

room to hold six hundred persons. Sir Anthony Carlisle, Dr. Lardner and John Phillips, the geologist, were all vice-presidents of the Society, before which many eminent men lectured. Another society flourishing then was the Brighton Literary and Scientific Society, the president of which was Mr. Ricardo. The president, so the *Mechanics' Magazine* states, had just concluded a series of lectures on railways. In the course of these lectures he had read a communication from George Stephenson in which it was said that a speed of forty miles per hour had been attained on the Liverpool and Manchester Railway and that "an engine might be constructed to run 100 miles within the hour although at that rapidity of motion the resistance of the atmosphere would be very considerable indeed".

Literary and Scientific Institutions

A correspondent contributes the following statement to the *Gentleman's Magazine* of January 1834:—The number of Literary and Scientific Societies has been greatly on the increase. The Royal Society numbers 750 members; the Antiquarian, 300; Royal Society of Literature, 271; Zoological, 2,446; Horticultural, 1,875; Royal Society of Arts, 1,000; Royal Institution, 758; Geological, 700; Linnæan, 600; Asiatic, 560; Geographical, 520; Astronomical, 320. The members constituting the London Medical, Westminster Medical, Medico-Chirurgical, Medico-Botanical, Phrenological and Entomological Societies, the College of Physicians and Surgeons, and Institution of Civil Engineers, cannot be short of 1,700 persons. Next follow the London, Russel, Western and Marylebone Institutions, whose proprietary and yearly subscribers may be estimated at 1,500. Here are in the whole 13,000 names (some it is true frequently repeated) supporting 26 Associations in London, founded for the sole purpose of promoting the interests of learning and science and diffusing useful knowledge. And, for the immediate benefit of the operative class, the Metropolis possesses a *Mechanics' Institute* which is said to have 1,000 members.

Investigations of Terrestrial Magnetism

About 1834 great activity prevailed in the investigation of the earth's magnetism, and magnetic observations were being made not only on land but also on exploring ships. On December 19, 1833, Commander J. C. Ross described before the Royal Society his expedition to the north magnetic pole, which he reached on June 1, 1831, and his measurement of the dip as $89^{\circ} 59'$. This determination was made with great care, and was as accurate as was then possible. Improvements of the magnetic instruments and the elimination of errors were being actively sought. On January 6, 1834, Mr. W. Snow Harris read before the Royal Society of Edinburgh a paper "On the Investigation of Magnetic Intensity by the Oscillations of the Horizontal Needle", in which he closely examined many real and supposed disturbing factors. He showed that light had no effect on the oscillations, but that they were susceptible to disturbance by slight air currents, and the instruments must therefore be enclosed, preferably in a vacuum. He also investigated methods of suspending magnets, the effects of changes of temperature and the determination of changes in the constants of magnets.

Darwin in Patagonia

For the greater part of 1832 and 1833, H.M.S. *Beagle*, under Capt. FitzRoy, had been on the east coast of South America, and Darwin had been able to make several expeditions inland from ports such as Buenos Aires and Monte Video. Leaving the Rio de la Plata on December 6, 1833, the vessel visited Port Desire on December 23 and then sailed for Port St. Julian farther south.

Here, on January 9, 1834, Darwin records: "Before it was dark the *Beagle* anchored in the fine spacious harbour of Port St. Julian, situated about one hundred and ten miles to the south of Port Desire. We remained here eight days. The country is nearly similar to that of Port Desire, but perhaps rather more sterile. One day a party accompanied Captain FitzRoy on a long walk round the head of the harbour. We were eleven hours without tasting any water and some of the party were quite exhausted. From the summit of a hill (since well named Thirsty Hill) a fine lake was spied, and two of the party proceeded with concerted signals to show whether it was fresh water. What was our disappointment to find a snow-white expanse of salt, crystallised in great cubes! . . . Although we could nowhere find, during our whole visit, a single drop of fresh water, yet some must exist; for by an odd chance I found on the surface of the salt water, near the head of the bay, a *Colymbetes* not quite dead, which must have lived in some not far distant pool. . . . A good sized fly (*Tabanus*) was extremely numerous, and tormented us with its painful bite. The common horsefly, which is so troublesome in the shady lanes of England, belongs to this same genus. We here have the puzzle that so frequently occurs in the case of mosquitoes—on the blood of what animals do these insects commonly feed? The guanaco is nearly the only warm-blooded quadruped, and it is found in quite inconsiderable numbers compared with the multitude of flies." ("Journal of Researches.")

Societies and Academies

LONDON

Physical Society, October 20. A. F. DUTTON: Graphic statistics. The plotting of frequency-distributions is discussed. In comparing for different populations the frequency-distributions of a particular variate, it is sometimes convenient to take one population as standard and to represent its distribution by a straight line. The method of plotting individual points described by Hazen is incorrect.

December 1. H. DENNIS TAYLOR: The image-distortion and other effects due to the glass-thickness in lens systems. The optical influence upon distortion of image, or departures from correct pictorial representation, caused by the considerable thicknesses of glass involved in the construction of high-class photographic lenses of projectors having a large angular field of view is discussed. H. CARMICHAEL: The tilted electrometer. A detailed description is given of the construction and performance of a new evacuated critically damped quick-reading quartz-fibre electrometer. The sensitivity obtainable is limited only by the Brownian motion of the fibre. The minimum potential change

that can be measured (with the usual convention that the corresponding deflection of the system be not less than four times the root of mean square of the deflections of the Brownian motion), is of the order of 0.0001 v. when the period (undamped) is 5 sec. and 0.0005 v. when the period is 1 sec. The range of approximately constant sensitivity is adequate for most purposes. A. S. RAO and K. R. RAO : Spectra of bromine v, vi and vii. The vacuum spark spectra of bromine have been investigated under different degrees of excitation in the region λ 1400 to λ 400, by means of a Siegbahn spectrograph. From a careful scrutiny of the plates the lines have been assigned to the different stages of ionisation of the element. With the aid of these the principal members of the spectra of bromine v, vi and vii, involving the low-lying terms, have been identified. E. B. MOSS : An automatic photoelectric photometer. A precision photoelectric photometer based on principles capable of wide application and operated from A.C. mains is described. It is a flicker instrument, but the simple shutter is on the spindle of a synchronous motor driven from the same supply as an alternating current valve bridge. This is connected to an emission type photocell, and gives a directional output which automatically moves the neutral density wedge to the position of balance, which is shown by a pointer. The wedge position is controlled electrically, being mounted on a galvanometer movement devoid of mechanical control. G. D. WEST : A mechanical wave model illustrating acoustic and electrical phenomena. The model consists of a series of equal masses suspended on equal lengths of straightened watch-spring from a rigid bar. Through holes bored in the masses, which are equally spaced, is threaded a piece of elastic. One end is fixed, and the other can move with a simple harmonic motion communicated by means of a rocker arm attached to a small motor. Wave-transmission along the system takes place only if the frequency falls within a certain range. Very high and very low frequencies are not transmitted.

DUBLIN

Royal Dublin Society, November 28. J. H. J. POOLE : Some difficulties in current views on the thermal history of the earth. In a discussion of various theories of earth history it is shown that, although the conditions necessary for the truth of the cooling-earth theory may now be satisfied, it is improbable that the primitive crust would have satisfied them. In consequence we must conclude that partial remelting of the original crust has occurred during some stages of geological history. Some points in Holmes's convection current theory of earth history are also considered, including the condition necessary for the existence of a permanent convective layer in the earth. It appears that the presence of such a layer will lead to shearing stresses in the crust, owing to the greater radioactivity of the continents and the consequent distortion of the geotherms. H. H. POOLE and W. R. G. ATKINS : Some measurements of the brightness of various parts of the sky by means of a rectifier photoelectric cell. The measurements were made in Dublin in June and July 1933 with approximately uniform skies of various degrees of clearness, the sun's altitude being 45°-60°. The minimum brightness recorded was about 0.6 metre candle per square degree for a clear blue north sky altitude 45° to 60°, and the maximum 11.8 metre candles per square degree for sky covered with light cirro stratus

cloud about 12° below the sun. The effect of haze, and to a greater extent of light cloud, is to (a) increase the brightness of all parts of the sky, (b) cause the brightness to increase with altitude instead of decreasing, as for a clear sky, and (c) increase the relative importance of regions near the sun.

EDINBURGH

Royal Society, December 4. J. M. STAGG : The British Polar Year Expedition to Fort Rae, Canada. After a brief account of the activities in 1882-83 and an explanation of the ideas leading to last year's repetition, the aims of the British Party to Rae were given. The methods adopted to obtain the required information in the various fields of observation were described and some indication given of the problems to the solution of which the records brought home by the Expedition will be applied.

PARIS

Academy of Sciences, November 20 (*C.R.*, 197, 1161-1256). PAUL DELENS : Isothermal congruences. S. COHN-VOSSEN : The total curvature of open surfaces. PAUL DIENES : The deformation of sub-spaces in a space with general linear connexion. SIXTO RIOS : The singular ensemble of a class of Taylor's series which presents gaps. M. FEKETE and S. MARSHAK : Certain conditions necessary for the regularity of a function in a point of the circle of convergence. RAPHAËL SALEM : Fourier's series of functions of summable square. ANDRÉ MARCHAUD : Fields of semi-right lines and differential equations of the first order. GEORGES BOULIGAND : A problem of the theory of potential. JULIUS WOLFF : The conjugated harmonic function of a limited harmonic function. MAURICE FRÉCHET : Remarks on the communications of M. Minetti concerning a space composed of holomorph functions. CHR. FOUSIANIS : A theorem of Carathéodory and Féjer. W. M. ELSASSER : The polarisation of diffused electrons. ALBERT TOUSSAINT : The corrections to be applied to the aerodynamical characteristics of a supporting wing under experiment in a rectangular wind tunnel, partly guided by the walls, parallel to the spread of the wing and to the velocity of the wind. PIERRE DIVE : Distributions of masses producing the same potential in a common interior region. JEAN CHAZY : The capture of comets by the solar system. MILES. RENÉE CANAVAGGIA and MARIE LOUISE FRIBOURG : The constants of motion of the *G*, *K* and *M* stars. L. NÉEL : Calculation of the [magnetic] susceptibility of nickel in the neighbourhood of the Curie point. ION I. AGARBICEANU : The absorption of iodine vapour in the presence of foreign gases. Experimental study of the absorption spectrum of iodine vapour mixed with oxygen or nitrogen, under pressures varying from 1 mm. to atmospheric. Existing lines were enhanced, but no new ones appeared. A. COUDER : The use of inclined lenses as a means of producing pure astigmatism in spectrographs. Suggestion for eliminating more completely the effect of the grain in the photographic emulsion. PIERRE BRICOUT : The photometric study of the irregularities of density of photographic plates. JEAN SAIDMAN : The technique of the measurement of the thermal radiation of the skin. A description of a robust form of apparatus, capable of being carried to the bedside of a patient, and of giving more accurate results than the apparatus in current use.

Some practical applications are indicated. VÉRON : Rectilinear wings with uniform calorific flux. RENÉ ARDITI : The system cadmium sulphate, sulphuric acid, water. The physical properties (solubility, density, refractive index, viscosity, electrical conductivity) of this system have been studied : results are given as curves. Mlle. SABINE FILITTI : The oxido-reduction potential of the system hypoxanthine, uric acid. PARISELLE : The influence of the strength of bases on the formation of the aluminotartaric complexes. MICHEL MAGAT : The energy of dissociation of water by symmetrical vibrations and the products of this dissociation. AUGUSTIN BOUTARIC and MARIUS PEYRAUD : The capillary rise of hydrosols and of solutions of colouring matters. The influence of the concentration and of electrolytes. LOUIS MÉDARD and Mlle. THÉRÈSE PETITPAS : The Raman effect of solutions of ammonium nitrate in nitric acid. E. BURLLOT : The tendency to destruction of explosives by inflammation in a vacuum. A study of mercury fulminate and lead nitride (hydrazoate). It was found that there is a limiting pressure below which the destruction of the explosive is not propagated throughout the mass of the explosive. In both of these detonants there is a phase of slow combustion preceding detonation. This phenomenon is easy to observe with mercury fulminate ; under special conditions described it can also be seen in lead nitride. MARCU ROTBART : Some arylfatty β -oxyacetals and their products of hydrolysis. CH. COURTOT and T. Y. TUNG : Studies in the aryl thionium series. D. IVANOFF and G. PCHÉNITCHNY : Syntheses with amides of the type $R.CH = CH.CH_2CO_2H$ and mixed organomagnesium derivatives. ALEXIS CHERMETTE : New geological observations in Bas-Dahomey. P. LEBEAU : The peranthracites and the true anthracites. On the basis of work described in earlier communications, the author has proposed a classification of anthracites into true anthracites and pyroanthracites, the name peranthracites now being suggested for the latter. This classification is based on the volumes of gas evolved on heating to $1,000^\circ C$. Further work shows other differences between the two groups : composition of the gas evolved at $1,000^\circ C$., temperatures of inflammation, decrepitation on heating, behaviour towards chemical reagents, and electrical conductivity. Peranthracites are practically conductors of electricity whilst anthracites have a very high resistivity. JACQUES FROMAGET : The Trias formations of western Tonkin. P. IDRAC : A curious phenomenon of the solfatara of Pouzzoles. JACQUES BOURCART : An attempt at the reconstitution of the history of the fluvial network of the Haut Atlas to the east of Marrakech. P. AUGER and L. LEPRINCE-RINGUET : Study of the variation of the cosmic radiation between the latitudes $45^\circ N$. and $38^\circ S$. The action of the earth's magnetic field on the cosmic rays should serve to discriminate between the two theories of their origin, electromagnetic or corpuscular. The experiments described and summarised in a graph show that the cosmic radiation is sensible to the action of the terrestrial magnetic field, at least for distances of the order of the earth's radius. J. BRANAS and J. DULAC : The mode of action of copper mixtures : the rôle of desiccation. A. DEMOLON and E. BASTISSE : The influence of the anions on the fixing and mobilisation of phosphoric acid in soils. The hydrosol of silica and humic acids play an important part in the mobilisation of the passive forms of phosphoric acid in cultivated soils. PAUL

CHABANAUD : A new type of fish of the family of Gobideæ, *Syrrhthonus Charrieri*. Description of a fish caught off the coast of Tangiers by Henri Charrier. R. LEGENDRE : The presence of *Anotopterus pharao* in the stomach of *germons*. POLACK : The anomalies of colour vision. The classical trichromatic theory cannot define or place the anomaly of the Rayleigh type. The author's theory, which characterises chromatic vision by two factors, the position of the luminous maximum in the spectrum and the extent of the untonal regions, gives a precise definition and forms a continuous series with normal chromatic vision and its various anomalies. G. SANDOR, A. BONNEFOI and J. J. PÉREZ : The precipitation of the proteins by neutral salts. The precipitation of natural proteins by neutral salts is not due to an isoelectric precipitability. The solubility passes through a maximum at the isoelectric point pH 6 for the globulins and is still very high at the isoelectric point pH 4.8 for the albumins.

VIENNA

Academy of Sciences, Oct. 19. JOSEF LINDNER and ALOIS TORGGLER : Convallarin. W. J. MÜLLER and W. MACHU : Theory of passivity phenomena (23). The most important results of the earlier study of the passivity phenomena in lead are confirmed. OTTO BRUNNER and GERTRUD WIEDEMANN : Components of hornbeam bark. The resinol found by Zellner and others in hornbeam bark has been purified and proves to be identical with the betulin of birch bark. OTTO BRUNNER and ROLF WÖHRL : *p*-Methoxy- and 3 : 4-dimethoxy-phenylurethanes. The higher aliphatic alcohols yield well-crystallising urethanes suitable for characterising these alcohols. KARL PRZIBRAM : Relation between contraction and pressure for salts and metals. RICHARD BIEBL : Action of α -rays on the cells of *Bryum capillare*. When sufficiently intense, α -rays kill the cells of this moss, the time required being almost inversely proportional to the strength of the preparation. ELISABETH KARA-MICHAILOVA : Measurement of strong polonium preparations in the large plate condenser. The advantages of this method are pointed out and curves of equal degrees of saturation for preparations of 2400–50000 electrostatic units are given. FRITZ ASINGER : Nitration of 3 : 5-dichlorobenzaldehyde and 3 : 5-dichlorobenzoic acid. At 0° , fuming nitric acid converts the aldehyde almost quantitatively into its 2-nitro derivative, and at 60° – 70° the same acid nitrates 3 : 5-dichlorobenzoic acid to give the 2-nitro compound in about 80 per cent yield. ERICH TSCHERMAK-SEYSENEGG : (1) Intermediate inheritance and chromosome addition with species-bastards of *Triticum villosum*. (2) Size- and colour-dimorphism of the grains of wild and culture forms of rye and wheat. KARL MAYRHOFER : Convergency principles with systems of ordinary differential equations. ZACHARIAS DISCHE : Formation of a triosephosphoric ester from hexosephosphoric esters by hæmolysed red blood corpuscles. FRANZ WERNER : Results of a zoological study and collecting expedition to the islands of the Ægean Sea. Descriptions of two new species, *Rhacocleis emmae* and *Rh. anatolica*, and of *Platycoleis sporadarum*, Brunner v. W. ALFRED BRUKL and KARL ZIEGLER : Rhenium oxybromides. The properties of the trioxybromide and the dioxybromide—the only known oxybromides of rhenium—are described. MARTIN GUSINDE and VIKTOR LEBZELTER : Craniometric investigations on skulls from Tierra del

Fuego. ALEXANDER ROLLETT and RUDOLF PETER : β -Amyrin from Manila elemi resin (6) : Resins and resin substances (9). ROBERT MÜLLER, H. KUMPF-MÜLLER, E. PINTER and B. v. SEEBACH : Electrochemistry of non-aqueous solutions (9) : Measurement of the E.M.F. of Ag-AgNO₃ concentration cells in nine organic solvents and comparison with the values calculated from conductivity measurements. ELFRIEDE ALMOSLECHNER : Yeast-growth substances in *Boletus edulis* and in urine. RUDOLF SIEBER : Palæobiological investigations on the fauna of the Röteland-Riff mass in the northern Osterhorn group.

Oct. 26. GUSTAV ORTNER and GEORG STETTER : Use of pure nitrogen for ionisation chambers. The use of nitrogen offers advantages over that of hydrogen or of the rare gases. GEORG KOLLER and KARL PÖPL : Capruric acid. The compound C₂₀H₁₈O₆ obtained by the alcoholysis of capruric acid is found to be identical with cetruric acid. KASIMIR GRAFF : Colorimetric review of the stars up to magnitude 5 between the north pole and 40° south declination. ANTON E. MAYER : Construction of the seven neighbour-regions (*Nachbargebiete*) on the torus. OTHENIO ABEL : Further contributions to the explanation of the creep-traces in the Greifenstein sandstone of the Wienerwald.

Forthcoming Events

[Meetings marked with an asterisk are open to the public.]

Monday, January 8

BRITISH MUSEUM (NATURAL HISTORY), at 11.30.—Capt. Guy Dollman : "African Antelopes".*

ROYAL GEOGRAPHICAL SOCIETY, at 8.30.—J. T. Sander-son : "An Expedition in British Cameroons".

Tuesday, January 9

PHARMACEUTICAL SOCIETY, at 8.30.—(at 17, Bloomsbury Square, London, W.C.1). Prof. I. M. Heilbron : "Isoprene as a Fundamental Unit in the Synthesis of Plant Products".*

Thursday, January 11

UNIVERSITY COLLEGE, LONDON, at 5.30.—Prof. C. H. Best : "The Role of the Liver in the Metabolism of Carbohydrates and Fat" (succeeding lectures on January 15 and 18).*

Official Publications Received

GREAT BRITAIN AND IRELAND

Proceedings of the Royal Irish Academy. Vol. 41, Section B, No. 16 : The Geology of North-Eastern Tyrone and the adjacent Portions of County Londonderry. By J. J. Hartley. Pp. 217-285 + plates 13-18. (Dublin : Hodges, Figgis and Co. ; London : Williams and Norgate, Ltd.) 3s. 6d.

Royal Society of Arts. Report on the Competition of Industrial Designs. Pp. 40. (London : Royal Society of Arts.)

Proceedings of the Royal Society of Edinburgh, Session 1933-1934. Vol. 54, Part 1, Nos. 1, 2 : i. On Fitting Polynomials to Weighted Data by Least Squares ; ii. On Fitting Polynomials to Data with Weighted and Correlated Errors. By Dr. A. C. Aitken. Pp. 16. (Edinburgh : Robert Grant and Son ; London : Williams and Norgate, Ltd.) 1s. 6d.

Economic Advisory Council : Committee on Locust Control. The Locust Outbreak in Africa and Western Asia in 1932. Survey prepared by B. P. Uvarov. Pp. 74 + 11 maps. (London : H.M. Stationery Office.) 3s. net.

Transactions of the Royal Society of Edinburgh. Vol. 57, Part 3, No. 31 : Studies on the Reproductive System in the Guinea-Pig ; Post-Partum Repair of the Uterus, and the Associated Appearances in the Ovaries. By Thomas Nicol. Pp. 765-775 + 2 plates. (Edinburgh : Robert Grant and Son ; London : Williams and Norgate, Ltd.) 2s. 3d.

University of Bristol. Annual Report of Council to Court, 1932-33. Pp. 47. (Bristol.)

OTHER COUNTRIES

Bernice P. Bishop Museum : Occasional Papers. Vol. 10, No. 2 : The Lizards of the Marquesas Islands. By Karl P. Schmidt and Walter L. Necker. (Pacific Entomological Survey ; Publication 5.) Pp. 11. Vol. 10, No. 3 : Cypraea from Hawaii. By F. A. Schilder. Pp. 22. Vol. 10, No. 4 : Lysimachia, Labordia, Scaevola and Pluchea ; Hawaiian Plant Studies, 1. By Harold St. John. Pp. 10. Vol. 10, No. 5 : Cryptochirus of the Central Pacific. By Charles Howard Edmondson. Pp. 23. Vol. 10, No. 6 : New Species of Amastridae. By C. Montagu Cooke, Jr. Pp. 27 + 2 plates. Vol. 10, No. 7 : Some Allis of the Migratory Period. By Bruce Cartwright. Pp. 11. Vol. 10, No. 8 : Notes on Pteralyxia. By Edward L. Caum. Pp. 24. Vol. 10, No. 9 : The Exotic Birds of Hawaii. By Edward L. Caum. Pp. 55. (Honolulu.)

Obras Completas y Correspondencia Científica de Florentino Ameghino. Vol. 10 : Mamíferos Fósiles de Patagonia y otras Cuestiones. Dirigida por Alfredo J. Torcelli. Pp. 870. (La Plata.)

Memoirs of the Geological Survey of India. Vol. 55, Part 2 : The Geology of the part of the Attock District West of Longitude 72°45' E. By Dr. G. de P. Cotter. Pp. viii + 63-161 + xvi + plates 11-19. 5.4 rupees : 8s. 6d. Vol. 64, Part 1 : Barytes in the Ceded Districts of the Madras Presidency, with Notes on its Occurrence in other Parts of India. By A. L. Coulson. Pp. viii + 142 + xii + 5 plates. 3.14 rupees ; 6s. 6d. (Calcutta : Central Book Depot ; Delhi : Manager of Publications.)

Whangpoo Conservancy Board. General Series, Report No. 10 : The Hydrography of the Whangpoo. Fourth edition. Pp. v + 80. (Shanghai.) 3 dollars.

Journal of the Faculty of Science, Imperial University of Tokyo. Section 1 : Mathematics, Astronomy, Physics, Chemistry. Vol. 2, Part 9 : Sur la théorie du corps de classes dans les corps finis et les corps locaux. Par Claude Chevalley. Pp. 365-476. 1.40 yen. Section 3 : Botany. Vol. 4, Part 2 : Systematic and Anatomical Studies on some Japanese Plants. 2 (Juncaceae). By Yosiusuke Satake. Pp. 131-223 + 4 plates. 1.80 yen. (Tokyo : Maruzen Co., Ltd.)

The British South Africa Co. Publication No. 2 : Mazoe Citrus Experimental Station Report for Period ending 31 December 1932. Pp. xx + 192. (Mazoe : Citrus Experimental Station ; London : British South Africa Co.)

The Bashford Dean Memorial Volume. Archaic Fishes. Edited by Eugene Willis Gudger. Article 5 : The Natural History of the Frilled Shark *Chlamydoselachus anguineus*. By Eugene W. Gudger and Prof. Bertram G. Smith. Pp. 243-319 + 5 plates. (New York City : American Museum of Natural History.)

Koninklijk Magnetisch en Meteorologisch Observatorium te Batavia. Verhandeligen No. 24 : Regenval in Nederlandsch-Indie (Rainfall in the Netherlands Indies). Door (by) Prof. Dr. J. Boerema. Deel (Vol.) 4 : Kaarten van den gemiddelden jaarlijkschen en maandelijkschen regenval op Celebes (Maps of the Mean Annual and Monthly Rainfall in Celebes). 13 maps. (Batavia.)

Ministry of Finance, Egypt : Coastguards and Fisheries Service : Fisheries Research Directorate. Notes and Memoirs, No. 1 : M moire sur l'organisation des recherches de pêcheries. Par Dr. Hussein Faouzi. Pp. iii + 16. Notes and Memoirs, No. 3 : An Examination of Plankton Hauls made in the Suez Canal during the year 1928. By Dr. R. Macdonald. Pp. 11 + 1 plate. Notes and Memoirs, No. 4 : Report on Fish Eggs and Larvae taken during 1931. By Dr. R. H. Whitehouse. Pp. 22. Notes and Memoirs, No. 5 : The Pharynx and Intestinal Tract of the Egyptian Mullet—*Mugil cephalus* and *Mugil capito*. Part 1 : On the Food of Mullet from Egyptian Waters. By F. M. Ghazzawi. Pp. ii + 18. Rapport sur les pêcheries d'Egypte en 1931. Par Dr. Hussein Faouzi. Pp. vii + 119. (Cairo : Government Press.)

Japanese Journal of Astronomy and Geophysics. Transactions and Abstracts, Vol. 11, No. 1. Pp. ii + 66 + 20. (Tokyo : National Research Council of Japan.)

Proceedings of the Imperial Academy. Vol. 9, No. 8, October. Pp. xxi-xxiii + 347-460. (Tokyo.)

Conseil Permanent International pour l'Exploration de la Mer. Bulletin statistique des pêches maritimes des pays du nord et de l'ouest de l'Europe. Rédigé par D'Arcy Wentworth Thompson. Vol. 21 : Pour l'année 1931. Pp. 79. (Copenhagen : Andr. Fred. Hest et fils.) 3.00 kr.

The Imperial Council of Agricultural Research. Scientific Monograph No. 7 : Influence of Manures on the Wilt Disease of *Cajanus indicus* Spreng, and the Isolation of Types resistant to the Disease. By Dr. W. McRae and Dr. F. J. F. Shaw. Pp. iii + 63 + 16 plates. (Delhi : Manager of Publications.) 2.4 rupees ; 4s. 3d.

New Zealand : State Forest Service. Annual Report of the Director of Forestry for the Year ended 31st March 1933. Pp. 15. (Wellington : Government Printer.)

U.S. Department of Agriculture. Technical Bulletin No. 366 : Further Investigations of the Parasites of *Popillia japonica* in the Far East. By C. P. Clausen, H. A. Jaynes and T. R. Gardner. Pp. 59. (Washington, D.C. : Government Printing Office.) 5 cents.

CATALOGUES, ETC.

Calendar for 1934. (Newcastle-on-Tyne : C. A. Parsons and Co., Ltd.) Glycine B.D.H. (Aminoacetic Acid). Pp. 4. (London : The British Drug Houses, Ltd.)

A Catalogue of Everything X-Ray. Pp. 68. (London : Cuthbert Andrews.)

Calendar for 1934. (London : British Museum (Natural History).)

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