Little pains is taken to improve the flock, either fleece or carcass. If a fat sheep is found in the flock, it comes about by accident, and is a surprise to the owner.

Sheep were made to grow wool and mutton, and they will do both with profit to the owner if they are given a chance. But if they are neglected, or badly managed and half starved, but little profit may be looked for. The day has gone by when we could live by careless and wasteful farming. Ordinary living expenses have increased wonderfully within the last twenty-five years, but the prices of what we have to sell have not advanced in proportion. We have got to make the farm and stock yield all there is in them, to meet the demands of our modern civilization. Where improved methods will help they must be adopted. Dairymen have been obliged to give up old methods and practices in a great measure and adopt new ones, and wool growers may profit by their example.

How Shall We Increase Both the Quantity and Quality of Our Crops.
[By J. M. Smith.]

When the great Father of all placed man upon earth, with authority to cultivate and improve it, he gave him not only hands to work with, but brains to think with, and to so direct his hands, that he might not only work intelligently in the present, but go on improving himself and his conditions both morally and physically.

Probably the most important element in connection with this problem at the present time, is the improvement of the farms of our State. We are just here met with a fact that of late years has become a far more important factor in this question than was the case some years since. It is this, we are by means of railway and steam navigation compelled, whether we choose it or not, to compete with the markets of the world. How can we do this successfully? I know of but one way, and that is to increase both the quantity and quality of our crops. We know that the average yield of wheat in this state, does not exceed 13 or 14 bushels per acre, that of oats and corn do not exceed 32 or 33 bushels, potatoes not more than 100 bushels. Our meadows only one ton of hay per acre. Our cows do not average 100 lbs. of butter each per year. Our beef cattle do not average over 400 lbs. dressed beef each when two years old, and thus we might go on through the entire list of our farm productions. Now, gentlemen, we know that at the average prices of the last few years, these yields do not pay even a moderately fair price for the capital invested upon the farms and the labor necessary to produce the crops, most of us know that to double the yields of our farm produce, is not only one of the possibilities, but one of the absolute necessities to those who propose to make farming a success in the future.

This brings us directly to the question of the increased yield of our field, and how they shall be obtained. In my opinion, which is based upon many years of both observation and experience, a more thorough system of drainage of our lands, is one of the absolute necessities, if any permanent improvement is to be made. It is not enough that swamps and absolutely worthless acres should be drained, but many tens of thousands of acres of the farming lands of the state could be made exceedingly valuable that are now almost worthless. If any farmer does not feel able to bear the expense of thoroughly underdraining his land, he can surely adopt and carry out a system of surface drainage that will be of great value, and often be the means of giving him a good crop which otherwise would be nearly worthless.

Some years ago I visited some friends who are the owners and cultivators of one of the best farms in the portion of the state in which they reside, and in some respects these men are far beyond the average farmer in intelligence, and the peers of any in upright and honorable dealings. The season was just at the close of the harvest. There had been a number of heavy rains and they, as well as others had suffered severely in consequence of them, I walked out with them to what had been a magnificent field of barley, of about 20 acres. It was completely ruined and would not in reality pay for harvesting. In the preparation of the land, not a moment's attention had been given to any drainage either upon the surface of the soil or beneath it, although the land lay in such shape that it would have been very easy to drain it into a small revine that passed very near the lowest part of the field. I said to them: "How could you be so thoughtless as to cultivate this beautiful field year after year, without
giving an hour's work of any kind to prevent just such a misfortune as has now taken place? If you had laid off the field into lands, say two rods wide, and backfurrowed them until they were somewhat raised in the middle, and sloping gradually to the middle furrows, and then kept the furrows well opened to one main ditch, and led it into that ravine, you would have saved not only your crop of barley, but also your meadow below, which is badly damaged." They replied substantially as follows: "We have never given the subject of drainage much thought, and in fact know very little about it, although we can readily see that if we had adopted such a plan (and it would have cost but very little), it would have saved a crop of barley that we supposed two weeks ago would have brought us from 700 to 800 dollars. Since that time there has been no day during which the team could get across the field with the reaper, nor can they for some days to come, even if we have no more rain."

You may say that this was an extreme case, and so it was. There was a loss in a single season, of much more value than would have been necessary to have both surface and underdrained the entire field, and done the work so thoroughly, that the crop could not have been injured by the storms that destroyed it.

Please allow me for a few minutes to refer to the system of drainage practiced upon my own grounds which is about as perfect as I know how to make it. The garden contains 40 acres, and has a slight slope towards the south. Nearly the whole of it is laid off in beds, a lands, as farmers would call them, running due north and south, and two and one-half rods in width. The middle of the beds (or lands) are kept from 6 to 10 inches higher than the edges next the alleys. This readily carries off the surface water into the alleys, which are two feet wide, and are so arranged that the water runs off at once. Under each of these alleys is, or will be when the work is finished, an underdrain which carries off the surplus water in the soil, and thus enables the growing crops to get the entire benefit of soil, climate and manure. During the month of October last, we had one very heavy rain. I went out during the rain to examine some drains that had been put in a short time before the storm came on. Upon my return, wife said: "What are you doing out in this storm?" I replied that I could well afford one thorough soaking for the pleasure it gave me to see the new drains carrying off such a quantity of water and not a barrel in sight on top of the ground. Another necessity is plenty of manure. The question naturally arises, where is it to come from.

Every farmer might, and ought to have his compost heap in addition to his barnyard manure, and both should be saved with as much care as if it were cash in the bank. Next to these there is, I think, no doubt that clover is the cheapest and best fertilizer known to the farmers of our state, much might be said as to the best methods of getting the greatest benefit from its use, but my time will not allow me to discuss the question in this paper. There is no doubt but that different crops require the manure to be applied in different ways and different amounts to get the greatest benefit from it. Whatever may be the best way of using it, the poorest way, in my estimation, is to plow it under from 8 to 10 inches deep. But with the land well prepared, and plenty of manure on hand, we are ready to go to work with a feeling that success is in the near future. If the land is well drained, it is in good condition for the plow from one to two weeks earlier than it would otherwise be. Do not plow until the land is in good condition, but if you deem it best, all things considered, to continue to depend upon the small grains for the main crops, and your land has not been fall plowed, do not wait a day after it is in good condition to work. If such crops as corn, potatoes, beans, etc., that need cultivation are to be grown, let the cultivation be the most complete and thorough character. None but those who have tried it are aware of the vast difference between crops so cultivated, and those but half cared for, I have assumed that your land was at least reasonably good to begin with. Such being the case, we have as necessities, first, the fairly good land; second, the drainage; third, manures; and fourth, good plowing and thorough afterculture. What are the practical result of adopting and carrying out this system?

Please allow me to refer again to its results upon land that I have either owned, or held under lease. A number of years ago I leased a piece of land
that I knew had been badly mismanaged for several years. In fact the year previous to my lease it had been sown with wheat, and owing to its bad condition and worse cultivation, the grain was not worth the cost of gathering, and was left on the ground. I surface drained it, and manured it heavily and planted the most of it with corn and potatoes and then cultivated it well. When grown, I measured off 1 1/2 acres of the potatoes, and from the plot we dug and sold 590 bushels of first-class potatoes. The measured portion was some better than the rest, but all gave a large yield. In an ordinary season we are not satisfied with less than 300 bushels per acre, unless they are dug for market before the entire crop is fully grown. Two or three years ago a gentleman was looking over a piece of growing cabbage and asked me how many it contained. I answered about 54,000. "Well," said he, "then there must be about 54,000 heads, for I cannot see one missing." Of course there were some missing, but the piece was very good. But it is during a very dry season that the system I am advocating shows to the greatest advantage. Last season was, in northeastern Wisconsin, the driest one ever known in the history of the state. We had 3 1/2 acres of strawberry vines in full bearing. A small portion of them were partially watered artificially, but the most of them had no water except from the clouds, and that was only two light showers from the time they came into bloom until the picking season was over. Yet the yield, counting only the actual sales and excluding all that were used in my own large family, and given away, was a little over 250 bushels per acre. The yield, with plenty of rain, would have been much larger, but when compared with many others that I might name, it was a very large crop. Last June I planted a piece of land with fodder corn. A fine crop of peas was growing upon the ground, and the corn was planted between the rows. As soon as the peas were ripe they were taken off and the land kept well cultivated until the corn was too thick to get through comfortably. It was somewhat damaged by drought, though all of it was good, and part of it very large.

Gentlemen, the fact is that if this system is adopted and carried out, it is not difficult to make large crops the rule, and not the exception. In my own case, we not only expect them, but base all our estimates in the spring upon them, and, as a general rule, the actual yields for the season will exceed the estimates often seen than fall short of them. But perhaps some of my hearers are saying to themselves: "I am not engaged in grain growing, but in dairying, or in growing and fattening stock for market." Gentlemen, the same rules and the same principles are involved in both cases. To be really successful, you must have not only good land, but it must be well cared for. If you are growing clover for dairy cows, it should yield from 4 to 5 tons per acre during the year, instead of from 1 to 2 tons. Your fodder corn should yield 30 or 40 tons per acre, instead of from 8 to 10 tons. This ratio of increase should hold good through the entire list of crops. Then, when they are grown, to what will you feed them? To some of our scrub cows that do not or cannot be made to manufacture a fair proportion of their food into milk and cream, or to some of the improved dairy breeds that have been bred and trained for this particular purpose? It is useless to any longer claim that the average native cows will return as much milk and cream for their feed as the average cow of some of the improved breeds.

A few years ago I owned three cows that came in during the month of November. They were nearly the same age, and all of them about in their prime. One was a native, or, as often termed, a scrub; one a high grade short-horn, and the other a full-blooded Ayrshire. The stable was warm and comfortable, and they were fed as nearly alike as possible without weighing their feed, it being measured out to them, and consisting of carrots, beets, parsnips, bran middlings, and a very small amount of good hay, though they would eat but very little hay, owing to the quantity of other feed. A number of times during the winter my wife kept the milk and cream of the Ayrshire by itself for a week at a time, and weighed each lot of butter, and every time the butter from the Ayrshire weighed a fraction more than that from the other two. The cows were very nearly of a size, though I believe the Ayrshire to have been the lightest of the three. You may ask what the others did with their feed. I do not know. I only know the very practical fact that they returned to me very little for their feed and care,
while the Ayrshire paid well for both
both feed and care.

Right here, in my opinion, is the
great and decisive point in the question
of dairy breeds. The one that will
manufacture the largest amount of first-
class milk and cream from a given
amount of food, will be the breed to
which the practical dairyman will look
for his most profitable cows. The same
rule holds good with regard to beef. It
is very possible that it will not be the
largest breed of cattle that will eventu-
ally prove to be the most profitable for
the farmer to feed; but the breed that
will, with a given amount of feed, make
the largest amount of first-class beef at
from two to three years old. Gentle-
men, many of you have tried the old
stereotyped system, or rather want of
system, and you have demonstrated to
your own dissatisfaction that it has not
paid in the past, is not paying in the
present, and that there is no prospect of
its paying any better in the future.
What then shall you do?

While I am firmly convinced that
dairy farming, well conducted, is the
most profitable branch of husbandry in
which the farmers of our state can en-
gage, I still recognize the fact that many
are so situated that, all things consid-
ered, it is best for them to continue in
a system of general farming. Where
such is the case, why not adopt the new
and the better way?

I am sure you will believe me when I
tell you that I know something of the
capabilities of the soil of Wisconsin;
and I have no hesitation in saying to
you that it is capable of growing 80
bushels of spring wheat or 55 to 40
bushels of winter wheat per acre, instead
of 12 or 15 bushels as is often the case
at present. It is capable of growing 60
to 75 bushels of oats or corn per acre,
200 or 300 bushels of potatoes, or 2 to
3 tons of hay per acre, and other crops
in the same proportion. If you are en-
gaged or intending to engage in dair-
ying, instead of keeping twenty or
twenty-five scrub cows on 100 acres, you
should have fifty to seventy-five and let
them be of some of the best of the dairy
breeds, and then let them have the best
of care. Instead of getting 100 or 150
pounds of 12 to 15-cent butter each per
year, the yield should be 200 or 300
pounds each per year, and of a quality
to bring 25 to 30 cents and upwards per
pound. Do you consider these state-
ments extravagant? I could count

 farms by the hundreds and thousands in
this state capable of doing this and
some much better, and doing it within a
very short time if a correct system of
improvement is adopted and carried out.
Suppose these suggestions should be
carried out by our farmers, how long
would the cry of hard times be heard
among them, even thought the prices are
low? Not long.

Gentlemen, we are entering upon an
era of farm improvement such as our
farmers have not yet seen. He who
puts himself in line with the march that
needs no prophet to see in the near fu-
ture, will reap the benefits of an agri-
cultural development such as has never
been seen in our state. It means a
progress that will result in better
drained and better manured farms, and
better cultivated fields. It means larg-
er and better crops of grain, better but-
ter and cheese, and more of both; and
also better beef, pork and mutton. It
means better and happier homes, where
the farmer is the conductor and man-
ger of a well improved and paying
farm, instead of being its slave and
being driven by it. It means a place
where the wife is the queen and the
 guardian angel of a happy home, instead
of the weary, worn-out drudge too often
seen in the farmer's home. Homes to
which the children, though they may
roam in far distant lands, will ever turn
with tender memories and loving affec-
tion—the home of their childhood upon
the farm. The farmer who refuses to
join in this forward march will be left
very far in the rear. His crops will
grow more and more scant, and the
quality only indifferent at the best. His
dairy of scrub cows will produce little in
summer and nothing in winter. His
beef cattle will be of poor quality and
light in weight; and his razor-backed
hogs will be a perpetual torment to him-
self, as well as an ever-increasing tem-
ptation to his neighbors to violate the
third commandment. He is a slave to
his farm, unable to hire help because it
does not pay. His wife, weary and
worn out with care and toil, can look
back to but few happy days in the years
gone by of her married life, and to
fewer still in the years to come, until
she reaches the far away land, where she
fondly hopes and trusts that there is
rest for the weary. Children leave be-
cause they can find but little happiness
in the present, and no prospect of either
happiness or prosperity in the future.
Gentlemen, which of these roads seem the more desirable? I know your answer. But you may say that it will cost money to make these improvements, and so it will; but do not be afraid to trust your farms, or to spend money upon them. If done with care and good judgment, it is better than money in the bank or a mortgage upon your neighbors' farms. I dare not tell you how much I have buried upon my now beautiful place, but it has come back with more than interest added and never once failed.

Gentlemen, I have neither the authority nor the desire to dictate to you, but I speak from experience and know what I say to be true. Then let us go forward manfully, steadily striving not only to make the best of our farms, but of ourselves and our families. We cannot perform a better or nobler service to our state, or one more far-reaching in its results for good, nor better serve both our God and our country, than by following in this the better way.

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Feeding Cows for Profit.

[By C. R. Beach, Whitewater.]

In feeding for profit four things are necessary: the right kind of cows, the right kind of surroundings, the right kind of feed, fed in the right way. I shall not here present the claims of any particular breed, though I think the Jerseys preferable as butter makers; but keep what we will we need to weed out the old, the unthrifty, the hard milker and the vicious. The most of us keep too many old cows. If the cow has been as highly fed as she ought to be, and milked each year as long as she probably will be, she has exhausted her vitality sooner than we are apt to think. From 5 to 8 is the golden age.

Aside from her age I will mention a few characters I deem desirable in a cow kept for profit. She should not be above the medium size, under rather than over. I would have her spirited and at the same time docile and intelligent. I would have her thoroughly feminine in her organization, yet I would have characterized by that robustness of constitution which is indicated by the word hardy. All other qualities, however good in themselves, lose much of their value unless united with a good constitution. The difference between a dairy or carefully selected young cow and one in which reference is had only to numbers will often amount to the difference between loss and profit.

As to the surroundings in which a cow should be kept for profit they may be indicated by the word comfortable—dry, warm, well-ventilated stables admitting as much sunlight as possible, in which cows should be kept nights as soon as frost begins to show itself, and at all times in the winter when the weather is uncomfortably cold, except when out for water. A cow will bear a good deal of confinement if the stables be light, dry, warm and well-ventilated. My idea of comfort is not to let the cow stand out-of-doors from 8 o'clock in the morning until 5 at night when the mercury is below zero and drink ice water to keep up the circulation. To you who think such care all right let me suggest that on such days, as soon as you have let out your cows, you take your easy chair round to the northwest corner of the house and sit there until it is time to do chores at night. In the mean time let your wife bring you a dinner of ice cream, follow this up for a week and then weigh yourself and see how many pounds you have gained and how much milk of human kindness you have left in you. To keep the heat of the body at 98 degrees is the first use that every living animal makes of the food consumed, and if that be not enough, it burns the fat accumulated in its own body. Warmth then is but another name for food saved, and keeping cows comfortable will constitute a large factor in the question of profit.

Next to comfortable quarters the cow must have an unlimited supply of pure water, easy of access. Let me emphasize that word pure. A cow will live longer without food than without water; nor will we wonder at the fact, when we remember that three-fourths of her live weight and 85 per cent. of her milk is water. The man who has made money from a lot of cows whose supply of water was a stagnant pond hole, into which the cows waded in summer and drank through a hole cut in the ice in winter, has wrought a miracle, besides producing a lot of unhealthy milk at the same time. Much has been said and written upon the benefit of warming water for cows. In a late number of Hoard's Dairymen, there is a statement that at an agricultural school in France, the milk of a cow was increased one-third, by warming water up to 118 degrees. Boyd, of Chicago, and others