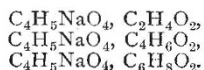


free nitrogen, was demonstrated for the first time by M. Reiset in 1856, and confirmed by the subsequent experiments of Messrs. Lawes and Gilbert, and others. Here, M. Schloesing describes the process by which he has endeavoured to determine the quantity of nitrogen dissipated during decomposition under the natural conditions of temperature and the general environment. The results of these researches will be communicated in a future paper.—The Buitenzorg Botanic Garden and Laboratory, by Dr. Treub. From this interesting description of the Buitenzorg institution near Batavia, Java, it appears that it comprises three distinct branches: (1) the Botanic Garden, properly so called, where are cultivated from 8000 to 9000 tropical and sub-tropical plants; (2) the Tjibodas Garden, situated at an altitude of 1500 metres in one of the hilliest districts of the Preang residency; (3) the Experimental Garden, in the Tjikeumeuh quarter of Buitenzorg, where are grown all the economic plants of the tropical zone. The first comprises a museum, an herbarium, a large library, a phytochemical laboratory, a photographic atelier, and a laboratory for botanic research. This last was established four years ago for the purpose of enabling botanists from Europe to study tropical vegetation on the spot, and is thus somewhat analogous to the Zoological Station at Naples. Buitenzorg is supported by an annual grant of £6000 from the Dutch East Indian Government.—Observations of Barnard's Comet, 1888 *c*, made with the west equatorial of the Paris Observatory, by M. D. Eginitis. These observations, covering the period from December 7 to January 8, give the positions of the comparison stars, and the apparent positions of the comet.—Observations of the new planet discovered on January 28, at the Observatory of Nice, by M. Charlois. The observations were taken on January 28 and 29, when the planet was of the thirteenth magnitude.—On the personal equation in astronomical calculations, by M. J. J. Landerer. The object of this communication is to show that within somewhat wide limits the personal equation depends on an effect of diplopy which may be easily measured.—Euler's problem on the equation $dx^2 = dz^2 + dy^2$, by M. G. Koenigs. In this note the problem in question is extended to the case of any surface.—On homography in mechanics, by M. Appell. It is shown that the method of transforming figures by central projection, which plays such an important part in geometry, may also be employed in mechanics. These remarks may be extended to the movement of a point in space, and even to the movement of several points, on the condition in the latter case of making a general homographic transformation, which shall simultaneously contain the co-ordinates of all the points.—On the compressibility of mercury and the elasticity of glass, by M. E. H. Amagat. In his communication of October 15, 1888, the author gave the results of his studies on the elasticity of the crystal in the cylindrical piezometers of this substance charged with mercury. By simultaneous inward and outward pressure of these cylinders, he obtains the coefficient of apparent compressibility, and ultimately that of the absolute compressibility of the liquid metal. The whole series of experiments are now repeated, and the results here tabulated, showing for mercury a mean general coefficient of 0.000003918 under pressures not exceeding 50 atmospheres. Although slightly higher, this may be regarded as in accordance with the coefficient 0.0000036, obtained by Prof. Tait, who worked up to a pressure of 450 atmospheres, and who considered his result as somewhat too low, even according to the method adopted by him ("Voyage of the *Challenger*," Part 4).—On the heat of formation of the bichromate of aniline, by MM. Ch. Girard and L. L'Hôte. In a previous note (*Comptes rendus*, June 13, 1887) the authors showed that the bichromate of aniline might be easily prepared by causing the bichromate of potassa to react on the hydrochlorate of aniline under conditions there specified. In order to complete these researches they here study the thermic conditions of the formation of this salt.—Alcoholic combinations of the glycolalcoholate of soda, by M. de Forcrand. The author finds that the monatomic alcohols combine with the glycolalcoholate of soda, forming with it crystallized compounds analogous to the alcoholic glycerinates of soda. He has prepared and analyzed the following products:—



—On the quantitative analysis of organic nitrogen by the Kjeldahl method, by MM. E. Aubin and Alla. In reply to M.

L'Hôte's objections to this method, experiments are here described showing that it is both trustworthy and accurate, yielding results fully equal, if not superior, to those of MM. Will and Warrenttrapp. During the process the organic matter is completely transformed, and in the end all the nitrogen appears under an ammoniacal form; the sulphuric liquids obtained are always limpid and colourless, nor is there any loss of ammonia during the operations.—On the cockroaches of the Carboniferous age, by M. Charles Brongniart. Mr. S. H. Scudder, author of the best monograph on these Palaeozoic forms, divides them into the two families of Blattinariae and Mylacridae, the former common to both hemispheres, the latter, as he supposed, confined to the United States coal-fields. But it is here shown that this is a mistake, and that the Mylacridae are as common as the Blattinariae in the Commeny formations, France.—M. de Malarce contributes a paper on the extension of the metrical system, on the development of uniform monetary systems and of the credit system (cheques, bills, &c.), throughout the civilized world.

BOOKS, PAMPHLETS, and SERIALS RECEIVED.

The Scientific Papers of the late Thomas Andrews, M.D., F.R.S., with a Memoir by P. G. Tait and A. Crum Brown (Macmillan).—The Physician as Naturalist: W. T. Gairdner (MacLehose, Glasgow).—Report on the Proceedings of the U.S. Expedition to Lady Franklin Bay, Grinnell Land, vol. 1: A. W. Greely (Washington).—Popular Lectures and Addresses, vol. 1, Constitution of Matter: Sir Wm. Thomson (Macmillan).—The Philosophy of Mysticism, 2 vols.: C. du Prel, translated by C. C. Massey (Redway).—Dr. H. G. Bronn's Klassen und Ordnungen des Thier-Reichs, Erster Band, Protozoa, 53, 54, 55, Liefg.: Dr. O. Bütschli (Williams and Norgate).—Bird Life of the Borders: A. Chapman (Gurney and Jackson).—Report on the Cost and Efficiency of the Heating and Ventilation of Schools: T. Carnelley (Dundee).—Yield Tables for the Scotch Pine: W. Weise; converted into English measure and arranged by Dr. W. Schlich (Allen).—Volkaner i det Nordöstlige Island: Th. Thoroddsen (Stockholm).—Journal of the Chemical Society, February (Gurney and Jackson).—Observaciones Magnéticas y Meteorológicas del Real Colegio de Belen en la Habana, 4^o. Trim. 1886 (Habana).—Bulletin de l'Académie Royale des Sciences de Belgique, No. 12 (Bruxelles).—Annalen der Physik und Chemie, 1889, No. 2 (Leipzig, Barth).—Beiblätter zu den Physik und Chemie, 1889, No. 1 (Leipzig, Barth).

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