mould; (*d*) control of rate of pouring; (*e*) exclusion of dross from stream of metal; and (*f*) mitigation of "zinc-fume." Uniformity of hardness was secured by annealing. For the annealed bars the Brinell curve showed an increase of hardness over the range 100 to 88 per cent. copper. From 88 to 72 per cent. copper hardness was constant, a slight fall setting in at about 72 per cent. copper and persisting to 63 per cent., at which point a rapid increase set in with the appearance of the β-constituent. With the exception of a small dip in the curve, between 53 and 50 per cent. copper, the increase is maintained to 45 per cent. copper. The changes of scleroscopic hardness with composition are similar but less pronounced. The hardening capacity of the α-brasses under cold-work increases rapidly with increase of zinc up to a maximum near 75 per cent. copper. The rolled strips, after close annealing, were re-tested for hardness; the range of uniform hardness is slightly restricted and the succeeding fall (between 70 and 63 per cent. copper) is more pronounced.—F. W. **Harris**: The hardness of the brasses, and some experiments on its measurement by means of a strainless indentation. The theories generally advanced with regard to the connexion between hardness and internal constitution have been, in the main, substantiated. A slight maximum occurs in the middle of the α-phase and a small depression in the β-phase. The "absolute" hardness for the series was compared with the Brinell hardness by means of curves.

PARIS.

Academy of Sciences, September 11.—M. L. Maquenne in the chair.—L. **Cuénot** and L. **Mercier**: The loss of the faculty of flight in parasitic Diptera. The hypothesis generally admitted is that the atrophy of the wings is the result of non-usage connected with the parasitic mode of life. The authors give the results of a series of observations directly opposed to this view.—E. **Merlin**: A mobile space attached to a network.—P. **Urysohn**: Cantorian multiplicities. D. **Riabouchinski**: The equations of motion in two dimensions, of solids in a liquid with vortices.—Henri **Villat**: Plane vortex movements in a fluid containing solid walls.—M. **Thiébaut**: The composition of the iridescent marls. These marls contain three main constituents: carbonates (dolomite and calcite), a silicate which is not a clay, approaching celadonite and bravaisite in composition, and detritic elements with abundance of white mica and quartz.—W. J. **Vernadsky**: The problem of the decomposition of kaolin by organisms. In admixture with bacteria, diatoms developed well on a nutritive medium, containing no silica except combined silica in a colloidal clay. From these results it would appear that diatoms, either alone or in association with bacteria, can decompose the kaolin structure and set free alumina.—Cam. **de Bruyne**: Idioblasts and diaphragms in the Nymphaceæ.—Marc **Romieu**: A method of selective coloration of the nervous system in some invertebrates. Details of the application of the benzidine-hydrogen peroxide reagent to the study of the nervous system of some invertebrates. The nerves are coloured blue; and the nervous system as a whole can be seen down to the smallest details.—Gabriel **Bertrand** and M. **Mokragnatz**: The presence of cobalt and nickel in plants. The ashes from twenty species of plants have been analysed, the parts utilised as food being chosen for examination. Nickel has been found in all the plants examined in quantities between 0·01 milligram and 0·2 milligram per kilogram of fresh material: cobalt (0·005 to 0·3 milligram per kilogram) was found in all cases except oats and carrot.

Diary of Societies.

MONDAY, OCTOBER 16.

FARADAY SOCIETY AND THE BRITISH COLD STORAGE AND ICE ASSOCIATION (at Institution of Civil Engineers), at 2.30, 4.45, and 7.45.—Discussion on the Present Position of the Generation and Utilisation of Cold.—Prof. H. Kamerlingh Onnes and others: Laboratory Methods of Liquefaction, and Methods of Measuring Low Temperatures.—Dr. Crommelin: Description of the Equipment of the Cryogenic Laboratory at Leyden.—M. Claude: The Industrial Manufacture of Hydrogen by the Partial Liquefaction of Water Gas.—E. A. Griffiths and others.

CHEMICAL INDUSTRY CLUB (at 2 Whitehall Court), at 8.—Annual General Meeting.

ROYAL GEOGRAPHICAL SOCIETY AND THE ALPINE CLUB (at Central Hall, Westminster), at 8.30.—Gen. Bruce, Col. Strutt, Mr. Mallory, Capt. Finch, and Major Norton: The Mount Everest Expedition, 1922.

TUESDAY, OCTOBER 17.

ROYAL HORTICULTURAL SOCIETY, at 3.—R. G. Hutton: The Control of the Fruit Tree by its Roots.

ROYAL SOCIETY OF MEDICINE, at 5.—General Meeting of Fellows.

INSTITUTE OF TRANSPORT (at Institution of Electrical Engineers), at 5.30.

ROYAL PHOTOGRAPHIC SOCIETY OF GREAT BRITAIN, at 8.—Major F. C. V. Laws: The Progress of Aerial Photography.

WEDNESDAY, OCTOBER 18.

ROYAL COLLEGE OF PHYSICIANS, at 4.—Dr. A. Chaplin: Harveian Oration.

INSTITUTE OF PHYSICS (at Institution of Electrical Engineers), at 6.—C. C. Paterson: The Physicist in Electrical Engineering (Lectures on "Physics in Industry," No. 3).

ROYAL MICROSCOPICAL SOCIETY, at 8.—Prof. R. Chambers: New Apparatus and Methods for the Dissection and Injection of Living Cells.—T. F. Connolly: The Specification of a Medical Microscope.—H. J. Denham: A Micrometric Slide Rule.

THURSDAY, OCTOBER 19.

ROYAL SOCIETY OF MEDICINE (Dermatology Section), at 4.30; at 8.30.—Dr. Savatard: Epithelioma of the Skin.

ROYAL AERONAUTICAL SOCIETY (at Royal United Service Institution), at 5.30.—J. D. North: The Metal Construction of Aeroplanes.

INSTITUTION OF MINING AND METALLURGY (at Geological Society), at 5.30.

CHILD-STUDY SOCIETY (at Royal Sanitary Institute), at 6.—Dr. F. H. Hayward: Something Wrong with Intelligence Tests.

CHEMICAL SOCIETY, at 8.—Prof. T. M. Lowry: The Polarity of Double Bonds. An Extension of the Theories of Lapworth and Robinson.

SOCIETY FOR CONSTRUCTIVE BIRTH CONTROL AND RACIAL PROGRESS (at Essex Hall), at 8.—Dr. Marie Stopes: The Ideals and Present Position of Constructive Birth Control (Presidential Address).

FRIDAY, OCTOBER 20.

INSTITUTION OF MECHANICAL ENGINEERS, at 6.—Dr. H. S. Hele-Shaw: Presidential Address.

JUNIOR INSTITUTION OF ENGINEERS, at 7.30.—G. H. Ayres: Profits from Waste Products.

INSTITUTION OF PRODUCTION ENGINEERS (at Royal Automobile Club), at 7.30.—M. R. Lawrence: Presidential Address.

ROYAL PHOTOGRAPHIC SOCIETY OF GREAT BRITAIN, at 8.—G. A. Clarke: Record Work in Cloud Photography.

PUBLIC LECTURES.

SATURDAY, OCTOBER 14.

HORNIMAN MUSEUM (Forest Hill), at 3.30.—H. Shaw: Flight in all Ages.

MONDAY, October 16.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, at 5.—Prof. Shattock: The Anatomical Results of Inflammation.

CITY OF LONDON Y.M.C.A. (186 Aldersgate Street), at 6.—Dr. E. L. Ash: Mind and Health.

TUESDAY, OCTOBER 17.

GRESHAM COLLEGE (Basinghall Street), at 6.—A. R. Hinks: Astronomy. Succeeding Lectures on October 18, 19, 20.

WEDNESDAY, OCTOBER 18.

SCHOOL OF ORIENTAL STUDIES, at 5.—J. W. Robertson Scott: Impressions of the Japanese.

UNIVERSITY COLLEGE, at 5.30.—Sir Richard Paget, Bart.: The Nature and Reproduction of Speech Sounds.

THURSDAY, OCTOBER 19.

UNIVERSITY COLLEGE, at 4.—Dr. T. G. Pinches: Babel and its Gods.

CITY OF LONDON Y.M.C.A. (186 Aldersgate Street), at 6.—Sir D'Arcy Power: Surgery in the City of London.

FRIDAY, OCTOBER 20.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, at 5.—Sir Arthur Keith: Hydrocephaly.

BEDFORD COLLEGE FOR WOMEN, at 5.30.—F. H. Marshall: The Early Civilisation of Ionia.

SATURDAY, OCTOBER 21.

HORNIMAN MUSEUM (Forest Hill), at 3.30.—Miss M. A. Murray: The Nile in the Life and Religion of the Ancient Egyptians.