

TABLE II.—Results of further examination of 13 samples Honey showing right handed rotation, by Miss. E. Davidson.

No. of samples.	BY CLERGET PROCESS.				Approximate percentage of glucose syrup.	BY FEHLING SOLUTION.			Dextrine reaction.
	Direct Saccharimeter reading.	Reading after Inversion.	Temperature Centigrade.	Cane sugar by Clerget formula; p. cent.		Reducing sugar, stated as invert.	Reducing sugar after inversion.	Cane sugar, per cent.	
4340	+27.4	+21.3	23°	4.65	13.7	62.68	68.04	5.09	Distinct.
21305	+81.0	+71.3	24	7.42	40.5	49.48	54.24	4.52	"
23101	+70.7	+39.3	24	24.02	35.3	40.15	62.60	21.33	"
17438	+22.9	-17.9	24	31.22	.....	42.98	80.08	35.26	None.
17459	+19.2	-16.5	24	27.31	.....	47.15	76.80	28.16	"
17467	+48.6	+35.2	24	10.24	24.3	52.98	63.00	9.52	Distinct.
17472	+26.8	-16.4	24	33.05	.....	45.69	78.75	31.41	None.
21726	+8.5	-15.2	24	18.13	.....	52.49	75.00	21.38	"
21729	+3.9	-14.7	23	14.18	.....	55.60	75.04	13.46	"
21699	+14.1	+10.8	21	2.49	.....	65.13	68.63	3.32	"
23516	+70.1	+55.4	23	11.20	35.0	55.51	65.72	9.70	Distinct.
23520	+41.9	+35.4	23	4.96	20.9	63.38	69.22	5.54	"
23522	+43.5	+32.2	23	8.61	21.7	62.60	70.00	7.11	"

## MEMORANDUM REGARDING THE EXAMINATIONS REFERRED TO IN TABLE II.

The samples whose numbers are given in this table are those which shewed right handed rotation in the polariscopic observation noted in Table I, and which were subjected to further examination in order to ascertain whether this behavior was due to glucose syrup or cane sugar, and, in the latter case to determine the quantity of cane sugar present.

They were first examined by the Clerget process the nature of which is very clearly described by Allen (Commercial Organic Analysis, 1898; Vol. I, p. 260). The only difference which has been made in the equations there given is in the change by inversion which instead of 144 has been placed at 142.7 in accordance with the more recent determinations of Wohl. In Table II all the observations were given which are necessary for calculating the cane sugar, the percentage of which is also stated.

The percentage of sucrose present in the samples of Table II was also ascertained by the use of Fehling solution, the details of the process being as follows:—A five per cent solution of the honey sample was first prepared.

(1.) For determining the reducing sugars 10 c.c.m. of it, containing 0.5 grammes of the original sample were treated direct with Fehling solution in excess. The weight of the cuprous oxide produced multiplied by the factor 0.4861 and by 200 gave the percentage of reducing sugars present, stated as invert sugar. The name reducing sugar applies to all the varieties of this substance which act upon Fehling solution with precipitation of cuprous oxide. Dextrose, grape sugar, starch sugar, levulose or fruit sugar, the mixture of dextrose and levulose called invert sugar, and certain reducing substances which form in the syrup during the manufacture of sugar from the cane are all included under "reducing sugars." The term excludes cane sugar which does not act upon Feh-