

Historic Natural Events.

Sept. 14, 1716. **Thames Dry.**—After an excessive drought, which continued from February to the end of August, a strong west-south-west wind prevented the tide from coming in for 24 hours, so that there was only a narrow channel some 10 yards wide, and so shallow that thousands of persons passed across on foot, under the arches of London Bridge.

Sept. 14, 1899. **Floods in Austria.**—Heavy rains fell on Sept. 8–14. At Mühlau the fall on Sept. 12 was 11·3 in. in 24 hours, and the total for the six days exceeded 24 in. The Danube rose to a level nearly 25 feet above the low-water stage at Vienna and nearly twice this amount in some other localities. The floods, which were exceeded only by those of 1501, did great damage.

Sept. 15–17, 1929. **Thunderstorm near Channel Islands.**—A remarkably severe thunderstorm raged almost without cessation over a small area near Dinard and the Channel Islands from 6 P.M. on Sept. 15 to 4 P.M. on Sept. 17, accompanied by violent winds from the north-east. There was considerable damage both by lightning and flood; the power station at St. Brioux was put out of action, and at Dinard an Englishman was blinded. A bridge on the main Dinard-St. Lunaire road was swept away and a motor-car crossing at the time was washed out to sea. St. Lunaire was flooded to a depth of two feet and the streets torn up.

Sept. 16, 1363. **Beginning of Severe Winter.**—According to various old chronicles, a "very terrible" frost continued from the middle of September into April. Holinshed, quoting "Walsingham and other old writers", says Dec. 7–Mar. 19. In Paris the frost began on Dec. 6 and lasted 14 weeks. The Rhine was frozen from Jan. 5 to Mar. 17, and waggons were driven over the ice. In France the winter was very snowy.

Sept. 17, 1882. **Great Comet.**—On this day, the great comet, visible to the naked eye in full daylight, was followed telescopically right up to the edge of the sun by Mr. Finlay (the discoverer of the comet on Sept. 7) at the Cape of Good Hope Observatory. Even the nucleus was quite invisible, however, as the comet crossed before the sun's disc. At Melbourne the comet was watched with the unaided eye to within 4° of the sun. By Sept. 24, it was visible with a tail 15° long in the bright dawn. Success in photographing this comet and its background of stars at the Cape Observatory under the direction of Sir David Gill was an important factor in the inception in 1887 of the *Astrographic Chart and Catalogue*. The period of the comet is 761 years.

Sept. 18–19, 1926. **Florida Hurricane.**—Early on Sept. 18 the south-eastern coast of Florida from Miami to Palm Beach was struck by an intense hurricane, which on the previous day had ravaged the Turks and Caicos Islands. The centre, moving towards the west-north-west, passed almost over Miami, where the official barometer fell to 936 mb. (27·65 in.). During its approach the wind reached hurricane force (75 miles per hour and upwards) for nine hours, and the greatest velocity is estimated as 130 miles per hour. Then, as the centre passed over, there was a lull and large numbers of people, not realising that a second phase was coming, ventured out, to be caught when the wind rose again to hurricane force in the rear of the centre. The strength of the wind is shown by the nature of the damage; an 18-story skyscraper recently completed was twisted so badly that it had to be demolished, and another tall building was bent over twenty degrees from the vertical. Yachts and

small ships were lifted bodily on to the land. After passing Miami the hurricane curved away to the north-west, striking the Gulf Coast between Mobile and Pensacola on Sept. 20 and dissipating over eastern Texas on Sept. 22. In Florida 327 persons were killed and more than 6000 injured, and the damage to property probably exceeded 100,000,000 dollars, and was greater than in any previous hurricane in the United States.

Sept. 19, 1387. **End of Hot Summer.**—The summer in Europe was extraordinarily dry and hot and was proverbial for centuries as "The Old Hot Summer". From Feb. 28 to Sept. 19 it rained only six times in Switzerland, and men waded across the Rhine at Cologne. The year was not especially dry in England.

Sept. 19, 1540. **Drought.**—After a calamitous year, fine weather and heat lasted from February until Sept. 19, during which interval scarcely any rain fell in Europe.

Sept. 20, 1909. **Storm Wave through Yucatan Channel.**—A tropical hurricane of great intensity and large extent passed through this Channel on Sept. 17 and struck the coast of Louisiana a short distance west of New Orleans on Sept. 20. A great storm wave swept inland, and the water, checked by the swamp forests and levees, reached a depth of 7–10 ft. over a large area to the right of the centre, including New Orleans. The damage to property caused by this storm exceeded six million dollars and 353 lives were lost.

Sept. 20, 1929. **Hurricane in West Indies.**—This disturbance was first reported about 300 miles north of Porto Rico on Sept. 20; at that time it was of moderate intensity, but by Sept. 24 it had reached hurricane force. It was, however, chiefly noteworthy for its abnormally slow rate of movement and aberrant track. From Sept. 24 to Sept. 28 it actually moved in a south-westerly direction across the Bahamas and through Florida Strait near Miami. At Nassau, Bahamas, on Sept. 25 a violent westerly gale caused a 'hurricane wave' which destroyed the sea wall and flooded the town, carrying away many houses. Many others were unroofed, stores, churches, and shipping were damaged, and many lives were lost. In Florida the damage was much less, and the centre was evidently decreasing rapidly in intensity, but at Miami there were a number of waterspouts and at Key Largo the wind velocity during gusts was estimated as 150 miles per hour. From Miami the centre moved very slowly north-westwards to Panama City near Pensacola, where a few wharves and stores were destroyed on Sept. 30.

Societies and Academies.

PARIS.

Academy of Sciences, July 21.—G. Bigourdan: The astronomical stations of Châtillon-sous-Bagneux.—L. Blaringhem: The heredity of the phases of flower opening in poppies.—F. Mesnil: The adaptation to man of the trypanosomes pathogenic to mammals. The author considers that it has been experimentally demonstrated that a trypanosome of animal origin, such as *Tr. brucei*, can adapt itself to man.—M. Aubert and R. Duchêne: The propagation of combustion in carburetted mixtures.—G. Bruhat and J. Terrien: The comparative absorption of active and racemic acids in aqueous solution. Between the wave-lengths 2653 Å. and 2400 Å., if racemic acid absorbs light differently from solutions of the active acids, the deviations are always less than 4 or 5 per cent in one direction or the other, and the average of

the results shows that the absorptions are practically identical. These results confirm those deduced by Darms from polarimetric measurements.—Daniel Chalonge: The mechanism of the continuous emission of the hydrogen molecule.—H. Ollivier: The thermal variation of the specific magnetic rotatory power in the case of cerium nitrate and nickel chloride.—F. Joliot: The determination of the period of radium-*C'* by Jacobsen's method. Experiments with thorium-*C'*.—Horia Hulubei: The preparation of very pure hydrogen in notable quantities by means of an electrolytic osmoregulator with palladium. The palladium tube of an osmoregulator is saturated with hydrogen by electrolysis of phosphoric acid, the anode being arranged so that the palladium tube is not altered in shape. By afterwards heating this tube, relatively considerable quantities of hydrogen are introduced into the vacuous tube.—Picon: Rendering some salts of camphocarbonic acid soluble in organic solvents. Various camphocarbonates, rendered anhydrous by prolonged exposure in a good vacuum over phosphoric anhydride, were examined for their solubilities in organic solvents. Some of these (neodymium, cerium, bismuth, gold) are readily soluble in organic solvents, others (copper, calcium, zinc, lead) when anhydrous are practically insoluble. But boiling with benzene, with subsequent removal of all the benzene, renders these salts more or less soluble in organic solvents.—Mlle. M. Montagne and B. Casteran: The action of potassium hypobromite on some trisubstituted amides. The α -trisubstituted amides give good yields of iso-cyanates when submitted to the Hofmann reaction; subsequent treatment with hydrochloric acid gives the corresponding amines in quantitative yield.—Jean Gubler: The geological structure in central western Cambodia (Indo-China).—A. Marin, M. Blumenthal, and P. Fallot: Stratigraphical comparisons between the western extremity of the Betic and Penibetic zones of Andalusia and the north of the Rifian arc.—Louis Besson: The daily variation of rain at Paris. A discussion of twenty years of observations made at the Observatory of Montsouris. The mean daily variation has two maxima and two minima, and this is due to two different causes, the daily convection currents and the nocturnal cooling.—M. and Mme. H. Labrouste: The relation between certain periodical components of the solar activity and the daily amplitude of the magnetic declination.—Couvreur: Preliminary note on the structure of the shells of Gastropods.—Alb. J. J. Vandevelde and Alfr. Verbelen: New biochemical researches on earth. The dye absorption method gives very variable results with the same earth, even with the same dye; results using methylene blue were the most concordant, but further study is necessary. The adsorptions of dye, peptone, and centrifuged milk were compared. The three methods gave roughly comparable results.—M. and Mme. A. Chauchard: Researches on the relation between functional velocity and chronaxy.—Raymond-Hamet: The comparative physiological action of aspidospermine and quebrachine. In opposition to the usually accepted view, the alkaloids of *Aspidosperma Quebracho* must be classed in two different pharmacological groups. The experiments described show that the total alkaloids of this plant can act at once on the vagus nervous system and on the sympathetic nervous system. This suggests a new therapeutic application of these alkaloids.—G. Belloc, R. Fabre, and H. Simonnet: Contribution to the study of the biological activity of the sterols. Study of the plankton sterols. From two samples of plankton, taken at different periods of the year, the sterols were extracted and purified, care being taken to exclude the action of air and light so far as possible. These sterols were sub-

mitted to physical (absorption in the ultra-violet), chemical, and biological tests. One, collected in July, was biologically active; the other, collected in April, only acquired biological activity after irradiation. The biological activity of the plankton depends on several factors, the chief of which are light and the zoological nature.—Mme. Y. Khouvine, E. Aubel, and L. Chevillard: The activity of sodium fluoride towards the transformation of pyruvic acid into lactic acid.—H. Colin and E. Guéguen: The constitution of the sweet principle of *Rhodymenia palmata*. This is shown to be a monogalactoside of glycerol; the fresh alga may contain up to 5 per cent of this substance.—M. Marcille: The injection of formolated ether into the lymphatics of cancerous tumours. Injection of ether containing 0.5 per cent of formol is proposed, and one case in which it proved beneficial is described.

CAPE TOWN.

Royal Society of South Africa, June 18.—H. H. Kary: On the geographical distribution of the Indo-African and Mediterranean Gryllacoids. Seven subfamilies are considered, representing the forms occurring in the regions under consideration. In the case of the *Stenopelmatinae* and *Anostostominae* there is a discontinuous distribution. In the case of the other subfamilies, some forms are endemic in India, but all other forms occurring in India show relationships to those found farther east, where more species also occur.—B. F. J. Schonland: Thunderstorms and the penetrating radiation. An examination of the effect of thunderclouds upon the intensity of the penetrating radiation, using a new type of ionisation-electroscope, was made at Johannesburg, in the summer of 1929–1930. Overhead storms give rise to a reduction in intensity, amounting to so much as 40 per cent. No evidence could be obtained for the existence of beams of 'run-away' electrons below these clouds. The reduction effect indicates that the majority, if not all, of the ionising particles have energies less than 5×10^9 electron-volts.—Enid Hogben: Sex differences in serum calcium in different classes of vertebrates. In the rabbit, dogfish, and crawfish, the calcium content was higher in males than in females, but the difference was not statistically significant. In the fowl and toad, the calcium content was significantly higher in females. In the rabbit, fowl, and toad, magnesium determinations gave parallel results to those of calcium. In the crawfish the magnesium content of the serum was significantly higher in females. In the dogfish the magnesium content of the serum gave a wide range of values. This variability may be connected with the different stages of the reproductive cycle in the female.

MELBOURNE.

Royal Society of Victoria, July 10.—T. Rayment: New and remarkable bees. *Meroglossa miranda*, a West Australian species with maxillary palpi larger than the antennæ, was described. Also the first recorded female of *Neopasiphae mirabilis*, from the Best collection in the National Museum. Other descriptions include *Paracolletes maculata*, *Neoceratina rubini*, *Trigona cockerelli*, and the allotypes of *Halictus demissus*. An emendation of *Melitribus* is given.—C. J. Gabriel: Catalogue of the land shells of Victoria. The records of previous authors are here brought up-to-date and a critical revision of the species made. Eight new species are described.—W. J. Parr and A. C. Collins: Notes on Australian and New Zealand Foraminifera. (1) The species of *Patellina* and *Patellinella*, with a description of a new genus, *Annulopatellina*. A trimorphic variety of *Patellina corrugata*

is recorded, resembling *P. advena* Cushman. A new species, *Patellinella annectens*, is described. The new genus, *Annulopatellina*, is founded on the genotype *A. annularis* (Parker and Jones).—F. Chapman and Irene Crespin: Rare foraminifera from deep borings in the Victorian Tertiaries. Six new species and a new variety are described.

Official Publications Received.

BRITISH.

Canada. Department of Mines: Mines Branch. Investigations in Ore Dressing and Metallurgy (Test and Research Laboratories), 1928. (No. 711.) Pp. ii+166. (Ottawa: F. A. Acland.)

The Central Library for Students (from March 1930 onwards, The National Central Library). 14th Annual Report of the Executive Committee, 1929-30. Pp. 50. (London.)

Transactions of the Royal Society of Edinburgh. Vol. 56, Part 3, No. 23: The Feeding Mechanism, Formation of the Tube, and Physiology of Digestion in *Sabella pavonina*. By Dr. E. A. T. Nicol. Pp. 537-598+2 plates. 8s. 6d. Vol. 56, Part 3, No. 25: Metamorphism in relation to Structure in the Scottish Highlands. By Dr. Gertrude Lilian Elles and Dr. Cecil Edgar Tilley. Pp. 621-642+2 plates. 4s. Vol. 56, Part 3, No. 26: Reports of the Jasper Park Lakes Investigations, 1925-26. The Molluscs of Jasper Park. By Alan Mozley. Pp. 647-669+2 plates. 3s. 6d. (Edinburgh: Robert Grant and Son; London: Williams and Norgate, Ltd.)

Jamaica. Annual Report of the Department of Agriculture for the Year ended 31st December 1929. Pp. 36+4 plates. (Jamaica: Government Printing Office, Kingston.)

Report of British Delegates of the Meeting of the International Council for the Exploration of the Sea, held in Copenhagen, June 1930. Pp. 11. (London: Ministry of Agriculture and Fisheries.)

Madras Fisheries Department. Administration Report for the Year 1928-29. By Dr. B. Sundara Raj. (Report No. 1 of 1930, Madras Fisheries Bulletin, No. 24.) Pp. vi+103+6 plates. (Madras: Government Press.) 1.4 rupees.

The Journal of the Institute of Electrical Engineers. Edited by P. F. Rowell. Vol. 68, No. 404, August. Pp. 945-1088+xxviii. (London: E. and F. N. Spon, Ltd.) 10s. 6d.

The Scientific Proceedings of the Royal Dublin Society. Vol. 19 (N.S.), No. 42: Report of the Irish Radium Committee for the Year 1929; including Reports by Dr. Oliver Chance, Andrew Charles, Oswald J. Murphy, Dr. Walter C. Stevenson, C. M. Taylor and Josephine Walsh. Pp. 475-489. (Dublin: Hodges, Figgis and Co.; London: Williams and Norgate, Ltd.) 1s.

Experimental Researches and Reports published by the Department of Glass Technology, the University, Sheffield. Vol. 12, 1929. Pp. iv+220+3 plates. (Sheffield.)

Proceedings of the Cambridge Philosophical Society. Vol. 26, Part 3, July. Pp. 285-428. (Cambridge: At the University Press.) 7s. 6d. net.

British Non-Ferrous Metals Research Association. Tenth Annual Report for the Year ending December 31st, 1929. Pp. 57. (Birmingham.)

Research Association of British Motor and Allied Manufacturers. Tenth Annual Report of the Council for the Year ending 31st March 1930. Pp. 7. (London.)

The Institute of Chemistry of Great Britain and Ireland. Register of Fellows, Associates and Students, corrected to 31st May 1930. Pp. 372. (London.)

The Quarterly Journal of the Geological Society. Vol. 86, Part 2, No. 342, July 31st. Pp. xlix-xxlvi+129-330+15 plates. (London: Longmans, Green and Co., Ltd.) 5s. 6d.

FOREIGN.

Report of the Aeronautical Research Institute, Tōkyō Imperial University. No. 62: Acoustical Properties of some Sound Collectors for the Aircraft Sound Locator. By Jūichi Obata and Yahei Yosida. Pp. 231-247+plates 25-27. (Tōkyō: Koseikai Publishing Office.) 0.15 yen.

Proceedings of the Academy of Natural Sciences of Philadelphia. Vol. 82. New Land Shells from the Solomon Islands. By E. G. Vanatta. Pp. 263-264+1 plate. (Philadelphia.)

The Cleveland Museum of Natural History. Annual Report for the Year 1929. Pp. 39. (Cleveland, Ohio.)

U.S. Department of Commerce: Bureau of Standards. Research Paper No. 191: The Geiger Tube Electron Counter. By L. F. Curtiss. Pp. 115-123. (Washington, D.C.: Government Printing Office.) 5 cents.

The Academy of Natural Sciences of Philadelphia. Special Publication No. 3: Gubb's California Cretaceous and Tertiary Type Lamellibranchs. By Ralph B. Stewart. Pp. 314+17 plates. (Philadelphia.) 3.50 dollars.

Smithsonian Miscellaneous Collections. Vol. 82, No. 8: Four New Raccoons from the Keys of Southern Florida. By E. W. Nelson. (Publication 3066.) Pp. ii+12+5 plates. (Washington, D.C.: Smithsonian Institution.)

Bulletin of the National Research Council. No. 76: Handbook of Scientific and Technical Societies and Institutions of the United States and Canada. Second edition. American Section compiled by Clarence J. West and Callie Hull; Canadian Section compiled by National Research Council, Canada. Pp. 352. (Washington, D.C.: National Academy of Sciences.) 3 dollars.

U.S. Department of Commerce: Bureau of Standards. Bureau of Standards Journal of Research. Vol. 5, No. 1, July, R.P. Nos. 183-193. Pp. 211. (Washington, D.C.: Government Printing Office.) 40 cents.

Field Museum of Natural History. Museum Technique Series, No. 3: Restoration of Ancient Bronzes and Cure of Malignant Patina. By Henry W. Nichols. Pp. 51+11 plates. (Chicago.)

Proceedings of the American Philosophical Society. Vol. 69, No. 4. Pp. 117-256. (Philadelphia.)

Smithsonian Institution: United States National Museum. Bulletin 152: The Canceroid Crabs of America of the Families Euryalidae, Portunidae, Atelecyclidae, Cancridae and Xanthidae. By Mary J. Rathbun. Pp. xvi+609+230 plates. 2 dollars. Bulletin 153: Birds collected by the Childs Frick Expedition to Ethiopia and Kenya Colony. By Herbert Friedmann. Pp. xiii+516+12 plates. 1 dollar. (Washington, D.C.: Government Printing Office.)

CATALOGUES.

Acriflavine "B.D." Brand, with references also to Euflavine and Proflavine. Pp. 26. (London: The British Drug Houses, Ltd.)

Laboratory Fittings, including "Technico" Standard Unit Type Benches. (List F, revised August 1930.) Pp. 48. Electrically Heated Laboratory Apparatus. (List No. 231F.) Pp. 24. Small Electric Furnaces for Laboratory and Works. (List No. 75G.) Pp. 20. (London: A. Gallenkamp and Co., Ltd.)

Diary of Societies.

TUESDAY, SEPTEMBER 23.

INSTITUTE OF MARINE ENGINEERS, at 6.—Lt.-Comdr. Sir August B. T. Cayzer, Bart. (Presidential Address).

MONDAY, OCTOBER 6.

IRON AND STEEL INSTITUTE (Additional Autumn Meeting) (at the Cleveland Technical Institute, Middlesbrough), at 7.30 P.M.

CONGRESSES.

SEPTEMBER 13 TO 20.

NEWCOMEN SOCIETY FOR THE STUDY OF THE HISTORY OF ENGINEERING AND TECHNOLOGY (at Liverpool).

SEPTEMBER 15 TO 20.

IRON AND STEEL INSTITUTE (Autumn Meeting) (in Czechoslovakia).

Monday, Sept. 15, at 10 A.M.—A. Kříž: The Heterogeneity of an Ingot made by the Harmet Process.

J. Šárek: What Reasons Compelled the Prague Ironworks to Introduce Thin-Walled Blast-Furnaces.

W. H. Hatfield: Permanence of Dimensions under Stress at Elevated Temperatures.

Tuesday, Sept. 16, at 10 A.M.—O. Quadrat: A Contribution on the Problem of the Analysis of Basic Slags and the Representation of their Composition in a Triangular Diagram.

H. C. Wood: Open-Hearth Furnace Steelworks. A Comparison of British and Continental Installations and Practice.

D. F. Campbell: High-Frequency Steel Furnaces.

L. W. Schuster: The Effect of Contamination by Nitrogen on the Structure of Electric Welds.

SEPTEMBER 19 TO 22.

ASSOCIATION OF SPECIAL LIBRARIES AND INFORMATION BUREAUX (at New College, Oxford).

Friday, Sept. 19, at 7.15 P.M.—Dr. H. T. Tizard: Presidential Address.

At 8.30 P.M.—Brig.-Gen. M. Mowat: The Year's Work of the Association.

Saturday, Sept. 20, at 9.45 A.M.—Col. Sir H. G. Lyons, Dr. F. A. Bather, and J. M. Walker: The Dissemination of Information by Exhibition and Display.

Capt. C. W. Hume: Animal Welfare, its Dependence on Accurate Information.

At 11.45 A.M.—Prof. A. F. C. Pollard and Dr. S. C. Bradford: The Inadequacy of the Alphabetical Subject Index.

At 5.30 P.M.—Annual General Meeting.

At 8.30 P.M.—D. A. Bremner: The World Power Conference.

Sunday, Sept. 21, at 9.45 A.M.—C. C. Fagg, G. L. Pepler, and S. K. Ruck: Surveys and Planning, their Relation to Organised Information.

G. F. O'Riordan and B. M. Headcar: The Technique of Information in the Training of Students.

At 11.45 A.M.—T. W. MacAlpine: Suggestions for the Improvement of Scientific Literature.

At 8.30 P.M.—A. Schломann and Dr. Prinzhorn: The Organisation of Information in Germany.

SEPTEMBER 22 TO 24.

CERAMIC SOCIETY (Joint Meeting of the Refractory Materials Section and Building Materials Section) (at the Building Trades Exhibition, Olympia, London), at 2.30 P.M.

SEPTEMBER 22 TO 27.

INTERNATIONAL CONGRESS OF THE HISTORY OF MEDICINE (at Rome).—Subjects for Discussion: How Europe protected herself against Leprosy in the Middle Ages, introduced by Prof. Jeanselme; The Medical and Scientific Relations between Italy and other European Countries during the Scientific Renaissance in the Sixteenth and Seventeenth Centuries, introduced by Prof. K. Sudhoff and Prof. A. Castiglioni; The Necessity of Making the Study of the History of Medicine a Compulsory Subject in all Universities, introduced by Prof. L. Szumoski; also the following papers: The Problem of Medical Historiography, by Prof. Siegerist; van Helmont, by Prof. Ostachowski; Girolamo Cardano and Leonardo da Vinci, by Prof. Bilancioni; Plastic Surgery in Italy and Europe at the Time of the Renaissance, by Dr. G. Sansevero-Roselli; and The Influence of Folk-lore on Medicine, by Dr. D. Mackenzie.

SEPTEMBER 29 TO OCTOBER 1.

FARADAY SOCIETY (at the Laboratory of Physical Chemistry, Free School Lane, Cambridge).—General Discussion on Colloid Science Applied to Biology.