

all, while the expense will be found small. Time is the chief factor. I will state the requirements: First, balances, to weigh the foods you give each cow, as well as her milk; second, a Babcock test; third, a good lead pencil and note book. Then begin work. All, or nearly all, native herds contain one, two or more cows that are not only persistent milkers, giving milk nine or ten months, but a good flow of it, and containing 4 or more per cent. of better fat. The scale and test will introduce you to them. Once acquainted, then purchase a thoroughbred bull from a good butter-family of a butter-making breed. Do not use him till he is nearly or quite two years old, then breed these tested cows to him. Take good care of the heifers; have them come in milk when they are 22 to 24 months old; use the scale, test and pencil then, if you find they are an *improvement* upon the mothers, keep them and breed them once more to the same sire. I would not inbreed further, although there are those who do it and report good results. If these heifers do not prove to be *better* than their mothers, change the sire and begin again with the old cows. I have pursued this course, and have raised the production of my herd of 50, from less than 150 pounds of butter each to nearly 300 pounds. I am using a thoroughbred Guernsey, and have a number of his daughters that are giving much promise. My herd works most in winter, when the product brings the best prices. I can make fully as much butter per cow in winter as in summer, of *better* quality and at *less* cost, and so can any intelligent dairyman if he but makes the effort. (1) Of course, he cannot do it in the old way, by keeping his cows in cold stables nights, turning them into a barnyard to shiver in zero weather, and feeding them dry timothy hay cut Aug. 15, and musty, moldy corn stalks stacked round a pole out-of-doors. He must have paying cows, warm, comfortable stables, good environment, nice succulent corn ensilage, early cut and well cured clover hay, and have grain foods that contain albuminoids, to go with the clover and ensilage, and *all* should be liberally and intelligently fed.

An entire morning session was taken up in making tests with the Babcock machine, there being two in operation. More than fifty samples were tested. Some of the best and poorest results are noted, also in some instances the number of pounds of milk given. It was stated by the owners of the cows that each sample was *correctly* taken from the entire milking, no cream or strippings having been added to the sample. If the statements were true—which some present very much doubted—Pauline Paul, Lily Flag, Landseer's Fancy and any other cow heard from so far, are not entitled to hold the "pitcher," cup, medal or ribbon any longer. They are noted for the purpose of showing the value of such cows and the small value of others tested at the same time.

Cow.	Pounds Milk.	Per cent fat.
Hooker.....	18	11.0 (2)
Red cow.....	25	4.6
Brown heifer.....	16	8.6
Heifer.....	...	12.0 (3)
Stewart cow.....	...	5.8
Big Red.....	...	6.2
Mr. Reed's cow.....	...	7.2
Mr. Ellis' Star.....	...	4.2
Mr. Ellis' (no name).....	...	4.2
Nancy.....	...	4.2

1) Rather too strong is it not?

R. J. F.

(2) Strippings?

A. R. J. F.

(3) Strippings?

A. R. J. F.

Mr. Orrin Torrey's herd of Red Polls and natives was represented by—

Cow.	Pounds milk.	Per cent. fat.
White Foot—native..	20	4.8
Little Heifer—grade.	10	4.0
Yellow Cow—native.	18½	4.2
Old Red.....	17½	4.4
Little—native.....	15½	4.3
Libbie—grade.....	15½	3.3
William Reed's cow.	18	(one day's) 6.6
Mr. Loun's herd.....	...	4.0

A sample of Cooley skimmed milk from Mr. Shaw's Jersey herd showed 6.2 per cent. fat, and one from skim-milk from the "Baby" separator used in the hall, 0.1.

In the afternoon, Mr. Eastman gave his lecture on foods. He said in part:

Those present have witnessed milk-testing for butter fat and making granular butter and that made in the old way. Great changes have been made in dairy work and practices within a few years, and what was once thought to be worthless is now saved. In many industries the only profit comes from the best products. You have here in this village a new industry—an establishment for converting the milk sugar in whey into sugar to be used for medicinal purposes; this will give you an additional value to your milk. Some of the cows tested this morning, if the milk was normal, are truly wonderful. Such cows should be well fed and cared for; they represent one of the changes in modern dairying, as does the converting of the milk sugar in whey into refined sugar, and should inspire us who keep cows to look round and see if we cannot make great and profitable changes by making better selections of cows, and the selection and employment of foods better suited for the purposes for which they are fed. The latter point is one of vital importance, as all know who have experimented and noted results. There is a wide difference in the values of properly secured clover and the average timothy hay and straw that are fed to the dairy cow. Clover is a milk-producing food, while timothy hay and straw are not. If we are to do winter dairying we should aim to have the foods we feed as nearly like those of summer as we can; they should be succulent, containing the original moisture and juices. Corn ensilage and roots are most used, and, if they are properly balanced with nitrogenous grain rations, will give results in winter quite nearly approaching those of summer.

C. W. J.

ROOTS VS. SILAGE FOR FATTENING LAMBS, P. M. HARWOOD, R. S., AND F. B. MUMFORD, B. S.—To test the relative value of sugar beets and silage for fattening lambs, 16 grade Shropshire lambs were divided into two lots and fed during two separate periods. Lot 1 received beets and clover hay *ad libitum* and lot 2 silage and hay *ad libitum* during 6 weeks (first period). In a transition period of 1 week the lots were alternated, and for 6 weeks following (second period) lot 1 received silage and hay, and lot 2 beets and hay. During the whole trial the lambs each received 1 pound per day of a grain mixture consisting of two parts of oats and one of bran. The lambs were purchased about October 15, at 45 cents per pound. The trial commenced December 9. The amounts of food consumed, gains in live weight, and the financial results, based on oats at 32 cents and bran at 15 cents per bushel, hay at \$7.50, and silage and roots each at \$2.50 per ton, are tabulated. The average gain of the lambs while on roots was 3 pounds per week and while on silage 2.5 pounds per week. "This experiment indicates that (1) roots are superior to silage for fattening lambs; (2) either roots or