

with which it readily formed a solid compound, the pure aldehyde was easily obtained from this by the usual methods. The specific gravity of the aldehyde at 15° C. was .9477. The specific rotation was  $[\alpha]_D^{20} - 49.17'$ , this somewhat high levorotation causes those oils containing it to be levorotatory, although mostly devoid of phellandrene. It is this aldehyde that causes the oil of *E. cnerifolia* of South Australia to be levorotatory. The pure aldehyde has an aromatic odour and is slightly yellowish in tint. It was soluble in the usual solvents. The author proposes the name aromadendral for this aldehyde, and aromadendric acid for the corresponding acid.

ST. LOUIS.

Academy of Science, March 18.—Prof. E. H. Keiser delivered an address showing the progress made in the science of chemistry during the nineteenth century.—Prof. F. E. Nipher exhibited pieces of pine board a foot square, showing the tracks of ball lightning discharges upon them like those formerly described by him in No. 6, vol. x. of the *Transactions* of the Academy. The discharges formerly described had been formed on a photographic film. The balls were very small, and wandered over the plate, leaving a track of metallic silver in their wake. In the present instance the balls were much larger, and they burned a deep channel in the wood. They are formed at the secondary spark gap of a coil. The terminals are pointed and are under control, so that the gap may be changed in length. To start the balls, the pointed terminals are put upon the wood surface, so near that the spark carbonises somewhat, after which the gap is made longer. These balls travel in either direction, when a direct current is used with a Wehnelt interrupter. This differs from the results reached on the photographic film with the Holtz machine. There the balls came from the kathode. Even when they originated at isolated points on the film, they travelled away from the kathode. In the present results, the balls have been caused to originate at isolated points, and two balls have started in opposite directions. Wood which gives little flame shows the phenomenon to best advantage, but the balls preserve their identity and travel slowly along even when completely surrounded by flames of the burning wood.

GÖTTINGEN.

Royal Society of Sciences.—The *Nachrichten* (physico-mathematical section), part 4 for 1900, contains the following memoirs communicated to the Society:—

December 22, 1900.—W. Voigt: On the parameters of crystallo-physics, and on directed magnitudes of higher orders (tensors, rotors, torsors, &c.). J. Wellstein: Prime forms on Riemann surfaces.

February 9.—E. Ehlers: On Atlantic palolo-worms.

DIARY OF SOCIETIES.

THURSDAY, APRIL 11.

MATHEMATICAL SOCIETY, at 5.30.—Summation of the Series  $\sum_{n=0}^{\infty} I^3(\alpha+n)$ .  
Dr. F. Morley.—On the Projective properties of Cubic and Quartics: A. B. Basset, F.R.S.

FRIDAY, APRIL 12.

MALACOLOGICAL SOCIETY, at 8.—On the Dates of Publication of Kiener's "Species générales des Coquilles vivants," 1834-80; C. Davies Sherborn and B. B. Woodward.—New Species of Land-Shell from Central and South America: S. I. DaCosta.—Note on the Genus *Temesa*, with Descriptions of Two New Land-Shell from South America: E. R. Sykes.  
GEOLOGISTS' ASSOCIATION, at 8.—The Zonal Value of Red Strata in the Carboniferous Rocks of the Midlands: Walcot Gibson.

ROYAL ASTRONOMICAL SOCIETY, at 5.—Note on some Engraved Charts of Pogson's Proposed Atlas of Variable Stars: Rev. J. G. Hagen.—Meteoritic Showers from the Region  $\alpha-\beta$  Persei and  $\eta$  Aurigæ: W. F. Denning.—Anomalous Occultations of Stars by the Moon: R. T. A. Innes.—A Method of Mechanically Compensating the Rotation of the Field of a Siderostat: H. C. Plummer.—Variations of R Horologii during 1900: A. W. Roberts.—Note on Meridian Observations of Nova Persei: A. Graham.—Further Observations of the New Star in Perseus: A. Stanley Williams.—(1) The Spectrum of Nova Persei; (2) The Spectrum of Nova Persei as a Variable Star with a Variable Spectrum: Rev. W. Sidgreaves.—*Probable Paper*: The Magnitude of Nova Persei as deduced from Photographs taken with the Astrographic Equatorial, Royal Observatory, Greenwich.

MONDAY, APRIL 15.

VICTORIA INSTITUTE, at 4.30.—The Ice Age: Warren Upham.

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TUESDAY, APRIL 16.

ROYAL INSTITUTION, at 3.—Cellular Physiology: Dr. A. Macfadyen.  
ZOOLOGICAL SOCIETY, at 8.30.—Revision of the Insects of the Order Rhynchota belonging to the Family *Coveidae* in the Hope Collection at Oxford: W. L. Distant.—On some Earthworms from Tropical Africa, and on the Spermatophores of *Polytorentes* and *Stuhlmannia*: F. E. Beddard, F.R.S.—On the Identity and Distribution of the Mother-of-Pearl Oysters: a Revision of the Subgenus *Margaritifera*: Dr. H. Lyster Jameson.  
INSTITUTION OF CIVIL ENGINEERS, at 8.—Modern Practice in the Manufacture and Distribution of Gas: Harry E. Jones.

WEDNESDAY, APRIL 17.

SOCIETY OF ARTS, at 8.—The Synthesis of Indigo: Prof. Raphael Meldola, F.R.S.  
ROYAL METEOROLOGICAL SOCIETY, at 7.30.—Special Characteristics of the Weather of March, 1901: W. Marriott.—Vapour Tension in Relation to Wind: R. Strachan.  
ROYAL MICROSCOPICAL SOCIETY, at 8.—Demonstration on the Metamorphoses of *Eschschia cyanea*, illustrated by Photographs from Life: Fred Enock.  
SANITARY INSTITUTE, at 8.—Sewage Purification and Standards of Purity: Dr. H. R. Kenwood and Dr. W. Butler.

THURSDAY, APRIL 18.

ROYAL INSTITUTION, at 3.—Naturalism in Italian Painting: Roger Fry.  
SOCIETY OF ARTS (Indian Section), at 4.30.—Madras, the Southern Satrapy: J. D. Rees.  
RÖNTGEN SOCIETY, at 8.—Meeting for Discussion. Subject: X-Ray Therapeutics: To be opened by Miss M. M. Sharpe.  
CHEMICAL SOCIETY, at 8.—Researches on Moorland Waters. Part II. On the Origin of the Combined Chloride: W. Ackroyd.—Robinin, Viola-queritrin, and Osyritrin: A. G. Perkin.—Preparation of Orthodimethoxybenzoin, and a New Method of preparing Salicylaldehydemethyl ether: J. C. Irvine.—(1) Action of Alkyl Haloids on Aldoximes and Ketoximes; Part II. (2) The Supposed Existence of Two Isomeric Triethylloxamines: Wyndham R. Dunstan and E. Goulding.—(1) Nitrocamphene, Aminocamphene, and Hydroxycamphene; (2) Action of Hydroxylamine on the Anhydrides of Bromonitrocamphane: M. O. Forster.—The Influence of Cane Sugar on the Conductivities of Potassium Chloride and Potassium Hydroxide, with Evidence of Salt Formation in the Latter Case: C. J. Martin and O. Masson.  
INSTITUTION OF ELECTRICAL ENGINEERS, at 8.—Replies of Mr. H. Ravenshaw and Mr. S. F. Walker to the Discussion on their Papers read at the last Meeting.—Test-Room Methods of Alternate Current Measurements: A. Campbell.—Note on the Use of the Differential Galvanometer: C. W. S. Crawley.

FRIDAY, APRIL 19.

ROYAL INSTITUTION, at 9.—The Existence of Bodies Smaller than Atoms: Prof. J. J. Thomson, F.R.S.  
INSTITUTION OF CIVIL ENGINEERS, at 8.—The Theory of Cast-Iron Beams: E. V. Clark.  
INSTITUTION OF MECHANICAL ENGINEERS, at 8.—Address by the President, W. H. Maw.

SATURDAY, APRIL 20.

ROYAL INSTITUTION, at 3.—Climate: its Causes and Effects: J. Y. Buchanan, F.R.S.

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