Societies and Academies.

LONDON.

Linnean Society, December 14.—Dr. A. Smith Woodward, president, in the chair.—W. O. **Howarth**: On the occurrence of *Festuca rubra* in Britain. Representatives of three subspecies, three varieties, six subvarieties, and the forms of Hackel's *F. rubra*, occur in Britain.—H. W. **Pugsley**: British species of Calamintha and a species new to this country. The three recognised British species are said to be *Calamintha ascendens*, Jord., *C. Nepeta*, Savi, and *C. sylvatica*, Bromfield. The new form, first found near Swanage, in Dorset, in 1900, and again in 1912, was identified with *C. bætica*, Boiss. and Reut., although showing differences in minor features, which were attributed to climatic influence.—Lily **Batten**: The genus Polysiphonia; a critical revision of the British species, based upon anatomy. British species of Polysiphonia show great diversity of habitat. Four main types are distinguishable: (1) Ecorticate plant attached when young by rhizoids developed by longitudinal proliferation of basal siphons. Later, siphons of procumbent branches develop rhizoids, which may have discs at their distal ends, or may ramify among filamentous algæ, or may be swollen to form haustoria. (2) Species having a number of siphons or the beginning of cortication at the base, show elementary aggregation of the rhizoids to form one large disc. (3) Stunted procumbent branches develop at the base of the plant, which produce attachment rhizoids. (4) Corticate species having an upright habit develop a large disc-like expansion by the longitudinal proliferation of basal siphons and corticating cells. The genus is divided into thirteen ecorticate and eleven corticate species, and *P. spiralis* is described for the first time.

Aristotelian Society, December 18.—Prof. H. Wildon Carr in the chair.—Roy Wood **Sellars**: The double-knowledge approach to the mind-body problem. The motives which have worked for the exclusion of mind and consciousness from the brain appear upon examination to have been based upon hasty assumptions. We may call these the epistemological, the categorical, the methodological, and the theological methods. We must determine the reach and character of the knowledge gained by the science of external observation. This beginning is imperative. It seems that this knowledge consists of the critical deciphering by means of "scientific data" of the structure, order, composition, quantity, and behaviour of things and their parts. This is the kind of knowledge we have of bodies, but it is necessarily external. It cannot penetrate to the "filling" or content of being. But in our own case, our consciousness is just such a participation. A careful examination of the situation shows that changes in consciousness are indexes of operations which must also be attributed to the brain. Thus we know the brain in two ways. We should speak of it as the brain-mind. We must conceive the mind more substantialistically than we have done hitherto and make it mean a class of operations, and that which expresses itself in these operations. But we must also re-define consciousness. Leaving aside temporarily the structure of an adult consciousness let us define any element which we call the psychical. The psychical is not a stuff; that was the mistake of association psychology. It is merely a *quale*. Now a *quale* is not self-sufficient. It is a dimension of the content of being which can be given only by participation, not by external knowledge. It is indissolubly one with the responding brain-mind state. Its function is to guide the discharge of this state. Here we are partially on the inside of a high level of causality.

Royal Anthropological Institute, December 19.—Prof. J. L. Myres, vice-president, in the chair.—Cyril **Fox**: The distribution of population in the Cambridge region in early times, with special reference to the Bronze Age. The distribution in Britain of constructions attributable to the Neolithic and Early Bronze Ages suggests that the population was then limited to those areas, mainly upland, which must have been, under natural conditions, largely free from forest. A topographical analysis of finds and remains of all culture periods from the Neolithic to the Saxon in a limited area—the Cambridge region—was undertaken to determine whether this limitation was complete or partial, and when the clearing and occupation of forest areas commenced. The Cambridge region is very suitable for the inquiry, since it possesses a wide range of soils and has yielded numerous finds of all periods. The maps exhibited suggest (1) that the chalk belt and the eastern shoreline of the Fens were occupied from Neolithic times onwards; (2) that there was a gradual shift of population from N.E. to S.W., *i.e.* from the West Suffolk heathland to the fertile lands of the upper Cam and Ouse valleys, as agriculture developed; and (3) that the forest uplands were almost entirely unoccupied until the Roman period. The distribution of population in the Bronze Age is, generally speaking, of a character intermediate between that of the Age which preceded it and that which followed, but it presents features of special interest.

DUBLIN.

Royal Dublin Society, December 19.—Prof. J. A. Scott in the chair.—Six papers on the action of the oxides and the oxyacids of nitrogen on aromatic urethanes and ureas at low concentrations of the reacting substances.—(1) **H. Ryan** and **Anna Donnellan**: Diphenylurethane reacted with nitric acid much more slowly than diphenylnitrosamine. At the ordinary temperature it was slowly converted first into 4-nitrodiphenylurethane and afterwards into a mixture of 4·10-dinitro- and 2·10-dinitro-diphenylurethane. Concentrated nitric acid reacted with the urethane forming 2·4-8·10-tetranitrodiphenylurethane and finally sym. hexanitrodiphenylamine.—(2) **H. Ryan** and **N. Cullinane**: *o*-Tolyl-ethylurethane was oxidised by the oxides and the oxyacids of nitrogen yielding *o*-tolylurethane. The latter substance then underwent nitration, forming successively 4-nitro-2-methyl-phenylurethane and 4·6-dinitro-2-methyl-phenylurethane.—(3) **H. Ryan** and **Anna Connolly**: Ethylphenylurethane nitrated at the ordinary temperature gives 4-nitro- and 2·4-dinitrophenylurethane. In hot solutions, on the other hand, the urethane, like *o*-tolyl-ethylurethane, underwent oxidation in addition to nitration. In the latter case the products isolated were 2·4-dinitro- and 2·4-6-trinitro-phenylurethane.—(4) **H. Ryan** and **J. O'Donovan**: Phenylbenzylurethane was converted by nitrogen peroxide into 4-nitrophenylbenzylurethane and a trinitrophenylbenzylurethane melting at 110° C. Similar results were obtained by the action of nitric acid at low temperatures on the urethane. At more or less high temperatures and concentrations of the substances a tetranitrophenylbenzylurethane melting at 126° C., a pentanitro derivative melting at 274° C. together with 4-nitrobenzoic acid, 2·4-dinitro-phenylurethane and pentanitrophenylbenzylamine.—(5) **H. Ryan** and **P. O'Toole**: Phenylurea and as-diphenyl-

urea reacted easily with oxides of nitrogen, the former giving nitro-phenols and the latter diphenylamine derivatives; *s*-diphenylurea and triphenylurea under the same conditions gave a dinitro-diphenylurea and a trinitrotriphenylurea respectively. Nitrous acid converted phenylurea and *s*-diphenylurea into their nitroso derivatives. Nitric acid converted phenylurea into phenylurea nitrate, *p*-nitrophenylurea, and 2·4-dinitro-phenylnitrourea. With *s*-diphenylurea it gave mono-, di- and tetranitro derivatives, and with triphenylurea it formed di-, tri- and pentanitro derivatives.—(6) **H. Ryan** and **M. Sweeney**: Phenylmethylurea and nitric acid underwent no change in the absence of nitrous acid. In the presence of the latter acid it was converted into methylaniline, phenylmethylnitrosamine, and then successively into 2- and 4-nitrophenylmethylnitrosamine, 2·4-dinitro- and 2·4·6-trinitro-phenyl-methylamine. With concentrated nitric acid, tetryl was formed readily and in a pure condition from the urea.

Official Publications Received.

Scientific Reports of the Agricultural Research Institute, Pusa (including the Reports of the Imperial Dairy Expert and the Secretary, Sugar Bureau), 1921–1922. Pp. iv+96+6 plates. (Calcutta: Government Printing Office.) 14 annas.

The University of Chicago. Bulletin of Information, Vol. 22, No. 4: Register of Doctors of Philosophy of the University of Chicago, June 1893–December 1921. Pp. 96. (Chicago: University of Chicago Press.)

Canada. Department of Mines: Geological Survey. Bulletin No. 35, Geological Series No. 42: Relationship of the Precambrian (Beltian) Terrain to the Lower Cambrian Strata of South-eastern British Columbia. By S. J. Schofield. (No. 1966.) Pp. 15. (Ottawa.)

Canada. Department of Mines: Geological Survey. Summary Report, 1921, Part B. (No. 1959.) Pp. 104B. Summary Report, 1921, Part E. (No. 1944.) Pp. 61E. (Ottawa.)

Field Museum of Natural History. Publication 208, Report Series, Vol. 6, No. 1: Annual Report of the Director to the Board of Trustees for the Year 1921. Pp. 75+16 plates. (Chicago.)

Sixtieth Annual Report of the Secretary of the State Board of Agriculture of the State of Michigan, and Thirty-fourth Annual Report of the Experiment Station from July 1, 1920, to June 30, 1921. Pp. 636. (Lansing, Mich.)

State of Connecticut. Public Document No. 24: Forty-fifth Annual Report of the Connecticut Agricultural Experiment Station; Being the Annual Report for the Year ending October 31, 1921. Pp. xi+445. (New Haven, Conn.)

Department of the Interior: United States Geological Survey. Bulletin 722: Mineral Resources of Alaska; Report on Progress of Investigations in 1920. By A. H. Brooks and others. Pp. 266+xiii +3 plates. (Washington: Government Printing Office.)

Conseil Permanent International pour l'Exploration de la Mer. Rapports et Procès-Verbaux des Réunions. Vol. 28: Procès-Verbaux (Septembre 1922). Pp. 74. (Copenhague: A. F. Høst and Son.)

Legislative Assembly: New South Wales. Report of the Director-General of Public Health, New South Wales, for the Year 1920. Pp. v+195. (Sydney: J. Spence.) 8*s*. 3*d*.

Diary of Societies.

SATURDAY, JANUARY 13.

GILBERT WHITE FELLOWSHIP, at 2.15.—Visit to the Geological Museum, Jermyn Street.

NATIONAL UNION OF SCIENTIFIC WORKERS (Annual Council Meeting) (at Caxton Hall), at 2.30.

MONDAY, JANUARY 15.

CHEMICAL INDUSTRY CLUB (2 Whitehall Court), at 8.

ROYAL GEOGRAPHICAL SOCIETY (at Æolian Hall), at 8.30.—Lt.-Col. D. Cree: The Yugo-Slavia–Hungarian Boundary.

TUESDAY, JANUARY 16.

ROYAL INSTITUTION OF GREAT BRITAIN, at 3.—Prof. F. G. Donnan: Semi-permeable Membranes and Colloid Chemistry (1). The Theory of Ionic Equilibria and Semi-permeable Membranes.

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

ROYAL STATISTICAL SOCIETY (at Royal Society of Arts), at 5.15.—Dr. R. Dudfield and others: Discussion on The Registration of Disease.

ROYAL PHOTOGRAPHIC SOCIETY OF GREAT BRITAIN, at 7.—J. C. Dollman: Address.

ILLUMINATING ENGINEERING SOCIETY (at Royal Society of Arts), at 8.—C. E. Greenslade, J. E. S. White and others: Discussion on the Need for Suitable Training in Illuminating Engineering.

ROYAL ANTHROPOLOGICAL INSTITUTE, at 8.15.—F. W. H. Migeod: The Bedde Group of Tribes of N. Nigeria.

ROYAL SOCIETY OF MEDICINE (Pathology Section), at 8.30.—Prof. M. J. Stewart and Dr. J. le F. C. Burrow: Malignant Spheno-occipital Chordoma.—Dr. A. J. Eagleton and Miss E. M. Baxter: The Serological Classification of Virulent B. Diphtheriæ.—Dr. C. C. Okell and Miss E. M. Baxter: The Fermentative Reactions of Virulent B. Diphtheriæ.

WEDNESDAY, JANUARY 17.

ROYAL SOCIETY OF MEDICINE (History of Medicine Section), at 5.—W. H. S. Jones: Medical Etiquette in Ancient Times.—Dr. C. Singer: The Hippocratic Oath.

ROYAL METEOROLOGICAL SOCIETY, at 7.30.—Dr. C. Chree: Aurora and Allied Problems (Presidential Address).

ROYAL SOCIETY OF ARTS, at 8.—C. A. Klein: Hygienic Methods in Painting: the Damp Rubbing-down Process.

ENTOMOLOGICAL SOCIETY OF LONDON, at 8.—(Annual Meeting).

ROYAL MICROSCOPICAL SOCIETY (Annual Meeting), at 8.—Prof. F. J. Cheshire: The Petrological Microscope and its Optical Evolution (Presidential Address).

THURSDAY, JANUARY 18.

ROYAL SOCIETY, at 4.30.—*Probable Papers.*—J. Barcroft: Observations on the Effect of High Altitude on the Physiological Processes of the Human Body.—Prof. E. W. MacBride: Some New Light on the Inheritance of Acquired Characters.—C. F. Cooper: *Baluchitherium osborni* (? syn. *Indricotherium turgaicum*. Borrissyak).—J. A. Gunn and K. J. Franklin: The Sympathetic Innervation of the Vagina.—H. G. Cannon: The Metabolic Gradient of the Frog's Egg.—Basiswar Sen: The Relation between Permeability Variation and Plant Movements.—Dr. H. L. Duke: An Inquiry into an Outbreak of Human Trypanosomiasis in a *Morsitans* Belt to the East of Mwanza, Tanganyika Territory.—Dr. L. Dollo: Le Centenaire des Iguanodons (1822–1922).

LINNEAN SOCIETY OF LONDON, at 5.—Capt. G. H. Wilkins: An Account of the Shackleton-Rowlett Expedition in the *Quest* to the Antarctic Regions.—Miss Helena Bandulska: The Cuticular Structure of certain Dicotyledonous and Coniferous Leaves from the Middle Eocene Flora and Bournemouth.—W. R. Sherrin: A Pocket Herbarium of the British Mosses.

LONDON MATHEMATICAL SOCIETY (at Royal Astronomical Society), at 5.—L. J. Mordell: Lecture on An Introductory Account of the Arithmetical Theory of Algebraic Numbers, and its recent Developments.

ROYAL AERONAUTICAL SOCIETY (at Royal Society of Arts), at 5.30.—Major J. D. Rennie: Flying Boats.

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

INSTITUTION OF ELECTRICAL ENGINEERS, at 6.—G. H. Nelson: Works Production.

CHEMICAL SOCIETY, at 8.

ROYAL SOCIETY OF MEDICINE (Dermatology Section), at 8.30.—Dr. J. W. McNee and Dr. A. M. H. Gray: A Chemical and Histological Study of a Case of Sclerema neonatorum.—J. E. A. McDonah: The Use of Manganese as a Chemo-therapeutic Preparation.

FRIDAY, JANUARY 19.

ROYAL SOCIETY OF ARTS (Indian Section), at 4.30.—The Earl of Ronaldshay: A Clash of Ideals as a Cause of Indian Unrest.

ROYAL SOCIETY OF MEDICINE (Otology Section), at 5.—Dr. L. Turner and J. S. Fraser: Demonstration of Labyrinthitis as a complication of Middle Ear Suppuration.

INSTITUTION OF MECHANICAL ENGINEERS, at 6.—L. Pendred: The Problems of the Engine Indicator.—Prof. F. W. Burstall: A New Form of Optical Indicator.—W. G. Collins: Micro-indicator for High-speed Engines.—H. Wood: R.A.E. Electrical Indicator for High-speed Internal-Combustion Engines, and Gauge for Maximum Pressures.

JUNIOR INSTITUTION OF ENGINEERS, at 7.30.—S. C. Saunders: Paraffin as Fuel for Marine Motors.—T. H. Sanders: Laminated Springs.

ROYAL SOCIETY OF MEDICINE (Electro-Therapeutics Section), at 8.30.

ROYAL INSTITUTION OF GREAT BRITAIN, at 9.—Sir James Dewar: Soap Films as Detectors: Stream Lines; Vortex Motion, and Sound.

SATURDAY, JANUARY 20.

ROYAL INSTITUTION OF GREAT BRITAIN, at 3.—Sir Walford Davies: Speech Rhythm in Vocal Music (1).

PUBLIC LECTURES.

THURSDAY, JANUARY 18.

LONDON HOSPITAL MEDICAL COLLEGE, at 4.30.—W. A. M. Smart: The Mathematical Basis of Physiological Problems. (Succeeding Lectures on January 25, February 1, 8, 15, 22, and March 1 and 8.)

UNIVERSITY COLLEGE, at 5.30.—J. C. Flügel: The Psychology of Folklore.

KING'S COLLEGE, at 5.30.—Prof. W. Barthold: The Nomads of Central Asia. (Succeeding Lectures on January 25, February 1, 8, 15, and 22.)

SATURDAY, JANUARY 20.

HORNIMAN MUSEUM (Forest Hill), at 3.30.—Miss M. A. Murray: Ancient Egypt and the Aegean Islands.