

Societies and Academies.

LONDON.

Royal Society, Feb. 12.—J. Cohen, K. Cooper, and P. G. Marshall: Some aliphatic and aromatic amino derivatives of α -quinoline methiodide. Many of the amino and acylamino compounds obtained by the condensation of derivatives of α -methyl quinoline with nitrosoarylamines possess active antiseptic and in some cases mild trypanocidal properties. Substances obtained by attaching a basic aliphatic or aromatic side-chain directly to the α -carbon of the quinoline nucleus exhibited no marked antiseptic or trypanocidal character. Diamino compounds of aliphatic and aromatic series with basic groups at both ends of the chain did not exhibit the expected antimalarial action.—C. H. Browning, J. B. Cohen, S. Ellingworth, and R. Gulbransen: The antiseptic and trypanoidal action of certain styryl and anil benzthiazole derivatives. The anil benzthiazole derivatives are relatively weakly antiseptic for *Staphylococcus* and *B. coli*, as compared with the quinoline analogues, which are highly active in this respect. Several benzthiazole styryl compounds have produced cure of mice infected with *Trypanosoma brucei*, and the same relationships between chemical constitution and trypanocidal action have been found to hold as in the styryl quinoline series. Thus the maximum effect is produced when one nucleus contains a basic group and the other an acylamino group. The anil benzthiazole series, in general, possesses some trypanocidal action, but cure has only exceptionally been produced.

Physical Society, Jan. 16.—L. C. Martin: The theory of the microscope. The paper examines the diffraction-effects produced by (a) two adjacent apertures, and (b) a series of apertures in an opaque screen situated in the focal plane of a lens system, when the illuminating system is projecting the elementary image of a point-source of light into this object plane. The diffraction effects and geometrical resolving power of the grating are shown to be independent of the concentration of the light in the object plane; they depend rather on the number of apertures free to transmit light. The theory is then extended to the case where the illumination of the object is produced by a source of finite area.—J. H. Vincent: Further experiments on magnetostriction oscillators at radio-frequencies. The coil surrounding the bar can be in either branch of a simple tuned anode circuit. When the bar-coil is in the inductive branch the circuit may be operated as a series or parallel arrangement; in the latter case the direct plate-current does not pass through the inductive branch of the fly-wheel circuit. The variation in either the anode- or the grid-current can be used to indicate resonance. Comparative experiments with corronil, nickel, and glowray suggest that glowray is the most suitable of these materials for high-frequency oscillators.—S. Butterworth and F. D. Smith: The equivalent circuit of the magnetostriction oscillator. The equivalent electric circuit is developed and expressions for its elements in terms of the fundamental constants of the material are given. The circle-diagram of impedances is deduced, and the modifying effects of eddy currents and hysteresis are investigated. Some simple geometrical relations between the vectors in the diagram are derived. An experimental investigation of the resonant radial vibrations of solid and laminated nickel rings verifies the theoretical deductions. For nickel in the annealed state, $\lambda = 1.76 \times 10^4$ and $\kappa = 22.1 \times 10^4$ at a point on the curve corresponding to $H_0 = 14.5$ gauss.

Geological Society, Jan. 28.—J. F. N. Green: The South-West Highland sequence. The present succession near Ballachulish can be paralleled in detail with Islay. On attempting to apply the result to the neighbouring areas of Glencoe, Onich, and Cuil Bay, several amendments to current views are suggested. The evidence supporting these amendments is given. The three areas, Islay-Jura, Ballachulish-Appin, and Tayvallich-Loch Awe, are regarded as complex synclines of correlated rocks. Between these synclines appear grey calcareous phyllites. Between the phyllites and the flags or discontinuous quartzite occur shallow-water beds, composed essentially of quartzitic conglomerate and calcareous sandstone, accompanied usually, but not always, by black slate.

PARIS.

Academy of Sciences, Dec. 22.—P. Vincensini: A property relating to the deformation of surfaces.—Bertrand Gambier: Voss-Guichard surfaces.—J. Herbrand: A new demonstration and generalisation of a theorem of Minkowski.—Kourensky: The generalisation of the Poisson-Jacobi parentheses.—Henri Mineur: The K terms of the radial velocities. When the mean radial velocity of the stars is developed in a series of spherical functions, the development contains a constant, called the K term, which cannot be explained by the movement of the sun, or by the rotation of the whole of the stars. The K terms for stars of known radial velocities have been calculated, classifying by types of spectra, by the distances from the sun, and by galactic latitudes.—André Lallemand: The photometric study of the solar corona for radiations in the red and infra-red. The relation between the brightness (B) of an element of the corona and its distance from the sun (p) has been found to be

$$\log B = \alpha p + \log B_0.$$

For a given wave-length, α is constant and independent of the region explored.—G. C. Moisil: The systems of Dirac equations of elliptical type.—Marcel Chopin: An apparatus for measuring the surface tensions of liquids. The apparatus described and illustrated can be used for measuring surface tension in absolute values with quantities of liquid of the order of 0.15 c.c.—J. Basset and R. Dupinay: The compressibility of nitrogen and of hydrogen at ultra-pressure of 5000 atmospheres. 1 c.c. of hydrogen at 1000 kgm./cm.² becomes 0.456 c.c. at 5000 kgm./cm.²; 1 c.c. of nitrogen at 1000 kgm./cm.² becomes 0.610 c.c. at 5000 kgm./cm.². Apparatus is under construction for studying gases at pressures of 25,000 atmospheres.—P. de la Gorce: The realisation of a resistance for measurements at very high voltages. Description, with diagram, of an arrangement in use at the Laboratoire central d'électricité for a steady load at 150 kilovolts.—P. Girard and P. Abadie: The hypothetical existence in water of resonators of Hertzian frequency. Measurements of the dielectric constant of a solution of sodium silicate of concentration $1.5 \times 10^{-4} N$ for wave-lengths between 50.18 cm. and 60.28 cm. have not proved the existence of dispersion bands, and the experiments of Weichmann and of Frankenberger cannot be confirmed.—Georges Fournier: The graphical calculation of the magnitudes connected with the electron in motion.—Z. Zajac: The fluorescence of excited mercury atoms.—Louis Goldstein: The introduction of the exchange in the statistics of a gas of electrons.—André Guillet: The thermal phenomena produced along hysteresis cycles.—Marcel Dufour: The representation of the astigmatic pencil and the auxiliary straight line of Mannheim.—J. Dourgnon and G. Waguet: Theorems relating to the brilliancy of secondary sources.—Constantin

Salceanu : The magnetic rotatory polarisation of organic substances liquefied by fusion. Measurements are given of the magnetic rotation (field 36,000 gauss) of naphthalene and of β -methylnaphthalene for varying temperatures above the melting-points of these substances: the results are compared with those deduced from Mallemann's theory.—R. de Mallemann and P. Gabiano : The magnetic rotatory power of hydrocarbons in the gaseous state. Special attention has been paid to the purification of the gases examined, fractional distillation being used where possible. Data are given for the first six hydrocarbons of the paraffin series.—Charles Dufraisse and Léon Enderlin : Contribution to the study of the reversible oxidisability of organic substances: the thermochemistry of the oxidation of rubrene. The determination of the heats of combustion of rubrene and its oxides, proves that there is a loss of 23 calories when passing from rubrene to its dissociable oxide.—E. H. Buchner : The vapour pressure of jellies. The author has been unable to confirm the results obtained by Paul Bary on the vapour pressure of jellies, and hence thinks it unnecessary to discuss the theoretical explanation given by the latter.—Paul Bary : The vapour pressure of jellies. Reply to E. H. Buchner.—Marcel Godchot and Mlle. G. Cauquil : The dispersion of refraction of cyclanic hydrocarbons. The refractive indices (n, n') for two wave-lengths (λ, λ') have been determined for 23 hydrocarbons of the cyclo-pentane, cyclo-hexane, cyclo-heptane, and cyclo-octane series. The specific dispersion ($n - n'$)/ d , where d is the density taken at the same temperature as the optical observations, shows certain regularities.—G. Mahoux : The influence of high frequency oscillations on the treatment of metallurgical products. When a steel containing nickel, chromium, and molybdenum was heated to 500° C. for nine hours in a current of gaseous ammonia, its hardness and resilience are not appreciably changed. Under similar conditions, but with the test piece submitted to high frequency oscillations, the hardness is increased to about three times the original value. Other steels show similar changes.—Léon Guillet : Remarks on the preceding communication. The importance of these researches is emphasised and the necessity for further work indicated.—Augustin Boutaric : A method of following the variation of the number of particles in the course of the evolution of a colloidal solution. Application to blood serum. The change in the number of particles in suspension can be followed by the comparison of measurements of viscosity and the optical density.—P. Laffitte and M. Patry : The detonation of explosive solids.—M. Païc : The fusion diagram of the systems $HgBr_2 - HgSO_4$ and $HgCl_2 - HgSO_4$.—Edouard Urbain : The acid magnesium potassium carbonates and magnesium ammonium carbonates.—A. Travers and Franquin : The estimation of piperidine in a mixture of pyridine and its higher homologues.—J. Wyart : The dehydration of heulandite studied by means of X-rays.—L. Royer : The possible orientation of cubical crystals deposited on a sheet of mica.—F. Dupré la Tour : The polymorphism of the saturated dicarboxylic fatty acids as a function of the temperature.—R. Weil : The peculiarities of amethysts and quartz rich in solid inclusions.—Albert Michel-Lévy : Crushed granulite and ante-Stephanian mylonites at the north-east of the mountains of Espinouse.—Maurice Blumenthal : The transversal extension of the betic mass in the "Hoya de Malaga".—Henri Termier : The existence of Caledonian folds in central Morocco.—J. Devaux : The photometric study of the penetration of solar radiations in the interior of the Pyrenees glaciers.—J. Thoulet : Aerial columns and submarine liquid columns.—R. G.

Werner : The formation of lichens.—Maurice Hocquette : The evolution of the nucleus in the cells carrying bacteria of the nodules of *Ornithopus perpusillus* during the phenomena of infection and of intracellular digestion.—Marc Simonet : The cytological study of some hybrids of *Iris*.—Charles Pontillon : Variations in the unsaponifiable matter and lipoïd phosphorus of *Sterigmatocystis nigra* as a function of the mineral composition of the culture fluid.—Paul Guérin : The development of the egg and polyembryony in *Erythronium dens canis*.—J. R. Denis and P. Paris : The influence of light on the free plankton of fresh water.—M. Bridel and C. Charaux : Frangularoside, a new rhamnoside of recently dried alder-buckthorn bark. It is the custom to store this bark for a year before sale, and Schwabe has stated that franguloside does not exist in the fresh bark. The authors confirm this view, since on applying the method which extracts 25 grams of franguloside from a kilogram of commercial bark, a different rhamnoside is obtained, to which the name frangularoside is given. Hydrolysis of this new compound gives 41 per cent of rhamnose.—G. Nicholas and Mlle. Aggery : New observations on *Phyllosticta Daphniphylli* and the increase of its action by bacteria.—Mme. Lucie Randoin and Mlle. Andrée Michaux : Variations in the proportion of chlorine in the blood serum and the variations of the chloride elimination in the course of acute experimental scurvy.—H. Bierry : Protein, sugar and animal species.—L. Bugnard and C. Soula : Cholesterolic regulation.—C. N. Dawydoff : The post-embryonic development of the annamite *Cælopiana*. The organisation of the larva.—E. Roubaud : The existence of genetically distinct biological races in the common mosquito, *Culex pipiens*.—R. Fosse, A. Brunel, P. de Graeve, P. E. Thomas, and J. Sarazin : Application of the seed of *Soja hispida* deprived of uricase. The qualitative and quantitative analysis of allantoin.—Jean Loiseleur : The state of the biochemical constituents, especially the proteins, in anhydrous solutions. Proteins and other biochemical constituents are soluble in certain fatty acids, forming, in the absence of water, true solutions.—G. Ramon : The production of the tetanus antitoxin.—Georges Fontès and Lucien Thivolle : Tryptophane and histidine deficiency regarded as contributing to Biermer's disease (progressive pernicious anaemia).

MELBOURNE.

Royal Society of Victoria, Dec. 11.—J. H. Gatlift and C. J. Gabriel : Additions to, and alterations in, the Catalogue of Victorian Marine Mollusca. Of the new records, ten are chitons, three bivalves, and twenty-two univalves, of which nine are included in the family *Turridae*.—F. Chapman and W. J. Parr : Notes on new and aberrant types of Foraminifera. A new genus, *Heronallenia*, is proposed for some previously described species of *Discorbina*. The genus is found fossil in the Oligocene of Muddy Creek, the Miocene of Batesford, and the Pliocene of England. The recent specimens are recorded off the Falkland Islands, the Antarctic, New South Wales, and Japan. The new genus, *Hofkerina*, has for genotype Howchin's *Pulvinulina semiornata*, and is a member of the family *Victoriellidae*.—F. Chapman : Occurrence of a fossil *Hydractinia* in Australia. *Hydractinia thatcheri* is here newly described, from the Miocene of the Murray River Cliffs, South Australia. It is quite distinct in specific structure from any previously described, and is the first occurrence of the genus in Australian rocks. The perisarc is papillate and encrusts a once-existing gasteropod shell.—W. J. Parr : Victorian and South Australian shallow-water Foraminifera. One hundred and ninety-four species and varieties are

recorded, including sixteen described as new. Several usually warm-water species are found in Bass Strait, but not on the South Australian coast; while other species described from the Miocene of Victoria are now recognised for the first time as living in the same area.

Official Publications Received.

BRITISH.

The South African Journal of Science. Vol. 27: Being the Report of the Twenty-eighth Annual Meeting of the South African Association for the Advancement of Science, Caledon, 1930, 7 July to 12 July. Pp. xlii+620. (Johannesburg.) 30s. net.

Journal of the Manchester Geological Association. Vol. 1, Part 2, 1927-8. Edited by Laurence H. Tonks. Pp. 61-113. (Manchester.) 7s. 6d.

Annual Report of the Indian Central Cotton Committee, Bombay, for the Year ending 31st August 1930. Pp. ii+113. (Bombay.) 2 rupees.

Air Ministry: Aeronautical Research Committee. Reports and Memoranda. No. 1305 (E. 41): A Harmonic Analysis of the Torque Curves of a Single Cylinder Electric Ignition Engine when throttled to various Mean Indicated Pressures, with an Appendix on the Estimation of Forcing Torques in Multi-Cylinder Engines. By N. S. Muir and A. Terry. Pp. 14+11 plates. 1s. net. No. 1334 (Ae. 467): Wind Tunnel Experiments with Circular Discs. By L. F. G. Simmons and N. S. Dewey. (T. 2919.) Pp. 6+4 plates. 9d. net. No. 1337 (Ae. 468): The Stresses in a Radially Spoked Wire Wheel under Loads applied to the Rim. Part 2: Simplified Formulae and Curves. By Prof. A. J. Sutton Pippard and W. E. Francis. (T. 2978.) Pp. 10+9 plates. 9d. net. No. 1338 (Ae. 469): Stalled Flight Tests on a Bristol Fighter fitted with Auto Control Slots and Interceptors. By R. P. Alston and Pilots of Aerodynamics Flight, R.A.E. (T. 2979.) Pp. 3+1 plate. 4d. net. No. 1339 (Ae. 471): Full Scale Experiments on High Tip Speed Airscrews—The Effect of Thickness of Section on Airscrew Performance. By W. G. Jennings and A. Ormerod. (T. 3002.) Pp. 6+8 plates. 6d. net. No. 1340 (Ae. 472): Directional Stability of High Speed Aircraft. By W. G. Jennings. (T. 2991.) Pp. 4+17 plates. 6d. net. No. 1315 (Ae. 470): An Experimental Determination of the Intensity of Friction on the Surface of an Aerofoil. By A. Fage and V. M. Falkner. (T. 2936.) Pp. 24+13 plates. 1s. 3d. net. No. 1360: Technical Report by the Accidents Investigation Sub-Committee on the Accident to the Aeroplane G-AAZK at Meopham, Kent, on 21st July 1930. Pp. 92+27 plates. 3s. 6d. net. (London: H.M. Stationery Office.)

FOREIGN.

Mémoires de Musée Royal d'Histoire Naturelle de Belgique. Hors série. Résultats scientifiques du voyage aux îles orientales néerlandaises de LL. AA. R.R. le Prince et la Princesse Léopold de Belgique. Publié par V. van Straelen. Vol. 2, Fascicule 2: Süsswasserschwämme von Neuguinea. Von Walther Arndt. Pp. 12. Vol. 2, Fascicule 3: Coelenteres hydrotopiques. Par E. Leloup. Pp. 18+2 planches. Vol. 2, Fascicule 4: Styphomedusen. Von G. Stiasny. Pp. 12. Vol. 2, Fascicule 5: Die Oligochaeten. Von W. Michaelisen. Pp. 26. Vol. 3, Fascicule 1: I. Isopoda (excl. Oniscoidea et Epicaridea), par H. F. Nierstrasz; II. Isopoda Epicaridea, par H. F. Nierstrasz et G. A. Breder à Brandis. Pp. 17. Vol. 3, Fascicule 2: Parasitic Copepoda. By W. Harold Leigh-Sharpe. Pp. 11+5 plates. Vol. 3, Fascicule 3: Cirripedes. By Dr. C. A. Nilsson-Cantell. Pp. 24. Vol. 5, Fascicule 1: Batraciens. Par Gaston-Fr. de Witte. Pp. 8. (Bruxelles.)

University of California Publications in American Archaeology and Ethnology. Vol. 29, No. 2: A Crow Text, with Grammatical Notes. By Robert H. Lowie. Pp. 155-175. (Berkeley, Cal.: University of California Press; London: Cambridge University Press.) 30 cents.

Ministry of Agriculture, Egypt: Technical and Scientific Service. Bulletin No. 97: Some Climatic Relations of the Date Palm in Egypt. By Ahmed K. M. Gharmawy. Pp. ii+23. 5 P.T. Bulletin No. 100: Developments of the Existing System for Seed Supply of Cotton in Egypt. By Dr. W. Lawrence Ball. Pp. 11+3 plates. 5 P.T. (Cairo: Government Press.)

Conseil Permanent International pour l'Exploration de la Mer. Rapports et procès-verbaux des réunions. Vol. 67: Reports of the Proceedings of a Special Hydrographic Meeting held on May 27th, 1930, in Copenhagen. Pp. 99. 4.00 kr. Vol. 68: Fluctuations in the Abundance of the various Year-Classes of Food Fishes. Reports prepared by Special Reporters nominated by the Council and indicating the Main Results brought out by the Papers read at the Biological Meeting of London in 1929. Pp. 115. 4.50 kr. Vol. 69: Statistiques biologiques et considérations sur la population harenguière de la Manche orientale et du sud de la Mer du Nord. Pp. 12. 0.75 kr. Journal du Conseil. Vol. 5, No. 3, Décembre. Rédigé par E. S. Russell. Pp. 285-454. (Copenhagen: Andr. Fred. Høst et fils.)

Diary of Societies.

FRIDAY, FEBRUARY 20.

ASSOCIATION OF ECONOMIC BIOLOGISTS (Annual General Meeting) (in Botany Department Lecture Room, Imperial College of Science and Technology), at 11.30 A.M.—Discussion on Biological Races and their Significance in Evolution, to be opened by the President. Other speakers:—Dr. W. B. Brierley (Fungi); Dr. P. Bruce-White (Bacteria); Dr. T. Goodey (Nematodes); Dr. W. H. Thorpe (Insects); Dr. W. B. Turrill (Seed-Bearing Plants). GEOLOGICAL SOCIETY OF LONDON (Annual General Meeting), at 3.—Prof. E. J. Garwood: Presidential Address.

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LONDON SOCIETY (at Royal Society of Arts), at 5.—H. Robertson: Modern Architectural Possibilities.

ROYAL SOCIETY OF MEDICINE (Balneology and Climatology Section), at 5.

—Discussion on Research on Physiological Effects of Baths.

PHYSICAL SOCIETY (at Imperial College of Science and Technology), at 5.

G. G. Sherratt and J. H. Awbery: On the Velocity of Sound Waves in a Tube.—P. S. H. Henry: The Tube Effect in Sound-velocity Measurements.—W. A. Wood: Note on the Elimination of the β -wave-length from the Characteristic Radiation of Iron.

BRITISH INSTITUTE OF RADIOLOGY (Medical Meeting) (at 32 Welbeck Street), at 5.—Dr. H. Cohen and Dr. P. H. Whitaker: Cinematograph of Ventriculography.—Dr. R. E. Roberts: (a) Lympho-sarcoma Involving the Stomach; (b) Carcinoma of Lung with Pathological Specimens.—Dr. J. H. Mather: X-Rays of a Case of Idiopathic Myositis Ossificans: 1896 and 1930.—Dr. H. K. Graham Hodgson: Demonstration of the Technique of Method of Sinus Investigation.—C. T. Holland: Radiographs of Unique Conditions.

SOCIETY OF CHEMICAL INDUSTRY (Liverpool Section) (Annual Meeting) (at Liverpool University), at 6.—L. Wild: Modern Developments in Printing.

INSTITUTION OF MECHANICAL ENGINEERS (Annual General Meeting), at 6.—Capt. A. Swan, H. Sutton, and W. D. Douglas: An Investigation of Steels for Aircraft Engine Valve Springs.—R. G. C. Battson and J. Bradley: The Fatigue Strength of Carbon- and Alloy-Steel Plates as Used for Laminated Springs.

SOCIETY OF DYERS AND COLOURISTS (at Manchester Literary and Philosophical Society), at 7.—J. S. Wilson: Solazol Dyestuffs.

ROYAL PHOTOGRAPHIC SOCIETY OF GREAT BRITAIN (Pictorial Group—Informal Meeting), at 7.—Discussion on the Work of M. Puys.

SOCIETY OF CHEMICAL INDUSTRY (Newcastle Section) (jointly with Northern Coke Oven Managers' Association) (at Armstrong College, Newcastle-upon-Tyne), at 7.30.—Dr. S. R. Illingworth: Some Aspects of the Carbonisation of Coal.

ELECTRICAL DEVELOPMENT ASSOCIATION (at Royal Society of Arts), at 7.30.—T. I. Bernard: Electrical Methods: Ventilation and Air Conditioning.

JUNIOR INSTITUTION OF ENGINEERS (at Royal United Services Institution), at 7.30.—A. J. Grant: The Construction of the Variable Density Tunnel for the National Physical Laboratory at Teddington.

SHIPLEY TEXTILE SOCIETY (at Shipley Technical School), at 7.30.—A. B. Shearer: Rayon: its Uses in Woven Fabrics.

INSTITUTION OF STRUCTURAL ENGINEERS (at Merchant Venturers' Technical College, Bristol), at 7.30.—R. T. Morgan: Thame House.

ROYAL SOCIETY OF MEDICINE (Obstetrics and Gynaecology Section), at 8.—Dr. A. A. Osman and Dr. H. G. Close: Observations on the Plasma Bicarbonate, and the Value of Alkalies in the Treatment of some of the Renal Complications of Pregnancy.

ROYAL SOCIETY OF MEDICINE (Electro-Therapeutics Section), at 8.30.—Discussion on the Future Policy of the Section.

ROYAL INSTITUTION OF GREAT BRITAIN, at 9.—Prof. J. B. S. Haldane: Prehistory in the Light of Genetics.

GEOLGISTS' ASSOCIATION (North-East Lancashire Group) (at Technical College, Blackburn).—W. L. Turner: With the Geologists' Association in Czechoslovakia (Lecture).

ROCHDALE TEXTILE SOCIETY (at Technical Schools, Rochdale).—Gregg: Modern Weaving Methods.

SATURDAY, FEBRUARY 21.

NORTH OF ENGLAND INSTITUTE OF MINING AND MECHANICAL ENGINEERS (at Newcastle-upon-Tyne), at 2.30.—T. V. Simpson: Old Mining Records and Plans.—Paper open for further discussion:—W. H. Connell: Some Recent Improvements in Surveying Instruments.

ROYAL INSTITUTION OF GREAT BRITAIN, at 3.—J. Stephens: On the Reading and Speaking of Verse (2): Difficult Poets.

MONDAY, FEBRUARY 23.

INSTITUTE OF ACTUARIES, at 5.—D. Houseman: Suggestions on the Legal Aspects of Life Office Practice.

INSTITUTION OF MECHANICAL ENGINEERS (Graduates' Section, London), at 6.45.—D. G. Sopwith: Fatigue in Metals.

INSTITUTION OF ELECTRICAL ENGINEERING (North-Eastern Centre) (at Armstrong College, Newcastle-upon-Tyne), at 7.—E. T. Norris and F. W. Taylor: High-Voltage Testing Equipments.—B. L. Goodlet, F. S. Edwards, and F. R. Perry: Dielectric Phenomena at High Voltages.

ROYAL SOCIETY OF MEDICINE (Odontology Section), at 8.—A. Hopewell Smith: (a) Evidence against the Theory of Metabolic Properties of Human Enamel; (b) The Head of an Egyptian Mummy.

ROYAL GEOGRAPHICAL SOCIETY, at 8.30.—P. C. Visser: The Karakoram and Turkistan Expedition of 1920-30.

CAMBRIDGE PHILOSOPHICAL SOCIETY (in Botany School, Cambridge), at 8.45.—Prof. E. V. Appleton: Wireless Exploration of the Upper Atmosphere.

INSTITUTION OF ELECTRICAL ENGINEERING (Western Centre) (at Cardiff).—Prof. W. Cramp: The Birth of Electrical Engineering (Faraday Lecture).

TUESDAY, FEBRUARY 24.

ROYAL SOCIETY OF ARTS (Dominions and Colonies Meeting), at 4.30.—A. Wiglesworth: The Hard Fibre Industry, with special reference to the British Empire.

IMPERIAL COLLEGE CHEMICAL SOCIETY (in Main Chemistry Lecture Theatre, Royal College of Science), at 5.10.—Prof. G. T. Morgan: The High Pressure Plant at the Chemical Research Laboratory, Teddington (Lecture).

ROYAL INSTITUTION OF GREAT BRITAIN, at 5.15.—Sir William Bragg: Recent Experimental Physics (3): Adhesion (1).

INSTITUTION OF CIVIL ENGINEERS, at 6.

INSTITUTION OF MUNICIPAL AND COUNTY ENGINEERS (North-Western District) (in Geological Department, University, Manchester), at 6.30.—E. Morton: The Properties, Selection, and Specification of Sandstones for Use as Kerbstones on Main Thoroughfares.