

## SOCIETIES AND ACADEMIES.

## PARIS.

**Academy of Sciences, October 6.**—M. Léon Guignard in the chair.—H. Deslandres: Remarks on the constitution of the atom and the properties of band spectra. A continuation of communications previously made on the same subject. Band spectra may be considered as being formed of transversal and longitudinal vibrations, but the exact part of the spectrum which can be attributed to the one or the other of these cannot as yet be precisely determined.—G. Charpy and J. Durand: A cause of rupture of steel rails and a means of suppressing it. It has been proved by several observers that a frequent cause of breakage of steel rails, not possessing any local faults due to manufacture, consists in the formation of very fine fissures appearing on the surface carrying the wheel after a certain period of use, and it has been proposed that, after a careful inspection of the permanent way, these fissured rails should be detected and removed. The critical age of steel rails appears to be about ten years. The author has found that the incipient cracks are removed by annealing, and suggests a method by which it would be possible to anneal the rails without removal from the track.—E. Ariès: The equation of state of ethyl formate.—G. A. Boulenger: The genus *Saphæosaurus*, a Rhynchocephalian of the Kimmeridge formation of Cerin. The examination of the specimens at the Lyons Museum leads the author to agree with the views of L. Lortet as to the classification of this reptile, as opposed to the interpretation of D. M. S. Watson.—N. E. Nörlund: An extension of the polynomials of Bernoulli.—M. Stoilow: The analytical representation of functions of several complex variables.—G. Serf: The transformations of linear partial differential equations with two independent variables.—J. Rey: The experimental predetermination in the laboratory of the characteristic of a light-house at the horizon. The distribution of the light intensity in the horizontal plane is studied by means of a series of metallic screens, pierced with a regular series of small holes of accurately known diameter. The results of such a study are shown in a graph.—Ch. Boulin and L. J. Simon: The action of stannic chloride on dimethyl sulphate. The products of the reaction at a temperature of about 114° C., the boiling point of stannic chloride, are methyl chloride and stannic sulphate.

## SYDNEY.

**Linnean Society of New South Wales, August 27.**—Mr. J. J. Fletcher, president, in the chair.—W. W. Froggatt: A new species of wax scale (*Ceroplastes murrayi*) from New Guinea. The author describes a wax scale found on the wild mango in the forests fringing the Kikori River, Delta Division, British New Guinea. The scale, for which the name *Ceroplastes murrayi* is proposed, produces a solid mass of hard, white, wax-like secretion, forming a rounded dome over the resting gravid female coccid. The characters of the female are described. Male unknown.—G. F. Hill: Australian Stratiomyidæ (Diptera), with description of new species. Six new species are proposed, belonging to the genera *Actina*, *Hermetia*, *Odontomyia*, *Sargus*, and *Wallacea*, two of these genera (*Hermetia* and *Wallacea*) not having previously been recorded from Australia.—J. Mitchell: Two new Trilobites from Bowning, N.S.W. The Trilobite described in this paper under the name of *Dalmanites (Hausmannia) loomesi* was formerly joined with *Hausmannia (Dalmanites) meridianus*, Etheridge and Mitchell. The examination of additional and much better specimens has shown that the two forms are specifically distinct, and accordingly

each of the two forms originally described under the name *H. meridianus* has now been given specific rank. The cephalic characters of the other Trilobite proved to be so unusual that the writer deemed it advisable to propose a new genus (*Adastocephalum*) of the Phacopidæ for its reception. The chief generic feature in the genotype is the absence of glabella furrows and lobes.—A. A. Hamilton: An ecological study of the salt-marsh vegetation in the Port Jackson district.

## DIARY OF SOCIETIES.

## THURSDAY, NOVEMBER 6.

ROYAL SOCIETY (jointly with the ROYAL ASTRONOMICAL SOCIETY), at 4.30.—Sir Frank Dyson, Prof. Eddington, and Others: Discussion on the Results of the Observations obtained at the Total Solar Eclipse on May 29, 1919.  
LINNEAN SOCIETY, at 5.  
ROYAL COLLEGE OF PHYSICIANS, at 5.—Dr. A. P. Beddard: Some Remarks on Chronic Arthritis (Bradshaw Lecture).  
CHEMICAL SOCIETY, at 8.—F. G. Donnan and W. F. Garner: Equilibria across a Copper Ferrocyanide and an Amyl Alcohol Membrane.—R. R. Le G. Worsley and P. W. Robertson: The Peroxides of Bismuth.—T. M. Lowry and R. G. Early: The Properties of Ammonium Nitrate. Part I. The Freezing-point and Transition-temperatures.—R. H. Vernon: Organic Derivatives of Tellurium. Part I. Dimethyl-telluronium-di-iodide.—J. Reilly and W. J. Hickinbottom: Intramolecular rearrangement of the Alkylarylamine. Formation of 4-amino-*n*-butylbenzene.—H. Swann: A New Modification of 3:4-Dinitrodiphenylamine.—G. Le Bas: (1) The Refractivities of Unsaturated Substances; (2) The Molecular Refractions of Benzene and Aromatic Derivatives.—R. R. Baxter and R. G. Fargher: Some 1:3-Benzodiazolearsonic Acids and their Reduction Products.  
ROYAL SOCIETY OF MEDICINE (Obstetrics and Gynaecology Section), at 8.—Dr. D. Robinson: The Role of the Cinematograph in the Teaching of Obstetrics (Cinematograph Demonstration).—Dr. H. Spencer: Nine Cases of Inversion of the Uterus.

## FRIDAY, NOVEMBER 7.

ROYAL SOCIETY OF MEDICINE (Laryngology Section), at 4.  
ROYAL ASTRONOMICAL SOCIETY (Geophysical Committee), at 5.—Col. Sir S. G. Burrard, Prof. A. E. H. Love, and Others: Discussion on Isostasy.  
TECHNICAL INSPECTION ASSOCIATION (at Royal Society of Arts), at 7.30.—Prof. Baly: The Spectroscope in the Science of To-day.  
ROYAL SOCIETY OF MEDICINE (Anæsthetics Section), at 8.30.—Dr. F. E. Shipway: Intratracheal Insufflation of Ether in Operations which involve Bleeding into the Air Passages.

## MONDAY, NOVEMBER 10.

ROYAL GEOGRAPHICAL SOCIETY (at Kensington Gore, S.W.7), at 5.—Lt.-Col. G. A. Beazeley: Surveying in Mesopotamia during the War.  
BIOCHEMICAL SOCIETY (at King's College), at 5.30.  
ROYAL SOCIETY OF MEDICINE (War Section), at 5.30.—Surg.-Rear-Admiral Sir Robert Hill: Presidential Address.  
INSTITUTION OF MECHANICAL ENGINEERS, GRADUATES' ASSOCIATION, at 8.—F. M. Green: Modern Steam Turbines.  
SURVEYORS' INSTITUTION, at 8.—A. Young: President's Opening Address.

## TUESDAY, NOVEMBER 11.

ROYAL COLLEGE OF PHYSICIANS, at 5.—Dr. E. G. Browne: The Origins and Development of Arabian Medicine. I. The Translations (VII-IX. Cent.). (FitzPatrick Lecture).  
ROYAL ANTHROPOLOGICAL INSTITUTE, at 8.15.—S. Hazzledine Warren: A Stone-axe Factory at Penmaenmawr.

## WEDNESDAY, NOVEMBER 12.

CONJOINT BOARD OF SCIENTIFIC SOCIETIES (at Royal Society), at 5.—Discussion of Draft Report on the Metric System.  
ROYAL AERONAUTICAL SOCIETY (at Royal Society of Arts), at 8.—C. A. Swan: Some Physical and Psychological Effects of Altitude.

## THURSDAY, NOVEMBER 13.

ROYAL SOCIETY, at 4.30.—*Probable Papers*: Prof. W. B. Bottomley: The Effect of Nitrogen-fixing Organisms and Nucleic Acid Derivatives on Plant Growth.—W. Robinson: The Microscopical Features of Mechanical Strains in Timber and the Bearing of these on the Structure of the Cell-wall in Plants.—Agnes Arber: The Vegetative Morphology of Pistia and the Lemnaceæ.—Lt. Col. R. McCarrison: The Genesis of Edema in Beri-beri.—W. J. Young, A. Breinl, J. J. Harris, and W. A. Osborne: Effect of Exercise and Humid Heat upon Pulse Rate, Blood Pressure, Body Temperature, and Blood Concentration.  
ROYAL COLLEGE OF PHYSICIANS, at 5.—Dr. E. G. Browne: The Origins and Development of Arabian Medicine. II. Four Great Medical Writers of Persia (IX-XI. Cent.). (FitzPatrick Lecture).  
INSTITUTION OF ELECTRICAL ENGINEERS (At Institution of Civil Engineers), at 6.—Roger T. Smith: Presidential Inaugural Address.  
OPTICAL SOCIETY, at 7.30.

## FRIDAY, NOVEMBER 14.

ROYAL ASTRONOMICAL SOCIETY, at 5.  
ROYAL SOCIETY OF MEDICINE (Clinical Section), at 5.  
PHYSICAL SOCIETY, at 5.—S. Butterworth: The Self-Inductance of Single Layer Flat Coils.—Dr. N. W. McClachlan: An Experimental Method of Determining the Primary Current at Break in a Magneto.—F. H. Newman: Note on a Modified Form of the Wehnelt Interrupter. (With Demonstration).  
SATURDAY, NOVEMBER 15.

PHYSIOLOGICAL SOCIETY (at London School of Medicine for Women), at 4.30.