

## Societies and Academies.

## PARIS.

Academy of Sciences, Mar. 3.—Emile Borel: Probabilities universally negligible.—L. Lecornu: The loss of heat in explosion motors.—A. Cotton and G. Dupouy: The magnetic fields given by the large Bellevue electro-magnet. Diagrams are given of the results of the exploration of the magnetic fields produced under varying conditions of radius of the pole pieces, and distance between them. For very small pole pieces and at a distance apart of 2 mm., the field is near 70,000 gauss.—Charles Moureu, Charles Dufraisse, and Nicolas Drisch: Researches on the mechanism of the formation of rubrene: a new synthesis. The starting point of this synthesis is the ketone  $(C_6H_5)_2C=CH-CO-C_6H_5$ . Treatment with phosphorus pentachloride and the resulting chlorine derivative allowed to react with potassium acetate gives a substance capable of conversion into rubrene by simple heating. The yield is 30 per cent of the original ketone, and the new synthesis has nothing in common with the older methods of preparation.—J. Costantin: Mountain plants and Lamarckism. A discussion of the resistance to disease in the sugar cane acquired by growth at high altitudes and its transmission.—E. L. Bouvier: Some observations on the Saturnioid butterflies of the family of the Ceratocampidae.—V. Grignard and Th. N. Ilesco: The condensation of isobutanal. A résumé of work published in detail elsewhere.—Raffaele Nasini was elected a *Correspondant* for the Section of Chemistry.—Bertrand Gambier: Some properties of circles.—A. Buhl: The cartography, in  $E_3$ , of triple integrals with fields deformed in  $E_4$ .—A. Marchaud: A characteristic topological property of Jordan curves without a double point.—Georges Durand: Ordinary points and singular points of envelopes of spheres.—Henri Poncin: A mixed problem in a circular ring.—Julius Wolff: The angular derivative in conformal representation.—J. Haag: The theory of the ratchet pins.—A. Gruvel and W. Besnard: Description and presentation of a new oceanographic apparatus. The instrument is designed to collect a specimen of water, to measure the temperature at a predetermined depth, and to measure the depth at which these operations are carried out.—Georges Déjardin: The second spectrum of xenon in the interval 9000 Å.—6000 Å. The lines given were obtained by using the oscillating discharge in a tube without electrodes.—V. Ambarzumian and D. Iwanenko: Unobservable electrons and the  $\beta$ -rays. An outline of a theory of  $\beta$ -rays analogous with the theory of light quanta proposed by Dirac.—Estanave: A new contribution to integral photography.—F. Bourion and E. Rouyer: The cryoscopic study of paraldehyde in aqueous solution, and in solutions of potassium chloride.—Alfred Molnar: Researches on the cold hardening of lead, tin, and cadmium at different temperatures.—Marcel Guillot: The carrying down of polonium, a chloropoloniate, by ammonium chloropoloniate. The precipitation of crystals of  $(NH_4)_2PbCl_6$  from a solution containing polonium results in partition of the polonium between the liquid and crystal phases. Since, under the same conditions of acidity, the precipitation of lead chloride from a solution containing polonium leaves the whole of the latter in solution, it is concluded that the phenomenon is probably not due to adsorption but to the formation of a polonium compound  $(NH_4)_2PoCl_6$ , isomorphous with the lead chloropoloniate.—C. Matveyeff: The cone-in-cone structure observed in the celestine of Wereino (Ural).—Philippe Fabre: The laws of electrical excitability by very short discharges in rapid muscles.—C. Ninni:

The demonstration of the existence of the tubercle ultra-virus by direct inoculation in the lymphatic ganglions.

## LENINGRAD.

Academy of Sciences (*Comptes Rendus*, No. 21, 1929).—V. Ambarzumian: Methods of determining the number of different atoms in the atmosphere of stars.—D. I. Eropkin: Determination of the absorption in the atmosphere of planets. A new method is described which is based on the study of the influence of the atmosphere on the gradual decrease of the brightness of a satellite in the half-shadow and in the shadow of the planet. The method requires that the entire photometric curve of an eclipse should be interpreted, and it can be applied in practice only to the case of planets with bright satellites, for example, the earth and Jupiter.—V. V. Barovskii: A description of a new species of the genus *Malthodes* Kies. (Coleoptera, Cantharididae) of Central Asia. *Malthodes grigorievi* sp. n. is described from Fergana; this is the first representative of the genus in the fauna of Central Asia.—N. Olenev: Classification and geographical distribution of Ixodidae (4). Descriptions of *Ixodes semenovi*, sp. n. from *Accentor collaris* (Scop.) in Turkestan, and of *I. redikorzevi lagurae* sbsp. n., from *Lagurus lagurus* in the Lower Volga steppes, as well as a discussion of several other species.—N. P. Annenkova: A supplement to the polychaet fauna of the Black Sea. (1) *Goniada bobrezkii* sp. n. This is the first representative of the family Goniadidae known from the Black Sea.

(*Comptes Rendus*, No. 22, 1929).—D. I. Mushketov and P. M. Nikiforov: A gravimetric and seismic expedition to Central Asia. A preliminary account of the expedition is given. The work with pendulums, gravity variometers, and seismographs was carried out at a number of points in the Fergana depression, and a lack of compensation was quite definitely established; the resulting tendency of the earth's crust to vertical upward displacements is the cause of earthquakes, which are not unusual in that locality. As regards the origin of the Fergana depression, the conclusion was reached that it was formed as a result of squeezing of the earth's crust, the sial-masses having been pressed into a denser layer underlying the crust.—P. I. Simanin: Contributions to the Culicid fauna of Fergana. A list of twelve species of mosquitoes is given. The number of setae on the first joint of the valva is a doubtful specific character in the genus *Anopheles*.—D. Beliankin: Titanium oxide in the dinas. In a metallurgical oven, the titanium oxide of a dinas brick migrates towards the unaffected zone. Analogous phenomena can be observed in the natural granites and porphyrites.

## PRAGUE.

Czech (Bohemian) Academy of Sciences and Arts (Second Class, Natural Science and Medicine), Dec. 6.—Extraordinary meeting: Prof. J. Matiegka gave a detailed account of his investigation concerning the identification of the remains of Jan Amos Komenský (Comenius) in the Church of Naarden, Holland.—Ordinary meeting—O. Jirovec: The fauna of the digestive tract of the termite *Calotermes* species Greek.—O. Jirovec: Nuclear division in *Trypanosoma evansi*.—C. Čechura: Magnetic declination of Moravia and Silesia in the epoch 1925-5.—V. Špaček and B. Zahálka: Magnetism of the mountain Rip.—F. Němejc: Palaeobotanical researches on the quaternary flora of some localities in the vicinity of Ružomberk, Slovakia.—M. Dillinger: A study of the maximum of current

occurring in the electrolysis of mercuric cyanide solutions with the dropping mercury cathode. The electro-reduction of the non-electrolyte mercuric cyanide in presence of electrolytes proceeds like that of oxygen, the maximal maximum occurring at a certain conductance, which is proportional to the concentration of mercuric cyanide. The mercury cathode shows a considerable polarisation.—**B. Brauner**: Comments to a former report on the analysis of water from the pond Babylon, Bohemian Forest.

## ROME.

Royal National Academy of the Lincei, Nov. 17.—**P. Burgatti**: The transformations of Lorentz. A simple method is given for deducing Cayley's theorem, that the coefficients of a linear and orthogonal transformation in a Euclidean  $S_n$  are expressible rationally by means of  $n(n-1)/2$  independent parameters.—**U. Cisotti**: Types of rigid isolated profiles subjected to dynamic action by means of a local fluid current circulating round them.—**N. Parravano** and **E. Onorata**: 'Blanc' alumina. Results are given which indicate the existence of what, in Wyckoff's terminology, must be regarded as a semi-crystalline alumina, obtained by the thermal decomposition of hexahydrated aluminium chloride, as well as of another alumina arising from the first at a higher temperature. The former exhibits the double refraction characteristic of non-monomeric crystalline substances, whereas the second gives a distinct X-ray interference spectrum pointing to hexagonal or rhombohedral symmetry. The passage from the first to the second is accompanied by increase in density from 2.2 to about 3.5 and is, therefore, attended by approach of the atoms in the space intervening between the atoms of the unit cell. Conversion of the second form into corundum also occurs with rise in the density (from 3.5 to 3.9) and with further approach of the atoms of the unit cell.—**F. Verceili**: The system of currents in the Straits of Bab-el-Mandeb in the summer.—**E. Bortolotti**: Geodetic co-ordinates along a line (1).—**R. Calapso**: A problem of the zero system osculatory to a congruence  $W$ .—**Gr. C. Moisil**: Movable datums in functional space.—**O. Onicescu**: The asymptotic behaviour and the zeros of a class of entire functions.—**G. Supino**: A criterion of choice between elastic solutions with equal resultants.—**G. Viola**: The system of  $U$  Cephei. The data collected on this system since 1913, particularly by Bemporad, are considered. The mean light curve indicates asymmetry with respect to the minimum epoch, oscillations both during the phase of totality and at the beginning and end of the eclipse, and inconsistency of the maximum luminosity of the system.—**E. Fermi**: The  $4d$  complex of the helium molecule.—**Giambattista Dal Piaz**: New geological observations on the region lying between the Aurino torrent and the river Rienza (Upper Adige) (3).—**A. Ferrari** and **F. Giorgi**: Crystalline structure of anhydrous iodides of divalent metals (1). Cobalt, ferrous, and manganese iodides. These iodides exhibit structure of the cadmium iodide type. The elementary cells have the following dimensions: cobalt iodide,  $a=3.96$  A.,  $c=6.65$  A.,  $c:a=1.68$ , density, 5.75; ferrous iodide,  $a=4.04$  A.,  $c=6.75$  A.,  $c:a=1.67$ , density, 5.39; manganese iodide,  $a=4.16$  A.,  $c=6.82$  A.,  $c:a=1.64$ , density, 5.01. The dimensions of the unit cell of lead iodide, for which previous authors have given discordant values, are  $a=4.53$  A.,  $c=6.92$  A.,  $c:a=1.53$ .—**L. Maddalena**: Utilisation of an interesting hydric level over the north-east part of the plateau of Sette Comuni.—**G. Gabrieli**: Two iconographic codices of plants in miniature, in the Royal Library at Windsor.

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## Official Publications Received.

## BRITISH.

- Report of the Rugby School Natural History Society for the Year 1929. (Sixty-third issue.) Pp. 43+2 plates. (Rugby.)
- Canada. Department of Mines: Geological Survey, Canada. Memoir 155: Horton-Windsor District, Nova Scotia. By W. A. Bell. (No. 2176.) Pp. ii+268 (36 plates). (Ottawa: F. A. Acland.) 50 cents.
- Canada. Department of Mines: National Museum of Canada. Bulletin No. 62: Annual Report for 1928. Pp. 38. (Ottawa: F. A. Acland.)
- Dominion of Canada. Report of the Department of Mines for the Fiscal Year ending March 31, 1929. (No. 2217.) Pp. vi+58. (Ottawa: F. A. Acland.) 25 cents.
- Gold Coast: Survey Department. Records, Vol. 1: Report on Three Chains of Triangulation surveyed in the Southern Part of the Colony during the Years 1924, 1925 and 1926. By Capt. J. Calder Wood. Pp. 116. (London: The Crown Agents for the Colonies; Accra: Survey Department.) 12s. 6d.
- Proceedings of the Royal Society of Edinburgh. Vol. 50, Part 1, No. 4: The Occurrence of Cell Division in the Endodermis. By George Bond. Pp. 38-50. 1s. Vol. 50, Part 1, No. 5: The Early Colonization of North-eastern Scotland. By Prof. V. G. Childe. Pp. 51-78+2 plates. 3s. Vol. 50, Part 1, No. 6: The Gonadotrope Actions of the Anterior Lobe of the Pituitary. By B. P. Wiesner and F. A. E. Crew. Pp. 79-108+2 plates. 3s. Vol. 50, Part 1, No. 7: On the Presence of a Kyogenic Substance in the Mouse Placenta. By Ijuba Mirskaia. Pp. 104-112+1 plate. 1s. (Edinburgh: Robert Grant and Son; London: Williams and Norgate, Ltd.)
- Memorandum on British Patent Law Reform by Joint Chemical Committee, submitted to the Board of Trade Patents Committee, 1929. Pp. ii+32. (London: The Association of British Chemical Manufacturers.) 1s.
- Imperial Department of Agriculture for the West Indies. Report on the Agricultural Department, Dominica, 1928-29. Pp. iv+34. (Trinidad.) 6d.
- Navy (Health). Statistical Report of the Health of the Navy for the Year 1928. Pp. 151. (London: H.M. Stationery Office.) 5s. net.
- Ministry of Agriculture and Fisheries Standing Committee on River Pollution. River Pollution and Fisheries: a Non-Technical Report on the Work during 1926, 1927 and 1928 of the Standing Committee on River Pollution appointed in 1921. Pp. 69. (London: H.M. Stationery Office.) 1s. 3d. net.
- The Research Scheme of the Institute of Brewing. Memorandum, 1930. Pp. 18. (London.)
- Department of Scientific and Industrial Research. Building Science Abstracts. Vol. 3 (New Series), No. 2, February. Abstracts Nos. 242-247. Pp. 37-71. (London: H.M. Stationery Office.) 9d. net.
- Air Ministry: Aeronautical Research Committee. Reports and Memoranda. No. 1265 (E. 33): Engine Performance with Gaseous Fuels. Part 1: Characteristics and Engine Performance of Gaseous Fuels obtained from Oil; Part 2: Engine Performance from Kerosene/Oil Gas Mixtures. By Squadron Leader W. Helmore. (I.C.E. 625: I.C.E. 626: I.C.E. 688: I.C.E. 689.) Pp. 54. 3s. net. No. 1279 (Ae. 425): Tests under Conditions of Infinite Aspect Ratio of 4 Aerofoils in a High Speed Wind Tunnel. By T. E. Stanton. (T. 285a.) Pp. 4+1 plate. 4d. net. No. 1280 (Ae. 426): On the Distribution of Pressure over a Symmetrical Joukowski Section at High Speeds. By T. E. Stanton. (T. 284c.) Pp. 3+2 plates. 4d. net. No. 1283 (Ae. 429): The Effects of Turbulence and Surface Roughness on the Drag of a Circular Cylinder. By A. Fage and J. H. Wagnap. (T. 284d.) Pp. 8+6 plates. 6d. net. (London: H.M. Stationery Office.)
- Department of Agriculture: Straits Settlements and Federated Malay States. General Series, No. 1: The Culture of Vegetables in Malaya. By B. Bunting and J. N. Milsom. Pp. iv+80+12 plates. (Kuala Lumpur.) 1.50 dollars.
- Proceedings of the Royal Irish Academy. Vol. 39, Section A, No. 5: Velocities of Ions in the Cathode Dark Space. By Dr. K. G. Emeluse. Pp. 49-57. (Dublin: Hodges, Figgis and Co.; London: Williams and Norgate, Ltd.) 6d.
- Tanganyika Territory: Department of Tsetse Research. Co-ordination Report No. 1: 1st September 1928 to 31st August 1929. Pp. 6. 1s. Co-ordination Report No. 2: 1st March 1929 to 28th February 1930. Pp. 12. 1s. (Dar es Salaam.)
- A Check-List of the Sphegidae of the Ethiopian Region. By Dr. G. Arnold. Pp. 21. (Pretoria: The Transvaal Museum.)

## FOREIGN.

- Det Kongelige Departement for Handel, Sjøfart, Industri, Håndverk og Fiskeri. Norges Svalbard- og Ishavs-Undersøkelser. Skrifter om Svalbard og Ishavet. Nr. 27: Beiträge zur Kenntnis der invertebraten Fauna von Svalbard. Von Sig Thor. Mit Beiträgen von F. Lengersdorf, A. C. Oudemans, C. Fr. Roewer und A. Roman. Pp. x+156+26 Tafeln. 18.00 kr. Nr. 28: Die Altersstellung des Fischhorizontes, des Grippianiveaus und des unteren Saurierhorizontes in Spitsbergen. Von Hans Frøhold. Pp. 36+6 Tafeln. 4.00 kr. (Oslo: Jacob Dybwad.)
- Proceedings of the United States National Museum. Vol. 76, Art. 22: Mitrospira, a new Ordovician Gasteropod Genus. By Edwin Kirk. (No. 2819.) Pp. 6+3 plates. 5 cents. Vol. 76, Art. 23: A new Fossil Coral from the Cretaceous of Texas. By J. Edward Hoffmeister. (No. 2820.) Pp. 3+2 plates. (Washington, D.C.: Government Printing Office.)
- U.S. Department of Commerce: Bureau of Standards. Bureau of Standards Journal of Research. Vol. 4, No. 1, January. Pp. ii+175. (Washington, D.C.: Government Printing Office.)
- United States Department of the Interior: Office of Education. Bulletin, 1929, No. 34: Statistics of City School Systems, 1927-1928. Pp. 193. 30 cents. Bulletin, 1929, No. 35: Statistics of Public High Schools, 1927-1928. Pp. 136. 20 cents. (Washington, D.C.: Government Printing Office.)
- Japanese Journal of Astronomy and Geophysics: Transactions and Abstracts. Vol. 7, No. 2. Pp. ii+47-81+11-18. (Tokyo: National Research Council of Japan.)