

III. In the "poor" group, the bad ones are being given continuous control in an attempt to raise their quality standard. This educative process takes time, and has its ups and downs as shown by the results, which results, nevertheless, reveal progress. The last few consecutive results of two suppliers in this category are as follows:—

(1) Supplier W.—

| Colonies per Cubic Centimetre. | <i>B. coli.</i> Cubic Centimetre. |
|-----------------------------------|--------------------------------------|
| 207,900 | + 5.0 |
| 26,700 | + 5.0 |
| 1,297,000 | +10.0 |
| 15,600 | — |

(2) Supplier R. M.—

| | |
|-----------|--------|
| 189,000 | + 0.1 |
| 1,531,000 | + 0.01 |
| 35,600 | +10.0 |
| 133,500 | + 2.5 |
| 5,160 | + 0.1 |

Continuous bacteriological control quickly detects carelessness. Enough of supplier H. N.'s results in 1932 are given to show this:—

| | Colonies per Cubic Centimetre. | <i>B. coli.</i> Cubic Centimetre. |
|------------------|-----------------------------------|--------------------------------------|
| 1932—May | 146,100 | — |
| June | 506,500 | + 0.1 |
| August | 15,100 | + 2.5 |
| October | 1,411,000 | +10.0 |

The Inspector visited the supplier, and the response followed the same month:—

| | | |
|-----------------|---------|---|
| October | 170,100 | — |
|-----------------|---------|---|

Another example of the success of the Inspector's work under this scheme is the case of supplier M. D., very bad in April, wonderfully improved in May, maintained good in September, and subsequently:—

| | Colonies per Cubic Centimetre. | <i>B. coli.</i> Cubic Centimetre. |
|--------------------|-----------------------------------|--------------------------------------|
| 1931—April | 2,457,000 | + 0.0001 |
| May | 43,300 | + 1.0 |
| May | 36,000 | + 2.5 |
| September | 21,670 | — |

The same system has been simultaneously in operation in Whakatane, Opotiki, and Wairoa townships, monthly samples from all suppliers coming in for bacteriological examination. In each place close co-operation is maintained with the Agriculture Department's Inspector. From the bacteriological results one is often able to indicate the presence of diseased cows. For example, a count of 2,293,000 colonies (streptococci present), negative *Bacillus coli*, lead to a wire to the Health Department's Inspector at Opotiki. He informed the Agriculture Inspector, who culled out two mammitis cows the same day from the herd in question.

In Gisborne this bacteriological control revealed the failure of pasteurization to maintain consistently good results. A pasteurization and bottling plant was in operation when bacteriological control was instituted, which gave unduly high counts and showed the presence of *B. coli* in the pasteurized product from time to time. Several of our "good" group producers under continuous control were able to market consistently better-quality raw milk. This fact was communicated to the pasteurization-plant manager, with a request for stricter control of pasteurization, but the owner preferred to cease pasteurization. The moral is easily read—pasteurization is an excellent safeguard against disease; it must be efficient, however, and should be bacteriologically controlled.

Finally, after four years and a half of bacteriological control, the raw milks of Gisborne Borough can be classified through monthly samples as follows:—

| | Per Cent. |
|-----------------------------------|-----------|
| 10,000 colonies or less | 13 |
| 10,000 to 30,000 colonies | 35 |
| 30,000 to 100,000 | 29 |
| 100,000 to 200,000 | 9 |
| 200,000 to 500,000 | 7 |
| 500,000 to 1,000,000 | 2 |
| 1,000,000 and over | 5 |

This should be very encouraging to both Health and Agriculture Departments' Inspectors and to the milk-suppliers themselves, when it is remembered that the English Milk Order nominated 30,000 and 200,000 colonies per cubic centimetre as the level of "certified" and "Grade A tuberculin-tested" respectively. There is no doubt that the bacteriological laboratory is invaluable to a Medical Officer of Health attempting control and improvement of milk-supplies.