

similar to those carried on at Duxford and elsewhere, could be made near the western seaboard of the British Isles, say Penzance and southern Ireland, the results would be interesting and might very well be important.

An interesting point which does not appear to have been much studied is the condensation of water vapour at low temperatures. Rime sometimes takes one dominant form, sometimes another. The crystals in one shower of fine snow are frequently of one type, while those of another shower show quite a different figure.

Dec. 12, 1866.—Prof. E. W. MACBRIDE, F.R.S., professor of zoology in the Imperial College of Science and Technology, South Kensington, London.

The following problems are being investigated under my supervision :

(1) An attempt to repeat the experiments of Metalnikoff, which indicate the inheritability of acquired immunity.

(2) An attempt to repeat Kammerer's experiments on *Salamandra maculosa*, which indicate the responsiveness of its skin-colour to the background.

(3) An attempt to repeat Kammerer's experiments on *Alytes*, indicating the re-adaptation of this terrestrial type to aquatic life.

(4) An investigation by experimental methods of the late stages in the development of echinoderm larvæ. During these stages the possibility of evolving 'suppressed complexes' is indicated.

(5) An investigation into the action of various reagents on the eggs of the frog in producing abnormalities in late larval development.

Societies and Academies.

LONDON.

Mineralogical Society, Nov. 4 (Anniversary Meeting).—F. C. Phillips: On crystals of brookite tabular parallel to the basal plane. Small yellow-brown rectangular plates in heavy residues from Middle Jurassic sandstones of N.E. Yorkshire are shown by optical and X-ray examination to be brookite of normal optic orientation but unusual crystallographic habit, being tabular parallel to the basal plane. They are associated in the residues with brookite of normal habit, abundant anatase, and rutile.—T. Ito and T. Shiga: On scorodite from Kiura Mine, Bungo, Kiushiu, Japan. The mineral occurs as small dark-brown and green crystals associated with vivianite, fluorite, and quartz in druses in veins of arsenopyrite intruded into limestone. Chemical analysis on carefully selected material gives a result consistent with the formula $\text{FeAsO}_4 \cdot 2\text{H}_2\text{O}$. Forms present are (001), (100), (011), (120), (111), (201), (211), and (322). The crystals are orthorhombic with $a:b:c = 0.865:1:0.972$. The habit is pyramidal equidimensional. The 111 faces show abundant vicinal faces belonging to two principal zones $\{01\bar{1}\}$ and $\{10\bar{1}\}$.—W. Campbell Smith: On a new meteoric stone from Suwahib, Arabia. The stone was found in 1930 on the sand near Buwah, in Suwahib, by one of the Arabs accompanying Mr. Bertram Thomas on his journey across the Rub' al Khali. As found, it weighed just over 238½ gm. It is coated with limonite and shows no definite crust. It is a black chondrite belonging to Prior's Cronstad type, with more than ten per cent of nickel-iron. The density is 3.52.—Edward S. Simpson and D. G. Murray: A new siderolite from Bencubbin, Western Australia. A mass weighing 119.5 lb. (54 kgm.) was found in 1930 near

Bencubbin, about 150 miles north-east of Perth. It consists of a skeleton of nickel-iron (68.8 per cent) with enclosed crystals up to 1 cm. across, of greyish-white enstatite (13.5 per cent) and dark olivine (12.5 per cent). In the metallic portion $\text{Fe}:\text{Ni} = 15:1$. The meteorite is classed as a mesosiderite with an unusually high proportion of nickel-iron.—A. R. Alderman: The meteorite craters at Henbury, Central Australia. The locality is known locally as the Double Punch-bowl, from the two largest adjoining craters. It is situated seven miles west-south-west of Henbury cattle station on the dry Finke river, and about fifty miles south of the McDonnell Ranges in the very centre of Australia. Within an area of 500 yd. by 500 yd. thirteen craters were mapped. The largest is oval in outline, measuring 220 yd. by 120 yd. across, and with a depth of 50-60 ft. The other craters are roughly circular, with diameters ranging from 10 yd. to 80 yd. The walls consist of powdered rock and shattered blocks of Ordovician sandstone and slaty rock. Owing to the craters acting as collecting pans for rain-water in this arid region, the spots are prominently marked by the growth of mulga trees, acacias, and coarse grass. Scattered around the craters are numerous pieces of metallic iron, usually angular in shape, and ranging from a fraction of an ounce to 52½ lb. in weight. In one area of 6 ft. by 6 ft. more than a hundred fragments were collected. Only two masses (one of 13 lb.) were found within the crater walls; and in one of the smaller craters a bore-hole to a depth of 8 ft. through fine silt down to coarse rock fragments yielded no mass of iron. Fragments of iron rust are also abundant; and some glassy material, suggesting fusion of the country rock, was found. These craters, which are very similar, were evidently formed by the impact of a shower of meteoric irons at some remote period.

Geological Society, Nov. 13.—E. J. Wayland: The Katwe crater-lake, Uganda. Lake Katwe occupies the bottom of an explosion crater of the caldera type and is the source and centre of a flourishing native-managed salt industry. Lake Edward oscillates in accordance with the sunspot cycle, while Lake Katwe does not. While the level of the former is above the water-table, that of the latter is determined and maintained by it. Although the volcanic vent passes through the saturation zone, its upper parts are more or less completely sealed off from the surrounding ground-water by deposits of the less soluble salts thrown out of solution at successively lower levels as temperature decreased with time. Within the tube so formed, aqueous circulation is produced by the temperature gradient, and the most soluble of the salts, derived at depth from decomposing alkali lavas, are thereby brought to the surface and, as a consequence of solar evaporation, are deposited in the shallow lake.—Arthur Holmes and Henry Francis Harwood: Petrology of the volcanic fields east and south-east of Ruwenzori, Uganda. Towards the close of the period in which the Kaiso lacustrine beds were deposited, volcanic activity broke out along a series of belts extending north and south of Fort Portal and north and south of the Kazinga Channel. The first phase (Lower to Middle Pleistocene) is represented by sub-aqueous tuffs. Post-Kaiso rifting movements followed, and were succeeded in turn by a second phase of vulcanism, in which explosion vents were blown through the rift-valley floor, the bordering scarps, and the adjoining plateau. The rocks of this stage include tuffs and agglomerates, ejected blocks, and volcanic bombs. Throughout the area the earlier tuffs appear to represent melilite-basalts. The tuffs are followed by others having compositions transitional towards that of leucitite. The later cognate

ejected blocks include melanocratic varieties of potash-nephelinite and leucite. Accompanying them are bombs of leucite and olivine-leucite, some of the latter being sufficiently rich in olivine to be regarded as a volcanic equivalent of kimberlite. The volcanic belts together constitute a co-magmatic region of a highly individualised kind.

PARIS.

Academy of Sciences, Oct. 26.—P. Villard: The reduction of soda. Caustic soda is reduced to sodium by heating with manganese (or ferromanganese) at 700° C. Some potassium was also obtained from caustic potash. The manganese can be replaced by chromium (800° C.), iron (750° C.), cobalt, nickel (600°-750° C.), or tungsten. No reduction was observed with zinc.—Léon Guillet, Albert Roux, and Jean Cournot: New remarks concerning the influence of occluded gases on the mechanical properties of metallurgical products. The authors have repeated the experiments of Guichard, Claussman, Billon, and Lanthony and arrive at a different conclusion. They consider it is impossible to agree with the statement that the hardness of electrolytic iron is completely independent of the proportion of hydrogen present in the metal.—P. Vincensini: Isotropic congruences and minimum surfaces.—Gaston Julia: The trend of iterated series in the neighbourhood of boundaries of convergence.—Maurice Gevrey: The determination of the integrals of systems of linear partial differential equations of the elliptic type.—Arnaud Denjoy: The Riemann definition of the Lebesgue integral.—J. Le Roux: The conditions of application of the principle of relativity.—J. Rossignol: The problem concerning cylindrical vortices of finite section.—Henri Quillery: A method for securing fixed ratio of air to petrol in carburettors.—Th. Got: The calculation of the critical velocities of rotating shafts of constant section and non-negligible mass, carrying perfectly centred thin discs.—D. Barbier: Remarks on the dynamical parallaxes of double stars.—J. Dufay: The spectrum of the eclipsed moon. The moon, when passing through the earth's shadow, is illuminated only by the rays refracted by the earth's atmosphere, and hence the study of its spectrum allows the observation on an unusual scale of the effects produced by diffusion and selective absorption of our atmosphere. Photographs taken during the eclipse of Sept. 26 showed the solar line $C(H\alpha)$, two oxygen bands (one very strong), and others not identified.—René Gindre: The photometric study of the eclipse of the moon, Sept. 26, 1931.—A. Danjon: Photometric and colorimetric study of the total eclipse of the moon of Sept. 26, 1931.—Ernest Esclangon: Remarks on the preceding note.—L. Eblé and E. Salles: Some measurements of gravity in the Paris region.—Dalloni: A scientific expedition to Tibesti.—B. Decaux and Ph. Le Corbeiller: A self-maintained electrical system utilising a neon tube. If a battery, a neon tube, and a condenser are mounted in series, flashes in the tube separated by periods of longer duration are noted. As an example, with an e.m.f. of 200 volts, a condenser of 6 microfarads showing a leak resistance of 20 megohms, a neon lamp of the night-light type gives flashes every 20 seconds. A theoretical explanation is given.—Edgar Pierre Tawil: The origin of the third fundamental frequency of oscillating piezoelectric quartz.—G. Bruhat and J. Thouvenin: The realisation of a quarter wave plate for the ultraviolet with the aid of oblique quartz.—R. de Malle-mann: Molecular dissymmetry.—Pierre Lambert and Ion Agarbiceanu: The magnetic change of the absorption lines of nitrogen peroxide.—H. Forestier

and M. Galand: The study of beryllium ferrite and the ferric oxide arising from its decomposition. The variation of the magnetic properties with temperature and the X-ray study (Debye-Scherrer method) lead to the conclusion that the mechanism of formation of the ferric oxide attracted by a magnet, starting with beryllium ferrite, is the same as that of Malaguti's oxide, formed by the dehydration of certain natural and artificial oxides of iron. The atom of beryllium in the ferrite has the same function as that of the molecule of hydrogen in the hydrate $Fe_2O_3 \cdot H_2O$.—Ch. Marie and N. Marinesco: The volume contraction produced by the hydration of proteins. The contraction of volume produced by the solution of gelatin proves that strong compressions exist between the dispersing medium and the particles of the dissolved body. The variation of this contraction with the hydrogen ion concentration allows the swelling and viscosity of the same colloid to be interpreted with regard to its isoelectric point.—P. Mougnaud: The note of MM. Carrière and Janssens relating to the estimation of fluorine. The author still considers the precipitation of calcium fluoride in ammoniacal solution is too inaccurate for practical use.—Jacques Maroger: The reconstitution of the painting technique of Jean Van Eyck. Details are given of the preparation of an oil medium which can be regarded as a reconstitution of the medium used before the beginning of the nineteenth century.—Jean Chevrier: Researches on the electrical field of the air at Djesireh.—E. Chemin: The protein crystals in some marine species of *Cladophora*.—A. Famin: The action of temperature on the nucleus and karyokinesis in *Vicia faba*.—Marc Bridel and Mlle. A. Kramer: The constitution of asebotoside (asebotine): its identity with phlorizoside (phlorizine). The comparative study of the glucoside extracted from the leaves of *Kalmia latifolia* (asebotoside) and the glucoside extracted from the bark of apple and pear trees (phlorizoside) has proved the complete identity of these two substances. It follows that the name asebotoside should disappear from chemical literature.—Pierre Chouard: Analogies between the development of the young plant and the annual push of the leaves in the Liliaceæ.—A. Vandel: The existence of two species of *Spiloniscus*, hitherto confused, and their reciprocal relations.—J. André Thomas: The action of sea water, in which carotene has remained, on the experimental development of the sea urchin *Paracentrotus lividus*. The carotene employed, although theoretically insoluble in water, communicates properties to sea water affecting the experimental development of the egg of the sea urchin.

CRACOW.

Polish Academy of Arts and Sciences, Oct. 5.—Ladislav Natanson: General propositions connected with Fermat's principle and certain other associated theorems.—St. Rafalowski: The Raman bands in water. In the case of a solution of hydrochloric acid it has been found that the extreme components of a band weaken as the concentration in acid increases, whilst the middle component widens. This is not in agreement with the statement of Rao (see also NATURE, 128, 546, Sept. 26, 1931).—K. Dziewonski and Zb. Reicher: Studies on 2-benzylfluorene.—A. Gawel: The granites of the Carpathian flysch of Krosno in the neighbourhood of Sanok.—J. Kuhl: The formation of kaolin and of alunites in the eastern part of the Ste. Croix mountains (Montagnes du Poivre) in the neighbourhood of Sandomierz.—E. Malinowski and Mlle. A. Smólska: The mosaic strain of *Petunia violacea*.