

in a state of vapour and of positive or negative tension.—On the term "latex" in botany, by M. A. Trécul. In reply to some recent objections made to his comprehensive use of this term, the author here justifies its application both to the contents of the laticiferous vessels and to the product of the secreting ducts. The numerous facts brought together in this communication tend clearly to establish the fundamental resemblance between the physical and physiological properties of the contents of the laticiferous vessels properly so called, and of the secreting tubes, so that these two classes of vessels are properly grouped together under the common designation of vessels of the latex.—On some essays made at sea with Capt. Fleuriat's new collimating gyroscope, by M. de Jonquières. The results are given of the observations made with this instrument by Lieut. Baule, of the steamer *La Gascogne*, during a recent trip from Bordeaux to Brazil. Although this was the first application of the apparatus, the observer was able by its means to record the rolling of the vessel with considerable accuracy.—On earthquakes, by M. Oppermann. The author substantially accepts the general view of seismologists, that these disturbances are mainly due to the pressure exercised on the upper crust by the aqueous vapour formed at great depths below the surface by filtration through fissures or porous rocks.—On the winter egg of Phylloxera, by M. P. de Lafitte. The author replies to some misleading statements recently made by M. Donnadieu, and calculated to affect the issue of the experiments which are now being carried on throughout the wine-growing districts of France.—On a complementary experiment relative to waterspouts, by M. Ch. Weyher. The experiments hitherto described had reference only to the artificial formation of the "buisson," that is, of the two inverted cones superimposed at their summits. Here a further process is described, by means of which the author has succeeded in producing the complete waterspout, with its tube of vapour attached on the one hand to the centre of the *buisson* and on the other to the centre of the revolving drum placed 3 metres above the surface of the water. To effect this all that is needed is to project a jet of vapour to the neighbourhood of the axis of the vortex, or, better still, simply to heat the water in the large reservoir sufficiently to cause some vapour to rise.—A study of the alkaline vanadates (continued), by M. A. Ditte. Here are treated the vanadates of soda: VO_5NaO ; $2\text{VO}_5\text{NaO}$; $3\text{VO}_5\text{NaO}$; $3\text{VO}_5\text{NaO}$; VO_5NaO ; VO_5NaO ; 3NaO ; and VO_5NaO .—On the upheaval of the south-west coasts of Finland, by M. Venukoff. The topographic surveys recently carried out in Finland show once more that the shores of the Baltic are continually rising. Since the surveys of 1810-15 several islands have become peninsulas, while many shallows have become islands or beaches. On the south-west coast and in the neighbouring Aland Archipelago many places are pointed out by the inhabitants which a few years ago were under water, but which are now grazing-grounds, market-gardens, or corn-fields. The local authorities are now taking steps, by means of which the progress of this geological phenomenon may in future be determined with absolute certainty and accuracy.—The sudden death was announced of M. Thollon in the midst of his labours connected with the construction of a great solar chart, on which the distinction between the telluric and solar rays would have been indicated. M. Thollon's name will always be remembered in connexion with spectroscopic studies, which have been greatly advanced by his improved spectroscope and by the device suggested by him for distinguishing rays of solar origin from those due to the terrestrial atmosphere.

BERLIN

Physical Society, April 1.—Prof. von Helmholtz in the chair.—Dr. Pernet spoke on the comparison of barometers, and drew attention to a number of sources of error which must be avoided when reading off a barometer. The speaker has carried out a series of comparisons with corrected standard barometers, aneroid barometers, and the standard barometers of different stations. He finds that the standard barometers of Berlin and Paris correspond exactly within the limits of errors of observation; aneroids do not yield anything like the same exactness that may be obtained with syphon-barometers.—Dr. Pernet also brought a new form of standard mercurial thermometer before the Society, and explained its construction. It consists essentially of the usual bulb and fine tube, which is widened out above and below into two receptacles each of which is capable of holding a mass of mercury corresponding to a column representing 50°. By means of this arrangement the instrument is easily graduated, and admits of any desired adjustment of the zero and gradu-

tion; also by varying the amount of mercury with which it is filled the same exactness in reading which is possible between 0° and 50° can be obtained even up to 200°.—Dr. Kötter spoke on the mean rate of flow of a fluid from a small aperture. This rate, as is well known, depends not only upon pressure, weight, &c., but upon a certain constant which is called the coefficient of efflux, and which has been determined to be 0.62. The speaker gave an account, in their historical order, of a number of researches which have been made with a view to determining this coefficient mathematically, and then proceeded to explain his own methods of calculation, which lead to the value $\frac{\pi}{2 + \pi}$ established by Kirchhoff and Rayleigh.—Dr. König exhibited a direct-vision spectroscope constructed by Wernicke, which is contained in a glass tube instead of a wooden one, and thus admits of the internal arrangement of the instrument being seen.

BOOKS, PAMPHLETS, and SERIALS RECEIVED

Journal of the College of Science, Imperial University, Japan, vol. i. Part 1 (Tokio).—Monthly Weather Report of the Meteorological Office, October 1886.—Beiblätter zu den Ann. der Physik und Chemie, 1887, No. 3 (Barth, Leipzig).—Journal of the Society of Telegraph-Engineers and Electricians, No. 65, vol. xvi. (Spon).—Journal of Anatomy and Physiology, April (Williams and Norgate).—Mind-Cure on a Material Basis: S. E. Titcomb (Tribner).—Annalen der k. k. Universitäts-Sternwarte in Wien, iv. Band, Jahrgang 1884 (Williams and Norgate).—Quarterly Journal of Microscopical Science, March (Churchill).—The Auk, April (New York).—Journal of the Royal Microscopical Society, December 1886 and April 1887 (Williams and Norgate).—Bulletin of the American Geographical Society, vol. xix. No. 1, 1887 (New York).—Annalen der Physik und Chemie, 1887, No. 5 (Barth, Leipzig).

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