

SOCIETIES AND ACADEMIES.

PARIS.

Academy of Sciences, August 26.—**M. Emile Roux** in the chair.—**P. Appell**: The integration of the simultaneous differential equations verifying the Hermite polynomial $U_{m,n}$.—**G. Bigourdan**: The astronomical station at the Petit Luxembourg. The co-ordinates of the stations of the Collège d'Harcourt.—**G. Charpy** and **M. Godchot**: The formation of coke.—**M. Plancherel**: The unicity of the development of a function in a series of Legendre polynomials.—**M. Auric**: The calculation of the energy accumulated in the sun by contraction since its formation.—**C. Raveau**: Is the principle of equivalence a consequence of Carnot's principle? A criticism of a recent paper by Sir Joseph Larmor.—**G. Reboul**: The influence of the radius of curvature of a body on the formation of hoar-frost. Hoar-frost commences to deposit more rapidly on objects the smaller the radius of curvature.—**M. Collignon**: The propagation of the sound of gunfire to great distances. Annual periodicity.—**M. Chopin**: Apparatus for the measurement of chimney losses and the elements constituting these losses. Starting with the approximate formula giving the heat carried away by flue-gases as directly proportional to the difference of temperature between the outside air and the flue, and inversely proportional to the percentage of carbon dioxide by volume, an apparatus is described which reads off directly the percentage of heat lost. The temperature difference is measured by a thermocouple in the usual way and for the other factor use is made of the change in electrical resistance of a solution of caustic soda caused by the absorption of carbon dioxide and the production of sodium carbonate. Each of the factors is thus reduced to a galvanometer reading, and the point of intersection of the two galvanometer needles is read off on a series of curves plotting the percentage heat loss. The apparatus in its present form is not automatic.—**H. Colin** and **Mlle. A. Chaudun**: The law of action of sucrose: the hypothesis of an intermediate combination. The results of six series of experiments are given, from which it is shown that the theory of A. Brown, which assumes a combination between the sugar and the enzyme, is justifiable.—**F. Kerforné**: The iron minerals of Menez-Bel-Air (Côtes-du-Nord).—**C. Viola**: The law of Curie. Curie's law is defined as follows: The normal increases of the faces of a crystal in stable equilibrium are directly proportional to their capillary constants, and some mathematical consequences are developed.—**A. Piédallu**: The industrial application of the colouring matter of the glumes of the sugar sorghum. Details are given of the method of extracting the dye, and of its application with different mordants to dyeing wool, silk, and cotton.—**M. Galippe**: Researches on the resistance to heat of the living elements existing normally in animal and vegetable tissues.—**P. Girard** and **R. Audubert**: The electric charges of micro-organisms and their surface tension.—**R. Paucot**: The measurement of arterial pressure in clinical practice. A criticism of current methods of measurement and suggestion of a new technique.

September 2.—**M. Paul Appell** in the chair.—**E. Cartan**: Varieties of three dimensions.—**P. Straneo**: The extension to physics of the principles of homogeneity and similitude, and a remarkable relation between the universal constants of a theory.—**P. Weiss**: The characteristic equation of fluids. The equation proposed is of the form

$$\left(\rho + \frac{a}{\eta^n}\right)(v-b) = \zeta RT,$$

where R is the gas constant for perfect gases. This equation with four constants, a , b , η , ζ , represents

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with precision the properties of a fluid in one of the states corresponding with a family of isochores.—**F. Dienert**: The estimation of nitrites. The proposed method is based on the liberation and estimation of iodine from an acidified solution of potassium iodide by the nitrite in an atmosphere free from oxygen.—**P. Gaubert**: The artificial coloration of spherulites of helicoidal formation (tartrates and bimalates).—**H. Hubert**: The influence of the lithological nature of formations relatively to the distribution of the surface and underground waters north of the Senegal River.—**L. Gentil**: The geology of Andalusia.—**M. Lecoindre**: Some recent fossil-bearing strata in the neighbourhood of Casablanca, Western Morocco.—**F. Masmonteil**: The morphology of the antibrachial skeleton.—**P. Godin**: The transformation into pedagogic indications of the data of anthropology on the individual nature of the child of both sexes.—**A. Vernes**: The colorimetric measurement of syphilitic infection.—**S. Voronoff** and **Mme. Evelyn Bostwick**: The intensive acceleration of the budding of wounds by the application of testicular pulp.

BOOKS RECEIVED.

Medicinal Herbs and Poisonous Plants. By Dr. D. Ellis. Pp. xii+180. (London: Blackie and Son, Ltd.) 2s. 6d. net.

The New Science of the Fundamental Physics. By Dr. W. W. Strong. Pp. xii+108. (Mechanicsburg, Pa.: S.I.E.M. Co.) 1.25 dollars.

Present-day Applications of Psychology, with Special Reference to Industry, Education, and Nervous Breakdown. By Dr. C. S. Myers. Pp. 47. (London: Methuen and Co., Ltd.) 1s. net.

War Neuroses. By Dr. J. T. MacCurdy. Pp. ix+132. (Cambridge: At the University Press.) 7s. 6d. net.

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