

the development more than the green rays; (4) the violet and ultra-violet rays were still more effective, and they appeared to break down and disintegrate the vitality of the cells when the latter were kept for some time under their influence.

PARIS.

Academy of Sciences, November 12.—M. H. Poincaré in the chair.—Observations relating to equilibrium and reciprocal displacements between glycerol and other alcohols: M. **Berthelot**. The author refers to his experiments made between 1853 and 1862, and doubts the utility of the introduction of the words hydrolysis and alcoholysis.—A new and rapid method for the determination of the errors of division of a meridian circle: M. **Loewy**. A mathematical development of the method described in previous papers.—Some products of the fumerolles of the recent eruption of Vesuvius, with particular reference to the minerals containing arsenic and lead: A. **Lacroix**. The most abundant solid products of the fumerolles are those commonly found in all eruptions of Vesuvius, chlorides of iron, sodium, potassium, magnesium, and calcium, none of them well characterised from a mineralogical point of view with the exception of erythrosiderite. These chlorides are covered locally with realgar. The presence of galena has also been noted, the first time this mineral has been associated with the products of eruption of Vesuvius. Accompanying the galena were found magnetite, magnesioferrite, hæmatite, pyrrhotite, and pyrites.—Contribution to the study of the calorific emission of the sun: C. **Féry** and G. **Milochau**. A discussion of the results obtained by methods described in earlier papers. The measurements showed that there exists a distinct radiation outside the sun's disc, partly due to the dimensions of the thermocouple, but partly also to a calorific emission external to the solar image. On the assumption that the sun's nucleus acts as a black body, an attempt is made to correct the observed values for the absorption due to the solar atmosphere; the temperature obtained in this way lies between 5963° and 5888° absolute. The absolute error in the determination of a temperature in the neighbourhood of 6000° abs. is estimated to be of the order of 15° .—The photographic study of the telluric lines in the infra-red spectrum: Milan **Stefánik**. A description of observations carried out at the summit of Mt. Blanc. A comparison of two spectra obtained with a grating, one about noon and the other at 6 p.m.—Observations of the sun made at the Observatory of Lyons during the third quarter of 1906: J. **Guillaume**. The results are exhibited in three tables, showing the number of spots, their distribution in latitude, and the distribution of the faculæ in latitude.—Groups of functions: Frédéric **Riesz**.—Differential equations of the second order and of the first degree the general integral of which is at fixed critical points: M. **Gambier**.—The relative value of standards of light: Carcel, Hefner, and Vernon Harcourt: A. **Perot** and M. **Laporte**. Taking the Harcourt lamp as unity, the Carcel is 0.096 and the Hefner 0.0931. The experiments brought out the difficulties inherent to the use of flame standards, and show the necessity of having an absolute standard as independent as possible of external conditions, such as the Violle standard.—The reduction of molybdic acid in solution by molybdenum, and the titration of reducing solutions by permanganate: M. **Guichard**. The brown solution obtained by the reduction of an acid solution of molybdic acid by molybdenum contains, not a salt of the dioxide, but a salt of the oxide Mo_2O_5 . The conclusion is drawn that the dioxide of molybdenum does not form salts. The use of iron reduced from the pure oxide is recommended for standardising permanganate solutions.—The heat of combustion and of formation of some amines: P. **Lemoult**.—Xanthone and xanthidrol: R. **Fosse**. It is known that xanthone, although containing a ketonic oxygen, does not form directly a phenylhydrazone or an oxime. The reduction product of xanthone, xanthidrol, on the other hand, reacts directly with hydroxylamine and with semicarbazide.—The condensation of *o*- and *p*-nitro-benzyl chloride with acetylacetone: H. **Mech**.—The existence in Corsica of alkaline quartz porphyry, and a remarkable layer of orthose: M. **Deprat**.—The reproduction of the fig: Leclerc **du Sablon**.—The motor equivalent of resistant work in animal energetics: Jules **Lefèvre**.

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DIARY OF SOCIETIES.

THURSDAY, NOVEMBER 22.

ROYAL SOCIETY, at 4.30.—Studies on the Development of Larval Nephridia, Part ii., Polygordius: Dr. Cresswell Shearer.—The Structure of Nerve Fibres: Prof. J. S. Macdonald.—On Oponins in Relation to Red Blood Cells: Dr. J. O. Wakelin Barratt.—On the Inheritance of Certain Invisible Characters in Peas: R. H. Lock.—The Influence of Increased Barometric Pressure on Man, No. 2: Leonard Hill, F.R.S., and M. G. Greenwood.—The Influence of the Kidneys on Metabolism: Dr. F. A. Bainbridge and Dr. A. P. Beddard.

INSTITUTION OF ELECTRICAL ENGINEERS, at 8.—Selection and Testing of Materials for Construction of Electric Machinery: Prof. J. Epstein.

FRIDAY, NOVEMBER 23.

PHYSICAL SOCIETY, at 5.—On the Electrical Radiation from Bent Antennæ: Prof. J. A. Fleming.—Auroral and Sun-spot Frequencies contrasted: Dr. C. Chree.—The Electrical Resistance of Alloys: Dr. R. S. Willows.

SATURDAY, NOVEMBER 24.

ESSEX FIELD CLUB (at Essex Museum of Natural History, Stratford), at 6.30.—Report of Club's Delegate at York Meeting of British Association: F. W. Rudler.—Various Exhibits from Essex.

MONDAY, NOVEMBER 26.

SOCIETY OF ARTS, at 8.—Artificial Fertilisers; and the Fixation of Nitrogen: A. D. Hall.

LONDON INSTITUTION, at 5.—Egypt, Past and Present: Raymond Blathwayt.

INSTITUTE OF ACTUARIES, at 5.—Inaugural Address by the President, F. B. Wyatt.

TUESDAY, NOVEMBER 27

INSTITUTION OF CIVIL ENGINEERS, at 8.—The Talla Water-supply of the Edinburgh and District Waterworks: W. A. P. Tait.—Repairing a Limestone-concrete Aqueduct: M. Ratcliffe Barnett.—The Yield of Catchment-areas: E. P. Hill.

ZOOLOGICAL SOCIETY, at 8.30.

WEDNESDAY, NOVEMBER 28.

SOCIETY OF ARTS, at 8.—Patent Law Reform: J. W. Gordon.

FRIDAY, NOVEMBER 30.

ROYAL SOCIETY, at 4.—Anniversary Meeting.

INSTITUTION OF CIVIL ENGINEERS, at 8.—Applications of Electricity in Printing-works: P. A. Spalding.

INSTITUTION OF MECHANICAL ENGINEERS, at 8.—Steam as a Motive Power for Public Service Vehicles (Discussion): T. Clarkson.

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