

tion of the foundation has just awarded seven studentships with this object in view, and from the list of successful candidates, published in *The Times*, we notice that four of the students will proceed in Germany with scientific research as follows:—Mr. F. H. Smith, Pembroke College, Cambridge, chemical research; Mr. R. S. Wishart, Edinburgh University, chemical research; Mr. A. Cowe, Edinburgh University, neurology and gynæcology; Mr. S. G. Barker, Imperial College of Science and Technology, London University, scientific research in vapour pressures. The studentships are for one year and of the value of 175*l.*, and a condition of their tenure is continuous residence in Germany for this period. The cost of these will be defrayed by the German section of the foundation, while the British section is bearing the expense of a limited number of German students who, under a corresponding scheme, will visit this country in the autumn.

In a communication from *The Times* correspondent at Toronto on June 5, it is announced that the report of the Royal Commission on Industrial Training and Technical Education in Canada, instituted three years ago, has now been made public. The report suggests that a fund of 600,000*l.* be provided annually by the Dominion for a period of ten years, and be divided among the provinces on the basis of population for the promotion of higher technical education and industrial training, while for elementary schools teaching manual training and domestic science a grant of 70,000*l.* a year for ten years is recommended. The report also proposes the establishment in each province of a board qualified to carry on industrial training. It advocates the provision of suitable and adequate apparatus and equipment for teaching purposes, the foundation of scholarships for students, the engagement of experts with experience in industrial training, and the creation of central institutions to supplement the work carried on by the provincial and local authorities. Workers in factories whose main task is to attend or to operate machines should, it is suggested, receive instruction which would develop all-round skill and increase their interest beyond the routine of automatic operations. Such training should be provided as will conserve and develop occupations in which skilled handicraft is required. The interests of the rural population should be preserved so far as possible by industrial training and technical education suitable to the needs of its workers. The needs of girls and women for organised instruction and training in housekeeping and home-making under modern industrial conditions should be recognised. The report also recommends that schools for fishermen should be established, and that provision be made for instruction in packing and curing. The distinguishing characteristic of the report is the attention which it gives to the problems of the rural communities.

## SOCIETIES AND ACADEMIES.

### LONDON.

**Royal Society**, June 12.—Sir Archibald Geikie, K.C.B., president, in the chair.—Commendatore G. Boni: Address on recent researches on the Palatine, in relation to geology, ethnology, and physics.—J. G. Thomson and D. Thomson: The growth and sporulation of the benign and malignant Tertian malarial parasites in the culture tube and in the human host.—Sir David Bruce, Majors D. Harvey and A. E. Hamerton, and Lady Bruce: (1) *Plasmodium cephalophi* sp. nov. (2) The trypanosome causing disease in man in Nyasaland. II., Susceptibility of animals to the human strain. (3) Trypanosome diseases of domestic animals in Nyasaland. I., *Trypanosoma simiae* sp. nov.

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Part ii., The susceptibility of various animals to *Trypanosoma simiae*. (4) Trypanosome diseases of domestic animals in Nyasaland. I., *Trypanosoma simiae* sp. nov. Part iii.

**Zoological Society**, June 3.—Prof. E. W. MacBride, F.R.S., vice-president, in the chair.—Sir Arthur H. Church: Notes on turacin and the turacin-bearers. This paper contains a summary of the chief facts as to the composition, properties, and occurrence of turacin, the soluble crimson pigment of the Musophagidæ. Special stress is laid upon its constancy of composition, the limitation of its occurrence to certain plant-eaters, and the relation of its spectrum to the spectra of hæmoglobin and chlorophyll. Some current errors concerning turacin are corrected.—Dr. P. Chalmers Mitchell: Observations on the anatomy of the shoe-bill (*Balaeniceps rex*). The author showed that *Balaeniceps* and *Scopus* shared so many anatomical characters, and of these so many occurred also in storks, that if the reasoning generally followed by anatomical ornithologists were adopted, *Balaeniceps* and *Scopus* must be placed with storks rather than with herons. He submitted, however, that such a method was irrational, unless it were accompanied by a much closer scrutiny of the value of the characters than had hitherto been made or was yet possible, and that for the present *Balaeniceps* must be regarded as the representative of a division equivalent to storks and herons. He thought also that the relation of the Steganopods to these three groups required reconsideration.—T. H. Withers: Some Miocene Cirripedes of the genera *Hexelasma* and *Scalpellum* from New Zealand. An account is given of the "gigantic Cirripede" of New Zealand, originally described as *Scalpellum aucklandicum*, of which remains have long been known to occur in the Waitemata Beds (Miocene) of Motutapu Island, Auckland Harbour.—Prof. A. Dendy and R. W. Row: The classification and phylogeny of the Calcareous sponges, with a reference list of all the known species, systematically arranged. This memoir aims at a complete revision of the genera of Calcareous sponges. Fifty recent genera are recognised and diagnosed, and all the described species, amounting to 433, are arranged under these genera. The rejected generic names, which are listed separately, amount to ninety-seven. The fifty accepted genera are grouped in ten families, and Poléjaeff's subdivision into Homocœla and Heterocœla is abandoned.—Surgeon J. C. Thompson: Contributions to the anatomy of the Ophidia.—Prof. T. Wingate Todd: Observations on Osteomalacia in the zoological collections of Manchester and Cleveland.

**Linnean Society**, June 5.—Prof. E. B. Poulton, F.R.S., president, in the chair.—Miss L. S. Gibbs: A contribution to the flora and plant-formations of Kinabalu and the highlands of British North Borneo.—H. Scott: The Histeridæ of the Percy Sladen Expedition to the Seychelles.—Mme. Weber van Bosse: Red marine algæ from the Indian Ocean.—J. G. Needham: Myrmeleonidæ.—W. L. Distant: Rhynchota from the Seychelles. Part I., Heteroptera.—Prof. R. J. Harvey Gibson: *Mystropetalon*, Harv.

**Mathematical Society**, June 12.—Prof. Love, president, in the chair.—Sir J. Larmor: The electromagnetic force on a moving charge in relation to the energy of the field.—Prof. E. Laudau: Einige Ungleichungen für zweimal differenzierbare Funktionen.—G. H. Hardy and J. E. Littlewood: (1) The fractional part of  $n^k\theta$ . (2) The trigonometrical series associated with the elliptic  $\theta$ -functions.—Dr. T. J. P.A. Bromwich: Foucault's pendulum.—J. Hammond: A certain definite integral.



**Royal Astronomical Society**, June 13.—Major E. H. Hills, C.M.G., F.R.S., president, in the chair.—F. W. Dyson and E. W. Maunder: Position of the sun's axis as determined from photographs of the sun from 1874 to 1912, measured at the Royal Observatory, Greenwich. In a previous paper corrections to the position of the axis were deduced from observations of spots crossing the sun's disc; in the present paper the material employed was extended by the consideration of spot groups passing across the further side of the sun. A still more important addition consisted in the observation of the latitudes of spots near the centre of the disc. No change was observed, either with sun-spot cycle or with phase.—A. S. Eddington: Preliminary results of observations with the Cookson floating zenith telescope. Mr. Cookson had photographed trails of the same star with reversed positions of the instrument; at Greenwich trails of different stars were taken, a method which brings the trails closer together, and near the centre of the plate. This method considerably reduced the probable error, but there remained discordances, the cause of which was uncertain; there seemed reason to believe that they were atmospheric.—J. A. Harker: The origin of solar electricity. A simple apparatus was described with which experiments were made, showing increase of electrical emission in all metals with increasing temperature. The cosmical bearing of the phenomena observed was pointed out.—Prof. E. C. Pickering: Some work carried on at the Harvard Observatory, especially the classification of stellar spectra by Miss Cannon. One thousand spectra had been classified by Miss Cannon alone in three years, but with her great experience and by carefully organising the work, Miss Cannon and her staff of assistants were now able to classify 5000 spectra a month. The work to be done was very great; there appeared to be more than 150,000 spectra to be dealt with.—Miss Cannon: Classification of spectra of gaseous nebulae. Many gaseous nebulae have precisely the character of the spectra of stars of the fifth type.—S. S. Hough: Progress of the Cape of Good Hope share in the work of the Astrogaphic Chart. The catalogue plates were all taken and checked by comparing the overlapping quadrants. Mr. Hough described briefly the other work carried on at the Cape, especially mentioning the high degree of stability of the system of meridian marks used.—Dr. H. N. Russell: Studies of stellar evolution, carried on at the Princeton Observatory. Dr. Russell showed diagrams exhibiting the relation between the spectra of stars and their real brightness, that is the brightness which they would have if all were placed at a uniform distance corresponding to a parallax of ten seconds. Interesting relations between colour and brightness were shown by the diagrams.

## CAMBRIDGE.

**Philosophical Society**, May 19.—Dr. Shipley, president, in the chair.—Dr. G. F. C. Searle: (1) Some methods of measuring the surface tension of soap films. In one method the pressure excess due to a curved soap film is measured by aid of what may be called a "viscosity potentiometer." Air from a gasometer flows through two tubes AB, BC in series. The pressure at A is measured by a manometer; the end C is open to the air. From the junction B a side tube leads to a cup with a horizontal circular rim on which a soap film is placed. On account of the viscosity of the air, there is a fall of pressure along each tube. For a given flow of air, the fall of pressure in either tube is proportional to the length of the tube, and inversely proportional to the fourth power of its internal radius. The excess of the pressure at B over that of the atmosphere causes the film to become part of a sphere. From the distance of the highest

point of the film above the plane of the rim and from the radius of the rim, the radius,  $r$ , of the film can be computed. (2) A simple method of testing lens systems for aberration. On account of spherical aberration, a lens does not bring to a mathematical point all the rays which have reached it from an object point on its axis. When there is aberration, the emergent beam has at one place a finite minimum cross section called the least circle of aberration; the smaller this circle is the more nearly is the lens free from spherical aberration for the given position of the object point. A metal plate is pierced with three equally spaced circular holes, A, B, C, each about 0.1 cm. in diameter, and the distance AC (measured from centre to centre) is about 2 cm. The holes are illuminated by a flame and their "images" formed by the lens system under test are received upon a very fine ground-glass screen backed by a micrometer scale divided to 0.01 cm.; this scale is viewed by an eyepiece. The examination shows whether the lens is free from spherical aberration or whether it is (1) under-corrected or (2) over-corrected for aberration.—R. D. Kleeman: The unstable nature of the ion in a gas. The ions in a gas in thermodynamical equilibrium must at any instant consist of free ions and clusters of various complexities (Proc. Camb. Phil. Soc., vol. xvi., pt. iv., p. 285). In order to obtain some experimental information on the nature of the ions, the ionisation by collision between a gauze and plate was studied, the initial ions being formed outside the space between gauze and plate in a weak field which drew the ions through the gauze. Some of the elementary ions were thus able to form clusters before being seized upon by the strong field producing further ions by collision.—W. A. Douglas Rudge: A dust electrical machine. The author has shown that clouds of dust raised by the wind or by artificial means are always strongly charged with electricity, the sign of the charge depending upon the nature of the dust. By a suitable arrangement of apparatus it is possible to get a continuous supply of electricity, by directing a current of air laden with dust through an insulated tube. When the current is passing a stream of sparks, sometimes 6 cm. in length, may be obtained from the tube. Flour, sulphur, road dust, or fine iron filings may be used. The air which escapes from the exit tube of the apparatus is also strongly charged, and if the apparatus is used inside a room the charge may be retained by the air of the room for more than half an hour. The origin of the charge upon the apparatus is probably due to (1) the actual raising of the cloud, (2) friction of the dust against the walls of the tube.—R. Whiddington: A mechanical vacuum tube regulator. One of the devices for regulating the speed of cathode rays within a discharge tube is to provide the cathode with a movable glass sheath. The position of the sheath determines the speed of the rays. Experiments are described which show that the inside of the sliding sheath concentrates the cylindrical beam of rays to a fine beam, thus diminishing the effective size of the cathode.

## EDINBURGH.

**Royal Society**, May 4.—Sir William Turner, K.C.B., president, in the chair.—Dr. W. S. Bruce: The skulls of antarctic seals (Scottish National Antarctic Expedition). The paper contained the measurements of the skulls of the different seals found in the Antarctic, with careful photographs of the skulls in various aspects.—Miss Laura R. Thornley: The Bryozoa of the Scottish National Antarctic Expedition. Of the eighty-five species described, three were new to science and six of the remainder had been found in the southern seas for the first time.—W. Watson: The



compressibility of solutions of certain salts. Dilute solutions of NaOH, KOH, MgSO<sub>4</sub>, ZnSO<sub>4</sub>, and Na<sub>2</sub>CO<sub>3</sub> were investigated by the electrical-contact method of measuring compressibility. The pressures were from one to one thousand atmospheres, and the temperature was 15° C. Within certain limits the observed compressibilities were found to satisfy Tamman's formula,

$$\frac{1}{v_0} \frac{dv}{dp} = \frac{A}{B + p + \Delta k^2} \frac{1}{v_{\Delta k}}$$

where  $\Delta k$  is the internal pressure due to the added salt and A and B are constants.

May 18.—Prof. T. Hudson Beare, vice-president, in the chair.—J. H. Harvey Pirie: Deep-sea deposits of the Weddell Sea and South Atlantic Ocean. The *Scotia* collections included three main types, viz. globigerina ooze, diatom ooze, and glacial muds and clays. The latter differs from most blue muds of terrigenous origin mainly in the character of its finest constituents—"rock feons"—and in the irregular size of its coarser components, this being due to its distribution by floating ice. A peculiar feature is the absence of diatoms, although they flourish in the surface waters over it. They seem to be carried off northwards by currents set up by the melting ice to be deposited in the diatom ooze band to the north.—F. Gordon Pearcey: Foraminifera collected by the *Scotia*. A record of 267 species, including eleven new forms, separated from the deposits. The collection is very rich in arenaceous forms (to which most of the new species belong) from the glacial deposits. It includes also examples of such rare forms as *Verammosphaera fusca*.—Miss Margaret Moir: The effect of thermal treatment and the effect of longitudinal strain in inducing a sensitive state in certain magnetic materials. Under certain conditions it was found that longitudinal strain and heating had very similar effects on the manner in which the steels experimented with responded, as regards their induction, to the magnetising force acting on them.

#### PARIS.

Academy of Sciences, June 2.—M. F. Guyon in the chair.—E. L. Bouvier: The genera *Pseudibaculus* and *Nisto*.—M. de Forcrand: The Trouton quotient and the molecular heat of vaporisation of pure bodies boiling at high temperatures. In connection with a modified Trouton formula recently proposed by the author, the experimental methods of determining the latent heat of vaporisation at high temperatures are discussed, and preference is given to the vapour-pressure method, with application of the Clapeyron equation. Experimental data for mercury, cadmium, zinc, bismuth, lead, silver, tin, and copper are compared with those deduced from the Forcrand formula.—M. Ciamician was elected a correspondant for the section of chemistry in the place of the late Lecoq de Boisbaudran.—J. Bosler: The spectrum of the Schaumasse comet 1913a. Three condensations are clearly shown on the spectrographs, the blue band of the Swan spectrum, the cyanogen band ( $\lambda$  388), and a large band  $\lambda$  400 to  $\lambda$  407.—M. Borrelly: Observations of the comet 1913a (Schaumasse) made at the Observatory of Marseilles with the comet-finder. Positions of the comet and comparison stars are given for May 9, 10, 15, 22, 29, and 30.—M. Coggia: Observations of the comet 1913a (Schaumasse) made at the Observatory of Marseilles with the Eichens 26-cm. equatorial. Positions for May 26, 27, 28, and 29.—N. Lusin: The convergence of Fourier's trigonometrical series.—Paul Lévy: The integration of functional partial differential equations.—Jacques Chapelon: The numbers of classes of positive binary quadratic forms with negative determinant.—Vasilescu Karpen: Hovering flight.—Louis Roy: Com-

plement to two recent notes on the movement of indelinite viscous media.—Ernest Esclangon: A temperature regulator. The regulator consists of a circular glass tube containing mercury and a volatile liquid supported on a knife edge at the centre of the circle formed by the tube. It is in indifferent equilibrium, and can be rendered extremely sensitive. Curves are given showing the behaviour of this as compared with an ordinary bimetallic regulator.—R. Détrait: The slip of liquids on the walls of capillary tubes. The flow of two liquids, petrol and water, was studied in tubes of glass, wetted by both liquids, and sulphur, wetted by the petrol only.—H. Parenty: The reconstitution photographically of certain invisible details of ancient drawings. Lighting in various ways a *Décollation de Saint Jean Baptiste*, attributed to Rubens, the signature *Rubès* appeared, the first two letters in all the negatives, the last three in one or other of them.—Pierre Weiss: The kinetic theory of the paramagnetism of crystals.—G. Friedel: The general law of the diffraction of the Röntgen rays by crystals.—A. Perot: The movement of the light centres in electric discharges in Geissler tubes.—G. Malacozo and Mlle. A. Moschkoff: The deflocculation of starch and the solution of glucose.—Edouard Bauer: 1-Benzoyl-2-phenyl- $\Delta_1$ -cyclopentene. With sodium amide this compound behaves similarly to benzophenone, breaking up partially into 2-phenyl- $\Delta_1$ -cyclopentene-1-carboxylic acid and benzene and partially into 1-phenyl- $\Delta_1$ -cyclopentene and benzamide.—E. Léger and Ferdinand Roques: Contribution to the study of carpine or pilosine.—M. Chaillot: Researches on the morphology of the bud in Labiates with subterranean stolons.—E. Boucherie: The cytological phenomena and sporogenesis in *Barbula muralis*.—M. Mollard: Semi-parasitic *Lepidium sativum* produced experimentally.—D. Chouchak: The penetration of different forms of nitrogen in plants; adsorption phenomena.—N. Patouillard: A conidiferous *Septobasidium*.—J. M. Laby: The physical signs of professional superiority in dactylographs.—L. Bordas: The gizzard of the Dytiscidae.—A. Gruvel: Fishing for the large Cetaceans on the western coast of Africa. The present rate of destruction is so great that an international control is suggested.—Edouard Chatton: Spontaneous septicemia due to the cocobacillus in the cockchafer and silkworm.—Auguste Lumière and Jean Chevrotier: The toxicity of antityphoid vaccines. The vaccines studied proved to be very slightly toxic for the guinea-pig.—M. Dalloni: The marine Oligocene and its fauna in Algeria.—Alphonse Berget: The exact position of the continental pole of the earth.

June 9.—M. F. Guyon in the chair.—E. Jungfleisch and L. Brunel: The reactions between water and sulphurous acid at varying temperatures. The formation of hyposulphurous acid. Aqueous solutions containing from 20 per cent. to 21 per cent. of sulphur dioxide were heated to various temperatures. At about 150° C. sulphur and sulphuric acid were formed, an equilibrium being reached in twenty days. A study of the reaction at lower temperatures showed that hyposulphurous acid was formed; this then decomposes into sulphur and sulphuric acid.—Prince Albert de Monaco: The twenty-fifth scientific expedition (*Hirondelle II.*). Results obtained in the neighbourhood of the Azores and Madeira in the summer of 1912.—Pierre Duhem: An elementary remark on the problem of spherical waves.—Paul Sabatier and A. Mailhe: The use of calcium carbonate as a catalyser of the organic acids and their anhydrides. A column of precipitated chalk, 15 cm. to 40 cm. long, and maintained at a temperature of 450° C. to 500° C., gives a fair yield of ketones when the vapours of the acids are led over it. Acetic acid and propionic acid give



very good yields, but there is an increase in the secondary products as the molecular weight of the acid is higher. Benzoic acid gives no benzophenone, but mixtures of benzoic and fatty acids give fair yields of the mixed fatty-aromatic ketones.—A. de Gramont was elected a member of the section of free academicians in succession to the late Alfred Picard.—J. Guillaume: Observation of the occultation of a star of the eighth magnitude by Jupiter made at the Observatory of Lyons.—J. Guillaume: A curious aspect of the third satellite of Jupiter. Instead of the usual round disc the satellite Ganymede presented a gibbous appearance recalling that of Mars at certain periods. Two illustrations of the satellite are given.—L. Godeaux: The classification of the involutions of genus 1 belonging to a surface of genus 1.—A. Buhl: Formulæ analogous to the formula of Stokes.—Th. Got: The fundamental domains of certain Fuchsian groups.—M. Schwarz and M. Villatte: The first determination of the difference of longitude by wireless telegraphy in western French Africa. The stations were Kissidougou and Conakry.—A. Magnan: Data for the construction of an ideal monoplane based on the flight of birds.—M. Levavasseur and M. Gastambide: An aëroparachute.—Eugène Bloch: The principle of an electrostatic motor. An ordinary quadrant electrometer is modified to serve as a motor.—M. de Broglie: The diffraction and reflection of the Röntgen rays.—Jacques Carvallo: The electrical conductivity of some pure liquids: ammonia, acetone, ethyl and methyl alcohol. The method used was to seal up the purified liquids in glass tubes furnished with electrodes, and apply a constant electromotive force. The liquid is purified by the action of the current, without, however, any electrolytic phenomena being observable, and the current is noted as a function of the time and voltage.—A. Tian: The determination of the order of a photochemical reaction. An attempt to elucidate the effect of absorption on the reaction velocity.—Eugène Fouard: A law of tonometry and its consequence as regards the ionic theory.—P. Leroux: Magnetic study of the constitution of some antimony alloys. Curves are given for the tin-antimony and lead-antimony alloys.—Daniel Berthelot and Henry Gaudechon: The photochemical synthesis of a new compound, carbon oxycyanide, by means of ultra-violet light. Mixtures of carbon monoxide and cyanogen are acted upon by ultra-violet light of wave-length less than  $0.25\mu$ , the gases combining in equal volumes. The substance formed is gaseous at about  $100^{\circ}\text{C}$ ., and solid at the ordinary temperatures. An analysis, combined with a study of the reactions of this compound, shows that it is carbonyl cyanide,  $\text{CO}(\text{CN})_2$ , analogous with carbonyl chloride.—F. Bourion and A. Deshayes: The quantitative separation of iron and chromium.—H. Copaux: The constitution of the para-molybdates and the para-tungstates.—Léon Guillet: The transformation points and the structure of nickel-chrome steels.—Jean Nivière: The preparation of diglyceric alcohol.—Marcel Godchot and Félix Taboury: Some derivatives of  $\beta$ -methylcyclopentanone. The preparation of the monochloro-derivative and some substances obtained from this are described.—A. Guilliermond: New observations on the chondriome of fungi.—D. Chouchak: The absorption of different forms of nitrogen by plants; the influence of the medium. The absorption of mineral or organic nitrogen by young wheat plants does not depend immediately upon the living material. It is determined by substances which are contained in the roots and which are not removed by boiling water.—R. Argand: A directly excitable endocardiac region.—Jacques Mawas: Action of the traction of the zonule on the general configuration of the human crystalline lens. The possibility of flattening the periphery of the crystalline lens during accommodation.—Em.

Bourquelot and H. Hérissé: The biochemical synthesis with the aid of emulsin of a glucoside isomeric with salacin.  $\beta$ -Salicylglucoside.—L. Cayeux: The meaning of mineral gravels included in the Hettangian iron deposits of Burgundy.—Jean Groth: The southern border of the Iberian Meseta.—Lucien Mayet and Joseph Mazenot: The discovery of a prehistoric cave of the Aurignacian age at Brancion (Saone-et-Loire). The cave showed three different archæological levels and a fairly uniform fauna of the middle Quaternary.

## CAPE TOWN.

Royal Society of South Africa, April 16.—The president in the chair.—Miss E. L. Stephens: A new species of *Hæmatoxyton* (*Leguminosæ-Cæsalpiniæ*) from Great Namaqualand. The discovery of a South African species of *Hæmatoxylin* is of particular interest, as the genus has hitherto been represented only by one species—*H. campecheanum*, L., the log-wood tree, a native of Mexico, Central America, the northern parts of South America, and the West Indies. The species here described was found among rocks near Holoog, in Great Namaqualand, by Dr. H. H. W. Pearson, in February, 1909, during the Percy Sladen Memorial Expedition in South-West Africa, 1908-9. It is a shrub, 1-1.5 metres high, and it differs from *H. campecheanum* by its shrubby habit, its more or less pilose and glandular young parts and inflorescence, its smaller leaves, its longer flowered and terminal inflorescence, its bilabiate calyx, and its longer petals and stamens. On a more recent expedition, Dr. Pearson has obtained some wood of this species, which has yielded the characteristic log-wood dye.—G. Rattray: Notes on the pollination of some South African Cycads. *Encephalartos Altensteinii*, Lehm., is pollinated by insect agency, the pollen bearer being a weevil belonging to the genus *Phlæophagus*. Anemophily may still occasionally occur in this species. *E. villosus*, Lehm., from its habitat and cone structure, appears to be exclusively entomophilous. No evidence of entomophily has been found in *Stangeria Katzeri*, Rgl.—R. A. Dümmer: A synopsis of the species of *Lotononis* and of *Pleiospora*.—T. Muir: Note on an overlooked theorem regarding the product of two determinants of different orders.—R. T. A. Innes: Note on the Newcomb operators used in the development of the perturbative function.

## BOOKS RECEIVED.

- Herpetologia Europaea. By Dr. E. Schreiber. Pp. 54. (Jena: G. Fischer.) 2 marks.  
County Borough of Halifax. Bankfield Museum Notes. Second Series. No. 2, Ancient Egyptian and Greek Looms. By H. Ling Roth. Pp. 41+plate. (Halifax: F. King and Sons, Ltd.) 2s. 6d.  
National Antarctic Expedition, 1901-4. Meteorology. Part ii. Prepared in the Meteorological Office, under the superintendence of M. W. C. Hepworth. Pp. 26+charts. (London: The Royal Society.)  
Konstitutions-Formeln der organischen Chemie in graphischer Darstellung. By J. Loschmidt. Edited by R. Anschütz. Pp. 154. (Leipzig: W. Engelmann.) 5 marks.  
Handwörterbuch der Naturwissenschaften. Edited by E. Korschelt and others. 43 and 44 Lief. (Jena: G. Fischer.) 5 marks each Lief.  
Die Chemie als mathematisches Problem. By C. Mezger. Pp. 108. (Metz: G. Scriba.) 3 marks.  
Das selbstgefertigte Lichtbild. By W. Dix. Pp. 70. (Leipzig: Quelle and Meyer.) 1 mark.  
Ausländische Kultur- und Nutzpflanzen. By L. Trinkwalter. Pp. vi+120. (Leipzig: Quelle and Meyer.) 2.40 marks.