

## RADIOLARIAN ROCKS OF THE CULM MEASURES, DEVONSHIRE.

SIR,—I wish to call attention to the unfortunate mistake which I have made on pp. 4, 105, 106, 107, 108, and 109 of the Geological Survey Memoir on Plymouth and Liskeard, 1907, in attributing to Mr. Fox alone various statements which I have quoted from the joint papers of Messrs. Hinde and Fox on the Radiolarian rocks of the Culm Measures, in the *Quart. Journ. Geol. Soc.*, vol. li, 1895, and in the *Transactions of the Devonshire Association*, vol. xxviii, 1896, and in *Proc. Geologists' Association*, vol. xx, pp. 88, 92, 1907. I desire to express my regret, and to offer my apologies to these authors for the unintentionally deficient references to their joint papers.

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28, JERMYN STREET, S.W.  
February 12th, 1908.

## THE LIQUID AND PNEUMATOLYTIC THEORIES OF GRANITIC MINERALS.

SIR,—I have noticed with much regret that the conclusions arrived at by the Geological Survey<sup>1</sup> as to the crystallisation of the West Country Granites are in hopeless conflict with several communications which the *GEOLOGICAL MAGAZINE* has honoured me by publishing.

Broadly speaking, the Survey authorities have adopted the high temperature gaseous theory,<sup>2</sup> whereas I have assumed the impregnability of the low-temperature liquid theory. Any attempt at reconciliation is useless, but it may be as well if I submit the list of the authorities on which I have relied. They are in order of date as follows:—

- (1) Sorby, "Microscopical Structure of Crystals": *Q.J.G.S.*, 1858.
- (2) Sorby & Butler, "Rubies, Sapphires, and Diamonds": *Proc. R.S.*, 1869.
- (3) Hartley, "The Identification of Liquid Carbonic Acid in Mineral Cavities": *Royal Micro. Soc.*, March 1st, 1876.
- (4) Sorby, "On the Critical Point in the Consolidation of Granitic Rocks": *Mineralogical Mag.*, September 6th, 1876.
- (5) Hartley, "On Variations in the Critical Point of Carbon Dioxide in Minerals," etc.: *Journ. Chem. Soc.*, September, 1876.
- (6) Hartley, "Observations on Fluid Cavities": *Journ. Chem. Soc.*, March, 1877.
- (7) Hartley, "Attraction and Repulsion of Bubbles by Heat": *Proc. R.S.*, 1877.
- (8) Hartley, "On the Constant Vibration of Minute Bubbles": *Proc. R.S.*, 1877.
- (9) Report on the Conditions under which Liquid Carbonic Acid exists in Rocks and Minerals, by a Committee consisting of Walter Noel Hartley, F.R.S.E., E. J. Mills, D.Sc., F.R.S., and W. Chandler Roberts, F.R.S. Drawn up by W. N. Hartley, F.R.S.E.: *Rep. Brit. Assoc.*, 1877.
- (10) A. Daubrée, "Études Synthétiques de Géologie Expérimentale": 1879.
- (11) Sorby: Address to the Geological Section of the British Association, 1880.
- (12) Fouqué et Lévy, "Synthèse des Minéraux et des Roches": 1883.

I am bound to admit that the first chapter of Daubrée's "Experimental Geology" justifies the views of the Geological Surveyors, and

<sup>1</sup> "Land's End District," pp. 49–60, 1907.

<sup>2</sup> "Pneumatolysis" refers to the action of gases above critical temperature" ("Falmouth and Camborne," p. 168, 1906).