

Societies and Academies.

LONDON.

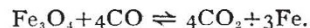
Royal Society, January 27.—Prof. C. S. Sherrington, president, in the chair.—K. Sassa and Prof. C. S. Sherrington: The myogram of the flexor-reflex evoked by a single break-shock. In the spinal preparation excess of the reflex contraction over maximal twitch indicates that summation of successive contraction-waves is present in the former. Repetitive discharge from the reflex centre occurs, therefore, in response to a stimulus consisting of a single induction shock.—Sir Almroth Wright: "Intertraction" between albuminous substances and saline solutions. It is demonstrated by means of experiments in which serum is directly superimposed upon heavier salt solutions, and of corresponding experiments in which lighter salt solutions are superimposed upon heavier serum, that the fluids thus brought into conjunction interpenetrate with extreme rapidity. The phenomena are due to an interaction between the salts and the albuminous substances. The designation "intertraction" is applied to this form of interaction; and it is suggested that these forces supplement diffusion. In supplementary experiments it is shown that by intertraction microbes lodged in serum are rapidly carried down into heavier, or caught up into lighter, salt solutions.—Dr. S. Russ, Dr. Helen Chambers, and Gladys M. Scott: The local and generalised action of radium and X-rays upon tumour growth. The local effects of the β - and γ -rays from radium and X-rays upon rat tumours, under varying conditions, were obtained by exposing the tumour only to measured quantities of radiation. When large doses are employed destructive action upon the tumour-cells is observed; as the dose is reduced the action tends to become stimulative in character, so that the tumour-cells grow more rapidly. The generalised effects of the rays used were obtained by submitting the whole animal to the radiation, the tumour being screened. Large generalised doses could not be borne by the animals; with repeated small doses an increase in body-weight and in resistance towards tumour growth was observed. The bearing of the observations on radiation treatment in man is discussed.

PARIS.

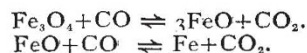
Academy of Sciences, January 10.—M. Georges Lemoine in the chair.—P. Marchal: The utilisation of ladybirds against insects harmful to-cultivation in the South of France. Specimens of *Cryptoloemus Montrouzieri* obtained from America have been cultivated at Mentone, and colonies were liberated in that town and the neighbourhood. It was proved that the insects could pass the winter in the open air in spite of an unusually low temperature.—M. Lugeon and J. Villemagne: An old glacial bed of the Rhone between Léaz and Pont-Rouge des Usses (Haute-Savoie).—A. Schaumasse: Observations of the Skjellerup comet (1920b) made with the bent equatorial at Nice Observatory. Positions are given for December 16, 20, and 23. The comet was of 10.5 magnitude, about 1.5' diameter, with an ill-defined nucleus.—G. Fayet and A. Schaumasse: Provisional elements of the new comet 1920b (Skjellerup).—H. Godard: Observations of the Skjellerup comet made at the Bordeaux Observatory with the 38-cm. equatorial.—S. Posternak: The tetrabasic polymolybdates.—E. Chaput: Observations on the old alluvia of the Seine.—L. Cayeux: The mineralogical evolution of the oolitic iron minerals of France, independent of the time factor.—A. Guilliermond: The morphological constitution of the cytoplasm.—E. De Wildeman: The theories of myrmeco-

phily.—G. Mangenot: The "fucosane grains" of the Pheophyceæ.—H. Lagatu: The respective rôles of the three bases, potash, lime, and magnesia, in cultivated plants. The K:Ca:Mg ratios for a large number of plants are plotted on a rectangular isosceles triangle. The results explain experimental figures recently obtained by the use of calcined dolomite as a manure.—E. Lombard: A collection of phenomena, clinical and experimental, permitting the study of the functional state of the vestibular apparatus in its relations with organic equilibrium.—M. Doyon: The anti-coagulating action of the nucleic acid of the pancreas. The stability and characters of the nucleated plasma.—A. Mayer, H. Magne, and L. Plantefol: The toxicity of the chlorinated methyl carbonates and chlorocarbonates. Thirteen chlorine derivatives of methyl carbonate were studied; the results are expressed graphically with substituted chlorine atoms as abscissæ and minimum focal concentrations as ordinates.—P. Chabanaud: A new Batrachian in intertropical Africa. The larva found appears to be that of *Triton Poiréti*, although there are some differences.

January 17.—M. Georges Lemoine in the chair.—C. Guichard: Couples of two O_1 congruences, reciprocal polars, with respect to a linear complex.—T. Varopoulos: Functions having a finite or infinite number of branches.—C. Trémont: The testing of thin metal sheets by stamping. Two methods are described, one for metal sheets utilised for their rigidity, the other for resistance to shock. Some data obtained with sheets of steel, copper, brass, and aluminium are given.—H. Villat: The initial flow of a liquid through an orifice opened suddenly.—R. de Mallemann: The variation of the rotatory power of tartaric acid. The marked increase in the rotatory power of solutions of tartaric acid caused by the addition of certain weak acids (boric, molybdic, tungstic, etc.) has been attributed to the formation of new chemical compounds of high rotatory power. The author describes modifications of rotatory power produced by the chlorides and nitrates of the alkalis and alkaline earths which appear to be due to another cause. The rotatory power diminishes and then changes its sign; the dispersion changes follow a definite law.—G. Chaudron: Reversible reactions of carbon monoxide with the oxides of iron. The composition of the gaseous phase in this equilibrium has been determined by an interference method. Below 580°C . there is a single system corresponding to the equation



Below 580°C . there are two equilibria corresponding to



A diagram is given, plotted from the experimental figures showing the three branches of curves corresponding to these systems.—J. B. Senderens: The catalytic decomposition of the chloroacetic acids. Whilst acetone is readily formed by the catalytic decomposition of acetic acid, the chloroacetic acids are split up in quite a different manner. Monochloroacetic acid gives carbon monoxide and dioxide, aqueous hydrochloric acid, and a little ethylene chloride; trichloroacetic acid gives the same gases with a little phosgene, with a condensed liquid containing chloroform, tetrachloroethylene, and a little hexachloroethane. Thoria and kaolin have practically identical catalytic actions in these decompositions; but animal charcoal gives different products with trichloroacetic acid, 85 per cent. of the distillate consisting of chloroform.—M. Delépine and P. Jaffaux: The two homo-

logues of ethylene sulphide, 1:2-thiopropene and 1:2-thiobutane. These two sulphides have been prepared in a pure state, and their principal physical constants are given and compared with the isomers described by Grichkévitsh-Trokhimovsky.—R. Fosse: The synthesis of cyanic acid by the oxidation of formamide and of oxamic acid. Formamide was oxidised by potassium permanganate in strongly ammoniacal solution and the resulting solution heated with ammonium chloride; urea was proved to be present by the xanthidrol reaction.—C. Dufraisse: The auto-oxidation of α -bromostyrolene.—O. Mengel: The inter-Glacial and post-Glacial tectonic movements of the eastern end of the Pyrenees.—C. Dufour: The values of the magnetic elements at the Val-Joyeux Observatory on January 1, 1921.—Ad. Dawy de Virville: Modification of the form and structure of a moss (*Hypnum commutatum*) kept under water. After six months marked changes in the mode of growth were observed.—E. Miège: The action of chloropicrin on the germinative faculty of seeds. The destruction of parasitic insects on seeds with chloropicrin vapour is readily carried out, but in some cases the seeds are injuriously affected. Leguminous seeds are not injured by this treatment.—P. Mazé: The chemical mechanism of the assimilation of carbon dioxide by green plants.—A. Pézard: The latent period in experiments of testicular transplantation and the law of "all or nothing."—M. Marage: The limits of audition.—C. Porcher and L. Panisset: Experimental researches on colostrum. Colostrum is not a special fluid secreted by the mammary gland, but the product of phagocytosis of ordinary milk; it is a product of retention. The lactose is absorbed, and the phagocytes attack the colloids and fat globules.—E. Kayser: The influence of light radiations on the azotobacter.—H. Vallée and H. Carré: The adsorption of the aphthous virus.

Books Received.

The Development of Institutions under Irrigation. By Prof. G. Thomas. Pp. xi+293. (New York: The Macmillan Co.; London: Macmillan and Co., Ltd.) 16s. net.

Laboratory Projects in Physics: A Manual of Practical Experiments for Beginners. By F. F. Good. Pp. xiii+267. (New York: The Macmillan Co.; London: Macmillan and Co., Ltd.) 9s. net.

The Origin and Development of the Nervous System from a Physiological Viewpoint. By Prof. C. M. Child. Pp. xvii+296. (Chicago: University of Chicago Press; London: Cambridge University Press.) 1.75 dollars net.

An Introduction to Zoology for Medical Students: By Prof. C. H. O'Donoghue. Pp. x+501. (London: G. Bell and Sons, Ltd.) 16s. net.

Mechanism, Life, and Personality: An Examination of the Mechanistic Theory of Life and Mind. By Dr. J. S. Haldane. Second edition. Pp. vii+152. (London: J. Murray.) 6s. net.

New Studies of a Great Inheritance: Being Lectures on the Modern Worth of some Ancient Writers. By Prof. R. S. Conway. Pp. viii+241. (London: J. Murray.) 7s. 6d. net.

First Course in General Science. By Prof. F. D. Barber and others. Pp. vii+607. (New York: H. Holt and Co.; London: G. Bell and Sons, Ltd.) 9s. net.

Elementary Vector Analysis: With Application to Geometry and Physics. By Dr. C. E. Weatherburn. Pp. xxvii+184. (London: G. Bell and Sons, Ltd.) 12s. net.

Anuario del Observatorio de Madrid para 1921. Pp. 591. (Madrid.)

Botany with Agricultural Applications. By Prof. J. N. Martin. Second edition, revised. Pp. xii+604. (New York: J. Wiley and Sons, Inc.; London: Chapman and Hall, Ltd.) 21s. net.

A Laboratory Manual of Organic Chemistry for Medical Students. By Prof. M. Steel. Second edition, revised. Pp. xi+284. (New York: J. Wiley and Sons, Inc.; London: Chapman and Hall, Ltd.) 9s. 6d. net.

Geography for Junior Classes. By E. Marsden and T. Alford Smith. Pp. viii+278. (London: Macmillan and Co., Ltd.) 5s.

Purpose and Transcendentalism. An Exposition of Swedenborg's Philosophical Doctrines in Relation to Modern Thought. By H. S. Redgrove. Pp. xvi+170. (London: Kegan Paul and Co., Ltd.; New York: E. P. Dutton and Co.) 5s. net.

The Carnegie Trust for the Universities of Scotland. Nineteenth Annual Report (for the Year 1919-20) Submitted by the Executive Committee to the Trustees on February 9, 1921. Pp. iv+102. (Edinburgh: T. and A. Constable and Co., Ltd.)

Orographical, Regional, and Economic Atlas. Edited by T. Franklin. Part 3: Asia. Pp. 32. (Edinburgh: W. and A. K. Johnston, Ltd.; London: Macmillan and Co., Ltd.) 1s. 6d. net.

Memoirs of the Geological Survey. Special Reports on the Mineral Resources of Great Britain. Vol. xii.: Iron Ores (continued). Bedded Ores of the Lias, Oolites, and Later Formations in England. By G. W. Lamplugh and others. Pp. iv+240+viii plates. 12s. 6d. net. Vol. xiv.: Refractory Materials: Fire-clays. Resources and Geology. Pp. iv+243+iv plates. 8s. net. (Southampton: Ordnance Survey Office; London: E. Stanford, Ltd.)

Diary of Societies.

THURSDAY, FEBRUARY 10.

ROYAL INSTITUTION OF GREAT BRITAIN, at 3.—Prof. W. A. Herdman: Oceanography (Problems of the Plankton).

ROYAL SOCIETY, at 4.30.—Rev. John Roscoe: Certain Ethnological Features of Uganda.

LONDON MATHEMATICAL SOCIETY (at Royal Astronomical Society), at 5.—Prof. A. S. Eddington: World Geometry (with particular reference to Weyl's Electromagnetic Theory).—J. Brill: Note on the Electromagnetic Equations.—J. E. Littlewood: Researches in the Theory of the Riemann Zeta-function.—S. Pollard: A New Condition for Cauchy's Theorem.—I. J. Schwatt: (1) An Independent Form of the Numbers of Bernoulli; (2) Euler's Numbers of Higher Order; (3) Certain Numbers which are related to Euler's Numbers of Higher Order.—S. Tunoshenko: (1) The Tension of a Prism one of the Cross-sections of which remains Plane; (2) The Analogy with Membranes in the Case of the Bending of a Prism.

CHILD-STUDY SOCIETY (at Royal Sanitary Institute), at 6.—Dr. G. H. Miles: Vocational Tests.

INSTITUTION OF ELECTRICAL ENGINEERS (at Institution of Civil Engineers), at 6.—Discussion on Electric Appliances for Domestic Purposes, to be introduced by Dr. E. Griffiths and F. H. Schofield in a Paper on Some Thermal Characteristics of Electric Ovens and Hot Plates.

LONDON DERMATOLOGICAL SOCIETY, at 6.—Dr. Sibley: Alopecia (Chesterfield Lecture).

OPTICAL SOCIETY, at 7.30.

ROYAL SOCIETY OF MEDICINE (Neurology Section) (at National Hospital for Paralysis and Epilepsy), at 8.

FRIDAY, FEBRUARY 11.

ROYAL ASTRONOMICAL SOCIETY (Anniversary Meeting), at 5.

ROYAL SOCIETY OF MEDICINE (Clinical Medicine, Surgery), Joint Meeting, at 5.—Dr. H. Mackenzie, J. Berry, and Others: Discussion: The Medical and Surgical Treatment of Graves' Disease. ROYAL COLLEGE OF SURGEONS OF ENGLAND, at 5.—Prof. A. G. T. Fisher: Loose Bodies in Joints.

PHYSICAL SOCIETY OF LONDON (at Imperial College of Science), at 5.—Discussion on Absolute Measurements of Electrical Resistance, and Instruments Based on the Temperature-variation of Resistance.—Sir Richard Glazebrook and F. E. Smith: Absolute Measurements of Electrical Resistance.—Resistance Thermometry: Prof. H. L. Callendar: The Compensated Resistance Bridge, and Instrument for the Measurement of Radiation.—C. R. Darling: The Early Work of Siemens on the Resistance-Pyrometer.—