

ing the polariscope tube, the readings would be nearly constant. Hence, to determine invert cane sugar and dextro-glucose in a sample, observe first, at—say  $25^{\circ}$  C.; second, at  $92^{\circ}$  C.; without inverting; third, invert and read at  $92^{\circ}$  C. The first observation would give us the cane sugar and the dextrose less the left rotation due to laevulose.

I am still experimenting on sugars of various grades, and may be able to give you in another paper some further details.

In conclusion I wish to express my thanks to my assistant, Mr. C. L. Constant, who has aided me materially in the experimental work necessary for the preparation of this paper.

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### III.—PROCEEDINGS.

#### *Regular Meeting, February 16, 1879.*

THE meeting was called to order at 8:15 o'clock, Vice-President Leeds in the chair. The minutes of the last meeting were read and adopted.

The Board of Directors reported as follows:

At a meeting held January 16, 1879—*Present*, Messrs. Leeds, Nichols, Casamajor, Miller, Waller, Endemann and Goldschmidt.

The Treasurer reported a balance of \$984.79.

The following bills were audited and ordered to be paid: T. J. Fay, \$9.00; G. E. Stechert, \$19.65.

On motion of the Treasurer it was resolved to appoint a committee to mature a plan of action for the collection of the amount due the Society for arrears of dues, and to report the names of members to be dropped from the rolls of the Society for such non-payment. The chair appointed as committee Messrs. Casamajor, Nichols and Goldschmidt.

*Resolved*, That no one should be considered a member of the Society, or receive the proceedings or their publications, until he shall have paid his initiation fee and dues for the current year.

*Resolved*, That the Librarian hereafter send out the proceedings.

*Resolved*, That the Treasurer be empowered to make such arrangements in regard to re-engaging the rooms of the Society as he may deem proper.

At a meeting of the Board of Directors, held February 6, 1879—*Present*, Messrs. Leeds, Goldmark, Endemann, Miller, Nichols, Waller, Casamajor, Eastwick and Goldschmidt.

The following bills were audited and ordered to be paid: G. A. Kundahl, \$52.00; G. E. Stechert, \$6.60; Baker & Godwin, \$87.87; S. A. Goldschmidt, \$17.25.

The Treasurer reported a balance of \$1,100.00.

The Committee on Publications were authorized to publish the proceedings for the coming quarter. They were also directed to publish Vol. I, No. 4, by March 1, 1879.

The Committee on delinquents reported 104 members in arrears, of whom 42 had never paid one cent, and that they had sent the following circular to these gentlemen:

AMERICAN CHEMICAL SOCIETY,  
No. 11 East 14th St.

NEW YORK, January 24, 1879.

SIR: The Committee on Delinquents, of the American Chemical Society, has directed me to inform you that you owe to this Society the amount specified in the enclosed notice. By decision of this Committee, the names of those who have not paid their dues for the years prior to 1879, shall be dropped from the roll of membership on the first day of May next. We hope that you will give this matter your immediate attention, as we would regret the necessity of dropping your name from our rolls.

With much respect, I remain

Your obedient servant,

P. CASAMAJOR,

*Corresponding Secretary.*

Messrs. F. W. Potter, Chas. de Lamothe, Chas. Marchand and Herbert Hazard were elected Members, and Messrs. E. W. Leggett and C. F. Wingate Associates.

Messrs. C. G. Wheeler, T. B. Stillman, August Eimer, — Erhardt, W. F. Hildebrand and John F. Kelly were proposed as members, and Messrs. A. W. Hazard, Joseph Binns, John Seal and Wm. Ziegler as Associates.

The resignations of Messrs. H. M. Drowne, A. Hallgarten, E. L. Kalbfleisch, J. H. Rickettson, J. L. Morgan, Jr. and Davenport Fisher were read and accepted.

Dr. Endemann taking the chair:

Prof. Leeds read the first two papers, viz: 1. "An algebraic expression for the curve expressing the relation between temperature and volume in the generation of ozone." 2. "Quantitative

measurements of the chemical energy of the solar ray." The papers were accompanied with photographic and experimental illustrations.

In discussing the second paper, Dr. Eudemann remarked that Grotthuss had studied the action of the various rays upon starch iodides, and had found that the red and yellow rays bleached this substance, while the violet ray restored the color. The possibility of a greater energy of the violet ray at noon would correspond with the results obtained by Prof. Leeds.

The Vice-President resuming the chair.

Mr. Sherer read a paper entitled "A Method for the Determination of Dextro-glucose and Cane Sugar in Refined Sugars and Syrups,"\* which was discussed by Dr. Behr.

Mr. Casamajor then read a paper "On the Influence of Variations of Temperature, and the Deviations of Polarised Light by Solutions of Inverted Sugar." After which the meeting adjourned.

S. A. GOLDSCHMIDT,

*Recording Secretary.*

IV.—RELATIONS BETWEEN THE TEMPERATURE AND VOLUME IN THE GENERATION OF OZONE, WITH DESCRIPTION OF A NEW FORM OF OZONATOR.

By ALBERT R. LEEDS, PH. D.

THE methods usually employed to generate ozone by means of the slow oxidation of phosphorus, partly immersed in water, are quite unsatisfactory. Thus Miller (*Elements of Chemistry*, 2d. Ed., Part II., p. 23) directs that a stick of clean phosphorus, moistened with a few drops of water, should be placed in a bottle of atmospheric air. In an hour or two the production of ozone attains a maximum, when, if the phosphorus be not removed, the ozone disappears, owing to its combination with the phosphorus. Instead of a bottle, a large glass balloon is preferably employed, which Arendt (*Lehrb. der Anorgan. Chem.*, p. 416) directs to be covered with a glass plate, and allowed to remain before using for twelve hours. Gorup-Besanez (*Anorgan. Chem.*, p. 358) recommends, in addition to the foregoing, that the balloon should be maintained for several hours at a temperature of 16° to 20°. As means of studying, or even of exhibiting to a class, the properties of ozone, everyone who has used these and similar devices, will probably have found them disappointing. At times—a

\* This paper has been withdrawn by the author, C. P. P.