

DEVONIAN AND OLD RED SANDSTONE.

SIR,—I wish to call attention to what Mr. Horace Woodward, in his interesting "Geology of England and Wales," says on the above subject. At page 72 of Mr. Woodward's book, and paragraph at the foot of the page, beginning "Mr. Etheridge places these limestones," etc., the reader will notice two principal points: first, the probable conformability of the Culm-measures on the Devonian Limestones, and secondly that the Cockington beds, "similar in character to Old Red Sandstone," are beneath the Limestones.

Sir H. de la Beche questioned this last point (see page 72 of the "Report"), . . . "And it becomes difficult to determine whether these Sandstones are higher in the series than the Torquay and Tormoham Limestones, or whether we may consider them represented by the Red Sandstones occurring amid the beds inferior to the Limestones which extend from Meadfoot Sands to Upham." Dr. Holl went further, and pronounced them higher than the Berry Park Slates, and these in their turn higher than the Limestone.

Assuming, however, that the Cockington beds are the same as the red beds forming the heart of the Torquay peninsula (and the Torquay geologists do not appear to be troubled with a doubt on this score), I will venture to add a rider to Mr. Woodward's paragraph, viz., that "Upper South Devon Slates" are a fiction. For the Cockington beds, being older than the limestone, will become inverted as they range westwards by Beacon Hill, having the Wildwood and Berry Park Slates conformably between them and the Limestones, and standing in the place of the main mass of Lower Slates.

In Dr. Holl's hypothetical section of the inversions of the Kingsbridge promontory (page 438 of his Memoir, Q. J. G. S., 1868), as I read it, to whatever dimensions the supposed Upper Slates may swell out, he yet conceives the Red Grit Group (*d*) to be higher still. May the Slates be the Lower Slates, and the Red Grit Group lower still?

Before we need work out details and draw boundary-lines, it is manifestly of the utmost importance that we should read our sections aright. The Plymouth Limestone might thus occupy an inclined trough, and we should be relieved from the supposition of such a rapid thinning out as must be the case if it be intercalated between two slate groups. The Sharkham Point Limestone would be similarly circumstanced, its southern outcrop being inverted.

Speaking, then, in very general terms, grey colours and slaty rocks would mantle round red grit areas, and on the other hand they would surround and support lines or oases of limestone, these being frequently doubled on themselves and rarely showing their true summit.¹ The Limestone is occasionally brought into abrupt contact with the red beds by faulting, as at Kent's Cavern Coppice on the north side of the Lincombe Hill.

From my study of the country it appears to me a necessary consequence of the Cockington red beds being beneath the Limestones

¹ Perhaps among the highest of the series may be the thin-bedded Red Clymenia Limestone of Lower Dunscombe, near Chudleigh.

that there are no upper slates. But this obviously follows if the conformability of the Culm-measures and the Limestones be admitted, as the Culm-measures at Ogwell and the Berry Park Slates at Loventor cannot both be conformable on the Great Devon Limestone; and this is tantamount to allowing that the slates are beneath.

Dr. Holl says truly that the organic remains of the Upper Slates of Berry immediately above the Limestones do not appear to differ from those beneath them. This is so far in favour of their being one and the same thing.

Let me close, however, with saying that until within the last month, I held, in spite of many perplexities, the same views with Dr. Holl, but since the appearance of Mr. Woodward's book, I quite think that he has found the clue to unravel the country.

DARTINGTON HALL, October 31st, 1876.

A. CHAMPERNOWNE.

HARPACTIRA v. *HARPACTES*.

SIR,—Finding that the generic term *Harpactes* has been appropriated by the Ornithologists, I beg leave to substitute *Harpactira* for the fossil fish described in the October Number of this MAGAZINE (p. 441).

PHILIP GREY EGERTON.

FURTHER LOCALITIES FOR *ACANTHOSPONGIA SMITHII*, YOUNG,
AND *ESTHERIA DAWSONI*, JONES.

SIR,—Will you allow me to give one or two further localities for this interesting Carboniferous fossil, described by Mr. J. Young at the late meeting of the British Association in Glasgow. A number of the spicules of *Acanthospongia Smithii* (see Armstrong, Young, and Robertson's Cat. W. Scottish Fossils, 1876, p. 38) have been presented to the Survey Collection by Mr. Smith, who first discovered the fossil, through Mr. J. Bennie, from the typical locality, Cunningham Bealand, near Dalry, Ayrshire. With the aid of these specimens I am enabled to state that it occurs in the No. 1 Limestone of the Calderwood Series (Lower Carboniferous Limestone Group) at East Drumloch Quarry, near East Kilbride, Lanarkshire; again in limestone in the railway cutting at Waterland, Lugton Inn, near Dunlop, Ayrshire; and lastly in the east of Scotland at one of the Currielee Quarries, Tyne Water, near Borthwick, Edinburghshire.

When collecting in the neighbourhood of Dunbar within the last month, Mr. J. Bennie hit upon a bed of shale in the Red Sandstone, or Lower Group of the Calciferous Sandstone Series, at the base of the Carboniferous system in the East of Scotland, containing peculiar plant remains, a number of modioliform bivalves, and an *Estheria*, which Prof. T. Rupert Jones, F.R.S., tells me is scarcely, if at all, to be distinguished from the Nova-Scotian Lower Carboniferous form *E. Dawsoni*, Jones.

R. ETHERIDGE, JUN.

EDINBURGH.

MR. J. F. WHITEAVES, F.G.S., formerly of Oxford, England, who for thirteen years has held the post of Scientific Curator and Secretary to the Natural History Society of Montreal, has been recently appointed Palæontologist to the Geological Survey of Canada, vacant by the death of Mr. E. Billings, F.G.S.