

of agriculture at the University of Leeds. The University Council has provided a site for the new building, and much of the experimental work will be done at the Manor Farm, Garforth.

MANCHESTER.—Mr. A. R. Wardle, assistant demonstrator in zoology in the Royal College of Science, London, has been appointed lecturer in economic zoology in succession to Mr. J. Mangan, who resigned at the end of last session to take up the position of assistant to the professor of biology in the Government Medical College, Cairo.

MR. W. MCBRETNEY, headmaster of the Storey Institute, Lancaster, has been appointed headmaster of the new Secondary School and Technical Institute at Wallsend.

FOUR Gresham Lectures on Harvey, Darwin, and Huxley will be delivered on October 28, 29, 30, and 31, by Dr. F. M. Sandwith, Gresham professor of physics. The lectures, which will be given at the City of London School, Victoria Embankment, E.C., are free to the public, and will begin each evening at six o'clock.

IT is stated in *Science* that M. Ernest Solvay, the discoverer of the Solvay process for the manufacture of sodium carbonate, celebrated the fiftieth anniversary of that discovery on September 2 last at Brussels by giving more than 200,000*l.* to educational and charitable institutions and the employees of his firm. The Universities of Paris and Nancy each received 20,000*l.*

THE new engineering laboratories at University College, Dundee, were opened on October 14, by Sir Alexander Kennedy, F.R.S. The chair of engineering was one of the first to be established at Dundee University College, and in 1882, Prof. (now Sir Alfred) Ewing, K.C.B., was elected as its first occupant. For some few years after the foundation of the college, the facilities for the experimental teaching of engineering were meagre, and it was not until 1887 that an engineering laboratory on an adequate scale was provided. In January, 1911, the University authorities decided to build and equip a new engineering block, utilising for the purpose a grant of 10,000*l.* made by the Carnegie Trust for the development of the Scottish Universities. This department has been erected at a cost, including equipment, of about 15,500*l.* Owing to the completion in 1910 of the Peters's Electrical Engineering Laboratory, the college is well equipped for the study of this branch of engineering, and the present laboratories are devoted to the investigation of problems involved in civil and mechanical engineering. The heat-engine equipment at present includes an experimental steam engine, a gas engine, and a petrol motor, while provision is made for the installation of a Diesel oil engine and a steam turbine in the near future. The heat engine-room also contains all the apparatus necessary for the measurement of the heat value of solid and gaseous fuels, for the analysis of flue, exhaust, and fuel gases, and for the measurement of the dryness of steam, &c. The equipment of the strength of materials laboratory consists of a 50-ton Buckton single-lever testing machine, fitted for tension, compression, and cross-breaking, and with autographic recorder, an alternating stress machine, and cement testing machine, along with apparatus for determining the moduli of elasticity and rigidity, and for investigating the strength of struts and the elastic vibrations and deformations of structures. The hydraulic equipment includes a 24-in. Pelton wheel, a 9-in. inward flow pressure turbine, an electrically-driven centrifugal pump, capable of discharg-

ing 450 gallons per minute, an Oddie-Barclay high-speed differential-ram reciprocating pump, a flume, 3 ft. broad and 4½ ft. long, for the study of weir and channel flow, and apparatus for studying the friction of fluids in pipes, the impact of jets, &c.

SOCIETIES AND ACADEMIES.

PARIS.

Academy of Sciences, September 29.—M. C. Jordan in the chair.—J. **Guillaume**: Observation of the occultation of the Pleiades by the moon, made September 20, 1913, with the *coudé* equatorial at Lyons Observatory.—Léopold **Fejér**: Harmonic polynomials.—H. **Tietze**: Continuous representations of surfaces on themselves.—C. **Beau**: The relations between tuberisation of roots and the attack by endophytic fungi in the course of development of *Spiranthes autumnalis*.

October 6.—M. P. Appell in the chair.—H. **Deslandres**: Remarks on the general electric and magnetic fields of the sun. A full discussion of the work of Hale in comparison with that done at Meudon by the author.—A. **Chauveau**: A comparison of human and bovine tuberculosis from the point of view of innate or specific aptitude of receiving or cultivating the bacillus. A development of views put forward in an earlier paper. The author holds that no human being, whatever the state of health, is incapable of receiving the tubercle infection, and regards this as a necessary consequence of his experiments on cattle. In the case of human beings exposed to infection and escaping, it is not the stronger subjects alone who escape. The practical conclusion is drawn that in the battle against tuberculosis, it is the bacillus which must be attacked, and hence that concentration on strengthening the vitality of the possible patient is unscientific.—R. **Lépine** and M. **Boulud**: The origin of the sugar secreted in phlorizic glycosuria. The results of experiments are cited contradicting the hypothesis that the sugar eliminated in phlorizic glycosuria arises from the renal cells. The point of attack in the kidney appears to be especially the vascular endothelium.—Charles **Depéret**: The fluvial and glacial history of the Rhône valley in the neighbourhood of Lyons. The Rhône glacier reached the Lyons region at a later period than the Quaternary epoch.—J. **Bosler**: The spectrum of the Metcalf comet, 1913*b*. Photographs taken at Meudon show a feeble continuous spectrum with three condensations corresponding to hydrocarbons (Swan spectrum) and cyanogen. It is nearly identical with the spectrum of the Schaumasse comet.—Michel **Plancherel**: The convergence of series of orthogonal functions.—Georges **Rémouondos**: Families of multiform functions admitting exceptional values within a domain.—Emile **Jougnet**: Some properties of waves of shock and combustion.—Léon **Guillet** and Victor **Bernard**: The variation of the resilience of some commercial alloys of copper as a function of the temperature. The alloys examined included seven bronzes with tin, ranging from 3.5 per cent. to 20 per cent., four brasses, and one aluminium bronze. The results are given graphically in two diagrams.—Charles **Nicolle** and L. **Blaizot**: An atoxic antigonococcal vaccine. Its application to the treatment of blennorrhagia and its complications. The authors have obtained a stable, atoxic antigonococcal serum by a method not disclosed, and give details of its curative action in a considerable number of cases.—Ch. **Dhéré** and A. **Burdé**: The absorption of the visible rays by the oxyhæmocyanines. Three reproductions of photographs of spectra are given. There would appear to be one absorption band common to

all the oxyhæmocyamines.—M. de Montessus de Ballore: An attempt at synthesis of seismic and volcanic phenomena.—Ph. Flajole: Observation of a curious formation of cirrus.

NEW SOUTH WALES.

Linnean Society, August 27.—Mr. W. W. Froggatt, vice-president, in the chair.—A. M. Lea: Revision of the Australian Curculionidæ belonging to the sub-family Cryptorhynchides, Part xii. This paper deals with the balance of the genera, more particularly those allied to Poropterus, and species of this immense sub-family of weevils, and, with the exception of a concluding instalment dealing with the classification, distribution, &c., is the last of the series. Fifteen genera (one proposed as new) and twenty-three species (two proposed as new) are described.—W. N. Benson: The geology and petrology of the Great Serpentine Belt of New South Wales, Part i., Introductory. The area described stretches from Warialda to Tamworth, embracing about 2000 square miles, together with one hundred square miles in the Nundle district, S.S.E. of Tamworth. A general description of the palæozoic formations is given. A great extension of the radiolarian rocks has been proved, both laterally and in vertical range. The sequence in igneous rocks is sketched.

BOOKS RECEIVED.

Preliminary Geography. By E. G. Hodgkinson. Pp. xvi+225. (London: W. B. Clive.) 1s. 6d.

Memoirs of the Department of Agriculture in India. Botanical Series. Vol. vi., No. 3. Studies in Indian Tobaccos, No. 3. The Inheritance in Nicotiana of Characters Tabacum, L. By G. L. C. Howard. Pp. 25-115+plates. (Calcutta: Thacker, Spink and Co.; London: W. Thacker and Co.) 3 rupees.

Die Luftfahrt. Ihre Wissenschaftlichen Grundlagen und Technische Entwicklung. By Dr. R. Nimführ. Dritte Auflage. Pp. viii+132. (Leipzig and Berlin: B. G. Teubner.) 1.25 marks.

Experimental-Zoologie. By Dr. Hans Przibram. 4. Vitalität. (Lebenszustand.) Pp. viii+179+x plates. (Leipzig and Wien: F. Denticke.) 10 marks.

The Latest Light on Bible Lands. By P. S. P. Hancock. Pp. xii+371. (London: S.P.C.K.) 6s. net.

A First Book on Practical Mathematics. By T. S. Usherwood and C. J. A. Trimble. Pp. v+182. (London: Macmillan and Co., Ltd.) 1s. 6d.

Practical Geometry and Graphics for Advanced Students. By Prof. J. Harrison and G. A. Baxandall. Enlarged edition. Pp. xiv+677. (London: Macmillan and Co., Ltd.) 6s.

Proceedings of the Edinburgh Mathematical Society. Vol. xxxi. Session 1912-1913. Pp. 110. (Edinburgh: Mathematical Society and Lindsay and Co.) 7s. 6d.

The Twisted Cubic. With some Account of the Metrical Properties of the Cubical Hyperbola. By P. W. Wood. Pp. x+78. (Cambridge: University Press.) 2s. 6d. net.

The Physician in English History. (Linacre Lecture, 1913, St. John's College, Cambridge.) By Dr. N. Moore. Pp. 57. (Cambridge: University Press.) 2s. 6d. net.

The Bacteriology of Diphtheria. Including Sections on the History, Epidemiology and Pathology of the Disease, the Mortality Caused by it, the Toxins and Antitoxins, and the Serum Disease. Edited by Dr. F.

Loeffler, Dr. A. Newsholme, and others. Re-issue, with Supplementary Bibliography. Pp. xx+718+xvi plates. (Cambridge: University Press.) 15s. net.

Notes on the Natural History of Common British Animals and some of their Foreign Relations. Vertebrates. By Kate M. Hall. Pp. xii+289. (London: Adlard and Son.) 3s. 6d. net

Ulster Folklore. By Elizabeth Andrews. Pp. xiii+121+xii plates. (London: Elliot Stock.) 5s. net.

Japan's Inheritance. The Country, its People, and their Destiny. By E. Bruce Mitford. Pp. 384+plates. (London and Leipzig: T. Fisher Unwin.) 10s. 6d. net.

The Vulgate Version of the Arthurian Romances. Edited from manuscripts in the British Museum by H. O. Sommer. Vol. vii. Supplement, Le Livre D'Artus. Pp. 370. (Washington, U.S.A.: Carnegie Institution.)

Penmo-Carboniferous Vertebrates from New Mexico. By E. C. Case, S. W. Williston, and M. G. Mehl. Pp. v+81. (Washington, U.S.A.: Carnegie Institution.)

Igneous Rocks. Composition, Texture and Classification, Description and Occurrence. By J. P. Iddings. Vol. ii. Pp. xi+685. (New York: J. Wiley and Sons, Inc.; London: Chapman and Hall, Ltd.) 25s. 6d. net.

The Theory of Relativity. By Prof. R. D. Carmichael. Pp. 74. (Mathematical Monographs.) (New York: J. Wiley and Sons, Inc.; London: Chapman and Hall, Ltd.) 4s. 6d. net.

Elements of Water Bacteriology. By Prof. S. C. Prescott and Prof. C. E. A. Winslow. Third edition. Pp. xiv+318. (New York: J. Wiley and Sons, Inc.; London: Chapman and Hall, Ltd.) 7s. 6d. net.

My Game-Book. By A. R. Haig Brown. Pp. xvi+239. (London: Witherby and Co.) 5s. net.

Untersuchungen über Chlorophyll. Methoden und Ergebnisse. By R. Willstätter and A. Stoll. Pp. viii+424+xi plates. (Berlin: J. Springer.) 18 marks.

Department of Commerce. U.S. Coast and Geodetic Survey. Results of Observations made at the U.S. Coast and Geodetic Survey Magnetic Observatory at Cheltenham, Maryland, 1911 and 1912. By D. L. Hazard. Pp. 98+plates. (Washington, U.S.A.: Government Printing Office.)

Department of the Interior. U.S. Geological Survey. Professional Paper 78. Geology and Ore Deposits of the Philipsburg Quadrangle, Montana. By W. H. Emmons and F. C. Calkins. Pp. 271+xvii. Professional Paper 80. Geology and Ore Deposits of the San Francisco and Adjacent Districts, Utah. By B. S. Butler. Pp. 212+xi plates. (Washington, U.S.A.: Government Printing Office.)

Outlines of Mineralogy for Geological Students. By Prof. G. A. J. Cole. Pp. viii+339. (London: Longmans, Green and Co.) 5s. net.

A Day in the Moon. By the Abbé Th. Moreux. Pp. viii+199+plates. (London: Hutchinson and Co.) 3s. 6d. net.

Electric Circuit Theory and Calculations. By W. Perren Maycock. Pp. xiv+355. (London and New York: Whittaker and Co.) 3s. 6d. net.

Anleitung zur Darstellung phytochemischer Übungspräparate für Pharmazeuten, Chemiker, Technologen u.a. By Dr. D. H. Wester. Pp. xi+129. (Berlin: J. Springer.) 3.60 marks.

The Principles and Practice of Medical Hydrology: being the Science of Treatment by Waters and Baths.