

spectrograph, specially designed for the determination of radial velocities. Special attention has been given to securing constancy of temperature, with such success that the variations during several months have amounted to two- or three-hundredths of a degree.—**J. Boussinesq**: The integration of the equations of waves of emersion by Maclaurin's formula, in series always convergent, for a deep, endless canal and for an indefinite basin.—**A. Haller and Ed. Bauer**: The alkylation of fatty ketones by the use of sodium amide. By successive treatments with sodium amide and methyl iodide, pinacolone was converted into $(\text{CH}_3)_3\text{C.CO.CH}_2\text{.CH}_3$, and ultimately into



In benzene solution this was further acted upon by sodium amide and methyl iodide, the symmetrical hexamethylacetone $(\text{CH}_3)_6\text{C.CO.C}(\text{CH}_3)_3$ being formed. Various derivatives of these ketones, together with the corresponding ethyl compounds, are described.—**Richard Dedekind** was elected a foreign associate.—**H. Andoyer**: New fundamental trigonometrical tables.—**J. Guillaume**: Observations of the sun made at the Observatory of Lyons during the third quarter of 1909. Observations were possible on sixty-seven days, the results being summarised in three tables, showing the number of spots, their distribution in latitude, and the distribution of the faculae in latitude.—**Ch. Gallissot**: The phenomenon of Purkinje. An experimental study of the luminosity of two points, red and blue. The brightness of these artificial stars could be altered by known amounts. It is concluded that Purkinje's phenomenon has no sensible influence from the sixth magnitude upwards.—**Arnaud Denjoy**: The measurement of ensembles.—**M. de Séguier**: The symmetrical group and the alternating group.—**W. Stekloff**: The development of an arbitrary function in series proceeding in accordance with certain fundamental functions.—**Joseph Marty**: Developments according to certain singular solutions.—**Sigismund Janiszewski**: Contribution to the geometry of general plane curves.—**M. Hadamard**: Liquid waves.—**Marcel Brillouin**: Questions of mathematical physics.—**A. Dufour**: Unsymmetrical triplets; an example of an asymmetry of position proportional to the square of the magnetic field. The chromium line 5247.56 forms a triplet in the magnetic field the axis of symmetry of which is displaced towards the violet. This asymmetry of position with respect to the initial line increases as the square of the field.—**E. Caudrelier**: The discharge of inductors: the capacity of the electrodes.—**André Kling**: A new method of estimating dextro-tartaric acid. The estimation is based on precipitation as calcium racemate.—**Léo Vignon**: The diffusive power of certain artificial colouring matters. A study of diffusion shows that dye-stuffs considered as soluble in water fall into two clearly differentiated groups; those of the first group, of which picric acid is the type, form true solutions; those of the second group are only apparently soluble, and are incapable of diffusion, such as Congo red.—**Pierre Dupuis**: The action of phosphorus trichloride upon guaiacol.—**Aug. Chevalier**: The forest resources of the Ivory Coast. Results of the scientific expedition in western Africa. The products include kola and coffee, both in the wild state, a gum analogous to gum arabic, and several gumm-resins.—**Auguste Joxe**: The modes of opening of achenes and kernels at the time of germination.—**Ed. Griffon**: Variation in grafting and asexual hybridation.—**Gabriel Vallet**: The penetration and bactericidal action of the ultra-violet rays with respect to the chemical constitution of the media.—**H. Bordier and R. Horand**: The action of the ultra-violet rays on trypanosomes. *Trypanosoma lewisi* in the blood of a rat was killed by an exposure for fifteen seconds to the ultra-violet rays of a quartz mercury vapour lamp. These trypanosomes were absolutely unaffected by a prolonged exposure to the X-rays.—**Mme. Marie Phisalix**: The natural immunity of batrachians and snakes against the poisonous mucus of the former: the mechanism of this immunity.—**A. Briot**: Properties of the serum of sero-anaphylactised rabbits.—**R. Robinson**: The dimensions of the cæcum and typhlectasis.—**J. Thoulet**: A lithological submarine map of the coast of Languedoc.—**B. Galitzine**: The determination of the epicentre of an earthquake from the data of a single seismic station.

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DIARY OF SOCIETIES.

THURSDAY, MARCH 17.

ROYAL SOCIETY, at 4.30.—*Bakerian Lecture*: The Pressure of Light against the Source: the Recoil from Light: Prof. J. H. Poynting, F.R.S., and Dr. Guy Barlow.

INSTITUTION OF ELECTRICAL ENGINEERS, at 8.—*Further discussion*: (1) Short Circuiting of Large Electric Generators and the Resulting Forces on Armature Windings; (2) The Design of Turbo Field Magnets for A.C. Generators with Special Reference to Large Units at High Speeds: Miles Walker.

INSTITUTION OF MINING AND METALLURGY, at 8.—Annual Meeting.—*Followed by*: The Surface Condenser in Mining Power Plant: W. A. MacLeod.

LINNEAN SOCIETY, at 8.—The Life-history of *Chermes himalayensis*, Steb., on the Spruce, *Picea morinda*, and Silver Fir, *Abies Webbiana*: E. P. Stebbing.—A Contribution toward a Knowledge of the Neotropical Thysanoptera: R. S. Bagnall.

INSTITUTION OF MECHANICAL ENGINEERS, at 8.—Compounding and Superheating in Horwich Locomotives: G. Hughes.

OPTICAL SOCIETY, at 8.—Some Measurements of Stereoscopic Power: D. P. Boatman and R. J. Lucking.—Optical Instruments for Naval Purposes: T. Y. Baker.

FRIDAY, MARCH 18.

ROYAL INSTITUTION, at 9.—The Dynamics of a Golf Ball: Sir J. J. Thomson: F.R.S.

INSTITUTION OF CIVIL ENGINEERS, at 8.—The Construction of Warships: N. Maas.

SOCIETY OF DYERS AND COLOURISTS, at 8.—The Coal Tar Colour Industry of England; the Causes of its Progress and Retardation: Ignatius Singer.

SATURDAY, MARCH 19.

ROYAL INSTITUTION, at 3.—Electric Waves and the Electromagnetic Theory of Light: Sir J. J. Thomson, F.R.S.

MONDAY, MARCH 21.

VICTORIA INSTITUTE, at 4.30.—Light, Luminaries and Life: Rev. A. Irving.

INSTITUTE OF ACTUARIES, at 5.—(1) On the Valuation of the Payment on the Death of a Pensioner of the Excess of his Contributions, with or without Interest, over his Pension Payments; (2) On a Method of Scheduling Particulars for the Valuation, in certain cases, of Prospective Pensions based on Terminal Salaries: T. Tinner.

TUESDAY, MARCH 22.

INSTITUTION OF CIVIL ENGINEERS, at 8.—*Further discussion*: Birmingham Sewage-disposal Works: J. D. Watson.—Salisbury Drainage: W. J. E. Binnie.

WEDNESDAY, MARCH 23.

GEOLOGICAL SOCIETY, at 8.

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