

water by carbonic acid under pressure. Water containing the Eberth bacillus is sterilised by carbonic acid in 20 hours under 10 kg. pressure, 8 to 20 hours under 15 kg., 3 to 9 hours under 20 kg., and 3 to 6 hours under 25 kg. pressure. Data for other micro-organisms are also given.

### BOOKS RECEIVED.

Mimicry in Butterflies. By Prof. R. C. Punnett. Pp. vi+188+plates xvi. (Cambridge: At the University Press.) 15s. net.

A Student's Book on Soils and Manures. By Dr. E. J. Russell. Pp. ix+206. (Cambridge: At the University Press.) 3s. 6d. net.

Soils and Plant Life as related to Agriculture. By Prof. J. C. Cunningham and W. H. Lancelot. Pp. xx+348. (New York: The Macmillan Co.; London: Macmillan and Co., Ltd.) 5s. net.

The Cambridge University Calendar for the Year 1915-1916. Pp. xxvi+1069. (Cambridge: At the University Press.) 7s. 6d. net.

A Course of Modern Analysis. By Prof. E. T. Whittaker and Prof. G. N. Watson. Second edition. Pp. 560. (Cambridge: At the University Press.) 18s. net.

U.S. Bureau of Education. Bulletin No. 27. Whole No. 654. Opportunities for Foreign Students at Colleges and Universities in the United States. Pp. 213. (Washington: Government Printing Office.)

Smithsonian Miscellaneous Collections. Vol. lxxv., No. 3. Hodgkins Fund: A Study of the Radiation of the Atmosphere. By A. Angström. Pp. v+159. (Washington: Smithsonian Institution.)

Homer and History. By Dr. W. Leaf. Pp. xvi+375. (London: Macmillan and Co., Ltd.) 12s. net.

Instinct and Intelligence. By N. C. Macnamara. Pp. 216. (London: H. Frowde and Hodder and Stoughton.) 6s. net.

Contributions from the Jefferson Physical Laboratory of Harvard University for the Years 1913 and 1914. Vol. xi. (Cambridge, Mass.)

Department of Education, Ontario. Educational Pamphlets, No. 9: Laboratory Accommodation in Continuation and High Schools and Collegiate Institutes. By G. A. Cornish. Pp. viii+144. (Toronto: L. K. Cameron.)

### DIARY OF SOCIETIES.

#### THURSDAY, DECEMBER 9.

ROYAL SOCIETY, at 4.30.—Croonian Lecture: The Respiratory Process in Muscle; and the Nature of Muscular Motion: Dr. W. M. Fletcher and Prof. F. G. Hopkins.

MATHEMATICAL SOCIETY, at 5.30.—The Vibrations of a Special Type of Dissipative System: H. Jeffreys.—Diffraction by a Wedge: F. J. W. Whipple.—Some Applications of the Two-three Birational Space Transformation: T. L. Wren.—The Circles which Touch the Escribed Circles of a Triangle: T. C. Lewis.

OPTICAL SOCIETY, at 8.—Improvements in Prismatic Compasses, with Special Reference to the Creagh-Osborne Patent Compass: A. Hughes.

#### FRIDAY, DECEMBER 10.

ROYAL ASTRONOMICAL SOCIETY, at 5.—(1) The Accuracy of Hagen's Chart of T Herculis, and on a possible new Variable Star; (2) Note on the number of faint stars with large Proper Motions: F. A. Bellamy.—The Theory of Star-streaming and the Structure of the Universe: J. H. Jeans.—(1) The Viscosity of the Earth, second paper; (2) The Figure of the Earth; a reply to Mr. Hinks: H. Jeffreys.—Note on Comet Mellish (1915a), 1915, October 4: F. Henroteau.—Preliminary Paper on recent lists of new Double Stars: E. Doolittle.—The Distribution of Stars in Globular Clusters: H. C. Plummer.—*Probable Papers*: The Magnitude Scales of the Astrographic Catalogue, ninth note: The Toulouse and Cape Magnitudes, with further remarks on the Obscured Region in the Sky as a Spiral: H. H. Turner.—Baxendell's Observations of Variable Stars, fifth instalment; No. 13, T Herculis and No. 14 R Leonis: H. H. Turner and Mary A. Blagg.

MALACOLOGICAL SOCIETY, at 7.—Note on the Oligocene of Tampa, Florida, the Panama Canal Zone, and the Antillean Region: Dr. W. H. Dall.—Description of Two New Species of Angasella: G. K. Gude.

#### MONDAY, DECEMBER 13.

ROYAL SOCIETY OF ARTS, at 4.30.—Optical Glass. III: Dr. W. Rosenhain. ROYAL GEOGRAPHICAL SOCIETY, at 8.30.—The Work of the Peru-Bolivia Boundary Commission: Sir T. H. Holdich.

VICTORIA INSTITUTE, at 4.30.—The Movements of the Stars: Prof. A. S. Eddington.

SOCIETY OF ENGINEERS, at 5.30.—Annual General Meeting.

#### TUESDAY, DECEMBER 14.

ROYAL ANTHROPOLOGICAL INSTITUTE, at 5.—The Evolution of the Earliest "Chelles" Palaeoliths from the Rostro-Carinate Implements: J. Reid Moir.

INSTITUTION OF CIVIL ENGINEERS, at 5.30.—"James Forest" Lecture, Electrical Railways: H. M. Hobart.

ILLUMINATING ENGINEERING SOCIETY, at 8.—Recent Developments in Electric Incandescent Lamps in Relation to Illuminating Engineering: Prof. J. T. Morris.

#### WEDNESDAY, DECEMBER 15.

ROYAL SOCIETY OF ARTS, at 4.30.—Carillons and Carillon Playing: J. J. Denyn and W. W. Starmer.

ROYAL METEOROLOGICAL SOCIETY, at 7.30.—The Incidence of Bright Sunshine over the United Kingdom during the thirty years, 1881-1910: F. J. Brodie.—Remarkable Cloud Phenomena: Dr. W. Galloway.—South African Coast Temperatures: Dr. J. R. Sutt-n.

ROYAL MICROSCOPICAL SOCIETY, at 8.—The Use of Ultra-violet Light in Microscopy: J. E. Barnard.

GEOLOGICAL SOCIETY, at 5.30.—Deep-Boring for Coal at Little Africk, near Missenden (Bucks): Dr. A. Strahan.

#### THURSDAY, DECEMBER 16.

ROYAL SOCIETY OF ARTS, at 4.30.—The Indian Jute Industry: C. C. McLeod.

INSTITUTION OF ELECTRICAL ENGINEERS, at 8.—The Design of High-pressure Distribution Systems: J. R. Beard.

ROYAL GEOGRAPHICAL SOCIETY, at 5.—The Nature and Formation of Sand Ripples and Dunes: W. J. Harding King.

LINNEAN SOCIETY, at 5.—The Structure and History of Play: The Flating Fen of the Delta of the Danube: Miss Marietta Pallis.—The Seed-mass and Dispersal of *Helleborus fatidus*, Linn.: T. A. Dymes.—Sample of "Figured Ebony," with Specimens of Walking-sticks Manufactured from it by Messrs. Henry Howell & Co.: B. Daydon Jackson.—The Reproduction of Protodrilus; E. S. Goodrich.

#### FRIDAY, DECEMBER 17.

INSTITUTION OF MECHANICAL ENGINEERS, at 6.—Engineering Colleges and the War: Dr. R. Mullineux Walmsley and C. E. Larard.

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#### 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.