula*? one *Naticosa*, and one that looks like a very broad and short *Anthracosia*, and a small *Goniatites*.

Yours truly, S. LUCAS.

LONGTON: Oct. 4, 1865.

ANECDOTE OF STEPHENSON.

To the Editor of the GEOLOGICAL MAGAZINE.

SIR,—As I communicated the anecdote of the late Mr. George Stephenson sometime before I observed or paid any attention to the rocks of Charnwood Forest, would you allow me to make a correction by stating that, though it was formerly customary among miners to apply the term granite to all the igneous rocks of Leicestershire, the

rock through which Mr. Stephenson penetrated was really *greenstone*, as noticed at page 499 of your last number. Mr. Hull, in the 'Memoirs of the Geological Survey,' gives a correct account of this achievement. My anecdote is original only as regards the words used by Mr. Stephenson on the occasion.

Yours truly,
D. M.

SIR,—The anecdote in the concluding paragraph of your November number is interesting, in spite of its geological inaccuracies, as it tends to throw light on a question that has often puzzled me. The facts are these :—A very slight examination would show that the Coal-measures of the Coleaton and Snibston Field pass to the east beneath a thick mass of New Red marl and sandstone, and that still further to the east the two must abut and end off against the western flank of the mass of slaty and igneous rocks of Charnwood Forest. Thus much we may safely assume that Stephenson knew when he began to sink through the New Red at Snibston in search of the Coal-measures. The sinking was carried down through the marls and the underlying sandstone till a bed of greenstone (not 'granite') was struck. It would have been only natural to take this for the underground prolongation of the Charnwood Forest rocks, and consequently to conclude that the shaft was too far to the east, and that there was no hope of finding Coal-measures there. But, nothing daunted, Stephenson carried on his work, and after passing through sixty feet of greenstone reached, not 'more productive Coal-measures,' but the first Coal-measures that had been met with in the shaft. Now I have often wondered whether Stephenson had any *reason* for hoping in the end to be successful, or whether it was only a plucky determination to go on, even in the dark, and see what would come of it. I think your anecdote shows that the latter was the case; but perhaps some of your correspondents may be able to tell us more on the subject.

Yours obediently,

A. H. GREEN.

28, JERMYN STREET: Nov. 7, 1865.

ANCIENT BRONZE IMPLEMENTS.

To the Editor of the GEOLOGICAL MAGAZINE.

DEAR SIR,—I hear that bronze implements have been discovered in the Kirkhead Cavern. Surely the exact analysis of the metal of which they consist would prove of interest. If samples of ancient bronze, brass, or other alloys are placed at my disposal, I shall be most glad of the opportunity of analysing such of them as are likely to yield good results. Fragments of from five to ten grains generally afford sufficient material for one quantitative analysis, but a larger quantity is preferable.—I am, dear Sir, yours truly,

A. H. CHURCH.

R. A. COLLEGE, CIRENCESTER: Oct. 29, 1865.