

Societies and Academies.

PARIS.

Academy of Sciences, July 17.—M. Emile Bertin in the chair.—H. Deslandres and V. Burson: Researches on the atmosphere of the stars. Properties of stars which have the same radiations and the same chromospheric layers as the sun: a list of twelve stars is given, all of which show bright lines: eleven of these are yellow stars of types G and K (Harvard classification), one only is of the M_a type. These stars possess chromospheres relatively more luminous and more important than those of the sun.—Charles Moureu and Charles Dufraisse: Auto-oxidation. Anti-oxygenic power. Various phenomena relating to anti-oxygenic action. It has been shown in an earlier communication that certain substances, of which hydroquinone is the type, can prevent oxidation. The reaction between acrolein and oxygen has been studied quantitatively, when the proportion of hydroquinone present has been varied between $\frac{1}{100}$ th and $\frac{1}{10000}$ th of the acrolein present; and the results given in graphical form. Various phenols are classified according to their power of retarding oxidation ("anti-oxygenic power"). A summary is given of earlier work bearing on the subject.—Maurice Leblanc: Lamps with three electrodes, anode, cathode, and intermediate grid where the current is carried by ions, and their applications. It is shown how these lamps can be used to transform a continuous current in an alternating current of high frequency or to transform high-frequency currents into alternating currents of low frequency.—Jules Andrade: Mechanical determinism and the notion of the medium; pseudo-elliptic orbits and circular orbits.—Paul Vuillemin: The legitimacy of the genera *Laverania* and *Nocardia*.—Jules Baillaud: The co-ordinates of the galactic pole, deduced from the distribution of the stars in the zone of the Paris astrophotographic catalogue.—M. Bedeau: The determination of the specific inductive capacity of mercury vapour. The measurements were made at a temperature of 400°C ., under atmospheric pressure, utilising the method described in an earlier communication for air. Mercury vapour shows none of the anomalies proved for steam, ammonia, etc., and its specific inductive capacity is in agreement with 1.00074 deduced from Maxwell's formula.—Jean G. Popesco: The variation of the surface tension of mercury in gases. Employing a kinematographic method, the variation of the surface tension of mercury with time of exposure to various gases has been measured. Results are given for air, ammonia, sulphur dioxide, hydrogen, carbon dioxide, and nitrogen. In all cases there is a rapid fall in the surface tension, and the variation is of the same order of magnitude in all the gases, about 5 per cent. reduction in 10 seconds, increasing to about 24 per cent. after 24 hours' exposure.—M. Lindsay: The limits of the L absorption of elements Ba, Cs, I, Te, Sb.—R. de Malleman: Rotatory polarisation and molecular orientation.—Pierre Lambert and A. Andant: An arrangement for depositing films of metal on large surfaces by cathodic projection. The use of greased ground joints is avoided by using a double bell jar. Both jars are exhausted down to about 10 mm., and the evacuation of the inner jar, containing the cathode and object to be silvered, is completed by a Gaede pump.—Ch. Fabry and H. Buisson: The curve of the distribution of energy in the ultraviolet part of the solar spectrum.—M. Duffieux: The mass of the particles which give the spectrum of carbon monoxide. The bands are emitted by particles the masses of which are in the ratio of

16:12, and hence are not due to the molecule CO but to its decomposition products, the free atoms of carbon and oxygen.—Paul Mondain-Monval: The preparation of ammonium chloride at a low temperature.—A. Ch. Vournazos: Mixed complex antimoniodobromides. Several complex salts have been isolated, of which the sodium salt $\text{Na}(\text{SbBrI}_3)$ may be taken as the type.—L. J. Simon: The chromic oxidation of the homologues of acetic acid. A comparison of the oxidising effects of the two mixtures, sulphuric acid, chromic acid, and sulphuric acid, silver chromate upon eleven fatty acids. These acids are only partially converted into carbon dioxide and water by the chromic acid mixture, but are completely burnt when silver chromate replaces chromic acid.—Maurice François and Louis Gaston Blanc: A method of preparing the iodomercurates of the alkaloids in a crystallised condition.—A. Wahl and R. Lantz: The 2-oxy-1-arylnaphthylamines.—Louis Longchambon: The rotatory power of crystals and molecular rotatory power.—René Abrard: The presence of *Nummulites variolarius* in the Cresnes, Marines, and Ruel sands and their significance.—P. Lavialle and J. Delacroix: The wall of the pistil and fruit in the genus *Euphorbia*.—J. Athanasiu and L. Bull: The registration of the longitudinal vibrations of muscle during voluntary contraction.—Pierre Girard, W. Mestrezat, and Li-Shou-Houa: A physical view of the selective permeability of living cells for different ions.—Mlle. Marthe Giroud, Gaston Giroud, and L. Parès: Experimental researches on the genesis of the hæmoclasic crisis of intensive irradiations.—L. Panisset, J. Verge, and E. Grasset: The fixation-reaction in the diagnosis of tuberculosis in cattle. The Bordet-Gengoux method may be applied to the diagnosis of tuberculosis of milch cows.—M. Denucé: The treatment of congenital dislocation of the hip.

Official Publications Received.

Abisko Naturvetenskapliga Station. Observations Météorologiques à Abisko. Situé par $68^\circ 20'_{15}$ Lat. Nord et par $18^\circ 49'_{13}$ Long. Est. By Bruno Rolf. En 1913. Pp. xvi+76. En 1918. Pp. ii+74. En 1919. Pp. ii+75. En 1920. Pp. iii+76. (Uppsala: Almqvist and Wiksells Boktryckeri A.-B.)

Department of the Interior: Bureau of Education. Bulletin, 1921, No. 27: Training for Foreign Service. Compiled by Glen Levin Swiggett. Pp. vi+154. (Washington: Government Printing Office.) 15 cents.

Memoirs of the Bernice Pauahi Bishop Museum. Vol. 8, No. 3: The Grasses of Hawaii. By A. S. Hitchcock. Pp. 132+5 plates. Vol. 8, No. 4: Bayard Dominick Expedition, Publication No. 2: A Contribution to Tongan Somatology. By Louis R. Sullivan. Pp. 30+4 plates. (Honolulu: Bishop Museum Press.)

Occasional Papers of the Bernice Pauahi Bishop Museum of Polynesian Ethnology and Natural History. Vol. 7, No. 12: Notes on Hawaiian Zonitidae and Succineidae. By C. Montague Cooke, Jr. Pp. 17+2 plates. Vol. 7, No. 13: Stomatopoda in the Bernice P. Bishop Museum. By Chas. H. Edmondson. Pp. 24. Vol. 7, No. 14: Dermaptera and Orthoptera of Hawaii. By Morgan Hebard. Pp. 76+2 plates. Vol. 8, No. 2: Hawaiian Dromiidae. By Chas. H. Edmondson. Pp. 10+2 plates. Vol. 8, No. 3: Proverbial Sayings of the Tongans. By E. E. V. Collocott and John Havea. Pp. 118. Vol. 8, No. 5: Report of the Director for 1921. Pp. 39. (Honolulu: Bishop Museum Press.)

Union of South Africa: Department of Agriculture. Bulletin No. 2: Pear Scab in the Western Province. Experiments and Facts relating to its Control. By V. A. Putterill. Pp. 31. (Pretoria: Government Printing and Stationery Office.) 3d.

Department of Statistics, India. Agricultural Statistics of India, 1919-20. Vol. 2: Area, Classification of Area, Area under Irrigation, Area under Crops, Live-Stock, and Land Revenue Assessment in Certain Indian States. Pp. iv+v+192. (Calcutta: Government Printing Office.) 1-8 rupees.

Bihang till Meteorologiska Takttagelser i Sverige, Band 60, 1918: Termosynkroner och Termoskroner på den Skandinaviska Halvön. By H. E. Hamberg. Pp. 39+15 plates. (Stockholm: Almqvist and Wiksells Boktryckeri A.-B.)

U. S. Department of Agriculture: Weather Bureau. Monthly Weather Review. Supplement No. 20: An Aerological Survey of the United States. Part 1: Results of Observations by Means of Kites. By Willis Ray Gregg. Pp. iv+78. (Washington: Government Printing Office.)