

## Calendar of Nature Topics

### 'Old Wives' Summer'

Towards the end of September in central Europe there is often a period of calm clear weather, with cold nights and misty mornings but fine warm days. This is the 'Old Wives' Summer'; it has been explained as the transition between summer and winter conditions. In summer, the pressure distribution over central Europe is dominated by the Azores anticyclone, from which a wedge of high pressure extends across southern France and south-west Germany. In winter the dominant feature is the great Siberian anticyclone, from which a long arm extends across Switzerland. There is, however, a short period of transition during which the Azores anticyclone has retreated to the Atlantic while the Siberian anticyclone has not yet developed. During this interregnum, which, on the average, occurs between September 18 and 22, an anticyclone develops over southern Germany north of the Alps, and this brings the fine weather of the 'Old Wives' Summer'. Later in the month, the anticyclone drifts away eastwards, and in Russia the 'Old Wives' Summer' occurs at the end of September or the beginning of October.

### Greatest Frequency of West Indian Hurricanes

The revolving storms or 'hurricanes' of the West Indies are among the most dreaded of all natural phenomena, and since the first colonisation of Central America they have caused enormous loss of life and property. In recent years, they have been studied intensively and an elaborate system of hurricane warnings has been organised. The majority of hurricanes originate over the open ocean between about lat. 10° N. and 20° N., travel westwards or north-westwards across the West Indies, and after re-curving towards the north-east, either strike the Gulf States and die out over the land, or continue over the ocean parallel with the Atlantic coast. The great majority occur in August, September and October, and in recent years a number of severe hurricanes have been experienced about the third week of September. New Orleans suffered great damage from a hurricane on September 20, 1909, and another storm which crossed the West Indies and the south-eastern States on September 22-30, 1916, gave a wind velocity of 140 m.p.h. at the mouth of the Mississippi. Florida was struck by a hurricane on September 19, 1926, and great damage was done in the West Indies about September 24, 1929.

### A Great Hawk Migration in Ontario

On September 19, 1931, Manly Minor saw such a migration of hawks as has seldom or never been recorded, in spite of the incredible numbers which annually cross Essex County in Ontario every September and October. His own words give an extraordinarily vivid description of this outstanding movement: "The number of hawks present could scarcely be made believable to one who had not seen them. Some witnesses thought there were as many as fifty thousand present. Circling flocks could be seen with the naked eye for two miles in any direction and with glasses more were visible at a greater distance. By counting the number in a single flock I estimated that between ten and twenty thousand hawks were passing within sight.

"High in the air Broad-wing, Red-shouldered and Red-tailed Hawks circled, sailed four or five miles and circled again. To my surprise, lower down an occasional Osprey or Fish-Hawk passed, not circling like the others but flying much faster and not mixing with them. Near to the ground were many Sharp-shinned and Cooper's Hawks with occasional Sparrow and Pigeon Hawks.

"I have seen as many hawks in a whole day but never before such numbers in less than an hour as on this occasion. It was between eight and nine o'clock in the morning and I conclude that the birds probably congregated for the previous night in some near-by woods and were starting out together on their day's travel. They were progressing at varying speeds and by night would very likely be spread out for fifty or a hundred miles" (*Canadian Field Naturalist*, Nov. 1932, p. 191).

### Breeding Ewes

The financial success of sheep farming depends very largely on the number of lambs reared for each ewe in the flock, and in ordinary farming the condition of the ewe is far more important in deciding the number of twin births than that of the ram. There is no doubt that the plane of nutrition of the ewe has a great deal to do with her fertility. Hence the practice of 'flushing' the ewes just before the mating season. After weaning, the ewes are kept in rather hard condition and then at about this season of the year they are admitted to better food rich in protein; a piece of fresh young aftermath, a fold of rape or mustard, or even an addition of some concentrated food to their ordinary rations. The ewes come to the ram in rising condition and a heavier fall of lambs is the result. Excessive fatness in breeding ewes is to be avoided as a well-known cause of shy breeding and sterility.

## Societies and Academies

### PARIS

Academy of Sciences, July 31 (*C.R.*, 177, 365-432). The president announced the death of Edouard Quénu, member for the Section of Medicine and Surgery. A. LACROIX: A stony meteorite which fell in Morocco on August 22, 1932. R. FOSSE, P. DE GRAEVE and P. E. THOMAS: The transformation of the intermediate term of the permanganate oxidation of uric acid into allantoinic acid, in the presence of the soya ferments and of potassium cyanide. CHARLES NICOLLE and L. BALOZET: Man is insensible to inoculation of the aphthous virus of known types, even in the form of a latent infection. CHARLES NICOLLE, J. LAIGRET and P. GHOUD: The transmission of typhus by bites and by ingestion of infected fleas. The ape can be infected by flea bites, rats by ingestion of infected fleas. The infections produced were of the latent type, none of the animals showing febrile symptoms. B. CARRERA and H. FAHLENBRACH: Diamagnetism and temperature. PAUL PASCAL and BONNEMEMAN: The reversible passage of the dimetaphosphates to the condensed salts of Graham. Study of the metaphosphates produced by the dehydration of silver acid pyrophosphate and by heating silver hypophosphate at varying temperatures. G. B. GOUREWITCH: The

canonical forms of a trivector in space of six dimensions. RENÉ DE POSSEL: The theory of measurement. The prolongation of an additive function of ensemble. TULLIO VIOLA: The points of convergence of general trigonometrical series. B. RIABOUCHINSKY: Total dissemination. P. DUMANOIS: Concerning the influence of the temperature on detonation in internal combustion motors. From the peroxide theory of detonation, the author concludes that if the temperature of the explosive mixture going into the motor cylinder be raised, the detonation should disappear. Experiments confirming this are described. J. LE ROUX: A new form of the Lorentz formulæ. J. SAVARD: The ionisation potential and formation of the molecule of hydrogen. ALEXIS GUERBILSKY: Piezo-electric crystal dynamometers in resonance vibration. J. SOLOMON: The effect of internal conversion. A discussion of the application of Dirac's theory of the electron to the explanation of the effect of internal conversion, that is, the absorption by an electron of a radioactive atom of the photon emitted by the nucleus. W. GENTNER: The absorption of very penetrating  $\gamma$ -rays. MARCEL LECOIN: The  $\beta$ -radiation of radium *E* and of the active deposit of actinium. AUGUSTE LE THOMAS: The anomalies of the tempering of cast irons: their relation with the oxidation in the liquid state. ED. CHAUVENET and Mlle. J. BOULANGER: The compounds of zirconyl bromide with the alkaline bromides. Application of the calorimetric method indicated the formation of definite compounds of zirconyl bromide with the bromides of sodium, potassium, rubidium, caesium and ammonium, but not with lithium bromide. The compound with caesium bromide was isolated in crystals. O. MILLER and L. PIAUX: The Raman spectra of the cis-trans isomeric orthodimethylcyclohexanes. VOLMAR and BETZ: The emetics derived from mandelic and malic acids. The preparation and properties of sodium antimonimandelate and sodium antimonimalate are described. E. VELLINGER and G. RADULESCO: The antioxidising or antioxygen constituents of petrol prepared by cracking. It is suggested that the petrol passing below 170° C. should be refined and then mixed with the crude unrefined fraction passing between 170° C. and 180° C. MME. GUAISNET-PILAUD: The crystallographic constants of the hydrates of the phenylmethyl ethyl betaines and of the phenylmethylpropylbetaines. J. GUBLER: The presence of the Trias at Cambogia. A. DUFÉRIER and G. COLLADO: The fluctuations of the terrestrial electric field. Experiments made at Paris and Madrid show that the continuous fluctuations of the electric field cannot be regarded as being due to local irregular disturbances. H. COLIN and J. AUGIER: Floridoside, trehalose and glycogen in red fresh-water Algæ (*Lemanea*, *Sacheria*). J. ANDRÉ THOMAS: The evolution of prolonged cultures of the wall of the umbilical vesicle, in the embryo of the chick. A. POLICARD: The study by micro-incineration of the distribution of fixed mineral matter in the spermatozooids of mammals. In the spermatozooids of both man and rat the method of micro-incineration shows at the level of the head the presence of a part poor in mineral matter and a posterior part containing much more. SWIGEL and THÉODORE POSTERNAK: The phosphorus containing nucleus of the ichtulin of the pike. MME. ANDRÉE ROCHE: The comparative study of the chemical constitution of normal animal muscle, dead through total starvation or through protein starvation.

## MELBOURNE

Royal Society of Victoria, April 6. CEDRIC DEANE: Australian Hydrophilidæ (2). Nine new species of *Ochthebius*, namely *O. heiroglyphicus*, *O. costatus*, *O. subcostatus*, *O. levis*, *O. lividus*, *O. flavocinctus*, *O. notalis*, *O. schizolabrus*, *O. labratus* and two new species of *Hydræna*, namely, *H. selecta* and *H. plenipennis*. These water beetles have received but scant attention by collectors until recently, owing possibly to their small size. NANCY ATKINSON: An investigation of the bacterial pollution of the waters of Port Phillip Bay with special reference to the effluents from the Melbourne and Metropolitan Sewage Farm, near Werribee. The *Bacillus coli* content of the water was taken as an index of its contamination. In every case the dilution factor was found sufficient to render the effluents innocuous.

## ROME

Royal National Academy of the Lincei, April 23. FRANCESCO SEVERI: Theory of the equivalence series on an algebraic series: the topological and transcendent points of view (3). A. BEMPORAD: Stellar currents about R.A. 14<sup>h</sup>. + 54° Decl. G. ARMELLINI and G. ANDRISSI: The radiation of the sun in 1931 and 1932. The results of pyroheliometric measurements at the Campidoglio Observatory show that, on the average, the atmospheric absorption is about double the value adopted by Müller for his Potsdam photometric tables. GIUSEPPINA BIGGIÖGERO: Geometric observations on tensors. S. CINQUINI: Functional equations of the Volterra type. C. MIRANDA: Useful connexions between the methods of summation of series and problems of the linear differential equations to the partial derivatives of elliptic type. R. SARTORI: A theorem of functional operative calculus. M. HALMOVICI: Curves of constant pressure. Curves on a surface such that a material point moving on one of them without friction under the action of a conservative field of forces exerts a constant pressure on the curve, are considered. R. SARMENTO DE BEIRES: The Euler-Savary formula. With the help of simple, plane perspective considerations, a ready method is demonstrated for establishing the Euler-Savary formula relating to rigid plane motions and for its extension to rigid spherical motions. M. TENANI: Constructive principles of magnetic compasses. G. WATAGHIN: The theory of the nucleus. Observations on Heisenberg's theory of nuclear structure, suggested by the discovery of positive electrons, are made. If the conception of intranuclear electrons, regarded as independent mechanical entities, has any significance, it is considered more plausible that they are positive, rather than negative, electrons. G. R. LEVI and M. TABET: X-ray examination of electrolytic chromium deposits. G. PICCARDI: Spectrum of molybdenic anhydride. G. D'ERASMO: Remains of tertiary vertebrates collected in Libya by the expedition of the Royal Academy of Italy (1931). A. DEBENEDETTI: First results of the study of effusive rocks of southwestern Sardinia. B. BORGHI: Trypanosomiasis and avitaminosis (2): Scurvy and *Trypanosoma Brucei*. When inoculated into guinea-pigs on a scorbutogenic diet, *Trypanosoma Brucei* is capable of living and multiplying as in the normal animals. If introduced when the animals have been on the scorbutogenic diet only a few days, the trypanosome produces an infection which differs markedly from that shown by animals on normal diet. G. BRUNELLI: The 'fossa circondaria' and hydrobiological improvement.

## SYDNEY

Linnean Society of New South Wales, April 26. J. ANDREWS and W. H. MAZE: (1) Some climatological aspects of aridity in their application to Australia. The present-day climatic factor is the most important of the immediate causes of aridity. The authors suggest, as a basis for discussion, the definition that regions of aridity are regions of markedly intermittent and strongly contrasted geomorphological and biological processes which are controlled in their occurrence by the length of the period of insufficient precipitation. (2) Seasonal incidence and concentration of rainfall in Australia. A series of maps of Australia is given showing the proportion of the annual rainfall occurring in each season, together with a map showing the degree of concentration of the rainfall in the wettest season. J. R. MALLOCH: Notes on Australian Diptera (33). A synopsis is presented of the species of *Amenia* belonging to the *Ameniinae* and certain misconceptions regarding the species *leonina* and *imperialis* are cleared up. One genus and species of Tachinidae belonging to the group Trichopodini is described as new, being the first record of this group in Australia. One species of *Amenia* is described as new, and a key is given for the identification of the species of the genus. A. J. TURNER: Revision of Australian Lepidoptera. Oecophoridae. Part 2. Notes on eight genera and fifty species, of which five genera and forty-six species are described as new, are given. W. L. WATERHOUSE: On the production of fertile hybrids from crosses between *vulgare* and Khapli emmer wheats. More than 5,000 crosses have been made. An average of about 35 per cent grain-setting has resulted. Almost always sterility has been shown by the progeny, but in a few cases a low measure of fertility has been found. Some of these derivatives are now in the  $F_3$  generation. A big advance comes from crosses made in 1931. Three *vulgare* wheats are found to cross readily with 'Khapli' and have given  $F_1$  plants of normal development. Under conditions of open-pollination, these hybrid plants have set more than 17 per cent of grain. Crosses between these three *vulgare* wheats and other refractory members of other species of *Triticum* indicate an unusually high fertility in these cases also.

## VIENNA

Academy of Sciences, May 18. GEORG KOLLER and GERHARD PFEIFFER: The enzymes of lichens and the constitution of umbilicic acid. *Umbilicaria pustulata*, *U. deusta*, and *Evernia prunastri* contain an enzyme capable of splitting off carboxyl groups and also a depsidase which hydrolyses depsides of the lecanoric acid type. The formation of methyl iso-evernate on alcoholysis of umbilicic acid with methyl alcohol excludes one of the two possible structural formulæ for this acid. WILHELM SCHMID: A cyclograph  $Z_4$ , derived from a quadratic Hirst complex. FRANZ HÖLZL, WALTER BRELL and GUIDO SCHINKO: Hexacyanocobaltic acid and *n*-propyl alcohol.

May 26. H. WENDELIN: Non-exchangeable operators. KARL BRUNNER: New derivatives of 3:3-dimethylindolinones (2). When treated with sulphuric acid on a water-bath, indolinones give monosulphonic acids in almost quantitative yields. JOSEF NORBERT DÖRR: Three slight earthquakes in Austria in 1932. HERBERT HABERLANDT and KARL

PRZIHRAM: Fluorescence of fluorite. Like the red radio-photofluorescence, the well-known blue fluorescence of fluorite may be annulled by calcination and regenerated by irradiation with radium. It must, therefore, be regarded as radio-photofluorescence. R. WILLHEIM and ERWIN V. PAPHÁZY (with JULIUS FISCH and GERTRUDE NETTEL): A new carbohydrate occurring in the urine after administration of caramel or glucose. After caramelised products, particularly bread crust or glucosan, have been eaten, the urine is found to contain a non-fermentable, optically inactive sugar, which gives a phenylosazone of melting point  $200^\circ$  and of the molecular weight 350 in camphor solution. No means of isolating the sugar has yet been devised. FRIEDRICH LECHNER: Eigen vibrations of a valency-force system with five mass points. OTTO FÜRTH, HARALD MINNIBECK, and EMIL EDEL: The rôle of citric acid in the carbohydrate metabolism of the mammals and of man. WOLFGANG REICHARDT: Flora from the highest Auernig strata of the Schuterkofel (Carinthian Alps).

## WASHINGTON, D.C.

National Academy of Sciences (*Proc.*, 19, 477-579, May 15). CLYDE E. KEELER: Akhissar spotting of the house mouse. The marking, a small white spot on the belly, seems to be due to the gene commonly producing recessive piebald in laboratory mice. CHESTER STOCK: A miacid from the Sespe Upper Eocene, California. DAVID I. MACHT: Effect of methylthionine chloride on the phytotoxic reaction of normal and pathological blood. Blood or serum in plant physiological saline has a toxic effect on lupin seedlings which is decreased by weak solutions of methylene blue. Such solutions also seem to detoxify carbon monoxide blood and sera from pernicious anaemia, leprosy and pemphigus, suggesting the guarded use of methylene blue in the treatment of these diseases. CECILIA H. PAYNE: A physical analysis of Wolf-Rayet spectra. These stars fall into two groups, those containing carbon and those without. Many of the bright-line spectra show lines arising from three or more successive stages of ionisation of the same atom, suggesting that Wolf-Rayet stars are compact planetary nebulae. WILLIAM W. HOWELLS: Notes on blood-groups and race in the Pacific. Roughly, group *A* decreases and group *B* increases in going from east to west, while group *O* remains constant. It is concluded that the *A* factor is older than the *B* factor. ANGUS S. ROY and O. S. DUFFENDACK: The excitation potential of the  $\lambda$  2883 and  $\lambda$  2895 bands of carbon dioxide. These bands seen to be due to the carbon dioxide ion  $\text{CO}_2^-$ , having an excitation potential about 18.7 volts. Their appearance in mixtures of carbon and oxygen is apparently due to collisions of the second kind with excited oxygen molecular ions. OSWALD VEBLEN: Geometry of four-component spinors. The first of a series of papers based on the use of the Pluecker-Klein correspondence between the lines of a projective 3-space and the points of a quadric in a 5-space in a manner inverse to that intended by Klein. E. H. KENNARD: Contribution to the theory of scattering by a force centre. SELIG HECHT and CORNELIS D. VERRIJP: The influence of intensity, colour and retinal location on the fusion frequency of intermittent illumination. In the rod-free region of the fovea, critical frequency and logarithm of intensity give a single narrow sigmoid curve. Measurements using a retinal area containing rods and cones show

a high intensity section corresponding with that obtained from the fovea (cones only) and a low intensity section (rods). Corresponding results are obtained at different wave-lengths. KENDALL W. FOSTER: Colour changes in *Fundulus* with special reference to the colour changes of the iridosomes. Iridosomes deep in the dermis are composed of guanin crystals and remain blue or green in colour regardless of background. Under illumination, however, they change colour progressively. The changes suggest that the laminae of the crystals or the crystals thicken under the action of light and that the recovery is a reverse process. J. L. WALSH: The Cauchy-Goursat theorem for rectifiable Jordan curves. M. F. ROSSKOPF: An inequality for Legendre series coefficients. AARON FIALKOW: The geometry of degenerate heat families. E. K. HAVILAND: On statistical methods in the theory of almost-periodic functions. G. A. MILLER: Sylow subgroups and the number of operators whose orders are powers of the same prime. HERBERT DINGLE: Values of  $T_{\mu}^{\nu}$  and the Christoffel symbols for a line element of considerable generality. C. RAYMOND ADAMS: On non-factorable transformations of double sequences. A. KHINTCHINE: The method of spectral reduction in classical dynamics. EINAR HILLE and J. D. TAMARKIN: Questions of relative inclusion in the domain of Hausdorff means. E. T. BELL: Finite ova.

### Forthcoming Events

- INSTITUTE OF METALS, Sept. 18-21.—Twenty-fifth Autumn Meeting to be held at Birmingham.  
Sept. 18.—W. R. Barclay: "Twenty-five Years' Progress in Metallurgical Plant" (Twelfth Autumn Lecture).
- BRITISH MYCOLOGICAL SOCIETY, Sept. 18-23.—Annual Meeting at Newcastle-upon-Tyne.  
Prof. W. Brown: "The Mechanism of Disease Resistance in Plants" (Presidential Address).
- INTERNATIONAL CONGRESS OF GLASS AND CERAMICS, Sept. 18-26. To be held at Milan.
- ASSOCIATION OF SPECIAL LIBRARIES AND INFORMATION BUREAUX.—Sept. 22-25. Tenth Annual Conference to be held in Wills' Hall, Stoke Bishop, Bristol. Sir Charles Sherrington: President.

### Official Publications Received

#### GREAT BRITAIN AND IRELAND

- East London College (University of London). Calendar, Session 1933-1934. Pp. 221. (London.)
- The Journal of the Institution of Electrical Engineers. Edited by P. F. Rowell. Vol. 73, No. 440, August. Pp. 97-212+xii. (London: E. and F. N. Spon, Ltd.) 10s. 6d.
- The British Mycological Society. Transactions. Edited by J. Ramsbottom, B. F. Barnes and H. Wormald. Vol. 18, Part 1, August 16th. Pp. 92+6 plates. (London: Cambridge University Press.) 7s. 6d.
- Sir John Cass Technical Institute, Jewry Street, Aldgate, E.C. Syllabus of Classes, Session 1933-34. Pp. 116. (London.)
- Journal of the Society of Glass Technology. Edited by Prof. W. E. S. Turner. Vol. 17, No. 66, June. Pp. xiii+35-238+133-300+xxiv. (Sheffield.) 10s. 6d.
- Aeronautical Research Committee. Report for the Year 1932-33. Pp. iv+94+5 plates. (London: H.M. Stationery Office.) 2s. net.
- Journal of the British Wood Preserving Association. Edited by A. H. Lloyd and R. C. B. Gardner. Vol. 3. Pp. viii+111+xxvi+8 plates. (London.) 7s. 6d.
- University of London: King's College, Faculty of Engineering. Syllabus of Classes, 1933-1934. Pp. 39+xv. (London.)
- The North of Scotland College of Agriculture. Calendar, Session 1933-1934. Pp. viii+120. Bulletin No. 38: The Use of Chlorates in Weed Control. By D. Clouston and A. Hill. Pp. 8. Bulletin No. 39: Worm Infestation of Lambs. By Dr. David Robertson. Pp. 8+2 plates. (Aberdeen.)
- Air Ministry: Aeronautical Research Committee: Reports and Memoranda. No. 1519 (T. 3091 and 'a'): Lateral Stability of an Aeroplane beyond the Stall. By L. W. Bryant, I. M. W. Jones and

G. L. Pawsey. Pp. 18+20 plates. 1s. 3d. net. No. 1529 (T. 3326): Abstract—Flexural Centre and Centre of Twist of an Elastic Cylinder. By Dr. W. J. Duncan, D. L. Ellis and C. Scruton. Pp. 4. 2d. net. No. 1534 (T. 3361): Spinning of High and Low Wing Monoplanes. By H. B. Irving, A. S. Batson and A. G. Gadd. Pp. 5+6 plates. 6d. net. (London: H.M. Stationery Office.)

Journal of the Society for the Preservation of the Fauna of the Empire. New Series, Part 20, August. Pp. 68. (Hertford: Stephen Austin and Sons, Ltd.) 2s.

London County Council. Lectures and Classes for Teachers: Handbook for the Session 1933-34. Pp. 72. (London.)

Department of Scientific and Industrial Research: Food Investigation. Leaflet No. 3: The Care of the Trawler's Fish. By A. Lumley. Pp. 4. (London: Department of Scientific and Industrial Research.) Free.

#### OTHER COUNTRIES

Review of Agricultural Operations in India, 1929-30 and 1930-31. Pp. v+350. (Delhi: Manager of Publications.) 5 rupees; 8s. 3d.

Ministry of Public Works, Egypt: Physical Department. Helwan Observatory Bulletin No. 36: On the Choice of a Suitable Projection for representing the Aspect of the Heavens. By M. R. Madwar. Pp. 12+1 plate. (Cairo: Government Press.)

Agricultural Experiment Station: North Dakota Agricultural College. Bulletin 269: Wild Flowers of North Dakota. By O. A. Stevens. Pp. 51. (Fargo, N.D.)

The Pneumatic System of Plants, especially Trees. By D. T. MacDougal and Earl B. Working. (Publication No. 441.) Pp. 87. (Washington, D.C.: Carnegie Institution.)

Chemical Investigations of the Tobacco Plant. By Hubert Bradford Vickery, George W. Pucher, Alfred J. Wakeman and Charles S. Leavenworth; with Technical Assistance of Laurence S. Nolan. (Publication No. 445.) Pp. iv+77. (Washington, D.C.: Carnegie Institution.)

Annale van die (Annals of the) Transvaal Museum. Deel (Vol.) 15, Stuk (Part) 2. Pp. 123-280+14 plates. (Pretoria: Government Printer.) 7s. 6d.

Commonwealth Bureau of Census and Statistics, Canberra. Official Year Book of the Commonwealth of Australia. No. 25, 1932. Prepared by E. T. McPhee. Pp. xxxii+894. (Canberra: Commonwealth Government Printer.) 5s.

Proceedings of the American Philosophical Society. Vol. 72, No. 3. Pp. 101-214. (Philadelphia.)

Scientific Papers of the Institute of Physical and Chemical Research. No. 435: Cathode Ray Oscillogram of Action Potential of Nerve. By Shumpei Watanabe and Kyogo Sasagawa. Pp. 139-148. 20 sen. Nos. 436-439: On the Production of Seborrhea in Rat by Feeding with Whale Oil, by Eiichi Somekawa; On the Precision of the Measurement of the Lo Surdo Stark Effect Patterns, by Yoshio Ishida and Tadashi Tamura; Ether-soluble Substances in Polished Rice and their Physiological Behaviour, by Yoshikazu Sahashi; The Solarization of Luminiferous Calcite, by Satoyasu Iimori. Pp. 149-231+plates 15-18. 80 sen. (Tokyo: Iwanami Shoten.)

Proceedings of the American Academy of Arts and Sciences. Vol. 68, No. 7: Gyromagnetic Experiments on the Process of Magnetization in Weak Fields. By S. J. Barnett. Pp. 229-249. 65 cents. Vol. 68, No. 8: The Significance of Cells as revealed by their Polyhedral Shapes, with Special Reference to Precarillage; and a Surmise concerning Nerve Cells and Neuroglia. By Frederic T. Lewis. Pp. 251-284+2 plates. 85 cents. (Boston, Mass.)

Zoologica: Scientific Contributions of the New York Zoological Society. Vol. 13, No. 8: Deep-Sea Isospondylous Fishes; Two New Genera and Four New Species. By William Beebe. Pp. 159-167. (New York City.)

Astrographic Catalogue 1900-0. Sydney Section, Dec. -51° to -65°. From Photographs taken at the Sydney Observatory, New South Wales, Australia. Vol. 9: R.A. 0<sup>h</sup> to 6<sup>h</sup>, Dec. -53° to -55°, Plate Centres Dec. -54°. Vol. 10: R.A. 6<sup>h</sup> to 12<sup>h</sup>, Dec. -53° to -55°. Plate Centres Dec. -54°. Pp. 119. (Sydney: Government Printer.)

Statens Meteorologisk-Hydrografiska Anstalt. Årsbok, 14, 1932. ii. Nederbörden i Sverige. Pp. 56. (Stockholm.) 2.50 kr.

Department of Agriculture: Straits Settlements and Federated Malay States. Economic Series, No. 2: Nationality of Ownership and Nature of Constitution of Rubber Estates in Malaya. By D. H. Grist. Pp. ii+26. 50 cents. General Series, No. 13: Tapioca in Malaya. By V. R. Greenstreet and J. Lambourne. Pp. vi+78+24 plates. 1 dollar; 2s. 4d. (Kuala Lumpur.)

Commonwealth of Australia: Council for Scientific and Industrial Research. Bulletin No. 75: *Nigrospora musae* n.sp. and its Connexion with "Squirter" Disease in Bananas. By Prof. Etnel I. McLennan and Shirley Hoette. Pp. 36+1 plate. Pamphlet No. 40: A guide to the Seasoning of Australian Timbers. By C. Sibley Elliot. Pp. 53. (Melbourne: Government Printer.)

Denkschriften der Schweizerischen Naturforschenden Gesellschaft. Band 68, Abh. 2: Jura und Unterkreide in den helvetischen Alpen beiderseits des Rheins (Vorarlberg und Ostschweiz). Von Arnold Heim und Ernst Baumberger. Pp. ix+155-220+2 plates. (Zürich: Gebrüder Fretz A.-G.)

South Australia: Department of Mines. Mining Review for the Half-year ended December 31st, 1932. (No. 57.) Pp. 103. (Adelaide: Government Printer.)

Journal of the University of Bombay. Vol. 1, Part 5: Biological Sciences, including Medicine. Pp. 213. (Bombay: Longmans, Green and Co., Ltd.) 3 rupees.

#### CATALOGUES

Oestroform: a Standardised Preparation of the Crystalline Ovarian Follicular Hormone. Pp. 6. (London: The British Drug Houses, Ltd.)

Bee Flowers: a Descriptive List of all kinds of Flowers which secrete Nectar and provide Pollen, with reasons why they should be grown. Pp. 8. (Maidenhead: H. S. Boothman.)

"TRT" Toolroom Tempering Equipments with Forced Air Circulation. Pp. 4. (London: Wild-Barfield Electric Furnaces, Ltd.)