

fluid-surface thus exposed no inert layer was to be seen. Similarly he had been able to show, by observations under the microscope, that the phenomenon cannot be explained by any vortex movements in the fluid. Further, the assumption that it is due to a solution of alkali from the glass, which then prevents the precipitation of the chloroform, had been excluded by using a vessel made of quartz crystal. Prof. Liebreich inclined to the view, on the basis of his past experiments, which, however, must be further followed and extended, that the suppression or slowing of the chemical reaction at the surface of the fluid, which gives rise to the inert layer, is determined by the greater solidity and resistance of this part of the liquid.

Meteorological Society, April 2.—Prof. von Bezold, President, in the chair.—Prof. Börnstein spoke on the ebb and flow of the tide. After explaining the nature of the moon's action on the fluid part of the earth's surface, and showing that the flood is essentially due to a diminution of gravity and the ebb to its increase, he passed on to the consideration of the moon's attraction as it affects the atmosphere. Many experiments have been made with a view to proving the influence of the moon on the atmosphere, and at various places observers have succeeded in establishing a daily variation in the pressure of the air dependent upon the moon, and showing two maxima and two minima; these places are Singapore, St. Helena, Melbourne, and Batavia. The amplitude of the variation amounted to from 0.079 to 0.2 mm. But opposed to these are the observations of Laplace on the variations of the barometer in Paris, as also of Kreil in Prague, and further, Bessel's observations on atmospheric refraction. All these last-named observers found that the action of the moon on the earth's atmospheric envelope was either *nil* or else the reverse of that described above. Prof. Börnstein then discussed the question whether any ebb and flow of the atmosphere could possibly be detected with the means now at our disposal, and showed that the mercurial barometer can never be able to give indications of any such action, since it is itself affected by the alterations of gravity which are due to the varying position of the moon. He explained the phenomena observed at the four stations mentioned above as due to the fact that they are situated either on the sea-coast or on islands, at places on the earth's surface at which the ebb and flow of the sea is very considerable. The ebb and flow of the sea acts secondarily on atmospheric pressure, especially by means of the alteration of surface, and give rise to corresponding increases and diminutions in that pressure. Paris, Prague, and Königsberg are, on the other hand, inland stations, at which the barometer cannot be affected by any variations in the level of the sea's surface.

STOCKHOLM.

Royal Academy of Sciences, March 14.—On the essential results of the mathematical paper for which M. Poincaré received the mathematical prize of the King of Sweden, by Prof. Mittag-Leffler.—Derivation of some independent expressions of the Bernoullian numbers, by Dr. A. Berger.—On the plane curves which may be rectified through Abel's integrals of the first kind, by Dr. J. Brodén.—On the conform delineation of a paraboloid on a plane, by Herr H. von Koch.—On some remarkable minerals formed at a later period in the primordial strata of Sweden, by Baron Nordenskiöld.—Sur la chaleur latente de vaporisation de l'eau et la chaleur spécifique de l'eau liquide, par Dr. N. Ekholm.—New observations on the variation of the shape of the first abdominal appendices of the female crawfish, by Dr. Bergendahl.—Contributions to the anatomy of the Trematode genus *Apoblenia Dujardin*, by Herr H. Juel.—Ascomycetæ from the Isle of Öland and from Östergötland, by Herr C. Starbäck.—On some triazol derivatives, by Dr. J. A. Bladin.—On bisphenyl-methyl-triazol, by the same author.—On the molecular weight of maltose and some inulinoid carbohydrates, by Dr. Ekstrand and Herr R. Manzelius.—Annotations on some European Orthotricha, i., by Lector Grönvall.—Déterminations des éléments magnétiques dans la Suède méridionale, by Herr W. Carlheim-Gyllenskiöld.—Formulas and tables for calculation of the absolute perturbations of the planets, by Herr Masal.

AMSTERDAM.

Royal Academy of Sciences, March 30.—Dr. Van den Sanden in the chair.—M. Forster stated the results of some experiments made in his laboratory, by Mr. Hunder Stuart and Mr. Fraser Ewman, on the presence of bacteria in the intestines. Mr. Stuart found that ordinary, and Mr. Ewman that typhoid, bacteria, introduced into the stomach along with the food, are discovered only in the lowest part of the smaller intestine.

and further in the large intestine. Ordinary bacteria have, therefore, no influence on the digestive process.—By means of known properties of polar systems and of elementary reasoning about reality, M. Schoute proved geometrically that the co-variant of Hesse, belonging to a binary equation with real co-efficients, is negative for the values of the variable that correspond to the real roots of the equation, independently of the number of its real roots; this is an extension of Dr. F. Geribaldi's theorem (compare *Rendiconti di Palermo*, tome iii. p. 22).—M. J. A. C. Oudemans read a paper on the present state of the methods for determining the parallaxes of fixed stars.

VIENNA.

Imperial Academy of Sciences, February 21.—The following papers were read:—On the specific brightness of colours, a contribution to the physiology of visual sensations, by F. Hillebrand.—On the law of the decreasing of the power of absorption at increasing thickness of absorbent layers, by W. Müller-Erbach.

BOOKS, PAMPHLETS, and SERIALS RECEIVED.

E. Museo Lundii, Part 1 (Copenhagen, Hagerups).—The Bacteria in Asiatic Cholera: E. Klein (Macmillan).—Systematic Account of the Geology of Tasmania: R. M. Johnston (Tasmania).—Life; what it is sustained by, and Cognate Subjects: W. Boggett (Trübner).—Proceedings of the London Mathematical Society, vol. xix. (Hodgson).—Flora Orientalis, Supplementum: R. Buser (Geneva, Georg).—Jahrbuch der Meteorologischen Beobachtungen der Wetterwarte der Magdeburgischen Zeitung, 1888 (Magdeburg).—Wild Life in a Southern County: new ed., R. Jefferies (Smith, Elder).—The Structure and Distribution of Coral Reefs, 3rd edition, with an Appendix by Prof. Bonney: C. Darwin (Smith, Elder).—Statics for Beginners: J. Greaves (Macmillan).—The Anatomy of *Astrangia danae*, six lithographs from drawings by A. Senrel; explanation of plates by J. W. Fewkes (Washington).—New Zealand Meteorological Report, 1885 (Wellington).—Proceedings of the Geologists' Association, February (Stanford).—Journal of the Institution of Electrical Engineers, No. 78 (Spon).—Quarterly Journal of Microscopical Science, April (Churchill).—Brain, No. 44 (Macmillan).—Botanische Jahrbücher für Systematik, Pflanzengeschichte und Pflanzengeographie, Zehnter Band, v. Heft, Elfter Band, i. Heft (Leipzig, Engelmann).—Bulletin of the American Geographical Society, vol. xxi. No. 1 (N.Y.).—Bulletin from the Laboratories of Natural History of the State University of Iowa, vol. i. No. 1 (Iowa).—Journal of the Royal Statistical Society, March (Stanford).—Journal of the Royal Microscopical Society, April (Williams and Norgate).

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