

Historic Natural Events.

Aug. 17, 1876. **Electrical Phenomena near Weymouth.**—At Ringstead Bay, near Weymouth, Dorset, during a sultry afternoon, on ground above the cliffs, a number of globes of light were seen of the size of billiard balls, extending from a few inches above the surface to a height of 7-8 ft. They slowly rose and fell vertically, sometimes within a few inches of the observers but always eluding the grasp. The number of these objects varied from twenty to 'thousands'. No sound accompanied the display, but at 10 P.M. there was a thunderstorm.

Aug. 17, 1929. **Shyok Glacier Floods.**—Near its source the Shyok River, a tributary of the Upper Indus, flows through a narrow valley, into which the Kumdan Glaciers protrude. At times the glaciers advance to the opposite wall, completely blocking the valley and damming the river. This occurred in 1928 and 1929, when the ice dam was 1000 yards long and more than 400 feet high. The force of the great volume of water broke through the barrier on Aug. 17, 1929, and a disastrous flood followed. At Khalsar, where the river runs through a narrow gorge, it rose rapidly to 93 ft. above the normal level, and by 8 P.M. on Aug. 18 the flood, travelling about 20 miles an hour, had raised the level by above 50 ft. at Attock, 600 miles from the dam. Owing to the system of warnings which had been arranged, the losses of life and property caused by the flood were comparatively small.

Aug. 18, 1631. **Aurora.**—The account of the search for the North-West Passage by Capt. Luke Foxe in His Majesty's Pinnace *Charles* contains an entry made on Aug. 18 at the mouth of the Nelson River, Hudson Bay: "This night 10 were many Pettiedancers". Mr. W. J. Healy of the Provincial Library, Winnipeg, explains that the term 'Dancers' or 'Merry Dancers' is a local name for the aurora borealis.

Aug. 18, 1923. **Typhoon at Hong Kong.**—The centre of a violent typhoon passed within 14 miles of Hong Kong. On Aug. 18 the calm centre had a diameter of seven miles, outside which the winds had a velocity of more than 100 miles per hour, while a gust was recorded, after correction for instrumental error, of 127 miles per hour. This was at the time the highest wind velocity ever recorded autographically.

Aug. 19, 1867. **Thunderstorm over London.**—After a day of intense heat one of the greatest London thunderstorms began at 9 P.M., and continued until 5 A.M. next morning. The lightning was continual, and the thunder scarcely ceased. Rain fell in torrents, accompanied by a violent wind and in some places by hail. The storm was very violent in all parts of Surrey and in some parts of Sussex and Berkshire.

Aug. 19, 1880. **Typhoon.**—This disturbance, known as "The Great Typhoon of 1880", originated to the east of the Liu Kiu islands on Aug. 19-22. On Aug. 24-27 it travelled north-eastward along the east coast of Japan, doing great damage.

Aug. 19, 1889. **Cloudburst in Japan.**—The Kii Peninsula, on the south of Nippon, was the scene of a deluge of rain unequalled in the history of Japan. On Aug. 18, a typhoon approached the south coast, and during Aug. 19 crossed the inland waters to the Sea of Japan, causing a southerly gale over the Kii Peninsula. Heavy rain was experienced on Aug. 18, and on Aug. 19 the rain was so violent and continuous that a considerable area was devastated. At Tanabe the fall was 14.5 in. on Aug. 18, and 35.5 in. on Aug. 19, the latter quantity falling in 17 hours. During a period of four hours from 2 P.M. to 6 P.M. the fall amounted to 14.25 in. and near by 9.5 in. fell in two hours. The observer reported that in the mountains of the interior the rain

was even heavier. The Izugawa, a tiny stream only eleven miles long, became a devastating torrent. The lower part of Tanabe was deeply flooded, while a stream south of Tanabe rose 50 feet in two hours. Hundreds of thousands of trees were washed out to sea, forming temporary dams in the valleys which added to the flooding; 1502 lives were lost and 400,000 persons were ruined.

Aug. 19, 1924. **Heavy Rain in British Isles.**—During a thunderstorm in the early morning, a total of eight inches of rain fell in five hours at Brymore House, near Cannington in Somersetshire. In the twenty-four hours ending at 9 A.M. the fall amounted to 9.40 in., the second largest recorded in the British Isles. It appears that two or three thunderstorms followed one another in rapid succession. After the storm hailstones lay on the ground to a depth of three or four inches, but were not especially large.

Aug. 21, 1852. **Eruption of Etna.**—A violent eruption of Etna, that lasted more than nine months, began on this day. Streams of lava flowed from craters in the Val del Bove, on the south-east side of the mountain, one stream advancing towards Zaffarana and another threatening La Macchia and Giarre. The total volume of lava was estimated to cover an area 6 miles long and 2 miles wide to an average depth of 12 ft.

Aug. 23, 1923. **Sandstorm at Khartoum.**—During a violent sandstorm at Khartoum the wind reached a velocity of 62 miles per hour. Many large trees were blown down. During storms of this type the dust is raised to a height of about 3000 feet, and advances across the ground like a solid wall ten or twenty miles in length.

Societies and Academies.

LONDON.

Geological Society, June 25.—J. E. Richey: Tertiary igneous complex of Ardnamurchan. The district is chiefly noteworthy on account of its intrusive rocks, and only small outliers of the widespread Tertiary plateau basalt-lavas are preserved. The types of intrusion include volcanic vents piercing the basalt-lavas, and largely filled with acid and trachytic fragmental materials; minor intrusions, including cone-sheets, chiefly quartz-dolerite, and dykes; and plutonic masses, nearly all gabbro or dolerite, occurring mainly as ring-dykes. The above, excepting the dykes, are arranged in concentric series around three different centres, marking three foci of igneous activity which functioned successively. It is suggested that the three complexes are successively more deep-seated, due, presumably, to the growth of an overlying volcanic pile. The regular ring-patterns marked by the intrusions are of more especial interest and constitute evidence of the formation of annular or arcuate fissures that are considered here, as in Mull, to have resulted from localised stresses set up in the roof of an underlying magma-reservoir.

PARIS.

Academy of Sciences, June 23.—Bigourdan: The Observatory of Cagnoli in the rue de Richelieu.—Ernest Esclangon: The determination of an orbit, planet or comet, by three observations, taking into account the perturbations caused by other planets.—Léon Guillet and Marcel Ballay: The influence of reheating on the electrical resistance and resistance to shearing of the tempered aluminium-silicon alloys.—Louis Roy: The propagation of waves on isotropic elastic surfaces with three parameters.—André Nessi and Léon Nisolle: A machine for calculating by means

of a planimeter the integral of the product of two functions.—T. Popovici: Convex functions of one real variable.—Georges Bouligand: The figuration of imaginary points and the theory of functions.—Michel Fekete: Series of factors keeping the class of a Fourier's series.—Luigi Fantappiè: The extension of a theorem of M. Hadamard to series of multiple powers.—F. E. Myard: An absolutely general mode of linkage of two axes of rotation in space.—Nicolas G. Ferrakis: The sensitometric study of a new panchromatic plate. A study of a Guilleminot panchromatic plate, with special reference to the interpretation of photographs of the solar corona taken on similar plates.—André Marcelin and Mlle. S. Boudin: Stratifications coloured by sublimation. A description of the technique necessary to obtain crystals suitable for microscopic examination.—René Lucas: The mutual influence on their absorption bands of the chromophore groups of a molecule.—J. Aharoni and Ch. Dhéré: Study of the influence exerted by the exciting rays on the fluorescence spectrum of etiopyrphyrin. The structure of this spectrum from the infra-red to the ultra-violet.—L. Goldstein: The distribution of potential and charge in a diatomic molecule.—Lespieau and Bourguet: Chemical constitution and the Raman effect: ethylenic hydrocarbons. As regards the Raman effect, the double bonds of the benzene nucleus give the same effect as ordinary ethylene double bonds; both are characterised by the line 1600. The Raman spectra of six hydrocarbons of known composition have been studied and the results applied to the verification of the structure of a new double ring hydrocarbon, phenyltrimethylene.—G. Arrivaut: The formation of a violet copper alloy, Cu_2Sb . This has been prepared by the action of a 10 per cent solution of antimony chloride containing some free hydrochloric acid upon finely divided copper.—Maurice François: The rational preparation of the bromides and chlorides of mercurammonium. Crystallised dimercurammonium bromide and dimercurammonium chloride.—M. Tiffeneau and Mlle. Jeanne Lévy: The affinity capacity of the piperonyl radical, $CH_3O_2C_6H_5$.—Urien: The decomposition of divinylglycol by various catalysts: 1-methylal-1-cyclopentene.—H. Colin and P. Ricard: The glucides and the glucidic derivatives of the brown Algae.—H. Lagatu and L. Maume: Observation, by leaf diagnosis, of the influence of temperature on the mode of nutrition of a plant.—Emile Saillard: Adsorption in the sugar industry.—A. and B. Chauchard: Sleep produced in fishes by compression of the brain.—D. Bennati and E. Herzfeld: The action of formaldehyde on neuromuscular excitability.—P. Sédallian and Mme. Clavel: The use of flocculated diphtheric toxin in the preparation of antidiphtheric serum. Other conditions being the same, and with some reserve as regards individual reactions of animals, experimental proof is given that the toxin precipitated at pH 4.7, brought into solution in a suitable volume of peptone solution, furnishes an antigen of at least equal value to that of the total toxin.—H. Simonnet and G. Tanret: The calcification of the lung in the healthy or tuberculous rabbit by larger doses of irradiated ergosterol.—S. Bratianu and C. Guerriero: The phagocytic power of the epithelial cells of the mammary gland.—Mlle. G. Cousin: The endoparasitic development of the ectoparasitic larva of *Mormoniella vitripennis*.

CAPE TOWN.

Royal Society of South Africa, May 21.—P. R. v. d. R. Copeman: Changes in the composition of oranges during ripening (Part 2). Changes in soluble solids. The percentage of soluble solids in the juice and the

weight of soluble solids per fruit both increase during ripening. The changes follow the course of an autocatalytic reaction. During the final three weeks the effects of transpiration become dominant and the percentage soluble solids show an abnormal increase. Spraying with lead arsenate mixtures does not produce any significant change in the amount of soluble solids.—B. Farrington: The life of Vesalius by Boerhaave and Albinus. A translation of the preface by Boerhaave and Albinus to their edition of the works of Vesalius. It contains a brief history of anatomy from the earliest times until its revival in Italy in the beginning of the fourteenth century. It gives a more extended account of the work of the Italian pioneers; and then establishes the epoch-making importance of the work of Vesalius. The career of Vesalius is treated in considerable detail and with many lively biographical touches. This preface of theirs is not now readily accessible in Latin, and has not before been translated into English.—A. Zoond and G. Rimer: The mechanism of equilibration in *Xenopus Laevis*. An analysis of the function of the eyes and the labyrinthine organs in connexion with equilibrium and the response to rotation. Whereas extirpation of eyes and labyrinths abolishes completely the response to rotation on a turntable, eyed labyrinthless animals do respond to such rotation by definite muscular movement. This response is still maintained when the animal is rotated in total darkness. The same phenomenon is recorded also for *Rana*.—A. Zoond: Dermal photoreceptivity in *Xenopus Laevis*. *Xenopus* is negatively phototropic and response is not in any way affected by the removal of the eyes, the eyeless animals reacting to light in the same way as the eyed. Immersion in 1 per cent cocaine solution for six minutes completely abolishes the sensitivity to light of the eyeless animals, although the spinal reflexes are not impaired. These observations demonstrate the presence of photoreceptive elements in the skin of *Xenopus*.

CRACOW.

Polish Academy of Science and Letters, Mar. 3.—W. Seisłowski: The radiation of semi-conducting cells.—D. Doborzyński: The dielectric constant of liquid bromine.—K. Kostanecki: The course of the cæcum of the great bustard, *Otis tarda*.—F. Rogoziński and Mlle. M. Starzewska: Experimental rickets. The influence of ultra-violet light on the mineral metabolism and on the composition of the bones. Experiments on the white rat prove the favourable action of irradiation on the retention of calcium and of phosphorus.—L. Monné: Comparative researches on the structure of the Golgi apparatus and of the vacuome in the sexual and somatic cells of some gastropods (*Helix*, *Paludina*, *Cerithium*).—St. Ciechanowski: (1) Study of tar cancer tumours. (2) The influence of the anatomical structure of the region exposed to tar on the appearance and development of tar tumours.—K. Sciesiński: The influence of the species of the rabbit on the appearance and development of tar tumours.—St. Ciechanowski and K. Sciesiński: Pregnancy and tar tumours. The influence of the intensity of the local agent on the formation and development of tar tumours in the rabbit.—R. Weigl: The nature and forms of the micro-organism of exanthematic typhus.—R. Weigl: The methods of active immunisation against exanthematic typhus.—L. Hirszfild and Mlle. W. Halber: The serological unity of cancers.

April 7.—T. Banachiewicz: First orbit of the trans-Neptunian star.—A. Wilk: Discovery of a new comet.—Wl. Górczyński: Values of the intensity of the solar radiation measured on board different vessels

on the Atlantic and Indian Oceans.—E. Chauvenet and J. Dawidowicz: Zirconyl oxydides.—K. Dziewoński, Cz. Baraniecki, and L. Sternbach: A new method of synthesis of colouring matters of the thioindigo type. Syntheses in the naphthalene group.—J. Kuhl: Contribution to the knowledge of the Trembowla grits in the neighbourhood of Mogielnica (Eastern Little Poland).—Mlle. C. de Kleist: Phytosociological researches on the peat bogs of the region of the dunes of the right bank of the Vistula in the neighbourhood of Warsaw.—Z. Grodiński: The development of the blood vessels in the anterior extremities of *Amblystoma mexicanum*.—J. Zacwili-chowski: Researches on the innervation of the wings of insects.—L. Hirsfeld and Mlle. W. Halber: Deviation of the complement by the serum of cancer patients and of pregnant women with alcoholic extract of cancers.—Z. Zakrzewski: Researches on the production of the principles stimulating the growth of normal tissues by sarcomatous cells in culture *in vitro*.

MELBOURNE.

Royal Society of Victoria, June 12.—John Clark: New Formicidæ; with notes on some little-known species. Fourteen species and one genus are described as new. The ants described by Kirby in 1896, collected by the member of the Horn Expedition to Central Australia, have been revised. Of the twelve species mentioned by Kirby, five now stand as apparently valid species.—Alan P. Dodd: New Hymenoptera Proctotrypoidea from Victoria. Six new species are described, belonging to the families (1) Scelionidæ and (2) Belytidæ. The genus *Xenotoma* is here recorded for the first time from Australia.—Alan Coulson: Notes on the Jurassic Rocks of the Barrabool Hills, near Geelong, Victoria. Fossil plants, of which a list is given, were discovered in a mudstone band intercalated with basal boulder beds. The flora indicates a Lower Jurassic age. The pebbles of the boulder beds are Ordovician spotted slate, quartzite, quartz and mica schist, Heathcoteian (Up. Cambrian) epidiorite, and Lower Palæozoic granite. Two faults have affected the Jurassic beds.

SYDNEY.

Linnean Society of New South Wales, May 21.—C. P. Alexander: Observations on the Dipterous family Tanyderidae. A preliminary description of the immature stages of the family Tanyderidae. The material consists of larvæ and pupæ of a North American species, *Protoplasa fitchii*, from the Gaspé Peninsula of eastern Quebec, Canada. More than half the known species of the family are from Australasia, which is the great centre of distribution of the family.—H. L. Jensen: The genus *Micromonospora* Orskov, a little-known group of soil micro-organisms. Morphological and biological description of nine strains of the practically unknown genus *Micromonospora*, which appears to be of common occurrence in Australian soils.—A. Jefferis Turner: Revision of Australian Oenochromidæ (Lepidoptera). Part 3. This completes the revision of the family. In this part twenty genera and forty-seven species are dealt with, one genus and six species being described as new. Keys are given for the determination of the species of *Oenochroma* and *Derambila*.

VIENNA.

Academy of Sciences, May 22.—G. Machek: The linear pentacene series (19). The constitution of the bi-derivatives of pentacene-diquinone.—M. Kohn and E. Gurewitsch: The 2, 5-dichlor-hydro-quinone-dimethyl-ether.—M. Kohn and S. Fink: Chlorination

of *p*-amido-phenol. 35th. Communication on bromo-phenols.—K. Przibram: Recrystallisation and coloration of rock-salt.—G. Ortner: Recrystallisation of compressed rock-salt. M. Blau and E. Rona: Application of Chamie's photographic method to reactions and electrolysis of polonium.

Official Publications Received.

BRITISH.

Indian Central Cotton Committee: Technological Laboratory. Technical Bulletin, Series A, No. 15: Preliminary Spinning Tests on Mixings of Indian and American Cottons using Ordinary and High Drafts. By R. P. Richardson and Dr. A. James Turner. Pp. 21. (Bombay.) 1 rupee.

Publications of the Dominion Observatory, Ottawa. Vol. 10: Bibliography of Seismology. No. 4: October, November, December, 1929. By Ernest A. Hodgson. Pp. 51-65. (Ottawa: F. A. Acland.) 25 cents. A Summary of Data relating to Economic Entomology in the British Empire. Prepared for the Third Imperial Entomological Conference by Dr. S. A. Neave. Pp. 23. (London: Imperial Institute of Entomology.) 2s. 6d. net.

The Scientific Proceedings of the Royal Dublin Society. Vol. 19 (N.S.), No. 41: Study of the Polysaccharides. Part 3: Acetamide as a Polysaccharide Solvent. By Dr. J. Reilly, Dr. Reinhold Wolter and P. P. Donovan. Pp. 467-473. (Dublin: Hodges, Figgis and Co.; London: Williams and Norgate, Ltd.) 6d.

Memoirs of the Asiatic Society of Bengal. Vol. 11, No. 3: The Palæography of the Hathigumpha and the Nanaghat Inscriptions. By R. D. Banerji. Pp. 131-146+plates 17-23. (Calcutta.) 4.8 rupees.

The Half-Yearly Journal of the Mysore University. Vol. 4, No. 1, January. Pp. 144. (Bangalore.) 2 rupees.

Education, India. Pamphlet No. 26: Note on Education at Jamshedpur in Bihar and Orissa. By G. E. Fawcus. Pp. iii+8+2 plates. (Calcutta: Government of India Central Publication Branch.) 8 annas; 10d.

Journal of the Indian Institute of Science. Vol. 13A, Part 10: Contributions to the Study of Spike-Disease of Sandal (*Santalum album*, Linn.) Part xi: New Methods of Disease Transmission and their Significance. By M. Sreenivasaya. Pp. 113-117. (Bangalore.) 12 annas.

University of Bristol. The Annual Report of the Agricultural and Horticultural Research Station (The National Fruit and Cider Institute), Long Ashton, Bristol, 1929. Pp. 227+18 plates. (Bristol.)

Queensland. Department of Mines: Queensland Geological Survey. Publication No. 278: The Queensland Upper Palæozoic Succession. By J. H. Reid. Pp. 96. (Brisbane: Anthony James Cumming.)

Report of the Progress of the Ordnance Survey for the Financial Year 1st April 1929 to 31st March 1930. Pp. 22+6 plates. (London: H.M. Stationery Office.) 4s. 6d. net.

Transactions of the Institute of Marine Engineers, Incorporated. Session 1930, Vol. 42, July. Pp. 391-473+xliv. (London.)

Harper Adams Agricultural College, Newport, Shropshire. Advisory Report No. 5: Report of the Advisory Department, 1929-1930. Pp. 32. (Newport.)

Ministry of Agriculture and Fisheries. The National Mark. Second edition. Pp. 11. (London: Ministry of Agriculture and Fisheries.) Free.

FOREIGN.

Annales de l'Institut Henri Poincaré: recueil de Conférences et mémoires de calcul des probabilités et physique théorique. Vol. 1, Fasc. 1. Pp. 74. (Paris: Les Presses universitaires de France.) 35 francs.

Transactions of the San Diego Society of Natural History. Vol. 6, No. 4: Upper Eocene Orbitoid Foraminifera from the Western Santa Ynez Range, California, and their Stratigraphic Significance. By W. P. Woodring. Pp. 145-170+plates 13-17. 50 cents. Vol. 6, No. 5: A new Race of Gilded Flicker from Sonora. By A. J. van Rossem. Pp. 171-172. 10 cents. Vol. 6, No. 6: New Species of Mollusks. By Fred Baker and V. D. P. Spicer. Pp. 173-182+plates 18-19. 25 cents. (San Diego.)

Publikationer og mindre Meddelelser fra Københavns Observatorium. Nr. 69: Die retrograden periodischen Bahnen um die beiden endlichen Massen im Probleme Restreint, mit direkter absoluter Bewegung (Klasse β). Von Elis Strömgen. Pp. 31. (København: Bianco Lunos Bogtrykkeri A.-S.)

Federated Malay States. Annual Report on the Department of Agriculture, S.S. and F.M.S., for the Year 1929. By Dr. H. A. Tempany. Pp. ii+19. (Kuala Lumpur.)

Ministry of Agriculture, Egypt: Technical and Scientific Service. Bulletin No. 93: Some Supplementary Records to Muschler's Manual Flora of Egypt; including many Species collected by Mr. G. W. Murray. By N. Douglas Simpson. Pp. iv+59. 6 P.T. Bulletin No. 94: The Angular Leaf Spot of Cotton in Egypt. By Dr. Tewfik Fahmy. Pp. 5+7 plates. 5 P.T. (Cairo: Government Publications Office.)

Collection des travaux chimiques de Tchecoslovaquie. Rédigée et publiée par E. Votoček et J. Heyrovský. Année 2, No. 7, Juillet. Pp. 441-488. (Prague: Regia Societas Scientiarum Bohemica.)

Proceedings of the Academy of Natural Sciences of Philadelphia, Vol. 82. The North American Retinellæ. By H. Burrington Baker. Pp. 193-219+plates 9-14. Results of the Pinchot South Sea Expedition. 1: Land Mollusks of the Caribbean Islands, Grand Cayman, Swan, Old Providence and St. Andrew. By Henry A. Pilsbry. Pp. 221-261+plates 15-19. (Philadelphia, Pa.)

Bulletin of the Bingham Oceanographic Collection. Vol. 3, Art. 4: Scientific Results of the Third Oceanographic Expedition of the *Paenae*, 1927. Teleostean Shore and Shallow-water Fishes from the Bahamas and Turks Islands. By Albert Eide Parr. Pp. 148. (New Haven, Conn.: Peabody Museum of Natural History, Yale University.)