

action of the monosodium derivative of acetylene on some halogen esters of secondary and tertiary alcohols. The reaction differs from that shown by halogen esters of primary alcohols, and the corresponding acetylene compounds are not formed. Halogen acid is eliminated and ethylene hydrocarbons are produced.—**J. Amar**: The curve of pulmonary ventilation. A study of the effects of physical fatigue on respiration.

April 28.—**M. Léon Guignard** in the chair.—**H. Parenty**: Presentation of a miniature model of a steam recorder. The apparatus, a photograph of which is given, is based on the measurement of pressure in front and behind a constriction in the pipe.—**A. Rigbi**: Michelson's experiment and its interpretation.—**M. Carleman**: The conformable representation of multiply connected domains.—**L. E. J. Brouwer**: The enumeration of finite groups of topological transformations of a torus.—**A. Denjoy**: The true value of definite integrals.—**R. Biquard**: A modification of the fluorometric method of measuring X-rays and its application to the measurement of the radiation from Coolidge bulbs. Measurements with fluorescent screens cannot give a value of the radiation in absolute measure, since the fraction of the incident energy absorbed by such screens may vary, according to the nature of the X-rays, between 53 and 20 per cent. of the whole, and matters are not improved by increasing the thickness of the screen, since the observed brightness is due to the superficial layers only. This difficulty is avoided by the use of a sufficient number of thin screens (0.2 mm.).—**M. de Broglie**: The spectroscopy of the X-rays. The L absorption spectrum of radium.—**J. Bourcart**: The presence of the Priabonian in the Salonica region.

#### BOOKS RECEIVED.

Botany of the Living Plant. By Prof. F. O. Bower. Pp. x+580. (London: Macmillan and Co., Ltd.) 25s. net.

Premiers Eléments d'une Théorie du Quadrilatère Complet. By A. Oppermann. Pp. 76+plate. (Paris: Gauthier-Villars et Cie.)

Technic of Surveying Instruments and Methods, including General and Detailed Instructions for Field and Office Work of Extended Students' Surveys. By Profs. W. L. Webb and J. C. L. Fish. Pp. xvi+319. (New York: J. Wiley and Sons, Inc.; London: Chapman and Hall, Ltd.) 9s. 6d. net.

#### DIARY OF SOCIETIES.

##### THURSDAY, MAY 8.

INSTITUTION OF ELECTRICAL ENGINEERS (Joint Meeting with the Iron and Steel Institute), at 2.30.—**J. Bibby**: Developments in Iron and Steel Electric Furnaces.—**W. H. Booth**: The Booth-Hall Electric Furnace.—**H. A. Greaves**: Application of Electrical Energy to the Melting of Metals.—**R. G. Mercer**: Electric Furnaces in the United Kingdom, 1918.—**Axel Sahlin**: A New Type of Electric Furnace.—**Victor Stobie**: Large Electric Steel Melting Furnaces.

ROYAL INSTITUTION, at 3.—**Dr. H. S. Hele-Shaw**: Clutches.

INSTITUTION OF MINING AND METALLURGY, at 5.30.—Annual General Meeting.—**Hugh K. Picard**: Presidential Address.—**H. Standish Ball**: The Work of the Miner on the Western Front, 1915-18.

OPTICAL SOCIETY, at 7.30.—**Prof. F. J. Cheshire**: Presidential Address—Polarised Light.—**J. Rheinberg**: Graticules.

##### FRIDAY, MAY 9.

ROYAL ASTRONOMICAL SOCIETY, at 5.—**A. W. Clayden**: Note on the Blue Violet Absorption of Venus.—**E. Doolittle**: Note on Espin's List of New Double Stars.—**A. N. Brown**: Observations of U Persei in 1911-19.—**A. Pannekoek**: The Distance of the Milky Way.—*Probable Papers*: **Rev. T. E. R. Phillips**: Micrometrical Measures of Double Stars in 1918.—**Rev. A. L. Cortie**: The Spectrum of Nova Aquilæ, 1918, July 29.—**W. M. Smart**: Note on the Position Line of Navigation.

PHYSICAL SOCIETY, at 5.—**A. E. Bawtree**: Demonstration of a New Method of Producing Coloured Designs upon Glass.—**F. J. Whipple**: Absolute Scales of Pressure and Temperature.—**Dr. A. O. Rankine**: The Transmission of Speech by Light.

ROYAL INSTITUTION, at 5.30.—**Sir George Macartney**: Chinese Turkistan—Past and Present.

MALACOLOGICAL SOCIETY, at 6.—**G. B. Sowerby**: A New Species of Ampullaria in the Geneva Museum.—**Dr. A. E. Boycott**: Parthenogenesis in *Palaudestrina jenkinsi*.—**Tom Iredale**: Notes on the Mollusca of Lord Howe Island.

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##### SATURDAY, MAY 10.

ROYAL INSTITUTION, at 3.—**Prof. H. S. Foxwell**: Chapters in the Psychology of Industry.

##### MONDAY, MAY 12.

ROYAL GEOGRAPHICAL SOCIETY, at 8.30.—**A. Trevor Batty**: Crete: its Scenery and Natural Features.

##### TUESDAY, MAY 13.

ROYAL INSTITUTION, at 3.—**Prof. A. Keith**: British Ethnology—The People of Ireland.

ROYAL ANTHROPOLOGICAL INSTITUTE, at 5.—**Sir Everard im Thurn**: Dwellings and Costumes of Old Fiji, illustrated by Lantern Slides and Specimens.

ZOOLOGICAL SOCIETY, at 5.30.—**Lt.-Col. S. Monckton Copeman**: Experiments on Sex Determination.

##### WEDNESDAY, MAY 14.

ROYAL SOCIETY OF ARTS, at 4.30.—**H. Kelway-Bamber**: Railway Transport in the United Kingdom.

INSTITUTION OF ELECTRICAL ENGINEERS, at 6.—**Major J. Erskine-Murray**: Wireless in the Royal Air Force.

BRITISH PSYCHOLOGICAL SOCIETY (Medical Section), Medical Society of London, 11 Chandos Street, W.1, at 8.30.—**Dr. W. H. R. Rivers**: Inaugural Address—The Objects and Work of the Section.

##### THURSDAY, MAY 15.

ROYAL INSTITUTION, at 3.—**Prof. F. Keeble**: Intensive Cultivation.

ROYAL SOCIETY, at 4.30.—*Probable Papers*: **Prof. W. H. Young**: (1) The Area of Surfaces; (2) Change of the Independent Variables in a Multiple Integral.—**Prof. W. A. Bone** and **R. J. Sarjant**: Researches on the Chemistry of Coal. I. The Action of Pyridine upon the Coal Substance.—**Prof. E. F. Burton**: A New Method of Weighing Colloidal Particles.—**W. E. Curtis**: The Value of the Rydberg Constant for Spectral Series.

ROYAL SOCIETY OF ARTS, at 4.30.—**Prof. H. E. Armstrong**: Soil Deficiencies in India, with Special Reference to Indigo.

INSTITUTION OF ELECTRICAL ENGINEERS, at 6.—**E. A. Laidlaw** and **W. H. Grinstead**: The Telephone Service of Large Cities, with Special Reference to London.

CHEMICAL SOCIETY, at 8.—**B. Blount** and **J. H. Sequeira**: "Blue John" and other Forms of Fluorides.—**G. M. Bennett**: The Nitration of Diphenyl-ethylenediamine.—**D. L. Hammick**: The Destruction of Picric Acid in Nitrating Acid.—**J. C. Irvine** and **J. S. Dick**: The Constitution of Maltose. A New Example of Degradation in the Sugar Group.—**R. J. Manning** and **M. Nierenstein**: The Tannin of the Canadian Hemlock (*Tsuga Canadensis*, Carr).

##### FRIDAY, MAY 16.

ROYAL INSTITUTION, at 5.30.—**Dr. S. F. Harmer**: Sub-Antarctic Whales and Whaling.

##### SATURDAY, MAY 17.

ROYAL INSTITUTION, at 3.—**Dr. J. Wells**: Caesar's Personal Character as seen in his Commentaries.

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