acetone, isopropyl alcohol, pinacoline (the principal product), and mesityl oxide. The yield of pinacoline is 21 per cent., and this forms the most rapid and advantageous method of preparing this substance.—On oxyethylcrotonic acid and ethylerythric acid: M. **Lespieau.**—On a method for the volumetric estimation of hydroxylamine: L. J. **Simon.** The method is based upon the conversion of the hydroxylamine salt into the oxalate by the addition of sodium oxalate, and titration in neutral solution by potassium permanganate. The influence of dilution and of excess of the sodium oxalate has been studied.—The glycerophosphates of piperazine: A. **Astruc.** A description of the preparation of the acid glycerophosphate of piperazine, and a method for its estimation based on the use of two indicators, phenol-phthalein and methyl orange.—On the experimental bases of the reticular hypothesis: G. **Friedel.**—The requirements of the tobacco plant in fertilising materials: A. Ch. **Girard** and E. **Rousseaux.** The average amounts of lime, potassium, phosphoric acid and nitrogen required per 1000 kilograms of dried leaves are given.—The genesis of the gametes and anisogamy in Monocystis: Louis **Brasil.**—On the Alpheidæ of the Laccadive and Maldive Islands: H. **Coutière.**—Sterility and alopecy in guinea-pigs previously submitted to the influence of ovarian extracts of the frog: Gustave **Loisel.** The ovarian extracts of the frog contain a poison which acts by causing the atrophy of a certain number of ovules. Other effects of the poison are noted.—On the antidote to nicotine: C. **Zalackas.** Experiments on rabbits and guinea-pigs show that strychnine has not the effects as an antidote to nicotine usually attributed to it. The effects of eserine are more favourable, and an extract of *Nasturtium officinale* led to still better results, the effects of a mortal dose of nicotine being entirely removed by the injection of the latter substance.—On the lowering of the arterial pressure below the normal by d'Arsonvalisation: A. **Moutier** and A. **Challamel.** In certain cases the use of high frequency, high tension currents leads to a lowering of the blood pressure under the normal. It is therefore necessary to measure this pressure with great care when d'Arsonvalisation is being used therapeutically.—A modification of the spectrum of methæmoglobin under the action of sodium fluoride: J. **Ville** and E. **Derrien.**—On the Middle Eocene deposits in Senegal: J. **Chautard.**—On the phenomena of the deviation of water courses dating from the seventeenth, eighteenth, and the commencement of the nineteenth centuries, proved my maps: E. **Fournier.** In a series of five maps of a valley near Lons-le-Saunier, dated 1658, 1748, 1790, 1841, and the present day, the various changes undergone by the water courses can be traced.—The results of a year's study of the electrical conductivity of the water of the Rhone at Lyons: M. **Chanoz.** The water supply of Lyons, obtained from the Rhone, contains mineral matter in relatively constant amounts throughout the year, as indicated by the freezing point and electrical conductivity.

DIARY OF SOCIETIES.

THURSDAY, MARCH 23.

ROYAL SOCIETY, at 4.30.—Bakerian Lecture: The Reception and Utilisation of Energy by the Green Leaf: Dr. Horace T. Brown, F.R.S.

INSTITUTION OF ELECTRICAL ENGINEERS, at 8.—Report of Experiments carried out at the National Physical Laboratory: On the Effect of Heat on the Electrical and Mechanical Properties of Dielectrics, and on the Temperature Distribution in the Interior of Field Coils: E. H. Rayner.—*Discussion*: On Temperature Curves and the Rating of Electrical Machinery: R. Goldschmidt.

ROYAL INSTITUTION, at 5.—The Reasonableness of Architecture: Thomas G. Jackson.

FRIDAY, MARCH 24.

ROYAL INSTITUTION, at 9.—A Pertinacious Current: Sir Oliver Lodge, F.R.S.

PHYSICAL SOCIETY, at 5.—Note on the Voltage Ratios of an Inverted Rotary Converter: W. C. Clinton.—On the Flux of Light from the Electric Arc with varying Power Supply: G. B. Dyke.—The Application of the Cymometer and the Determination of the Coefficient of Coupling of Oscillation Transformers: Prof. J. A. Fleming, F.R.S.—Exhibition of Cymometers and other Instruments.

INSTITUTION OF CIVIL ENGINEERS, at 8.—The Wanki to Victoria Falls Section; Victoria Falls Railway: C. T. Gardner.—Design of a Double-Line Plate-Girder Railway-Bridge: H. S. Coppock.

SATURDAY, MARCH 25.

ROYAL INSTITUTION, at 3.—Electrical Properties of Radio-active Substances: Prof. J. J. Thomson, F.R.S.

MONDAY, MARCH 27.

SOCIETY OF ARTS, at 8.—Telephone Exchanges: H. L. Webb.

ROYAL GEOGRAPHICAL SOCIETY, at 8.30.—Liberia: Sir Harry Johnston, G.C.M.G., K.C.B.

INSTITUTE OF ACTUARIES, at 5.—Bonuses in Model Office Valuations and their Relations to Reserves: Dr. James Buchanan.

TUESDAY, MARCH 28.

INSTITUTION OF CIVIL ENGINEERS, at 8.—Coolgardie Water-Supply C. S. R. Palmer.

ROYAL INSTITUTION, at 5.—Vibration Problems in Engineering: Prof. W. E. Dalby.

SOCIETY OF ARTS, at 4.30.—The Manufactures of Greater Britain—Australasia: The Hon. W. H. James.

WEDNESDAY, MARCH 29.

SOCIETY OF ARTS, at 8.—British Woodlands: Sir Herbert Maxwell, Bart., M.P.

THURSDAY, MARCH 30.

ROYAL SOCIETY, at 4.30.—*Probable Papers*: On the Observations of Stars made in some British Stone Circles (Preliminary Note): Sir Norman Lockyer, K.C.B., F.R.S.—On the Distribution of Velocity in a Viscous Fluid over the Cross-section of a Pipe, and on the Action at the Critical Velocity: J. Morrow.—The Direct Synthesis of Ammonia: Dr. E. P. Perman.—The Determination of Vapour Pressure by Air Bubbling: Dr. E. P. Perman and J. H. Davies.—Note on Fluorescence and Absorption: J. B. Burke.—The Determination of the Specific Heat of Superheated Steam by Throttling and other Experiments: A. H. Peake.

INSTITUTION OF ELECTRICAL ENGINEERS, at 8.

FRIDAY, MARCH 31.

ROYAL INSTITUTION, at 9.—The Scientific Study of Dialects: Prof. J. Wright.

SATURDAY, APRIL 1.

ROYAL INSTITUTION, at 3.—Some Controverted Questions of Optics: Lord Rayleigh.

CONTENTS.