

substance can be obtained in a state of purity in two ways, by the interaction of calcium and arsenic at a low red heat, and by heating carbon and calcium arsenate in the electric furnace. The arsenide has the composition Ca_3As_2 , and is readily decomposed by water giving pure AsH_3 , mixed, however, with a little acetylene when the product from the electric furnace is used. It is readily attacked by the halogens, but is unaltered in dry air or oxygen.—On the decomposition of carbon monoxide in presence of ferric oxide, by M. O. Boudouard. The decomposition is a function of the time, and also depends upon the quantity of oxide of iron present.—Volumetric estimation of cerium, by M. André Job. Ceric salts can be accurately determined in acid solution by titrating with aqueous hydrogen peroxide, the end of the reaction being indicated by the disappearance of the yellow coloration. An estimation of the cerium contained in the crude mixture of oxalates from monazite can be carried out in a few minutes by this method.—The variation of entropy in the dissociation of similar heterogeneous systems, by M. Camille Matignon. From the measurements of MM. Isambert and Bonnefoi of the heats of combination and the temperatures at which the dissociation pressure reaches 760 mm., it is shown that these quantities are proportional in the case of compounds of the type $\text{CaCl}_2 \cdot 4\text{NH}_3$. This result is expressed by the statement that when similar systems dissociate with the same dissociation pressure, the variation of entropy is the same.—Constitution and chemical properties of ethylideneimine, by M. Marcel Delépine. The constitution ethylideneimine ($\text{CH}_3\text{CH}=\text{NH}$)₂, is assigned to aldehyde ammonia, and it is shown that all the reactions of this compound agree well with the formula.—Derivatives of synthetic methyl-heptenone, by M. Georges Leser.—Synthesis of dimethyl-heptenol, by M. Ph. Barbier. This synthesis is easily effected from methyl-heptenol and methyl-iodide, by a modification of Saytzeff's method, using magnesium instead of zinc.—Studies on filtration, by M. J. Hausser.—On a mode of formation of ureas, by M. A. Jouve. If a solution of carbon monoxide in ammoniacal cuprous chloride is heated under pressure at 105°, urea is formed. The substitution of fatty and aromatic amines for the ammonia gives the analogous substituted ureas.—On an absinthine, a new substance extracted from absinthe, by MM. Adrian and A. Trillat.—On the formation of sugar from egg albumen, by M. Ferdinand Blumenthal. By the action of baryta water upon white of egg, a sugar is obtained giving a phenyl-glycosazone on treatment with phenyl-hydrazine.—Modifications undergone by toxins when introduced into the digestive tube, by MM. Charrin and Levaditi.—The sexual law of the smallest coefficient, by M. F. Le Dantic.—On the culture of monstrosities in plants, by M. Hugo de Vries.—The leucite volcanic rocks of Trebizonde, by M. A. Lacroix.—On the laws governing macles properly so called, by M. Fred. Wallerant.—On the conditions of culture in Tunis, by M. J. Dybowski.

DIARY OF SOCIETIES.

THURSDAY, JANUARY 19.

ROYAL SOCIETY, at 4.30.—Observations upon the Normal and Pathological Histology and Bacteriology of the Oyster: Prof. Herdman, F.R.S., and Prof. R. Boyce.—On the Formation of Multiple Images in the Normal Eye: S. Bidwell, F.R.S.—On the Vibrations in the Field round a Theoretical Hertzian Oscillator: Prof. K. Pearson, F.R.S., and Miss Lee.—On the Refractive Indices and Densities of Normal and Semi-normal Aqueous Solutions of Hydrogen Chloride, and the Chlorides of the Alkalies: Sir J. Conroy, F.R.S.

ROYAL INSTITUTION, at 3.—Tibet and the Tibetans: A. H. Savage Lander.

SOCIETY OF ARTS (Indian Section), at 4.30.—Railways in Burma, and their proposed Extension across Yunnan: J. Nisbet.

LINNEAN SOCIETY, at 8.—New Peridiniaceae from the Atlantic: G. R. Murray, F.R.S., and Miss F. G. Whitting.—On the Structure of Lepidostrobilus: Arthur J. Maslen.—Some Observations on the Caudal Diplospondyly of Sharks: Dr. W. G. Ridewood.

CHEMICAL SOCIETY, at 8.—Researches on Moorland Waters I. Acidity: W. Ackroyd.— α -ketotetrahydronaphthalene: Prof. F. S. Kipping, F.R.S., and Alfred Hill.—A New Method for preparing *as*-dimethyl- and Trimethyl-succinic Acids: William A. Bone.—Reduction of Optically-active Mono- and Di-alkoxy-succinic Acids from Malic and Tartaric Acids: Prof. Thomas Purdie, F.R.S., and William Pitheathly.—Action of Ammonia on Ethereal Salts of Organic Bases: Dr. Siegfried Ruhemann.—Esterification Constants of Substituted Acetic Acids: Dr. J. J. Sudborough and Lorenzo L. Lloyd.—Di-ortho-substituted Benzoic Acids. Part IV. Formation of Salts from Di-ortho-substituted Benzoic Acids and different Organic Bases: Lorenzo L. Lloyd and Dr. J. J. Sudborough.—The Thermal Effects of Dilution: J. Holmes Pollok.—The Changes of Volume due to Dilution of Aqueous Solutions: F. B. H. Wade.

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FRIDAY, JANUARY 20.

ROYAL INSTITUTION, at 9.—Liquid Hydrogen: Prof. J. Dewar, F.R.S.

EPIDEMIOLOGICAL SOCIETY, at 8.30.—Epidemic Cerebro-spinal Meningitis: Dr. Bruce Low.

QUEKETT MICROSCOPICAL CLUB, at 8.

SATURDAY, JANUARY 21.

MATHEMATICAL ASSOCIATION, at 2.—Annual Meeting.—On the Expression "Motion at an Instant": S. A. Saunder.—Porismatic Equations: R. F. Davis.—Arithmetical Division: E. M. Langley.

MONDAY, JANUARY 23.

SOCIETY OF ARTS, at 8.—Bacterial Purification of Sewage: Dr. Samuel Rideal.

IMPERIAL INSTITUTE, at 8.30.—The Work and Wealth of Western Australia: E. T. Scammell.

ROYAL GEOGRAPHICAL SOCIETY, at 8.30.—The Plan of the Earth, and its Causes: Dr. J. W. Gregory.

TUESDAY, JANUARY 24.

SOCIETY OF ARTS (Foreign and Colonial Section), at 4.30.—Rhodesia and its Mines: W. Fischer Wilkinson.

INSTITUTION OF CIVIL ENGINEERS, at 8.—The Effects of Wear upon Steel Rails: William G. Kirkaldy.—On the Microphotography of Steel Rails: Sir William Roberts-Austen, K.C.B., F.R.S.

ROYAL PHOTOGRAPHIC SOCIETY, at 8.—The Development of Gelatino-chloride Papers: John Sterry.

ANTHROPOLOGICAL INSTITUTE, at 8.30.—Anniversary Meeting.

WEDNESDAY, JANUARY 25.

SOCIETY OF ARTS, at 8.—Tuberculosis in Animals: W. Hunting.

THURSDAY, JANUARY 26.

ROYAL SOCIETY, at 4.30.—*Probable Papers*: Contributions to the Theory of Simultaneous Partial Differential Equations: Prof. A. C. Dixon.—On the Structure and Affinities of Fossil Plants from the Palaeozoic Rocks. III. On *Medullosa anglica*, a New Representative of the Cycadofilices: Dr. Scott, F.R.S.—On the Nature of Electro-Capillary Phenomena. I. Their Relation to the Potential Differences between Solutions: S. W. F. Smith.

INSTITUTION OF ELECTRICAL ENGINEERS, at 8.—Rules for the Regulation of the Wiring of Premises for Connection to Public Supply Mains: J. Pigg.—The Regulation of Wiring Rules: C. H. Wordingham.—The Institution Wiring Rules: R. E. Crompton.

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