

sult in a more even flavored butter during the year.

#### SHOULD WE WASH OUR BUTTER ?

During the past year, we have made one experiment each week, by taking out about one-third of each churning and salting, working and packing this in a tub without washing. The remaining two-thirds we washed once; and then salted, worked and packed one-half of it. The other half (or remaining third of the original churning) we washed twice and then salted, worked and packed it. We have found that by adding about 25 p. c. of water to the contents of the churn before drawing off the butter milk, we thin the buttermilk and so allow a better separation of the butter, whereas, if this is not done, it is difficult to get the buttermilk from the butter. We would recommend adding in winter about 10 p. c., of water at churning temperature, when the butter "breaks," and the remaining 15 p. c., of colder water after the granules are full size. After this, revolve the churn a few times to mix the water with the milk, and then draw off the buttermilk and water.

As a result of the season's experiments on this point, we would recommend little or no washing where the butter is made into pound prints for customers who like highly flavored butter, and who will consume it in from eight to ten days after it is made. While we have found the unwashed butter to keep fully as well as the washed in some cases, yet the general results indicate that the former has not quite so good keeping quality as the washed butter. For packing in tubs, butter may be washed once or twice, but we feel satisfied that many makers are spoiling the flavor of their butter by too much washing. To-day (Dec. 28th) I have just examined three prints of butter, from the same churning, made at the dairy on the 18th instant, and the print of unwashed would score three or four points higher in flavor than the others which were washed. Winter butter especially should not be washed too much.

#### THE OIL TEST CHURN COMPARED WITH ACTUAL RESULTS IN CHURNING

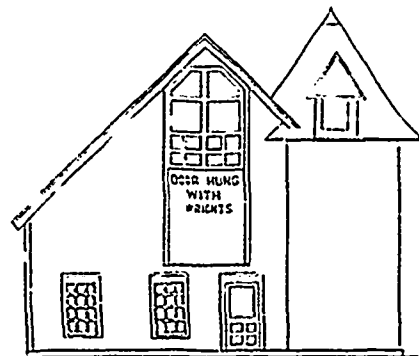
The oil test churn has been the subject of a number of attacks from patrons of cream-gathering creameries and others. To compare this test with the actual yields of butter from the churn, twenty-seven trials were made during the months of July, August and September. Altogether, there were churned 2,385 1/4 pounds of cream, which made 592 pounds 5 ounces of butter. Tested by the oil test churn method, there were 530.6 inches of cream, which varied in the test from 75 p. c., to 140 p. c. The total amount of butter credited in these churnings by the oil-test churn was 575.94 pounds, compared with 592.34 pounds as the actual yield, a difference of 16.4 lbs. Half of this difference was made in one day, June 30th, when the oil test credited the churning with 20.43 pounds of butter, whereas the actual butter churned was 38.42 lbs. Why there was so much difference on this particular day, it is difficult to say.

Only three times out of the twenty-seven trials did the oil test credit more than the actual yield from the churn.

#### EXPERIMENTS IN FEEDING

"Value of milk for calves"—Beginning May 6th, an experiment was commenced to find the relative value of skim milk and whole milk for calves. Two grade calves, as nearly alike in age and weight as we could get, were selected. Number one, fed on skim milk only, was dropped May 3rd and weighed 61 pounds on May 6th. At the end of six weeks it weighed 141 pounds, a gain of eighty pounds, or nearly two pounds per day. During this time the calf drank 714 pounds of skim milk. Calf number two fed on whole milk (dropped April 10th) weighed 75 pounds at the beginning, and 201 pounds at the end of six weeks, a gain of 126 lbs., or three pounds per day.

These calves were both sold to a local butcher, who pronounced the calf fed on whole milk worth one cent a pound more than the other. The calf fed on skim milk sold for \$3.50, (1) and the one on whole milk sold for \$7.50. Allowing \$1.50 as the value of No. 1 calf, and \$1.00 as the value of No. 2 at the beginning of the experiment, we have \$2.00 as the value of 714 pounds of skim milk, or 28 cents per 100 pounds and \$5.50 as the value of 714 pounds of whole milk or 77 cents per 100 pounds. To produce one pound of gain required 8.9 pounds of skim milk. The whole milk gave one pound of gain for 5.6 lbs. fed.



End Elevation of Sheep Barn, Minnesota University Experiment Farm.

#### GIVE SEPARATOR CREAM AGE, AND IT IS ALL RIGHT.

Ed. Hoard's Dairyman:—H. E. B., on page 288, wants to know why the separator cream he furnishes fails to give good satisfaction for ice-cream making.

There was once a time when we thought we knew lots about separators, milk, cream, cows, butter, and the whole dairy business in general and particular. Well, we are still reading the "Dairyman" and keeping in sight of the procession. Though we have not had the harness on for a year or two, still we know where the old rig is, and will just pause in our regular daily course to suggest to H. E. B. that the trouble comes from the newness of the cream, probably. We went through this mill with the first Hand Separator ever run in New Hampshire, in 1886-7, and were accused of furnishing "thin cream", when, as a matter of fact, we were giving our customers a cream with 4 to 6 p. c., more butter fat in it than we had been doing with the old feed setting. Still it did seem thin and it wouldn't whip, as we know from

(1) And, probably, was a bony beast, from too much phosphate in the skim-milk.—Ed.

bitter experience, at least not when just taken from the milk, so we investigated a little and found that age was all that was needed, and our separator cream, when 24 to 36 hours old, would whip without churning, it would also make good ice-cream or anything else, and we were happy; so were our customers.

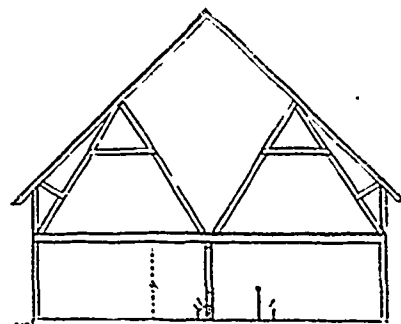
If our friends in the west will apply this suggestion, as seems best in their own case, it may be of use, anyway it is free.

G. H. WHITCHER.  
Durham, N. Y.

We are very glad that Prof. Whitcher keeps the "old harness" within reach, but regret that he so seldom puts it on. We suppose he might have gone into various and sundry suppositions in regard to the effect of age upon cream, and attributed the changes which take place to the activity of the bacteria. Probably bacteria may have some influence, but we cannot help but believe that there is a mellowing or ripening that comes solely from age and without the intervention of microbes of any kind (So do we. Ed. J. of Ag.)

#### POINTS IN COW KEEPING.

Referring to the performance of the three Holstein cows at the Michigan Experiment Station, Rosa Bonheur, Houwtje D., and Belle Sarcasie, which we published in full some months ago,



Sectional View of Sheep Barn, Minnesota University Experiment Farm.

with photogravure illustrations of the animals, we find in an exchange the following deductions as summarized by Prof. Smith:

1. The similarity between the forms of these cows and the ideal dairy type as exemplified in the score card goes far to confirm the value of the latter.
2. The size of the udders and bellies requisite to the production of extraordinary yields seems to indicate that the cows must be relatively large if a phenomenal record is desired.
3. Perfect health, a glossy coat, thrifty appearance and a good coat of flesh are not incompatible with the best and most economical dairy performance.
4. In feeding dairy cows successfully they must be treated as individuals, each with likes and dislikes peculiar to herself. "One cow's meat" may be "another's poison."
5. Regard must be had to the same question of individuality in the stable management. Rosa enjoyed a temperature entirely too low for the comfort of the other cows in the herd.
6. Cows should be given a variety of feeds.
7. They should be allowed an abundance of succulent food in winter.
8. In these cases, an ample grain ration while at pasture was accompanied by extraordinary yields. It hardly

seems possible that the later could have been produced without the former.

9. The individuality of the cow is the determining factor, (a) in the amount of milk she can be made to yield; (b) in the quality of her milk; (c) in the relation of quantity and quality to the lapse of the period of lactation; (d) in the selection of her feed; (e) in her stable management as to temperature, frequency of feeding and watering.

10. While the richness of the milk in fat is largely determined by the individuality of the cow herself it is influenced within narrow limits by the season, the richer milk being yielded in the colder months.

11. The fact that each of these cows descended from ancestors of merit confirms the idea that ability in the dairy is a matter of inheritance, and that therefore in the selection of his cows the dairyman should regard (a) their forms, (b) the performance of their ancestors and (c) their record with scales and tests. The later is the deciding factor.

12. In feeding, the general plan should be to place the cows in the hands of an experienced and skillful feeder, and then provide an abundance of succulent feed, a variety of grains and hay and insist that these materials shall be presented in the most appetizing form. The judgment of the feeder, rather than any predetermined formula, must decide what the ration of each cow shall be, both in amount and composition. This judgment will be governed largely by the appetite of the cow and the condition of her bowels and milk glands, but will attach due weight to the knowledge of the chemical constitution and specific effect of each element of the ration.—"Hoard."

PROFITABLE?—According to "Hoard's Dairyman", the Minnesota creameries report dividends ranging from 42 to 53 cents per 100 lbs. of milk; average 47 cents, equal to about 4 1/2 cents a gallon!

#### Household-Matters.

In town or country, every mistress will strain every energy, to make her house look as nice as her circumstances will permit, and, where there is taste, the cost of doing so will not be much.

There are so many, very pretty, inexpensive things sold now, that it is only a matter of using them in the nicest way to display their look. A few yards of Art muslin, thrown about a room, perhaps to hide an ugly scratch on the furniture, or to twist round a photograph, or to cover up an old picture frame.

In fact, it is impossible to say where it will not be a pleasure to look upon. Choose pretty colours and see that they blend well together.

A bunch of flowers or green leaves, in the centre of the dinner table, with about a yard and a half of muslin thrown round it, and carefully picked up in puffs, so as to completely hide the vessel used. If the flowers or plants are drooping ones, let them fall carelessly over the muslin, and I think you will find something so pretty to look at that you will eat slowly, thereby giving the digestive organs plenty of time to do their work; for people, as a rule, eat much too fast. A hanging lamp with a pretty paper shade will add much to the furnishing of a plain room, and be quite safe for children.