

the worse as the years pass by. Of a different class is the case I report, centric in its origin and more often met with in young persons, which no doubt accounts for its fatality at early periods of life.

Mrs. B., age 28 years. Height 5 ft. 6 in., weight 123 lbs., of spare habit of body. Family history good, both parents alive and well, and no discoverable, hereditary tendency. Came under observation and treatment October, 1886.

Previous to commencement of present disease had always enjoyed perfect health, and accustomed to long daily walks. Had a miscarriage several years ago, with this exception menstruation has always been normal in every respect. In July 1886, first noticed a slight dimness of vision, heaviness of the legs, and was easily tired, especially on walking up-hill. The continuance of this weakness induced her to try change of air, and in September, while at Providence, Rhode Island, was troubled with intense thirst, which was ascribed to fatigue of travelling, and to the hot weather. Returning to Montreal in October I was consulted; there was great bodily weakness, excessive thirst, pains increased in severity, and her eyesight much worse, a colored ring being noticed when looking at a distant light. As this latter symptom indicated a possible glaucoma, her eyes were examined by an oculist without anything being discoverable. At the same time the urine was examined with the result of finding a large amount of sugar. She was placed upon as strict a diabetic diet as possible, which, with exceptions noted, has been followed throughout, any variations being always followed by a rise in the sugar, well shown on the record Dec. 25th. The desire for sweetening was obviated by the use of saccharine, which answered the purpose, but otherwise had no apparent physiological action. The largest amount of sugar excreted in one day was on Oct. 17th, 1886, amounting to 8.75 oz. The total sugar excreted in 10 months was 50 lb. 10 oz. With the analysis will be found the treatment and food. The patient at this date, January, 1888, feels perfectly well and strong.

Although some of the sugar percentages and Sp. Gr. agree very well, as for example:

Oct. 23	s.g.	1.0288	Urine	90 ozs.	Sugar	4.5
" 24	s.g.	1.0300	"	90 ozs.	"	4.5
Nov. 11	s.g.	1.03	"	70 ozs.	"	2.916
" 13	s.g.	1.028	"	70 ozs.	"	2.916
" 21	s.g.	1.027	"	110 ozs.	"	6.105

Dec. 15	s.g.	1.027	"	100 ozs.	"	5.555
" 19	s.g.	1.031	"	88 ozs.	"	4.884
" 18	s.g.	1.031	"	90 ozs.	"	4.995
" 26	s.g.	1.031	"	144 ozs.	"	7.952

Others are very wide apart, as for example:

Mch. 24	s.g.	1.035	Urine	60 ozs.	Sugar	2.28
" 27	s.g.	1.045	"	60 ozs.	"	2.28
Apl. 19	s.g.	1.032	"	50 ozs.	"	3.105

it was therefore thought worth while, the urine being again saccharine, to estimate the total solids and ash as well as the sugar and urea, and the following was worked out during the month of September, 6 days only being lost.

The sugar totals vary as much as before:

Sept. 29th	58 ozs.	Urine	s.g.	1.0377	Sugar	1.276
" 30th	58 ozs.	"	s.g.	1.0360	"	1.682

but on the 29th the ash is 0.52348 oz., on the 30th only 0.36223 oz., and the urea also is higher on the 29th.

If however the total solids and Sp. Grs. are compared with published tables of the Sp. Gr. of carbohydrate solutions:

2.5 %	starch sugar	= s.g.	1.0104
5.0 %	"	"	1.0208
7.5 %	"	"	1.0313
10.0 %	"	"	1.0424

The September work will be found fairly near:—

Sep. 4th	Total solids	8.4 %	s.g.	1.038
" 8th	"	10.5 %	s.g.	1.040
" 12th	"	7.0 %	s.g.	1.031
" 29th	"	7.81 %	s.g.	1.0377

It appears therefore that the Sp. G. is no sure indicator of the amount of sugar present; also up to 1.023 it will not determine its presence or absence since

July 16th	s.g.	1.021	sugar,	0.562
" 24th	s.g.	1.024	"	0.000
" 25th	s.g.	1.023	"	0.000
Oct. 30th	s.g.	1.017	"	0.511

On October 31st, the s.g. was 1.021, and total sugar 1.345; the calculated percentage is 2.359 oz., and that found by Fehling is 2.36; total solids calculated as above from the s.g. is 1.85, leaving only 0.505 oz. for all other bodies; it is unfortunate that the direct estimation of solids, ash and urea was not suggested at that time.

As a rule, when the amount of drink taken is large the sugar is higher, although the volume of urine may be the same, e. g. :—

Feb. 2	Drink, 45 oz.,	Urine, 60 oz.,	Sugar, 2.73
" 4	" 62 oz.,	" 61 oz.,	" 3.385
and " 6	" 79 oz.,	" 80 oz.,	" 4.000
" 7	" 88 oz.,	" 80 oz.,	" 4.208

of course when the urine is increased much in quantity, the sugar is still higher:

Feb. 12	Drink, 82 oz.,	Urine, 100 oz.,	Sugar, 6.15
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