tion with the maximum tension of the saturated solutions.—Heat of formation of the methylate and ethylate of potassa, by M. de Forcrand.—On the wines and brandies extracted from strawberries and raspberries, by M. Alph. Rommier. By the process here described raspberries are made to yield a wine with over 18 per cent. of alcohol instead of the normal 2 or 2·5 per cent., while the brandy distilled from it retains a highly aromatic flavour. A still more palatable wine, with 16 per cent. of alcohol, is obtained from the fine strawberries grown in the neighbourhood of Paris, the corresponding brandy also preserving the flavour of the fruit.—On the zymotic properties of certain virus: fermentations of nitric substances under the influence of non-aërial virus, by M. S. Arloing. The object of this communication is to show that the virus of non-aërial microbes stimulates the fermentation of albuminoid substances.—Note on the multiplication of *Leucophrys patula*, Ehrenberg, by M. E. Maupas. In a favourable medium, a single individual of these Infusoria, which multiply by fissiparity, is found to increase to over a million in five days. Certain hitherto unobserved irregularities in the process of segmentation are here described.—On the phosphorescence of the Geophili, by M. Macé. As studied on a *Geophilus simplex*, Gervais, this phenomenon appears to be analogous to that of certain Chetopteræ described by Panceri and Jourdan.—On the typical nervous system of the dexter and sinister Prosobranchæ, by M. E. L. Bouvier.—Fresh anatomical and physiological studies on the Glyciphagi, by M. P. Mégnin.—The diseases of the olive, by M. L. Savastano. A brief description of the various forms of hyperplasia and tumours by which this plant is affected.—Remarks on the so-called Calcifugal vegetation, by M. Ant. Magnin. A theory is advanced to explain the presence of these plants in the limestone region of the Jura.—On two rocks in the Vélay and Lyons districts, containing beryl and apatite, by M. Ferdinand Gonnard.—On an experiment undertaken to determine the direction of the currents of the North Atlantic, by Prince Albert of Monaco. The author describes a second excursion on board the *Hirondelle*, during which 510 bottles were thrown into the sea along a course about 500 miles long, and nearly parallel with the twentieth meridian west of Paris. The operation was begun on August 29 and completed on September 5, 1886, and some of the floats have already been picked up at various points on the European seaboard; but the general results are reserved for a future communication.—The periodical showers of shooting-stars and the seismic disturbances of the years 1883, 1884, and 1885, by M. Ch. V. Zenger. During these years, both orders of phenomena are shown to coincide, while they are also frequently accompanied by hurricanes, cyclones, electric discharges, and auroras.

BERLIN

Physiological Society, October 29.—Prof. du Bois-Reymond in the chair.—Dr. J. Munk reported on experiments instituted by him in the course of the last two years with a view of arriving at an experimental decision between the two theories of the secretion of urine: the filtration theory of Ludwig, and the secretion theory of Heidenhain. According to the first theory, the blood-pressure prescribed the measure for the urine secretion; according to the second theory, the urine got secreted from the secretory epithelial cells of the kidneys, and the quantity of the matter secreted was dependent on the rate of movement of the circulation of the blood. The speaker had instituted his experiments on excided but living kidneys, through which he conducted defibrinised blood of the same animals, under pressures which he was able to vary at pleasure between 80 mm. and 190 mm. Fifty experiments on dogs whose blood and kidneys were, during the experiment, kept at 40° C., yielded the result that the blood of starving animals induced no secretion of urine, which, on the other hand, showed itself in copious quantities where normal blood was conducted through the kidney. If to the famished blood was added one of the substances contained as ultimate products of digestion in the blood, such, for example, as urea, then did the secretion ensue. The fluid dropping from the ureter contained more urea than did the blood. That fluid was therefore no filtrate, but a secretion. An enhancement of the pressure of the blood flowing through the kidney had no influence on the quantity of the secretion passing away. An increased rate of movement on the part of the blood, on the other hand, increased in equal degree the quantity of urine. On a solution of common salt or of mere serum sanguinis being poured through the kidney, no secretion followed. All these facts, involving the exclusion of the possibility of a central influence being exercised from the heart or from the nervous system on the kidneys, were deemed by the speaker arguments proving that the urine was secreted by the renal epithelial cells. A series of diuretics was next tried, in order to establish whether they operated in the way of stimulus centrally on the heart or peripherally on the renal cells. Digitalis was a central diuretic. Common salt, on the other hand, was a peripheral diuretic. Added in the portion of 2 per cent. to the blood, it increased the quantity of urine eight- to fifteen-fold. Even in much less doses, it was a powerful diuretic. In a similar manner, if yet not so intensely, operated saltpetre and coffeïne, as also urea and pilocarpine. On the introduction, however, of the last substance into the blood, the rate of circulation was accelerated in an equal measure as was the quantity of urine increased, so that in this case the increase in the quantity of urine was, perhaps, exclusively conditioned by the greater speed in the movement of the blood. On the other hand, the quantity of secreted urine was reduced when morphine or strychnine was administered to the blood. In the case of the application of strychnine, the rate in the current of the blood was retarded in a proportion equal to the reduction in the secretion of the urine. The speaker had, finally, demonstrated the synthesis of hippuric acid and sulphate of phenol in the excided kidney as a function of its cells, by adding to the blood pouring through the kidney, in the first place, benzoic acid and glycol; in the second place, phenol and sulphate of soda. In order that these syntheses might make their appearance in the excided kidney, the presence of the blood-corpuscles was not necessary, though, indeed, the presence of oxygen in the blood was indispensable.

BOOKS AND PAMPHLETS RECEIVED

The Origin of Mountain Ranges: T. M. Reade (Taylor and Francis).—The Six Inner Satellites of Saturn; Appendix 1 and 2: A. Hall (Washington).—Conchylien der Gosaumergel von Aigen bei Salzburg: Dr. L. Tausch (Fischer, Wien).—Ueber die Fauna der Oolithe von Cap. S. Vigilio: M. Vacek (Fischer, Wien).—Jahrbuch der k.k. Geologischen Reichsanstalt, 1886 (Hölder, Wien).—Monthly Summaries and Monthly Means for Year 1885, Imperial Meteorological Observatory, Tokio.—Report of the Meteorological Observations for Years 1876-85 at Imperial Meteorological Observatory at Tokio.—The Arithmetic of Electrical Measurements: W. R. P. Hobbs (Murby).—Zoological Record, vol. xii., 1885 (Van Voorst).—My African Home: E. W. Fielden (Low).—Studies in Social Life: G. C. Lorimer (Low).—The Mechanics of Machinery: A. B. W. Kennedy (Macmillan).—A Strain Indicator for Use at Sea: C. E. Stromeyer.—Report on the Progress and Condition of the Government Botanical Gardens at Saharanpur and Mussoorie for Year ending March 31, 1886 (Allahabad).

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