

## Contemporary Birthdays.

- December 4, 1875. Prof. George William O. Howe.  
 December 6, 1858. Prof. Hans Schinz.  
 December 7, 1865. Sir John Otto Beit, Bart.,  
 K.C.M.G., F.R.S.  
 December 9, 1855. Mr. W. H. Dines, F.R.S.  
 December 9, 1855. Dr. F. A. Dixey, F.R.S.  
 December 10, 1855. Mr. H. N. Ridley, C.M.G., F.R.S.  
 December 11, 1860. Dr. Leonard Huxley.  
 December 11, 1863. Sir Frank Heath, K.C.B.

After an apprenticeship with Messrs. Siemens Bros., Woolwich, Prof. HOWE was appointed lecturer at the Technical College, Hull; he then became assistant professor of electrical engineering, Imperial College of Science and Technology, South Kensington, and afterwards chief assistant, Department of Electrical Standards and Measurements, National Physical Laboratory. In 1921 he was appointed James Watt professor of electrical engineering in the University of Glasgow.

Prof. SCHINZ, born in Zürich, was educated there at the Polytechnic, and at the University of Berlin. Professor of botany in the University of Zürich, and director of its famous botanical gardens and museum, he is a foreign member of the Linnean Society of London. Prof. Schinz has conducted valuable botanical surveys in South Africa; with M. Théophile Durand, he issued the "Conspectus Floræ Africæ."

Sir OTTO BEIT's name is associated with the foundation of the Beit Fellowships for Scientific Research tenable at the Imperial College of Science and Technology, and the Beit Memorial Fellowships for Medical Research. The former fund has recently received, through Sir Otto's munificence, a further capital sum of 15,000*l.*, enabling the trustees to make awards for two years instead of one year as hitherto.

Mr. DINES, the distinguished meteorologist, was educated at Woodcote House School, Windlesham, graduating afterwards at Corpus Christi College, Cambridge. He is the author of many valuable papers in meteorological and aeronautical science.

Dr. DIXEY is a Londoner. Educated at Highgate, he graduated at Wadham College, Oxford; he is subwarden, bursar, and lecturer there. An authority on insect bionomics, and a past president of the Entomological Society, he is curator of the Hope Collections, Oxford.

Mr. H. N. RIDLEY, who was educated at Haileybury, graduated at Exeter College, Oxford. A member of the botanical staff, British Museum, he became Director of Gardens and Forests, Straits Settlements, retiring in 1911 after twenty-three years' service. Whilst in the tropics Mr. Ridley conducted numerous scientific expeditions. Last year he published the final volume of his "Flora of the Malay Peninsula."

Dr. LEONARD HUXLEY, eldest son of Thomas Henry Huxley, is the author of the well-known biography of his father, published in 1900; this was supplemented in 1918 by a biography of Sir J. D. Hooker, both works of classic interest.

Sir FRANK HEATH is a Londoner. Educated at Westminster, he graduated at the University of London, from University College. He was assistant registrar and librarian of the University from 1895 until 1901, and in 1916 became Secretary to the Department of Scientific and Industrial Research. He has recently completed a tour in Australia and New Zealand and has put forward valuable schemes, which have been adopted, for State aid in research in these countries.

## Societies and Academies.

LONDON.

**Geological Society**, November 3.—Sydney S. Buckman: Jurassic chronology (iii.): Some faunal horizons in Cornbrash. Faunal dissimilarity within strata of a supposedly synchronous time-unit, the Cornbrash, were observed about seventy years ago, but were not understood. Series of faunal analyses of the brachiopod species south of the Humber disclose a series of synclines, anticlines, and various non-sequences in the strata of the South Humbrian Cornbrash. The divisions of Cornbrash time on the basis of brachiopods and of ammonoids are compared and also the Cornbrash and the inferior oolite. If the time-value of brachiopod species be the same in the Cornbrash as in the inferior oolite—and there is every reason that it should be—then the Cornbrash must have taken in deposition a time far in excess of that of the middle and upper inferior oolite, with all its numerous ammonoid hemereæ.

**The Physical Society**, November 12.—H. Dewhurst: A rapid bolometer made by sputtering on thin films. Thin films of collodion are made by drying weak solutions in ether and alcohol on the surface of clean mercury. Flexible films which withstand great distortion, and can be punctured without fracture, are made in the same way. Both types can be produced rapidly and cheaply down to a thickness of one wavelength of light. Two novel types of sputtering apparatus are described, and a table is given containing sputtering data for 25 metals, nine of which appear for the first time. The method of making the bolometers, together with holders of various types, and apparatus for blackening, are detailed. Rings were moulded for supporting the thin collodion films and providing a reliable contact for overlying sputtered metallic films. The comparative sensitivity of these new bolometers is discussed, and curves and an empirical formula given from which an estimate of the speed of the instruments can be determined. The new type of instrument is roughly 400 per cent. faster than a representative bolometer of the Lummer and Kurlbaum type.—Ezer Griffiths and J. H. Awbery: A hygrometer employing glycerine. The variation of refractive index of glycerine solutions in equilibrium with air of various humidities has been studied; the time for equilibrium to be reached, when thin films of glycerine are used, has been investigated, and this property may be used very conveniently in a hygrometer.—J. W. Avery and C. J. Smithells: The effect of working on the physical properties of tungsten. Measurements of the densities of specimens cleaned in successive stages by etching reveal the presence of low density surface layers. Variations of heat treatment likely to occur in practice have no appreciable effect upon the density of worked tungsten. The density rises rapidly during swaging to a maximum value within 0.5 per cent. of the density of the perfect tungsten crystal. Further working produces a steady fall in density, which becomes more marked in the finest sizes. The resistivity falls rapidly in the early stages of working and reaches a minimum when the density is a maximum. It then increases at a uniform rate, which is approximately an exponential function of the diameter.

**Royal Meteorological Society**, November 17.—E. W. Bliss: The Nile flood and world weather. Correlation coefficients are given with pressure, temperature, rain, ice and wind, and it is shown (a) that the Nile takes part in the southern oscillation as a member of the first group; (b) that equatorial temperatures are in inverse relation to the Nile; and (c) that the



winter North Atlantic circulation varies inversely with the preceding Nile. St. Helena pressure has no contemporary relationship with the Nile. A formula is derived for prediction on June 1 with a joint coefficient of 0.72.—D. Brunt: (1) An investigation of periodicities in rainfall, pressure, and temperature at certain European stations. A discussion is given of twelve periodograms: those of rainfall at Milan, Padua, London, and Edinburgh; of pressure at Edinburgh, Stockholm, London, Paris, Berlin, and Vienna. Their use for forecasting future weather is not recommended. (2) A simple period of vertical oscillation in the atmosphere. When an element of air is displaced vertically, it oscillates harmonically about its equilibrium position, with a period of the same order as those found in microbarograph records.

## EDINBURGH.

**Royal Society**, November 8.—A. P. Laurie and John Milne: The evaporation of water and salt solutions from surfaces of stone, brick, and mortar. Sulphate of lime sometimes crystallises out in bricks and stones, and in other cases it does not do so. Prof. Guye's work on the conditions of evaporation where capillary tubes open on surfaces over which water can creep, shows that the flow of liquid under these conditions is governed by the rate of thinning of the liquid layer by evaporation. Experiments made on the surface of a wall soaked by the rain and then drying out indicate that the surface which is evaporating more rapidly draws water from the more slowly evaporating surfaces. Thus if the brick or stone is evaporating more rapidly than the mortar, water will be drawn from the mortar containing salts in solution which will crystallise out and break up the stone or brick; if, however, the mortar is evaporating more rapidly than a stone or brick, water will be drawn from the stone or brick to the mortar, causing the concentration of salts to take place principally in the mortar instead of in the stone or brick. Hence in repointing old buildings, the decay of the brick or stone will be stimulated if the mortar is too dense. Mortar joints should be raked out; a suitable preservative should then be used so as to reduce the rate of evaporation from the stone or brick surface, and then repointed.—J. H. Ashworth and Janet C. W. Bannerman: A tetracotyle (*T. phoxini*) in the brain of the minnow. Specimens were collected near Edinburgh, near Loch Lubnaig, and in the Thames Valley. The parasite appears to be identical with *T. phoxini*, a species originally described in 1910 from minnows collected in Switzerland and in Germany, but has apparently not been recorded since. The tetracotyle are 0.33 mm. to 0.42 mm. long and very immature. The minnow is the second intermediate host of this trematode; the first intermediate host, and also the host in which it reaches maturity, have still to be ascertained. In heavily infected minnows about 250 or more tetracotyles were present, chiefly in the cavities of the optic lobes, in the Sylvian aqueduct, and in the fourth ventricle. The epithelial lining of these cavities has undergone extensive proliferation, and forms a vacuolated tissue in which most of the worms lie.—David Waterston: Development of the hypophysis cerebri in man, with a note upon its structure in the human adult. A series of specimens from embryos 3 mm. in length, and over, and from a *Tarsius* embryo, are discussed. Evidence is shown of the division of the anterior lobe into central and lateral portions, and of the absence of a distinctive pars intermedia in the adult human pituitary.—Ekendranath Ghosh: On the anatomy of the Masta-

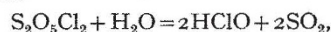
cembelidæ of Bengal, with notes on their habits.—Sir Thomas Muir: The theory of persymmetric determinants from 1894 to 1919.—Satish Chandra Chakrabarti: A factorable continuant.

## PARIS.

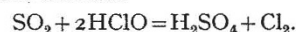
**Academy of Sciences**, November 3.—Emile Picard: Certain partial differential equations connected with problems of calorific equilibrium.—Charcot and P. Idrac: A phenomenon of atmospheric depression produced by a lofty obstacle in the wind. Entrance of the ship *Pourquoi Pas* into the shelter afforded by the high volcanic mountain Beerenberg on Jan Mayen Island (2300 metres), caused a sudden drop of the barometer of 1.8 mm. on one occasion and 2.5 mm. on another.—V. Grignard and P. Murat: Pyrosulphuryl chloride. With water in excess the reaction is given by the equation



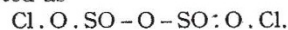
With the chloride in excess, the primary reaction appears to be



followed by the reaction



From this reaction and from measurements of the magnetic susceptibility and molecular refraction, the constitution of sulphurvl chloride is considered to be best represented as



—Léon Guillet and Albert Roux: The influence of gases on the properties of steels. Steels from which the gases have been extracted by heating in a vacuum at 750°-850° C., show changes in mechanical and chemical properties when compared with samples of the same steels heated to the same temperature in air.—A. Recoura: Acetylated chromium sulphate.—Paul Alexandroff: Cantorian multiplicities and the generalised theorem of Phragmén-Brouwer.—Paul Mentré: The reciprocity of two complexes with double inflectional foci.—I. Raramata: Relation between the distribution functions of two series dependent on each other.—G. Valiron: The theorems of Bloch, Landau, Montel, and Schottky.—S. Stoilow: Remarks on some properties of continuous transformations of  $n$  variables.—A. Kovanko: The necessary and sufficient conditions for the capability of summation of some functions.—R. Mazet: Flow through a jet.—B. Pollard: The limit of absorption of the  $K$  series of the element of atomic number 75.—R. Forrer: The structure of the atomic magnet and the mechanical effects of magnetisation.—Edmond Vellinger: The rotatory dispersion of tartaric acid. The author concludes that in aqueous solutions of tartaric acid there exist two fundamental forms. Of these, one is dextrorotatory corresponding to the molecular structure of the tartrate, the other levorotatory corresponding to a structure as yet undetermined, that of the molecules in the crystals of tartaric acid.—Charles Prévost: The catalytic dehydration of the  $\alpha$ -ethylenic alcohols.—Charles Dufraisse and Alfred Gillet: Stereochemical researches in the benzalacetophenone series. Ethylenic isomerism and polymorphism.—Georges Darzens: A new general method for the synthesis of the tetrahydronaphthalene and naphthalene hydrocarbons. Benzylallylacetic acid, treated with 78 per cent. sulphuric acid, undergoes internal condensation, giving tetrahydromethylnaphthalene carboxylic acid. The method is generalised by starting with homologues of benzylallylacetic acid.—Pierre Bedos: The stereochemical isomerism of the ortho-cyclohexanediols



and on the structure of the oxide of cyclohexene.—**R. Weil**: The influence of impurities on the temperature of the paramorphic transformation of cristobalite.—**L. Petitjean**: The thermodynamics of the surfaces of atmospheric discontinuity.—**Marcel Lefèvre**: A variation of tabulation in certain fresh-water species of *Peridinium*.—**Pierre Georgévitch**: *Ceratostomella Querci*.—**Raymond-Hamet**: The action of ergotamine on the respiration.—**Raoul Bayeux**: The transmission of erythroclasia, produced by change of altitude, by the serum of animals which have lived in a rarefied atmosphere.

## SYDNEY.

**Linnean Society of New South Wales, September 29.**—**A. J. Turner**: Revision of Australian Lepidoptera: Drepanidae, Limacodidae, Zygaenidae. Nine genera and twenty species are described as new. Keys are given for the identification of the genera in each of the three families, and for the species of many of the genera.—**H. J. Carter**: Revision of *Athemistus* and *Microtragus* (Cerambycidae) with notes, and descriptions of other Australian Coleoptera.—**T. C. Roughley**: An investigation of the cause of an oyster mortality on the George's River, New South Wales, 1924-5. During the winters of the past eight or nine years there have been mortalities of oysters of varying intensity on the shores of the George's River and other rivers on the southern half of New South Wales. Where the mortality was greatest large numbers of the oysters remaining alive were affected with abscesses and ulcerations, commonest on the palps, gills, and inner surfaces of the mantles, but also found in the stomach, liver, gonad, and adductor muscle. A fairly definite ratio of this affection to the severity of the mortality was found, and the appearance of microscopic sections suggests a bacterial origin. The theory is advanced that the low winter temperatures lower the vitality and therefore the resistance of the oysters and induce infection by bacteria in the water.

## VIENNA.

**Academy of Sciences, October 14.**—**A. Dadiou**: The electromotive behaviour of aluminium. The potential was measured of aluminium and aluminium amalgam in molten aluminium bromide plus potassium bromide and in the solution aluminium bromide, ethyl bromide. The oxide skin theory is preferred.—**A. Rollett**:  $\beta$ -amyryn from elemi resin from Manila.—**A. Rollett** and **L. Bayer**: The constitution of furoperylene.—**O. Dischendorfer** and **H. Grillmayer**: Betulin.—**K. Przibram**: An artificial blue colouration of rock salt at room temperature. Kahlbaum's pure sodium chloride or rock salt from Wieliczka was crushed to powder and then exposed to weak daylight for some days. Reference is made to former experiments with radium radiation.—**K. Singer**: Physiological and pathological chemistry of the brain (I.). The nitrogen and sugar apportionment in the brain of the horse. Total amino nitrogen was determined, also cholin nitrogen, galactosid nitrogen and residual nitrogen.—**N. Alders**, **H. Chiari**, and **D. Laszlo**: The glycolytic power of cell-free extracts from tumours and other tissues.—**R. Weiss** and **K. Woidich**: The condensation of ethoxymethylene- $\beta$ -ketoneacidester with resacetophenone and its relation to xanthophanic acid.—**J. Pollak** and **E. Gebauer-Fülnegg**: The action of chlorosulphonic acid on phenols.—**M. Holly**: (1) New fish forms from the Sanaga River, Cameroons.—(2) Two new silurids and a new characinid from the Cameroons.—**L. Lämmermayr**: New contributions to serpentine flora with special relation to Styria.

## Official Publications Received.

## BRITISH AND COLONIAL.

London County Council. Annual Report of the Council, 1925. Vol. 4: Education. Elementary Education; Children's Care; Special Schools, Industrial and Reformatory Schools and Places of Detention; Accommodation and Attendance in Elementary Schools, and Employment of Children; Higher Education; Technical, Trade and Evening Education, Day Continuation Schools, and Juvenile Employment Centres; General. (No. 2471.) (Published by the London County Council.) Pp. 40+8 plates. (London: P. S. King and Son, Ltd.) 1s.

Society for the Provision of Birth Control Clinics. Annual Report, 1925-1926. Pp. 16. (London: Walworth Women's Welfare Centre.)

Department of Agriculture, Jamaica. Entomological Bulletin No. 4, Parts 1 and 2: Catalogus Insectorum Jamaicaensis. By C. C. Gowday. Pp. ii+114+10+2. (Jamaica: Government Printing Office, Kingston.) 2s.

Union of South Africa: Department of Agriculture. Division of Chemistry Series No. 68: The Solubility of Copper in Basic Copper Carbonate. By Thos. D. Hall. Pp. 8. (Pretoria: Government Printing and Stationery Office.)

Transactions and Proceedings of the Botanical Society of Edinburgh. Vol. 29, Part 3, Session 1925-26. Pp. xvii-xxiv+219-310. (Edinburgh.) 7s. 6d.

The Journal of the Institution of Electrical Engineers. Vol. 64, No. 859, November. Pp. 1093-1212+xxx. (London: E. and F. N. Spon, Ltd.) 10s. 6d.

## Diary of Societies.

## SATURDAY, DECEMBER 4.

ROYAL SOCIETY OF MEDICINE (Obology Section), at 10.30 A.M.—**G. Wilkin-**son: Have we a Resonance Theory of Hearing, or only a Resonance Hypothesis?—**Sir James Dundas-Grant**: Remarks on the Use of Weber-Liel's Intra-tympanic Tube in Chronic Eustachian Catarrh.

INSTITUTION OF MUNICIPAL AND COUNTY ENGINEERS (South Midland District) (at Shire Hall, Hertford), at 10.45 A.M.—**S. M. Senior**: Hertford Sewage Disposal Works and Housing.

ROYAL INSTITUTION OF GREAT BRITAIN, at 3.—**Dr. G. C. Simpson**: Atmospheric Electricity (2).

## MONDAY, DECEMBER 6.

CAMBRIDGE PHILOSOPHICAL SOCIETY (at the Museums, Cambridge), at 4.30.

ROYAL SOCIETY OF EDINBURGH, at 4.30.—**Dr. A. G. Cannon** and **Miss S. M. Manton**: On the Feeding Mechanism of a Mysid Crustacean, *Hemimysis Lambrus*.—**J. H. Awbery** and **Dr. E. Griffiths**: Further Experiments with the Ewing Ball and Tube Flowmeter.—**E. A. Baker**: The Law of Blackening of the Photographic Plate at Low Densities (second paper). IV. Results for Isochromatic and Blue-Sensitive Plates and Filtered Light.—**Dr. F. Walker**: The Igneous Geology of Ardsall Hill.

VICTORIA INSTITUTE (at Central Hall, Westminster), at 4.30.—**Prof. J. A. Fleming**: Evolution and Revelation.

BIOCHEMICAL SOCIETY (at Imperial College of Science), at 5.—**D. Krestin** and **J. B. Marrack**: The Calcium in Body Fluids in Nephritis.—**D. J. Lloyd**: The Mutual Influence of pH and Salt Concentration on Protein Swelling.—**C. R. Harrington** and **Prof. G. Barger**: Chemistry of Thyroxin. III. Constitution and Synthesis of Thyroxin.—**H. W. Buston** and **Dr. S. B. Schryver**: The Basic Hydrolysis Products of Gelatine.—**Prof. I. M. Heilbron**, **E. D. Kamm**, and **R. A. Morton**: Absorption Spectra of Cholesterol and its Possible Biological Significance with reference to Vitamin D.—**O. Rosenheim** and **T. A. Webster**: Further Observations on the Photochemical Formation of Vitamin D.—**Demonstration of Methods Employed for Purifying and Investigating the Proteins (Electro-dialysis, etc.)**.

ROYAL INSTITUTION OF GREAT BRITAIN, at 5.—General Meeting.

BRITISH PSYCHOLOGICAL SOCIETY (Education Section) (at London Day Training College), at 5.30.—Annual General Meeting at 5.45.—at 6.—**M. M. Lewis**: Personality and Verbal Expression.

SOCIETY OF CHEMICAL INDUSTRY (South Wales Section) (jointly with Institution of Mechanical Engineers) (at Engineers' Institute, Cardiff), at 6.—**Dr. J. H. Paul**: Water, and its Action in Steam Boilers.

INSTITUTION OF AUTOMOBILE ENGINEERS (Bristol Centre) (at Merchant Venturers' Technical College, Bristol), at 6.45.—**G. Rushton**: The L.G.O.C. Methods of Repairing Motor Buses.

INSTITUTION OF ELECTRICAL ENGINEERS (Informal Meeting), at 7.—**Ll. B. Atkinson** and others: Discussion on Notes on the Tread of Electrical Development in America and Canada.

SOCIETY OF CHEMICAL INDUSTRY (London Section) (at Chemical Society), at 8.—**Dr. R. H. Pickard**: Some Scientific Problems confronting the Leather Industry.

INSTITUTION OF THE RUBBER INDUSTRY (London and District Section) (at Engineers' Club, Coventry Street), at 8.—**A. Fraser**: British and American Machine Practice.

ROYAL GEOGRAPHICAL SOCIETY (at Eolian Hall), at 8.30.—**Earl Cawdor**: The People of the Tsangpo Gorge.

INSTITUTE OF CHEMISTRY (Leeds Area Local Section).—**F. Scholefield**: Registration of Chemists.

INSTITUTE OF CHEMISTRY (Manchester and District Section) (at Manchester).—**Dr. H. Levinstein**: Address.

## TUESDAY, DECEMBER 7.

ROYAL INSTITUTION OF GREAT BRITAIN, at 5.15.—**Sir William Bragg**: The Imperfect Crystallisation of Common Things (3).

INSTITUTION OF ELECTRICAL ENGINEERS (East Midland Sub-Centre) (at Loughborough College), at 6.45.—**Col. J. F. Lister**: Address.

INSTITUTION OF AUTOMOBILE ENGINEERS (at Royal Society of Arts), at 7.—**Prof. W. Morgan**: The Use of the Optical Indicator as a Means of Examining Combustion in Internal Combustion Engines.