

Contemporary Birthdays.

- October 15, 1884. Prof. Lewis Knudson.
 October 16, 1859. Prof. James Playfair McMurrich.
 October 17, 1872. Sir Cyril Reginald S. Kirkpatrick.
 October 19, 1856. Prof. Edmund B. Wilson, For. Mem. R.S.
 October 20, 1862. Prof. Thomas Hastie Bryce, F.R.S.
 October 22, 1876. Prof. Harold Hilton.

Prof. KNUDSON, who occupies the chair of botany at Cornell University, was born at Milwaukee, Wisconsin, U.S.A. His informative lectures on plant physiology have been particularly welcomed in recent years by Spanish men of science, notably at such centres as Madrid and Barcelona. His botanical studies comprise researches in fermentation, the organic nutrition of plants, germination of orchid seeds, and the diseases of the banana.

Prof. McMURRICH was educated at Upper Canada College, Toronto, at the University of the city, and at Johns Hopkins University, Baltimore. He has occupied posts in several universities of the United States, but since 1907 he has been professor of anatomy at Toronto. In 1922 Prof. McMurrich was president of the Royal Society of Canada.

Sir CYRIL KIRKPATRICK was educated at Repton. His engineering studies were conducted, in the first instance, at the Crystal Palace School of Engineering; afterwards he entered the service of the old London and North-Western Railway. Sir Cyril was chief engineer of the Port of London Authority from 1913 until 1924.

Prof. E. B. WILSON, distinguished as a zoologist, was born at Geneva, Illinois, U.S.A., and educated at Yale University, New Haven, and Johns Hopkins University, Baltimore. In 1883 he was a lecturer in biology at Williams College, fulfilling afterwards various important duties elsewhere until 1891, when he was appointed professor of zoology in Columbia University. Prof. Wilson is a foreign member of the Royal Society of London, and of the Linnean Society. In 1914 he delivered the Croonian lecture before the former body, taking as his subject "The Bearing of Cytological Research on Heredity." A member of the National Academy of Sciences, Washington, and of several English societies, he is Hon. Sc.D., Cambridge. Prof. Wilson is the author of a standard work, "The Cell in Development and Heredity"; originally issued in 1896, it passed recently into a third edition.

Prof. BRYCE was educated at Edinburgh Collegiate School. He graduated later at the University of Edinburgh. Lecturer on anatomy in the University of Glasgow from 1892 until 1909, he was then appointed to the chair of anatomy. The Royal Society of Edinburgh awarded Prof. Bryce its Keith prize in 1906 for his memoirs on the histology of the blood of the larva of *Lepidosiren paradoxa*. He is the author of vol. 1 of "Quain's Anatomy" and joint author of a work on the development of the human ovum.

Prof. HILTON, an old pupil of Lancing College, graduated at Hertford College, Oxford. Sometime assistant lecturer in mathematics in the University of Bangor, he afterwards joined the teaching staff of Bedford College. Since 1912 he has been professor of mathematics in the University of London. Prof. Hilton is the author of many papers in crystallography, especially the theory of crystalline structures.

Societies and Academies.

SYDNEY.

Linnean Society of New South Wales, July 28.—C. T. White: On a small collection of plants from the Rigo district, Papua. Two species, one of *Plectronia* and one *Jasminum*, are described as new.—C. P. Alexander: The Trichoceridæ (Diptera) of Australia. One genus and four species are described as new. A key is given for the determination of the genera.—R. H. Cambage: Notes on the native flora of New South Wales. Part xi. Moree to Mungindi and Moonie R., with a description of a new species of *Eucalyptus*. The paper contains notes on the early exploration, topography, etc., and a list of the plants noticed. A comparison of this flora is made with that of Tasmania, in view of the dominating influence of climate on plant distribution.—G. H. Cunningham: *Gasteromycetes* of Australasia. (v.) The genus *Calvatia*. The genus may be separated from *Lycoperdon* by the method of dehiscence, which is effected in *Calvatia* by the irregular falling away of the apical portion of the peridium; whereas in *Lycoperdon* dehiscence is effected by means of a definite apical stoma. The genus contains about eight species, of which four are present in Australia and New Zealand.—G. D. Osborne: Stratigraphical and structural geology of the Carboniferous rocks in the Mt. Mirannie and Mt. Dyrning districts, near Singleton, N.S.W. There are two volcanic series with associated clastic rocks, and separating these series is a set of sediments called the Main Clastic Zone. The major volcanic series comprises andesites, dacites, rhyolites and keratophyres, while the lavas in the other group are chiefly toscanitic and dellenic. The only glacial beds occur near the top of the Kuttung Series, and Rhacopteris-bearing strata are found on two horizons. The chief tectonic feature is the great Bridgeman Fault which separates the Kuttung Series from the Permian or Permo-Carboniferous Series. This is probably an overthrust. In addition there are many normal faults connected with the late Palæozoic diastrophism which folded the area and produced two basin-structures.

WASHINGTON, D.C.

National Academy of Sciences (Proc. vol. 12, No. 8, August).—R. J. Havighurst: The absorption of X-rays in crystalline compounds. The mass absorption coefficient in a compound is the sum of the mass absorption coefficients of the individual atoms and has been calculated from various empirical formulæ. Measurements upon crystalline compounds are subject to large experimental error on account of "selective absorption" due to reflection of the primary ray from certain atomic planes. Compressed slabs of powders (and also Wingardh's data from solutions) give results in good accord with the calculated absorptions for sodium chloride and fluoride and calcium fluoride and carbonate.—Carl Barus: (1) Acoustic pressures in case of soap bubbles. A series of soap bubbles were attached to the telephonic apparatus and pinhole probe. Pressure as measured by the fringe displacement of the interferometer always corresponded with the radius of the bubble. (2) Acoustic pressure promoted by co-operating quill tubes without pinholes.—Edwin H. Hall: Note on the temperature relations of photo-electric emission and thermionic emission of electrons. Hall's theory of "associated" and "free" electrons in metallic conduction indicates a slight increase with temperature in the work done in detaching completely an associated electron; this accords with the fact that

the lowest frequency producing photo-electric emission is nearly independent of temperature. Also the work done in detaching completely a free electron within the metal should diminish with rise of temperature; this has not been disproved.—R. de L. Kronig: The dielectric constant of diatomic dipole-gases on the new quantum mechanics.—F. L. Mohler: A photo-ionisation experiment with hydrogen. Using a double thermionic tube, one unit of which produced a discharge while the other detected photo-ionisation excited by the radiation from the discharge, no evidence was obtained that hydrogen emits radiation which can ionise the normal molecule.—Otto Laporte: Series and ionisation potentials in the iron spectrum.—Carleton C. Murdock: The location of the electromotive force in a photo-active cell containing a fluorescent electrolyte. Semi-transparent platinum films sputtered on opposite sides of a glass test-tube serve as electrodes. The electrolyte can be illuminated before it reaches the electrode, through it, or after leaving it, and is made to flow along the surface of the electrode. The photo-active electromotive force is due, in part, to the action of light on the fluorescent electrolyte.—Richard C. Tolman and Sinclair Smith: Remarks on Professor Lewis's note on the path of light quanta in an interference field.—L. R. Maxwell: The mean free path of electrons in mercury vapour. An electron stream passes through a chamber the end of which is a long Faraday cage. The electron current was measured with and without the presence of mercury vapour at a pressure of 3.12 bars in the chamber. The distance traversed by the electrons was varied by raising and lowering the cage. The mean free path is calculated for accelerating potentials up to 3000 volts; at 1120 volts and 3050 volts it is 73 cm. and 144 cm. respectively.—Edward A. Birge and Chancey Juday: The organic content of lake water. Large samples from Wisconsin lakes were examined. The quantity of organic material present is much greater than, and that of the inorganic salts is far less than, that found in sea water. The dissolved organic matter forms a potential food supply several times as large as that offered by the plankton.—Thomas Wayland Vaughan: (1) The stratigraphic horizon of the beds containing *Lepidocyclina chaperi* on Haut Chagres, Panama. The horizon is upper Eocene, virtually the same as that of the Ocala limestone of Florida and Georgia. (2) Foraminifera from the upper Eocene deposits of the coast of Ecuador. The horizon is about the same as that at Haut Chagres; the finds indicate that the same fauna existed on both sides of America during Eocene times.—T. J. Webb: On the free energy of hydration of ions. The energy of hydration depends on the dielectric properties of the solvent, as well as upon the charge and effective radius of the ion.—Curt Stern: An effect of temperature and age on crossing-over in the first chromosome of *Drosophila melanogaster*. Susceptibility is connected in some way with the localisation of the spindle fibre attachment.

Official Publications Received.

BRITISH AND COLONIAL.

Aeronautical Research Committee: Reports and Memoranda. No. 989 (Ae. 200): An Investigation of the Flow of Air around an Aerofoil of Infinite Span. By L. W. Bryant and D. H. Williams; with an Appendix by G. I. Taylor. (A. 3. a. Aerofoils, General, 132.—T. 1885.) Pp. 44, 1s. 6d. net. No. 995: The Behaviour of Single Crystals of Aluminium under Static and Repeated Stresses, Parts 1, 2 and 3. By H. J. Gough, Dr. D. Hanson and S. J. Wright. Work performed for the Engineering Research Board of the Department of Scientific and Industrial Research. (B. 1. a. Metals, 40, a and b.—T. 1983, a and b.) Pp. 54+35 plates, 3s. 6d. net. No. 1015 (Ae. 218): On the Drag of an Aerofoil for Two-dimensional Flow. By A. Fage and L. J. Jones. (A. 3. a. Aerofoils-General, 154.—T. 2135.) Pp. 14, 7d. net. (London: H.M. Stationery Office.)

Leicester Museum, Art Gallery and Library. Bulletin No. 10. Pp. 12. (Leicester.)
County Borough of Warrington: Museum Committee. Report of the Director for the Two Years ending 30th June 1926; with a List of the Principal Additions to the Museum Collections. Pp. 21. (Warrington.)
Transactions of the Royal Society of Edinburgh. Vol. 54, Part 3, No. 14: Magnetic Quality in Crystals. Part i: Discrimination of, and Stability in, Magnetic Lattices; Part ii: Stability of Magnetic Lattices; and Part iii: Twinning in Crystals. By Dr. J. Forrest. Pp. 601-701. (Edinburgh: Robert Grant and Son; London: Williams and Norgate, Ltd.) 12s. 6d.
Union of South Africa: Department of Agriculture. Science Bulletin No. 45: Physiological Studies of the Grape. By Dr. Francois Jean de Villiers. Pp. 97. (Pretoria: Government Printing and Stationery Office.) 1s. 6d.
Northampton Polytechnic Institute, St. John Street, London, E.C.1. Announcements, Educational and Social, for the Session 1926-1927. Pp. 176. (London.)
Decennial Index of *The Analyst*: the Journal of the Society of Public Analysts and other Analytical Chemists. Vols. 41-50 (1916-1925). Compiled by M. B. Elliott. Pp. 353. (Cambridge: W. Heffer and Sons, Ltd.) Paper, 21s. net; cloth, 25s. net.
Transactions of the Royal Society of Edinburgh. Vol. 54, Part 3, No. 16: On the Development of the Cranial Muscles in Protopterus and Lepidosiren. By Prof. F. H. Edgeworth. Pp. 719-734+9 plates. 5s. 6d. Vol. 54, Part 3, No. 19: The Petrography of Jan Mayen. By Dr. G. W. Tyrrell. Pp. 747-765. 2s. 6d. (Edinburgh: Robert Grant and Son; London: Williams and Norgate, Ltd.)
The Journal of the Royal Anthropological Institute of Great Britain and Ireland. Vol. 56, 1926, January to June. Pp. 206+15 plates. (London.) 15s. net.
Aeronautical Research Committee: Reports and Memoranda. No. 1029 (Ee. 20): Hydrogen as an Auxiliary Fuel for a Solid Injection Oil Engine. By G. F. Mucklow. (I.C.E. 529.) Pp. 16+17 plates. 1s. net. No. 1032 (Ae. 224): Wind Tunnel Tests on a Wing covered with Monel Metal Gauze. By F. B. Bradfield. (A. 3. a. Aerofoils-General, 162.—T. 2239.) Pp. 2+1 plate. 4d. net. (London: H.M. Stationery Office.)
Report by the Hon. W. G. A. Ormsby-Gore, M.P. (Parliamentary Under-Secretary of State for the Colonies), on his Visit to West Africa during the Year 1926. (Cmd. 2744.) Pp. 188. (London: H.M. Stationery Office.) 3s. 6d. net.
British Honduras. Annual Report of the Forest Trust for the Year ended 31st March 1926. Pp. 24. (Belize, British Honduras.)

FOREIGN.

Proceedings of the Imperial Academy. Vol. 2, No. 7, July. Pp. xxi-xxii+299-359. (Ueno Park, Tokyo.)
Ministero dell'Aeronautica, Aviazione Civile e Traffico Aereo: Ufficio Presaggi. Le condizioni meteorologiche dell'Umbria nel mese di Settembre. Pp. 12+3 tavole. (Roma.)
Agricultural Experiment Station: Michigan State College of Agriculture and Applied Science. Technical Bulletin No. 76: Concentration of Materials and Rates of Application in the Control of Apple Scab. By W. C. Dutton. Pp. 18. (East Lansing, Mich.)
Bulletin of the Experiment Station of the Hawaiian Sugar Planters' Association. Entomological Series, Bulletin No. 18: Contributions to our Knowledge of South American Fulgoroidea (Homoptera, Part i.: The Family Delphacidae. By F. Muir. Pp. iii+51. (Honolulu, Hawaii.)
Museums of the Brooklyn Institute of Arts and Sciences. Report upon the Condition and Progress of the Museums for the Year ending December 31, 1925. By William Henry Fox. Pp. 75+3 plates. (Brooklyn, N.Y.)
Department of the Interior: U.S. Geological Survey. Bulletin 768: Geology and Oil Resources of the Puente Hills Region, Southern California. By Walter A. English. With a Section on the Chemical Character of the Oil, by Paul W. Prutzman. Pp. v+110+14 plates. 40 cents. Bulletin 776: The Mesozoic Stratigraphy of Alaska. By George C. Martin. Pp. xii+493. 75 cents. Bulletin 785-B: Potash Investigations in 1924. By Walter B. Lang. (Contributions to Economic Geology, 1926, Part 1.) Pp. ii+29-43. 5 cents. Water Supply Paper 558: Preliminary Index to River Surveys made by the United States Geological Survey and other Agencies. By Benjamin E. Jones and Randolph O. Helland. Pp. iv+108+2 plates. Professional Paper 143: Paleontology and Stratigraphy of the Castle Hayne and Trent Marls in North Carolina. By Lewis Burnett Kellum. Pp. iii+56+11 plates. 30 cents. Professional Paper 145: Geology and Oil and Coal Resources of the Oregon Basin, Meeteetse, and Grass Creek Basin Quadrangles, Wyoming. By D. F. Hewett. Pp. iv+111+32 plates. 1 dollar. (Washington, D.C.: Government Printing Office.)
Publications of the United States Naval Observatory. Second Series, Volume 10. In 2 parts. Part 1: Observations made with the Prime Vertical Transit Instrument, 1893-1912, by George A. Hill; Part 2: Total Solar Eclipses of August 30, 1905, and June 8, 1918, with Aviators' Notes on the Total Solar Eclipse of September 10, 1923. Pp. A cxviii+A 382+9 plates+B 416+50 plates. (Washington, D.C.: Government Printing Office.)
Ministry of Agriculture, Egypt: Technical and Scientific Service. Bulletin No. 63: An Account of Experiments carried out to Determine the Experimental Error of Field Trials with Cotton in Egypt. By M. A. Bailey and T. Trought. Pp. ii+29+23 plates. (Cairo: Government Publications Office.) 10 P.T.
Report of the Aeronautical Research Institute, Tôkyô Imperial University. No. 18: Eye shaped end of Bar investigated by Photo-elastic Method. By Kango Takemura and Yahet Hosokawa. Pp. 127-143. 0.40 yen. No. 19: On the Distribution of Shearing Stresses in Beams of certain Cross-sections. By Tuneso Inokuty. Pp. 145-204. 1.05 yen. (Tôkyô.)

List D: Wavelength Spectrometers, Monochromators, and Specialised Spectroscopes. Pp. 21. List E: Spectrographs. Pp. 24. List I: Micrometers, etc. Pp. 5. Water Jacketed Tubes. Pp. 2. (London: Adam Hilger, Ltd.)