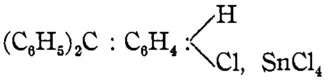
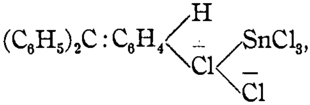
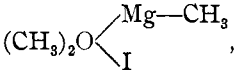
explained by Kehrmann as being due to their being salts of an isomeric quinoid chloride,  $(C_6H_5)_2C : C_6H_4 :\!<\begin{array}{l} H \\ Cl,\ SnCl_4 \end{array}$; that is, Kehrmann considers them to be carbonium salts of a bivalent carbon base, $(C_6H_5)_2C = C_6H_4 <$. It is probable, however, that they are really quinoid chloronium salts,  $(C_6H_5)_2C : C_6H_4 < \begin{array}{l} H \\ Cl < \begin{array}{l} SnCl_3, \\ Cl \end{array} \end{array}$ corresponding to the oxonium salts,  $(CH_3)_2O < \begin{array}{l} Mg—CH_3 \\ I \end{array}$, prepared by Baeyer,[1] and to an ammonium or metal ammonium, salt RNH_3Cl. In other words the basic, not the acid, properties of chlorine account for their formation.

(5) Triphenylmethyl chloride is a conductor, especially in acid solvents (sulphur dioxide),[2] and the conducting solutions are colored; the conductivity in acid solvents is as valid an indication of triphenylmethyl chloride being a base—a chloronium base in its quinoid form—as of its being a salt of a carbonium base, as has been argued heretofore. Dimethylpyrone shows exactly the same behavior, forming conducting solutions of oxonium salts in acid solvents.

We do not consider the evidence we have presented as being by any means conclusive but we do believe that our views agree rather better with the facts than does the carbonium theory and that (1) the existence of the long sought chloronium bases will be dated from Baeyer's work and that the endeavor to obtain simpler chloronium salts ought to be undertaken with renewed hope; (2) the quinoid theory of the triphenylmethane dyes should still be maintained; and (3) the existence of true carbonium salts, both in the case of the carbimides and of the triphenylmethane derivatives, is still open to grave doubts.

CHICAGO, June 6. 1905.

NOTE.

The Crystallization of Sodium Iodide from Alcohols.—An accidental observation during the preparation of some ethers by Williamson's method led to the experiments detailed below, which are

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[1] *Ber.*, **35**, 1201 (1902).

[2] Gomberg : *Ibid.*, **35**, 2397 (1902); Walden : *Loc. cit.*

merely presented as an addition to the somewhat restricted literature upon the addition products between haloid salts and alcohols.

Sodium iodide is very soluble in absolute methyl alcohol and is not precipitated therefrom upon the addition of a considerable volume of absolute ether, while wet ether produces immediate separation. On cooling a warm solution, rather large plate-shaped crystals separate out, while a solution saturated at room temperature and then cooled below 0°, becomes thoroughly permeated with brilliant white felted needles; although differing markedly in appearance, these two kinds of crystals are identical in composition.

The iodine was determined by Volhard's method; the methyl alcohol, by heating in a current of air and absorbing the vapors in sulphuric acid; the gain in the weight of the latter corresponding accurately to the loss experienced by the crystals. The results agreed very closely with the formula $NaI.3CH_4O$: 38.91 and 38.55 per cent. of methyl alcohol and 51.50 per cent. of iodine. Calculated for $NaI.3CH_4O$, 39.06 and 51.58 per cent.

Potassium iodide, while fairly soluble in alcohol, crystallizes free from it and this seems to be quite a characteristic distinction between the two salts. Sodium iodide crystallizes from ethyl alcohol, forming an addition product, although not quite so readily as with the methyl alcohol. The analysis gave 64.22 per cent. I; calculated for $NaI.C_2H_6O$, 64.91 per cent. This, therefore, seems to be the formula of the addition product with ethyl alcohol.

Normal propyl alcohol dissolves nearly one-third of its weight of sodium iodide and, on evaporation at low temperatures, deposits crystals which appear to have the formula $5NaI.3C_3H_8O$, as two distinct preparations gave 68.26 per cent. and 68.22 per cent. of iodine, against 68.27 per cent. required by theory. Apparently, therefore, the molecular proportion of alcohol assimilated decreases as the series ascends.

MORRIS LOEB.

NEW BOOKS.

CONVERSATIONS ON CHEMISTRY: Part I, General Chemistry. By WILHELM OSTWALD. Translation by ELIZABETH CATHERINE RAMSAY. New York: John Wiley & Sons. 1905. vii + 250 pp.

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