

here establishes the important generalisation that all these cubics may be rectified by means of the elliptical integrals.—On the voltaic arc, by M. G. Maneuvrier. A new process is described, by means of which the voltaic arc may be excited without previous contact of the two electrodes.—Law of distribution of the rays and bands common to several spectra of bands, by M. Deslandres. Having already shown that the rays composing the same band may be divided into a series of identical rays, such that in each series the intervals between one ray and the following run pretty well in arithmetical progression, the author here extends this simple law of distribution to the bands of the same spectrum of bands, indicating an analogy with the law of succession of sounds in a solid body.—Fatal accidents in electric workshops, by M. A. d'Arsonval. Some remarks are presented on the causes of these accidents, on their physiological effects, and on the means of preventing them.—Quantitative analysis of vanadic acid, by M. A. Ditte. It is shown that by observing certain precautions the method indicated by Berzelius, based on the insolubility of the vanadate of ammonia in sal ammoniac may be applied to the analysis of vanadium in the form of vanadic acid with satisfactory results.—On some ammoniacal combinations of the sulphate and nitrate of cadmium, by M. G. André. Some details are given for the preparation of the ammoniacal sulphates and nitrates of cadmium, with indications of their possible relations to the corresponding salts of zinc and copper.—On the extraction and analysis of the vanadium occurring in rocks and mineral ores, by M. L. L'Hôte. The method here described involves two operations: the extraction of the vanadium in the form of vanadic solution, and its analysis by means of titrated liquors, or by weighing.—On the preparation of the propylamines and iso-amylamines, by M. H. Malbot. The observations recently made by the author on the isobutylamines are here extended to the amines derived from various alcohols.—On the power of multiplication of the ciliated Infusoria, by M. E. Maupas. This power is shown to depend on three factors: the quality and abundance of nourishment; temperature; and the biological adaptation of each species from the alimentary standpoint.—Results obtained by the preventive inoculation of the attenuated virus of yellow fever at Rio de Janeiro, by MM. Domingos Freire, Paul Gibier, and C. Rebourgeon. Of the 1675 cases terminating fatally between January 1885 and September 1886, only 8 had been vaccinated, and these at a time when the treatment was still imperfectly understood. In general, the mortality is now 1 per 1000 for the vaccinated, and 1 per 100 for all others.

BERLIN

Physiological Society, March 25.—Prof. du Bois-Reymond, President, in the chair.—Prof. Falk spoke on the influence of extremes of temperature on the colour of blood. In persons either burnt or frozen to death the *post-mortem* patches present a strikingly bright red colour. The speaker has found, as the result of an experimental investigation, that temperatures of 0° C., and below, lead to the colour of the blood becoming bright red by causing the oxygen of the air to be more readily fixed and more stably retained by the corpuscles than is the case at ordinary temperatures. If, however, the blood has stood exposed to the air until putrefactive changes have set in, in this case the action of cold no longer makes the blood brighter in colour. Other experiments have shown that in animals killed by low temperatures the blood is bright red, not only in the peripheral parts but also in the heart and great vessels. Also in human beings frozen to death the blood even in the heart is sometimes observed to be bright red, although in most cases only the blood of the peripheral parts presents this appearance; probably death has ensued from freezing only in cases presenting the first of these two appearances.—The President read a communication from Prof. Fredericq, of Louvain, on Traube-Hering curves. As is well known, a blood-pressure tracing recorded by a mercurial manometer, shows three distinct kinds of curves:—(1) Curves of the first order, which are caused by the systole of the heart. (2) Curves of the second order, which make their appearance at lengthy intervals and are synchronous with the respiratory movements: these curves represent the influence of the respiration on the blood-pressure. (3) Curves of the third order, which make their appearance at still longer intervals and were first described by Siegmund Meyer: these have usually been regarded as due to a rhythmic increase and diminution in the activity of the vaso-motor centre. The curves described by Traube and Hering have until now been regarded

as belonging to the above-mentioned third order of curves. Prof. Fredericq, however, regards this as an incorrect view; he regards them as belonging to the second order, corresponding to and produced by the respiratory movements.—Dr. Wurster stated that he has treated the caseine-like substance (see NATURE, vol. xxxv. p. 455) obtained by the addition of hydrogen-peroxide to white of eggs with ammonia, and finds that a portion of this substance is thereby dissolved. Another portion, however, is converted into a ropy mass, which on being dried yields a horny substance, with a very marked affinity for colouring matters, and which exhibits nearly all the characteristics of horn. He has further found that these two bodies undergo no change by the action of nitrite of soda on the white of eggs. By the addition of lactic or acetic acid he has obtained a yellow precipitate which turned intensely red on exposure to the air: the same reagents applied to blood produced a black coloration.—Prof. Zuntz gave a short communication on the course of experiments which he has made in conjunction with Profs. Virchow and Senator on Cetti during his fast lasting over eleven days. The results of the investigation have not yet been completely put together, but will be communicated at an early sitting of the Physiological Society.

BOOKS, PAMPHLETS, and SERIALS RECEIVED

Calendar of the Royal University of Ireland, 1887 (Thom, Dublin).—Studies from the Laboratory of Physiological Chemistry, Sheffield Scientific School of Yale University, vol. ii. (New Haven).—Transactions of the Edinburgh Geological Society, vol. v. Part 2 (Edinburgh).—The Treatment and Utilisation of Sewage, 3rd edition: W. Corfield and L. Parkes (Macmillan).—Practical Solid Geometry: W. G. Ross (Cassells).—Bees and Bee-Keeping, vol. ii. Part 7: F. R. Cheshire (Gill).—British Dogs, No. 6: H. Dalziel (Gill).—Catalogus der Bibliotheek van 'Slands Plantentum te Buitenzorg (Batavia).—Nitrate of Soda: A. Stutzer (Whittaker).—Mystery of Gravity: J. Fraser (Wyman).—England as a Petroleum Power: C. Marvin (Anderson).—Circulars of Information of the Bureau of Education, Nos. 1 and 2, 1886 (Washington).—Report of the Mitchell Library, Glasgow, 1886 (Glasgow).—Geo.ogical Magazine, No. 274 (Triibner).—Journal of the Chemical Society, April (Gurney and Jackson).—Journal of the Straits Branch of the Royal Asiatic Society, June 1886; Notes and Queries (Singapore).

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