

accepted, Mr. Wickham King having shown the materials to have been derived from land-masses in the neighbourhood, and Mr. R. D. Oldham having pointed out their resemblance to certain Indian breccias.

The so-called Dolomitic Conglomerate of the South-West of England, which exhibits similar characters, though on a smaller scale, and the remarkable breccias in the Upper Oolite of Caithness described by Professor Judd, are next noticed, after which the author passes on to the breccia-beds in the Alpine Flysch, taking as examples those of the Habkerenthal and of the Val des Ormonts. The former apparently are more sporadic in character, and are suggestive of the intervention of floating ice; the latter are more regularly interbanded, and that with true marine deposits: their occurrence is extremely difficult to explain, without assuming the existence of a mountain range or a great highland district in their immediate neighbourhood.

When we seek for parallels to these breccias in deposits of late date or in process of formation, we find some resemblances to them in the breccias of Gibraltar described by Sir Andrew Ramsay and Professor James Geikie, in the stone-rivers of the Falkland Isles described by Sir Wyville Thomson, and in the breccias of Persia and other parts of Central Asia described by Dr. Blanford. The author accordingly infers the Rothliegende (and probably the Triassic) breccias to be indicative of a continental climate, due to a great extension of land or more probably the existence of a mountain region on the west—winters with severe cold and snow, but rather hot and arid summers. The Caithness breccias were perhaps more analogous to the stone-rivers of the Falkland Islands, but they also indicate a rather low temperature; while the Flysch breccias land us in the following dilemma, namely, that either similar temperatures existed in Switzerland, and that there was also an important highland district, of which no remnant can be found, within a short distance of the breccia-beds; or they must be the product of a range not inferior to the present Alps, which also has completely disappeared, and would be (for reasons given) very difficult to locate. But, even in the latter case, we seem forced to admit that a temperature, if not lower, at any rate not higher than the present, prevailed in Central Europe late in the Eocene Period.

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## CORRESPONDENCE.

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### EFFECTS OF LIGHTNING NEAR SNOWDON.

SIR,—I found last November on the hills between Cynicht and Nant y Mor two crags that had been struck by lightning. The scars on one of them were so fresh that I felt sure they had been made during a heavy thunderstorm which passed over the district on the 29th of last July, the only thunderstorm there was in this part of Wales last Summer. On asking Mr. Roberts of Gelli Iago, who farms the land, I was told that such was the case, and that the

other crag had been struck during the very heavy thunderstorm which passed over the district on a Sunday evening in the Summer of 1898 (I do not remember the exact date), when several beasts were killed by lightning. In this case some blocks have been thrown eighteen yards from the parent rock; the largest of these is between ten and eleven cubic feet in size, and there are several others lying beside it measuring three cubic feet and less. One huge block measuring sixty-four cubic feet had been thrown twenty-six yards. There are no marks of vitrification on the stricken crags nor on the detached fragments. The lightning has done nothing more than to break off slices and chunks and cast them to a distance.

On subsequently examining the ground again I found several other places where the rocks had been struck by lightning.

The name of the place given on the Ordnance Map is Cerig y Mellt. If this name is correct it is significant, for the words mean 'rocks of lightning'; but there is some doubt as to what is the correct name, for Mr. Roberts tells me that he learnt from his father to call the place Cerig y Myllt, which means 'rocks of the wethers.'

J. R. DAKYNS.

SNOWDON VIEW, NANT GWYNANT, BEDDGELERT.

January 25, 1902.

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## OBITUARY.

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### HON. CLARENCE KING, F.G.S.

BORN

DIED DECEMBER 24, 1901.

In the death of Clarence King geological science has lost one who rendered distinguished service in the surveys of the United States. He was born at Newport, Rhode Island, and graduated from the Sheffield Scientific School of Yale University in 1852. He prepared the geological and topographical atlas and several important reports for the Geological Exploration of the Fortieth Parallel, and when in 1880 this and other geological surveys were amalgamated as the United States Geological Survey, Mr. King was appointed Director. Under his charge the Survey was carried on with vigour, and special investigations were made on regions of exceptional economic importance. A year later, however, Mr. King relinquished his position, desiring to devote himself unfettered to geological research. His fame, however, rests on his official work. Mr. King died at Phoenix, Arizona, on December 24th, 1901.

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### REV. FREDERICK SMITHE, M.A., LL.D., F.G.S.

BORN 1822.

DIED DECEMBER 9, 1900.

WE learn from the recently published Address of the President of the Cotteswold Club (Mr. E. B. Wethered) of the death more than a year ago of Dr. Frederick Smithe, vicar of Churchdown in Gloucestershire. He laboured for many years with great enthusiasm