

VARIATIONS IN THE PERCENTAGE OF BUTTERFAT IN MILK.

A STUDY BASED ON NEW ZEALAND C.O.R. DATA.

(Continued.)

W. N. PATON, Dairy Division, Wellington.

III. MONTHLY VARIATIONS.

MONTHLY variations in test are fluctuations which occur as the lactation period advances. They are not to be confused with variations which occur from day to day. Lactational or monthly variations are influenced by practically a different set of factors from those which affect daily variations. As it is the phase of test variations which concerns C.O.R. breeders most, it is hoped that this article will help to clear certain points for them. The subject has been treated as simply as possible, and as many of the results as space would permit have been represented by graphs.

LACTATIONAL VARIATIONS DUE TO BREED.

The difference in lactational variations due to breed are readily apparent in Graph 4 and in Table 7 from which the curves were plotted. The figures in the table represent the averages for all first-class records for the chief breeds up to 31st December, 1923, except in the case of the Jerseys; with the latter figures for one year only are given.*

The first most noticeable point is that the Jersey graph line is different in general conformation, inasmuch as it exhibits an upward trend from beginning to end, whereas for the other breeds a "dip" appears in the first half of each curve. In the case of the Friesians, Milking Shorthorns, and Ayrshires the length of this "dip" seems to bear some relation to the average test of the breed, as it will be noticed that it becomes less as we consider these breeds in the ascending order of their average tests. To illustrate this more clearly, points have been taken on these curves where they again reach the same point as indicated by the commencement of the curves, and these joined by the straight dotted line shown.† The fact that this line is a straight line may be merely accidental. Apart from the surprising and interesting nature of the result, it is possible that there is some significance attachable to it. Why does it apply only to these three breeds? The following extract from page 1008 of the *British Friesian Journal* of October, 1924, may help to answer the question: "Among the well-known breeds which are known to have their origin in the cattle of the Netherlands are the Hollandaise of Belgium, Flamande, Boulonaise, and Artesienne of France, Brittenburg and Oldenburg of

* Much laborious work is entailed in obtaining results for lactational-test variations, and it is regretted that time would not permit all the Jerseys being included. The year selected was 1918-19, as this was considered to be a typical average year, and should therefore give a good idea of what the complete figures would reveal.

† The equation for this line is: Number of days in the dip of the lactational-test curve of a particular breed = $(722 - 163)$ times the average test of that breed.