

table charcoal (1). The action of calcium chloride as activator. The decolorising power of charcoal depends on the tissue of the initial material and the temperature and duration of burning. The best material is that with a great content of cellulose.—**M. Mikan**: Cremona correspondence in quadridimensional space given by four correlations.—**V. Spaček**: Complex swings of the magnetic declination needle.—**E. Votoček** and **F. Valentin**: Studies in the series of rhodose (*d*-galacto-methylose).—**E. Votoček** and **V. Kučerenko**: Studies in the series of fucose (*l*-galacto-methylose). In both the above communications the optical rotation of the derivatives of rhodose, epirhodose, fucose, epifucose are studied and an entire agreement is found with the Hudson's rule; this confirms Hudson's rule also in the series of methyl-pentoses.—**V. Pospíšil**: Experimental studies on the pressure effect of light upon microscopic particles.—**O. Michal**: The *K*-absorption and the satellites of the ferromagnetic elements. The wave-length of the *K*-absorption edge is negligibly affected, when varying the crystalline diffraction grating.—**J. Klíma**: The construction of flecnoidal lines on the skew planes of fourth order.—**F. Herles**: The significance of the segment *RT* and of the wave *T* in the electrocardiogram for the diagnosis of pathological changes in the myocardium.

WASHINGTON, D.C.

National Academy of Sciences (Proc., Vol. 15, No. 12, Dec. 15, 1929).—**Chas. W. Metz** and **M. Louise Schmuck**: (1) Unisexual progenies and the sex chromosome mechanism in *Sciara*. It has been shown previously that sex of individual depends on the sperm, but the types of sperm functioning depend on the zygotic constitution of the female. Both characteristics are determined by the sex chromosomes, of which there appear to be three kinds.—(2) Further studies on the chromosome mechanism responsible for unisexual progenies in unisexual progenies in *Sciara*. Tests of 'exceptional' males. Such individuals, to be expected on the hypothesis put forward above, were found.—**M. Demerec**: Changes in the rate of mutability of the mutable miniature gene of *Drosophila virilis*. The lines of mutable miniature are described and the rate of change from one to the other determined.—**L. J. Stadler**: Chromosome number and the mutation rate in *Avena* and *Triticum*. Cultivated oats and wheat are polyploid forms and treatment with X-rays produces very few mutants, as judged by seedling characters, in contrast with cultivated barley (normal chromosome content) in which many mutants are produced. This appears to be connected with reduplication of chromosomes in polyploid species.—**Donald A. Johansen**: A proposed phylogeny of the Onagraceae based primarily on number of chromosomes.—**Delmer C. Cooper**: The chromosomes of *Buginvillaceae*.—**Robert F. Weill**: New results from the study of cœlenterate nematocysts (preliminary note). A comprehensive study of nematocysts from 109 species has been made; the nematocysts are of taxonomic value.—**Harold Osterberg**: An interferometer method of observing the vibrations of an oscillating quartz plate. One mirror of the interferometer is replaced by the crystal, which is mounted so that reflection occurs at the surface to be examined.—**Jenny F. Rosenthal** and **F. A. Jenkins**: Perturbations in band spectra (2). Perturbations in the Angström bands of carbon monoxide are discussed.—**Marie J. Weiss**: On groups defined by $A^q = 1$, $B^{-1}AB = A^2$, $B^e = A^s$.—**Tracy Yerkes Thomas**: On the existence of integrals of Einstein's gravitational equations for free space and their extension to *n* variables.

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Official Publications Received.

BRITISH.

- Imperial Department of Agriculture for the West Indies. Report on the Agricultural Department, Grenada, for the Period 1926 to 1928. Pp. ii+12. (Trinidad.) 6d.
- Board of Education. Educational Pamphlets, No. 79: Report of an Inquiry into the Teaching of the Geography of the British Empire in certain types of Schools. Pp. 29. (London: H.M. Stationery Office.) 4d. net.
- The Economic Proceedings of the Royal Dublin Society. Vol. 2, No. 26: Experiments on the Establishment of Rice Grass (*Spartina Townsendii*) in the Estuary of the Lee. By Prof. H. A. Cummins. Pp. 419-421+plate 28. (Dublin: Hodges, Figgis and Co.; London: Williams and Norgate, Ltd.) 6d.
- Report of the Marlborough College Natural History Society for the Year ending Christmas 1929. (No. 78.) Pp. 120+5 plates. (Marlborough.) To Members, 3s.; non-Members, 5s.
- Transactions of the Royal Society of Edinburgh. Vol. 56, Part 2, No. 19: Chromosome Linkage and Syndesis in *Enothera*. By David G. Catcheside. Pp. 467-484+3 plates. (Edinburgh: Robert Grant and Son; London: Williams and Norgate, Ltd.) 3s. 6d.
- Government of India: Department of Industries and Labour. Note on the Functions, Organisation and Present Developments of the Indian Meteorological Department. Pp. 12. (Delhi: Government of India Press.)
- The Mining Institute of Scotland. Fifty-second Annual Report of the Council, 1929-1930. Pp. 4. (Glasgow.)
- Asiatic Society of Bengal. Presidential Address, 1930. By U. N. Brahmachari. Pp. 12. Annual Report for 1929. Pp. 80. (Calcutta.)
- Journal of the Chemical Society. March. Pp. iv+321-569+xii. (London.)
- Department of Agriculture, Madras. Bulletin No. 89: The Conduct of Field Experiments. By R. O. Iliffe and B. Viswa Nath. Pp. vii+51. (Madras: Government Press.)
- Transactions of the Geological Society of South Africa. Vol. 32, containing the Papers read during 1929. Pp. iv+190+9 plates. 42s. Proceedings of the Geological Society of South Africa: containing the Minutes of Meetings and the Discussions on Papers read during 1929; to accompany Vol. 32 of the Transactions, January-December 1929. Pp. iii+lx. (Johannesburg.)
- The Indian Forest Records. Silviculture Series, Vol. 15, Part 1: Classification of Thinnings. Pp. vii+8 plates. (Calcutta: Government of India Central Publication Branch.) 14 annas; 1s. 6d.
- Transactions of the Institute of Marine Engineers, Incorporated. Session 1930, Vol. 42, March. Pp. 105-203. (London.)
- Clifton College Scientific Society. Report for the Years 1926-29. Pp. 24. (Bristol.)
- Souvenir, Henry Hill Hickman Centenary Exhibition 1830-1930 at the Wellcome Historical Medical Museum, 54 Wigmore Street, London, W.1. Pp. 85. (London: The Wellcome Foundation, Ltd.)
- Indian Central Cotton Committee: Technological Laboratory. Technological Bulletin, Series B, No. 5: A Comparison of some Methods of Testing the Breaking Strength of Single Cotton Fibres. By Harirao Navkal and K. R. Sen. Pp. 10. (Bombay.)
- Ministry of Health. Eighth Report of the Advisory Committee on the Welfare of the Blind to the Minister of Health, 1928-29. Pp. 34. (London: H.M. Stationery Office.) 6d. net.
- Ministry of Health. Final Report of the Departmental Committee on Ethyl Petrol. Pp. 91. (London: H.M. Stationery Office.) 1s. net.
- Proceedings of the Royal Society. Series A, Vol. 127, No. A804, April 1. Pp. 240. (London: Harrison and Sons, Ltd.) 8s.
- Tanganyika Territory: Department of Agriculture. Annual Report 1928-29. Part 1: Agricultural Administration and Progress. Pp. 46. 2s. Part 2: Agricultural Investigation. Pp. 36. 2s. (Dar es Salaam: Government Printer.)
- Scottish Marine Biological Association. Annual Report 1928-29. Pp. 24. (Millport.)
- The Scientific Proceedings of the Royal Dublin Society. Vol. 19 (N.S.). No. 34: Responses of Plant-Tissues to Electric Currents. By Prof. H. H. Dixon and T. A. Bennet-Clark. Pp. 415-420. 6d. Vol. 19 (N.S.). No. 35: Electrical Properties of Oil-Water Emulsions with Special Reference to the Structure of the Plasmatic Membrane. By Prof. H. H. Dixon and T. A. Bennet-Clark. Pp. 421-440. 1s. 6d. Vol. 19 (N.S.). No. 36: Studies in Peat. Part 4: Low Temperature Carbonisation under various Conditions. By Colm O'Sullivan and Joseph Reilly. Pp. 441-446. 6d. (Dublin: Hodges, Figgis and Co.; London: Williams and Norgate, Ltd.)

FOREIGN.

- Memoirs of the College of Science, Kyoto Imperial University. Series A, Vol. 13, No. 1, January. Pp. 100. (Tokyo and Kyoto: Maruzen Co., Ltd.)
- Proceedings of the United States National Museum. Vol. 77, Art. 3: A Revision of the North American Species of Ichneumon-Flies of the Genus *Odontomerus*. By R. A. Cushman. (No. 2826.) Pp. 15. (Washington, D.C.: Government Printing Office.)
- Annalen van de Sterrewacht te Leiden. Deel 16, Stuk 4: Discussion of Old Eclipses of Jupiter's Satellites. By W. de Sitter. Pp. 80. (Leiden.)
- Publikationer og mindre Meddelelser fra Københavns Observatorium. Nr. 67: Fortgesetzte Untersuchungen über asymptotische Bahnen im Probleme Restreint; Über das System periodischer, in Bezug auf die ζ -Achse unsymmetrischer, asymptotischer Bahnen. Von Elis Strömgrén. Pp. 61+2 Tafeln. (København: Bianco Lunos Bogtrykkeri A.-S.)
- Occasional Papers of the Bingham Oceanographical Collection, Peabody Museum of Natural History, Yale University. No. 3: On the Osteology and Classification of the Piculate Fishes of the Genera *Aceratias*, *Rhynchoeratas*, *Haplophryne*, *Laevoeratas*, *Allector* and *Lipactis*; with Taxonomic and Osteological Description of *Rhynchoeratas longipinnis*, new species, and a special Discussion of the Rostral Structures of the *Aceratiidae*. By Albert Eide Parr. Pp. 23. (New Haven.)

Report of the Aeronautical Research Institute, Tôkyô Imperial University. No. 54: Application of the Inverse Wiedemann Effect to Torque Variation Recordings, Part 2. By Tatsu Kobayasi, assisted by Hiroto Okumura, Kinmatsu Simamura and Tatsu Koyama. Pp. 4+3 plates. 0.22 yen. No. 55: On the Stability of Kármán Vortex Street in a Channel of Finite Breadth, II. By Susumu Tomotika. Pp. 5-48. 0.47 yen. No. 56: Kuda no Tomonari ni tuite (On the Resonance of Pipes with a Movable End). By Kôji Satô. Pp. 49-92. 0.50 yen. No. 57: On the Possibility of Applying the Cathode-Ray Oscillograph to the Indicator for High-Speed Engines. By Jûichi Obata and Yukio Munetomo. Pp. 93-100+2 plates. 0.19 yen. (Tôkyô: Koseikai Publishing House.)

Columbia University. Bulletin of Information, Thirtieth Series, No. 23: Professional Courses in Optometry, 1930-1931. Pp. 30+3 plates. (New York City.)

United States Department of Agriculture. Circular No. 106: Tree Hoppers and their Control in the Orchards of the Pacific North-West. By M. A. Yothers. Pp. 15. 5 cents. Circular No. 109: Parasitism of the Mediterranean Fruit Fly in Hawaii, 1922-1924. By H. F. Willard and T. L. Bissell. Pp. 12. 5 cents. (Washington, D.C.: Government Printing Office.)

Proceedings of the United States National Museum. Vol. 76, Art. 8: A new Variety of the Hexactinellid Sponge *Rhabdoalcyptus dawsoni* (Lambe) and the Species of *Rhabdoalcyptus*. By H. V. Wilson and J. T. Penney. (No. 2803.) Pp. 9+2 plates. Vol. 76, Art. 21: Ordovician Trilobites of the Family Telephidae and concerned Stratigraphic Correlations. By E. O. Ulrich. (No. 2818.) Pp. 101+8 plates. (Washington, D.C.: Government Printing Office.)

Collection des travaux chimiques de Tchecoslovaquie. Redigée et publiée par E. Votoček et J. Heyrovský. Année 2, No. 3, Mars. Pp. 113-160. (Prague: Regia Societas Scientiarum Bohemica.)

Rendiconti del Seminario Matematico e Fisico di Milano. Vol. 3. (1929-VII). Pp. xv+267. (Milano.)

Journal of the Faculty of Agriculture, Hokkaido Imperial University, Sapporo, Japan. Vol. 23, Part 5. Pp. 151-187. (Tokyo: Maruzen Co., Ltd.)

Scientific Papers of the Institute of Physical and Chemical Research. Nos. 221-227. 221. Über die katalytische Reduktion des Kohlenoxyds unter gewöhnlichem Druck. 1: Versuche über die Katalysatoren mittels Erhitzungskurve, 1, von Shinjiro Kodama; 222. Über die katalytische Reduktion des Kohlenoxyds unter gewöhnlichem Druck. 2: Versuche über die Einflüsse einiger Stoffe auf die katalytische Wirkung des Kobalts mittels Erhitzungskurve, 2, von Shinjiro Kodama; 223. Über die katalytische Reduktion des Kohlenoxyds unter gewöhnlichem Druck. 3: Herstellung der flüssigen Kohlenwasserstoffe mit dem Kobalt-Kupfer-Thoriumoxydkatalysator, von Shinjiro Kodama; 224. The Separation and Determination of Gallium. 1: A new Method for the Determination of Gallium, by Sunao Ato; 225. On the Absorption Spectra of Salt Solutions. 1: The Absorption Spectra due to the Halogens and some Metallic Ions, by Sechi Kato; 226. Resistance of Impact on Water Surface. Part 1: Cone, by Shumpei Watanabe; 227. Effect of Superposing Alternating Currents on the Electrolytic Oxidation of Aluminium (abridgement), by Shoji Setoh and Akira Miyata. Pp. 193-274+4 plates 15-19. (Tokyo: Iwanami Shoten.) 1.25 yen.

Contents and Index of Scientific Papers of the Institute of Physical and Chemical Research. Vols. 1-11 (1922-1929). Pp. 40. (Tokyo: Iwanami Shoten.) 65 sen.

Ministerio da Agricultura, Industria e Commercio: Directoria de Meteorologia. A Previsão das Secas do Nordeste: Ensaio pelo metodo de correlações. Por J. de Sampaio Ferraz. Pp. 12. Memoria sobre o clima do Rio Grand do Sul. Por Ladislau Coussirat de Araujo. Pp. iv+101. (Rio de Janeiro.)

Abstract-Bulletin of Lamp Development Laboratory, Incandescent Lamp Department of General Electric Company, Nela Park, Cleveland, Ohio. Vol. 2, No. 1, January. Pp. ix+163+6 plates. (Cleveland.)

University of California Publications in American Archaeology and Ethnology. Vol. 28, No. 2: Textile Periods in Ancient Peru. By Lila M. O'Neale and A. L. Kroeber. Pp. 23-56+48 plates. (Berkeley, Calif.: University of California Press; London: Cambridge University Press.) 60 cents.

Sudan Notes and Records. Vol. 12, 1929, Part 2. Pp. 119-272. (Khartoum.) 30 P.T.; 6s.

Publications of the Earthquake Investigation Committee in Foreign Languages. No. 25: Topographical Changes accompanying Earthquakes or Volcanic Eruptions. Pp. ii+143+39 plates. (Tokyo.)

Bulletins of the Pacific Scientific Fishery Research Station. Vol. 3, Part 6: Паразитические черви рыб залива Петра великого (Parasitic Worms from the Fishes of Peter the Great Bay). By E. M. Layman. (With Summary in German.) Pp. 120. 1r. 60k. Vol. 4, Part 1: Морфометрическая характеристика западнокамчатской горбуши *Oncorhynchus gorbuscha* Walbaum (Morphometrical Characteristics of the West Kamchatka Humpback Salmon). By I. F. Pravdin. (With Summary in English.) Pp. 152. 3r. (Vladivostok.)

U.S. Department of Commerce: Bureau of Standards. Circular of the Bureau of Standards, No. 380: Architectural Acoustics. Pp. 8. (Washington, D.C.: Government Printing Office.) 5 cents.

U.S. Department of Agriculture. Circular No. 107: The Normal Breeding Season and Gestation Period of Martens. By Frank G. Ashbrook and Karl B. Hanson. Pp. 7. 5 cents. Technical Bulletin No. 173: The Bluegrass Webworm. By George G. Ainslie. Pp. 26. 10 cents. (Washington, D.C.: Government Printing Office.)

Proceedings of the American Academy of Arts and Sciences. Vol. 64, No. 5: The Minimum of Resistance at High Pressure. By P. W. Bridgman. Pp. 75-90. 45 cents. Vol. 64, No. 6: The Reflecting Power of some Substances in the Extreme Ultra-violet. By Paul R. Gleason. Pp. 91-125. 75 cents. (Boston, Mass.)

Publikationer fra det Danske Meteorologiske Institut. Communications magnétiques, etc. No. 8: La balance de Godhavn, par D. la Cour; No. 9: Contribution à la théorie de l'intensiomètre magnétique à l'induction mutuelle de D. la Cour, par Helge-Petersen et D. la Cour. Pp. 23+4. (København: G. E. C. Gad.)

Proceedings of the United States National Museum. Vol. 76, Art. 17: Contribution to the Taxonomy of Asiatic Wasps of the Genus *Tiphia* (Scolidae). By H. W. Allen and H. A. Jaynes. (No. 2814.) Pp. 105+4 plates. (Washington, D.C.: Government Printing Office.)

The Kyoto Imperial University. Publications of the Kwasan Observatory. Vol. 1, No. 1: General Descriptions of the Kwasan Observatory of the Kyoto Imperial University. By Prof. Issei Yamamoto. Pp. 16+4 plates. Vol. 1, No. 2: Shih Shen's Catalogue of Stars, the Oldest Star Catalogue in the Orient. By Joe Ueta. Pp. 17-48. (Kyoto.)

Smithsonian Institution: United States National Museum. Bulletin 104: The Foraminifera of the Atlantic Ocean. Part 7: Nonionidae, Cameriniidae, Peneropliidae and Alveolinellidae. By Joseph Augustine Cushman. Pp. vi+79+18 plates. 35 cents. Bulletin 149: Composition and Structure of Meteorites. By George P. Merrill. Pp. vi+62+32 plates. 40 cents. (Washington, D.C.: Government Printing Office.)

Scientific Survey of Porto Rico and the Virgin Islands. Vol. 10, Part 2: The Fishes of Porto Rico and the Virgin Islands—Branchiostomidae to Scaenidae. By J. T. Nichols. Pp. 159-295. 2 dollars. Vol. 10, Part 3: The Fishes of Porto Rico and the Virgin Islands—Pomacentridae to Ogcocephalidae. By J. T. Nichols. Pp. 297-399. 2 dollars. (New York: New York Academy of Sciences.)

Proceedings of the Academy of Natural Sciences of Philadelphia, Vol. 82. A new Nightjar from Angola: Second Preliminary Paper on the Birds collected during the Gray African Expedition, 1929. By W. Wedgwood Bowen. Pp. 2. Two new East African Birds: Third Preliminary Paper on the Birds collected during the Gray African Expedition, 1929. By W. Wedgwood Bowen. Pp. 3-7. (Philadelphia.)

U.S. Department of Commerce: Bureau of Standards. Research Paper No. 137: Effect of Small Changes in Temperature on the Properties of Bodies. By Mayo D. Hersey. Pp. 137-156. (Washington, D.C.: Government Printing Office.) 5 cents.

Annales de l'Observatoire de Paris, Section de Meudon. Publiées par H. Deslandres. Tome 7, Fascicule 1: Recherches sur la polarisation de la lumière des planètes et de quelques substances terrestres. Par B. Lyot. Pp. ix+161. (Orléans; Impr. Henri Tossier.)

Travaux et mémoires du Bureau International des Poids et Mesures. Tome 18. Pp. vi+41+12+85+82+44+126+19+6. (Paris: Gauthier-Villars et Cie.)

Proceedings of the United States National Museum. Vol. 77, Art. 4: The Lysianassid Amphipod Crustaceans of Newfoundland, Nova Scotia and New Brunswick in the United States National Museum. By Clarence R. Shoemaker. (No. 2827.) Pp. 19. (Washington, D.C.: Government Printing Office.)

CATALOGUES.

The Nickel Bulletin. Vol. 3, No. 3, March. Pp. 73-104. Publication R2: The Nickel-Copper Alloys containing more than 50% Nickel. Revised edition. Pp. 24. Series B, No. 6: The Practical Application of Nickel in Cast Iron. Pp. 12. Publication R1: The Nickel-Copper Alloys containing less than 50% Nickel. Pp. 28. Publication S1: Case-Hardening and the use of Nickel Steels. Pp. 16. (London: The Mond Nickel Co., Ltd.)

Medicinal Glucose (Pure Dextrose) B.D.H. Pp. 13. (London: The British Drug Houses, Ltd.)

Caprokol (Hexyl Resorcinol B.D.H.), the Urinary Antiseptic for Oral Administration. Pp. 15.

Diary of Societies.

THURSDAY, APRIL 24.

LONDON MATHEMATICAL SOCIETY (at Royal Astronomical Society), at 5.—H. A. Hayden: Asymptotic Lines in a V_m in a V_n .—V. Naylor: The Methods of Summation.—G. N. Watson: Theorems stated by Ramanujan (XII.).

FRIDAY, APRIL 25.

FARADAY SOCIETY (at Chemical Society), at 2.15.—Annual General Meeting.

ROYAL SOCIETY OF MEDICINE (Medicine Section), at 5.—Cinematographic Demonstration by Dr. L. G. Rowntree: Ganglionectomy in Chronic Arthritis.—Prof. Dixon and Dr. G. N. Myers: The Curative Action of Digitalis in Toxaemia.

INSTITUTE OF MECHANICAL ENGINEERS, at 6.—F. Carnegie: The Economical Production and Distribution of Steam in Large Factories.

ROYAL SOCIETY OF MEDICINE (Epidemiology Section), at 8.—Prof. S. L. Cummins: Some of the Clinical and Pathological Factors underlying Mortality Rates in Tuberculosis.

INSTITUTE OF ELECTRICAL ENGINEERS (West Wales (Swansea) Sub-Centre).—S. W. Melson, A. N. Arman, and W. Bibby: Surge Investigations on Overhead Line and Cable Systems.

SATURDAY, APRIL 26.

NORTH OF ENGLAND INSTITUTE OF MINING AND MECHANICAL ENGINEERS.

PUBLIC LECTURES.

THURSDAY, APRIL 24.

INSTITUTE OF PATHOLOGY AND RESEARCH, ST. MARY'S HOSPITAL, PAD-DINGTON, at 5.—Sir Almroth E. Wright: Twelve Years' Work on Immunisation of the Blood *in vitro*.

THURSDAY, MAY 1.

INSTITUTE OF PATHOLOGY AND RESEARCH, ST. MARY'S HOSPITAL, PAD-DINGTON, at 5.—Prof. J. Mellanby: Absorption from the Alimentary Canal.

CONGRESS.

APRIL 25 TO 28.

FLEMISH CONGRESS OF NATURAL SCIENCES AND MEDICINE (at Antwerp).