

Calendar of Discovery and Invention.

April 17, 1823.—Though Dalton in 1801 had remarked, "There can scarcely be a doubt entertained respecting the reducibility of all elastic fluids of whatever kind into liquids, and we ought not to despair of effecting it in low temperatures and by strong pressures exerted on the unmixed gases," it was not until 1823 that the question was submitted to systematic experiment. Faraday then first obtained liquid chloride and afterwards liquid carbonic acid, ammonia, etc. The details of this work were given to the Royal Society by Faraday in two papers dated Mar. 13 and April 10, and on April 17, Davy in another paper suggested the employment of some of these substances as mechanical agents.

April 17, 1891.—Mechanical traction on common roads long met with opposition from the authorities, and it was an important gain when on April 17, 1891, Leon Serpollet received authorisation to place his steam cars on the streets of Paris.

April 19, 1758.—On this day John Dollond obtained a patent for his achromatic telescope, and that same year he received the Copley Medal "for his curious experiments and discoveries concerning the different refrangibility of the rays of light," communicated to the Royal Society.

April 21, 1686.—As is well known, the publication of Newton's "Principia" was mainly due to Halley. On April 21, 1686, Halley read "A Discourse concerning Gravity" to the Royal Society as preparation for the "incomparable treatise of motion almost ready for the press"; six days later, Dr. Vincent presented to the Society the manuscript of the first book of the "Principia," and on May 19 the Society resolved that "Mr. Newton's Philosophiæ Naturalis Principia Mathematica be printed forthwith in quarto, in a fair letter."

April 21, 1783.—One of the great scientific controversies of the eighteenth century concerned the discovery of the composition of water. The experiments of Cavendish were described in a paper in January 1784, but Watt, so early as April 21, 1783, had written to Black, "In the deflagration of inflammable and dephlogisticated airs, the airs unite with violence—become red hot,—and on cooling totally disappear. The only fixed matter which remains is water, and water, light, and heat are all the products. Are we not then authorised to conclude that water is composed of dephlogisticated and inflammable air?"

April 22, 1663.—The first Charter of Incorporation of the Royal Society was granted in 1661, but it having been found that this failed to give the Society certain privileges essential to its welfare, a second charter was obtained, the patent for which was dated April 22, 1663.

April 23, 1868.—In a paper read to the Royal Society on April 23, 1868, Huggins described the first successful investigation of the motion of the stars in the line of sight by the application of Doppler's principle, announced in 1842.

April 23, 1884.—It is estimated that the development of the steam turbine has halved the cost of the generation of electricity. Though there had been many earlier inventions, no advance was made until 1884, when de Laval and Sir Charles Parsons secured their patents. The patents of Parsons, Nos. 6734 and 6735, taken out on April 23, 1884, were for "improvements in electric generators and in working them by fluid pressure" and for "improvements in rotary motors actuated by elastic fluid pressure, and applicable also as pumps."

E. C. S.

Societies and Academies.

LONDON.

Institute of Metals (Annual General Meeting), Mar. 9. —D. Hanson and Grace W. Ford: Investigation of the effects of impurities on copper. Pt. v.—The effect of bismuth on copper. Experiments on copper containing up to 0.1 per cent. of bismuth confirm the great embrittling effect of bismuth, and indicate that when more than a trace of bismuth alone is present in copper, the working properties, particularly the cold-working properties, are seriously affected. The solid solubility of bismuth in copper has also been investigated.—Clement Blazey: Brittleness in arsenical copper. A description is given of a type of brittleness in arsenical copper tubing developed by annealing in the temperature range 450° to about 650° C. The susceptibility to brittleness was inherent in the 'as cast' billets from which the tubes were made, and no alteration in hot and cold working methods could eliminate it. The degree of susceptibility varied from billet to billet, but the variation could not be connected with chemical composition. After remelting, no trace of brittleness could be developed. Over a period of several years the brittleness was encountered in a certain mill on three occasions, and appeared to be connected with the composition of the refinery charges and with melting operations.

Mar. 10.—R. Genders: The penetration of mild steel by brazing solder and other metals. The cracking of mild steel under slight stress when heated and wetted with brazing solder is due to rapid intercrystalline penetration of the steel by the brass. Copper behaves similarly to brass, but zinc, tin, and lead-tin solder have no perceptible action. The phenomenon of intercrystalline penetration is in many cases of a complex character, involving a third factor.—H. J. Miller: The penetration of brass by tin and solder, with a few notes on the copper-tin equilibrium diagram. The cracking of stressed brass articles by a process of intercrystalline penetration when in contact with molten solder of the tin-lead variety is associated with the phenomenon of 'season-cracking' and the penetration of mercury into brass. Tensile tests upon brass test-pieces surrounded by various molten metals and solders indicate that the stress required for penetration to take place is much higher than that required for the penetration of mercury. The eutectic composition of the series copper-tin alloys occurs with about 0.7 per cent. of copper as against 1 per cent. by Heycock and Neville, 2 per cent. by Guertler, Shepherd, and Blough, and 5 per cent. by Giolitti and Tavanti.—Harold J. Hartley: The attack of molten metals on certain non-ferrous metals and alloys. Penetration of the molten into the solid material occurs when the latter is stressed in tension. Fully annealed materials are attacked at very low stresses with ultimate breakdown.—H. Moore and S. Beckinsale: Notes on the manufacture and properties of hairsprings. To raise the elastic limit to the required degree, hardening by heat-treatment or by cold-working is necessary, but all hardening operations are liable to produce a state of imperfect elasticity detrimental to the spring. The use of low-temperature heat-treatments to restore elasticity after cold-working (drawing, rolling, and the coiling of the spring) is described. Steel hairsprings are subject to corrosion, but elinvar is highly resistant.—F. Hargreaves: (1) The application of strain methods to the investigation of the structure of eutectic alloys. Investigation of the lead-tin, tin-zinc, and copper-silver eutectics shows that straining by suitable methods results in markings due to slip,

similar to those which occur in the case of pure metals. The orientation of the lead-tin eutectic is apparently determined by that of the tin. (2) Note on the crystallisation of the lead-tin eutectic. Straining and etching methods applied to a 30-lb. ingot of lead-tin eutectic show the exterior to possess the largest crystal size with absence of distinct colonies. The middle consists of much smaller crystal units in the form of distinct colonies of coarser eutectic structure.—J. D. Grogan: The influence of calcium on aluminium containing silicon. With an appendix on the estimation of calcium in aluminium alloys by P. G. Ward. Calcium combines with the silicon present in commercial aluminium, forming a compound, probably CaSi_2 , which is almost insoluble in solid aluminium at all temperatures and exerts no age-hardening influence. By removing silicon from solid solution in aluminium, calcium improves the electrical conductivity of the latter.—M. Hansen: Note on the magnesium-rich magnesium-copper alloys. Some indication of the phase boundary of the solid solution of magnesium with copper has been obtained. The quenched alloys show no perceptible hardening by ageing.—R. Genders: The mechanism of inverse segregation in alloys. With an appendix on the accurate determination of copper in bronze by electrolysis by R. A. F. Hammond. None of the hypotheses which has been put forward to account for the occurrence of inverse segregation in alloys is fully in accordance with experimental fact. Some further factor must be taken into consideration. In extreme cases of inverse segregation, exudation at the surface of the casting occurs simultaneously with the escape of evolved gases. The variation of composition in chill-cast slabs of bronze containing 5 per cent. tin made by various methods of casting were determined. Considering the flow taking place in the mould during the formation of the ingot in relation to these results, a general theory of inverse segregation is advanced, in which the gas constituent in alloys is considered as part of the system. The evolution of gas from solution in the metal is regarded as of primary importance in determining variations in composition in the solid casting.—K. Honda and H. Endo: Magnetic analysis as a means of studying the structure of non-magnetic alloys. The present investigation is to show by means of examples that magnetic analysis applied to the case of non-magnetic elements, which are paramagnetic or diamagnetic, affords a convenient method of studying the equilibrium diagram for the alloys consisting of these elements. Not only is the melting point or the transformation point of an element given by a sharp discontinuity of the susceptibility-temperature curve, but the liquidus and the solidus of an alloy are also marked by a sharp break or bend. In some cases, small solubility is marked by a very large abrupt diminution of the diamagnetic susceptibility of one component on adding a small quantity of the other. Magnetic analysis is also convenient for the study of the actual state of an alloy when above its melting point, that is, in detecting the existence of an intermetallic compound in the liquid phase, the degree of dissociation of the compound with the rise of temperature, etc.—J. Newton Friend and W. E. Thorneycroft: Note on the silver contents of Roman lead from Folkestone and Richboro' Castle. Specimens of Roman lead from Folkestone and Richboro' Castle contained 0.0072 and 0.0078 per cent. respectively of silver.

Geological Society, Mar. 9.—L. J. Chubb and W. Campbell Smith: The geology of Maiao (Society Islands). Maiao, or Tubai Manu, which lies some 50 miles west of Tahiti, consists of a small volcanic

island about a mile long and 800 feet high, encircled by a barrier-reef six miles in diameter. The volcanic rocks collected from the central island include a basalt with numerous phenocrysts of olivine and augite, of the type known to be abundant in Tahiti and the Austral Islands, a phonolitic nepheline-tephrite, and an olivine-bearing basaltoid nepheline-tephrite somewhat similar to those described from Rurutu.—C. I. Gardiner: The Silurian inlier of Woolhope; with palaeontological notes by F. R. C. Reed. The beds seen in the inlier are those between the Llandovery and the Downtonian. The uppermost beds frequently show a slightly eroded surface, and on this rests a conglomerate of clay-pebbles or limestone fragments full of fish remains, forming the base of the Downtonian. Higher up come false-bedded sandstones and shales, and the highest beds seen are sandstones yielding *Lingula cornea*. The inlier has been affected by pressures in two directions. One from the southwest has markedly affected the southern portion of the inlier, at places bringing Downtonian deposits into contact with the Wenlock Limestone. The main result was the bending of the Silurian rocks into an anticline. Pressure also produced an anticline, the axis of which runs north-north-east and south-south-west. The two pressures have produced a more or less dome-like arrangement of the beds, but much faulting has gone on in parts of the area near Sollers Hope, Old Sufton, and Woolhope Cockshoot. Dr. F. R. C. Reed describes fourteen new species and five new varieties of brachiopods, lamellibranchs, gastropods, and trilobites.

Optical Society, Mar. 10.—Basil Graves: Microscopy of the living eye. The uses and advantages are illustrated of using a narrow beam of light for illumination and arranging that the axis of observation is so positioned as to place the object under view in the most favourable condition for observation, against a bright or dark background as the case may be. The non-coincidence of the observing and illuminating axes also enables troublesome specular reflections from the corneal and lens surfaces to be eliminated. Illumination by means of the reflection of the narrow beam from the iris, termed by the author 'retro-illumination,' is described. The rendering visible of the track of the light beam through the ocular media is explained and a term 'relucency' suggested for this property. As the result of continued observation over a period of years, the probable duration of certain conditions, in the crystalline lens for example, is capable of estimation.

Physical Society, Mar. 11.—G. M. B. Dobson and I. O. Griffith: Measurements of absorption coefficients of light filters. A portion of the slit of a spectograph is covered by the absorbing medium, and in front of the photographic plate or of the slit a neutral wedge is placed. The resulting spectogram consists of two parts, one due to light which has passed through the filter and the wedge, the other to light which has traversed the wedge only. From a knowledge of the distance between two points, one in each part of the spectogram, which are of the same density, the absorption coefficient of the filter at any wave-length may be determined. The source of light need not be constant.—T. L. Ibbs and L. Underwood: A comparison of the behaviour in thermal diffusion of nitrogen and carbon monoxide, and of nitrous oxide and carbon dioxide. The gas analysis required in the measurement of the effect is made by means of the Shakespear katharometer. The behaviour of nitrogen is similar to that of carbon monoxide. The effect given by carbon dioxide is generally a little greater than that given by nitrous oxide. The pairs of gases

examined provide a special case for the application of the Enskog-Chapman theory, as in each pair the molecular weights and mean collision areas are the same. It can thus be deduced that the molecular field of nitrogen is similar to that of carbon monoxide, and that the field of carbon dioxide differs little from that of nitrous oxide.—Robert R. Nimmo: Relighting of a neon lamp when momentarily extinguished at voltages below the striking potential. The time for which the continuous discharge of a neon lamp may be interpreted without putting out the lamp is of the order of 50 micro-seconds and depends on the voltage across the lamp and on the current passing through it.—G. B. Deodhar: Electricity of dust clouds. The factors governing the phenomena of electricity of dust storms are: (1) Material of the dust; (2) its size; (3) the gas raising the cloud; (4) the velocity of the gas; (5) the temperature. The first two factors are discussed. The electricity developed is of frictional nature. Some quantitative estimates of electrification of chlorides and nitrates of sodium and potassium are made, showing that chlorides of sodium and potassium are equally efficacious, whilst sodium nitrate is about $4\frac{1}{2}$ times as efficacious as potassium nitrate. Using prepared and graded dusts, it is shown graphically that, other things being the same, the number of volts developed by blowing increases very rapidly as the size grows less.

Mineralogical Society, Mar. 15.—C. E. Tilley: A melilite-spurrite- Ca_2SiO_4 assemblage from Larne (Antrim). This contact metamorphic assemblage, together with merwinite, perovskite, wollastonite, aegirine, and other minerals, occurs at the borders of Cretaceous limestone and a Tertiary dolerite near Larne. The rocks give evidence of considerable chemical interchange during metamorphism.—G. T. Prior: Alkaline rocks from Nimrud volcano, Armenia. Nimrud was a centre of eruption of alkali rocks similar to those of the Rift Valley, East Africa. The lava forming the main mass of the rim and the floor of the crater is a soda-rhyolite (comendite) containing anorthoclase feldspar and the soda-pyroxenes and soda-amphiboles aegirine, cossyrite, and riebeckite. More basic lavas overlying the soda-rhyolites resemble the kenytes of East Africa in containing numerous corroded phenocrysts of anorthoclase. Ordinary olivine-basalts with phenocrysts of labradorite also occur.—G. Greenwood: Rotating crystal X-ray photographs. The first part of the paper deals with this method of crystal analysis as used in the German laboratories, where it was studied by the author. Two substances, tetramethylammonium iodide $\text{N}(\text{CH}_3)_4\text{I}$ and tetraethylammonium iodide $\text{N}(\text{C}_2\text{H}_5)_4\text{I}$ were investigated. The unit cell of $\text{N}(\text{CH}_3)_4\text{I}$ is a tetragonal unit of dimensions $a = 8.05 \text{ \AA.U.}$ and $c = 5.75 \text{ \AA.U.}$, and the space group is either D_2^2 or V_2^2 , most probably the latter. Hence the crystal class is not the holohedral one proposed by L. Vegard. The unit cell of $\text{N}(\text{C}_2\text{H}_5)_4\text{I}$ has dimensions $a = 12.29 \text{ \AA.U.}$, $c = 6.82 \text{ \AA.U.}$ when referred to the axes demanded by the scalenohedral space group V_2^2 to which the substance belongs. A smaller unit can be found, using as a axis half the base-diagonal; the cell then has $a = 8.86 \text{ \AA.U.}$ and $c = 6.82 \text{ \AA.U.}$ The nitrogen and the iodine atoms in both substances are crystallographically identical, but the methyl and ethyl radicles may be half of one kind and half of another. The hypothetical structures suggested for these substances by Groth, as deduced from topic axes, are also discussed.—L. J. Spencer: Biographical notices of mineralogists recently deceased (third series). The average age of the forty lives described was sixty-eight years.

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Royal Meteorological Society, Mar. 16.—G. I. Taylor: Turbulence (Symons Memorial Lecture). Turbulence is a condition of motion in a stream of fluid which occurs when it flows past solid surfaces or when two layers of fluid flow over one another. Turbulence increases the diffusing power of air until it is 100,000 times as great as that of air at rest. So great is this effect that in the case of tidal motions in the sea it is possible to prove that turbulence is responsible for the gradual slowing down of the earth's rotation, and consequent lengthening of the day which astronomers have been able to observe. Some observations of the details of turbulence show that eddying motion in the atmosphere is spread out equally in all directions in space.

DUBLIN.

Royal Dublin Society, Feb. 22.—E. J. Sheehy: The correlation of nutritive value with dry matter content of pastures. Two pastures, in which the nutritive value or stock-carrying capacity was in the ratio of about 3 to 1, were compared. The chemical analysis of the dry matter of the herbage—total nitrogen, ether extract, crude fibre, nitrogen-free extract, and total ash—showed no material difference, nor did the digestibility of the herbage from the two pastures differ. A difference in dry-matter content, which amounted to about 25 per cent. in favour of the richer pasture, was revealed; and a correlation was established between the dry-matter content and the proportions of grasses, clovers, and broad-leaved miscellaneous plants (weeds) present.—J. Wilson: The maintenance requirements of cattle on different kinds of rations and at different rates of production. Contrary to Kellner's and Armsby's assumption, it has been shown that maintenance not only rises with the rate of production, but that the rise is accelerated as the rate of production rises. The present paper discusses 'dynamic action' and suggests that such action is really a part of the digestive process, and the heat set free a result of the work done.

PARIS.

Academy of Sciences, Mar. 7.—The president announced the death of Charles Graebe, *correspondant* for the Section of Chemistry.—Messager: The rectangular beam loaded at a point. Angle under the charge when it becomes infinitely long. Consequences for plates.—André Blondel: Methods for position-finding by Hertzian waves.—E. Mathias: Contribution to the study of fulminating material (lightning): examples of spontaneous decomposition.—M. Potron: The distribution of a system of integers in groups of given sums.—Beniamino Segre: The diagrams of probability.—Paul Alexandroff: A new generalisation of the Phragmén-Brouwer theorem.—Jacques: Networks the tangents of which belong to linear complexes.—G. Pólya: A theorem of Hadamard relating to the multiplication of singularities.—Hadamard: Remarks on the preceding communication.—P. Tzitzéica: A certain system of partial differential equations.—D. Riabouchinsky: Some cases of cavitation.—Raoul Ferrier: Planck's oscillator.—Nicolas Kryloff: The approximate integration of some partial differential equations of mathematical physics.—Léon Brillouin: The statistics of light quanta (photons).—H. Pélabon: Rectifying contacts.—S. Piña de Rubies: The arc spectrum of gadolinium. Measurements made at the normal pressure, between $\lambda 3100$ and $\lambda 2200$.—H. Jedrzejowski: The ionising powers of RaB and RaC.—F. Bourion and E. Rouyer: The determination, by the boiling-point method, of the affinity relative to the formation of complex com-

pounds between cadmium halides and the alkaline halides.—H. Devaux and E. Aubel: The absorption of ions by glass. The surface of glass (glass wool) is capable of absorbing the ions Ca, H, K, Na, NH₄, quinine, and the action is reversible. Glass behaves as a gel, since adsorption takes place not only at its surface but also in its mass.—J. E. Verschaffelt: The specific heats of a sufficiently cooled condensed phase. An adverse criticism of a recent communication under the same title by M. Perrakins.—Henri Marcelet: The heats of combustion of some oils of marine animals. Data are given for eight samples of oil, ranging from 8700 cal. to 10,790 cal. per gram.—A. Travers and Joutot: The iodometric estimation of the antimonic ion. The reaction between antimonite salts and potassium iodide is complete in the presence of a considerable proportion of concentrated hydrochloric acid.—Ch. Courtot and C. Vignati: Researches in the fluorene series.—André Meyer: The sulphonation of anthraquinone in the presence of mercury.—Ch. Maurain: The distribution of earthquakes in latitude. A statistical study shows that the frequency of earthquakes is greater the smaller the latitude.—D. Faucher and E. Rougetot: Contribution to the study of the mistral.—P. Martens: The vital structure of the nucleus and the action of fixing reagents.—A. Guilliermond: Cytological and taxonomic observations on yeasts of the group of the *Sporobolomyces*.—J. Szymanek: Some observations on the morphology of the mycelium and suckers of *Phytophthora infestans* in the tubercle of the potato.—Boodan Varitchak: The development of the perithecium in *Cordyceps militaris*.—P. Cappe de Baillon: The descendance of double monsters of phasmids.—Maurice Fontaine: The comparative compressibility of the serum and the blood globules of the horse. The blood serum of the horse is less compressible than an isotonic solution of common salt. The complete blood is less compressible than the serum of the same blood.—Roger Douris and Georges Giquel: A method of differentiation of pathological sera (cancer, syphilis, tuberculosis). The characters of cancer serum. The turbidity produced by the addition of varying quantities of distilled water to the serum is compared with the same serum diluted with 0.9 per cent. sodium chloride solution. The difference in the optical density of the two tubes is determined in the Yvon photometer. The differences observed with normal sera are given by numbers between 0 and 3, for syphilitic sera, numbers between 3 and 10. If the number is higher than 10, under the experimental conditions described, the diagnosis is in favour of cancer.—Y. Manouelian and J. Viala: *Encephalitozoon Negrii*, the parasite of encephalomyelitis in young dogs.—A. Borrel: The verminous etiology of certain cancers.

GENEVA

Physical and Natural History Society, Mar. 3.—F. Chodat: The importance of isoelectric points in the preparation and activity of ferments. The author has studied the mother-liquors of the following ferments: saccharogenase, prunase, catalase, tyrosinase. In most cases several minima of dispersion occur in hydro-alcoholic media which are considered as indices of isoelectric points, each minimum corresponding to one of the amphoteric electrolytic colloids which are dispersed in the extract.—S. C. Guha: The preferential electric conductivity of the pistil of some plants. The pistil of the plants studied shows a basipetal preferential conductivity for the incident current, a difference which disappears after pollination.—E. Briner and A. Schidlof: The ebullioscopic paradox. It is established by calculation that external work is effected by the atmospheric pressure

during the condensation of the vapour, and that this work is much higher than the compensating work, evaluated on the basis of a reversible transformation.—E. Cherbuliez and P. Rosenberg: Researches on the silicates. Having applied the determination of electrical conductivity to kaolin, quartz, and orthose, and to their mixtures, the authors have proved that kaolin presents very large variations as a function of the time to reach a limiting value, and this for several values of the temperature. The phenomenon is irreversible and follows the law of a monomolecular reaction.—P. Balavoine: The refractometric estimation of alcohol in fermentation products. The refractive indices of wine distillates have been examined, and it is shown that the volatile acidity of these distillates (mainly due to acetic acid) modifies these indices in a manner not permitting the use of an empirical correction table. A table has been prepared, based on the experimental data, which agrees well with the pycnometric measurements.—R. Wavre: The stratification of the planets and Fredholm's equation. Fredholm's equation, to which the problem of the stratification of the planets may be reduced, possesses a symmetrisable nucleus.

VIENNA.

Academy of Sciences, Feb. 17.—A. Kieslinger: Second preliminary report on geological petrographic researches in the Southern Kor Alps of Styria. A survey of the Kor Alps district including Unterdrauburg and Deutschlandsberg-Wolfsberg. The present reports concern metamorphic rocks and a series of mineralogical peculiarities—destratification (*Bentschieferung*), deformations (*Verwachsungen*), recrystallisation (*Umkrystallisieren*), rough injected mica schist (*Glimmerschiefer*). Between the textures of the injection-changed rocks emerge remains of still older textures (*Durchbewegungstexturen*). The lamelliform gneisses with streaky texture are clearly intrusive rocks.

Official Publications Received.

BRITISH.

- Biological Reviews and Biological Proceedings of the Cambridge Philosophical Society. Edited by H. Munro Fox. Vol. 2, No. 2, March. Pp. 91-197. (Cambridge.) 12s. 6d. net.
- Aeronautical Research Committee: Reports and Memoranda. No. 1054 (M. 48): The Variation in the Fatigue Strength of Metals when tested in the Presence of Different Liquids. By G. D. Lehmann. Work performed for the Engineering Research Board of the Department of Scientific and Industrial Research. (E.F. 184.) Pp. 13+14 plates. 1s. net. No. 1056 (Ae. 239): Algebraic Formulae for the Performance of an Aircraft at Full Throttle. By R. S. Capon. (D.1. Special Technical Questions, 181.—T. 2296.) Pp. 13. 9d. net. (London: H.M. Stationery Office.)
- Colony and Protectorate of Kenya. Agricultural Census: Seventh Annual Report, 1926. Pp. 34. (Nairobi: Department of Agriculture.)
- The British Mycological Society. Transactions. Edited by Carleton Rea and J. Ramsbottom. Vol. 12, Part 1, March 23. Pp. 77+10 plates. (Cambridge: At the University Press.) 7s. 6d. net.
- More Books to Read (1920-1926) on Social and Economic Subjects. A Supplement to "What to Read," containing Publications from December 1920 to December 1926. Pp. 30. (London: The Fabian Society.) 6d.
- Proceedings of the Geologists' Association. Edited by A. K. Wells. Vol. 33, Part 1, March 21st. Pp. 144. (London: Edward Stanford, Ltd.) 5s.
- Report on the Operations of the Department of Agriculture, Madras Presidency, for the Year 1925-26. Pp. ii+79+4+8 plates. (Madras: Government Press, 1926.) 12 annas.
- Madras Agricultural Department. Year Book, 1925. Pp. ii+63+12 plates. (Madras: Government Press.) 1 rupee.
- Astrographic Catalogue 1900.0. Sydney Section, Dec. -51° to -65°. From Photographs taken at the Sydney Observatory, New South Wales, Australia. Vol. 7. R.A. 12^h to 18^h, Dec. -52° to -54°, Plate Centres Dec. -53°. Pp. 65. Vol. 8. R.A. 15^h to 24^h, Dec. -52° to -54°, Plate Centres Dec. -53°. Pp. 32. (Sydney, N.S.W.: Alfred James Kent.)
- Transactions of the Geological Society of South Africa. Vol. 29, containing the Papers read during 1926. Pp. iv+150+17 plates. 42s. Proceedings of the Geological Society of South Africa. Containing the Minutes of Meetings and the Discussions on Papers read during 1926; to Accompany Vol. 29 of the Transactions, January-December 1926. Pp. iii+xlix. (Johannesburg.)