

Contemporary Birthdays.

- August 20, 1860. Sir William Henry Ellis, G.B.E.
 August 21, 1866. Sir Gerald P. Lenox-Conyngham, F.R.S.
 August 21, 1858. Mr. Charles T. Heycock, F.R.S.
 August 23, 1875. Prof. W. H. Eccles, F.R.S.
 August 25, 1851. Sir John A. F. Aspinall.
 August 25, 1844. Sir Thomas Muir, F.R.S.
 August 26, 1863. Mr. Edward Heawood.
 August 26, 1873. Prof. William A. Osborne.
 August 26, 1860. Sir Thomas Ranken Lyle, F.R.S.

Sir WILLIAM ELLIS is president of the Institution of Civil Engineers, and a past president of the Iron and Steel Institute. He was master cutler of Sheffield from 1914 until 1917.

Sir GERALD LENOX-CONYNGHAM, reader in geodesy in the University of Cambridge, was educated at Edinburgh Academy, afterwards entering the Royal Engineers branch of the army. He was superintendent of the Trigonometrical Survey of India from 1912 until 1921. Sir Gerald is a member of the National Committee for Geodesy and Geophysics of the International Research Council.

Mr. HEYCOCK, mathematician and metallurgist, is a fellow of, and lecturer in natural science in, King's College, Cambridge. He was president of Section B (Chemistry) at the Cardiff meeting of the British Association in 1920. Mr. Heycock was awarded the Royal Society's Davy medal in that year on the ground of his researches in physical chemistry, more especially on the composition and constitution of alloys. While his work added to theoretical conceptions, it proved of importance also to industrial metallurgy.

Prof. ECCLES was born at Ulverston, Lancashire. He was the last dean and professor of applied physics in the City and Guilds of London Technical College, which was recently closed. Lately president of the Radio Society of Great Britain, he was, last month, elected president of the Institution of Electrical Engineers.

Sir JOHN ASPINALL was born at Liverpool. He was chief mechanical engineer of the Lancashire and Yorkshire Railway from 1886 until 1899. In 1919 he was appointed consulting mechanical engineer to the Ministry of Transport. Sir John is a past president of the Institution of Mechanical Engineers and of the Institution of Civil Engineers.

Sir THOMAS MUIR, for a long period—1892 until 1915—superintendent-general of education in Cape Colony, was born in Scotland. A graduate of the University of Glasgow, he was, early in his career, assistant professor of mathematics there. In 1883 the Royal Society of Edinburgh awarded him the Keith gold medal for his researches into the theory of determinants and allied questions. The unusual course was taken of allotting the medal again in 1897 for continued work in the same field, and once more in 1916 to mark the completion of the series down to 1915, all the memoirs having been published by the Society. Sir Thomas remains faithful to residence in Cape Colony.

Mr. EDWARD HEAWOOD is known to a wide circle as the accomplished librarian of the Royal Geographical Society, a post he has filled since 1901. Born at Newport, Shropshire, he was educated at Queen Elizabeth's Grammar School, Ipswich, graduating at Gonville and Caius College, Cambridge.

Sir THOMAS LYLE was born at Coleraine, Ireland. He graduated at the University of Dublin. From 1889 until 1915 Sir Thomas was professor of natural philosophy in the University of Melbourne.

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Societies and Academies.

ROME.

Royal Academy of the Lincei, June 3.—Leonida Tonelli: The quadrature of surfaces.—A. Bemporad: The astrographic catalogue of Catania.—Ferruccio Zambonini: The presence in the products of the present-day activity of Vesuvius of a caesiferous variety of potassium fluoborate. For a crystalline sublimate from Vesuvius, consisting of potassium and caesium fluoborates in isomorphous mixture, the name 'avogadrite' is proposed.—Luisa Pelosi: Certain geometrical maxima and minima.—Mauro Picone: The singularity of harmonic functions.—Oscar Zariski: The impossibility of resolving parametrically by radicals an algebraic equation $f(xy)=0$ of the genus $p>6$ with general moduli.—Umberto Crudeli: Models of the helium atom.—R. Mazet: Oscillations of a liquid in connected vessels.—Vasco Ronchi: The limit of resolution of spectroscopic apparatus. The expression 'resolving power' of a prism, grating, etc., is shown to be inaccurate, since such apparatus is characterised only by dispersion. The resolution depends on the means by which it is examined and, when diffraction images are observed, is only one-half as great as when interference images are employed.—Mario Picotti: The results of the physico-chemical researches carried out on the Royal Italian cruiser *Marsigli* in the Straits of Messina. Observations on the temperature and salinity of the water are described.—Fausta Bertolini: Conformation of the stomach of the Teleostei in relation to the nutrition.—M. Sella: The migration of the tunny studied by means of fish-hooks.

SYDNEY.

Royal Society of New South Wales, June 2.—M. S. Benjamin: A note on the rate of decomposition of commercial calcium cyanide. Decomposition was effected in a large closed glass container, and the percentage of hydrocyanic acid evolved was determined. The curves obtained indicate that carbon dioxide considerably accelerates the rate of change and factors other than the cyanogen content of the material affect the efficiency of a given dose of the material in practical fumigation.—G. Harker and R. K. Newman: Reactions depending upon the vapour at the interface of two immiscible liquids. The reaction between amyl acetate and acidulated water has been studied. The hydrolytic effect of liquid amyl acetate and of the mixed saturated vapour of amyl acetate and water at 100°, upon a surface of given area of dilute mineral acid, revealed a close agreement in the rate of hydrolysis. Taken in conjunction with the results previously obtained for benzyl chloride, it is therefore evident that at the interface of the two liquids the mixed saturated vapours of both liquids must be present. This is in agreement with the view of Van der Waals that there exists a continuous transition from the liquid to the vapour state at the boundary of any liquid.—A. R. Penfold: Notes on the essential oils from some cultivated Eucalypts. The specimens were grown from seed at Ashfield, near Sydney. The trees examined varied from three to eight years of age, and consisted of *E. Australiana*, *E. Macarthurii*, *E. citriodora* and *E. radiata (numerosa)*. The *E. Australiana* was grown from seed collected at Wyndham, N.S.W., a place which yielded oils possessing a *lævo*-rotation of about -3.6 and containing phellandrene in small quantity, and as it would not meet the requirements of the various pharmacopœias the district had to be abandoned. The oils obtained from material grown

at Ashfield possessed an optical rotation of $+2.5^\circ$ to 3.2° and were free from phellandrene. *E. Macarthurii* gave remarkable yields, varying from 0.5 to 0.74 per cent., as compared with 0.2 per cent. yield from the ordinary native material, whilst the geranyl acetate varied from 62 per cent. to 75 per cent., thus showing the influence of ecological conditions. *E. citriodora* yielded oils from 0.5 per cent. to 1 per cent., containing from 90 to 98 per cent. citronellal, and it would appear as if there were separate races existing within this species.—Miss P. Nicol: An investigation of the optical properties of selenium in the conducting form. Methods of preparing mirrors of selenium are described. The method gives values of γ_0 generally correct to within about 3 per cent. and of κ_0 to within 5 per cent. The values obtained vary within fairly wide limits, depending on the method of preparation (casting on glass, polishing, grinding, etc.). The results obtained are:

$\lambda = 6470-4170$	$\nu_0 = 2.7-3.36$	$\kappa_0 = 0.45-0.9$
$\lambda = 5890-5896$	$\nu_0 = 2.75-3.06$	$\kappa_0 = 0.77-1.07$
$\lambda = 21900-8100$	$\nu_0 = 2.59-3.02$	$\kappa_0 = 0.90-1.18$
$\lambda = 4400-4800$	$\nu_0 = 2.74-3.04$	$\kappa_0 = 1.05-1.27$

Some rough measures in the near infra red indicated $\kappa_0 < 0.1$ and ν_0 about 2.6. There was no definite indication of any relation between the temperature of transformation to the conducting form and the optical properties, nor was there any variation with the length of exposure to light or with the age of the specimen.

VIENNA.

Academy of Sciences, July 1.—F. Hemmelmayr and J. Strehly: Contributions to our knowledge of skoparin. Apparently this substance contains seven hydroxyl groups, and its formula is $C_{22}H_{22}O_{11}$ rather than $C_{20}H_{20}O_{10}$.—L. Schmidt and R. Stöhr: Two substances similar to stearine from *Asclepias syriaca*. A monovalent unsaturated alcohol $C_{31}H_{52}O$ and a divalent unsaturated alcohol $C_{45}H_{74}O_2$ have been obtained.—L. Waldmann: Petrographic description of the stones collected by L. Kober in the northern Hegas and in the Taurus.

Official Publications Received.

- International Hydrographic Bureau. Special Publication No. 12: Investigation of Harmonic Constants, Prediction of Tide and Current, and their Description by Means of these Constants. By Rear-Admiral Phaff. Pp. 80+6 plates. 5 Swiss francs. Supplement to Special Publication No. 12: Tables for the Calculation of Tides by Means of Harmonic Constants. Pp. 136. (Monaco.)
- Straits Settlements. Annual Report on the Raffles Museum and Library for the Year 1925. By C. Boden Kloss. Pp. 14. (Singapore: Government Printing Office.)
- Union of South Africa: Department of Agriculture. Reprint No. 4, 1925: Weeds of South Africa, Part 3. By K. A. Lansdell. Pp. 24+5 plates. (Pretoria: Government Printing and Stationery Office.) 3d.
- The National University of Ireland. Calendar for the Year 1926. Pp. viii+329+431+156. (Dublin.)
- Department of Scientific and Industrial Research. Summary of Progress of the Geological Survey of Great Britain and the Museum of Practical Geology for the Year 1925; with Report of the Geological Survey Board and Report of the Director. Pp. vi+211+12 plates. (London: H.M. Stationery Office; Southampton: Ordnance Survey Office.) 4s. 6d. net.
- University of Bristol. The Annual Report of the Agricultural and Horticultural Research Station (The National Fruit and Cider Institute), Long Ashton, Bristol, 1925. Pp. 152+11 plates. (Bristol.)
- Report of the Imperial Institute of Veterinary Research, Muktesar, for the Year ending 31st March 1925. Pp. ii+59. (Calcutta: Government of India Central Publication Branch.) 1.14 rupees; 3s. 3d.
- Records of the Geological Survey of India. Vol. 59, Part 1: General Report for 1925, by Dr. E. H. Pascoe; The Zonal Distribution and Description of the larger Foraminifera of the Middle and Lower Kirthar Series (Middle Eocene) and parts of Western India, by W. L. F. Nuttall. Pp. 164+8 plates. (Calcutta: Government of India Central Publication Branch.) 2.12 rupees; 5s.
- Ceylon Journal of Science. Section A: Botany. Annals of the Royal Botanic Gardens, Peradeniya. Edited by A. H. G. Alston. Vol. 10, Part 1, June 15th. Pp. 144+2 plates. (Peradeniya: Director of Agriculture; London: Dulau and Co., Ltd.) 3 rupees.

The Scientific Proceedings of the Royal Dublin Society. Vol. 18 (N.S.), No. 22: The Downy Mildew of Onions (*Peronospora Schleideni*), with particular reference to the Hibernation of the Parasite. By Dr. Paul A. Murphy and Robert McKay. Pp. 237-261+plates 12-15. 4s. Vol. 18 (N.S.), No. 23: A simple Method of Temperature Control for use with Refractometers and Polarimeters. By Michael T. Casey. Pp. 263-264. 6d. Vol. 18 (N.S.), No. 24: The Dehydration Rates of Conifer Leaves in relation to Pentosan Content. By Joseph Doyle and Phyllis Clinch. Pp. 265-275. 1s. (Dublin.)

Forestry Commission. Sixth Annual Report of the Forestry Commissioners, Year ending September 30th, 1925. Pp. 32. (London: H.M. Stationery Office.) 9d. net.

Jamaica. Annual Report of the Department of Agriculture for the Year ended 31st December 1925. Pp. 23. (Jamaica, B.W.I.)

Diary of Societies.

SATURDAY, AUGUST 21.

NORTH OF ENGLAND INSTITUTE OF MINING AND MECHANICAL ENGINEERS (Annual Meeting) (at Newcastle-upon-Tyne), at 2.30.

CONGRESSES.

AUGUST 27 AND 28.

IRON AND STEEL INSTITUTE (Autumn Meeting) (at Stockholm).—F. Adcock: The Effect of Nitrogen on Chromium and some Iron Chromium Alloys (Alloys of Iron Research, Part IV.).—J. H. Andrew and H. A. Dickie: A Physical Investigation into the Cause of Temper Brittleness.—Prof. C. Benedicks, H. Bäckström, and P. Sederholm: Anomalies in Heat Conduction, with some Determinations of Thermal Conductivity in Iron and Carbon Steels.—Prof. C. Benedicks and R. Sundberg: Electrochemical Potentials of Carbon and Chromium Steels.—G. F. Comstock: The Treatment of Steel with Ferro Carbon-Titanium.—G. A. Hankins, D. Hanson, and Miss G. W. Ford: The Mechanical Properties of Four Heat-Treated Spring Steels.—Prof. K. Honda: Is the Direct Change from Austenite to Troostite Possible?—A. Johansson and R. Von Seth: The Carburisation and Decarburisation of Iron and Some Investigations on the Surface Decarburisation of Steel.—A. Jolansson and A. Wahlberg: The Development of the Swedish Iron and Steel Industry during the last thirty years.—E. Kinander: Notes on Jernkontoret.—A. Lundgren: The Testing of Hardened Steel.—W. Petersson: Notes on the Development of the Swedish Mining Industry during the last twenty-five years.—G. Phragmen: The Constitution of the Iron-Silicon Alloys.

AUGUST 29 TO SEPTEMBER 1.

SOCIÉTÉ HELVÉTIQUE DES SCIENCES NATURELLES (at Fribourg).—In Sections devoted to Mathematics, Physics, Geophysics, Meteorology and Astronomy, Chemistry, Geology, Mineralogy and Petrography, General Botany, Special Botany and Geographical Botany, Zoology, Entomology, Anthropology and Ethnology, Palaeontology, Medical Biology, History of Medicine and Natural Science.

AUGUST 31 TO SEPTEMBER 8.

WORLD POWER CONFERENCE (at Basle), Technical Programme of Sectional Meeting:

- Utilisation of Water Power, and Inland Navigation.
- Exchange of Electrical Energy between Countries.
- The Economic Relation between Electrical Energy Produced Hydraulically and Electrical Energy Produced Thermally: Conditions under which the two systems can work together with advantage.
- Electricity in Agriculture.
- Railway Electrification.

SEPTEMBER 1 TO 4.

INSTITUTE OF METALS (Autumn Meeting) (at Liège) (September 1, at 8.—Dr. W. Rosenhain: Ancient Industries and Modern Metallurgy) (Autumn Lecture).—Dr. C. J. Smithells, H. P. Rooksby, and W. B. Pitkin: The Deformation of Tungsten Crystals.—Prof. K. Honda: A Comparison of Static and Dynamic Tensile and Notched-Bar Tests.—C. H. M. Jenkins: The Constitution and the Physical Properties of the Alloys of Cadmium and Zinc.—H. J. Gough, S. J. Wright, and Dr. D. Hanson: Some Further Experiments on the Behaviour of Single Crystals of Aluminium under Reversed Torsional Stresses.—B. Ötani: Silicon and its Structure.—G. B. Phillips: The Primitive Copper Industry of America. Part II.—Kathleen E. Bingham: The Constitution and Age-Hardening of Some Ternary and Quaternary Alloys of Aluminium containing Nickel.—Dr. A. G. C. Gwyer and H. W. L. Phillips: The Constitution and Structure of the Commercial Aluminium-Silicon Alloys. With an Appendix upon The Properties of the Modified Aluminium-Silicon Alloys, by Dr. D. Stockdale and I. Wilkinson.—J. D. Grogan: Some Mechanical Properties of Silicon-Aluminium Alloys.—Dr. C. S. Smith and Prof. C. R. Hayward: The Action of Hydrogen on Hot Solid Copper.—Capt. F. R. Barton: The Development of the Use of Nickel in Coinage.—A. Pinkerton and W. H. Taft: Season-Cracking in Arsenical Copper Tubes.—Prof. P. Chevenard: Thermal Anomalies of Certain Solid Solutions.—W. T. Cook and W. R. D. Jones: Preliminary Experiments on the Copper-Magnesium Alloys.—F. W. Rowe: Bronze Worm Gear Blanks produced by Centrifugal Casting.—L. Boscheron: An Account of the Non-Ferrous Metals Industry in the Liège District.

SEPTEMBER 6 TO 11.

AMERICAN CHEMICAL SOCIETY (at Philadelphia).—In eighteen Divisional Gatherings, dealing with various branches of Pure and Applied Chemistry.

SEPTEMBER 13 TO 17.

INTERNATIONAL CONGRESS OF PHILOSOPHY (at Harvard University, Cambridge, Mass.).