

The energy is calculated of the steady state of lowest energy of the hydrogen molecule ion, when the electron vibrates in a straight line perpendicular to, and through the mid point of, the line joining the nuclei.—Albert L. Raymond: The mechanism of carbohydrate utilisation. The steps in alcoholic fermentation are, briefly, hexose monophosphate ester, cleavage into two triose groups, one containing all the phosphorus, the latter becoming hexose diphosphate and the former yielding alcohol and carbon dioxide; and the hydrolysis of the diphosphate back to hexose. Carbohydrate metabolism in the animal is believed to be similar.—William D. Harkins: The separation of chlorine into isotopes (isotopic elements) and the whole-number rule for atomic weights. By diffusion through the walls of clay pipe-stems, hydrogen chloride was obtained containing chlorine of atomic weight  $35.417$ , as compared with  $35.457_4$  for ordinary chlorine. It is hoped to investigate with this light fraction the spectral shift due to isotopes as found for ordinary lead and the lead produced by disintegration of uranium.—William D. Harkins and W. G. Guy: The radio-activity of potassium, rubidium, and other elements. The natural leak of a large ionisation chamber is balanced against that of a small chamber containing uranium oxide covered with aluminium foil to exclude  $\alpha$ -radiation. The salts examined were placed in the large chamber, and the activities of rubidium and potassium found are as  $1.39 : 1.00$ . It is concluded that the disintegration of an isotope is the source of the radiation from potassium.—William D. Harkins and Norvil Beeman: The oriented wedge theory of emulsions. If the oil-like or non-polar end of the soap molecule is smaller than the polar end, the emulsion will be one of oil in water; if the reverse be the case, the droplets will be of water. The size of the greatest number of drops is so much greater than the size of the sodium oleate molecule that it cannot be expected that the molecule should determine the size of the drop. Emulsifying agents, the molecules of which have larger non-polar or polar ends, are required to test the theory.—Williams D. Harkins and J. W. Morgan: Polymolecular and monomolecular films. Young's modulus for steel being about 12,000, that of a monomolecular film such as stearic acid on water is 39; a polymolecular film is generally much weaker. Films of mixed substances each giving a monomolecular film are also monomolecular.—William D. Harkins and S. B. Stone: The isotopic composition of the element chlorine in the meteorites: the atomic weight of meteoric and terrestrial chlorine (see NATURE, September 19, p. 426).—George L. Clark, P. C. McGrath, and M. C. Johnson: The effect of X-rays on the platinum catalyst in the contact sulphuric acid reaction. X-rays do not improve the yield if dry air is used. With moist air, an enormously greater conversion is obtained which is further increased, but only temporarily, by radiation of the catalyst.—Wm. H. Gates: The Japanese waltzing mouse, its origin and genetics. Both the waltzing and non-waltzing form of the Japanese mouse are derivatives of *Mus wagneri*, a native of Central Asia, and not of the common house mouse. In a cross with the latter, the characters of the waltzer tended to remain together in the  $F_2$  generation.—A. J. H. Russell: A statistical approach to the epidemiology of cholera in Madras Presidency. The monthly mortality figures for the period 1902-21 are used, and the population dealt with numbers 43 millions. There is an annual and a six-yearly periodicity and a varying relationship in different areas with rainfall.—Harold Hotelling: The distribution of correlation ratios calculated from random data.—E. W. Stearn, B. F. Sturdivant, and A. E. Stearn: The life-history of a micro-parasite isolated from carcino-

matous growths. Cultures or extracts of carcinomatous tissue give an organism the life-history of which seems to include rods, thread-like forms with tapering ends, cocci of various sizes, and large sporing bodies. The optimum temperature is  $37^{\circ}\text{--}41^{\circ}\text{C}$ . In fluid from the tissue it is almost invisible and passes filters, but can be detected as a loosely coiled spirillum. In cultured colonies, under certain conditions, orthorhombic crystals appeared.

### Official Publications Received.

- Sinsai Yobó Tyósakwai Hókoku. (Reports of the Imperial Earthquake Investigation Committee.) No. 100, A. Pp. vi+354+60 plates+3 maps. No. 100, B. Pp. iv+126+44 plates+3 maps. No. 100, E. Pp. vii+297+31 plates+13 maps. (Tokyo.)
- Department of Commerce: Bureau of Standards. Miscellaneous Publications, Bureau of Standards, No. 64: History of the Standard Weights and Measures of the United States. By Louis A. Fischer. Pp. v+84. (Washington: Government Printing Office.) 15 cents.
- United States Department of Agriculture: Department Bulletin No. 1349: The Brood-Rearing Cycle of the Honeybee. By W. J. Nolan. Pp. 58. (Washington: Government Printing Office.) 10 cents.
- Report of the Aeronautical Research Institute, Tókyó Imperial University. Vol. 1, No. 12: The Standard Atmosphere and the Corrections to be Applied to a Reading of an Altimeter. By Takuro Tamaru. Pp. 321-349. (Tokyo: Maruzen Kabushiki-Kaisha.) 50 yen.
- Congrès International des Américanistes. Compte rendu de la XXII<sup>e</sup> session, Deuxième partie, tenue à Göteborg en 1924. Pp. xxxix+705. (Göteborg: Museum.)
- United States Department of Agriculture. Department Bulletin No. 1359: Food of American Phalaropes, Avocets and Stilts. By Alexander Wetmore. Pp. 20+3 plates. (Washington: Government Printing Office.)
- The Development of India's Forest Resources. Compiled by the Economic Branch of the Forest Research Institute, Dehra Dun. Pp. v+39+22 plates. (Calcutta: Government of India Central Publication Branch.) 2.12 rupees; 5s.
- The National Institute of Agricultural Botany. Sixth Report and Accounts, 1924-25. Pp. 19. (Cambridge.)
- Department of the Interior: Bureau of Education. Bulletin, 1925, No. 11: Accredited Secondary Schools in the United States. Pp. v+119. (Washington: Government Printing Office.) 15 cents.
- Studies from the Connaught Laboratories, University of Toronto. Vol. 2, 1922-1925. Pp. 273. (Toronto: University of Toronto Press.)
- The Linnean Society of New South Wales. Historical Notes of its First Fifty Years (Jubilee Publication). Compiled by Dr. A. B. Walkom. Pp. 46. (Sydney, N.S.W.)
- Seale-Hayne Agricultural College, Newton Abbot, Devon. Pamphlet 17: The Cost of Food in Milk Production (Third Report). By D. R. Edwardes-Ker and T. J. Shaw. Pp. 21. (Newton Abbot, Devon.)
- British Photographic Research Association. Report for the Year 1924-25. Pp. 10. (London.)
- Aeronautical Research Committee. Reports and Memoranda, No. 967 (Ae. 183): An Experimental Study of the Vibrations in the Blades and Shaft of an Airscrew. By A. Page. (A.S.d. Airscrews, 73—T. 1947.) Pp. 16+1 plate. (London: H.M. Stationery Office.) 9d. net.
- British Cast Iron Research Association. Fourth Annual Report for the Year ending June 30th, 1925. Pp. 20. (Birmingham.)
- Ministry of Agriculture and Fisheries. Miscellaneous Publications, No. 49: Report on the Occurrence of Insect Pests on Crops in England and Wales for the Years 19-2, 1923 and 1924. Pp. 86. (London: Ministry of Agriculture and Fisheries.) 1s. 6d. net.
- Ministry of Public Works, Egypt: Physical Department. Helwan Observatory, Bulletin No. 32: Corrections to Observed Times of Wireless Signals, 1922 November to 1924 June. By H. Knox-Shaw and P. A. Curry. Pp. 181-141. (Cairo: Government Publications Office.)
- Spisy vydávané Přírodovědeckou Fakultou Masarykovy University (Publications de la Faculté des Sciences de l'Université Masaryk). Rédigées par Bohuslav Hostinský. Čís. 52: Iter Turcico-Persicum. Pars 2: Plantarum collectarum enumeratio (Compositae). Scriptis Dr. Fr. Nábělek. Pp. 57-12 tab. Čís. 55: Nástin zeměpisného rozšíření lišejníků na Moravě vzhledem k poměrům evropským: srovnávací studie fytoogeografická. (A Sketch of the Distribution of Lichens in Moravia with regard to the Conditions in Europe: a Phytogeographical Comparative Study.) Napsal Jindřich Suza. Pp. 152. Čís. 56: Onobrychis generis revisio critica. Pars prima. Scriptis G. Širjaev. Pp. 197+17 tab. Čís. 57: Studie o larvách Corixid I. (Études sur les larves des Corixides I.) Napsal V. Teyrovský. Pp. 18. Čís. 58: Parasitismus a metamorfóza druhu Gordius tolosanus Duj. (Parasitism and Metamorphosis of the species Gordius tolosanus Duj.) Napsal Jan Švábeník. Pp. 48+2 tab. Čís. 59: O růstových útvarech vznikajících reakcemi na rozhraní mezi roztoky elektrolytů ve vodě a v gelu. (On the Growth of Structures formed by Reactions on the Boundary between Solutions of Electrolytes in Water and those in Gel.) Napsal Vladimír Morávek. Pp. 42+5 tab. Čís. 60: Příspěvek ke kvantitativnímu stanovení kyseliny mléčné: mikrometoda ke stanovení v krvi. (Recherches dans le dosage de l'acide lactique: le microdosage dans le sang.) Napsal J. Frejka a K. Všečeka. Pp. 27. Čís. 61: Nový zjev elektrokinetický: Příspěvek ke studiu elektrokapilarity roztaveného kyslíčnicku telluriditěho. (Un nouveau phénomène électrocinétique; étude de l'électrocapillarité de l'oxide tellureux fondu.) Napsal A. Šimek a H. Kadlcová. Pp. 21+2 tab. Čís. 62: Rhamphorhynchus Gemmingi, H. v. Meyer. Napsal Fr. Rikovský. Pp. 14. Čís. 63: O absorpci plyného chlorovodíku v kyselině sírové. (The Absorption of Gaseous Hydrogen Chloride by Sulphuric Acid.) Napsal Václav Čupr. Pp. 18. (Brno.)