

Societies and Academies.

LONDON.

Royal Society, May 3.—Leonard Hill and A. Eidinow: The influence of temperature on the biological action of light. The biological action of light is accelerated by warmth and retarded by cold. This is true for bacteria, infusoria and human skin. The temperature coefficient for infusoria, between 1° and 20° C., is about 3.0. By adequate exposure to cool air over-action of the sun on the skin can be prevented. The proven success of heliotherapy applied to children with surgical tuberculosis can probably be secured for cases of phthisis if these are no longer exposed in hot sun-boxes, but suitably stripped and exposed in cool air.—F. A. E. Crew: Studies in intersexuality. I.—A peculiar type of developmental intersexuality in the male of the domesticated mammals. Individuals, regarded as females during the earlier part of their lives, later assume the behaviour and the secondary sexual characters of males. They form a series according to the degree of imperfection of the external genitalia and the relative degree of development of the derivatives of the Wolffian and Müllerian ducts. In all there were paired but mal-descended testes. The condition appears to be the result of the absence during the period of differentiation of the sex organisation of that minimum stimulus provided by the sex-differentiating substance, of the sex-hormone, in a zygotic male. The Wolffian and Müllerian ducts pursue an equal and parallel development. The degree of intersexuality varies with the stage during the period of sex-differentiation at which the necessary minimum stimulus was exhibited. Since the assumption of the secondary sexual characters of the male type is normal in time, either the minimum stimulus is ultimately exhibited, or else there is a different threshold of response to the action of the sex-differentiating stimulus on the part of various structures belonging to the sex-equipment.—E. J. Morgan and J. H. Quastel: The reduction of methylene blue by iron compounds. The restoration of the power to reduce methylene blue to boiled milk by means of ferrous sulphate solution is due to the inorganic constituents of the milk. Methylene blue is reduced by ferrous sulphate solution in the presence of sodium hydroxide, carbonate, bicarbonate or phosphate, and of the sodium salts of acids such as acetic, tartaric, or citric. Ferrous sulphate solution alone will not effect any perceptible reduction. Two ferrous molecules always react with one of methylene blue. The mechanism of the reduction appears to depend on the relative affinities of the oxygen acceptor for the hydroxyl ion and of the hydrogen acceptor for the hydrogen ion.—C. F. Cooper: The skull and dentition of *Paraceratherium bugtiense*. A genus of aberrant rhinoceroses from the Lower Miocene deposits of Dera Bugti. A complete lower jaw, a nearly complete skull, parts of three other skulls, several fragments of lower jaws, numerous loose teeth, and parts of the milk dentition found in Baluchistan are discussed. The lower pair of incisors have the form of tusks turned downward. Even in the oldest specimens they show practically no signs of having been used. The condition of the premolar dentition shows the animal to be in an early state of evolution, but on a side line, with some possible connexion with the early North American *Aceratheres*. Similar teeth were found in Turkestan by Borriasyak and described by him as belonging to *Indricotherium* (=Baluchitherium), and a skull has been discovered in Mongolia by the American

Museum expedition and attributed to Baluchitherium. It has the enormous length of 5 ft., as against a skull length of 3 ft. in the present form, which makes it the more probable that the two genera are properly separated.—W. L. Balls: The determiners of cellulose structure as seen in the cell walls of cotton hairs. The use of plane and circularly polarised light and of immature hairs shows that the reversals of the spiral fibrillar structure appear in full number, as soon as the secondary wall is visible, indicating predetermination thereof during growth in length. On development of the pre-cellulose, the primary wall shows a pair of opposed spirals with pitches corresponding to that of the slip spirals of the secondary wall. These slip spirals are structurally connected with the quicker pit spirals and invariably opposed to the latter in direction; the tangents of their angles are in the ratio of 4:1, which suggests polymerisation from the pre-cellulose of the primary wall. The rotation of the plane of polarisation by a single layer of secondary cell-wall is inverted on opposite sides of a reversal point; thus the molecular structures of the right-hand and left-hand areas would seem to be mirror-images. The probable space-lattice conformation of cotton and other celluloses seems to indicate a modernised restatement of Nägeli's micellar theory.—I. de B. Daly: The influence of mechanical conditions of the circulation on the electro-cardiogram. Exercise in man produces changes in the electro-cardiogram which are similar to those obtained in anæsthetised animals by simultaneous stimulation of both stellate ganglia. Partial or complete denervation of the heart was produced in a dog. Alterations in the mechanical conditions of the circulation were brought about (i.) by partial compression of the systemic aorta at various levels in the body, and (ii.) by changing the conditions of the artificial circulation of the heart-lung preparation. The most marked changes in the electro-cardiogram occurred when the arch of the aorta was partially clamped. The form of the electro-cardiogram of the denervated mammalian heart probably remains unaltered when the increase in work of the heart is produced in a physiological manner.

Zoological Society, April 10.—Dr. A. Smith Woodward, vice-president, in the chair.—G. C. Robson: The snail *Planorbis sufouirii* Graells, the intermediate host of *Schistosoma* (*Bilharzia*) *hæmatobium*, in Portugal.—C. F. Sonntag: On the anatomy, physiology and pathology of the chimpanzee.—K. Kostanecki: On a remnant of the omphalomesenteric arteries in the manatee.

Royal Microscopical Society, April 18.—Prof. F. J. Cheshire, president, in the chair.—D. W. Cutler: The Protozoa of the soil. Data were obtained from 365 consecutive daily counts of the numbers of bacteria and protozoa in a normal field soil. Fourteen-day averages of the total numbers showed marked seasonal changes; the organisms being most numerous in November and fewest during February. An inverse relationship exists between the numbers of bacteria and the active amoebæ. A two-day periodicity obtains for the active numbers of one species of flagellate. *Azotobacter*, in the presence of Protozoa, can fix more atmospheric nitrogen than when alone. Experiments on the reproductive rate of *Colpidium colpoda* show that, according to the age of the parent culture, death of some of the organisms follows inoculation into fresh medium; also that death occurs even during the period of maximum reproduction.—A. C. Seward: The use of the microscope in palæobotanical research. Microscopical investigation can be applied to plants which have been

preserved in different states, are of different geological age, and belong to various divisions of the vegetable kingdom, and reference was made to the examination of fragments detached from imperfectly petrified stems which cannot be cut into sections. Petrified roots of a Cretaceous fern were described in illustration of the difficulty of distinguishing between inorganic and organic structures. The architectural basis of plant organs has been remarkably persistent through the ages. Recent palaeobotanical discoveries have thrown little light on the problem of evolution.

MANCHESTER.

Literary and Philosophical Society, April 24.—Mr. W. H. Todd, vice-president, in the chair.—T. H. Pear: A new type of number form. The numbers appear to be on small square blocks. It is possible, by imaging a series of them tilted backwards, to see at a glance a numerical series like 1, 2, 4, 8, etc., or even $1, \frac{1}{2}, \frac{1}{4}, \dots, \frac{1}{128}$. To see this last fraction it is necessary, in imagination, to approach the form very closely. Complex numbers like $\sqrt{-1}$ and $\sqrt{-9}$ can be seen vaguely in undefined areas in the neighbourhood of 1 and 9 respectively. The form even represents a billion and a trillion, though it is difficult to see beyond a source of light (to look into which is like looking at the sun) which exists near the place representing a million.—W. J. Perry: The neurological basis of human behaviour in society. A calm, happy, peaceful behaviour is normal for man as he is at present constituted. Since this type of behaviour is universal among peoples in the "food-gathering" stage of culture, it must have been acquired at an early stage in the evolution of man, who, in the course of the development of civilisation, has, speaking generally, exhibited war-like, cruel, and angry types of behaviour to an increasing degree. An explanation is sought by considering man's brain as consisting of two distinct parts—the optic thalamus and the cerebral cortex, or neo-pallium. The optic thalamus represents the dominant part of the brain of the lower vertebrates. The cortex is concerned with "epicritic" sensibility, the thalamus with emotional tone. The increasingly violent behaviour of man as civilisation has proceeded can be referred to stimuli, due to certain social institutions, which, by unduly exciting the thalamus, undermine the control established by the cortex. The removal of those institutions should therefore have tremendous effects on human behaviour.

DUBLIN.

Royal Dublin Society, April 24.—Prof. J. A. Scott in the chair.—A. E. Clark: Evidence of displacement of Carboniferous strata in County Sligo. Accurate plotting of the igneous dykes on the N. coast of Co. Sligo shows that a strip of country four miles wide, lying just W. of Aughris Head, has been displaced southwards between parallel faults for a distance varying from a quarter of a mile on the W. side to three-quarters of a mile on the E.—E. J. Sheehy: The comparative values of protein, fat, and carbohydrate for the production of milk fat. By feeding lactating goats for successive periods with carbohydrate, fat, and protein the relative values of these materials have been ascertained. Protein (in excess of that required for milk protein and for body maintenance) and carbohydrate are equal in value, and fat is $2\frac{1}{4}$ times as valuable as either. In rations containing less than a certain quantity of fat, however, the substitution of extra

fat for some of the carbohydrate gives results which credit fat with a value much higher than $2\frac{1}{4}$ times that of carbohydrate. In addition to its food value, fat in the ration stimulates milk fat secretion, but a small quantity suffices for the latter purpose.—T. J. Nolan and H. W. Clapham: The utilisation of monomethylaniline in the production of tetryl. In the nitration of monomethylaniline, metanitrotetryl is formed in addition to tetryl; also crude tetryl formed from commercial dimethylaniline frequently contains the same impurity. The use of monomethylaniline for the manufacture of tetryl has, apart from its cost, been hitherto regarded with disfavour. Tetryl containing not more than almost inappreciable quantities of metanitrotetryl can be obtained in good yield from monomethylaniline if the latter, before nitration, is converted into its nitroso derivative. The nitroso group influences the course of the nitration.

PARIS.

Academy of Sciences, April 9.—M. Albin Haller in the chair.—A. Guntz and Benoit: The ionising power of fused lithium hydride.—Maurice Lecat: The generalisation and modifications of a theorem of Frobenius.—E. O. Lovett: Certain functional properties of conics and their generalisations.—Maurice Fréchet: The existence of (Ω) classes not complete.—M. Mandelbrojt: Taylor's series with gaps.—H. C. Levinson: The gravitational field of n bodies in the theory of relativity.—Ernest Csikser: Some dynamical and geometrical properties of movement resulting from the conditions of M. Angelesco.—G. Laville: The propagation of maintained waves along an iron wire. The experimental results are in good agreement with the formula developed from Maxwell's equations, but the formula deduced from Kirchhoff's theory leads to results not in accord with experiment.—G. Vavon and A. Husson: Catalysis and steric hindrance. A study of the reduction of cinnamic acid and esters and alkylcinnamic acids and esters by hydrogen in the presence of a platinum catalyst. The experimental results are in agreement with the predictions of the theory of steric hindrance. J. F. Durand: The action of acetylene on zinc ethyl. Acetylene was passed into a solution of zinc ethyl in petroleum ether, and the yellow solid produced rapidly separated. It gave the reactions of a zinc acetylidyde; water gave acetylene and zinc hydroxide. Mercury diphenyl treated in a similar manner gave no reaction.—W. J. Vernadsky: Mendeleeffite, a new radioactive mineral. This mineral, found near Sludjanka (on lake Baïkal), is a calcium urano-titanoniobate, containing about 23.5 per cent. of U_3O_8 . Its crystalline form is described.—Ph. Schereschewsky and Ph. Wehrli: Elements of a synthesis of the French and Norwegian methods of weather forecasts.—Ch. Janet: The ontogenesis of *Volvox aureus*.—Lucien Daniel: Variations of perfumes under the influence of grafting. Experiments on grafting with wormwood (*Artemisia Absinthium*) have shown that the modifications in the leaves and seeds are accompanied by changes in the character of the essential oil: the taste and perfume may improve or deteriorate with differences in the species grafted.—Raphael Dubois: Tears and the functions of the lachrymal gland. An enzyme has been isolated from the lachrymal glands of the cow: it is neither an oxydase nor a peroxydase, but is a diastase hydrolysing starch like ptialine; the name lacrymase is given to it.—M. Lopez-Lomba and Mme. Randoïn: The production of scurvy in the guinea-pig and young rabbit by means of a new food regime, complete and in bio-

chemical equilibrium, deprived only of the factor C. A food is described containing all the necessary constituents except factor C. The animals fed with this ration, plus 3 c.c. of lime juice (factor C), made normal growth. All the other animals fed with the same ration, minus factor C, after a short period of rapid growth, developed scurvy and died.—**E. Lesné, Christou, and Vaglianos**: The passage into the milk of the C vitamins introduced by other means than the mouth.—**E. Fernandez Galiano**: The rhythmic contractions of Vorticella.—**A. L. Herrera**: The imitation of plasmodia and chromatic structures by sodium silicate coloured with ivory black and drops of alcohol in diffusion. If drops of absolute alcohol are allowed to diffuse into a syrupy solution of sodium silicate coloured with ivory black, remarkable imitations of cells, nuclei, and chromatic structures are produced. The structure can be preserved fairly well by washing the card with weak alcohol to remove traces of alkali.—**A. Policard**: The mineralisation of histological sections by calcination, and its interest as a general histochemical method. The method, described in detail, permits the localisation of the mineral elements in the positions they occupy in the living tissue.—**René Jeannel**: The evolution of the copulatory apparatus in the genus *Choleva*. The sexual characters in this genus, both in the male and female, are more trustworthy than the external characters in defining the species.—**Lucien Semichon**: The preparation of wine by continuous fermentation: selection of the ferments by the alcohol already formed. Natural fermentation is due to elliptical yeasts, wild and apiculated yeasts, *Dematium*, spores of cryptogams, and various bacteria, all of which are objectionable except the first. Sterilisation of the must, followed by the introduction of a pure yeast culture, is economically impracticable. In a must containing 5 per cent. of alcohol the growth of the elliptic yeasts is favoured and the objectionable organisms do not develop freely. In practice, the addition of this amount of alcohol is not possible, but the same result can be obtained by a process of continuous fermentation. A portion of the must is started fermenting with a cultivated yeast, and after the necessary amount of alcohol has been produced, fresh must is added at a constant rate. The method has been successfully applied on the large scale.—**Auguste Lumière and Henri Couturier**: Barometric depression and anaphylactic shock. Guinea-pigs, sensitised by egg albumen, are partially protected against anaphylactic shock by placing under a bell jar in an atmosphere at about half the normal atmospheric pressure. The mortality in the animals thus treated was 40 per cent. against 80 per cent. when the animals were allowed to remain under normal pressure after the second injection.—**Jules Amar**: The law of vivireaction in pathology.

April 16.—**M. Albin Haller** in the chair.—**Emile Picard**: The singularities of harmonic functions.—**Charles Richet**: The spleen, a useful organ, but not essential. An account of experiments on the comparative effects of starvation of dogs with and without the spleen. Animals can survive for long periods after removal of the spleen: the experiments prove that animals without the spleen require more food to maintain their normal weight, and die more quickly than normal animals when deprived of food.—**M. d'Ocagne**: Normals of quadrics along their lines of curvature. **Charles Nicolle, Et. Burnet, and E. Conseil**: The micro-organism of epizootic abortion, distinguished from that of Mediterranean fever by the absence of patho-

genic power for man. *Micrococcus melitensis* (the organism of Maltese fever) and *Bacillus abortus* present striking similarities in their morphological characters, cultures, and pathogenic power towards the animals commonly used in laboratory experiments; but *B. abortus* proves to be innocuous to man. Cultures injected into five voluntary subjects caused neither fever nor any other trouble: hæmo-cultures remained sterile and the agglutinating power was generally not developed.—**Georges Bouligand**: The singularities of harmonic functions.—**Gaston Bertrand**: The problem of Dirichlet and the potential of the simple layer.—**G. C. Evans and H. E. Bray**: Poisson's integral generalised.—**André Planiol**: The influence of velocity and of temperature on the friction losses in explosion motors. The engine was driven by an electric motor and the power used measured electrically: in one set of experiments the air port was fully open, in another the air admitted was reduced to a minimum. The frictional losses were found to be a linear function of the turns per minute, the rate of increase being much larger than was expected. Experiments were also made on the effect of varying the temperature of the cooling water.—**Wladimir de Belaevsky**: A problem of elasticity in two dimensions.—**M. Mesnager**: Observations on the preceding communication.—**Antonio Cabreira**: A method of obtaining the geographical co-ordinates at any height of a star.—**Charles Nordmann and C. Le Morvan**: Observations of the Pleiades with the heterochrome photometer of the Paris Observatory. A new method for determining stellar parallax by photometry. The photometric measurements given show that, for the stars of the Pleiades studied, there exists a clear relation between the intensity distribution in the visible spectrum and the absolute magnitude of the star.—**P. Noaillon**: Superficial circulation.—**M. Hadamard**: Remarks on the preceding communication.—**Albert Péard**: Study of some mercury and krypton radiations with the view of their applications in metrology. The results of a large number of comparisons with the red cadmium line are given, with the view of detecting the presence of satellites of feeble intensity. None of the lines compared (neon, krypton, mercury) behaved as a simple symmetrical line.—**Léon and Eugène Bloch**: Spark spectra of higher order. Reply to a claim for priority by M. Duaoyer.—**M. A. Catalan**: Spectrum series and ionisation and resonance potentials of chromium and molybdenum.—**L. J. Simon and A. J. A. Guillaumin**: The determination of carbon and hydrogen by the use of a mixture of sulphuric acid and silver bichromate. The principle of the method is the determination of the carbon dioxide produced by heating a known amount of substance with a measured excess of the oxidising mixture, and the determination of the excess by the addition of an easily combustible substance (potassium methylsulphate), and a second measurement of carbon dioxide. Results of the application of the method to ten organic substances of varying types are given.—**M. Lespieau**: Some derivatives of the glycerol $(OH)CH_2 \cdot CH(OH) \cdot C : C \cdot CH_2(OH)$.—**A. Wahl and W. Hansen**: Isoindigotine and indine. Isoindigotine has been proved to be identical with Laurent's indine.—**M. E. Denaeyer**: The rocks collected by MM. Chudeau and Villatte in the central Sahara.—**E. Schnaebelé**: The tectonic origin of the valleys of the eastern slopes of the Vosges.—**Louis Besson**: Observation of a parhelion of 90°.—**René Souèges**: The embryogeny of the Valerianaceæ. The development of the embryo in *Valerianella olitoria*.—**Pierre Georgévitch**: The rôle of the centrosome in kinesis.—**Mlle. Lucienne Blum**: Modification of plants

submitted to culture under glass. Comparative studies of the same plants grown under glass and in the open air. Under glass the plant appears to be stabilised at an earlier stage of its growth. The organs of secretion are always more abundant in the plant under glass.—Henry Cardot and Henri Laugier: The adaptation, transmission of acquired characters, selection by vital concurrence in the lactic ferment.—Edouard Chatton and Mme. M. Chatton: Sexuality provoked experimentally in an Infusoria, *Glaucoma scintillans*. Predominance of the conditions of the medium in its determinism.—Jules Barrois: The development of Echinoderms.

CALCUTTA.

Asiatic Society of Bengal, April 4.—M. A. Wali: Hinduism according to Muslim Sufis. Some Sufi scholars of India conclude that India, like other countries, has produced prophets and saints, and that the teachings of the Vedas and Upanishads are in accordance with the Muslim Scriptures.—W. Ivanow: A "witch-case" in medieval India. A curious and complete case of sorcery in the form technically called envôitement from the Siyaru 'l-Arifin (\pm A.D. 1530) which is translated and annotated.—H. Mitra: Epigraphic notes.—H. C. Robinson and C. B. Kloss: Some remarks on Mr. C. Stuart Baker's new volume on the Birds (second edition) in the "Fauna of British India." A number of corrections are proposed for the Malaisian and eastern Indo-Chinese species dealt with.—Zoological results of the Percy Sladen Trust Expedition to Yunnan in 1922, under the leadership of Prof. J. W. Gregory:—J. C. Brown: An account of the country traversed by the Expedition.—N. Annandale: Land molluscs. Eighteen species and one local race are represented, of which five species (all belonging to the genus *Buliminus* or *Ena*) and one race of *Helicarion resinaceus* Heude are described as new.—B. Prasad: Bivalve molluscs. Six species of *Corbicula* from W. Yunnan, a Unionid and a *Sphaerium* are recorded from Lake Tali.—S. W. Kemp: Decapod Crustacea. Three crabs and a prawn of the genus *Caridina* were collected. One of the crabs is a new species of *Potamiscus*, while another (*Potamon atkinsonianum*) is interesting as being a Himalayan form. The *Caridina* from Lake Tali is new and is remarkable on account of the secondary sexual characters of the male.

Official Publications Received.

Abisko Naturvetenskapliga Station. Observations météorologiques à Abisko en 1921. Faites et rédigées par Bror Hedemo. Pp. v+66. (Stockholm: Victor Pettersons Bokindustriaktiebolag.)
Report of the Kodaikanal Observatory for the Year 1922. Pp. 8. (Madras: Government Press.) 6 annas.
Fourth Annual Report of the Governors of the Imperial Mineral Resources Bureau. Pp. 24. (London.)
Medical Research Council. Third Annual Report of the Industrial Fatigue Research Board to 31st December 1922 (including Personal Contributions from Investigators). Pp. 83. (London: H.M. Stationery Office.) 2s. net.
Rocznik Astronomiczny Obserwatorium Krakowskiego na rok 1923. Tom. 2. Pp. iv+167. (Kraków.) 2s. 6d.

Diary of Societies.

SATURDAY, MAY 12.

ANNUAL CONFERENCE OF THE UNIVERSITIES OF GREAT BRITAIN AND IRELAND (at King's College), at 11.—Sir Theodore Morison and others: Discussion on The Financial Outlook of the Universities.—Sir W. Henry Hadow and others: Discussion on Music as a University Subject.—Sir William H. Beveridge and others: Discussion on the Universities and Training for Administrative and Municipal Life.—A. Greenwood, the Master of Balliol, and others: Discussion on Labour and the Universities.

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MONDAY, MAY 14.

VICTORIA INSTITUTE (at Central Buildings, Westminster), at 4.30.—Prof. T. G. Pinches: Assyro-Babylonian Israel Likenesses and Contrasts.
ROYAL GEOGRAPHICAL SOCIETY (at Lowther Lodge, Kensington Gore), at 5.—Prof. J. W. Gregory: The Banda Arc; its Structure and Geographical Relations.
FARADAY SOCIETY (at Chemical Society), at 7.50 (Annual General Meeting): at 8.—E. P. Periman and H. L. Saunders: The Vapour Pressures of Concentrated Cane Sugar Solutions.—E. W. J. Mardles: The Elasticity of Organogels of Cellulose Acetate.—D. Stockdale: An Example of Polymorphism in an Intermetallic Compound.—A. L. Norbury: Some Experiments on the Hardness of Spontaneous Annealing of Lead.—F. C. Thompson and E. Whitehead: Some Notes on the Etching Properties of Alpha and Gamma Forms of Tricarbide of Iron.
ROYAL SOCIETY OF ARTS, at 8.—S. S. Cook: The Development of the Steam Turbine (S). (Howard Lectures.)

TUESDAY, MAY 15.

ROYAL INSTITUTION OF GREAT BRITAIN, at 3.—Prof. A. C. Seward: Arctic Vegetation of Past Ages. (Tyndall Lecture.)
ROYAL STATISTICAL SOCIETY, at 5.15.—D. R. Wilson: On Some Recent Contributions to the Study of Industrial Fatigue.
INSTITUTE OF TRANSPORT (at Institution of Electrical Engineers), at 5.30.—G. J. Shave: The Design and Maintenance of Commercial Motor Vehicles.
ROYAL PHOTOGRAPHIC SOCIETY OF GREAT BRITAIN (Pictorial Group), at 7.
ROYAL ANTHROPOLOGICAL INSTITUTE, at 8.15.—J. H. P. Murray: Native Administration in Papua.
SOCIOLOGICAL SOCIETY (at Leplay House, 65 Belgrave Road), at 8.15.—Dr. G. Slater: The Psychological Basis of Economic Theory.

WEDNESDAY, MAY 16.

ROYAL METEOROLOGICAL SOCIETY, at 5.—M. de Carle S. Salter and J. Glasspoole: The Fluctuations of Annual Rainfall in the British Isles considered cartographically.—A. W. Clayden: (a) An Improved Actinograph. (b) Note on the Influence of a Glass Shade.—Capt. E. E. Benest: Notes on the "Sumatras" of the Malacca Straits.
GEOLOGICAL SOCIETY OF LONDON, at 5.30.—W. B. R. King: The Upper Ordovician Rocks of the South-Western Berwyn Hills.—Prof. W. J. Pugh: The Geology of the District around Corris and Aberllefenni (Merionethshire).
ROYAL MICROSCOPICAL SOCIETY (Industrial Applications of the Microscope Section), at 7.—L. Taverner: The Principles and Application of Technical Metallurgical Microscopy.—W. M. Ames: Applications of the Microscope in the Manufacture of Rubber.
ROYAL SOCIETY OF ARTS, at 8.—L. Gaster: Industrial Lighting and the Prevention of Accidents.
SOCIETY FOR CONSTRUCTIVE BIRTH CONTROL AND RACIAL PROGRESS (at Essex Hall, Strand), at 8.—Earl Russell: Progress and the Law (to be followed by a discussion).

THURSDAY, MAY 17.

ROYAL INSTITUTION OF GREAT BRITAIN, at 3.—Prof. E. G. Coker: Engineering Problems solved by Photo-elastic Methods (1). Improvement in Apparatus: Contact Pressures and Stresses.
ROYAL SOCIETY, at 4.30.—Dr. A. E. H. Tutton: (1) A Universal Interferometer. (2) A Wave-length Torsometer and its Use with the Universal Interferometer.—Prof. L. N. G. Filon and F. C. Harris: The Diphasic Nature of Glass as shown by Photo-elastic Observations.—Prof. C. E. Inglis: Stress Distribution in a Rectangular Plate having two Opposing Edges sheared in Opposite Directions.—Prof. T. H. Havelock: Studies in Wave Resistance—Influence of the Form of the Water-plane Section of the Ship.—W. M. H. Greaves: A certain Family of Periodic Solutions of Differential Equations, with an Application to the Triode Oscillator.
INSTITUTION OF MINING AND METALLURGY (at Geological Society), at 5.30.
RÖNTGEN SOCIETY AND THE ELECTRO-THERAPEUTIC SECTION OF THE ROYAL SOCIETY OF MEDICINE (First Annual Joint Meeting) (in the Barnes Hall, Royal Society of Medicine), at 5.30.—Dr. A. W. George: The Pathological Gall Bladder. (Mackenzie Davidson Memorial Lecture.)
CHEMICAL SOCIETY, at 8 (and Informal Meeting).

FRIDAY, MAY 18.

ROYAL PHOTOGRAPHIC SOCIETY OF GREAT BRITAIN, at 7.—Discussion.
ROYAL INSTITUTION OF GREAT BRITAIN, at 9.—W. M. Mordey: Recent Studies in Alternating Magnetism.

SATURDAY, MAY 19.

ROYAL INSTITUTION OF GREAT BRITAIN, at 3.—J. B. McEwen: Harmonic Evolution.

PUBLIC LECTURES.

MONDAY, MAY 14.

UNIVERSITY COLLEGE, at 5.—Prof. G. Dawes Hicks: Kant's Theory of Beauty and Sublimity. (Succeeding Lectures on May 22 and 28.)

TUESDAY, MAY 15.

GRESHAM COLLEGE, at 6.—A. R. Hinks: Astronomy. (Succeeding Lectures on May 16, 17, and 18.)

THURSDAY, MAY 17.

UNIVERSITY COLLEGE, at 2.30.—Prof. W. M. Flinders Petrie: Recent Discoveries of the British School of Archaeology in Egypt. (Lecture repeated on May 23 at 5, and 26 at 3.)
ST. MARY'S HOSPITAL (Institute of Pathology and Research), at 4.30.—Prof. F. G. Hopkins: An Oxidising Agent in Living Tissues.
KING'S COLLEGE, at 5.30.—Principal L. P. Jacks: The Higher Education and the Community of Nations (Hibbert Lecture).
UNIVERSITY COLLEGE, at 5.30.—Prof. H. A. Lorentz: The Rotation of the Earth and its Influence on Optical Phenomena.—Dr. C. Pellizzi: Bernardino Telesio e la filosofia europea (in Italian.)