

RED ROCKS OF TYRONE AND DERRY COUNTIES.

SIR,—From Mr. Ketley's paper on the coals under the "Red Rocks" of South Staffordshire, we learn that the Coal-measures under certain circumstances may be made up of red strata, and that it is erroneous to class all such red rocks as Permian or New Red Sandstones.

In the Counties Tyrone and Derry there are some of these doubtful aged rocks. The highest of them under the Chalk, called "Redfre," seem to lie unconformably on the others, and probably to belong to the New Red Sandstone. The older ones were in part classified by the late General Portlock as Old Red Sandstone, and in part as Carboniferous, but now the general belief seems to be that they belong to the Permian. During a brief examination of the country made some time since, I found in places among the Coal-measure rocks (which I supposed to be the equivalent of the lower Scotch Coal-measures, such as occur in the neighbourhood of Edinburgh) considerable tracts of these red strata, which led me to suspect that most, if not all, these red rocks of the Counties Tyrone and Derry are portions of the associated Carboniferous rocks. Time, however, did not allow me to investigate the country minutely. In favour of their being Permian, there are fossils said to belong to the Permian type, that have been found in at least one locality; but are not these so-called Permian fossils very like stunted and ill-favoured forms of the Carboniferous fossils, and like what we might expect to meet in those portions of the Carboniferous sea, where the water was impregnated with iron or some other substance adverse to the growth and proper development of animal life? G. H. KINAHAN.

THE VOLCANIC DUST OF BARBADOES, 1812.

SIR,—When reading the interesting paper by Dr. Flight on the "History of Meteorites"¹ in the April Number of the *GEOLOGICAL MAGAZINE* (p. 159), I found a reference to the composition of the Volcanic Dust which fell on the Island of Barbadoes during the great eruption of the volcano of Le Souffrier, in St. Vincent, in 1812, described by Humboldt, and more recently by Lyell,² Daubeny,³ and Scrope.⁴ Having just received some of this dust, placed in my hands for microscopical examination,—which had been collected by a relative of mine⁵ at that time resident in Barbadoes,—I have thought it may be worth while to note the results.

It may be as well to premise, that this eruption was preceded by the great earthquake of Caraccas in Venezuela,⁶ which commenced on the 26th March of the same year, and was felt all along the valley of the Mississippi and the West Indian Islands. The eruption of Le Souffrier took place about a month afterwards, namely, on 27th April, opening by a grand discharge of ashes, which commenced to

¹ Dr. Flight's articles on Meteorites commenced in *GEOL. MAG.*, Jan., 1875.

² "Principles of Geology," vol. ii. ³ Daubeny, *Volcanos*, 2nd edit. p. 469.

⁴ Scrope on *Volcanos*, p. 432. ⁵ The late Mrs. C. T. Cooke, of Cheltenham.

⁶ See *GEOL. MAG.* 1871, Vol. VIII. p. 348.

fall on the night preceding the 1st May on Barbadoes, rendering the sky dark at noonday, and finally, after three days continuance, covering all the surface of the country with a hideous pall of dark brown ashes, which it took many a day to remove.

I well remember hearing my deceased relative describe the horror and consternation which pervaded the household and district on that fatal May Day, which realized to the mind one of the plagues of Egypt. The dust appears to the naked eye as an exceedingly fine impalpable powder, of a rich brown colour; with an ordinary pocket-lens the grains are distinctly visible.

The distance from the volcano to Barbadoes is exactly 100 English miles, and, as Daubeny observes, it is remarkable that the ashes were carried to Barbadoes notwithstanding the east wind which was blowing at the time, proving the existence of an upper and counter atmospheric current. As the volcanic mountain rises 4,740 ft. above the sea, the dust may have been blown to a height of 8,000 to 10,000 ft., and thus come within the influence of an upper current of air.

With an objective power of fifty-five diameters, the dust is seen to consist of angular, or subangular grains of a translucent reticulated mineral amongst which are dispersed black particles, sometimes angular, and a very few others of a rounded form and bronze colour. On examining the translucent grains with the polariscope, and under several different magnifying powers, it became evident they consist of felspar. The structure is reticulated and in a very few cases banded; but owing to the irregularity of the forms of the grains, I was unable to determine to which class of the felspars they are referable. My impression is that they are the dust of sanidine, and of a small proportion of plagioclase; such, in fact, as would result from the pounding up of trachyte. The black grains are those of magnetite, and on placing a small magnet near the dust, a movement is immediately observed amongst the grains, which increases in intensity as the magnet approaches contact.

It would be interesting to determine chemically whether or not titanitic acid is present, but I fear the grains are too minute for such a determination. The bronze-coloured grains are probably pyrites; they are opaque, but slightly translucent around the margin. I did not observe any other mineral substance.

EDWARD HULL.

GEOLOGICAL SURVEY OF IRELAND, DUBLIN.

MISCELLANEOUS.—ROYAL SOCIETY OF EDINBURGH.—On the 5th April, the ninth ordinary meeting of the present session of the Royal Society was held in the Royal Institution—Professor Kelland, Vice-President, in the Chair. Professor Geikie addressed the Society, explaining at length the grounds on which the Council had awarded the Neill prize for the triennial period 1871–74, to Mr. Charles William Peach for his contributions to Scottish Zoology and Geology, and for his recent contributions to fossil Botany. Mr. Peach, the Professor said, had materially increased our acquaintance with the marine fauna of the British seas; he had made known the nest-building habits of fishes and mollusca, and had made important contributions to fossil botany and palæontology. Professor Kelland, in presenting the medal, said that Mr. Peach had cultivated science disinterestedly and in the face of nature, and not from books at second-hand.