

insects were dissected, and proved all to be females. Eggs had been freely laid, and through June the caterpillars which hatched from them fed greedily. Examination on July 3 showed two caterpillars on the soil of the pot, and these had spun their cocoons by July 7. On July 17, the soil was sifted from the pot, and altogether 47 cocoons and five dead caterpillars were found. The cocoons were kept over the winter in suitable conditions indoors. On April 21 three females issued, and by May 8 fourteen other adults—all female. In five other similar experiments with virgin females, eggs were freely laid and caterpillars hatched. One experiment gave no result. Dissection of the female adults showed ovaries with eighteen tubes to each, and at the moment of dissection 180 eggs. From cocoons collected in the open many parasites were also bred, *Mesoleius aulicus* being abundant. Dissection of *M. aulicus* females showed twenty tubes to each ovary, and at the moment of dissection 160 eggs. Out of 249 cocoons 171 of *Nematus ericksoni* issued, 62 Ichneumonid parasites, and 16 Tachinids of the species *Exorista*.—Prof. W. **Peddie**: The molecular theory of magnetism in solids. The theory was developed so as to apply to a single homogeneous arrangement of molecular magnets in any crystalline grouping. The results in the special cases of cubic and hexagonal arrangements were applied to the magnetic crystals magnetite and pyrrhotine. A possible application to the case of the earth's magnetism was also discussed.—G. P. **Seamon**: Note on torsional oscillations of magnesium wire. These experiments were a continuation of Peddie's own experiments on torsional oscillations, and gave similar results to those obtained with other kinds of metals.

PARIS.

Academy of Sciences, February 26.—M. Lippmann in the chair.—Maurice **Hamy**: The determination of the astronomical flexion of meridian circles.—A. **Haller**: The preparation of 1:5-diphenyl-2:2:4:4-tetramethyl-3-pentanone and 1-phenyl-2:2:4:4-tetramethyl-3-pentanone. The method of alkylating with sodium amide and methyl iodide has been applied to symmetrical dibenzylacetone and 1-phenyl-3-pentanone. The successive methylation of these two ketones has given the desired tetramethyl derivatives as the final products.—A. **Laveran**: Generalised infection of mice by *Leishmania donovani*. It has been shown experimentally that generalised infections can be caused in mice by *L. donovani*, and it is probably the same for the rat. It still remains to be proved if the small rodents can contribute to the propagation of the disease.—Paul **Sabatier** and A. **Mailhe**: A new method of catalytic preparation of the aldehydes, starting from the acids.—Pierre **Puiseux** was elected a member of the section of astronomy in the place of the late M. Radau.—Milan **Stefanik**: Observation of the total eclipse of the sun (April 28, 1911) at the island of Vavau.—Ch. **Maurain** and A. **Toussaint**: Study of the surfaces of aeroplanes with an electric carriage. The only accurate measurements made up to the present on the action of air on aeroplane surfaces have been carried out on small-scale models exposed to currents of air. The present experiments were carried out on full-sized planes, carried on an electrically driven carriage with a range of velocities up to 23 metres per second. A set of experimental results for two surfaces of different shapes is given.—M. **Guéritot**: An attempt at a method permitting the deduction of the ratio of the two specific heats of gases from a volume measurement.—G. **Charpy** and S. **Bonnerot**: The permeability of iron for hydrogen. That iron is permeable to hydrogen has been known since the researches of Saint Claire Deville and

Troost, but no quantitative measurements have been made. The authors have measured the rate of passage of hydrogen through iron at temperatures ranging between 350° C. and 850° C.—P. **Langevin**: The comparison of gaseous and dissolved molecules. A reply to the criticism of M. Colson on the laws of dissociation of nitrogen peroxide in the gaseous state and in chloroform solution. It is shown that in concentrations sufficiently dilute, that is, in concentrations directly comparable with those in the gaseous conditions, the dissociation constant of nitrogen peroxide in chloroform solution is in good agreement with the law of mass action, allowance being made for the known difficulty in the colorimetric measurements.—Georges **Dupont**: The oxyhydrofuranes. The ketohydrofuranes give the oxyhydrofuranes by reduction with sodium and alcohol, although the reaction fails in some cases. The reduction could not be effected with zinc and potash or ammonia, with sodium amalgam or with hydrogen and platinum black.—C. **Picado**: The nutrition of the epiphytic Bromeliaceæ. These plants absorb not only mineral salts, but also proteid substances arising from the digestion of the vegetable and animal detritus retained in their leaves. They are the only plants which feed regularly on such detritus.—E. **Pinoy**: The preservation of wood. The wood is covered with a solution containing 5 per cent. of gelatin, 2 per cent. of potassium bichromate, and 0.5 per cent. of sodium fluoride, and exposed to light. Wood treated in this fashion is rendered completely indestructible by moulds.—Gabriel **Bertrand**: The extraordinary sensibility of *Aspergillus niger* towards manganese.—F. **d'Herelle**: The propagation in the Argentine Republic of the Mexican locust disease. Cultures of *Cocobacillus acridiorum* were used with great success to destroy the plague of locusts in the province of Santa-Fé, and the Argentine Government has decided to make use of this in all places attacked by these insects.

BOOKS RECEIVED.

Bad Reichenhall als klimatischer Kurort. By Drs. B. Alexander and E. Alt. Pp. 64+iv tables. (München: Otto Gmelin.)

Grundlinien der Pflanzen-morphologie im Lichte der Paläontologie. By Prof. H. Potonié. Zweite Auflage. Pp. vii+259. (Jena: G. Fischer.) 7 marks.

Markose. By Prof. Max Verworn. Pp. iii+37. (Jena: G. Fischer.) 1 mark.

Observations on the West of England Mining Region. By J. H. Collins. Pp. xxiv+683+xviii plates. (Plymouth: Printed by W. Brendon and Son, Ltd.)

A Manual of Veterinary Physiology. By Major-General F. Smith, C.B., C.M.G. Pp. xii+808. (London: Baillière, Tindall and Cox.) 18s. net.

Theoretische Astronomie. By Prof. W. Klinkerfues. Neubearbeitung by Prof. H. Buchholz. Pp. xxxviii+1070. (Braunschweig: F. Vieweg & Sohn.) 50 marks.

Byways in British Archæology. By W. Johnson. Pp. xii+529. (Cambridge: University Press.) 10s. 6d. net.

Thoughts on Ultimate Problems. By F. W. Frankland. Fifth and revised edition. Pp. xv+133. (London: D. Nutt.) 1s. 6d. net.

Annals of the Royal Botanic Garden, Calcutta. Vol. xii., part i.: Asiatic Palms—Lepidocarpaceae. Part ii.: The Species of Daemonorops. By Dr. O. Beccari. 2 vols. Vol. i., Letterpress. Pp. vii+237. Vol. ii., Plates. Pp. vii+109 plates. (Calcutta:

Printed at the Bengal Secretariat Press.) 39 rupees = 2l. 18s.

Storage Batteries. The Chemistry and Physics of the Lead Accumulator. By Dr. H. W. Morse. Pp. 266. (London: Macmillan and Co., Ltd.) 6s. 6d. net.

The Composition of Matter and the Evolution of Mind. By D. Taylor. Pp. 176. (London: Walter Scott Publishing Company, Ltd.) 3s. 6d.

Probleme der Physiologischen und Pathologischen Chemie. By Prof. O. von Fürth. i. Band—Gewebschemie. (Leipzig: F. C. W. Vogel.) 16 marks.

The Mineral Kingdom. By Dr. R. Brauns. Translated, with additions, by L. J. Spencer. Parts 17, 18, 19, 20. (Esslingen: J. F. Schreiber; London: Williams and Norgate.) 2s. net each.

Laubfall und Lauberneuerung in den Tropen. By G. Volkens. Pp. 142. (Berlin: Gebrüder Borntraeger.) 2.50 marks.

Notions Fondamentales d'Analyse Qualitative. By Prof. V. Thomas and D. Gauthier. Pp. viii+331. (Paris: Gauthier-Villars.) 10 francs.

Zoologische Jahrbücher. Supplement 15—Festschrift zum Sechzigsten Geburtstag des Herrn Geheimen Hofrats Prof. Dr. Johann Wilhelm Spengel in Giessen. Edited by A. Brauer and others. 3 vols. Pp. viii+609+plates, 863+plates, 572+plates. (Jena: G. Fischer.) 75 marks, 100 marks, and 50 marks.

Gardens in their Seasons. By C. Von Wyss. Pp. 64. (London: A. and C. Black.) 1s. 6d.

Biological Fact and the Structure of Society (the Herbert Spencer Lecture). By W. Bateson, F.R.S. Pp. 34. (Oxford: Clarendon Press.) 1s. net.

Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India:—Investigations into the Jail Diets of the United Provinces. By Prof. D. McCay. Pp. 200. (Calcutta: Superintendent Government Printing.) 1.12.0 rupees, or 3s.

The Rational Arithmetic for Rural Schools. By G. Ricks. Scholar's Books. First and Second Years' Courses. Each pp. 48. (London: Macmillan and Co., Ltd.) Each 3d.

DIARY OF SOCIETIES.

THURSDAY, MARCH 14.

ROYAL SOCIETY, at 4.30.—On a New Method of Examining Normal and Diseased Tissues by means of *intra vitam* Staining: Prof. E. Goldmann.—The Effects of Ultra-Violet Rays upon the Eye: Dr. E. K. Martin.—On the Presence of Radium in some Carcinomatous Tumours: Dr. W. S. Lazarus-Barlow.—An Improved Method for Opsonic Index Estimations involving the Separation of Red and White Human Blood Corpuscles: C. Russ.—The Electrical Conductivity of Bacteria, and the Rate of Inhibition of Bacteria by Electric Currents: Prof. W. M. Thornton.—A Critical Study of Experimental Fever: E. C. Hort and W. J. Penfold.—Certain Results of Drying Non-Sporing Bacteria in a Charcoal Liquid Air Vacuum: S. G. Shattock and L. S. Dudgeon.

ROYAL SOCIETY OF ARTS, at 4.30.—The Indian Census for 1911: E. A. Gait.

MATHEMATICAL SOCIETY, at 5.30.—The Cubic Surface as a Degenerate Quartic: G. T. Bennett.

INSTITUTION OF ELECTRICAL ENGINEERS, at 8.
CONCRETE INSTITUTE, at 8.—The Design of High Dams: R. Ryves.

FRIDAY, MARCH 15.

ROYAL INSTITUTION, at 9.—The Origin of Radium: F. Soddy, F.R.S.
INSTITUTION OF MECHANICAL ENGINEERS, at 8.—The Diesel Oil Engine, and its Industrial Importance particularly for Great Britain: Dr. Rudolf Diesel.

INSTITUTION OF CIVIL ENGINEERS, at 8.—The Heat Value of Fuels: A. E. Gladwyn.

SATURDAY, MARCH 16.

ROYAL INSTITUTION, at 3.—Molecular Physics: Sir J. J. Thomson, F.R.S.

MONDAY, MARCH 18.

ROYAL SOCIETY OF ARTS, at 8.—Materials and Methods of Decorative Painting: Noel Heaton.

TUESDAY, MARCH 19.

ROYAL INSTITUTION, at 3.—Ancient Britain: Dr. T. Rice Holmes.

ROYAL ANTHROPOLOGICAL INSTITUTE, at 8.15.—The Study of Primitive Music: Dr. C. S. Myers.

ROYAL STATISTICAL SOCIETY, at 5.—The Financial Systems of Germany: Percy Ashley.

INSTITUTION OF CIVIL ENGINEERS, at 8.—The Main Drainage of Glasgow: A. B. McDonald and G. M. Taylor.—The Construction of the Glasgow

Main Drainage Works: W. C. Easton.—Glasgow Main Drainage: The Mechanical Equipment of the Westera Works and of the Kinning Park Pumping Station: D. H. Morton.

ZOOLOGICAL SOCIETY, at 8.30.—Lantern Exhibition of Studies of Wild Animals in Africa and North America: I. A. Radcliffe Dugmore.—Observations on some Alcyonaria from Singapore, with a brief Discussion on the Classification of the Family Nephthyidae: E. W. Shann.—A List of Moths of the Family Pyralidae collected by Felix B. Pratt and Charles B. Pratt in Dutch New Guinea in 1909-10, with Descriptions of New Species: G. H. Kenrick.—Some Early Fossil Cirripedes of the Genus *Scalpellum*: T. H. Withers.

ILLUMINATING ENGINEERING SOCIETY, at 8.—Lighting of Printing Works and Offices: F. W. Goodenough and J. Eck.

WEDNESDAY, MARCH 20.

ROYAL SOCIETY OF ARTS, at 8.—The Work of the Marine Biological Association: F. Martin Duncan.

ROYAL METEOROLOGICAL SOCIETY, at 7.30.—The Connection between Hydrographical and Meteorological Phenomena: Prof. Otto Pettersson.
ENTOMOLOGICAL SOCIETY, at 8.

ROYAL MICROSCOPICAL SOCIETY, at 8.—Fairy flies and their Hosts: Fredk. Enock.

THURSDAY, MARCH 21.

ROYAL SOCIETY, at 4.30.—*Probable Papers*: On the Self-induction of Electric Currents in a thin Anchor-ring: Lord Rayleigh, O.M., F.R.S.—The After-luminosity of Electric Discharges in Hydrogen Observed by Hertz: Hon. R. J. Strutt, F.R.S.—On the Changes in the Dimensions of a Steel Wire when Twisted, and on the Pressure of Distortional Waves in Steel: Prof. J. H. Poynting, F.R.S.—The Critical Constants and Orthobaric Densities of Xenon: H. S. Patterson, R. S. Cripps, and R. Whytlaw-Gray.—Experimental Work on a New Standard of Light: W. A. Harwood and J. E. Petavel, F.R.S.—On the Distribution of the Scattered Röntgen Radiation: J. A. Crowther.—The Passage of Homogeneous Röntgen Rays through Gases: E. A. Owen.—Fluorescent Röntgen Radiation from Elements of High Atomic Weight: J. C. Chapman.—The Nature of the γ Rays excited by β Rays: J. A. Gray.

ROYAL INSTITUTION, at 3.—Seasonal Dimorphism in Butterflies: Dr. F. A. Dixey, F.R.S.

INSTITUTION OF MINING AND METALLURGY, at 8.—Annual Meeting.
INSTITUTION OF ELECTRICAL ENGINEERS, at 8.—*Discussion*: The Causes Preventing the More General Use of Electricity for Domestic Purposes: Opener, S. Z. de Ferranti, President.

FRIDAY, MARCH 22.

ROYAL INSTITUTION, at 9.—The North Sea and Its Fisheries: Prof. D'Arcy W. Thompson, C.B.
PHYSICAL SOCIETY, at 5.

SATURDAY, MARCH 23.

ROYAL INSTITUTION, at 3.—Molecular Physics: Sir J. J. Thomson, F.R.S.

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