more important constituents on the basis of the average total solid of the other liquors supplied by the same mill. The others are fairly uniform so far as these tests are concerned and compare favourably with the tests made in European countries. Ahren & gives 1+0465 for specific gravity; Wichelhans[§] 1+038; Lindsay and Tollens⁷ 1+055; while Walker⁸, who investigated Canadian liquors in 1913, recorded 1+05. The total solids recorded in the literature vary over a wider field. Wichelhaus[§] gives 8+28 grams per 100 cc., Lindsay and Tollens⁷ gives 9 to 10 per cent, and Seidel⁹ 11+44 per cent. As the Canadian liquors also vary from 9 to 11 per cent, they are fully as concentrated as those found in the European mills.

The total sugar content varies from 1.32 to 2.9 grams per 100 cc., if we accept the correction for the liquors which were considered diluted. The one with the lowest sugar content comes from a 17-hour cook, where much of the sugar must have been destroyed through cooking, as the gravity and total solids compare favourably with the other liquors. We also feel that sample 8, with a sugar content of 1.67, is not a representative one, as this same mill in four other liquors examined did not have a content less than 2 grams per 100 cc. It may be interesting to note that the temperature in this cook was from 145 to 155° C, during the last hour, which we will find later on materially decreases the amount of sugar in the liquor. We, therefore, believe that in representative liquors from mills in Eastern Canada the amount of total sugar varies from 2 to 2.9 grams per 100cc. The data in the literature vary over a wide range. Krause² gives 1:47 graps per 100 cc. for the Ritter-Kellner cool., while Hacgglund¹ gives from $2 \cdot 4$ to $2 \cdot 9$ per cent.

The percentage of the sugars which are fermentable varies from $61 \cdot 2$ to 75 per cent of the total. It is an important fact that those liquors which have the highest sugar content also have the highest per cent of fermentable sugar. Liquor number 8, which we have already pointed out, is low in sugar, due to the high temperature during the last hour, had only 61 per cent fermentable sugar, while those liquors thick have over $2 \cdot 5$ grams per 100 cc, of sugar have $66 \cdot 5$ per cont and over fermentable. In other words, if the conditions of the cook are such that the sugars are destroyed, the fermentable ones are the first to go. This is a confirmation of observations made by Haegglund¹.

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