

ing solution previous to inversion. The factor 0.4861 is based upon work done by Mr. F. W. Babington (Analyst, Vol. xvi., p. 181) and represents the cuprous oxide yielded by 1 gramme of invert sugar derived from inverting by dilute acid 0.95 grammes of cane sugar and precipitating by Fehling solution.

(2.) For ascertaining the quantity of cane sugar present 50 ccm. of the above mentioned five per cent solution of the honey were inverted by the action of 2 ccm. hydrochloric acid, then rendered slightly alkaline by potash solution and made up to 100 ccm. 10 ccm. of this inverted solution, containing 0.25 grammes of the original sample were then treated with excess of Fehling solution. The cuprous oxide produced multiplied by 400 and the factor 0.4861 gave the percentage of reducing sugar, including that derived from the inversion of the cane sugar present. The direct percentage, as ascertained under (1) was then deducted from the percentage after inversion, and the difference multiplied by 0.95 which gave the percentage of cane sugar in the sample. It will be seen from the table that the percentages thus obtained confirm, on the whole, with sufficient accuracy, those obtained by the Clerget process.

Allen states that, in the absence of added cane and invert sugar, an approximate estimation of the proportion of glucose syrup in honey may be made by reckoning 1 per cent of the adulterant for every degree of dextro-rotatory power possessed by the sample. Following this rule the percentage of glucose syrup present in the 13 samples of Table II are given in one of its columns.

The samples in question were also subjected to a qualitative test for dextrine which is usually a constituent of commercial glucose syrup. This test was applied in the manner described by Haenle (*Die Chemie des Honigs*; Strasburg, 1892), 5 ccm. of a 33 $\frac{1}{3}$ per cent solution of the sample are placed in a test tube, and 2 ccm. of absolute alcohol gently added. If dextrine is present a white turbidity is observable at the contact plane of the two fluids, which is caused by the separation of the dextrine, and disappears on mixing. Cane sugar treated in this way, and honey as a rule do not give this reaction. In Table II a column is given which shows the results of this test when applied to the different samples.

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