1894 have been dry, but not nearly so dry as in some previous years.—Enormous hailstones, by G. J. Symons. This contains some cuttings from various papers of a severe thunderstorm which occurred over a large part of the continent on August 26 and 27 last. At Beaucourt hailstones are said to have been picked up weighing nearly two pounds; at many places they weighed seven ounces and upwards, and many birds and some sheep were killed.—Climatological table for the British Empire for the year 1893, by G. J. Symons. The table contains data referring to temperature, rainfall, &c., at eighteen places. The highest temperature in the shade was 108° at Adelaide, on February 2, and the lowest − 48° at Winnipeg, on February 1. The highest temperature in the sun was 171° at Trinidad, which also had the greatest rainfall, viz. 92·5 inches; the least fall was in London, 19·8 inches.

SOCIETIES AND ACADEMIES.

PARIS.

Academy of Sciences, October 22.—M. Lœwy in the chair.—Experimental verifications of the theory of weirs, with liquid sheets submerged below or adherent, relative to the delivery and the contraction in the lower part of the liquid sheet, by M. J. Boussinesq.—M. A. Trillat claims priority in regard to processes of disinfection by formaldehyde.—On the rotation poles of Venus, by M. C. Flammarion (see p. 21). Variations of the level of water in a basin communicating with a tidal port, by M. A. de Saint-Germain. A mathematical paper.—Force acting at the surface of separation of two dielectrics, by M. H. Pellat. In the general case, the force is normal to the surface of separation and in the sense that the specific inductive capacity diminishes. Its value per unit of surface is given by the formula

$$f = \frac{K_1\phi_1^2 \cos 2\alpha_1}{8\pi} - \frac{K_2\phi_2^2 \cos 2\alpha_2}{8\pi},$$

α_1 and α_2 being the angles between the normal and the direction of the field, ϕ_1 and ϕ_2 the intensities of the field, on either side of the surface of separation.—Experimental researches on the freezing-point with different mixtures of alcohol and water, by M. Raoul Pictet. A table of the temperatures of crystallisation of definite mixtures is given, and the results are plotted in curves discussed in the paper.—A study of the combinations of hydrogen fluoride with water, by M. R. Metzner. The author has succeeded in obtaining only one hydrate possessing definite properties. It has the composition $HF.H_2O$ and contains 52·3 per cent of HF. The crystals of this composition melt at − 35° C.; they fume in the air, and have a specific gravity greater than 1·15. They are very soluble in the cold concentrated acid.—Researches on the mercuric sulphates, by M. Raoul Varet. The thermal data for the normal sulphate and for the basic salt $HgSO_4 . 2HgO$ are given in detail. Whereas sulphuric acid completely displaces HCN from its combination with potassium liberating + 25·4 Cal., hydrocyanic acid, even in dilute solution, replaces sulphuric acid in $HgSO_4$ with disengagement of + 23·5 Cal. Similarly hydrochloric acid displaces sulphuric acid in $HgSO_4$.—Antimony vermilion is not an oxysulphide, by M. H. Baubigny. Analysis of the colouring matter of antimony vermilion, precipitated by sodium thiosulphate, shows that it is simply a form of Sb_2S_3.—Bismuth nitrosalicylates, by M. H. Causse.—Salivary glands of the Apinæ (*Apis mellifica* ♂ and ♀), by M. Bordas. On an undescribed caterpillar ravaging the leaves and fruits of the fig-tree, in the arrondissement of Puget-Théniers, by M. Decaux.—On the mechanism of vegetable respiration, by M. L. Maquenne. The author shows that the ratio of CO_2 produced to O absorbed is sensibly altered by momentarily subjecting leaves to a vacuum, and the respiration is at the same time rendered more active. The conclusion is given: The respiration of plants appears to be the result of the slow combustion of a very oxidisable principle, which the living cell constantly secretes, shaded from the light, and which may accumulate when there is insufficient oxygen in the surrounding atmosphere.—The station of Schweizersbild, by M. Nüesch.—Three geological sections in French Congo, by M. Maurice Barrat.—Late geological researches in the Altai, by M. Vénukoff.—Rotation movements observed in an aerostatic ascension, by M. Vénukoff.

DIARY OF SOCIETIES.

LONDON.

THURSDAY, NOVEMBER 1.

LINNEAN SOCIETY, at 8.—Contributions to the Knowledge of Monocotyledonous Saprophytes: Percy Groom.—On an Error in the Descriptions of the Effect of a Centrifugal Force upon Growth: Rev. G. Henslow.—On Mediterranean and New Zealand Retepora, and a Fenestrate Bryozoan: A. W. Waters.

CHEMICAL SOCIETY, at 8.—The Electromotive Force of Alloys in a Voltaic Cell: A. P. Laurie.—The Action of Nitric Oxide on Sodium Ethylate: G. W. Macdonald and Orme Masson.—On Ethylic Butanetetracarboxylate: Dr. B. Lean.

MONDAY, NOVEMBER 5.

SOCIETY OF CHEMICAL INDUSTRY (Burlington House), at 8.—The Composition and Constitution of certain Alloys, by the late Dr. C. R. Alder Wright, F.R.S.: Mr. Watson Smith.—Note on Oxidised Linseed Oil: Mr. W. F. Reid.

ARISTOTELIAN SOCIETY (22 Albemarle Street), at 8.—An Essential Distinction in Theories of Experience: Mr. Bernard Bosanquet.

TUESDAY, NOVEMBER 6.

ZOOLOGICAL SOCIETY, at 8.30.—Descriptions of New Species of Œdionychis and Allied Genera of Coleoptera: Mr. Martin Jacoby.—On the Hyoid Arch of Ceratodus: Mr. W. G. Ridewood.—Third Report on Additions to the Batrachian Collection in the Natural History Museum: Mr. G. A. Boulenger, F.R.S.

ROYAL VICTORIA HALL, at 8.—The Electric Spark: Prof. A. W. Rücker, F.R.S.

WEDNESDAY, NOVEMBER 7.

GEOLOGICAL SOCIETY, at 8.—Notes on some Recent Sections in the Malvern Hills: Prof. A. H. Green, F.R.S.—The Denbighshire Series of South Denbighshire: Mr. Philip Lake.—On some Points in the Geology of the Harlech Area: Rev. J. F. Blake.

ENTOMOLOGICAL SOCIETY (11 Chandos Street, Cavendish Square), at 8.

THURSDAY, NOVEMBER 8.

MATHEMATICAL SOCIETY, at 8.—Mathematics, President's Address: A Generalised Form of the Hypergeometric Series, and the Differential Equation which is satisfied by the Series: F. H. Jackson.—Third (and concluding) Memoir on certain Infinite Products: Prof. L. J. Rogers.—On the Kinematics of Non-Euclidean Space: Prof. W. Burnside, F.R.S.

INSTITUTION OF ELECTRICAL ENGINEERS, at 8.—Notes on Electric Tramways [in the United States and Canada (Supplementary Paper): H. D. Wilkinson.—Electric Traction, with Special Reference to the Installation of Elevated Conductors: R. W. Blackwell and Philip Dawson.

FRIDAY, NOVEMBER 9.

PHYSICAL SOCIETY, at 5.—The Photographic Action of Stationary Light Waves: J. Larmor, F.R.S.—On Vapour Pressure: Prof. S. Young, F.R.S.—On the Luminescence of Glass: John Burke.

ROYAL ASTRONOMICAL SOCIETY, at 8.

SATURDAY, NOVEMBER 10.

ROYAL BOTANIC SOCIETY, at 3.45.

CONTENTS.

© 1894 Nature Publishing Group