

## SCHOOL OF PRACTICAL SCIENCE.

TORONTO, 29th December, 1890.

The Commissioner of Inland Revenue.

SIR,—I have the honour to submit my report on the work done in my laboratory during the past six months.

During the month of August I analysed sixty-four samples of milk collected from various places in my district as below:

	Samples.
Peterborough.....	6
Ashburnham .....	1
Lindsay.....	5
Beaverton.....	5
Orillia.....	8
Barrie.....	7
Bradford.....	7
Newmarket.....	7
Aurora.....	6
Toronto.....	<u>12</u>

The weather, when these samples were taken was extremely hot and before I was able to analyze them they were nearly all sour and curdled to such a degree as to render the analysis by the ordinary method very difficult and unreliable.

Of the sixty-four samples, thirty-six fell below the standard of 3·5 per cent. fat and twenty-three below that of 12 per cent. total solids.

In November and December eighty samples, of which two were lost in transit from breakage, were collected in my district and sent to me for analysis. The seventy-eight samples which reached me were, most of them, in good condition, only a few of the first sent being sour or curdled. The results of the analysis of these seventy-eight samples is given in the preceding table. The analysis were made by the Asbestos method in duplicate. In the table only one of these duplicate analyses is given.

In Bulletin No. 1, the chief analyst suggested the following limits for milk of good standard quality:

	Per cent.
Total solids.....	12·0
Fat.....	3·5
Solids other than fat.....	<u>8·5</u>

The results of the analyses of these seventy-eight samples of milk may be summarized as follows:—

	Total Solids.	Fat.	Other Solids.
Maximum.....	15·67	7·66	10·79
Mean.....	12·84	4·10	8·74
Minimum.....	<u>10·33</u>	<u>0·78</u>	<u>6·51</u>

The average of the analyses reported in Bulletin No. 1 is:

	In all Canada.	In Toronto Dist.
Total solids.....	12·48	12·27
Fat.....	3·86	3·56
Solids not fat.....	<u>8·62</u>	<u>8·71</u>

It appears, therefore, that the average milk sold in the market in the district of Toronto is at present richer in fat and other solids than was the average milk taken from herds of cows all over Canada in the summer of 1888.

It is quite certain, however, that some of these samples were not genuine milk.

The Society of Public Analysts have established the limit of 3 per cent. for fat and 8·5 for solids not fat, and report all milk adulterated which fall below these limits.

Of these seventy-eight samples, 24, or 30 per cent., fall below these limits as to solids not fat, and seven samples, or 9 per cent., fall short in fat. In one or both respects twenty-nine samples, or 37 per cent., are below the society's limits.