July 9, 1739 .- Cape Chelyushkin

A Russian expedition under Lieut. Laptev left the mouth of the Lena, and reached Cape Thaddeus, 76° 47′ N., on Sept. 2. After wintering at the head of Khatanga Bay, Laptev tried to return to the Lena, but his vessel was nipped in the drift ice off the Olonek River. He and his men with infinite difficulty reached their former winter quarters. Thence Laptev and his second in command, Chelyushkin, made sledge journeys to survey the peninsula, and, in 1742, Chelyushkin reached by land the northerly cape which now bears his name.

Societies and Academies

LONDON

Royal Society, June 23.-R. Whiddington and J. E. Taylor: The photographic action of slow electrons. The photographic action of electrons (60-300 volts) has been experimentally investigated in the case of 'Imperial Duoplex' films. The formula connecting the blackening with the electron current producing it is of the same form as that known to hold in the case of light but with the constants appropriately changed. The 'inertia' of the film is considerably reduced by oiling its surface before exposure, almost certainly due to fluorescence of the oil under electron impact .-A. Egerton and G. S. Callendar: The saturation pressures of steam (170° to 374° C.). The saturation pressures of steam up to the critical point have been measured by a dynamic method using the apparatus designed by the late Prof. H. L. Callendar for the determination of the total heat of steam. The probable accuracy of the results is 1 in 6000. Previous results by statical methods had agreed satisfactorily to 270° C., but departed considerably from each other above that temperature. The present results lie in the region between the former determinations, and should help in the establishment of a precise knowledge of the thermal properties of steam.

DUBLIN

Royal Dublin Society, March 22.-Henry H. Dixon and T. A. Bennet-Clark: Electrical properties of oilwater emulsions with special reference to the structure of the plasma membrane (2). Previous work has been confirmed and extended by the use of modified methods and apparatus. It has now been shown that the electrical behaviour of water-in-oil emulsions agrees with that of cells in the several particulars. The sensitivity of a water-in-oil emulsion is raised with the increase of the sodium/calcium ratio. The change of resistance is associated with the elongation in the path of the current of the minute droplets of the water-phase of the emulsion, and inversion is not necessary even for large changes of resistance. application of the emulsion-theory of the plasma membrane to the results of permeability experiments is discussed .- Paul A. Murphy and Robert M'Kay: A comparison of some European and American virus diseases of the potato. In a comparison of a number of European and American virus diseases of the potato undertaken some years ago, it was found that the latent viruses present in American 'healthy' potatoes, as well as in those showing symptoms of various diseases, seriously interfered with the results. The following diseases have been found to correspond on the two continents: leaf-roll, aucuba mosaic, interveinal mosaic, and witch's broom. American leafrolling mosaic may have affinities with paracrinkle. No equivalents have been found for six other virus diseases of the potato described in America.

PARIS

Academy of Sciences, May 17 (vol. 194, pp. 1697-1768).—H. Vincent and L. Velluz: The cryptotoxic properties of sodium α-oxynaphthoate. Its special action on the diphtheric toxin. Sodium a-oxynaphthoate possesses a selective neutralising action on the diphtheric toxin. The toxin thus neutralised ('cryptotoxin') injected into guinea-pigs gives neither local scar, paralysis, nor general troubles, and gives immunity against the diphtheria toxin.—André Blondel: The effect of hysteresis in heating by an oscillating magnetic field.—Charles Nicolle, J. Laigret, Marcandier, and R. Pirot: The rat, an animal reacting to benign endemic forms of typhus. The long conservation of virus in the rat. It has been found that the rat can act as a reservoir of the virus of some forms of typhus: for typhus of the Old World type, as distinguished from a second type (Toulons, Athens, and elsewhere), the rat carrying the virus shows no sign of infection .-Charles Nicolle and L. Balozet: An attempt to restore the original activity to rabic virus fixed by intra-cerebral passages on the dog. The experiments have led to an unexpected result. Instead of increasing the pathogenic power, the inoculations have specialised the virulence for the dog's brain and removed from the virus the power of causing hydrophobia except when placed in the brain.—E. Mathias, W. J. Bijleveld, and Ph. P. Grigg: The rectilinear diameter of the carbon monoxide molecule. Measurements of the densities of the liquid carbon monoxide and of its saturated vapour at the same temperature for absolute temperatures ranging between 68° and 131°.—L. Léger and T. Bory: Eimeria pigra, a new juxta-epithelial coccidium, parasitic on Scardinius erythrophtalmus.—Henry Perrier de la Bathie was elected correspondant for the Section of Botany .- J. Favard: The distribution of the points where a nearly periodic function takes a given value.—de Séguier: Normalisers of substitutions of order 2 of linear, quadratic, Hermitian, and skew groups in a Galois field of odd order.-Mile. Mary L. Cartwright: Certain integral functions of finite order.—Basile Demtchenko: variation of resistance at low velocities under the influence of the compressibility.—J. Bion and P. David: Daytime weakening of mean and intermediate (wireless) waves propagated over the sea. Sommerfeld's formula $d/\sigma \lambda^2$ (d, distance; σ , conductivity of the ground; \(\lambda\), wave-length) has been hitherto examined by varying λ and d, since the conductivity of the sea is known (10⁻¹¹). For observations made over the sea, with wave-lengths, 700, 215, and 158 metres, and up to a distance of 1050 km., Sommerfeld's formula was found inapplicable: the empirical formula of Austin, on the contrary, gave figures very close to the experiments.-J. Sambussy: The part played by the nature of the electrodes in the conductivity of semiconducting liquids. The current flowing through a column of nitrobenzene depends partly on the material of the electrodes. Some peculiarities in the fall of potential per centimetre were observed with lead, and especially with tantalum electrodes .-- André Lallemand: The variable paramagnetism of crystallised ferric chloride and the constant paramagnetism of the Fe₂Cl₆ molecule in the gaseous state. Constitution of the molecule Fe₂Cl₆. In the state of vapour, the two atoms of iron have equal magnetic moments, and hence possess the same valency .- J. P. Mathieu: Double salts, complex salts, and circular dichroism. René Lucas and Marcel Schwob: The stroboscopic method for the measurement of electrical double refraction.—Mile. Ellen Gleditsch and Sverre Klemetsen: The actinum-uranium ratio in an old uraninite-clevite from Aust-Agder (Norway). In this mineral the actinium found was 3.2 per cent of the

uranium. This agrees with the 2.7 per cent previously found for a Norwegian bræggerite and 3.3 per cent for a Cornish pitchblende.—G. Reboul: Radioactive phenomena of the second order and of artificial origin. Eugène Cornec and Henri Muller: The lowering of eutectic points .- M. Bourguel: The influence of substitutions on the vibration frequency of ethylene compounds. A method of classification of radicals. R. de Fleury and Benmakrouha: The utilisation of magnesium alloys .-- A. Sanfourche and A. Portevin: A particular mode of corrosion of austenitic chromenickel steels. This steel, which resists completely the action of cold phosphoric acid, is rapidly corroded if this acid contains hydrochloric acid, even in small proportion. The effects of various treatments of the surface on this corrosion has been studied.—Adrien Karl: Synthetic willemite. The phosphorescence of natural willemite is usually attributed to the presence of impurities (Ni, Fe, Cu). Synthetic willemite, prepared from highly purified materials, showed a violet phosphorescence: the brilliancy of the phosphorescence was increased by the addition of nickel (1 to 2 per thousand) and copper (0.5 to 2 per thousand).-P. Sue: The dehydration of niobic acid.-Maurice Loury: Researches on the diaryl-aryleth-inyl carbinols. Phenyl-p-tolylphenylethinyl carbinol, C₂₂H₁₈O, and phenyl-p-bromophenylethinyl carbinol, C₂₁H₁₅.O.Br.—Georges Lévy: The preparation of a new ethylnaphthol.—F. Loewinson-Lessing: The hortonolite gabbro-diabases of the Siberian trappean formation. - E. Chaput: Geological observations in Asia Minor. The Trias of the Angora region.—Mlle. Elisabeth David: The presence of Lepidocyclines in the Eocene and their relations with the Lepido-bitoides.—Jules Amar: The law of renal secretion.— Philippe Fabre and Pierre F. Quesnoy: The comparative efficacity of cuneiform waves of the second kind and of condenser discharges, with equal initial intensity. - Michel Taguet : A new method of studying microbial increase. The method is based on the measurement of the opacity of the culture, by the aid of a photo-electric cell. It is shown that the timeopacity curves for a given organism (B. coli in the example given) are superposable. Different organisms give different curves.—Paul Durand: Attempts at curative serotherapy of exanthematic typhus. A suitable quantity of the cephalo-rachidian fluid is removed and replaced by the serum. Temperature charts of twelve cases are given, showing the improvement effected.

ROME

Royal National Academy of the Lincei, Jan. 17 .- E. Paterno: (1) Action of oxygen on sodio-cellulose. The action of oxygen on sodio-cellulose at 100° C. yields only \$\beta\$-cellulose (oxycellulose). At the same time the proportion of carbonate present increases appreciably, the carbon dioxide being formed, together with pentosans, from the cellulose according to the equation, $C_6H_{10}O_5 + O_2 = C_5H_8O_4 + CO_2 + H_2O_{.--}(2)$ Maturation of sodio-cellulose. This maturation is undoubtedly an oxidation process, the β -cellulose (oxycellulose) formed being transported through the xanthate to the artificial silk, of which it constitutes a normal component.—(3) So-called regenerated cellulose. In the various transformations it undergoes, cellulose can be regarded as regenerated only when the substances it has absorbed are eliminated by washing with water. If the cellulose has been converted into any compound or has passed into solution or been colloidally dispersed, it cannot be regenerated. For example, when cellulose is separated from its zinc chloride or ammoniacal copper solution, from xanthate or viscose, or from sulphuric, hydrochloric, or phosphoric acid solutions, it does not retain its initial

properties. Cryoscopic determinations of the molecular weights of colloidal derivatives of cellulose The Bompiani: are inconclusive.—E. of two surfaces.-U. Broggi: The development of $\sum_{n=0}^{\infty} \left[b_n \left(\sum_{h=0}^{\infty} a_h x^h \right)^n \right] \text{ in series of increasing powers of } x.$ G. Sansone: The zeros of the polynomial solutions of the equation $(a_1x + a_0)y'' + (b_1x + b_0)y' - nb_1y = 0$ (1).—F. Conforto: Considerations on the impulses in isotropic elastic bodies .-- N. Moisseiev: The law of the resistance to motion of bodies in a pulverulent medium. -G. Petrucci: Trains of waves emitted at constant time intervals.-G. Todesco: Experimental confirmation of the selective absorption of the Hertzian waves caused by an electronic gas in a magnetic field.—A. Signorini: Certain properties of the medium in ordinary elasto-statics.—L. Infeld: Remarks on the prob-lem of the unitary theory of fields.—Dina Lombardi: Observations on the structure of the nucleus of the larva of Cricotopus sylvestris F.

SYDNEY

Linnean Society of New South Wales, March 30.— G. H. Cunningham: The Gasteromycetes of Australasia (14). The family Tulostomataceæ. This family is rearranged to contain the genera Podaxon, Phellorina, Chlamydopus, Tulostoma, Queletia, and Battarræa, all of which, save Queletia, have representatives in this biologic region, and is divided into subfamilies and tribes. The only representatives of the family found in New Zealand are confined to the genus *Tulo*stoma.—C. P. Alexander: A review of the Tipulidæ of Australia (Diptera) (1). The historical development of the subject and the general facies and distribution of the Australian fauna are discussed. Keys are given for the subfamilies of the Tipulidæ and for the genera of the Tipulinæ, and the Australian species of Clytocosmus are reviewed .- F. C. Chisholm: The occurrence of 'Atrax venenatus on the Comboyne plateau. Both male and female examples of Atrax venenatus are recorded.—Rev. H. M. R. Rupp: Notes on New South Wales orchids (2). A new genus and species of subterranean orchids, allied to the Western Australian genus Rhizanthella, is described from Bullahdelah, and notes are given on other species belonging to Diuris, Pterostylis, Dendrobium, Prasophyllum, and Cymbidium.

VIENNA

Academy of Sciences, March 10 .- Karl Fritsch: Observations on flower-visiting insects in Styria These observations, made in March-June and September-October in the neighbourhood of Graz and in other parts of Styria, extended to more than sixty plant species, including cultivated exotic species. It is noteworthy that the honey-bee was found to visit an ornithophilous plant, Agave americana L .-- Karl Przibram: Radio-luminescence and radio-photo-luminescence (3). Examination of the red fluorescence exhibited by many English fluorites after irradiation by radium reveals a band in the red without recognisable lines, this being often confined to certain positions on the crystal. Investigations with synthetic material show that red radio-photoluminescence occurs also with calcium fluoride free from rare earths. fluorite this phenomenon is, therefore, attributed either to more frequent contamination with heavy metals and only modified by the simultaneous presence of rare earths or to the effect of the rare earths themselves, which do not then emit their characteristic lines.—A. Dadieu, K. W. F. Kohlrausch, and A. Pongratz: Studies on the Raman effect (19). The Raman spectrum of organic substances (isomeric paraffin derivatives). For the vibration spectrum the substituents CH₂, NH₂, and OH are mechanically

almost equivalent, so that paraffin derivatives containing only these substituents yield vibration spectra of a different type (corresponding with higher molecular symmetry) from those of analogous derivatives with the substituents SH, Cl, Br, etc.—Friedrich Lechner: Studies on the Raman effect (20). Theory of the valency force system with three mass points.

Forthcoming Events

MONDAY, JULY 4

ROYAL INSTITUTION (General Meeting at the Institution, 21 Albemarle Street, London, W.1), at 5 P.M.

Physical Society of London (Special General Meeting at the Imperial College of Science and Technology, South Kensington, S.W.7), at 5 p.m.

SATURDAY, JULY 9

SOCIETY OF CHEMICAL INDUSTRY-South Wales Section (Special Joint Meeting with the South Wales Section of the Institute of Chemistry at the laboratories of the Cardiff Gas, Light and Coke Company, Bute Terrace, Cardiff), at 3 P.M.

Official Publications Received

The Quarterly Journal of the Geological Society of London. Vol. 88, Part 2, No. 350. Pp. 111-311. (London: Longmans, Green and Co., Ltd.) 7s. 6d.

Report of the Haffkine Institute for the Year 1930. By Major L. A. P. Anderson. Pp. 76. (Bombay: Government Printing and Stationery Office.) 6 annas; 8d.

Report of the Haffkine Institute for the Year 1930. By Major L. A. P. Anderson. Pp. 76. (Bombay: Government Printing and Stationery Office.) 6 annas; 8d.

Journal of the Chemical Society. May. Pp. v+1338-1641+x. (London: Chemical Society.)

Armstrong College, Newcastle-upon-Tyne: Standing Committee for Research. Report, Session 1930-1931. Pp. 36. (Newcastle-upon-Tyne.)

The Scientific Proceedings of the Royal Dublin Society. Vol. 20, N.S., Nos. 18-20: On Alginic Acid, its Mode of Occurrence and its Constitution, by Dr. Thomas Dillon and Annie McGuinness; The Performance of a Reservoir subjected to Flood, by H. H. Jeffcott; Cytological Studies of Potato Plants affected with certain Virus Diseases, by Dr. Phyllis Clinch; The Effect of an Insufficient Supply of Vitamin D on the Growth of the Skeleton and Internal Organs of Chickens, by E. J. Sheehy and Miss K. Sheil; Report on the Recent Bog-Flow at Glenculiin, Co. Mayo, by A. D. Delap, A. Farrington, R. Lloyd Praeger and Louis B. Smyth; A Critical Review of some Recent Work on the Occurrence of Virus Complexes in the Potato, by Dr. Paul A. Murphy; Electrical Properties of Oil-Water Emulsions, with Special Reference to the Structure of the Plasmatic Membrane, II, by Prof. Herbert H. Dixon and Dr. T. A. Bennet-Clark; The Compound Nature of Crinkle, and its Production by means of a Mixture of Viruses, by Dr. Paul A. Murphy and Robert M'Kay. Pp. 129-247+plates 4-12. (Dublin: Hodges, Figgis and Co.; London: Williams and Norgate, Ltd.) 122.

Imperial Bureau of Plant Genetics: Herbage Plants. Bulletin No. 7: Further Contributions on the Technique employed in the Breeding of Herbage and Forage Plants. Pp. 33+4 plates. (Aberystwyth: Agricultural Buildings.) 2s.

The Film in National Life: being the Report of an Enquiry conducted by the Commission on Educational and Cultural Films into the Service which the Cinematograph may render to Education and Social Progress. Pp. xi+173-185. (London: Edward Stanford, Ltd.) 2s. 6d.

Air Ministry: Aeronautical Research Committee: Repor

No. 3270, Vol. 130]

The Economic Botany of Cacao: a Critical Survey of the Literature to the end of 1930. By Prof. E. E. Cheesman. Pp. 16. (Trinidad: Government Printing Office.) 1s.

Report of the Astronomer Royal to the Board of Visitors of the Royal Observatory, Greenwich, read at the Annual Visitation of the Royal Observatory, 1932 June 4. Pp. 19. (Greenwich.)

Commonwealth Bureau of Census and Statistics, Canberra. Official Year Book of the Commonwealth of Australia. No. 24, 1931. Compiled by Chas. H. Wickens. Pp. xxxii+808. (Canberra: H. J. Green.) 5s.

Proceedings of the Royal Irish Academy. Vol. 40, Section B, No. 15: The Fens of North Armagh. By J. M. White. Pp. 233-283+plate 6. (Dublin: Hodges, Figgis and Co.; London: Williams and Norgate, Ltd.) 2s. 6d.

Proceedings of the Academy of Natural Sciences of Philadelphia, Vol. 84. West Mexican and Central American Mollusks collected by H. N. Lowe, 1929-31. By H. A. Pilsbry and H. N. Lowe. Pp. 33-144+17 plates. A Collection of Birds from Southwestern Africa. By Rodolphe Meyer de Schaunsee. Pp. 145-202+plates 18-26. The Name of Lophoceros bradfields from Bechnanaland and Rhodesia. By Rodolphe Meyer de Schaunsee.

P. 203. (Philadelphia.)
Smithsonian Miscellaneous Collections. Vol. 87, No. 8: Graphic Correlation of Radiation and Biological Data. By F. S. Brackett. (Roebling Fund.) (Publication 3170.) Pp. 8. (Washington, D.C.: Smithsonian

Institution.)

Institution.)

Proceedings of the Academy of Natural Sciences of Philadelphia. Vol. 83, 1931. Pp. iii +487+41 plates. (Philadelphia.) 6.25 dollars.

Conseil Permanent International pour l'Exploration de la Mer. Faune ichthyologique de l'Atlantique nord. Publiée sous la direction de Prof. Joubin. No. 9. 24 planches. 4.00 kr. No. 10. 24 planches. 4.00 kr. (Copenhague: Andr. Fred. Høst et fils.)

Proceedings of the Imperial Academy. Vol. 8, No. 4, April. Pp. vii-viii+113-141. (Tokyo.)

Statens Meteorologisk-Hydrografiska Anstalt. Årsbok, 11, 1929. iii. Vattenständen vid Eilsets kuster. Pp. 21, 200 kr. Årsbok, 11, 1929.

Statens Meteorologisk-Hydrografiska Anstalt. Årsbok, 11, 1929. iii. Vattenstånden vid Rikets kuster. Pp. 21, 2.00 kr. Årsbok, 11, 1929. iv. Meteorologiska iakttagelser i Sverige, Band 71. Pp. x+179. 7.00 kr. Årsbok, 12, 1930. v. Hydrografiska mätningar i Sverige. Pp. 40. 3.00 kr. Årsbok, 13, 1931. i. Månadsöversikt över väderlek och vattentillgång jämte anstaltens årsberåttelse. Pp. 94. 2.50 kr. (Stockholm.) Collection des travaux chimiques de Tchécoslovaquie. Rédigée et publiée par E. Votocke et J. Heyrovský. Année 4, No. 5, Mai. Pp. 193-238. (Prague: Regia Societas Scientiarum Bohemica.) Ministry of Public Works, Egypt: Physical Department. Meteorological Report for the Year 1926. Pp. xi+156. (Cairo: Government Press.) 40 P.T.

logical Report for the Year 1926. Pp. xi+156. (Cairo: Government Press.) 40 P.T.
League of Nations' Intellectual Co-operation Organisation. Information Bulletin, Vol. 1, No. 1, April. Pp. 32. (Paris.) 1s.
Smithsonian Miscellaneous Collections. Vol. 87, No. 9: Periodicity in Solar Variation. (Roebling Fund.) By C. G. Abbot and Gladys T. Bond. (Publication 3172.) Pp. ii+14+2 plates. (Washington, D.C.: Smithsonian Institution.)
Journal of the Faculty of Agriculture, Hokkaido Imperial University. Vol. 33, Part 1: Studies on the Morphology and Ecology of the Rice Leaf-Beetle, Lema oryzae Kuwayama, with Special Reference to the Taxonomic Aspects. By Satoru Kuwayama. Pp. 132+4 plates. (Tokyo: Maruzen Co., Ltd.)
Publications of the Allegheny Observatory of the University of Pittsburgh. Vol. 9. Pp. iii+213. (Pittsburgh, Pa.)
Science Reports of the Tokyo Bunrika Daigaku, Section B. No. 1: Uber die Farbbarkeit der fixierten Zellstrukturen. Von Gihei Yamaha. Pp. 21. 25 sen. No. 2: Zur Kenntnis der Alginsaure, I. Von Tomo-omiwa. Pp. 23-37. 23 sen. No. 3: On the Sexual Reproduction of Prasiola japonica Yataba. By Yoshitada Yabe. Pp. 39-40+1 plate. 10 sen. (Tokyo: Maruzen Co., Ltd.)
National Research Council of Japan. Report No. 8-9, April 1928-March 1930. Pp. iii+229-350. (Tokyo.)
Proceedings of the Delaware County Institute of Science. Vol. 9, No. 4. Pp. 153-204. (Media, Pa.)
Peking Natural History Bulletin. Vol. 6, Part 4: Chinese Materia Medica. vi: Avian Drugs. By Bernard E. Read. Pp. 112. (Peiping: The French Book Store.) 1.50 dollars.
The Science Reports of the National Tsing Hua University. Vol. 1, No. 4, May. Pp. 129-157. (Peiping.)
Egyptian Government: Ministry of Public Works. Annual Report for the Year 1927-1928. Part 1. Pp. vi+166. (Cairo: Government Press.) 20 P.T.
Publications of the Manila Observatory. Vol. 3, Nos. 1-10: Oceano-

Publications of the Manila Observatory. Vol. 3, Nos. 1-10: Oceanographic Papers. Report of the Subcommittee on Physical and Chemical Oceanography of the Philippine Islands to the International Committee on Oceanography of the Pacific Science Congress. By Rev. Miguel Selga, Rev. Wm. C. Repetti, Wallace Adams. Pp. 210. (Manila; Bureau of Printing)

Printing.)

Report of the National Research Council for the Year July 1, 1980-June 30, 1931. Pp. iv+92. (Washington, D.C.: Government Printing

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