

means of the finer terminal fibrils, which are shown to be frequently arranged in the form of distinct tufts, having a constant position relative to each other. On this account the author hazards the suggestion "that the nervous energy resembles a static electrical charge, in the fact that the discharge takes place most readily through points," the opposing tufts of fibrils of different elements being thus comparable to the "brushes" of an electrical machine. In the second and third of his "Studies," Mr. Allen deals with the Stomatogastric System of *Astacus* and *Homarus*, with the Beading of Nerve-fibres, and with End Swellings.—Other papers in the same number are by Mr. E. A. Andrews, on some abnormal annelids, and Mr. W. E. Collinge, on the sensory canal system of Ganoids. All these papers are admirably illustrated.

*American Meteorological Journal*, September.—On cloud formation, by Prof. W. von Bezold. This is a translation, by L. A. Bauer, of an address delivered in the "Urania" of Berlin, November 29, 1893, and published in *Himmel und Erde*, vol. vi. No. 5. (We gave a brief notice of this valuable paper in vol. xlix. p. 508.) Prof. von Bezold's explanations of the formation of fogs and clouds are exceedingly interesting and instructive, and the translation into English will be of great use to many readers who may be unacquainted with German. Several of the cloud views have been made in Berlin expressly for this article.—Summer hot winds on the Great Plains, by J. M. Cline, M.D. This paper has been reprinted from the *Bulletin of the Philosophical Society of Washington*, vol. xiii. 1894, and contains an account of the hot winds observed from 1874 to 1892, and of the general meteorological conditions prevailing at the time of their occurrence, together with a description of the general characteristics of those hot winds, and conclusions as to their causes.—The meteorological services of South America, by A. L. Rotch. The countries in which meteorological observatories and central stations exist are Peru, Chile, Argentine Republic, Uruguay, and Brazil. Those dealt with in this article are Peru, in which is situated the observatory of *El Misti*, the highest station in the world, and Chile, of which the National Observatory is at Santiago, and was founded by the United States Transit of Venus Expedition in 1848.

## SOCIETIES AND ACADEMIES.

### PARIS.

Academy of Sciences, October 8.—M. Lœwy in the chair.—On the eccentricity of the orbit of Jupiter's fifth satellite, by M. F. Ti-serand. If  $a$  be the great semi-axis,  $e$  the eccentricity, and  $\omega_0$  the longitude of perijove at a certain epoch (October 28, 1892), we have, as a first approximation,

$$a = 47''\cdot906, e = 0\cdot0073, \omega_0 = -14''.$$

—On the groups of transformations of differential linear equations, by M. Emile Picard.—Theory of flow on a weir without lateral contraction, when the bending liquid sheet is either depressed, submerged below, or adherent to the weir, by M. J. Boussinesq.—On the propagation of electromagnetic waves in ice, and on the dielectric power of this substance, by M. R. Blondlot (see Notes, p. 604).—Mean magnetism of the globe and "isonomales" of terrestrial magnetism, by M. Alexis de Tillio. The tables given show the mean value for the magnetic elements for parallels at  $10^\circ$  intervals for the years 1829, 1842, 1880, 1885.—M. Haton de la Goupillière informs the Academy that M. Cotteau has left his fine collection of fossil Echinoderms to the National School of Mines. This collection, combined with the Michelin collection, already at the School of Mines, will probably be the most complete of its kind.—On the dielectric power of ice, by M. A. Pérot. On recalculation of the results published on June 27, 1892, K assumes the value  $2\cdot04$ .—A study of the latent heats of vaporisation of the saturated alcohols of the fatty series, by M. W. Louguinine. The latent heats of vaporisation obtained are as follows: For ethyl alcohol, mean of eleven experiments,  $201\cdot42$  cal.; Ramsay and Young's value,  $206\cdot4$  cal., calculated by means of the formula

$$L = (s_1 - s_2) \frac{t}{I} \cdot \frac{dp}{dt},$$

where  $t$  = absolute temperature and  $I$  is the mechanical equivalent of heat, probably differs from the experimental value owing to accumulated errors of data entering into their formula.

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Normal propyl alcohol,  $L = (1) 164\cdot07$  cal.; (2)  $163\cdot19$  cal.  
Isopropyl alcohol (Sp. Ht. assumed same as N. P. Alcohol),  
 $L = 159\cdot72$  cal.  
Normal butyl alcohol,  $L = 138\cdot18$  cal.  
Isobutyl alcohol (Sp. Ht. of normal alcohol used),  $L = 136\cdot16$   
cal.  
Fermentation amyl alcohol,  $L = 118\cdot15$  cal.  
Dimethylethylcarbinol (Sp. Ht. assumed same as amyl alcohol),  $L = 110\cdot37$  cal.

All determinations were made at pressures between 745 and 755 mm.—On a particular case of the action of alkalis on glucose, by M. Fernand Gaud. The reaction of the alkali on glucose has been followed by means of different metallic oxides, capable of precipitating each of the products in turn, step by step.—On the production of gaseous formaldehyde for purposes of disinfection, by MM. R. Cambier and A. Brochet.—Manufacture of alumina from clays, by M. Joseph Heibling.—On the germination of oleaginous grains, by M. Leclerc du Sablon.—Experiments on the eggs of the mulberry silkworm, an annual race, by M. Victor Rollat. It is found that hatching may be produced at any desired time by submitting the eggs to the action of compressed air at the pressure of 6 to 8 atmospheres for a fortnight—M. J. Posno describes, in a note, the results obtained by a process of distillation of house refuse.—M. F. Larroque reports the ravages produced by anthrax in the higher pastures of the Pyrenees.

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