made by enclosing a piece of pink paper between 2 sheets of glass; this standard is then placed against the face of the single chamber which covers one of the two holes, while the chamber itself is filled with distilled water. A green filter, which enables very accurate readings to be made by the dark adapted eye, is used in the Stupho eyepiece. A series of readings for suspensions showing known degrees of lysis are given below, the right-hand drum, corresponding to the permanent standard, being set at 50. For each degree of lysis is shown (1) the reading of the Stupho left-hand drum, and (2) the greatest error made in a set of 10 successive readings, the error being expressed as a percentage of lysis. In the case of all readings, only 2 seconds was allowed for matching the fields of the Stupho; the table accordingly shows the precision of the instrument when working under this exacting condition.

TABLE I.

Lysis, %	Reading	Greatest Error in 10 Readings
0	82.1	1.5
10	68.5	2.4
20	56.4	2.5
30	44.0	3.0
40	33.0	2.2
50	23.5	2.3
60	16.1	2.0
80	7.3	1.9
100	1.44	1.8

The greatest error made in any single reading, when expressed as a percentage of lysis, thus never exceeds 3%, and further, the standard error of the successive readings is always found to be less than $\pm 0.5\%$; the precision of the method thus exceeds any used hitherto. Even were a smaller precision attained, however, the method would be much more useful in practice than existing methods by reason of its extreme simplicity.

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Sub-Threshold Hyperglycemia and Glycuresis.

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Folin[1] states that "Glycuresis is independent of the level of blood

[1] Folin, O., and Berglund, H., *J. Biol. Chem.*, 1922, li, 213.

sugar and is not normally obtained from the ingestion of pure glucose."

The opposite view is expressed by Benedict in the following:[2] "We note at once that in every instance there is a definite general form to the curve of the sugar elimination following the ingestion of the sugar. The general form of this curve is *a rise in the middle and a fall at both ends,*" and " . . . offers convincing evidence that the experimental factor (glucose ingestion) was responsible for an increased urinary sugar excretion in these experiments."

The experiments reported were designed to compare glycuresis during short intervals, with frequent values for blood sugar for comparison.

Thirty-six experiments were performed on 25 human subjects. We have found that the moderate rises in the blood sugar level after the ingestion of either pure glucose or a mixed meal are accompanied by parallel increases in the amount of urinary sugar excreted per hour. With the ingestion of 50 gm. of pure glucose in 20% solution we have observed an increase in urinary sugar from 14 mg. per hour to 26 mg. and 60 mg., with a return to 16 mg. and 15 mg. per hour, and this curve of increased sugar elimination follows closely the fluctuation in the level of the blood sugar, which in this case went from 80 mg. to 85 and 89 and then returned to 83 and finally 79 mg. per 100 cc. of blood, all sub-threshold values.

Similar results were obtained after mixed meals.

The method employed for the estimation of blood and urinary sugar was that of Folin[3] with the modification for urinary sugar determination outlined by Folin and Svedberg.[4]

While this method is not specific for glucose, the results obtained with it more nearly express the true sugar content of blood than older methods. We have recognized the value of doing similar experiments by methods capable of measuring the true glucose content of blood and urine, and such experiments are now under way and will be reported in the near future.

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[2] Benedict, S. R., and Osterberg, E., *J. Biol. Chem.*, 1923, lv, 769.

[3] Folin, O., *J. Biol. Chem.*, 1926, lxvii, 357.

[4] Folin, O., and Svedberg, A., *J. Biol. Chem.*, 1926, lxx, 405.