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 Digues 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 Clee 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).

Commencing with a succinct but not very full account of the geological formations, from Pre-Cambrian to Lias, which are represented in the county of Salop, a few pages are very usefully devoted to the description of a number of routes by which these formations may be seen and conveniently studied, the best localities for fossils being pointed out. The remainder and much the greater part of the work is palæontological, consisting of descriptions of fossils, first of the genera and then of the species, which are depicted on 22 plates. A few new species are described and figured.

In July, 1872, he conducted, with Prof. Morris and Mr. Lightbody, an excursion of the Geologists' Association to the neighbourhood of Ludlow and the Longmynds, which was highly successful.

Geology was not his only scientific study; it was but one of many. In 1875 he contributed a paper to the Meteorological Society (a result of a visit to Natal, where he went in 1874 to assist Bishop Colenso); he kept a rain-gauge and other meteorological instruments; and from the year 1876 the rainfall at Stokesay Vicarage has appeared annually in Symons' "British Rainfall." Through his astronomical work he became acquainted with Sir William Herschel, grandson of Herschel I. He studied microscopical petrology, making rock-sections with a machine of his own designing and examining them under the microscope until his eyesight became affected, when he turned his attention to the practical study of electricity, constructing the necessary apparatus himself. In Natural History his favourite studies were entomology and botany; he was expert in dissecting insects, and he made a complete collection of the plants of his neighbourhood. In his parish is the only British locality for *Astrantia major*, and he was proud to show this plant growing to those whom he could trust to look and not to take, but careful not to do so to the mere collector. It may be that his taste for botany and love of flowers were acquired from his intimate friend Sir Joseph Hooker. He had considerable archæological knowledge, as his "Guide to Stokesay Castle" attests, and at the time of his death he had just completed a history of his parish intended for publication.

With these diversified studies Mr. La Touche was also assiduous in parochial work. His ancestors on both sides being of Huguenot extraction, he appears to have inherited an intense desire, with the needful ability, to help those around him to acquire useful knowledge and to become expert artisans. He not only taught daily in his parish schools such subjects as Latin, French, mathematics, land-surveying, and shorthand, but he also had a room built which he fitted up with carpenter's bench, lathe, and a chemical laboratory, where he gave practical instruction in various useful arts, including bookbinding. His fame as a tutor was worldwide, and amongst his private pupils were sons of Bishop Colenso, of Professor Max Müller, and of Sir Joseph Hooker, and two nephews of Sir Charles Lyell.

As Vicar of Stokesay for the long period of 44 years, he had endeared himself to his parishioners, who will miss his commanding

but genial presence, his deep-toned but pleasant and cheery voice. He leaves a widow, three sons, and two daughters. His eldest son, who is in the Church, succeeds his father as Vicar of Stokesay; one is on the staff of the Geological Survey of India; and the other is a Civil Engineer in the Public Works Department of the Madras Presidency. J. H.

OTHNIEL CHARLES MARSH, LL.D. (YALE), PH.D. (HEIDELBERG).

BORN OCTOBER 29, 1831. DIED MARCH 18, 1899.

(WITH A PORTRAIT.)

SCIENCE of late has become so cosmopolitan in its interests that the loss of any one of its leading members is felt and mourned in distant lands as keenly as in the University in which he may have made his home.

A while since we had to regret the loss of Professor Dames of Berlin; yesterday we deplored that of Professor Nicholson of Aberdeen; to-day we mourn the loss of our dear American cousin, Professor O. C. Marsh of Yale. Such ties of sympathy and personal regard tend to knit more closely together our geological friends everywhere, and we join hands far and near in times of joy and sorrow.

O. C. Marsh was born at Lockport, New York, October 29, 1831, and graduated at Yale in 1860. Of his early years we have no details, but it may be inferred that it was due to the interest of his uncle, Mr. George Peabody, that after his schooldays had long ended he entered Yale College, where he graduated in 1860 at the age of 29. After travelling in Canada and Nova Scotia, where he discovered remains of a new Enaliosaurian (*Eosaurus Acadianus*) in the Coal-formation of Nova Scotia, he came to Europe and spent three years in the Universities of Berlin, Heidelberg, and Breslau, under Beyrich, Ehrenberg, Roemer, and other famous German Professors.

He visited London in 1864, and whilst diligently studying in the British Museum he became acquainted with the writer, and from that time a warm friendship was commenced, which lasted to the end. A letter arrived on the morning of the 20th March, addressed in Marsh's well-known handwriting, and also a telegram, the former full of life and pleasant hopes and promises, the latter the messenger of death: "Professor Marsh died yesterday, illness short, Beecher." Reverting again to 1864: we had just before (1862) secured the famous collection of Dr. Haberlein from the lithographic-stone quarries of Eichstatt, in Bavaria, which, among other treasures, contained the famous *Archæopteryx*. Marsh at that time devoted himself diligently to the investigation of the fossil Annelides, and discovered on one specimen the well-preserved jaws of *Helminthodes antiquus*, which he carefully worked out with his own hands and afterwards described and figured.

Returning to America in 1866, he joined Professor Sir William Thomson (now Lord Kelvin) when engaged in the delicate task of picking up and splicing the first Anglo-American cable in mid-Atlantic. The same year he was offered the Chair of Palæontology