

Photo-Electricity: the Liberation of Electrons by Light. By Dr. H. S. Allen. Pp. 219. (London: Longmans and Co.) 7s. 6d. net.

Modern Seismology. By G. W. Walker. Pp. xii+88+plates. (London: Longmans and Co.) 5s. net.
Hereditry and Sex. By Prof. T. H. Morgan. Pp. ix+282. (London: Oxford University Press.) 7s. 6d. net.

The Life of the Mollusca. By B. B. Woodward. Pp. xi+158+xxxii plates. (London: Methuen and Co., Ltd.) 6s.

Ordnance Survey. Professional Papers. New series. No. 2, An Investigation into the Accuracy of the Principal Triangulation of the United Kingdom. By Capt. H. St. J. L. Winterbotham. Pp. 20+v plates. (London: H.M.S.O.; Wyman and Sons, Ltd.) 2s.

Rays of Positive Electricity and their Application to Chemical Analyses. By Sir J. J. Thomson. Pp. vi+132. (London: Longmans and Co.) 5s. net.

Plant Physiology. By Dr. L. Jost. Authorised English translation by R. J. Harvey Gibson. Supplement incorporating the alterations of the second edition of the German original. Pp. 168. (Oxford: Clarendon Press.) 2s. 6d. net.

DIARY OF SOCIETIES.

THURSDAY, DECEMBER 11.

ROYAL SOCIETY, at 4.30.—Intermittent Vision: A. Mallock.—Attempts to Observe the Production of Neon or Helium by Electrical Discharge: Hon. R. J. Strutt.—The Relations between the Crystal-symmetry of the Simpler Organic Compounds and their Molecular Constitution: W. Wahl.—The Selective Absorption of Ketones: Prof. G. G. Henderson and I. M. Heilbron.—Absolute Measurements of a Resistance by a Method based on that of Lorenz: F. E. Smith.—A Determination of the Electromotive Force of the Weston Normal Cell in Semi-absolute Volts. (With a Preface by Prof. H. L. Callendar, F.R.S.): A. N. Shaw.—Elastic Hysteresis in Steel: F. E. Rowett.—A Simple Form of Micro-balance for Determining the Densities of Small Quantities of Gases: F. W. Aston.—A Second Spectrum of Neon: T. R. Merton.

MATHEMATICAL SOCIETY, at 5.30.—The Linear Integral Equation: Prof. E. W. Holson.—Generalised Hermite Functions and their Connection with the Bessel Functions: H. E. J. Curzon.—Limiting Forms of Long Period Tides: J. Proudman.—The Number of Primes of Same Residuacity: Lieut. Col. Cunningham.—Some Results on the Form Near Infinity of Real Continuous Solutions of a Certain Type of Second Order Differential Equations: R. H. Fowler.—The Potential of a Homogeneous Convex Body and the Direct Integration of the Potential of an Ellipsoid: S. Brodetsky.—The Dynamical Theory of the Tides in a Polar Basin: G. R. Goddsbrough.—Proof of the Complementary Theorem: Prof. J. C. Fields.

CONCRETE INSTITUTE, at 7.30.—Some Fallacies in Testing Cement: L. Gadd.

ROYAL SOCIETY OF ARTS, at 4.30.—The Cultivation and Manufacture of Indian Indigo: Prof. W. P. Bloxam.

INSTITUTION OF ELECTRICAL ENGINEERS, at 8.—Continuation of Discussion on Dr. Klingenberg's Address on "Electricity Supply in Large Cities."

FRIDAY, DECEMBER 12.

ROYAL ASTRONOMICAL SOCIETY, at 5.—The "Kinetic Theory" of Star Clusters: J. H. Jeans.—Distribution of Sun-spots in Heliographic Latitude, 1874-1913: E. W. Maunder.—Results of Micrometer Measures of Double Stars made with the 28-inch Refractor at the Royal Observatory, Greenwich, in the Year 1912: Royal Observatory, Greenwich.—Probable Papers: An Explanation of Sun-spots, of the Fluctuations of the Moon's Motion, and some other Puzzles of the Solar System: H. H. Turner.—The Spectra of the Wolf-Rayet Stars: J. W. Nicholson.—The Equatorial Current of Jupiter: Rev. T. E. R. Phillips.

MALACOLOGICAL SOCIETY, at 8.—Descriptions of Various New Species of Mollusca: G. B. Sowerby.—Synonymy of the Family Veneridae: A. J. Jukes-Browne.—Descriptions of New Species of Land and Marine Shells from the Montebello Islands, Western Australia: H. B. Preston.

ALCHEMICAL SOCIETY, at 8.15.—Alchemy in China: Prof. H. Chatley.

MONDAY, DECEMBER 15.

ROYAL SOCIETY OF ARTS, at 8.—The Measurement of Stresses in Materials and Structures: Prof. E. G. Coker.

TUESDAY, DECEMBER 16.

ROYAL ANTHROPOLOGICAL INSTITUTE, at 8.15.—A Rough Survey of the Tribes of Western Papua: W. Beaver.—The Non-enclature of Clans in the Pueblo Area: Miss B. Freire Marreco.—Arctic Hysteria in Northern Asia: Miss M. A. Czapliska.

ROYAL GEOGRAPHICAL SOCIETY, at 8.30.—Further Explorations in the N.W. Amazon Valley: Dr. Hamilton Rice.

ROYAL STATISTICAL SOCIETY, at 5.—Cooperative Live Stock Insurance in England and Wales: Sir James Wilson.—Some Material for a Study of Trade Fluctuations: D. H. Robertson.—The Determination of Size of Family, and Incidence of Characters in Orders of Birth from Samples: M. Greenwood and G. Udney Yule.

ILLUMINATING ENGINEERING SOCIETY, at 8.—Some Problems in Daylight Illumination, with Special Reference to School Planning: P. J. Waldram
INSTITUTION OF CIVIL ENGINEERS at 8.—Cyclical Changes of Temperature in a Gas-engine Cylinder: Prof. E. G. Coker and W. A. Scoble.

WEDNESDAY, DECEMBER 17.

ROYAL METEOROLOGICAL SOCIETY, at 7.30.—The Great Rain Storm at Doncaster, September 17: R. C. Mossman and C. Salter.—Recent Studies of Snow in the United States: Dr. J. E. Church, Jun.—The Meteorological Conditions of an Ice-Sheet, and their Bearing on the Desiccation of the Globe: C. E. P. Brooks.

AERONAUTICAL SOCIETY, at 8.30.—The Science of Fast Flying: C. T. Weymann.

ROYAL SOCIETY OF ARTS, at 8.—The Channel Tunnel: A. Fell.

GEOLOGICAL SOCIETY, at 8.—Supplementary Note on the Discovery of a Palaeolithic Human Skull and Mandible at Piltdown (Sussex): C. Dawson and Dr. A. Smith Woodward.

ROYAL MICROSCOPICAL SOCIETY, at 8.—The Binocular Microscopes of the Past and a New Form of the Instrument: Conrad Beck.

THURSDAY, DECEMBER 18.

INSTITUTION OF ELECTRICAL ENGINEERS, at 8.—The Employment of Power in H.M. Post Office: H. C. Gunton.

ROYAL GEOGRAPHICAL SOCIETY, at 5.—The Standardising of Colours and Symbols representing Geographical Data, especially on Small Scale Maps: Prof. A. J. Herbertson.

LINNEAN SOCIETY, at 8.—The Evolution of the Inflorescence: J. Parkin.—*Hypericum desetangsi*, Lamotte, a New British Plant: C. E. Salmon.—The Mouth-parts and Mechanism of Sucking in *Schizoneura lanigera*: J. Davidson.

INSTITUTION OF MINING AND METALLURGY, at 8.

FRIDAY, DECEMBER 19.

INSTITUTION OF MECHANICAL ENGINEERS, at 8.—Mechanical Engineering Aspects of Road Construction: Col. R. E. B. Crompton.

INSTITUTION OF CIVIL ENGINEERS, at 8.—Air-filtration and the Cooling and Ventilation of Electrical Machines: W. E. Gurry.

CONTENTS.

PAGE

The New Physical Chemistry 419
 Veterinary Physiology 420
 Popular Astronomy. By William E. Rolston 420
 Our Bookshelf 421
 Letters to the Editor:—
 The Structure of the Atom.—Prof. E. Rutherford, F.R.S. 423
 The Reflection of X-Rays.—Maurice de Broglie; E. Jacot 423
 Residual Ionisation in Gases.—Prof. J. C. McLennan 424
 The Nile Flood of 1913.—H. E. Hurst 424
 Pianoforte Touch.—Spencer Pickering, F.R.S.; Prof. G. H. Bryan, F.R.S. 425
 Alfred Russel Wallace Memorials.—Prof. R. Meldola, F.R.S., Prof. E. B. Poulton, F.R.S., and Rev. James Marchant 425
 Distance of the Visible Horizon.—R. Langton Cole 425
 The Problem of the University of London 426
 The Plumage Bill. By Sir H. H. Johnston, G.C.M.G., K.C.B. 428
 Notes 430
 Our Astronomical Column:—
 The Structure of the Universe 434
 Journal of the Royal Astronomical Society of Canada 434
 New Nebulae and Variable Stars 434
 Watts's Index of Spectra 435
 Secular Desiccation of the Earth. By E. G. 435
 Astronomy in South Africa 435
 The Origin of Argentine Horses 435
 French Hydrology. By B. C. 436
 Economic Geology of Papua 436
 Meteorology and Geophysics at the British Association 436
 Geography at the British Association 437
 University and Educational Intelligence 439
 Societies and Academies 440
 Books Received 443
 Diary of Societies 444

Editorial and Publishing Offices:

MACMILLAN & CO., LTD.,
 ST. MARTIN'S STREET, LONDON, W.C.

Advertisements and business letters to be addressed to the Publishers.

Editorial Communications to the Editor.

Telegraphic Address: PHUSIS, LONDON.
 Telephone Number: GERRARD 8830.