

seemed to us to be a continuation of the Hessele clay and sand. The thickness presented by this clay was greater than that presented by the Hessele along the Holderness coast section, and it was usually much fuller of boulders. This feature, however, seems due to similar causes to those which account for the greater thickness of the Upper clay of the North-west, since, like the area of that clay, the Vales of York and of the Tees lie contiguous to the Pennine Chain, and would, in like manner to the Lancashire lowlands, be copiously supplied by material brought down by glaciers occupying its valleys. Information furnished me by Mr. Topley, of the Geological Survey, of sections in Northumberland, and the perusal of a paper by Mr. Howse relative to the beds of that county and of Durham, lead me to think that the Hessele Group is continued to the frontier of Scotland; but how far it may penetrate that part of Britain I have no information.

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#### NOTICES OF MEMOIRS.

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- I.—SCHEME FOR THE CONSERVATION OF REMARKABLE BOULDERS IN SCOTLAND, AND FOR THE INDICATION OF THEIR POSITION ON MAPS. By D. MILNE HOME, F.R.S.E., F.G.S. From the Proceedings of the Royal Society of Edinburgh, 1870-71.

THE scheme which was set on foot last summer at Edinburgh, by Mr. Milne Home, for the preservation *in situ* of all the larger and more interesting Boulders of Scotland, has now assumed a definite shape. The paper in which the promoter discussed the subject, and ably demonstrated its importance, has been largely circulated among geologists and others North of Tweed, and, we believe, to some few in the North of England. Accompanying the papers are forms for recording, in a clear and uniform manner, the occurrence, size, position and nature of every remarkable boulder to be found in the parish or immediate neighbourhood of each observer. In this way a large array of facts will fall into the hands of Mr. Milne Home's Committee, which it will be their business to arrange, tabulate, and otherwise to mould into an available form. This work, if properly conducted, should be much more than a mere catalogue, and indeed would far outweigh in general value the actual preservation of the more noteworthy of the boulders themselves. It would throw light upon many points connected with the transport of Boulders in North Britain which are at present by no means clear to us, and all students of glacial phenomena would hail such a work as one of primary importance to them. One rule, however, which the Committee have printed at the head of their forms will, it seems to us, if adhered to, materially lessen the value of the undertaking, and that is embodied in the note limiting the stones to be registered to those above a certain number of tons in weight.

Now it is obvious that from a geological point of view a comparatively small block may in many cases be, from its position or composition, or from very distinct indications of its origin, much better

worth noting and describing, and may furnish a far more instructive account of its travels, than an enormous monolite whose only merit is size. In cases of this kind the observers should be allowed to use their own discretion, and should record not only what is huge, but what is of value; and no doubt many of them will do so, notwithstanding the recommendation of the Committee to the contrary.

With regard to the preservation which will, we presume, follow this census of the Boulders, the subject connects itself naturally with the preservation of all our out-door objects of scientific and historical interest, and more especially with that of the so-called Druidic monuments, and of the numerous inscriptions and sculptures on natural rock-faces which are yearly disappearing from Britain under the brutal treatment of tourist roughs. That such a general curatorship of the monumental curiosities of the country is not unthought of, we have an earnest of in the purchase of Avebury by Sir John Lubbock.

G. A. L.

March 12, 1872.

\* \* \* In connexion with the foregoing we append the following Note, which may prove of interest to those who are engaged in collecting information respecting Erratics.—EDIT. GEOL. MAG.

## II.—NOTE ON A BOULDER NEAR OLD CLEEVE, WEST SOMERSET.

By S. G. PERCEVAL, F.G.S.

IT may be worth mentioning in your MAGAZINE, that a large shrub-grown Boulder, seven or eight feet in height and several feet in circumference, formerly stood at the base of the hill, in a field to the west, immediately below New Barn, about a mile north of Old Cleeve Church. The rock composing it was felspathic or siliceous, exceedingly hard and compact, with angular fracture, of a dull yellowish colour, in parts mottled and striated of a greenish-black colour. Spherical concretions—of the same mineral character—with a concentric structure, some attaining the size of a cannon-ball, occurred in portions of the mass. There was no trace of organic remains, except some markings which might indicate the presence of organisms of a low type. According to Professor Ramsay, to whom I sent some specimens a few years ago—which are, perhaps, still at Jermyn Street—a rock of a similar description occurs in Carnarvonshire. From its position at the base of the hill, it might be supposed that the boulder had been deposited there at a time when the sea extended thus far. The coast at Blue Anchor is at present more than a mile distant. The occurrence of such a boulder in the neighbourhood was a circumstance quite unique. It was probably perfectly distinct from any formation in the West of England, and I have never seen a specimen of this kind, possessing so much interest, or whose origin was more unaccountable.

A smaller fragment of the same rock existed in a lane to the north of Old Cleeve Church, less than a mile distant from the principal boulder, and at about the same altitude.

I am sorry to say that the boulder has within the last few years been broken up for the purpose of mending the roads.

It may be worth mentioning in connexion with this boulder, that on the brow of the hill, in a field on the south of the Watchet Road, beyond the top of the hill descending to Blue Anchor, there was formerly a small boulder of quartz conglomerate projecting above the turf. Also at low-water mark off the commencement of the Alabaster Cliffs at Blue Anchor, a large round boulder of the same conglomerate, which probably had dropped from the top of the cliff, —as it has been gradually worn away—where it would have been in the same relative position with the previous boulder as regards the edge of the hill. These boulders may have been derived from a Carboniferous or older conglomerate. I am not aware of such a conglomerate in the New Red formation.

The Drift overlying the country is, in a great measure, derived from the Devonian rocks of the district, with a large intermixture of rolled quartz and hæmatite, which occur abundantly in the Brendon Hills. In the flat country, between Blue Anchor and Withycombe, there is a deposit of angular grauwacke drift, which, between Blue Anchor and the Pill (a small river), is overlain by a deposit of peat and remains of a forest, with occasional horns, etc., of red deer. This drift is exposed below the beach near the mouth of the Pill at Blue Anchor.

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## REVIEWS.

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I.—PRINCIPLES OF GEOLOGY; OR, THE MODERN CHANGES OF THE EARTH AND ITS INHABITANTS CONSIDERED AS ILLUSTRATIVE OF GEOLOGY. By SIR CHARLES LYELL, Bart. Eleventh and entirely Revised Edition. Murray. 1872.

II.—THE STUDENT'S ELEMENTS OF GEOLOGY. By the same Author. Murray. 1871.

IT has been well remarked that “there is no subject in the whole realm of human knowledge that cannot be rendered clear and intelligible if we ourselves have perfectly mastered it.” We are, therefore, pleased to see our greatest authorities coming forward in answer to the increasing demand for a more popular teaching of science, and gladly welcome a new work, and a new edition of an old work, from the pen of Sir Charles Lyell.

I.—It is more than forty years since the *Principles of Geology* first appeared. In those days the true methods of scientific investigation were but ill understood, and Cuvier's *Theory of the Earth* was supposed to offer a sufficient explanation of the laws which have governed the formation of its crust. To examine the modern changes in the organic and inorganic world, to study the operations of Nature as far as they come under our direct observation, and then to compare the phenomena observed in the rocks with results of agencies which we have seen in operation, was a mode of treating the subject which recommended itself at once to the common sense and growing freedom of thought of the age.