

process analogous to "staining." It does not seem to be due to the formation of a "lake" as the term "lakes" is applied to a group of coloring substances which are salts of an animal or vegetable coloring matter united with a metal, generally aluminum or tin ("U. S. Disp.," 21st Ed.), and methylene blue shows no disposition to precipitate with aluminum salts such as the neutralized, hydrochloric acid extract of the ash of Irish moss, or aqueous solutions of aluminum sulphate or ammonium alum. Nevertheless, there is a possibility that the aluminum in Irish moss may be present in such form as to "lake" with methylene blue, so that this is an open question.

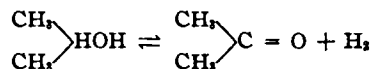
Because of the apparently strong adsorptive "attraction" between methylene blue and Irish moss an attempt was made to use an Irish moss decoction for removing methylene blue stains from the hands. However, the Irish moss proved less effective for this purpose than the detergent power of soap.

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CATALYTIC DEHYDROGENATION OF ISOPROPYL ALCOHOL.*

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The dehydrogenation of isopropyl alcohol to form acetone is of practical im-



portance and can be used as a manufacturing process. Moreover, the behavior of alcohols at elevated temperatures in contact with various substances is of importance in studies relating to the production of ethylenic compounds. Padoa and Foresti (*R. Atti, Accad. dei Lincei* (5), 23, 11, 84) converted the alcohol into the ketone by the action of benzene in the presence of a Ni catalyst at 185° for 67 hours; 37% acetone and some cyclohexanol are formed. Meyer and Eckert (*Monatsh. f. Chem.*, 39, 241) have oxidized isopropyl alcohol to acetone in the presence of anthraquinone in the presence of light; and Wells, U. S. Patent 1,497,817 oxidizes secondary alcohols by atmospheric oxygen and steam in the presence of certain especially prepared metal and metal oxide surfaces. In French patent, 525,108 (1920), the claimants also oxidize the alcohol by atmospheric oxygen in the presence of copper catalyst at 500° C., with 75% yield.

Hara, Tohoru (*Memoirs. Coll. Science Engin. Imp. Univ. Tokyo Series A*, 9 (1926), 405), reports a simple dehydrogenation of isopropyl alcohol in the presence of reduced copper made in a special manner, at 230–330° C. Reduced copper made in other ways gave no reaction. British Patent 263,877 (1927) (addition to British Patent 262,120 (1927)) claims the phosphides, selenides, tellurides, antimonides, bismuthides and sulfides of heavy metals as catalysts which effect the dehydrogenation of isopropyl alcohol at 410° C. to acetone, giving a yield of over 80 per cent.

* Scientific Section, A. P. H. A., Rapid City meeting, 1929.

In this laboratory we have found that we can effect the practically quantitative conversion of isopropyl alcohol to acetone by passing isopropyl alcohol vapor through an iron furnace charged with crucible graphite broken up to 8-mesh size at a temperature of 400° C. This result is not in agreement with that of Trautz and Winkler (*J. prakt. Chem.*, 104 (1922), 53) who reported a practically quantitative dehydration of isopropyl alcohol to propylene by broken crucible graphite at 360–400° C.

The difference in these two results undoubtedly lies in a difference in the type of graphite. The crucible graphite used by us was furnished by the Dixon Crucible Co. and was made from the crystalline Ceylon graphite baked with clay. The graphite crucibles on the European market may be made of German black lead, which is an amorphous plumbago.

The different results obtained by Tohoru Hara with reduced copper from different sources and the differences obtained with graphite from different sources tend to emphasize the fact that the catalytic properties of solid surfaces depends on the pore structure of the material to a greater extent than it does on the chemical nature of the catalyst.

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Left.—R. J. B. Stanbury, Secretary, Canadian Pharmaceutical Association. Right.—M. R. MacFarlane, President, Canadian Pharmaceutical Association.—Both are members of the AMERICAN PHARMACEUTICAL ASSOCIATION and participated in the Proceedings of the convention in Baltimore and are looking forward to the joint meeting of the two associations in Canada, 1932.