DR. WHEELTON HIND'S CARBONIFEROUS LAMELLIBRANCHIATA.—PART I. INTRODUCTION (PALÆONTOGRAPHICAL VOLUME, 1896).

SIR,—Under the heading of "General Sequence of the Carboniferous Rocks," which embraces analyses or divisions of some of the coalfields in Britain, reference is made to the succession of the rocks in the Coal-measures in Somersetshire, or the southern part of the Bristol Coalfield. *Under* the general term Coal-measures, in the division "UPPER," are placed—(1) The *Radstock and Farringdon* Series; (2) The *New Rock and Vobster* Series: both these are classed as belonging to the *Upper* Group of Coals.

The Radstock and Farringdon Series are undoubtedly members of the Upper Coal-measures, and of the uppermost division in Somersetshire; but the *New Rock* and *Vobster Series*, or coals, are in the *lowest* part of the *Lower Coal-measures*,—the two series being separated by *nearly* 2000 *feet* of the well-known "*Pennant* Sandstone," so that the *term Upper* is here most misleading. Between the lines Radstock and Farringdon Series, should be inserted the "MIDDLE or PENNANT SERIES, or *Sandstones*" (2000 feet thick). The term "Millstone Grit" has no value here, unless the *New Rock* and *Vobster Series* (coals) are inserted below the Pennant and above the Millstone Grit, in the *Somersetshire* portion of the Bristol Coalfield, the northern and southern areas forming one continuous field. We can hardly understand how the northern and important division of the Bristol and Somerset Coalfield was omitted in the sequence. The entire basin is 26 miles from north to south, and 8 to 10 miles from west to east, but continuous and almost unbroken, the sequence being the same in either case, the Carboniferous Limestones and coal shales being highly fossiliferous. The Bristol Coalfield is the most typical and perfect in stratigraphical succession of any of the coalfields in Britain. I draw Dr. Wheelton Hind's attention to this very important omission in order that he may make his monograph upon the fossils of the British Carboniferous rocks for the Palæontographical Society as complete and accurate as possible, and that he may be induced to look carefully into the true succession of the different areas that will come under his examination.

R. ETHERIDGE.

OBITUARY.

DAVID ROBERTSON, LL.D., F.L.S., F.G.S.

BORN NOVEMBER 28, 1806. DIED NOVEMBER 20, 1896.

DAVID ROBERTSON, once upon a time the little herd-boy of a Lanarkshire moorland farm, by-and-by the successful Glasgow merchant, and then for thirty or forty years the keen, shrewd, patient observer, bent on the acquisition and furtherance of "natural knowledge," has passed away, after a life that has still been "too short for friendship," although so greatly prolonged. He was born in 1806, November 28 of the Old Style; he died in 1896, November 20 of the New Style, and therefore just within three

weeks of finishing his ninetieth year. It must not be fancied from his age that his claim to be noticed in this Magazine depends on his having become, as is sometimes the result of longevity, a breathing fossil. On the contrary, his scientific activity was maintained unflinchingly to the end. He became a Fellow of the Geological Society of London in 1869, but he had joined the Geological Society of Glasgow two years earlier. To the Quarterly Journal of the former he contributed but one short paper; to the Transactions of the latter a long series of Essays, many of them in collaboration with the late Dr. Crosskey on post-Tertiary Clays. Together with G. S. Brady and Crosskey, he compiled for the Palæontographical Society an important Monograph on the post-Tertiary Entomostraca of Scotland.

In the words of Mr. Dugald Bell, Robertson's work in geology was distinctively that of a zoologist, but characterized, like all his other work, by its minute and painstaking thoroughness. "He seldom, if ever, meddled with questions of stratigraphical or physical geology. In conversation he sometimes 'beat over' certain points in glacial geology, and his statement of doubts and difficulties here and there was always very suggestive. But he always fell back upon his labours to unfold the *life* of the period as far as possible, in all its varieties, even the humblest. The principal observations of a more general kind, relating to what may be called physical matters, which I remember as coming from him, are (1) his note on the accelerated precipitation of sediment in salt-water as compared with fresh; and (2) his remark that a lighter or browner colour of the Upper Boulder-clay, as compared with the Lower, was due very frequently at least, not to any difference in materials or in conditions of deposition, but simply to the action of the weathering agencies to a certain depth from the surface on the ferruginous elements contained in the clay. These observations were wrought out with great clearness, and have been very helpful in some points." (Mr. Dugald Bell *in litt.*)

From 1892 onwards Robertson was on a Committee of the British Association for investigating certain shell-bearing clay deposits in various parts of Scotland. When a man of eighty-six is placed on such a committee, it might well be supposed to be done out of pure compliment, or for the countenance of a distinguished name, or at most to add the authority of an experienced judgment to the results of younger men's labour in the field. A far different view of the responsibility was taken alike by those who selected Robertson, and by the man of their choice. Each year a substantial part of the report has been from his pen. Each year a substantial part of the work has been accomplished by his exertions. He undertook the preparation of the samples of clay, and the determination of the various organic remains, many of them extremely minute or fragmentary, which resulted from the careful washing, straining, and separating of the constituent gravel, sand, and mud. The tediousness of the occupation none can know but those who have tried it. In private correspondence Robertson would speak of the

more congenial employments he would be at, "when," as he phrased it, "I am out of the mud." His last report on this subject, printed but not yet published, has, as Mr. Bell says, "a pathetic interest now as being the last work from his hand." The foundation of it was laid in an excursion to Tangy Glen and Cleongart Glen, in company with Messrs. Horne and Bell, in the summer of 1895. In a letter dated June 6, 1895, he gave the present writer an account of that expedition. Much of it was by carriage, but by no means all. Thus, in reference to Cleongart Glen, the geologist verging upon eighty-nine observes that "Here we had, when we left the road, some steep climbing, and at places we had to make sure of the hold of one foot before we ventured to bring up the other." He admits, with his accustomed modesty, that he could not walk quite so fast as his companions. So, to save time, when the inspection was over, he left them to do the packing-up, and started in advance. On his solitary way back he entered a large field in which were a number of cows with a bull. The "lord of the harem," displeased at intrusion, came "crooning" towards him. No harm followed, for the bull's attention was presently distracted by the appearance of the other geologists in a different quarter and by the advance of the placid members of his own family. Meantime Robertson was not leaving his fate to the chances of external succour; for, as he explains in a subsequent letter, being on the edge of a nearly precipitous bank, he was prepared to slip down on to a platform roomy enough for his two feet, but "where a bull could not have found footing for four." From this and similar, more or less laborious, excursions he returned in excellent health, with clay enough to last him for months. On May 1, 1896, he writes: "I expect I will have to go to Campbelton some time about the middle of this month, to endeavour to settle, if possible, a long-standing contention whether shells met with in clay beds four or five hundred feet above the present sea have lived and died where they are found, or have been transported there by ice action. I believe in the former, and I am hopeful that the conditions of the Campbelton shelly clay beds will put that beyond dispute, and further explain the relations between the laminated shelly clay and the Boulder-clay."

In April, 1895, the University of Glasgow conferred upon David Robertson, in company with Lecky the historian and other distinguished men, the honorary degree of Doctor of Laws. It was a fine and, as it has proved, a timely recognition of Robertson's enduring devotion to science. The honour came late, as it was likely to come, if it ever came, to a man whose unassuming simplicity of character made him far more anxious to do creditable things than to win credit for the doer. Robertson's heart was perhaps even more wrapped up in marine zoology than in geological subjects; but that is another story. He was a delightful friend. He was a sterling man. He passed through many changes of fortune, and knew how to make himself happy and beloved in all.

T. R. R. S.