

and without drawing in the least on that "scientific imagination" with which my distinguished friend is kind enough to credit me, and relying only on the use of my reasoning faculty, I maintain that they must be carried down to the lowest levels shown by the soundings, since rivers only flow at the bottom of their valleys! And, in this connection, let me ask Mr. Hudleston with reference to his plan of the Gulf of Gascony and his isobathic contours of 100 fathoms and 1,000 fathoms of the Fosse de Cap Breton (p. 151), why has he left the latter in so incomplete a state? The 1,000-fathom contour is broken in two just above the point where the narrow channel of 1,500 fathoms opens out on the abyssal floor, as will be seen by reference to the map itself. Surely with so many soundings there can have been no great difficulty in carrying the 1,000-fathom line eastwards to the point of crossing, which would indicate the form of this remarkable sub-oceanic ravine; and if contours of intermediate depths (say 750, 500, and 250 fathoms) had been traced, they would have thrown additional light on its form and character. As it stands, Mr. Hudleston's map is unintelligible, and reminds me of that of M. Elisée Reclus, who leaves the mystery of the Fosse de Cap Breton unsolved.

EDWARD HULL.

April 7, 1899.

THE ASSOCIATION OF *SCHLENBACHIA INFLATA* WITH
HOPLITES INTERRUPTUS.

SIR,—In discussing "The Base of the Gault in Eastern England" (*GEOLOGICAL MAGAZINE*, April, p. 161), Mr. A. M. Davies refers to the mixture of Lower and Upper Gault species at Heath, near Leighton Buzzard, and remarks that the same mixture "appears to exist in the Isle of Wight, where *S. inflata* occurs in the Gault Clay along with *H. interruptus*," his authority for this statement being the Geological Survey Memoir on the Isle of Wight.

It is true that in the tabular list of fossils at the end of that Memoir (p. 279) *Am. rostratus* and *Am. interruptus* are entered in the Gault column with the indication that both were found at Compton Bay, but it is not stated in the text that they were found in association. It so happens that I have had occasion to investigate this very point, and discovered that Mr. Rhodes had only found *H. interruptus* in the lower 20 feet of Gault, that a specimen obtained between 73 and 93 feet from the base was *H. denarius*, and that the *S. rostrata* came from a still higher bed, namely, that given at 8 feet thick in Mr. Strahan's section on p. 63 of the Memoir.

Other specimens of *H. interruptus* have been found in other parts of the island, but always in the lowest part of the Gault and never in association with *S. rostrata*. There is no mixture of zonal species, but the upper part of what is referred to 'Gault' by Mr. Strahan and others belongs to the zone of *S. rostrata*.

At Heath, on the other hand, there is unquestionably a commingling of Lower and Upper Gault species, and I am quite unable to explain it unless the Upper Gault should turn out to be much

thicker in that district than has hitherto been supposed. It must be remembered that the fossils are phosphatic, and the section exposed when I was there in 1884 showed that they lay in a seam of phosphatic nodules; hence some of them may have been derived from a lower horizon, but the occurrence of *S. rostrata* and *S. varicosa* within 20 feet of the base of the Gault remains to be explained.

A. J. JUKES-BROWNE.

TORQUAY, April 10, 1899.

OBITUARY.

JAMES DIGUES LA TOUCHE, B.A.

BORN APRIL 7, 1824.

DIED FEBRUARY 24, 1899.

SOME five and forty years ago the Rev. James Dignes La Touche of Stokesay, with Humphrey Salwey and Robert Lightbody of Ludlow, formed a trio of ardent students of the geology of South Shropshire. Surviving his fellow-workers for more than twenty years, the late Vicar of Stokesay is the best known to the present generation of geologists, and moreover, while all were equally willing to impart to others their intimate knowledge of the geology of their neighbourhood, he did not share his friends' reluctance to commit to writing the information which they acquired.

In his earlier geological papers he attacked two problems of considerable difficulty, one being the changes which sedimentary rocks undergo after their deposition and consolidation, and the other the amount of sediment brought down by rivers as a measure of the extent of denudation of the land. While we may not fully accept his original views on the "Mode of Formation of Limestone Bands" (*Geologist*, 1863), it is probable that "Nodules in the Limestone of Wenlock Edge" (*Brit. Assoc. Rep.*, 1865) and "Spheroidal Structure in Silurian Rocks" (*Journ. Geol. Soc. Ireland*, 1871) have been formed in the way which he suggests, so that his first paper merely carries his theory a little too far. The difficulties encountered in the study of the "Alluvial Deposits of Rivers" (*Trans. Woolhope Field Club*, 1868) and the "Measurement of River-sediments" (*GEOL. MAG.*, 1868) are of quite another kind, being chiefly manipulative, and it seems a pity that the very careful and well thought-out experiments which he made to form an "Estimate of the Quantity of Sedimentary Deposit in the Onny" (*Brit. Assoc. Rep.*, 1869) should have terminated with his "Report on the Sedimentary Deposits of the River Onny" presented to the British Association in 1870, and published as one of the "Reports on the State of Science" in the volume for that year. His papers in the *Transactions of the Woolhope Field Club* on the "Geology of the District around the Titterstone Cleve Hill" (1868) and on the "Geology of the Longmynd Hills" (1870) should be read by all who wish to study these interesting districts.

His principal work, however, is "A Handbook of the Geology of Shropshire," published in 1884 (4to, London and Shrewsbury).