

Historic Natural Events.

Nov. 2, 1664. Great Plague of London began.—For some years London had been almost free from the bubonic plague, but an outbreak of great intensity began in the autumn of 1664, probably spreading from Holland. The first cases occurred on Nov. 2, and a few more in the following winter, which was severe. In May 1665 the epidemic became more noticeable and spread slowly through the City. The numbers of deaths reported from this cause were 43 in May, 590 in June, 6137 in July, rising to 31,159 in September. The total number reported was more than 68,000, and there were probably many thousands more which were kept secret. The population of London at the time was less than half a million, and of these, two-thirds fled to escape the contagion (incidentally spreading it widely over the country), so that of those who remained, nearly half died. The condition of London on Sept. 20, 1665, was described by Pepys: "But Lord! What a sad time it is to see no boats upon the River; and grass grows all up and down White Hall court, and nobody but poor wretches in the streets!" It was not until the cold weather of November and December 1665 that the plague abated and the refugees returned.

Nov. 2, 1898. Floods in the Lake District.—As a result of heavy rains during a gale on Nov. 2, one of the worst floods on record occurred in the Lake District. At Kendal 3.6 in. of rain fell in two days, and the Kent rose 12 in. higher than the previous highest level of 1878, flooding the town to a depth of four or five feet and doing great damage. At Keswick nearly three inches fell in 24 hours, and Thirlmere being already at its full height, the water overflowed through Keswick, where many houses were flooded. Throughout Cumberland and Westmorland similar scenes occurred—bridges damaged or washed away, animals and poultry lost. At Cockermouth the Derwent rose to the highest point since the great flood of 1852 and the lower parts of the town were deeply flooded. Windermere reached a level a foot higher than the previous record.

Nov. 3, 1927. New England Floods.—As a result of strong south-easterly winds blowing from the Atlantic, torrential rains fell over New England and eastern New York, exceeding 9 in. in several places. The ground was already saturated by excessive rain in October, and so heavy and extensive were the rains of Nov. 3 and 4 that destructive floods occurred even before the rain had ceased. The rivers exceeded their previous highest levels by several feet. At Montpelier, Vt., for example, the Winovski rose 16.5 ft. and there were 8-10 ft. of water over the whole business district. At White River Junction, Vt., the Connecticut rose 29 ft. in 24 hours. The greatest floods occurred at night, and the damage was estimated as more than 37 million dollars, more than 9000 persons were rendered homeless, and 88 lives were lost. Both life and property would have suffered far more but for the Weather Bureau warnings.

Nov. 4, 1926. Storm and High Tide on West of Scotland.—An unusually deep barometric depression travelled along the north coast of Ireland and north-eastward across Scotland on Nov. 4 and 5, causing severe gales. On the west coast of Scotland there was a very high tide. Many rivers overflowed their banks and caused considerable damage by flooding; roads were rendered impassable, in some cases railway services were delayed, and the telephone and telegraph services were dislocated.

Nov. 5, 1530. North Sea Storm.—On Nov. 4-5 a violent wind blew down many houses and trees in

England. It was followed by a great inundation of the sea, which invaded the coasts of Essex and Kent and the Isle of Thanet, and was even more destructive in Flanders, Zealand, and Holland, where 25 towns and 24 smaller places were wholly or partly destroyed; Antorf and Antwerp suffered severely.

Nov. 6, 1909. Heavy Rain in Jamaica.—During the occurrence of an unusually strong northerly wind ('norther'), very heavy rains were experienced in the north-eastern part of the island, especially on Silver Hill. In eight days, Nov. 4-11, the total recorded was 135 in., of which 30.5 fell on Nov. 6. The rivers and gullies leading from the mountains were flooded, with much loss of property and some fatalities. At Radnor there was an immense landslide, which blocked the gorge of the Cascade River and raised the level of the water by 200 ft.

Nov. 6, 1916. Optical Phenomena near Amiens.—About 9.30 P.M., at Pont Noyelles, east of Amiens, there was a lunar halo of 22°, a horizontal circle or mock moon ring, and a halo of 90°. During the remainder of the evening gun flashes appeared as narrow vertical streaks centred 10° to 15° above the horizon, and a large red glow from a fire some miles away also appeared as a very large and fiery streak with a dark space at its centre, 32½° above the horizon. The appearance was described as "the Angel Gabriel crossing swords with the powers of darkness".

Societies and Academies.

PARIS.

Academy of Sciences, Sept. 22.—The president announced the death of Philippe Glangeaud, of the Section of Mineralogy.—H. Vincent: The comparative cryptotoxic power of the sodium salts of some of the saturated fatty acids. It has been shown in earlier publications that minute doses of sodium oleate, palmitate, or margarate can neutralise very active toxins (tetanus, diphtheria, dysentery), and that this is due to a physical action of the soaps. The antitoxic power of these soaps extends also to venoms, certain alkaloids, and metallic salts. The present communication gives an account of the antitoxic properties of the lower terms of the fatty acid series. The effects are very irregular and do not depend on the number of carbon atoms in the molecule, the solubility, or the melting point of the acid. There is no connexion between the cryptotoxic power and the surface tension of the solution.—Luc Picart: The singular cases in the calculation of orbits.—R. Chodat: New researches on the gonidia of lichens.—C. Raveau: The utilisation of streams at the mouth.—Jacques Chokhate: Continued algebraical fractions.—Paul Alexandroff: The geometrical analysis of the dimension of closed ensembles.—Georges Giraud: The integro-differential equations in conjunction with integro-differential conditions at the boundary.—Radu Badesco: A functional equation.—Pierre Dupin: The vibration of cylindrical tubes in water under the influence of alternating vortices.—D. Rosenthal and M. Mathieu: Mild steel welding in the electric arc. The strength of the weld is much increased if during the welding the metal is protected from oxidation. Examination by X-rays proves the existence of stresses in the case of the non-protected welds.—Constantin Salceanu: The magnetic double refraction of phenol, naphthalene, and of phenanthrene in the fused condition. The passage from the benzene ring to naphthalene and phenanthrene results in a large

increase in the magnetic double refraction.—A. P. Rollet: A silver borate. The compound described was proved to have the composition $Ag_2B_4O_7 + 2H_2O$.—André Meyer and Mlle. Suzanne Mathey: The volumetric estimation of acetone. The acetone is precipitated as $3HgSO_4 \cdot 5HgO \cdot 2C_3H_6O$ by Denigès reagent (acid mercury sulphate), the mercury in excess being titrated by Volhard's method.—L. Bert: A new method of synthesis of phenylpropargyl alcohol and its homologues substituted in the ring. With commercial cinnamyl alcohol as a starting point, a method giving good yields of phenylpropargyl alcohol is outlined.—H. Mémyer: The summer of 1930 and the solar variations.—W. Moycho: The formation of the pigment in *Bacterium prodigiosum*. The pigment (prodigiosine) always appears at the period of the strongest development: it is formed at the death of the bacterium and oxygen is necessary for its appearance.—G. Dinulescu: The biology of the horse-fly.—Edouard Ducloux and Mlle. Georgette Cordier: Researches on the treatment of experimental bovine anaplasmosis in Tunis. This disease is curable, provided that the treatment is commenced sufficiently early.

LENINGRAD.

Academy of Sciences (*Comptes rendus*, No. 5, 1930).—A. Archangelskii: Investigations of phosphorite deposits in Russia.—A. Borisiak: *Ursus spelæus rossicus* nov. n. Description of a new race of *U. spelæus* from five almost entire skeletons found in a cave near Krasnodar, northern Caucasus.—P. Lazarev and N. L. Rodzevic: The phenomena of ionisation of gases during the photochemical reactions in solids.—A. Rolmačev: Some unexpected floristic finds in the central region of the Taimyr peninsula.—N. Vassojevič: Geological investigations in the region of the Djava mineral waters, southern Ossetia.—K. Flerov: The white muzzle deer (*Cervus albivostris* Przew.) as the representative of a new genus *Przewalskium*. A full description of the new genus.—E. Cheissin: A contribution to the binomics of infusoria parasitic in various invertebrates of the Lake Baikal.

Comptes rendus, No. 6, 1930.—A. Vinogradov and M. Neustrueva: Manganese in insects (2). Quantitative determinations of manganese in a series of insects.—A. Zachvatkin: Vertical distribution and diurnal migrations of the zooplankton in Lake Baikal.—A. Birula: A preliminary communication on the Quaternary Carnivora of Crimea. Sixteen species are recorded from the Quaternary palæolithic deposits in Crimea, while the present-day fauna contains only seven.—A. Kovanko: A class of periodic generalised functions.—N. Bogoliubov: Approximation of functions by trigonometric summations.—V. Ambarcumian: A deduction from Dirac's theory of protons and electrons.

SYDNEY.

Linnean Society of New South Wales, Aug. 27.—J. McLuckie: On *Grevillea Gaudichaudii*, a supposed natural hybrid between *Grevillea laurifolia* and *G. acanthifolia*. The relation of the hybrids to the parents is shown by a graph based on the coefficients of divergence from the midparental reference point.—F. A. Craft: (1) The topography and water supply of Cox's River, N.S.W. The region forms part of the Nepean-Warragamba catchment area, and may be considered under the headings of tablelands, level valleys, and canyons or deep gorges. The tablelands have a thick mantle of soil or are forested; they supply water permanently to the streams, areas of swamp

lands acting as storage grounds. The level valleys, which vary in elevation from 300 ft. to 3100 ft. above sea-level, are in parts water-bearing, but they depend largely upon the tablelands for permanent streams. The sides of the steep gorges have a very quick run-off. The continued permanency of the streams will depend largely upon the preservation of upland swamps and forests.—(2) Goulburn, a vital point on the New South Wales Highlands. Goulburn is situated on the tablelands between two series of deep gorges. The main routes leading from Sydney to Riverina and the Southern Tablelands pass along a narrow strip of undissected country to Goulburn, whence there is a divergence of routes. These take advantage of gentle radial valleys converging on the town, which is, therefore, a natural centre for communications and trade.

VIENNA.

Academy of Sciences, July 3.—G. Koller and E. Kandier: The constitution of cetraric acid.—G. Koller and W. Passler: The constitution of capraric acid.—A. Franke and A. Kroupa: Ring-contraction in the formation of inner ethers (oxides) from glycols (1, 5-oxido-dodecane from 1, 12-dodecanediol).—A. Franke and A. Kroupa: The preparation of α -alkyl-pimelic acids from 1, 5-oxidododecane and 1, 5 oxido-dodecane.—A. Haas: (1) The mean mass-density of the universe. (2) The possible connexion between cosmic and physical constants.—G. Nöbeling: A fixed point theorem for curves connected *im Kleinen*.—G. Nöbeling: Universal curves of finite order. A. Wald: Axiomatics of the concept 'between' in metrical spaces.—K. Strubecker: Helical lines in elliptical space.—H. Leng: The question of photographic activity of metals after exposure to sunlight. The author did not succeed in getting results reported by others.—H. Brell: The question of the linearity of the Lorentz transformation.

WASHINGTON, D.C.

National Academy of Sciences (*Proc.*, Vol. 16, No. 8, Aug. 15).—G. A. Miller: Groups which are decomposable into two non-invariant cyclic subgroups.—Solomon Lefschetz and William W. Flexner: On the duality theorems for the Betti numbers of topological manifolds.—A. H. Sturtevant and T. Dobzhansky: Reciprocal translocations in *Drosophila* and their bearing on *Enothera* cytology and genetics. The suggestion that chromosome rings result from exchanges of ends between non-homologous chromosomes seems to apply to *Drosophila*.—T. Elliot Weier: Notes on the plastid and other cytoplasmic bodies during sporogenesis and spermatogenesis in *Polytrichum commune*. Previous to gametogenesis, the plastid assumes a form closely resembling a Golgi body.—J. B. Conant and W. G. Humphrey: The nature of the prosthetic group in *Limulus* hæmocyanin. A black material is obtained which contains copper and seems to be a complex salt of an amino acid containing sulphur.—Lynn H. Dawsey: The photochemical dissociation of nitrogen peroxide. Absorption spectra of nitrogen dioxide and tetroxide have been photographed at room temperature and at the temperature of liquid air. Primary photochemical decomposition of the mixture is due to the tetroxide and the threshold is at about 3800 Å.—J. B. Conant and F. H. Crawford: The study of absorption spectra of organic compounds at liquid air temperatures. Absorption bands of porphyrins and similar coloured organic substances are resolved into finer lines at liquid air temperature.—H. J. Schumacher: A correction to "The Decomposition of Nitrogen Pentoxide at Low Pressures".