

from that gentleman specimens from the shales of West Cramlington and other places since June, 1865. Both gentlemen are personally unknown to me, though it is possible that they may have been of the number of those who submitted fossils to my inspection after a lecture I previously delivered at Newcastle-on-Tyne.

RICHD. OWEN.

SPIRIFER CUSPIDATUS AND SYRINGOTHYRIS TYPA.

To the Editor of the GEOLOGICAL MAGAZINE.

SIR,—Absence from home and other causes compel me to defer my reply to Dr. Carpenter's and Mr. Davidson's papers on the structure and histology of "*Syringothyris typa*" for a short time longer, when I shall be able, from ample materials in my possession, to show clearly that it is no other than *Spirifer cuspidatus*, as represented by imperforate and tubeless specimens.

WILLIAM KING.

BELMONT, near GALWAY,
July 8th, 1867.

THE CLAY-BED NEAR STANNAGE, DERBYSHIRE.

To the Editor of the GEOLOGICAL MAGAZINE.

SIR,—I went up to Stannage the other day for the purpose of determining whether the bed of clay, seen by Mr. Binney, and mentioned by Mr. Maw in his paper in the June number of your MAGAZINE (page 247), was a member of the Carboniferous system or a more recent deposit. There can be no doubt that it is the former. A small pit has recently been sunk close to Spitewinter in order to get clay, it may be some fifteen or twenty feet deep, but as it was partly filled up with water I had no proper means of ascertaining the exact depth. The upper part exposes a section of thin shales, beneath are sandy clays and clay, and lastly, a thin seam of coal, which appears to have been only just touched. There is a good deal of clay under the peat in the immediate neighbourhood, and it has been dug into somewhat extensively still further to the west near the old Cupola marked on the Ordnance Map. When I have time I will endeavour to find out, if possible, the boundaries of the deposit; immediately above it, to the north, is the fine escarpment of what I conclude to be the first grit. May not the shales above-mentioned correspond with those spoken of by Messrs. Hull and Green in their paper on the Millstone Grit, in No. 79 of Geol. Journ. They say "shales, with a thin coal at the bottom, west of Buxton, lie below the Rough Rock." A thick bed of shales has also been exposed by a landslip on the north bank of the river Hipper, below Catholic hill, on the north-west side of Stannage. I may mention that the grit escarpment of Stannage has every appearance of having been an old sea-worn cliff; it has hollows or rock-pools in its face or on its summit; the escarpment is on the south-west side of the hill; on the other side the slope is more gradual, and three or four

terraces look very much like old beach lines, but as they have not been cut into I cannot say for certain.

A reference to the Ordnance Map, No. 82, south-west, will explain the relative position of the localities above referred to.

I am, yours truly,

J. M. MELLO.

ST. THOMAS'S PARSONAGE, BRAMPTON, CHESTERFIELD,
July 22nd, 1867.

DR. T. STERRY HUNT'S THEORY OF THE EARTH.

To the Editor of the GEOLOGICAL MAGAZINE.

SIR,—I have read with considerable interest the very ingenious theory of the "Chemistry of the Primeval Earth," by Dr. Hunt, which is contained in your issue for August, and beg your permission very briefly to ask the Doctor how his theory is compatible with the following facts respecting the mean densities of the sun and larger planets, or whether the theory of their extensive hollowness does not more satisfactorily account for their low mean densities than does that of the sun, the earth, and, by inference, all the planets increasing in density to their centres.

The following are approximately the mean densities of the sun and the larger planets:—

Sun... ..	1.42	Uranus	1.0
Jupiter	1.37	Neptune... ..	0.5
Saturn	0.5		

and those of the smaller planets are—

Mercury... ..	6.6	Earth	5.5
Venus	5.6	Mars	5.6

The densities of the asteroids are unknown, but should they be ascertained, I venture to predict that they will probably be found of higher mean density than are any of the planets just enumerated. All the large planets have very low mean densities; all the smaller planets have high and nearly uniform mean densities.

How are these facts to be accounted for on Dr. Hunt's theory of condensation and increase of density to the centres?

I am, yours obediently,

NEWCASTLE-ON-TYNE,
August 6th, 1867.

T. P. BARKAS.

ON THE SEQUENCE OF THE DRIFTS IN THE EASTERN COUNTIES.

To the Editor of the GEOLOGICAL MAGAZINE.

DEAR SIR,—With reference to Mr. Wood's suggestion, that I should give complete sections from his "upper drift" to the beds exposed on the coast, I wish to say that I have not materials by me to work out the details he asks for, and it appears to me that the point at issue would not be explained by exact particulars of surface contour, and the position of the crags in relation to the overlying drifts. There is no difference of opinion as to this, and all are agreed that the gravels underlying the Boulder-clay of High Suffolk correspond in height with much of the gravel superimposed on the