

dary." Many examples supporting the above principle have been obtained from meteorological observations, and synthetically the universal existence of the above proposition is assumed. It is suggested that the present principle must be derived from "the principle of equality."—C. J. P. Cave: Some notes on meteorology in war-time.

Books Received.

An Experiment in Synthetic Education. By Emily C. Wilson. With Chart for Five Years' Work. Pp. 62. (London: G. Allen and Unwin, Ltd.) 4s. 6d. net.

Twenty-five Years in East Africa. By Rev. J. Roscoe. Pp. xvi+288+19 plates. (Cambridge: At the University Press.) 25s. net.

Treatise on Fractures in General, Industrial, and Military Practice. By Prof. J. B. Roberts and Dr. J. A. Kelly. Second edition, revised. Pp. x+755. (Philadelphia and London: J. B. Lippincott Co.) 42s. net.

Biological Chemistry. By Prof. H. E. Roaf. Pp. xvi+216. (London: Methuen and Co., Ltd.) 10s. 6d. net.

The Fourth Dimension Simply Explained: A Collection of Essays Selected from those Submitted in the *Scientific American's* Prize Competition. By Dr. H. P. Manning. Pp. 251. (London: Methuen and Co., Ltd.) 7s. 6d. net.

Geofysiske Publikationer, vol. 1, No. 1. The Position in Space of the Aurora Polaris, from Observations made at the Haldde Observatory, 1913-14. By L. Vegard and O. Kroggers. Pp. vii+172+plates. (Kristiania: A. W. Brøgger.)

Annales de l'Observatoire astronomique de Tokyo. Tome 5, 4 fascicule: Studies on Astronomical Timekeepers and Time-preserving Systems. By Kiyofusa Sôtome. Pp. ii+59. (Tokyo: Imperial University.)

New Zealand. Department of Mines: Geological Survey Branch. Palæontological Bulletin, No. 8: Lists of New Zealand Tertiary Mollusca from various Localities Examined and Named from 1913 to the End of 1917. By H. Suter. Pp. vii+107. (Wellington.)

Die Tagebücher von Dr. Emin Pascha. Herausgegeben von Dr. Franz Stuhlmann. Band VI., Zoologische Aufzeichnungen Emin's und seine Briefe an Dr. G. Hartlaub, bearbeitet von Prof. Dr. H. Schubotz. Pp. viii+301. (Hamburg und Braunschweig: G. Westermann.) 200 marks.

The Advancement of Science: 1921. Addresses Delivered at the 89th Annual Meeting of the British Association for the Advancement of Science, Edinburgh, September, 1921. (London: J. Murray; The British Association.) 6s. net.

A Short Course in Commercial Arithmetic and Accounts. By A. Risdon Palmer. (Bell's Mathematical Series.) Pp. x+171+xv. (London: G. Bell and Sons, Ltd.) 2s. 6d.

The Use of Graphs in Commerce and Industry. By A. Risdon Palmer. (Handbooks of Commerce and Finance.) Pp. ix+47. (London: G. Bell and Sons, Ltd.) 2s. net.

Practical Mathematics. By A. Dakin. Part 1. Pp. viii+362+12+xxiv. (London: G. Bell and Sons, Ltd.) 5s.

Index Kewensis Plantarum Phanerogamarum. Supplementum Quintum Nomina et Synonyma Omnium Generum et Specierum ab Initio Anni MDCCCCXI Usque ad Finem Anni MDCCCCXV Nonnulla Etiam Antea Edita Complectens. Ductu et Consilio D. Prain, Confecerunt Herbarii Horti

Regii Botanici Kewensis Curatores. Pp. iii+277. (Oxonii: E. Prelo Clarendoniano.) 76s. net.

Memoirs of the Geological Survey. Summary of Progress of the Geological Survey of Great Britain and the Museum of Practical Geology for 1920. Pp. iv+112. (London: E. Stanford, Ltd.; Southampton: Ordnance Survey Office.) 3s. 6d. net.

Memoirs of the Geological Survey: Scotland. The Economic Geology of the Central Coalfield of Scotland. Area IX., Carluke, Strathaven, and Larkhall, with Braidwood, Netherburn, Auchenheath, Blackwood, and Stonehouse. By L. W. Hinxman and others. Pp. viii+148. (London: E. Stanford, Ltd.; Southampton: Ordnance Survey Office.) 8s. net.

The Continents of the South. By A. B. Archer. (A Secondary School Course in Geography, Book II.) Pp. xvi+272. (London: W. Heinemann.) 4s. 6d. net.

Soil Conditions and Plant Growth. By Dr. E. J. Russell. (Rothamsted Monographs on Agricultural Science.) 4th edition. Pp. xii+406. (London: Longmans, Green and Co.) 16s. net.

The Physical Properties of Colloidal Solutions. By Prof. E. F. Burton. (Monographs on Physics.) 2nd edition. Pp. viii+221. (London: Longmans, Green and Co.) 12s. 6d. net.

The Transition Spiral and its Introduction to Railway Curves: With Field Exercises in Construction and Alignment. By Arthur L. Higgins. Pp. viii+111. (London: Constable and Co., Ltd.) 6s. net.

Diary of Societies.

WEDNESDAY, SEPTEMBER 28.

FARADAY SOCIETY (at Institution of Electrical Engineers), at 4.30.—General Discussion on Catalysis, with Special Reference to Newer Theories of Chemical Action. Part 1, The Radiation Theory of Chemical Action, opened by Prof. J. Perrin. Part 2, Heterogeneous Reactions, opened by Prof. I. Langmuir. Expected speakers:—Prof. Arrhenius, Prof. V. Henri, Prof. E. C. C. Baly, Prof. F. G. Donnan, Prof. W. C. McC. Lewis, Prof. A. Lindemann, Prof. A. W. Porter, and Dr. E. K. Rideal.

CONTENTS.

	PAGE
Causes of Fluctuations in the Birth-rate	105
Indian Land Mollusca. By Lt.-Col. H. H. Godwin-Austen, F.R.S.	106
Chemistry of Anthracene. By Dr. M. O. Forster, F.R.S.	108
The Future of Geometrical Optics. By L. N. G. F.	109
Kite Balloons. By Dr. S. Brodetsky	111
Our Bookshelf	111
Letters to the Editor:—	
Communism and Science.—Dr. J. W. Mellor	113
The Disaster to the Airship R38.—Dr. Wm. Leighton Jordan; The Writer of the Article	114
The British Association in Edinburgh. By C. G. K.	115
Science and Crop Production. (With Diagrams.) By E. J. Russell, D.Sc., F.R.S.	116
Applied Geography. By D. G. Hogarth, M.A., D.Litt., C.M.G.	120
Stellar Parallax. By J. Jackson	124
Obituary:—	
John Robert Pannell. By N. R. C.	127
Notes	127
Our Astronomical Column:—	
September Meteors	131
Ionisation in Stellar Atmospheres	131
Variable Stars	131
Spontaneous Combustion in Coal Mines	132
Lighting of Factories and Workshops	132
The World's Wheat Supply	133
University and Educational Intelligence	134
Calendar of Scientific Pioneers	134
Societies and Academies	135
Books Received	136
Diary of Societies	136