

author regarding the presence of foreign substances in didymium, as revealed by its absorption-spectra. Some of these bodies may possibly be diverse combinations of the same with another substance or with itself, such combinations being so stable that it has hitherto been impossible to transform one into the other.—On the specific heat of a salt-solution, by M. P. Duhem. The method employed by the author to find the expression of the heat of solution is here shown to lead also to the expression of the specific heat of a salt-solution.—On a standard pile, by M. Gouy. The author describes a convenient standard of electro-motor force, formed with zinc, sulphate of zinc, mercury, and dioxide of mercury.—Researches on the application of rotatory force to the study of certain compounds produced in the solutions of tartaric acid, by M. D. Gernez.—On a general method of forming the manganites from the permanganates, by M. G. Rousseau. The metallic permanganates are transformed to manganates at a temperature ranging from 100° to 150° C., and as the law of decomposition here formulated is applicable to the compounds of the whole series, it is proposed as a general method for obtaining most of the metallic manganates.—On the reticulated structure of the protoplasm of the Infusoria, by M. Fabre-Domergue.

BERLIN

Physiological Society, February 25.—Prof. Munk in the chair.—The President communicated two treatises sent, for publication in the Proceedings of the Society, by Prof. Kronecker, of Berne. In the first, Prof. Kronecker had, in conjunction with Fräulein Popoff, examined the formation of serous albumen in the intestinal canal. As reagents they made use of the hearts of frogs and tortoises, void of blood, which were stimulated to contraction only when blood or a solution of serous albumen was poured through them, but under every other albuminous or saline solution remained inactive. Stomachic peptone was incapable of nourishing the heart. When, however, the peptone was kept for some time in the stomach or in an intestinal coil connected with the mesentery, then it acted on the heart in the same way as did serous albumen. Pancreatic peptone was incapable, either of itself or after remaining in the stomach or the intestine, of stimulating the heart to contraction; by exposure for a considerable time to the air, the peptone likewise became nutritious to the heart.—In the second treatise, containing an investigation by Prof. Kronecker and Fräulein Rink, it was demonstrated that in peptone solution two kinds of Bacteria are developed in the presence of air: *Bacillus restituens*, which transformed the peptone into serous albumen, exactly in the same way as did the living mucous membrane of the stomach; and *Bacillus virescens*, which liquefied the alimentary gelatine and imparted a deep blue colouring to all sterilised substrata when exposed to the air. This latter Bacillus operated poisonously on the heart.—Dr. Benda spoke of the function of the cross-striped muscle substance. By anatomical investigation of the muscles of the river crayfish he had arrived at the conviction that it was only the cross striped substance which generated the contraction, while it was in the highest degree probable that the protoplasm discharged the office of mediation between the ends of the motory nerves and the contractile substance.—Prof. Ewald described some comparative experiments performed on three patients to ascertain the amount of nourishment with different commercial peptones, with eggs, and with eggs to which were added pepsine and hydrate of chlorine. The nutritive fluids were supplied *per enema*, and the individually very changeable nitrogenous transpositions were determined by careful analyses of the ingesta and egesta.

Meteorological Society, March 1.—Prof. von Bezold in the chair.—Dr. Kremser communicated the results of an investigation into the variability of atmospheric temperature in Germany. Variability he understood, in accordance with Hann's definition, to be the difference between the mean temperature on two consecutive days. Such variability was found by Dr. Kremser to attain its greatest magnitude in the mountains and in the eastern provinces, and its least range along the coasts of the Baltic and North sea, and on the islands. The maximum was in the Riesengebirge, 4°·3 F., the minimum on the islands of the North Sea, 2°·3. If the monthly means were arranged in chronological sequence for the year, there was presented an annual march of temperature with a chief maximum in December and a secondary in June. The variability of temperature at each of the different hours, 6 a.m., 2 p.m., and

10 p.m., yielded values differing from those of the variability of the daily means of temperature. Yet the yearly march of variability of each of the different hours already specified was similar to the yearly march of variability of the daily means. The greatest change of temperature affecting an individual period of twenty-four hours was observed in Clausen, amounting to 68° F. In Berlin, the greatest change to which the same period was liable was 24°·7; in Munich it was 30°·6. A variability of 18°·0 affecting a period of twenty-four hours might be expected in the course of a year in the east and south, but along the North Sea coast only in a period of three years. As the basis for the above conclusions, Dr. Kremser had made use of the observations of ten years.

BOOKS, PAMPHLETS, and SERIALS RECEIVED

Gairloch: J. H. Dixon (Edinburgh).—Catalogue of Siwalik Vertebrata contained in the Geological Department of the Indian Museum, Calcutta; part 1, Mammalia; part 2, Aves, Reptilia, and Pisces: R. Lydekker (Calcutta).—Catalogue of Pleistocene and Prehistoric Vertebrata contained in the Geological Department of the Indian Museum, Calcutta: R. Lydekker (Calcutta).—Memoirs of the Geological Survey of India. Palæontologia Indica, ser. xiii. Salt Range Fossils: W. Waagen; ser. xii. The Fossil Flora of the Gondwana System, vol. iv. part 2, The Fossil Flora of some of the Coal-Fields in Western Bengal: O. Feistmantel (Trübner).—Challenger Reports, vol. xviii., 3 parts.—Science of Thought: F. Max Müller (Longmans).—Le Commozioni Telluriche il Terremoto del 23 Febbraio, 1887 (Roux, Torino).—On Over-work and Premature Mental Decay, 4th edition: C. H. F. Routh (Baillière, Tindall, and Cox).—Geological History of Lake Lahontan: J. C. Russell (Washington).—Transactions of the Academy of Science of St. Louis, vol. iv. No. 4 (St. Louis).—Proceedings of the American Philosophical Society, vol. xxiii. (Philadelphia).—Essentials of Histology, 2nd edition: E. A. Schäfer (Longmans).—Natural History Transactions of Northumberland, Durham, and Newcastle-upon-Tyne, vol. viii. part 2 (Williams and Norgate).—Verhandlungen des deutschen Wissenschaftlichen Vereins zu Santiago, 3 Hefte (Valparaiso).—A Plea for a Midland University: H. W. Crosskey (Cornish, Birmingham).—Proceedings of the Academy of Natural Sciences of Philadelphia, part 3, October to December 1886 (Philadelphia).—American Naturalist, January (Lippincott).—Annalen der Physik und Chemie, No. 4, 1887; Beiblätter der Physik und Chemie, No. 2, 1887 (Barth, Leipzig).

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