

ther more likely that the shales represent intermediate and different conditions happening between each formation of coal; and, in this case, the ferns imbedded in the shales may have belonged to quite another class of vegetation from that which formed the coal. Has anybody ever thought sufficiently how far the tender herbs of those days and myriads of fallen seeds might have been the chief sources of that bituminous product which makes England the first country in the world for civilization and wealth?

It is not our intention now to enter, however, into the matter of the formation of coal, nor of the nature and characters of the many beautiful vegetable forms which are imbedded in the intercalating strata. But we wish some one would earnestly take up the work.

CORRESPONDENCE.

The Older Parian in Trinidad.

DEAR SIR,—Permit me to observe, in reply to Mr. Lankester (whose letter appeared in your issue of July), that I am not the authority for the correlation of the Older Parian formation in South America and Trinidad, with the Neocomian of Europe. Indeed, from the references I gave I should have thought that Mr. Lankester would have had no great difficulty in finding out that the supposed age of the formation in question rested upon far better evidence than any I could produce. I had it only in my power to add a little to the evidence already accumulated on the subject, and to demonstrate it almost to a certainty that the rocks at Pointe-à-Pierre in Trinidad do belong to the same formation which it was the opinion of the Government Geological Survey that they did; that is, to the formation at Cumana, containing *Trigonia subcrenulata*. The opinion of the Government geologists was built upon evidence which was none the worse for being strengthened; and I had it in my power to do so.

But if the references given in the footnotes to my paper are not sufficient, I beg to refer Mr. Lankester to those appended to Mr. Wall's paper on the geology of Venezuela and Trinidad (Quart. Journ. Geol. Soc., vol. xvi. p. 465). Von Buch's work on the fossils collected by Humboldt contains much evidence relating to the age of the formation in South America.

When I transmitted my paper to you I was perfectly aware of Professor Huxley's views as regards "homotaxis;" and I have held opinions of a somewhat similar kind for some time previously to reading Professor Huxley's able address to the Geological Society. But in writing my paper on the Older Parian formation, my object was not to support or elucidate any theory which is yet quite new and unacknowledged by geologists at large; more especially when it did not make the least difference one way or the other as to the question upon which I was engaged. Whether the rocks in South America containing organic remains of types

similar to the Neocomian of Europe were actually contemporaneous with the latter formation, or merely homotaxical and representative of it, was not the question I proposed to deal with. The general sequence of animal life is admittedly the same in either case; and whether the Neocomian in South America was or was not contemporaneous with the Neocomian in Europe, still it would have to be considered in comparative geology as Neocomian, at all events until some better nomenclature could be decided on. If Belemnites are not found above the Chalk, in Europe, it is probable they will not be found above the homotaxical representatives in South America of the Chalk.

I trust that this explanation will prove satisfactory to Mr. Lankester and to those of your readers who may take an interest in the matter.

I am, Sir, your obedient servant,

R. LECHMERE GUPPY.

Port of Spain, Trinidad, July 28th, 1863.

Former Higher Temperature of the Earth v. Atmospheric Pressure.

SIR,—The Rev. James Brodie, at the late British Association Meeting, stated that if at any time the earth had been subjected to a great increase of temperature, it necessarily implied an immense increase of pressure in the atmosphere. A slight increase, he said, would double the atmospheric pressure. Can you, Sir, inform me the grounds of the assertion, and the reasons why the atmospheric pressure would be augmented by the increase of internal heat? Perhaps Mr. Brodie would condescend to enlighten myself and others of your readers who may be in the same ignorance as myself upon this very interesting subject, if you, Sir, cannot or decline to give us the explanation.

Yours respectfully,

PULEX.

Taunton, 4th September, 1863.

BRITISH ASSOCIATION MEETING AT NEWCASTLE.

The Section of Geology was under the Presidency of Mr. Warington W. Smyth.

PRESIDENT'S ADDRESS.—If there is any one part of the British Islands where the very name of the place is naturally associated in our minds with a particular geological formation, it is the town of Newcastle as associated with coal; and, beyond a doubt, many of the present visitors to this cradle and centre of the coal trade will have made their journey hither with the expectation of not only hearing communications on various branches of geological science, but more especially of adding something to their knowledge of the carboniferous strata. We are to be favoured with several papers dealing with different portions of the subject, and it may be advisable that I should invite your attention to the state of our knowledge of the occurrence and history of the coal-measures generally, referring mainly to the phenomena which characterize that most valuable region in which we are assembled. I shall attempt, as it were, an overture giving a general outline of the carboniferous plot, and introducing a few notes to illustrate those passages which are most likely, in our successive