XI. A NOTE ON THE HYDROLYSIS OF PECTIN.

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IN a communication to this Journal [1921] the present author showed that when pectin was treated with cold, aqueous alkalis or with the enzyme, pectase, pectic acid was formed, together with methyl alcohol and acetone. It was stated, moreover, that "the proportion of acetone to methyl alcohol produced appeared to be about one part of the former to two of the latter," and, furthermore, that "it appears likely, therefore that pectin is the dimethyl-*iso*-propenyl ester of pectic acid." This conclusion was not based on any indirect method of estimation of either the methyl alcohol or the acetone, which cannot easily be determined accurately in the presence of one another, but was a considered conclusion based on the actual amounts of these substances obtained after their separation by a prolonged and careful fractional distillation and subsequent treatment of the "acetone fraction" with calcium chloride. The amount of material dealt with was large, and more than 3 g. of practically pure acetone were obtained. The author sees no reason to modify his original, somewhat guarded statement.

In view, however, of several personal communications from an authoritative American source the subject appears to require a little further explanation.

The author's statement regarding the formation of acetone on cold¹ hydrolysis was at first denied, but has been subsequently confirmed, here and in America, but it must be pointed out that too prolonged treatment of the pectin with water at a high temperature, especially in the presence of acid, results in a loss of both methyl alcohol and acetone. It has now been stated, however, that whether the percentage of methyl alcohol yielded by pectin is calculated from the amount of alkali required to hydrolyse the latter, or estimated by Zeisel's method, practically identical results are obtained. From this it is concluded that there is hardly room for an *iso*-propenyl group in the molecule. It will at once be seen, however, that the amount of alkali required to eliminate an *iso*-propenyl group is the same as that required for a methyl group. Moreover, when employing Zeisel's method, acetone (or an *iso*-propenyl group) is converted into *iso*-propyl iodide, which readily volatilises and yields the same amount of silver iodide as would a methyl group.

This behaviour of acetone does not seem to be generally realised, and it is considered advisable to draw attention to it as several previous workers have employed Zeisel's method for estimating the methyl alcohol yielded by pectin.

REFERENCE.

Tutin (1921). *Biochem. J.* 15, 494.

¹ Acetone is yielded by a great variety of products on treatment with hot alkali.