

Owing to the shallowing of the river when the dry season set in, Jobson was compelled to start his return journey on Feb. 10, and not for a century was any further effort made to reach the Niger river and inner Africa. Jobson had been sent out by a company formed in Britain in 1618 with the purpose of exploring the Gambia. Their first expedition was entrusted to Richard Thompson, the pioneer of British exploration in Africa. But attacks by the Portuguese, mutiny among his own followers, and the deadly climate resulted in failure, Thompson being murdered by his own men. Jobson escaped with his life, but the company was dissolved.

Jan. 26, 1903.—Coats Land and the Weddell Sea.

W. S. Bruce in the *Scotia* left Port Stanley, in the Falklands, on a voyage to the Weddell Sea for purposes of scientific examination, Dr. R. N. Rudmose Brown and other scientific workers accompanying him. The vessel was anchored off Laurie Island for the winter, and scientific work and sledge exploration were carried on. In November 1903 the *Scotia* left Laurie Island, the meteorologist of the party, Mossman, remaining behind with five companions. The *Scotia* proceeded to Buenos Aires and brought back a party of Argentine meteorologists, who remained with Mossman on Laurie Island, while the vessel steamed southwards, discovering Coats Land and reaching 74° 1' S. in 22° W. The *Scotia* carried a line of deep soundings across a vast stretch of previously uncharted ocean, and corrected Ross's marking of a point "4000 fathoms, no bottom", to 2660 fathoms, the powerful undercurrent and the less perfected instruments of Ross having caused the error.

Societies and Academies.

DUBLIN.

Royal Irish Academy, Dec. 14.—J. M. O'Connor: The nature of the metabolic regulation of the body temperature, and its relation to temperature sensations. The oxygen consumption of rabbits under urethane anaesthesia in relation to the rectal, brain, and mean skin temperature is analysed statistically. When the animal is not shivering, the oxygen consumption as determined in short periods (about 6 minutes) is closely correlated with the rectal temperature and is not appreciably influenced by the dose of anaesthetic used. The results obtained coincide with values previously established under the influence of curare. When the animal is shivering, there is an additional consumption of oxygen, which rises as the skin temperature falls from 35° C. to 28° C., after which it declines and disappears at a skin temperature of about 23°. These short period results were confirmed by the examination of 40-minute periods during which the animals' temperatures were maintained approximately steady at various levels. No influence of the head temperature could be demonstrated. It is further shown that when the surface temperature of an area of human skin is lowered to about 21° C. its power of originating sensations of cold becomes faint or is obliterated. The evidence supports the view that 'chemical temperature regulation' is a reflex response of the muscles to sensations of cold.—Miss W. E. Frost: Observations on the reproduction of *Nyctiphanes couchii* (Bell) and *Meganyctiphanes norvegica* (Sars) off the south coast of Ireland. These two euphausians are the species most abundant in the plankton of the waters off the south coast of Ireland. An account is given of their reproductive cycles, showing the seasonal occurrence and varying abundance of their larvæ in the plankton;

a few notes are given on the distribution of the larvæ; the reproduction of the two species is compared. Some remarks are made on the euphausians included in the dietary of herring and mackerel taken off the south, east, and north-east coasts of Ireland; attention is directed to the fact that the larval as well as the adult forms had been eaten.

PARIS.

Academy of Sciences, Dec. 7.—The president announced the death of Sir David Bruce, *correspondant* for the Section of Medicine.—H. Vincent: Notice on Sir David Bruce.—Georges Perrier: Work carried out at the southern end of the Delambre base line, at Melun. The pillar carrying the line indicating the southern end of the Delambre base line (1792-98) has become an obstruction to traffic: it has been lowered below the surface of the road, with precautions to prevent alteration in the length of the base line.—L. Blaringhem, M. Bridel, and Mlle. C. Bourdoul: The dominance of the starchy character in hybrids of the first generation of two varieties of pea (*Pisum sativum*).—Jean Rey: The invention of the periscope. A claim for priority.—E. Mathias: Forms of lightning. Theory of formation of lightning resembling a string of beads.—P. Vincensini: A transformation of isotropic congruences.—G. Tzitzéica: Quadratic curves.—F. Marty: The determination of periodic minimum surfaces.—Georges Calugaréano: The necessary and sufficient condition for the univalence of a holomorphic function in a circle.—Miron Nicolesco: Harmonic and subharmonic functions of p order.—Jacques Devisme: Some partial differential equations.—J. Karamata: The applications of some theorems of inversion to exponential summability.—B. N. Prasad: The convergence of the conjugated series of a Fourier's series.—Florin Vasilescu: A method of Riabouchinsky having for its object the solution of the problem of Dirichlet, in view of the calculation of the velocity potential.—J. Leray: The slow movement of a viscous fluid in two dimensions limited by fixed walls.—Ch. Racine: The gravitation equations of Einstein.—B. Lyot: The photography of the solar corona apart from eclipses. A detailed account of the precautions found necessary to reduce the instrumental and atmospheric diffusion to a minimum and to amplify the contrasts of the negative. The first results, although imperfect, show that it is possible to follow the changes in the appearance of the interior corona between eclipses.—Ernest Esclançon: Remarks on the preceding note. Emphasising the importance of direct observations being possible on the solar corona.—Ch. Fabry: Remarks on the preceding note.—Jacques Métadier: The general equation of Brownian movement.—Henri Chaumat and Edouard Lefrand: The realisation of electrostatic machines.—A. Grumbach and F. Taboury: The discontinuous variation of the electromotive force of photoelectric batteries with coloured liquids.—R. Hocart and Mlle. A. Serres: The magnetic properties and crystalline structure in the different varieties of anhydrous cobalt sulphate. Two varieties of anhydrous cobalt sulphate exist, both crystallised and of orthorhombic symmetry. Their crystalline networks have the same dimensions, but the different structures and change of structure run parallel with the change in magnetic properties.—E. Darmois and Mlle. R. Peyroux: The action of boric acid and borax on the rotatory power of glucose, galactose, and fructose.—L. Jacqué: The action of petrols arising from the catalytic hydrogenation of coal-tar as stabilisers. The stability of mixtures of ethyl alcohol and petrol from petroleum is increased by the addition of petrol produced by hydrogenation of coal-tar light oil.—

T. Karantassis and L. Capatos: The action of ammonia and amines on germanium tetriodide. Ammonia gives the compound $\text{GeI}_4 \cdot 8\text{NH}_3$. Germanium iodide gives addition compounds with amines containing 4-10 molecules of the base to one of the iodide.—Martineau: The oxidation of ethyl alcohol by air in the presence of carbon-copper catalysts. The preparation of a copper-coated carbon of high activity, capable of oxidising alcohol at 66°C ., is described.—Émile André and Charles Vernier: The preparation of α -phenylethylamine and its separation into its optical isomers.—Sébastien Sabetay: The synthesis of the *p*-alkyloxy-methyl-benzaldehydes.—M. Battegay, L. Denivelle, and J. Meybeck: The *N*-chlorosulphonylamides and the *N*-chlorosulphonyl-sulphonamides.—André Kling and Daniel Florentin: The mode of action of scission catalysts in hydrogenation cracking of hydrocarbons with a polycyclic nucleus. Details of the results obtained by cracking naphthalene and anthracene in the presence of various catalysts. Anhydrous aluminium chloride proved the most effective catalyst.—Mlle. Eglantine Peytral: A method of preparation of ketene. By a modification of Wilsmore's method gaseous ketene containing only 0.5-1 per cent of impurities (carbon monoxide and ethylene) can be collected over mercury.—V. Babet: The organic remains and oolithic rocks of the old sedimentary formations of French Equatorial Africa (basins of the Niari and Nyanga).—Breistroffer: The Albian level in Chartreuse (Isère and Savoie).—Louis Barrabé: The existence of three layers comparable with those of the Germanic Trias in the eastern Corbières.—J. Devaux: The study of the infra-red radiation emitted by the terrestrial atmosphere. A preliminary account of results obtained at the summit of the Pic du Midi (2860 metres) with a spectrograph containing a rock salt prism. A band at 10μ appears not to be due to water vapour or carbon dioxide. This is probably an emission band of atmospheric ozone.—J. de Lagaye: The visibility of Mont Blanc at the summit of the Puy de Dôme. A statistical study of the visibility, with a discussion of the influence of moisture, state of the sky, and barometer.—Coulomb: Certain rapid long waves (due to earthquakes), and in particular, the wave *PL* of O. Somville.—Marc Simonet: The genetic and cytological study of the hybrid *Iris pallida* \times *Iris tectorum*.—Comandon and de Fonbrune: Rhythmic contractions in the pigmentary cells under the action of various poisons.—M. Fontaine and P. Portier: The proportion of calcium in the blood of marine fishes. In marine fishes the ratio of the globular calcium to the serum calcium is of the same order of magnitude as in the higher vertebrates. No relation has been found between the calcium in the serum and the nature of the skeleton, bony or cartilaginous.—L. Lutz: The soluble ferments secreted by the hymenomycete fungi. The alcoholic constituents of essential oils and the antioxygen function.—A. Paillot: The morphological variations of the symbiotic bacillus of *Macrosiphum tanacetii*.

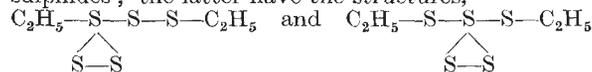
CAPE TOWN.

Royal Society of South Africa, Oct. 21.—G. Slater: The glaciated surfaces of Nooitgedacht, near Kimberley, and the upper Dwyka boulder shales of the eastern part of Griqualand West (Cape Province). The evidence in Griqualand West contributes notably to our knowledge of glacial erosion and sedimentation. Nooitgedacht is a classical area for the study of progressive erosion of the topographical features by land-ice. The rock basin contains large outcrops of jointed diabase which display excellent examples of crag and tail phenomena showing in plan the stream-

line form. The iceward limb increases in length with progressive decrease in height of the obstruction to ice-movement, and terminates at the crest of a sigmoid curve. Abrasion was therefore the dominant form of erosion in the later stages of ice action. The leeward limb is associated with 'pluck', more especially in the larger outcrops. The section at De Kalk is a type example of the sedimentation of glacial detritus in water. The hard bands of tillite-like material represent englacial substance from land-ice which has been deposited as cakes from floating ice.

ROME.

Royal National Academy of the Lincei: Communications received during the vacation.—L. Labocetta: Geometric generation of the function $I x$ and of the other numerical functions, $Fr x$, $Cm x$, $R x$, associated with it.—G. Scorza Dragoni: Concerning a theorem of Rosenblatt. The author's recent criterion of unicity for the solutions of a differential equation assuming definite values in pre-established points, which partly includes an analogous criterion due to Rosenblatt, is developed further.—D. Mercogliano: The equations of the surface of Veronese.—G. Palozzi: Correspondences projectively associated, in a point, to a surface.—A. Masotti: Observations on the plane motion of a system of points in which the centre of the velocity is stationary.—A. Belluigi: The gravimetric depression of Gattatico-Parma.—A. Baroni: Measurement of the parachor applied to the study of the constitution of polysulphides, polyselenides, and mixed sulphur-selenium chains. For compounds containing three atoms of sulphur or selenium, these measurements indicate a linear chain, which branches in the case of the tetrasulphide, and exhibits a ring of three sulphur atoms for the two isomeric diethyl pentasulphides; the latter have the structures,



—L. Passerini and M. Baccaredda: Researches on spinels (4). Sulphochromites of manganese and of cadmium. Both manganese sulphochromite, MnCr_2S_4 , and cadmium sulphochromite, CdCr_2S_4 , exhibit a structure of the spinel type.—G. Natta and L. Passerini: Sulpho-salts having spinel structures. Zinc sulphochromite belongs structurally to the spinel class and, given the small ionic radius of zinc, it may be assumed that the sulphochromites of other bivalent metals with ionic radii slightly greater than that of zinc possess the same lattice structure.—Giulio Cotronei and Celso Guareschi: Zoological constitution and grafting. Experiments with Anura and Urodela (6).—M. Ghiron: Enzymes and immunity. When the tubercle bacillus is grown in glycerin-broth containing a sterile glycerin suspension of an active lipolytic enzyme isolated from liver, an enfeebled strain of the organism is obtained. Moreover, systematic inoculation of the same enzyme during the development of the tubercular process determines an arrest of such process at the first phase of the inflammatory process, which may be followed by cure without further progress of the lesion.—G. Mezzadrola and E. Vareton: Action exerted on the development of silkworms by an open oscillating circuit of copper and zinc, functioning in proximity to a short wave-length radio oscillator. Under the influence of these circuits, the whole of the life-cycle of the silkworm is accelerated and its development is enhanced, the worms attaining increased robustness and weight. Further, spinning is commenced earlier, and the yield of cocoons is augmented 10-15 per cent.—P. Pasquini: Correlative differentiation of the crystalline lens and cornea in the development of anuran and urodele amphibians.—

Ada Bolaffi: Investigations on the lipoids of human tumours, particularly on the sulphophospholipids of the tumour. All the neoplastic tissues—human or otherwise—investigated by the author exhibit distinct analogies in their lipoidal constitution. They invariably contain a complex sulphophosphorated lipid extractable by means of acetone of specific gravity 0.85, but, if pure, insoluble in the anhydrous solvent. This lipid, which is moderately concentrated in the tumour, probably exhibits a constitutional character specific for each tumour, and represents a substance to some extent characteristic, if not quite specific, for neoplastic tissue. That occurring in human tumours is probably identical with the so-called jecorin.

Forthcoming Events.

Societies.

FRIDAY, JANUARY 22.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, at 5.—Sir Arthur Keith: Malformations of the Human Body considered from a New Point of View (Hunterian Lecture).

SOCIETY OF CHEMICAL INDUSTRY (Liverpool Section) (jointly with Manchester Section) (at Liverpool University), at 6.—Dr. A. E. Dunstan: Liquid Fuels, To-day and To-morrow (Jubilee Memorial Lecture).

ROYAL INSTITUTION OF GREAT BRITAIN, at 9.—Sir Arthur Eddington: The Expanding Universe.

SATURDAY, JANUARY 23.

MATHEMATICAL ASSOCIATION (London Branch) (at Bedford College for Women), at 3.—A. R. Green: Some Interesting Practical Problems in Elementary Geometry.

MONDAY, JANUARY 25.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, at 5.—Sir Arthur Keith: Malformations of the Human Body considered from a New Point of View (Hunterian Lecture).

ROYAL SOCIETY OF ARTS, at 8.—Capt. O. A. Barrand and G. A. Green: Life Saving Appliances on Merchant Ships (Thomas Gray Lectures) (2).

TUESDAY, JANUARY 26.

ROYAL INSTITUTION OF GREAT BRITAIN, at 5.15.—Prof. C. A. Edwards: The Progress of Research relating to Physical Metallurgy (2).

WEDNESDAY, JANUARY 27.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, at 5.—Sir Arthur Keith: Malformations of the Human Body considered from a New Point of View (Hunterian Lecture).

BRITISH WOOD PRESERVING ASSOCIATION (at 29 Lincoln's Inn Fields), at 6.—K. St. G. Cartwright: Diseases of Timber.

ROYAL SOCIETY OF ARTS, at 8.—Noel Heaton: The Permanence of Artists' Materials (Lecture).

THURSDAY, JANUARY 28.

ROYAL INSTITUTION OF GREAT BRITAIN, at 5.15.—Prof. H. G. Cannon: Feeding and Digestion in Invertebrates (2).

FRIDAY, JANUARY 29.

ROYAL ASTRONOMICAL SOCIETY (Geophysical Meeting), at 5.—Prof. E. V. Appleton: Upper Air Ionisation.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, at 5.—Sir Arthur Keith: Malformations of the Human Body considered from a New Point of View (Hunterian Lecture).

Public Lectures.

FRIDAY, JANUARY 22.

IMPERIAL COLLEGE OF SCIENCE (Royal College of Science), at 5.30.—Dr. T. M. Finlay: The Evolution of Landscape: Mountains (Swiney Lectures) (8).

UNIVERSITY COLLEGE, LONDON, at 5.30.—Prof. H. A. R. Gibb: The Expansion of the Arabs, A.D. 600–750.

SATURDAY, JANUARY 23.

HORNIMAN MUSEUM (Forest Hill), at 3.30.—M. A. Phillips: In the Haunts of the Sea-Birds.

MONDAY, JANUARY 25.

KING'S COLLEGE, LONDON, at 3.—C. J. Gadd: Assyrian Dealings with Israel.

GUY'S HOSPITAL (in Physiological Theatre), at 5.—Prof. J. M. W. Morison: The Use of X-Rays in Physiological Investigations (2): Respiratory Movements.

KING'S COLLEGE, LONDON, at 5.30.—Prof. S. H. Hooke: The Myth and Ritual of the Old Testament and the Cultural Patterns of the Ancient East (1).

IMPERIAL COLLEGE OF SCIENCE (Royal College of Science), at 5.30.—Dr. T. M. Finlay: The Evolution of Landscape: Glaciers and Land Sculpture (Swiney Lectures) (9).

TUESDAY, JANUARY 26.

UNIVERSITY COLLEGE HOSPITAL MEDICAL SCHOOL, at 5.15.—Dr. R. A. O'Brien: The Preparation, Testing, and Use of Antitoxin (2).

KING'S COLLEGE, LONDON, at 5.30.—H. A. Sieveking: Peak Load and Energy Storage (1). (Succeeding Lectures on Feb. 2 and 9.)

WEDNESDAY, JANUARY 27.

ROYAL INSTITUTE OF PUBLIC HEALTH, at 4.—Dr. R. Fortescue Fox: The Rise of the Conception of Rheumatism as a Social Problem.

SCHOOL OF ORIENTAL STUDIES (jointly with Royal Anthropological Institute), at 5.15.—Prof. C. G. Seligman: Races of Africa.

IMPERIAL COLLEGE OF SCIENCE (Royal College of Science), at 5.30.—Dr. T. M. Finlay: The Evolution of Landscape: Britain during the Ice Age (Swiney Lectures) (10).

BELFAST MUSEUM AND ART GALLERY, at 8.—A. J. B. Wace: Linen Damask.

ESSEX HALL (Essex Street, W.C.2), at 8.—Dr. F. H. Hayward: The Message of J. L. Tayler (Tayler Memorial Lecture).

THURSDAY, JANUARY 28.

SCIENCE MUSEUM (South Kensington), at 4.30.—Capt. C. J. P. Cave: Clouds.

KING'S COLLEGE, LONDON (at 16 Russell Square, W.C.1), at 6.—S. P. Turin: Economic Conditions in Russia To-day (2): Unemployment in Russia.

FRIDAY, JANUARY 29.

IMPERIAL COLLEGE OF SCIENCE (Royal College of Science), at 5.30.—Dr. T. M. Finlay: The Evolution of Landscape: The Desert (Swiney Lectures) (11).

SATURDAY, JANUARY 30.

HORNIMAN MUSEUM (Forest Hill), at 3.30.—Dr. A. I. Richards: Women's Life and Work in a Central African Tribe.

Official Publications Received.

BRITISH.

University College of Wales, Aberystwyth: Welsh Plant Breeding Station. Self- and Cross-Fertility and Flowering Habits of certain Herbage Grasses and Legumes, together with Studies in Bulb Development and Spikelet Characters in *Arrhenatherum*. (Series H, No. 12, Sessions 1921-1930.) Pp. 240+2 plates. (Aberystwyth.) 5s.
The British Mycological Society Transactions. Edited by J. Ramsbottom, B. F. Barnes and H. Wornald. Vol. 16, Parts 2 and 3, December 18. Pp. 89-208. (London: Cambridge University Press.) 15s.
Canada: Department of Mines: Mines Branch. Chrysotile Asbestos in Canada. By James Gordon Ross. (No. 797.) Pp. x+146+34 plates. (Ottawa: F. A. Acland.) 25 cents.
Torquay Natural History Society. Transactions and Proceedings for the Year 1930-1. Vol. 6, Part 1. Pp. 82. (Torquay.)
Department of Scientific and Industrial Research. Building Science Abstracts. Vol. 4 (New Series), No. 11, November. Abstracts Nos. 2010-2237. Pp. 367-402. (London: H.M. Stationery Office.) 9d. net.
Museum and Public Gardens. Administration Report 1105 M.E. Pp. 18. (Trivandrum.)
County Borough of Southport. The Fernelly Observatory, Southport: Meteorological Department. Report, and Results of Observations, for the Year 1930. By Joseph Baxendell. Pp. 28. (Southport.)