evolved, add plenty of water and re-evaporate. Repeat this evaporation with water till the nitrous vapors are no longer evolved on dilution. Finally dilute sufficiently to filter and add water until the color of a platinum chloride solution of known content is matched.
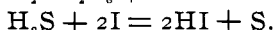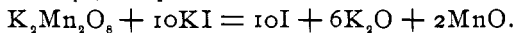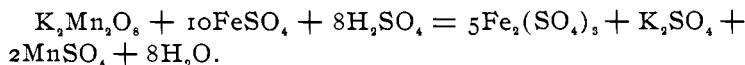
STANDARD IODINE SOLUTION FOR SULPHUR DETERMINATIONS.

BY EDWARD K. LANDIS.

Received January 11, 1897.

THE following calculation shows an easy method of preparing Payne's iodine solution, with the least amount of calculation.

REACTIONS.

$K_2Mn_2O_8 + 10FeSO_4 + 8H_2SO_4 = 5Fe_2(SO_4)_3 + K_2SO_4 + 2MnSO_4 + 8H_2O.$

$K_2Mn_2O_8 + 10KI = 10I + 6K_2O + 2MnO.$

$H_2S + 2I = 2HI + S.$

2 atoms I = 2 atoms Fe = 1 atom S.

32 grams S = 112 grams Fe.

1 gram S = 3.5 grams Fe.

When five grams are taken for analysis, 0.01 per cent. = 0.0005 gram, and this multiplied by 1000 = 0.5 gram in a liter.

Let x = value of 1 cc. $K_2Mn_2O_8$ in Fe in grams.

Then $\dfrac{0.5}{\dfrac{x}{3.5}} = 0.5 \times \dfrac{3.5}{x} = \dfrac{1.75}{x}.$

Therefore 1.75 divided by the value of one cc. potassium permanganate in iron in grams, gives the number of cc. of potassium permanganate to be added to the potassium iodide and sulphuric acid and diluted to one liter, to form iodine solution of such strength that one cc. will be equal to 0.01 per cent. sulphur when using five grams of sample.

NOTE.

Notes on "An Analytical Investigation of the Hydrolysis of Starch by Acids."[1]—A number of errors and misprints were overlooked by the authors in their compilation of this paper. The following are the most important:

[1] This Journal, 18, 869.

Page 873, ninth line, read "77.40" instead of "76.40."

Page 873, second foot-note, read "Heron" instead of "Hearn."

Page 879, the equation for the curve of K_{386} is much more nearly: $x^2 + y^2 - 758x + 772.4y = 0$. The values of K as given in Table C are, however, correct.

Page 880, last equation should read $m = \dfrac{\alpha + 141.5\,K - 195}{26.52}$

By a clerical error the denominator 27.82 was carried through the calculations of Tables C and E. The values of m_{386} are, therefore, too low by 4.65 per cent. of the true value, the maximum therefore being 0.462 instead of 0.441. The values of g_{386} and d_{386} are correspondingly too high. This error does not affect the general conclusions of the article nor the character of the curves plotted in Plate B. The final resulting values of Tables I, II, and III, deduced from Table E, are moreover not materially changed by the correction.

Page 885, twenty-third line, the "$\alpha_{D_{386}}$" should be "131.7," the K (obtained) should be "0.523," the K_{386} (calculated) should be "0.533."

Page 885, third line from bottom read "possibly" instead of "possible."

Page 896, eleventh line, read "$\frac{1}{50}\,N$" instead of "$\frac{1}{100}N$."

Page 890, Table II, Column II, read "134.0" and "285.0" instead of "13.40" and "28.50."

Page 897, Plate I, the last plot should be five divisions to the right.

It is interesting to note that if there were but two simple carbohydrates resulting from hydrolysis, dextrose, and dextrin, as believed by some investigators,[1] the theoretical values of K would fall exactly on a *straight line* passing through the "zero" and "hundred" points of Plate A. The *experimental* values, on the contrary, show a maximum divergence from this line of about eight per cent., a discrepancy too great to be explained by experimental error or approximate specific gravity standard. Moreover, at the higher conversions, the curve approaches the value of pure dextrose again, showing quite conclusively that a body which we take as maltose, is an intermediate product between dextrin and dextrose, and not a decomposition product of dextrose, at least as far as the curve is carried.

[1] Flourens: *Compt. Rend.*, 110, 1204-1206.

Plots on a similar scheme made of the values of dextrin and maltose, present at successive stages of diastase conversion $[\alpha]_{D386} = 195$ and $[\alpha]_{D386} = 135.2$, demonstrate that by the law of Brown and Morris, K, m, and d can be graphically represented as straight lines.

Again it follows that the values of K_{354} of a *mixture* of hydrolyzed starch products made by the action of acids must be necessarily less than the value of K of a homogeneous product of the same rotation, as it falls on the straight line joining the points on the K curve corresponding to the original values of the separate constituents.

A reprint of the paper on the hydrolysis of starch will appear in the *Technology Quarterly* in March. The authors will be glad to send corrected copies to any member of the Society interested in the subject. GEO. W. ROLFE.

GEO. DEFREN.

NEW BOOKS.

COMMERCIAL ORGANIC ANALYSIS. BY ALFRED H. ALLEN, F.I.C., F.C.S. Second Edition, Revised and Enlarged. Vol. III. Part III. VEGETABLE ALKALOIDS (Concluded), NON-BASIC VEGETABLE BITTER PRINCIPLES, ANIMAL BASES, ANIMAL ACIDS, CYANOGEN AND ITS DERIVATIVES. xii + 508 pages. 1896. Philadelphia: P. Blakiston, Son & Co. Price, $4.50.

This, the last volume but one of Allen's compendious work, is devoted to a study of the vegetable alkaloids, non-basic vegetable bitter principles, animal bases, animal acids, and cyanogen and its derivatives. It is really Volume V of the book, Volume III having grown into three large volumes during compilation and publication.

This volume, like its associates, is much more than its title indicates. It not only describes methods of procedure for the benefit of the analyst, but gives also a description of the various organic bodies, notes concerning their preparation and other encyclopedic matter valuable to the scientific reader.

Since Mr. Allen's work has so far outgrown its original plan, it might be well for him to consider the advisability of a re-arrangement of the material in a future edition in order to make it more convenient for different classes of chemical workers. For instance, in the present volume the matter on pages 1 to 166 is