

Early Science at Oxford.

September 16, 1684. Dr. Plot began reading his discourse *de Origine Fontium*; half of which being read, we proceeded to other matters:

A letter from Dr. Pit was read, which promises his discourse concerning Digestion; and gives an account of a woman, who, by reason of stoppages for three monthes, complained of a load, and fullness of her stomach; vomited blood, flesh, and blood-vessels, as big as goose quills; after which, by ye help of some Physick, she recovered.

A Letter from Mr. Molyneux, dated Dublin September ye 2nd, 1684, was read: It gave an account, that Mr. Osburn had observed ye last solar Eclipse near Tredagh in Ireland, lat: 53°. 40'. Initium. H. 1.37'. 30". finis H. 3.56'. 20".

Merchant Wayt's account of his peice of Incombustible Cloth was read.

A Letter, written at ye Request of this Society, by Mr. President, to be sent to ye head of each of the Universities in Scotland, for the establishing a Correspondence in that Kingdom, was read.

Sir Robert Sibbald's *Scotia Illustrata*, was presented ye Society.

Dr. Mark, an ingenious Brandenburg Gentleman, was proposed, in order to be elected a member of this Society.

September 23, 1684. Dr. Plot continued ye reading of his discourse *de Origine Fontium*, and severall other things were offered to ye Society, but ye company being very small, they were referred to another meeting.

September 30, 1684. Dr. Plot made an end of reading his Discourse *de Origine Fontium*, after which, ye Society gave him their thankes, for communicating to them so succinct an account, of what has been delivered by other writers, and of his own observations, on this subject; and also made it their request, that he would be pleased to print ye same.

A letter from Mr. Aston, dated September ye 25th, was read; in it were contained some observations of ye late solar Eclipse taken by severall French astronomers, and printed in ye *Journall des scavans*. They are translated into English, and will suddenly be printed in ye Transactions.

Part of a Letter from Dr. Cole of Worcester, dated September ye 27th, was read; which informed the Society, how very ready that learned physitian is to correspond with us and to communicate to us, whatsoever shall occur to him fit to be imparted.

Dr. Plot communicated an old silver ring, lately found in Staffordshire, with this motto, *in Godt al*; and an old Roman brass ring gilt about two ounces, 3 drams in weight, sent him by Mr. Packer, Physitian at Reading; this ring had a cornelian set in it, and four collets round ye cornelian, for as many stones more, three of which were lost.

A large stone, consisting of severall Branches, taken out of ye kidney of a woman by Mr. Packer, was communicated by Mr. Welstead. An Account of this Stone will be printed in a little time.

Spongia arborescens erythmiiformis, i:e: of ye forme of Samphire, from Devonshire; and some of the button berries, from Jamaica; and some of the Kelp, embroydered with ye shells of fish growing on ye leaves of that plant, (all which are a part of that present the generous Mr. Cole of Bristoll lately made this University), were communicated to us by Dr. Plot.

Dr. Caspar Marck having been proposed, Sept: 16th, his admission was now put to the Ballot, and carried in ye affirmative, after which he subscribed to the Articles.

Societies and Academies.

LONDON.

Institute of Metals (Autumn Meeting, Glasgow), September 3.—Robert J. Anderson and Everett G. Fahlman: The effect of low-temperature heating on the release of internal stress in brass tubes. The work was carried out to determine a suitable heat-treatment which would prevent warping of manufactures made of lead-brass tubing on standing for a period at the ordinary temperature, and at the same time effect stress release without material loss in hardness and strength. Heating for 2 or 3 hours at 325° C. or for 4 hours at 300° C. in the case of material reduced 22.4 per cent. in area is satisfactory, but the mill control of separate lots of tubing must be substantially identical if a given heat-treatment procedure is to be applied to the material.—L. H. Callendar: Passivation and scale resistance in relation to the corrosion of aluminium alloys. Aluminium is a passive metal; its normal reactions are modified by the presence of a hydroxide scale of high mechanical, chemical, and electrical resistance. Corrosion in water may be started by solution or peptisation of this scale; it may be stopped by precipitation of scale on the metal surface. Chlorides reduce the resistance and adherence of these scales, and carbonates tend to increase scale resistance. Nitrates passify the metal by direct oxidation and anodic polarisation. Dichromates combine the passifying action of nitrates with the formation of a highly resistant scale containing chromate.—O. W. Ellis: The influence of pouring temperature and mould temperature on the properties of a lead-base antifriction alloy. Within the limits of the experiments, the replacement of lead by antimony increases the resistance to compression and increases the hardness. The replacement of tin by copper increases the resistance to compression but scarcely affects the hardness. Mould temperatures are more important than pouring temperatures. There is evidence of an intermetallic reaction in the copper-bearing alloy in the liquid state at 334° C.—R. H. Greaves and J. A. Jones: The effect of temperature on the behaviour of metals and alloys in the notched-bar impact test. Copper, aluminium, and lead showed a continuous fall in impact figure from -80° C. to the melting-point. Maxima in the impact figure-temperature curves were shown by tin at 0°, zinc at 150°, duralumin at 400°, lead-free 70:30 brass at 800°, 60:40 brass at 715°, 10 per cent. aluminium bronze at about 750° C. On the other hand, 70:30 brass containing 0.02 per cent. or more of lead, and coinage bronze, showed no similar improvement in impact figure at high temperatures. A high notched-bar impact figure seems to indicate good rolling properties; for many alloys there is a range of temperature within which their behaviour on rolling is likely to be worse than at either higher or lower temperatures.—D. Hanson and Marie L. V. Gayler: On the constitution of alloys of aluminium, copper, and zinc.—Harry Hyman: The properties of some aluminium alloys. Aluminium alloys available for sand castings for engineering purposes generally possess low ductility, and this renders them difficult to manipulate in workshop practice; also they are readily susceptible to corrosion. A series of alloys was prepared with the view of passing a minimum test of 5 tons yield point, 10 tons breaking stress, and 5 per cent. elongation on sand-cast test-bars, and at the same time capable of undergoing a severe salt spray corrosion test without marked loss in weight. The alloy B.S.7, containing copper, nickel, iron, and magnesium, gave the most promising results, and has

been adopted on a commercial scale.—Douglas H. Ingall: The high temperature-tensile curve: (a) Effect of rate of heating; (b) Tensile curves of some brasses. For any given load the breaking temperature and the critical inflection temperature are lower the slower the rate of heating. In the lower temperature, straight-line portion of the curve, the relationship between breaking temperature and rate of heating may follow a hyperbolic curve, which would establish a definite fundamental tensile strength for any given temperature. Alloying increases the number of loops in the higher temperature curve over a given range of temperature; this is probably due to space lattice distortion. The high temperature-tensile curves of the brasses indicate that the solution of zinc in copper, over the α -range of composition, is not simple.—George B. Phillips: The primitive copper industry of America. There was a pre-historic copper industry in America, carried on by aborigines, who made widespread use of copper for tools, weapons, implements, ornaments, and ceremonial objects. This extensive manufacture of copper implements of similar shape to take the place of the stone and bone articles formerly used seems to justify the claim of a primitive copper culture for the American Indians, suddenly interrupted by the arrival of the Spaniards.—D. Stockdale: The α -phase boundary in the copper-tin system. Specimens were brought into equilibrium by quenching from a high temperature followed by long heat treatments at the supposed temperatures of the transformations. At ordinary temperatures the solubility of tin in copper is much higher than any previous diagram indicates; it is 16.0 per cent. of tin by weight. This result does not affect bronze-bearing metals, because such material when originally cast consists of the α and δ phases, and the hard δ shows no tendency to dissolve in the soft α at low temperatures. The existence of a transformation in the β phase has been confirmed.

PARIS.

Academy of Sciences, July 27.—Henri Jumelle: The tombak tobacco of the Alaonites.—Alexandre Rajchman: Multiple convergence.—Th. Vautier: Secondary waves due to an aerial wave.—Nobuo Yamada: The long-range particles emitted by the active deposit from radium.—André Graire: The theoretical and practical conditions of reversibility of the reactions in the leaden chamber process.—Munonari Tanaka: The quinonediazides of the anthraquinone series.—G. Vavon and P. Peignier: The preparation of active isoborneol. Two methods have been worked out and are described in detail, one starting with pinene hydrochloride, the other by the catalytic hydrogenation of camphor.—E. Rothé: The earthquake of February 22, 1924, in the Pyrenees. Discussion on the epicentre.—Gabriel: The application to meteorology of the astronomical cycle of 744 years.—Mlle. G. Bonne: The retrogression bundles in the floral section of certain Rosaceæ.—Ad. Davy de Virville: The effect of hygrometric state and of submersion on the form and structure of mosses.—Antonin Němec and Mihovil Gračanin: The influence of the reaction of the soil on the absorption of phosphorus and potassium in the presence of various phosphatic manures.—R. Hovasse: The Ellobiopsidæ, propagated by flagellisporæ.—J. Dumas, G. Ramon, and Saïd Bilal: The immunising properties of dysenteric anatoxin.

SYDNEY.

Linnean Society of New South Wales, June 24.—J. R. Eyer and A. J. Turner: The Australian species of Oncoopera (Hepialidæ, Lepidoptera). A key to

the species is given, based on the characters of the male genitalia, as well as a key to the superficial characters. Two species are described as new, making four species in all in the genus.—A. B. Walkom: Fossil plants from the Narrabeen stage of the Hawkesbury Series. Near the base of the stage, a few species have been found representing a survival of the Glossopteris flora. Higher up, the flora is quite distinct from the Glossopteris flora, and about twenty species are known. No description of this flora has been published hitherto.—A. Eland Shaw: New genera and species (mostly Australasian) of Blattidæ, with notes, and some remarks on Tepper's types. Notes are given on many of Tepper's types in the South Australian Museum. Four genera and twenty-five species are described as new, and an attempt has been made to explain some of the peculiarities of structure in the Panesthiinæ most strongly evidenced in the earth-digging group.

Official Publications Received.

- Proceedings of the American Academy of Arts and Sciences. Vol. 60, No. 2: New Researches on the Magnetization of Ferromagnetic Substances by Rotation and the Nature of the Elementary Magnet. By S. J. Barnett and L. J. H. Barnett. Pp. 125-216. (Boston, Mass.) 1.50 dollars.
- Bulletin of the Geological Institution of the University of Upsala. Edited by H. Sjögren. Vol. 17. Pp. vi+450+11 plates. Vol. 19. Pp. iii+249+8 plates. (Upsala: Almqvist and Wiksells Boktryckeri A.-B.)
- University of Colorado Bulletin. Vol. 25, No. 6, General Series No. 219: Catalogue, 1924-1925; with Announcements for 1925-1926. Pp. 394. (Boulder, Colo.)
- Imperial Economic Committee. Report of the Imperial Economic Committee on Marketing and Preparing for Market of Foodstuffs produced in the Overseas Parts of the Empire. First Report: General. (Cmd. 2493.) Pp. 38. (London: H.M. Stationery Office.) 9d. net.
- Laws Agricultural Trust: Rothamsted Experimental Station, Harpenden. Report 1923-24, with the Supplement to the "Guide to the Experimental Plots" containing the Yields per Acre, etc. Pp. 130. (Harpenden, Herts.) 2s. 6d.
- Anatomical Society of Great Britain and Ireland. Proceedings, May 1921-February 1925. Recorded by R. J. Gladstone, edited by E. Barclay-Smith. Pp. 120. (London: Cambridge University Press.) 12s. 6d. net.
- Bulletin of the National Research Council. Vol. 9, Part 3, No. 50: Bibliography of Bibliographies on Chemistry and Chemical Technology, 1900-1924. Compiled by Clarence J. West and D. D. Berolzheimer. (Washington, D.C.: National Academy of Sciences.)
- National Association of Master Bakers, Confectioners and Caterers. Report on Research at the National Bakery School, London. By Dr. C. Dorée and J. Kirkland. Pp. 27+10 plates. (London: Regent House, Kingsway.) 2s. 6d.
- Indian Forest Records. (Economy Series) Vol. 11, Part 9: Summary of Investigations on Bamboos and Grasses for Paper Pulp. By W. Raitt. Pp. ii+11+1 plate. (Calcutta: Government of India Central Publication Branch.) 8 annas; 9d.
- Imperial Economic Committee. Report of the Imperial Economic Committee on Marketing and Preparing for Market of Foodstuffs produced in the Overseas Parts of the Empire. Second Report: Meat. (Cmd. 2449.) Pp. 35. (London: H.M. Stationery Office.) 9d. net.
- Scientific Papers of the Institute of Physical and Chemical Research, Tokyo. Vol. 3, No. 32: On the Physical and Chemical Properties of Biosterin (a Name given to Fat-Soluble A) and on its Physiological Significance. By K. Takahashi, Z. Nakamiya, K. Kawakami and T. Kitasato. Pp. 81-146. Vol. 3, No. 33: Condensation of Nitriles with Thiamides. V. Action of Sulphur Monochloride upon Thiamides. By S. Ishikawa. Pp. 147-154. Vol. 3, No. 34: On the Behaviour of some Spark Lines of Carbon in an Electric Field. By S. Nakamura and Y. Fujioka. Pp. 155-162. Vol. 3, Nos. 35-36: A new Discussion of Bucherer's Experiment; On the Interpretation of the Results of Bucherer's Experiment. By U. Doi. Pp. 163-182. (Tokyo.)
- Union of South Africa. Department of Mines and Industries: Geological Survey. Cape Sheet No. 5: Laingsburg. The Geology of the Country near Laingsburg: Explanation to Cape Sheet No. 5. By Dr. A. W. Rogers. Pp. 34. (Pretoria: Government Printing and Stationery Office.) 2s. 6d. net.
- Report of the Aeronautical Research Committee for the Year 1924-25. Pp. 44. (London: H.M. Stationery Office.) 1s. 6d. net.
- Aeronautical Research Committee. Reports and Memoranda No. 950 (Ae. 174): The Airflow round a Body as affecting Aircraft Performance. By C. N. H. Lock, H. Bateman, and H. C. H. Townsend. Pp. 22. 1s. 3d. net. Reports and Memoranda No. 969 (Ae. 185): A Note on the Katzmayr Effect, That is, The Effect on the Characteristics of an Aerofoil produced by an Oscillating Airstream. By W. L. Cowley. Pp. 5. 6d. net. (London: H.M. Stationery Office.)
- University of Bristol. The Annual Report of the Agricultural and Horticultural Research Station (The National Fruit and Cider Institute), Long Ashton, Bristol, 1924. Pp. 135. (Bristol.)
- Department of Industries, Madras. Report for the Year ended 31 March 1924. Pp. iv+89. (Madras: Government Press.) 6 annas.
- Imperial Department of Agriculture for the West Indies. Report on the Agricultural Department, St. Kitts-Nevis, 1923-24. Pp. iv+39. (Barbados.) 6d.