

OBITUARY.

THOMAS ROBERTS, M.A., F.G.S.,

ST. JOHN'S COLL., CAMB.; ASSISTANT TO THE WOODWARDIAN PROFESSOR.

BORN 1856. DIED JAN. 24TH, 1892.

MR. ROBERTS must have been a strong man to have come to the front as he did; for he had not the early advantages that the youths of our large towns generally have now in the way of lectures and schools and colleges, open to any boys who show a spark of intelligence.

His father was a contractor and agent in Wales, and at one time much better off than the ups and downs of the world left him in his old age. Tom Roberts was intended for the same line, and thus in early life was familiar with the construction of sea-walls, with laying railway lines, with building, and with the superintendence of quarries and mines.

Perhaps this influenced his choice of subjects in after-life. However that may be, he went to school, and showed such promise that he was encouraged and aided to pursue his studies in the University College of Wales at Aberystwith, where he obtained a scholarship for Mathematics. Here also he impressed his teachers with his power, and he was sent up to St. John's College, Cambridge, where he won a scholarship on entrance, and, being now able to throw himself entirely into the congenial study of Natural Science, at the end of his course he was placed in the First Class in the First Part of the Natural Sciences Tripos in 1882, and also in the First Class in the Second Part of the Natural Sciences Tripos in June, 1883.

In the spring of 1883 he was appointed Assistant to the Woodwardian Professor, in succession to Mr. E. B. Tawney, a post which he has held ever since.

It may be asked why a man of such knowledge did not do more original work, but the answer is easy. In the first place his time and energies were chiefly given up to educational work, and secondly he was preparing for a much larger undertaking, namely, a treatise on Palæontology, so that he had no time to keep himself before the public by frequent small descriptions or controversial papers. Moreover, such time as he had to spare was at everybody's disposal. His work must be listened for in echoes rolling on through other people's publications, and the record must be looked for, not in the Proceedings of Societies, but among the hundreds of students that have passed through the Woodwardian Museum since he first took his share in its management and in its educational work.

But if his published work was not voluminous, it was good. He was a stratigraphical palæontologist of a very high order, and those who had the good fortune to work with him in the field will remember how careful he always was to work out the fossils of each zone, and how he allowed no correlation which was not supported by palæontological evidence.

We pass quickly over the joint paper by Marr and Roberts on the

Lower Palæozoic Rocks of the neighbourhood of Haverfordwest,¹ because in that he was associated with the keenest stratigraphical palæontologist we have, on ground which he, rather than Roberts, has made peculiarly his own. Whatever Roberts's contribution to that work may have been, he must have come out of it a stronger man from the contact. But in his description of the Jurassic Rocks, we see in one paper after another first that careful working out of zones in one connected set of sections, and then suggested correlation of horizons between more or less widely separated areas.

He first undertook the examination of the Jurassic Rocks of the neighbourhood of Cambridge, upon which he wrote an essay, for which the Sedgwick Prize was awarded to him in 1886. It was hoped by his friends and by himself, that this essay would some day be expanded into a much larger work, or at any rate that its scope might be considerably extended. As it stands, it is a valuable contribution to the Life History of the Earth, and, for students of the geology of the neighbourhood of Cambridge, a useful handbook. The Syndics of the University Press have undertaken to publish it, and many friends have volunteered their services to help to see it through the press in *Memoriam*.

In the following year he read a paper before the Geological Society,² "On the Correlation of the Upper Jurassic Rocks of the Swiss Jura with those of England." This was the outcome of an excursion for which he received a grant from the Worts Fund in 1884. In it he gives a detailed description of the more important subdivisions above the horizon of our Kellaways Rock, with numerous sections, and full lists of fossils. He points out that the thick clays of Kimeridge and the variable beds of Portland and Purbeck are in the Jura all represented by massive limestones and that, as might be expected from such difference of sediment, there is a considerable difference in the fauna of the two areas, but that still some well-marked zones make an approximate correlation possible. The views of various authors and his own as to the identity of certain widely separated zones, he presents tabulated in parallel columns for easy reference, and explains wherein he differs from the continental geologists as to the synchronism or the grouping of the several deposits.

In 1888 the Lyell Fund was awarded to him in token of appreciation of these investigations. Having thus prepared himself for the recognition of the different horizons in the Jurassic Rocks, even when presenting very various aspects, he turned his attention to "the Upper Jurassic Clays of Lincolnshire,"³ and traced through that district a zone which had not been previously recognized, and which he identified with certain clays in the neighbourhood of Cambridge, referred by him to the Corallian.

The thorough way in which he worked out a palæontological inquiry may be gathered from his early note⁴ on what he considered a new species of *Conoceras* from Llanvirn. He described the

¹ Q.J.G.S. vol. xl. 1884, p. 476.

² Q.J.G.S. vol. xliii. 1887, p. 229.

³ Q.J.G.S. vol. xlv. 1889, p. 545.

⁴ Q.J.G.S. vol. xl. p. 636.

specimen and its state of preservation, pointing out sources of error arising from confounding superinduced structures in the rock, with original markings on the organism. He compared it with those species which appear most nearly to resemble it among previously described forms. He pointed out the exact geological horizon from which it was obtained, as determined by the associated fossils, and then gave the technical description of his new species.

The same treatment of the specimens and of the species is seen in his description¹ of "Two Abnormal Cretaceous Echinoids."

In Palæontology also we must look for his work not so much in published descriptions of new species, as in the large numbers of named fossils in the Woodwardian Museum, from almost every horizon, the determination of which we owe to him.

The characteristic of his work as of the man was its honesty. We who lived and worked with him up to a few days of the end feel his loss at once; he is no longer there to help, and many another coming up to the old Museum from time to time will feel it too; for when a friend or stranger asked to see something in our collections, we would say, "You will find Tom Roberts there," with full confidence that our visitor would return well pleased and the honour of our Museum would be well sustained.

He was a man of great force of character, of clearness of vision, and soundness of judgment. False reasoning rarely escaped him, and you could no more lose sight of his intellectual presence than of his large and powerful frame. Yet his gentle sympathetic manner and his open truthful eye gave you at once the comfortable feeling that you need not be on your guard with him. Students said that he never tried to put himself on a higher pedestal by scoring off them. He led them on, and rather than drive or urge them, he would ask them to help him to get them through with credit, as if he, not they, were most interested in their success.

T. MCKENNY HUGHES.

FREDERICK DREW, F.G.S., F.R.G.S.

BORN AUGUST 11, 1836. DIED OCTOBER 25, 1891.

MR. FREDERICK DREW, F.G.S., F.R.G.S., was born August 11th, 1836, at Southampton, where his father kept a well-known private school, and at this school he was educated until he was seventeen years of age, when he entered the Royal School of Mines, at that time (1853) recently established in connexion with the Jermyn Street Museum. Here he distinguished himself, although younger than some of the other students, by taking all the prizes offered, including the Duke of Cornwall's Scholarship, a Royal Scholarship, and the Edward Forbes medal, the last two for the first year in which they were awarded.

In 1855, on leaving the School of Mines, Frederick Drew joined the Geological Survey of Great Britain, and remained on the staff till 1862, being chiefly engaged in the south-east of England. His

¹ GEOL. MAG. Vol. VIII. 1891, p. 116.