

Societies and Academies.

LONDON.

Geological Society, March 25.—C. B. Brown and R. A. Baldry: On the clay pebble-bed of Ancon (Ecuador). This bed, varying in thickness from 550 to 900 feet, crops out on the southern shore of the Santa Elena Peninsula, Ecuador. It consists of polished, rounded, or sub-rounded pebbles of harder clay, embedded in a matrix of softer clay, and contains large and partly rounded boulders of sandstone, foraminiferal limestone, grit, polished quartz-pebbles, etc., and masses of limestone. It is considered to be the result of a great post-Oligocene overthrust in soft sands and clays of Tertiary age. The direction of thrusting is from the east-south-east (the Brazilian over the Pacific block).—J. I. Platt: The pre-Cambrian volcanic rocks of the Malvern inlier. The region described occurs about the central part of the Malvern Range, and consists largely of volcanic rocks, which are of pre-Cambrian age, and belong to a distinctly sodic suite comprising sodarhyolites, keratophyres, and spilites. There are a few pyroclastic rocks developed. Although those examined were of an acid composition, there can be little doubt that more basic types also occur. A number of minor intrusions have been injected into the lavas. In the south-west of the area described, two dykes of a comparatively fresh ophitic dolerite crop out, while a subophitic variety of the same type is found in the north-west. There are several dykes and a volcanic neck of epidiorite in the east of the area.

Aristotelian Society, April 20.—Jessie White: The relation of pedagogy to philosophy. The science of pedagogy, like other sciences, depends on observation, experiment, and reflection on their results. It starts with assumptions: (1) that immature individuals with marked differences, qualitative and quantitative, can be aided or obstructed in their development by the nature of their material environment and by the actions of the persons with whom they are in contact; (2) that in normal infants there is a powerful impulse towards loving and learning, and these are processes which each individual must engage in for himself with suitable help from others; (3) that relatively to the child there is "a ready-made systematised classification of the facts and principles of the world of nature and man" (Dewey); (4) that schooling is only part of the educative process and must be viewed in relation to that wider process.

MANCHESTER.

Literary and Philosophical Society, March 17.—W. W. C. Topley: The bacteriophage phenomenon—transmissible bacterial lysis. The lytic principle is an ultramicroscopic parasite, because it is particulate in Nature, has the power of reproduction through an endless series of subcultures in symbiosis with a sensitive bacterium, and possesses a certain power of adaptation. It is not a living organism, because it can only increase in amount when the sensitive bacterium is actually dividing, a limitation which is not in accordance with most known facts of infection, because it can be precipitated by such agents as acetone or aluminium hydroxide and be recovered in an active form by solution in such substances as acetic acid or ammonia, and because its heat-resistance and persistent activity on prolonged storage suggest a chemical substance rather than a living organism. All the latter characteristics are, however, quite compatible with the active substance being a ferment; but a ferment cannot reproduce itself, so that we should have to believe that the organisms themselves produced more of the ferment when they were

undergoing destruction by it. This mechanism would seem to lead to race suicide; yet the bacteriophage and sensitive bacteria are widely distributed in Nature.

PARIS.

Academy of Sciences, March 30.—Émile Picard: Some singular integral equations.—Ch. Lallemand: A supposed sinking of the soil in France. On the basis of geodesic work by Bourdaloué, done in 1857–1864, and by Ch. Lallemand in 1884–1893, Schmidt has concluded that in the neighbourhood of Lille the ground has fallen by about 1 metre, and this sinking is proceeding at the rate of 25 mm. per annum. This view is accepted by E. Kayser, who considers the differences cannot be regarded as within the limits of the experimental error. A study of the records of the self-registering tide recorders at Brest and at Marseilles does not reveal this difference, which the author concludes must be attributed to systematic experimental errors in Bourdaloué's observations.—Marcel Brillouin: The external field of gravitation and internal densities.—Ch. Moureu, Ch. Dufraisse, and P. Lotte: Auto-oxidation and antioxygen action. The catalytic property is localised in the oxidisable part of the molecule of the catalyst. In the case of sulphur compounds a relation has been established between the oxidisability of the catalyst and its antioxygen action. Thus whilst mercaptan and alkyl sulphides act as powerful antioxygen catalysts towards furfural, the corresponding sulphones are devoid of such action.—P. Widal, P. Abrami, Diaconescu, and Gruber: Digestive hæmoclasis and variations of the neuro-vegetative tonus.—André Blondel: Acoustic selection and radiogoniometry. A discussion of the best means of utilising wireless telephony from lighthouses as a means of warning vessels at sea during fog.—E. Mathias, C. A. Crommelin, H. Kamerlingh Onnes, and J. C. Swallow: The rectilinear diameter of helium. The observed values of the densities of the liquid and the saturated vapour of helium are given for nine temperatures between $-268^{\circ}\cdot38$ C. and $-270^{\circ}\cdot79$ C. The formula for the rectilinear diameter is $z = -0\cdot40263 - 0\cdot0017616 \theta$. The deviations from the straight line are small, although a little larger than those found for hydrogen and neon.—Ladislav Nikliborc: Hyper-harmonic functions.—St. Kempisty: The integration of measurable functions.—Gossot and Liouville: The principles of interior ballistics.—J. Cojan: New extension of the method of zones (Ritchey) to the determination of aberrations outside the axis.—G. Bruhat and M. Pauthenier: The measurement of the dispersion of carbon disulphide in the ultra-violet.—Fernand Prothais: Study of the mixer of gas pumps at low pressure.—Mme. J. S. Lattès: The decomposition into definite groups of the total radiation of radium, by absorption in platinum.—A. Baldit: An alignment of radioactive springs in the region of Velay (Haute-Loire). Out of seventeen mineral springs in this district which have been examined, only three show radioactivity, those of Sembadel, Les Estreys, and Bonnefont, and these three springs are shown to be in a straight line. A fourth radioactive spring (Ceyssoc) was discovered in January 1925, and this is exactly on the line joining the other three.—L. Chassevent: The velocities of crystallisation of gypsum and the preparation of plaster of high resistance.—Mlle. J. Lévy and Roger Lagrave: Comparison of the migratory aptitudes of hydrogen and some radicals of the acyclic series.—J. F. Durand and Sherrill Houghton: The reduction of nitro-derivatives by calcium hydride. Calcium hydride reduces nitrobenzene to nitrosobenzene, then to azoxybenzene. Nitromethane gives a calcium salt without reduction.—C. E. Wegmann: The orogenic

phases of the Scandinavian Caledonian chain.—Iovan Cvijic: Karstic types of transition.—Raoul Bélus and Léon Maurel: Magnetic measurements in the south of France.—P. Bugnon: Leaf homologies in the sweet violet.—L. Lutz: The specificity towards their supports of the fungi of the group of *Pleurotus Eryngii*. The growth of the fungus is controlled by the presence or absence of antagonistic substances in the plant: the fungi behave more as saprophytes than as true parasites.—M. Bridel and C. Charaux: Rhamnucoside, a new glucoside, the generator of Chinese green, extracted from the bark of the stem of *Rhamnus cathartica*. Details of the isolation and physical and chemical properties of this new glucoside are given. Its composition is $C_{20}H_{30}O_{15} \cdot 4H_2O$, and on hydrolysis with dilute sulphuric acid gives glucose, xylose, and rhamnicogenol. The glucoside in alkaline solutions, in the presence of air and light, gives Chinese green.—Raphael Dubois: The nutrition of the Bromeliaceæ without roots. *Tillandsia dianthoides* (the air flower) has been regarded as a carnivorous plant, but observations are given which prove that this view is incorrect.—G. André and E. Demoussy: The selective absorption of potassium by plants.—Gustave Rivière and Georges Pichard: Comparative trials between the efficacy of nitric nitrogen, employed alone, and ammoniacal nitrogen in the presence of partial soil sterilisers.—M. and Mme. Louis Lapicque: A new demonstration of the equality of chronaxy between striated muscle and its motor nerve.—Jean Delphy: The fixation and contractibility of some Infusoria.—Émile F. Terroine and Jean Roche: The causes of the differences of the intensity of elementary respiration of the tissues.—Mme. L. Randoïn and Mlle. A. Michaux: Variations in the proportion of urea in the blood of the guinea-pig under the influence of a diet lacking the anti-scorbutic factor.—Auguste Michel: Metamerism and muscular elements in *Scoloplos armiger*.—W. Mestrezat and Mlle. Y. Garreau: Experimental contribution to the study of the transit of electrolytes. Velocity of diffusion through a septum and ionic selection.—Raoul M. May and S. R. Detwiler: The nerve relations of transplanted eyes with the nerve centres in course of development in *Amblystoma punctatum*.—Ph. Joyet-Lavergne: The evolution of the lipoids and the sexualisation of the cytoplasm in the Sporozoa.—H. Foley and M. Brouard: Demonstration of the efficacy of the daily administration of quinine in small doses for reducing the virus reservoir in malaria of natives (southern Algeria).—Edmond Sergent and H. Rougebief: New experiments on the dissemination of yeasts in the vineyard by drosophiles.

ROME.

Royal Academy of the Lincei, February 28.—Secondo Franchi: The secondary inversion series and the large overthrusts in the Albenga Mountains (Ligurian Alps).—Eduard Čech: Projective geometry of bands of contact elements of the third order.—Francesco Sbrana: A proposition of Almansi.—Giovanni Vacca: Euler's constant, $C=0.577 \dots$.—Ugo Broggi: Theory of repeated proofs.—Bruno Finzi: Lord Rayleigh's dissipation function.—Francesco Vercelli: Results of the cruise of the *Marsigli* in the Straits of Messina. The construction of general tables of the currents for nautical purposes is described.—Franco Rasetti: Duration of the quantic state $2p_2$ of the mercury atom.—Giorgio Piccardi: A thermal method for the study of gaseous systems.—P. Leone: Organo-metallic compounds of aluminium. Aluminium alkyl halides behave similarly to the corresponding magnesium compounds towards ammonia and primary and secondary amines, the hydrocarbon

being liberated and the nitrogen becoming directly attached to the metal.—Arrigo Mazzucchelli and Angelina Vercillo: Preparation of intermetallic compounds by the wet method. Reference is made to a number of instances in which an alloy is formed by the interaction of salts of the component metals in aqueous solution.—Bernardo Oddo: Methylketole yellow. This name is proposed for potassium 2-methylindyl-2-methylindolidenephylmethane-o-carboxylate, which imparts to wool and silk a bright yellow colour stable towards acids.—U. Pratalongo: Notes on pedological chemistry. (1) The alkalinity of the soil in its relations to the lithological constitution. The high degrees of constitutional alkalinity (P_H 8.8-9.2) exhibited by certain soils are, contrary to what was formerly a common supposition, not derived from calcite or aragonite; possibly hydromagnesite is the determining factor.—Mario Amadori: Hydrated mesotartaric acid.—Antonio Cavinato: Studies on quartz. Corrosion phenomena in a quartz crystal from the Miage glacier (Mont Blanc).—A. Sparta: New species of *Phyllirhoë* (Berg): *Phyllirhoë Sanzoi*.

VIENNA.

Academy of Sciences, February 19.—G. Kirsch and H. Pettersson: Atomic disintegration by α rays (Preliminary communication). The H-particles and reflected α particles given off by 25 elements under bombardment by swift α particles and at wide angles (about 140°) with the direction of incidence were investigated by methods previously described. The fact already found for nickel and copper, that the reflected α particles have a smaller range than that calculated by Rutherford's theory assuming elastic impact, is confirmed for the elements investigated. For all the lighter elements, including chlorine, the reflected α particles seem to be almost completely missing even at ranges of only 0.5 cm. For vanadium, chromium, iron, selenium, and iodine the departures from the theoretical values are particularly large. Retrograde H-particles have been found with certainty from the elements beryllium, carbon, oxygen, magnesium, aluminium, chlorine, titanium, vanadium, chromium, iron, copper, selenium, and zinc.—F. Hettwer: The viscosity of certain metals. By prolonged torsion of rods of lead, tin, aluminium, and zinc, the effect of viscosity could be distinguished from the elastic after-effect. The coefficient of viscosity of these metals was found to be between 5×10^{14} and 3×10^{16} . For lead-tin alloys no viscosity effect was detected.

March 5.—H. Michel and K. Przibram: Blue zircon from Siam and its behaviour to Becquerel rays. For some years there has come from the neighbourhood of Muang Chantaboon in Siam, some 198 kilometres north of Bangkok, a blue zircon occasionally called Siamese aquamarine. This blue zircon, the crystal form of which is described, develops, when kept in the dark, flesh-coloured spots which disappear in the light. The possibility of these spots being due to radioactivity often associated with zircon made it desirable to study the action of Becquerel rays on this mineral. Under $\beta \gamma$ radiation the blue changes through flesh colour to dark brown often in striae parallel to certain cleavage-planes. The blue colour is restored by heat and light. Qualitative observations on the radio-luminescence, thermo-luminescence, and radio-photo-luminescence are recorded.—J. Weise: Chrysomelidæ and Coccinellidæ, beetles from the Anglo-Egyptian Sudan, being Part xxiii. of the scientific results of F. Werner's expedition.—H. Wichmann: The ecology of *Xyloterus lineatus*, a wood beetle obtaining its food from symbiotic fungi.