

the same sections as those mentioned by Mr. E. Hull, of the Geological Survey, but, on the contrary, are taken from a Brick-croft at a distance of about 300 yards, where nothing but Lower Boulder-clay is to be seen, with a covering of fine sand. The absence of the 'Laminated clays and bed of decomposed vegetation,' in Section No. 1, that your correspondent gives, is owing to its being at a much lower elevation than Section No. 2 that he speaks about, where he says that upon the surface (of what he calls Upper Boulder-clay) 'occurs a boggy soil, with branches of trees, some 3 feet thick.' The difference that exists between the Upper Boulder-clay and the deposit at Heaton Mersey, to which he gives the same name, is so great that a novice would be able to see the distinction. The first is a hard, compact, and unstratified deposit, containing pebbles and striated boulders in abundance; whilst the second is a soft stratified or laminated deposit in which no pebbles nor boulders occur. Another proof as to the difference of the deposit is well shown in the materials that are produced from them. The Boulder-clay is extensively used for brick-making, whilst the laminated clay is used for making earthenware. The following is the section about midway from the top of Grundy Hill; it was taken yesterday:—

Fine laminated sand . . . . .	10 feet.
Layer of peaty matter, about 3 feet thick, composed of decomposed vegetation, containing branches of hazel-trees, trunks, and roots, but not in an upright position . . . . .	1 foot.
Dark-brown laminated clay, now known as 'warp' . . . . .	13 feet.
Lower Boulder-clay, varying in colour from red to bluish, containing striated boulders and remains of <i>Bos primigenius</i> . . . . .	20 feet, and the base not seen.

I may state, that I never before observed the trunks and roots of the hazel-trees in the bed that occurs on the surface of the 'warp,' nor was I ever rewarded with finding the remains of *Bos primigenius* in the Lower Boulder-clay of Heaton Mersey until my excursion yesterday.—Yours, &c. J. WEBSTER KIRKHAM.

LOWER BROUGHTON: May 5, 1865.

*To the Editor of the GEOLOGICAL MAGAZINE.*

DISCOVERY OF FOSSIL SHELLS IN THE SILURIAN SHALES OF DUMFRIESSHIRE.

SIR,—The precise age of the Silurian beds of Dumfriesshire has always been a difficulty with Geologists, because the most diligent search has hitherto brought to light no higher organisms than *Graptolites*, with the exception of some very doubtful and obscure specimens—so obscure that the species could not be determined.

It has been my good fortune to discover several specimens of shells in the Black Shales of Garpel Burn, which runs through a glen about  $2\frac{1}{2}$  miles from the town of Moffat. I only found them after searching the shales on four consecutive days, spending a good

part of each day at this point. After finding the first specimens, I went on the following day; but, although I laboured for several hours, I did not succeed in obtaining a single specimen. On a subsequent occasion I was more fortunate, but yet the fossils are very rare. The state of preservation of these shells is pretty good, and they may be referred to two species: one is a Brachiopod, like *Discina rugata*, but rather larger than the one figured by Sir R. I. Murchison, in his 'Siluria.' This shell, in the typical district, ranges from the Wenlock to the Ludlow beds; and, according to this evidence, these beds must rank higher than has been hitherto supposed. The others may be referred to *Modiolopsis*, and the species much resembles *M. orbicularis*, which ranges from the Caradoc or Bala to the Llandovery Rocks. The occurrence of this shell seems to confirm the opinion held by Professor Harkness, that these beds are of the same age as the Caradoc Sandstone.

This discovery is of some importance, as it points towards data on which the age of the beds may be decided. I have therefore thought it my duty to lay it before the Geological world as soon as possible.

I am, Sir, &c.,

D. J. BROWN.

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#### MISCELLANEOUS.

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ILLUSTRATIONS OF TRILOBITES.—We have received from Mr. E. J. Hollier, of Dudley, a lithographic plate of Trilobites of the natural size, characteristic of the Wenlock Shale and Limestone of Dudley, drawn from specimens in Mr. Hollier's collection. There are 28 figures of various species, from the great *Homalonotus delphinocephalus* to the minute *Cyphaspis megalops*. But although interesting to local collectors, and also because they represent actual specimens, their execution is not equal to that of the figures given by Mr. J. W. Salter, in his monographs for the Palæontographical Society, and hardly does justice to the excellent specimens in Mr. Hollier's cabinet, which they are intended to represent.

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#### OBITUARY.

SAMUEL P. WOODWARD, Ph.D., A.L.S., F.G.S., Assistant-Palæontologist in the British Museum, and Examiner in Natural Sciences to the Council of Military Education, was born September, 17, 1821. He was the second son of the late Samuel Woodward, of Norwich, well known to geologists and antiquaries as the author of a 'Geology of Norfolk' (1833), 'Synoptical Table of British Organic Remains' (1830), a 'History of Norwich Castle' (posthumous, 1847), and various papers in the 'Archæologia' of the Society of Antiquaries. Shortly after his father's death, he was temporarily employed (in 1838) in the library of the British Museum, and in 1839 succeeded Mr. Searles Wood as Sub-curator of the Geological Society of London, and was elected a Member of the Botanical Society and an Associate of the Linnæan. In 1845, he was appointed Professor of Botany and Geology in the Royal Agricultural College, Cirencester, and was one of the founders of the Cotteswold Naturalists'