Societies and Academies.

PARIS.

Academy of Sciences, July 23.—M. Albin Haller in the chair.—H. **Deslandres**: Mountain observatories. A description of the heights, position, and equipment of the existing mountain observatories. The four American observatories (Lick, Arequipa, Flagstaff, Mount Wilson) can be occupied all the year round, are equipped with large instruments, and have already produced important results: of the others, those on Mont Blanc, Pic du Midi, and Etna are insufficiently equipped and observations can be made only for a short period of the year. For a new French observatory Revard (near Aix-les-Bains) and Fort Romeu (Pyrenees), altitudes 1500 metres and 1800 metres respectively, have been examined. Fort-Romeu possesses the advantages of possible occupation all the year round and ease of access.—G. **Bigourdan**: The use of a completely free pendulum as a chronometer.—F. E. **Fournier**. The forms of hull most favourable to high speeds are only realised in racing automobiles.—**de Séguier**. Linear groups with bilinear or quadratic invariant in the real and complex field.—S. **Sanielevici**. An application of the tensorial calculus.—**Evans**. Poisson's integral.—F. H. **van den Durgen**: Some technical applications of integral equations.—Emile **Bélot**: An attempt at the representation of the period of continuous evolution, t, of the stars as a function of the effective temperature, θ. Application to the sun.—R. **Jarry-Desloges**: The influence of the various elements of an objective (aperture, focal distance, magnification) on the quality of telescopic images. Diaphragms smaller than two-thirds of the diameter of the objective cannot be usefully employed. As regards magnification there exists an optimum focal length of the refractors, between 6 and 6·75 metres: this result is new and difficult to explain.—E. **Selety**: The possibility of an infinite potential, and of a mean velocity of all stars equal to that of light.—Wladimir **de Bélaévsky**: A problem of elasticity in polar co-ordinates.—Th. **De Donder**: Synthesis of the gravific.—Camille **Gillet**: Aqueous solutions. The origin of osmotic effects. Starting with the assumption that water is a mixture in equilibrium of hydrol (H_2O), dihydrol $(H_2O)_2$ and of polyhydrol $(H_2O)_n$, of which the first is gaseous, a theory is developed affording an explanation of the existence of osmotic pressure, flocculation of solutions and of sols by electrolytes, the flocculation of sols by other sols, and the formation of emulsions.—A. **Boutiric** and M. **Vuillaume**: Study of the absorption spectrum of sols of arsenic sulphide.—Alfred **Gillet**: Researches on electrodiffusion (migration of the ions). Experiments on the migration of the ions in jellies (gelatine) containing sodium sulphate. A. **Lassieur**: The electrolytic estimation of antimony. If a thin coating of mercury is deposited on the cathode, and the potential not allowed to go over 1·3 volts, the antimony subsequently deposited electrolytically is coherent and accurately corresponds with the weight of metal present.—L. J. **Simon**: The sulphochromic oxidation of the aromatic hydrocarbons and the present conception of graphite. Comparison of the oxidation of aromatic hydrocarbons by sulphuric acid with chromic acid and silver bichromate, together with the results of the application of the silver bichromate reagent to various forms of carbon and coal.—L. S. **Glichitch**: The estimation of easily dehydrated alcohols in essential oils. The estimation of free alcohols in essential oils by acetylation fails in the case of certain alcohols, water being removed and hydrocarbons formed. By replacing acetic anhydride by a mixture of this substance with formic acid, this difficulty is overcome.—J. **Orcel**: The bavalite of Bas-Vallon.— — **Thiébaud**: Researches on the mineralogical composition of some chalk marls of the Tertiary of Alsace.—A. **Cholley**: Evolution of the karstic relief of the Parmelan (Préalpes de Savoie).—Henri **Coupin**: The supposed formation of chlorophyll in the dark. Experiments are described contradicting the view that etiolated plants can manufacture chlorophyll in the dark.—Jean **Politis**: The formation of a glucoside (saponarine) in the mitochondria.—A. **Demolon** and P. **Boischot**: The activity of the biological phenomena in peat. The relative passivity of peat from the biological point of view is due to the poverty of the medium in nutritive elements, and especially phosphoric acid, and the results of the partial sterilisation of peat by heat cannot be attributed to destruction of toxins or to an action on the protozoa.—A. **Quidor** and Marcel A. **Herubel**: The psycho-physiology of visual phenomena.—Paul **Benoît**: The polar globules of the egg of *Tubularia mesembryanthemum*.—Jean **Camus**, J. J. **Gournay**, and **Fiterre**: The mechanism of insipid diabetes.—E. **Lesné**, L. **de Gennes**, and **Guillaumin**: The action of light on the variations of calcemia in rickets.—A. **Juillet**: Remarks on the note by MM. Chevalier and Mercier on the pharmacodyamic action of the insecticidal principle of pyrethrum flowers.

SYDNEY.

Linnean Society of New South Wales, June 27.—Mr. A. F. Basset Hull, president, in the chair.—G. I. **Playfair**: Notes on freshwater algæ. A series of miscellaneous notes on algæ, in which twelve species and fourteen varieties are described as new; and remarks made on the development and life-history of many species.—Miss M. I. **Collins**: Studies in the vegetation of arid and semi-arid New South Wales. Part i. The plant ecology of the Barrier District. The paper consists of an introductory section in which the chief physiographic units of New South Wales are discussed in reference to the formation of the Great Western Plains. The geologic, physiographic, and climatic features of the Barrier Range are described, accompanied by an account of the chief plant associations, and lists of species for the different habitats. In a final discussion the developmental relationships of the associations are indicated.—Miss Marguerite **Henry**: A monograph of the freshwater Entomastraca of New South Wales. Part iii. Ostracoda. This paper gives brief descriptions of thirty-six species of Ostracods, with their synonymy and keys for their identification. Seven species are described as new, two are recorded for the first time in Australia and one for the first time in New South Wales. A freshwater member of the family Cytheridæ is recorded for the first time in Australia. Lists are also given of the species that are known to occur in other States.

Official Publications Received.

United States Department of Agriculture. Department Bulletin No. 1165: Report on Bird Censuses in the United States 1916 to 1920. By May Thacher Cooke. Pp. 36. (Washington: Government Printing Office.) 5 cents.

University of Liverpool: Tidal Institute. Fourth Annual Report, 1923. Pp. 7. (Liverpool.)

University of Colorado Bulletin. Vol. 23, No. 3, General Series No. 192: Catalogue, 1922–1923, with Announcements for 1923–24. Pp. 489. (Boulder, Colo.)