SOCIETIES AND ACADEMIES.

PARIS.

Academy of Sciences, September 15.—M. Léon Guignard in the chair.—E. **Goursat**: Remarks on a problem of vectorial geometry.—H. **Le Chatelier** and B. **Bogitch**: Refractory properties of aluminous materials. In spite of the high melting point of alumina, it has proved in practice to be an unsatisfactory refractory material. Measurements of the resistance to crushing at varying temperatures of alumina bricks, made up in different ways, are given, and it is shown that all become plastic at temperatures between 1200° C. and 1500° C. This explains their failure in steel furnaces, where the temperature exceeds 1600° C. In special types of laboratory furnace, where the material is not required to bear pressure, alumina can be used with advantage, and details are given of the method of building such a furnace capable of sustaining a temperature of 1600° C.—H. **Le Chatelier**: The development of scientific research in the United States.—A. **Foch**: Concerning the period of water-mains with a unique characteristic, furnished with an air-chamber.—L. **Picart** and F. **Courty**: Observations of the Metcalf and Borrelly comets made at the Bordeaux Observatory (38-cm. equatorial). Details of observations made on August 23 (Metcalf), August 31, and September 1 and 4 (Borrelly).—L. **Picart** and F. **Courty**: Further observations on these two comets. Measurements are given for September 5, 9, 10, and 11.—H. **Vanderlinden**: Elements of the comet 1919*c* (Borrelly).—L. **Guillet**, L. **Durand**, and J. **Galibourg**: Contribution to the study of the tempering of certain aluminium alloys. The alloys studied were of the duralumin type, containing about 3·7 per cent. of copper, 0·6 per cent. of manganese, 0·25 per cent. of zinc, and 0·43 per cent. of magnesium. The breaking strain, elastic limit, and hardness all increase with the time after tempering, a remarkable property shown by this alloy alone. The hardness was measured at varying intervals of time after tempering at temperatures of 300° C., 400° C., 450° C., and 500° C., and the transformation point found to lie between 400° C. and 450° C. The increase of hardness with time was only shown when the tempering temperature was above 400° C.—A. **Carpentier**: The fructifications of *Sphenopteris herbacea*.—L. **Daniel**: The stability and heredity of the Cratægomespilus and the Pirocydonia.—V. **Galippe**: The resistance of living intra-cellular agents to the action of certain chemical substances. The microzymas of tissues are not destoyed by glycerol, alcohol, chloroform, or by lapse of time.—M. **Herlant**: New researches on the inhibiting action exercised by the sperm of the mollusc on the fecundation of the egg of the sea-urchin.

BOOKS RECEIVED.

Cattle and the Future of Beef-Production in England. By K. J. J. Mackenzie. Pp. xi+168. (Cambridge: At the University Press.) 7*s.* 6*d.* net.

Unexplored New Guinea. By W. N. Beaver. Pp. 320. (London: Seeley, Service, and Co., Ltd.) 25*s.* net.

Spitsbergen. By Dr. R. N. Rudmose Brown. Pp. 319. (London: Seeley, Service, and Co., Ltd.) 25*s.* net.

Modern Engineering Workshop Practice. By H. Thompson. Pp. xi+328. (London: C. Griffin and Co., Ltd.) 9*s.* net.

Catalysis in Theory and Practice. By Dr. E. K. Rideal and Prof. H. S. Taylor. Pp. xv+496. (London: Macmillan and Co., Ltd.) 17*s.* net.

Submarines and Sea Power. By C. Domville-Fife. Pp. viii+250. (London: G. Bell and Sons, Ltd.) 10*s.* 6*d.* net.

An Introduction to General Physiology, with Practical Exercises. By Prof. W. M. Bayliss. Pp. xv+238. (London: Longmans and Co.) 7*s.* 6*d.* net.

Text-book on Wireless Telegraphy. By Prof. R. Stanley. New edition in 2 vols. Vol. i. Pp. xiii+471. Vol. ii. Pp. ix+357. (London: Longmans and Co.) 15*s.* net each vol.

A Practical Handbook of British Birds. Part 4. Pp. 209–272+3 plates. (London: Witherby and Co., September 26, 1919.) 4*s.* net.

DIARY OF SOCIETIES.

TUESDAY, OCTOBER 14.

ROYAL ANTHROPOLOGICAL INSTITUTE, at 8.15.—Lieut. E. W. Pearson Chinnery: Initiation Ceremonies of the Mambare and Kumusi Divisions, British New Guinea.

THURSDAY, OCTOBER 16.

THE INSTITUTION OF MINING AND METALLURGY, at 5.30.—C. M. Harris: Prospecting for Go'd and Other Ores in Western Australia.—F. Danvers Power: Coral Island Phosphates in the Making.

OPTICAL SOCIETY, at 7.30.—J. W. French: The Unaided Eye, II.—Chas. W. Gamble: Projection Screens.

TUESDAY, OCTOBER 21.

ZOOLOGICAL SOCIETY, at 5.30.—E. G. Boulenger: Report on Research Experiments on Methods of Rat Destruction at the Zoological Society's Gardens.—Dr. A. Smith Woodward, Prof. F. Wood Jones, Prof. J. P. Hill, Prof. A. Keith, Mr. R. I. Pocock, Prof. G. Elliot Smith, and Others: Discussion on the Zoological Position and Affinities of Tarsius.

CONTENTS.

	PAGE
Mathematical Text-books. By Dr. S. Brodetsky	109
Vagueness and Discrimination. By H. W. C.	110
Iron and Steel Production in Great Britain during the War	111
Our Bookshelf	112
Letters to the Editor:—	
Temperature in the Sea.—**A. Mallock, F.R.S.**	113
Percussion Figures in Isotropic Solids. (*Illustrated.*)—**Prof. C. V. Raman**	113
The Rigidity of the Earth.—**Dr. A. A. Michelson and Henry G. Gale**	114
The "Flying Gallop" in Art.—**Dr. B. Laufer**	114
Museums, Education, and the Board	114
The Coalfields of Spitsbergen. By R. N. R. B.	115
Notes	116
Our Astronomical Column:—	
Comet 1919*c*	119
A Faint Nova	119
Hindu Spherical Astronomy	119
Stellar Clusters	119
The Aurora of October 1	119
The Sudan Irrigation Works. By Dr. Brysson Cunningham	120
Colliery Boiler-Plants	120
The British Association at Bournemouth:—	
Section D—Zoology—Opening Address by **Dr. F. A. Dixey, M.A., F.R.S., President of the Section**	121
University and Educational Intelligence	126
Societies and Academies	128
Books Received	128
Diary of Societies	128

(INDEX.)

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