

if kept in good order, but they must be kept in a dry case when not in use, and be discarded when showing signs of sluggishness. Check tests should be frequently made with the chemical balance. Tests which I have made by this means showed a new set to be exact, while another set two years in use, under poor conditions, were giving results 1 per cent. too high, which would mean a reduction of about $2\frac{1}{2}$ per cent. in overrun.

Chemical balance : 39, 47, 33, 33, 35, 45, 33, 34. Average, 37.37.

12-bottle scales : 40, 49, 33, 35, 36, 45, 33, 36. ,, 38.37.

It need hardly be mentioned that whatever scale is used the greatest care must be taken to see that the weighing is done correctly.

WEIGHT OF SAMPLE.

While 18 grammes is the full charge used in testing cream, equally correct results are possible if 9 grammes are used and the result doubled. Extra care is necessary, however, as any error in weighing or reading the "fat" column is doubled when a 9-gramme sample is used. When an 18-gramme sample is used it is also necessary to use a 50-per-cent. testing-bottle, as the average fat-content of cream received in New Zealand factories is over 30 per cent. The 50-per-cent. bottle cannot be regarded as the best for several reasons. Tests of the same cream which I have made by both weights showed an average of 0.5 of 1 per cent. lower reading by using the heavier sample.

9 gramme :	40, 41, 39, 35 ..	38.75	} Average 0.5 lower by
18 ,, :	39, 40.5, 38.5, 35 ..	38.25	

Both tests were made in 50-per-cent. bottles, so it is probable that had the 9-gramme samples been done in 30-per-cent. bottles there would not have been even this difference.

TESTING-BOTTLES.

The bottles most commonly in use in New Zealand factories are the 6 in., 30 and 50 per cent. The former is much to be preferred. It is graduated to 0.5 of 1 per cent., which makes closer reading possible than with the 50-per-cent., which is graduated to 1 per cent. The 30-per-cent. bottle has the further advantage that, having a narrower neck, the graduations are much farther apart—say, 6 per cent. on a 30-per-cent. bottle occupying the same space as 10 per cent. on a 50-per-cent. There is also a difficulty at times in getting a clear straight line at the bottom of the "fat" column when using 50-per-cent. bottles.

METHODS OF SAMPLING.

The ordinary pipette cannot be regarded as the best means of putting the sample into the testing-bottle. The curd in the composite