

Societies and Academies.

LONDON.

Optical Society, June 9.—T. H. Harrison : The use of photo-electric cells for the photometry of electric lamps. A description is given of apparatus and experiments designed for giving the highest accuracy and precision in the photometry, using photo-electric cells, electric lamps. Although the methods adopted are not novel, yet every care has been taken to obtain the highest sensitivity in the photo-electric current measuring apparatus and to maintain the lamps at a steady, accurately known voltage. It is claimed, therefore, that the results are useful in showing the maximum capabilities of photo-electric cells when used in the usual manner with a sensitive electrometer or electroscope. Sources of error and their elimination and the computation of the accuracy of the results are discussed.—R. Kingslake : An experimental study of the best minimum wave-length for visual achromatism. A special telescope is described, in which the chromatic aberration can be varied continuously without introducing any other undesirable aberrations. By the aid of this apparatus, many determinations have been made as to the best type of achromatism for visual observations, in daylight, in artificial light, and on astronomical objects. Several observers were employed to make settings, and their opinions as to the most desirable type of achromatism are tabulated and compared. In general it is found that a moderate amount of undercorrection is required to give a truly colour-free image, that less undercorrection is needed if the best definition is to be obtained, and that a slight overcorrection is desirable for astronomical work.—S. K. Datta : On Brewster's bands (Part ii.). The nature of the patterns obtained by the superposition of two systems of Haidinger's rings when the actual law of spacing of the rings is considered is discussed.

Mineralogical Society, June 14.—A. F. Hallimond : On the atomic volume relations in certain isomorphous series. For isomorphous salts of the eutropic elements potassium, rubidium, caesium, the differences caesium-potassium and rubidium-potassium stand in constant ratio, and the same ratio holds good for the free metals, though these are considerably larger than in the combined state; the constancy does not extend to the salts of ammonium or thallium. A modified additive relation is indicated, the volumes of the metals when free and when combined being in the same ratio as the differences for the free metals and for the respective isomorphous series. This would appear to be a distinctive character of each 'eutropic' group of elements.—P. K. Ghosh : Petrology of the Bodmin Moor granite (eastern part), Cornwall. Three types of granite are mapped and described in detail : (1) an earlier coarse-grained 'normal granite,' followed by (2) a coarse-grained granite of Godavere type, and (3) a fine-grained granite. Various minor intrusions connected with these are described, and also their altered facies. Several types of hornfelsed inclusions of sedimentary rocks are distinguished.—P. G. H. Boswell : On the distribution of purple zircon in British sedimentary rocks. The properties and behaviour under radioactive treatment of purple zircon from sedimentary rocks are described. The mineral occurs at practically every horizon in British sedimentary rocks. In the Carboniferous, Permian, Triassic, and Aptian rocks it is especially abundant, and is there associated with numerous other minerals apparently freshly derived from crystalline metamorphic rocks.—J. Drugman : On β -quartz twins from Cornwall.

β -quartz seems to be sufficiently differentiated from α - or low-temperature quartz for the two to be treated quite apart from each other. This is specially the case with the twin-laws one observes in these. In β -quartz, twinning with inclined axes is a very common occurrence indeed, and examples are very abundant in the Cornish localities at Belowda Beacon, a china-clay pit near Belowda Beacon and Wheal Coates. Besides twinning on (1011), Estérel twinning, and twinning on (1122), three new laws are stated, namely, twinning on (3032), confirmed by a good Estérel specimen ; twinning on (2021) (and perhaps on the Zinnwald law) and lastly twinning on (2132), also confirmed by an Estérel specimen. This latter is, however, probably of extremely rare occurrence.—E. V. Holt and H. F. Harwood : The separation of manganese in rock analysis. The whole of the manganese can be completely precipitated with the alumina and ferric oxide. The solution after removal of silica is diluted to 400 c.c., heated to boiling after the addition of ammonium chloride, and ammonia added to alkalinity. Bromine water is then run in very slowly from a tap funnel, small additional quantities of ammonia being simultaneously added to keep the solution alkaline. When the addition of the bromine is complete the liquid is boiled for one minute and then filtered. The precipitate is redissolved and the precipitation repeated ; in the combined filtrates lime and magnesia are determined by the usual methods. The results are perfectly satisfactory up to a limit of 50 mgm. MnO₂; when more than that quantity is present, some lime and magnesia are liable to be carried down with the alumina precipitate, but such a case will practically never occur in rock analysis.—L. J. Spencer : Corundum twins from Transvaal. Large twinned crystals of corundum, up to 6 inches across but only about an eighth of an inch thick, are abundant in plumbosite rock near Bandolier Kop, northern Transvaal. The twin-plane is a face of the primary rhombohedron and the twinned crystals have a form resembling arrow-heads.

Royal Meteorological Society, June 15.—J. Edmund Clark, I. D. Margary, and R. Marshall : Report on the phenological observations in the British Isles, December 1925 to November 1926. 373 sets of records were received, but observers would be welcomed in the western halves of Ireland and Scotland, and all Scotland north of Inverness. The five weeks' cold spell preceding Christmas 1925 retarded the first indications of the new season's growth, but this was quickly neutralised by warmth equally abnormal, culminating in the closing week of winter and continued on to Easter. In consequence flower, bird, and insect records were very early up to mid-April, notable being those of the arrival of cuckoo and swallow and flowering of hawthorn. Then everything was retarded by a long spell of cold, worst about mid-May, injuring the fruit crop, particularly apples. June was cool and very dry and in many parts July brought a deluge. Field crops were helped by a dry summer and fairly warm August, warm September and early October. Grain expectations failed of full realisation upon threshing. Destructive mid-October frosts damaged late potatoes and practically wiped out autumn colouring. Many records were obtained of the return after this of swallows and housemartins, often lingering all through November and in some cases into December.—G. C. Simpson : Past climates. The paper discusses from the meteorological point of view the possible changes in climate which can be brought about by changes in the physical condition of the earth's surface—chiefly changes in the extent and

distribution of the land masses and changes in their height—unaccompanied by any variation in solar radiation. The zonal distribution of temperature has not materially changed ; there must always have been a cold polar zone, a warm tropical zone, and an intermediate temperate zone, all very similar to those which exist to-day. Further, a detailed examination of the existing variations in mean annual temperature along various circles of latitude leads to the conclusion that no rearrangement of land and water could have produced larger variations of mean annual temperature than are to be found in the northern hemisphere to-day. The ice sheet which covered north-west Europe during the last great ice-age could not have been caused by the elevation of Scandinavia. The present conditions in tropical regions, where in the coldest parts the snow-line is to-day more than 5000 metres above sea-level, lead to the conclusion that ice could never reach sea-level within the tropics.

DUBLIN.

Royal Irish Academy, June 27.—H. Ryan and V. Coyle : The hydrolysis of *n*-butyl nitrate. *n*-Butyl nitrate, formed by the action of nitric and sulphuric acids on *n*-butyl alcohol, reacted very slowly with cold aqueous or alcoholic potash. With a warm solution of potash the ester was, unlike those of the polyhydric alcohols, readily converted into butyl alcohol and potassium nitrate. In addition to these bodies, potassium nitrite and a resin were formed. Alcoholic ammonia had little action on the nitrate, but in the presence of sulphuretted hydrogen, butyl alcohol was formed very readily.—H. Ryan, J. Keane, and J. C. McGahon : On 3-nitrodiphenylene oxide. Two mononitro derivatives of diphenylene oxide are known. One of these melts at 182° C. and the other at 110° C., and each in turn has been assumed to be 3-nitrodiphenylene oxide. It is now shown that the latter body is a new mononitro-diphenylene oxide melting at 141° C., which is obtained by diazotisation of 2-amino-4-nitrodiphenyl ether, followed by elimination of nitrogen with formation of the diphenylene oxide grouping.—Joseph Doyle and Phyllis Clinch : Seasonal changes in conifer leaves, with special reference to enzymes and starch formation. The absence of starch from evergreen leaves in winter is largely due to an internal change which necessitates, irrespective of temperature, a great increase in sugar concentration before starch synthesis begins. This has to be related to corresponding changes in the carbohydrate enzymes. Although invertase is always present, maltase, dextrinase, and amylase may be absent or much less active in winter. Starch may develop in the absence of maltase and dextrinase ; and, in some cases, independently of assimilation, light may be necessary for its formation in winter. Osmic acid staining substances are very plentiful, but they are not fat, which is sparingly present if at all. Lipase is not detectable at any season.

PARIS.

Academy of Sciences, June 27.—G. André and E. Demoussy : The distribution of potassium and sodium in plants. From the experimental facts given, it follows that the distribution of potassium and sodium, considering only the soluble forms, is dependent on diffusion. During the growth of the plant the most mobile element, the potassium, travels farthest from the mixed solution. After the period of growth the ratio potassium/sodium tends to fall.—P. Viala and P. Marsais : A new disease of grapes (scleriosis), due to *Sordaria uvicola*. Details of mode of growth and effects of this fungus are given, which at present is confined to Bessarabia.—Pierre Bazy :

Remarks on the note by M. Raymond Hamet. A protest against the conclusion that in cases of syncope under chloroform or other anaesthetics the injection of adrenaline may be harmful. The author contends that the value of the adrenaline injection in such cases is well proved.—Riquier : The general integration of the partial differential equation $s=f(x, y, z, p, q)$.—Charles Camichel : The vortices provoked by an obstacle immersed in a flowing liquid. A résumé of experiments made by the author in collaboration with Dupin, Escande, and Teissié Solier.—Amé Pictet and H. Vogel : The synthesis of maltose.—René Maire and Paul de Peyerimhoff : The discovery of *Pinus nigra* in the north of Africa. This pine has not hitherto been met with in Africa. The age and position of the trees exclude the possibility of introduction from Europe during French occupation.—Charles Fabry was elected a member of the section of general physics in succession to the late Daniel Berthelot, and Alexis Carrel a correspondant for the section of medicine and surgery.—Otakar Borůvka : The projective geometry of the analytical correspondences between two planes.—Gaston Julia : Remarks on the singular right lines of congruences.—J. Hjelmslev : The invariants of integral series.—André Roussel : An intermediate method of the calculus of variations.—G. Pólya : Integral functions with lacunar series.—Gr. Fichtenholz : Suites of analytical functions.—Biernacki : The displacement of the zeros of integral functions by their derivation.—Kiveliovitch : The periodic orbits of the problem of three bodies with impacts of two bodies.—P. Fatou : The movement of the nodes of certain orbits.—Emile Belot : The origin and values of the eccentricities of the orbits according to the dualist cosmogony.—L. Rosenfeld : The magnetic electron and wave mechanics.—V. Posejpal : The yield of fluorescence of the K level for the $K\alpha$ lines.—R. Descamps : The natural rotatory dispersion, in the range of the ultra-violet spectrum, of four aqueous solutions of tartaric acid.—Beauvais and Mesny : An arrangement of the Faraday cage for radio-telegraphy.—Mlle. St. Maracineanu : Researches on the radioactivity of matter after long exposure to solar radiation. In a previous communication it has been shown that a leaden roof, which had been exposed for a long period to solar radiation, showed distinct radioactivity. That this lead was not originally radioactive has now been proved by cutting out a piece of the lead (2 mm. thick) and examining it in the laboratory. Only the exposed face was found to be active, the radioactivity on the under side being nil. The possibility that the radioactivity found was due to radioactive deposits from the atmosphere was disproved. Zinc and copper from the same roof also showed radioactivity, but less than the lead.—H. Deslandres : Remarks on the preceding communication. The importance of these results is emphasised and the necessity for additional research indicated. The facts at present known would appear to be best explained as being due to a special action of the sunlight.—H. Jedrzejowski : The charge of the α -rays emitted per second by 1 gram of radium. The method used was based on that of Rutherford and Geiger ; with some additional refinements. The charge emitted by 1 gm. of radium was found to be 33.4 electrostatic units per second, corresponding to the number of α -particles $N = 3.50 \times 10^{10}$. This is in good agreement with recent results of H. Geiger and A. Werner, of J. Thibaud and of L. Meitner, but is appreciably lower than the 3.72×10^{10} found by V. F. Hess and R. W. Lawson.—A. Andant and E. Rousseau : The photolysis of hydrocyanic acid by the total radiations and by the filtered radiations of

the mercury arc. The data given show that photolysis by ultra-violet light is hindered by the presence of radiations of longer wave-length.—Eugène Cornec and Joseph Dickely : Studies on sodium perchlorate.—Victor Lombard : The permeability of iron and of platinum to hydrogen. The permeability of iron to hydrogen at a given temperature is proportional to the square root of the pressure. At constant pressure and varying temperature, the permeability of iron and platinum to hydrogen, like that of nickel, is of the form $d = a^t$ (a , constant; t , temperature).—Amand Valeur and Paul Gaillot : The passage from trimethylarsine to cacodylic acid. Trimethylarsine is converted into the dichloride by the direct action of chlorine; at 180° C. this gives methyl chloride and cacodyl chloride, and the latter is quantitatively oxidised to cacodylic acid by means of hydrogen peroxide.—Charles Prevost : An unexpected reaction of the di-isocrotyl dibromides.—Marcel Bouis : The addition of hydrobromic acid to the allene hydrocarbons.—Paul Gaubert : Helicoidal building up in crystals.—Louis Barrabé : The Jurassic and Cretaceous sedimentary series of the western coast of Madagascar, between Manambolo and Manambao.—F. Blodel : The recent volcanic action in the south-east of Indo-China. The magnitude of the volcanic area is remarkable, but owing to the deep changes in the basalts and the absence of sedimentary strata, the exact date of the eruptions cannot be determined with accuracy.—J. MacLaughlin : Measurements on the large ions at Paris.—Ch. Maurain : Magnetic measurements in Alsace and Lorraine.—Henri Coupin : The carbon nutrition of *Penicillium glaucum* by means of various organic compounds of the fatty series. Out of 47 organic substances added to an inorganic culture medium, *Penicillium* can use carbon from 22 of them, including ethyl alcohol, glycerol (but not glycol), sugars, malic and succinic acids.—Denis Bach : The nitrogen nutrition of the Mucorineæ. The assimilation of the nitric ion.—Robert Lamé : The influence of a peptone on the germination of some Vanda.—Jean Batherier : The fungus cultures made by the Indo-Chinese ants.—Ch. Brioux and J. Pien : The lime requirements of acid soils. The slow reappearance of acidity after saturation with lime.—Jacques Pellegrin : The barbel of Morocco.—H. Joyet-Lavergne : The relations between glutathione and the chondriome. Some results obtained by the use of sodium nitroprusside as a histological reagent for glutathione.—Philippe Fabre : The shunt shock on the gastrocnemius of the frog.—Joseph Thomas : Injections of cancerous autolysates in the treatment of cancer.—Marcel Duval and P. Portier : The total carbon dioxide content of the blood of freshwater invertebrates and marine invertebrates. The blood of freshwater invertebrates is richer in carbon dioxide than that of marine invertebrates. No reason can be assigned for this difference.—R. Fosse and A. Hieulle : The identification of allantoic acid in the leaves of *Acer pseudoplatanus*.—H. Cardot, J. Régnier, D. Santenoise and P. Varé : The variations of the cortical excitability, in relation with the pneumogastric excitability, the thyroid apparatus and the muscular activity.—H. Simonnet and G. Tanret : The hypoglycaemic properties of galactine sulphate.—J. Cantacuzène and O. Bonciu : The agglutinins acquired on contact of scarlatina filtrates by bacteria heated to 60° C.—X. Chahovitch and Mlle. Vichnjitch : The energy metabolism in the course of experimental tuberculosis.

ROME.

Royal National Academy of Sciences, April 24.
L. Tonelli : A property of integrable functions.

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G. Armellini : Selective absorption of the terrestrial atmosphere and the effective and apparent stellar temperature. The effect produced on the spectrum of a star by the selective absorption of the earth's atmosphere is to render the distribution of energy in the stellar spectrum such as would be obtained from the radiation of a black body at a temperature different from, and lower than, the effective temperature of the star. The difference between the two temperatures is proportional to the selective atmospheric constant and to the square of the effective temperature.—A. Lo Surdo : The electric current filtered through a saturated thermionic valve. If a saturated thermionic valve is inserted in a circuit with the object of filtering the current due to a pulsating electromotive force, the pulsations of the current are greatly attenuated but cannot be entirely eliminated.—L. Rolla and G. Piccardi : Electro-affinity potential of molybdic anhydride. Measurements made by the flame method give the value 2.73 volts for the electronic affinity potential of molybdic anhydride rendered free from bases by sublimation. This result is calculated on the assumption that, at the flame temperature employed, namely, about 1970° absolute, the anhydride undergoes no appreciable dissociation.—S. Franchi : Geology of the northern Appenines.—R. Calapso : A transformation of the rectilinear congruences W.—S. Cherubino : The surface integrals of quadratic differential forms.—S. Bernstein : New demonstration of an inequality relating to trigonometrical polynomials.—O. Onicescu : Geodetic displacement, stability, and Whittaker's problem.—A. Rosenblatt : Kutta-Joukowski's theorem.—E. Fermi and F. Rasetti : Measurement of the ratio h/k by means of the anomalous dispersion of thallium.—U. Sborgi : Anodic behaviour of metals in non-aqueous solutions. Comparison of the results obtained on electrolysing sodium and ammonium chlorides, and ammonium nitrate in aqueous and in ethyl alcoholic solutions indicates that, to a large extent, the anodic behaviour of metals is similar in aqueous and non-aqueous solutions.—G. Malquori : The systems $\text{AlCl}_3-\text{HCl}-\text{H}_2\text{O}$, $\text{KCl}-\text{HCl}-\text{H}_2\text{O}$, and $\text{KNO}_3-\text{HNO}_3-\text{H}_2\text{O}$ at 25° (iii.). The solubilities of aluminium and potassium chlorides in water are diminished by the presence of hydrochloric acid. On the other hand, potassium nitrate is increased in solubility by addition of nitric acid to the aqueous solution; aluminium nitrate, however, follows the general rule.—C. Fontana : Identity of the crystalline structures of Fe_3S_4 and FeS . The results of X-ray analysis show that the interaction of magnetite and hydrogen sulphide under the ordinary pressure at 1000° is expressed by the equation:



The sulphur does not occupy a fixed, characteristic position in the crystal lattice, and the existence in the product of the reaction of the compound Fe_3S_4 as a chemical individual cannot be regarded as proved.—A. Ferrari : Crystalline structure of iodine. Investigation by Laue's method, in conjunction with the rotating crystal method, shows that iodine exhibits a rhombic lattice, the elementary cell of which consists of an orthogonal parallelepiped containing eight atoms and having the dimensions $a=4.760$ Å.U.; $b=7.164$ Å.U.; and $c=9.783$ Å.U.—D. Bigiavi : Action of peracetic acid on the acetyl derivatives of aromatic amines. The action of peracetic acid on aromatic amines yields the corresponding nitro-compounds, together with the azoxy-compounds, but similar treatment of the acetyl derivatives of the amines gives the nitro-compounds alone.—G. Natta : Crystalline structure of the chlorides of tervalent metals (i.). Chromic chloride. This salt crystallises

in the rhombohedral system and probably in the holohedral class, its elementary cell containing one molecule of CrCl_3 and having the side $a = 4.42 \text{ \AA.U.}$ and the axial ratio $c:a = 1.29:1.30$. The calculated density is 2.71.—C. Perrier: Two recent notes by Philibert. The apparent biaxiality which may occur with Iceland spar when observed with the help of Federow's plate does not detract from the value of this plate when the segments are properly mounted.—D. Cattaneo: Ultramicroscopy of the crystalline lens (i.). The ultramicroscopic character of the normal crystalline lens. Ultramicroscopic investigation confirms Bottazzi's view that the protoplasm of the crystalline lens consists essentially of optically homogeneous material, but shows also that the crystalline fibres may contain a phase differing optically from such homogeneous material.

Official Publications Received.

BRITISH.

Aeronautical Research Committee: Reports and Memoranda. No. 1076: Comparison of Atalanta and Model Sea Worthiness and Fore and Aft Angle. By the Staffs of the Marine Aircraft Experimental Establishment, Felixstowe, and the William Froude National Tank, National Physical Laboratory. (S. 33.) Pp. 9+6 plates. (London: H.M. Stationery Office.) 1s. net.

Royal College of Surgeons of England. Annual Report on the Museum, by the Conservator. Pp. 28. (London.)

Annual Report of the Imperial Institute of Veterinary Research, Muktesar, for the Year ending 31st March 1926. Pp. 18. (Calcutta: Government of India Central Publication Branch.) 8 annas; 10d.

Report of the Director-General of Public Health, New South Wales, for the Year 1925. Pp. vi+207. (Sydney, N.S.W.: Alfred James Keut.) 8s. 9d.

Scientific and Industrial Research Council of Alberta. Report No. 18: The Bituminous Sands of Alberta. Part 1: Occurrence, Studied with Respect to Commercial Development. By K. A. Clark and S. M. Blair. Pp. 74+7 plates. (Edmonton, Alta.: W. D. McLean.)

Trinidad and Tobago. Administration Report of the Conservator of Forests for the Year 1926. Pp. 19. (Trinidad, B.W.I.: Government Printing Office, Port-of-Spain.)

Department of Scientific and Industrial Research. Report of the Fuel Research Board for the Year 1926, with Report of the Director of Fuel Research. Pp. vi+62. (London: H.M. Stationery Office.) 1s. 8d. net.

Air Ministry: Meteorological Office. International Meteorological Organization: Commissions for Terrestrial Magnetism and Atmospheric Electricity and for the Réseau Mondial. Reports of the Meetings in Zurich, September 1926. (M.O. 296.) Published by the Authority of the Meteorological Committee. Pp. 34. 9d. net. International Meteorological Organization: Commission for Synoptic Weather Information (formerly Commission for Weather Telegraphy). Report of the Sixth Meeting, Zurich, September 9-16, 1926. (M.O. 298.) Published by the Authority of the Meteorological Committee. Pp. 105. 2s. net. (London: H.M. Stationery Office.)

Mines Department. Publications of the Safety in Mines Research Board. Vol. 1, 1923, 1924 and 1925. Reports and Papers relating to Research into Coal Dust, Firedamp and other Sources of Danger in Coal Mines. Subject Index. Pp. xiii. (London: H.M. Stationery Office.) 2d. net.

FOREIGN.

Report of the National Research Council for the Year July 1, 1925-June 30, 1926. Pp. iv+106. (Washington, D.C.: Government Printing Office.)

Cornell University Agricultural Experiment Station. Bulletin 458: The Climate of Long Island; its Relation to Forests, Crops and Man. By Norman Taylor. Pp. 20. Memoir 100: A Study of *Pogonitis* Varieties. By Austin W. W. Sand. Pp. 159+3 plates. Memoir 105: The Manufacture of Cheddar Cheese from Milk pasteurized by the Holder Method. By Walter V. Price. Pp. 86. (Ithaca, N.Y.)

Department of the Interior: Bureau of Education. Bulletin, 1927, No. 4: Bibliography of certain Aspects of Rural Education. (From January 1, 1920, to September 1, 1926.) Pp. viii+56. (Washington, D.C.: Government Printing Office.) 5 cents.

Bulletin of the National Research Council. No. 58: Handbook of Scientific and Technical Societies and Institutions of the United States and Canada. American Section compiled by Clarence J. West and Callie Hull for the Research Information Service, National Research Council, United States; Canadian Section compiled by National Research Council, Canada. Pp. 304. (Washington, D.C.: National Academy of Sciences.) 3 dollars.

Reprint and Circular Series of the National Research Council. No. 75: Doctorates conferred in the Sciences by American Universities, 1925-1926. Compiled by Callie Hull and Clarence J. West. Pp. 34. 50 cents. No. 76: Directory of Research in Child Development. Compiled for National Research Council Committee on Child Development by Leslie Ray Marston. Pp. 36. 50 cents. No. 77: Mathematics and the Biological Sciences. By Horatio B. Williams. Pp. 21. 25 cents. (Washington, D.C.: National Academy of Sciences.)

The Rockefeller Foundation. A Review for 1926. By George E. Vincent. Pp. 54. (New York City.)

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Bulletin géodésique. Organe de la Section de Géodésie de l'Union Géodésique et Géophysique Internationale. Année 1925, No. 7, juillet, août, septembre 1925. Pp. 351. Travaux de la Section de Géodésie de l'Union Géodésique et Géophysique Internationale. Tome 2: Rapports généraux établis à l'occasion de la Première Assemblée générale, Rome, 2-10 mai 1922. Pp. vii+99+10+77+26+85+7. (Toulouse: Edouard Privat; Paris: J. Hermann.)

Year Book, The Academy of Natural Sciences of Philadelphia for the Year ending December 31, 1926. Pp. 110+7 plates. (Philadelphia, Pa.)

State of Illinois. Department of Registration and Education: Division of the Natural History Survey. Bulletin, Vol. 16, Arts. 5 and 6: An Experimental Investigation of the Relations of the Codling Moth to Weather and Climate, by Victor E. Shelford; A Study of the Catalase Content of Codling Moth Larvae, by C. S. Spooner. Pp. 367-446. (Urbana, Ill.)

Kornstorrelsesforsk: Forsok, undersøkelser og iakttagelser til belysning av spørsmålet stor- eller småkornet såvære i planteproduksjonen. Av Prof. Emil Korsmo. (Sættrykk fra Meldinger fra Norges Landbrukshøyskole, 1927.) Pp. 76. (Oslo: Johansen og Nielsens Boktrykkeri.)

Smithsonian Institution: Bureau of American Ethnology. Bulletin 82: Archaeological Observations North of the Rio Colorado. By Neil M. Judd. Pp. ix+171+61 plates. (Washington, D.C.: Government Printing Office.) 1 dollar.

CATALOGUE.

Radiography for the Dentist. (Bulletin No. 82.) Second edition. Pp. 37. (London: Watson and Sons (Electro-Medical) Ltd.)

Diary of Societies.

CONGRESSES.

EMPIRE MINING AND METALLURGICAL CONGRESS.

Montreal Meetings, August 21 and 23.—Sir Thomas Holland: Proposed Review of the Mineral Resources of the Empire.—G. M. Carrie and C. S. Pascoe: Magnesia Refractories for Steel Furnaces.—A. Stansfield: Smelting Titaniferous Iron Ores.—W. A. Toohey: Portland Cement in Canada.—Mining and Metallurgical Practice in Australia.—Health Safety Problems.

Toronto Meetings, August 25 and 26.—C. Johnson: Winning and Refining of Precious Metals from Sudbury Ores.—R. C. Stanley: Nickel, Past and Present.—A. A. Cole: The Silver Mining Industry of Canada.—J. G. Morrow: The Cascade Method of Pouring Steel.—A. Mavrogordato and H. Pirow: Deep Level Mining and High Temperatures.

Winnipeg Meeting, September 3.—G. E. Cole: The Development of Gold Mining in Canada.—W. A. Quince: Methods of Eliminating Barren Rock from Ore at the Sub-Nigel Mine.—C. R. Davis, J. L. Willey, and S. E. T. Ewing: Notes on the Operation of the Reduction Plant at West Springs, Ltd.—E. J. Laschinger: A New Form of Air Meter and the Measurement of Compressed Air.

Vancouver Meeting, September 14.—C. F. Browning: Canadian Copper and its Production.—F. J. Alcock and T. W. Bingay: Lead and Zinc in Canada.—C. J. N. Jourdan: A Brief Review of the Principal Base Metal and Base Mineral Resources of the Union of South Africa.—R. Craig: Dewatering the Lower Levels of the Slimmer and Jack Mines, Ltd.—W. S. Robinson: Manufacture of Sulphuric Acid by the Contact Process. From Zinc Blende Roaster Gases.

Edmonton Meeting, September 20.—R. Strachan, W. J. Dick, and R. J. Lee: The Coal Industry in Western Canada.—J. Ness: Petroleum in Canada.—A. Poqueler, J. Bataille, and R. Beestonstone: A Combination of the Baum, the Draper, and the Froth Flotation Systems as applied to the Washing of Coal at the Linsi Mine of the Kailan Mining Administration, North China.—A. E. Cameron: Impact Resistance of Steel at Low Temperatures.

Quebec Meetings, September 5 and 26.—J. G. Ross: Asbestos Mining and Milling.—A. W. Nash: Possible Auxiliary Sources of Liquid Fuel.—A. Job: The Sinking and Equipment of the Ventilation Shaft of the Government Gold Mining Areas.—G. W. Sharp: The Tipping and Guiding of Vertical Skips.—P. M. Newhall and L. Pryce: Improvements in Drilling Efficiency with Jack-Hammers.

Sydney Meetings, September 9 and 10.—F. W. Gray: Mining Coal Under the Sea in Nova Scotia.—Sir Robert Hadfield: The Metal Manganese and its Properties: also, the Production of Ferro-Manganese and its History.—Raw Materials for the Iron and Steel Industry in India.—B. Yansek: The Manufacture of Steel in India, by the Duplex Process.

SEPTEMBER 1-4.

SCHWEIZERISCHE NATURFORSCHENDE GESELLSCHAFT (at Basel) (in 14 Sections).—President Address by Dr. F. Sarasin.—Lectures on, respectively, The Causes and Factors of Morphogenesis, by Prof. A. Brachet; Recent Work and Views in Astronomy, by Prof. L. Courvoisier; The Urals from the Point of View of Geophysics, Geology, and Mining, by Prof. L. Duparc; Paracelsus in Relation to Modern Thought, by Prof. H. E. Sigerist.

SEPTEMBER 4-9.

INTERNATIONAL CONGRESS OF ZOOLOGY (at Budapest).

SEPTEMBER 11-17.

INTERNATIONAL CONGRESS OF PHYSICS IN COMMEMORATION OF THE CENTENARY OF VOLTA (at Como).

SEPTEMBER 11-18.

INTERNATIONAL CONGRESS OF GENETICS (at Berlin).

SEPTEMBER 18-OCTOBER 3.

INTERNATIONAL CONGRESS OF THEORETICAL AND APPLIED LIMNOLOGY (at Rome).