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 Ceratocampidæ.—**V. Grignard** and **Th. N. Iliesco** : 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 rachet 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 A.–6000 A. The lines given were obtained by using the oscillating discharge in a tube without electrodes.—**V. Ambarzumian** and **D. Iwanenko** : Unobservable electrons and the β-rays. An outline of a theory of β-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 chloroplumbate. 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 chloroplumbate.—**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, Cantharididæ) 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 Ixodidæ (4). Descriptions of *Ixodes semenovi*, sp. n. from *Accentor collaris* (Scop.) in Turkestan, and of *I. redikorzevi laguræ* 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 polychæt fauna of the Black Sea. (1) *Goniada bobrezkii* sp. n. This is the first representative of the family Goniadidæ 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 setæ 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. Jírovec** : The fauna of the digestive tract of the termite *Calotermes* species Greek. —**O. Jírovec** : 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 Řip.—**F. Němejc** : Palæobotanical researches on the quaternary flora of some localities in the vicinity of Růžomberk, Slovakia.—**M. Dillinger** : A study of the maximum of current

occurring in the electrolysis of mercuric cyanide solutions with the dropping mercury kathode. 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-monometric crystalline substances, whereas the second gives a distinct X-ray interference spectrum pointing to hexagonal or rhombohedric symmetry. The passage from the first to the second is accompanied by increase in density from $2 \cdot 2$ to about $3 \cdot 5$ 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 $3 \cdot 5$ to $3 \cdot 9$) and with further approach of the atoms of the unit cell.—F. Vercelli : 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 inconstancy 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, $a = 3 \cdot 96$ A., $c = 6 \cdot 65$ A., $c : a = 1 \cdot 68$, density, $5 \cdot 75$; ferrous iodide, $a = 4 \cdot 04$ A., $c = 6 \cdot 75$ A., $c : a = 1 \cdot 67$, density, $5 \cdot 39$; manganese iodide, $a = 4 \cdot 16$ A., $c = 6 \cdot 82$ A., $c : a = 1 \cdot 64$, density, $5 \cdot 01$. The dimensions of the unit cell of lead iodide, for which previous authors have given discordant values, are $a = 4 \cdot 53$ A., $c = 6 \cdot 92$ A., $c : a = 1 \cdot 53$.— 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.

Official Publications Received.