

no more. As they grow older of course they require more.

"A single time over-fed," Mr. Rockwood says, "will give scours." I think he must be mistaken about that. A single over feed may physic a calf, but I do not call that the scours. A persistence in over feeding will no doubt produce scours, but usually a calf by leaving its milk untouched will tell you as plainly as in so many words that you are supplying it too liberally, and must desist, if you regard his future welfare.

Very soon after a calf learns to drink I put a handful of wheat middlings in its milk, and the quantity is gradually increased as the calf grows older, until it is fed a pint at a mess, and will pay well for it in extra growth. I know middlings are better for them than corn meal, which is more laxative, and I think it is better than ground oats, the hulls of which they don't like.

I have raised calves so fat that they could have been sold to the butcher at any time for veal. Calves will begin to eat solid food when two or three weeks old, and they don't seem to be particular whether it is hay, straw or chaff. I have seen them eating straw bedding, but no doubt fine hay is most relished, and will promote the fastest growth.

Mr. Rockwood puts hay into his calf pens. I think the better way is to have a hole in the side of the pens where the calves can put their heads out, and place the hay within their reach where they cannot trample on it. Our pens have such a hole, and before it is little box into which the feeding pail is placed to prevent it from being upset and milk spilled before the calf learns better than to butt it over; and before this hole I put their hay. Mr. Rockwood says: "It pays to give the best of care to calves." That's so. I have bought spring calves in the fall of \$3 and paid too much. I have bought others at \$1 each, and got a better bargain. Our fall calves are kept in the basement of the barn, are never out of it until the next May, never suffer with the cold, and grow as fast in the winter as in the summer. Their pens are cleaned often and kept well bedded.

Country Gent. J. W. I
Sugar Run, Pa.

MIXED FOODS.

Mr. Beach—The results that we get from any given kind of food depend upon so many circumstances that no man can state positively its value. He must understand all the surroundings, the kind of a cow, the condition that she is in, her relations to the length of time that she has been giving milk, the stable that she is in, the man that feeds her, the methods of feeding, all these things enter into it, and you cannot put your finger upon this result and that result and say that it is the result of this kind of feed or that kind of feed. It is a combination of the whole. I will make the statement and the statement will be correct, although you may draw the wrong conclusions from it. It was with regard to feeding four and one half acres of silage corn of a silo to dairy cows in milk. It was the first silo that I built, and I had a good many misgivings and I opened it with fear and trembling. We had about forty cows, most of them giving milk and in good condition. The day we opened it, we opened in a snow storm, so that if it was all rotten and not worth feeding, we wouldn't let anybody know it. I said, "Now,

we want to know something about this, we will keep an exact account of the cows and grain we feed in connection with this silo. There are four and a half acres of corn in this pit." We fed a hundred and twenty dollars' worth of grain; we estimated the hay to amount to \$80, making \$200, and when we got through feeding that four and a half acres of corn, we had after paying \$200 out of it, \$460 of butter money left to pay for the four and a half acres of corn and the labor. I do not say that the results might not have been part of them attributable to the grain, part of it to the hay, and part to the skill in feeding. They were good cows, butter brought a good price, I think thirty five cents that winter, but it don't alter the fact I got \$100 an acre for every acre of corn that I fed. I have never gone back on silage since. If I did not get as good results, I claimed it was either my want of skill or the condition of the cows or the state of the market or something else. Now, don't go home and say that Beach fed his silage and got \$100 an acre for it, for he doesn't say so. I can't tell whether I got it out of the silage or the skill and care in the handling of the cows or the cows themselves. I don't know—but I got the money.—Hoard.

THE AGRICULTURAL PRESS.

It goes without saying that the Agricultural Press of the country, taken as a whole, has been of immense benefit, not only to the farmer as such, but to all classes and conditions of our people. And yet one looking through these papers from week to week, meets with many surprises, finding the most ridiculous and misleading suggestion in least expected quarters. This fact has a recent and most conspicuous illustration in the columns of the *Michigan Farmer*, which in commenting on the discovery of tuberculosis in the herd at the Wisconsin Experiment Station, says:

The statement by Prof. Henry, of the Wisconsin Experiment Station, that the herd of dairy cattle there had to be slaughtered because affected with tuberculosis, comes like a crash of thunder from a clear sky. It would naturally be supposed that a herd under the management of Prof. Henry, who is an accepted authority upon all matters pertaining to the feeding and care of dairy animals, would be in most vigorous health. But it looks as if balanced rations and scientific care were not be relied upon except to increase the production of milk or flesh. Sound health appears to have been left out of the calculation when those balanced rations were prepared. What a commentary upon the long treatises published for the enlightenment of the "moss-backs" who paid no attention to scientific feeding, but whose herds are yet alive and free from disease? With all the heavy expenditures for fitting up warm stables, supplying cotton seed and linseed meals to balance the rations of these cows, and thus show to the world what should be accomplished by chemistry, the scales and other modern appliances, the Experiment Station suddenly finds itself without any cows to experiment upon. The herd has perished utterly and totally. We suggest that Prof. Henry, if he secures another herd, get some plain old moss-back, with common sense ideas of how cows should be kept, and be guided by his advice. The Professor has shown his theories to be worthless, as the cows persist in becoming diseased under the very latest up-to-date meth-

ods of scientific management, explained in columns of well worded and interesting articles. It shows what ungrateful and stubborn animals cows are.

It would be impossible to crowd more ignorance and nonsense into the same number of words, than appear in the above extract. Tuberculosis in cattle, like its congener, consumption in the human race, is no respecter of persons or places. It is quite as much at home in the cottage and stable of the common farmer—the moss-back of this Michigan paper—as in the more expensive dwelling and barn of the progressive dairyman, the scientist or the millionaire. It is not a question of breeds or feeds, but purely of contagion. It is surely communicable from men to cattle, and is more likely, therefore, to break out in an Experiment Station stable than elsewhere, because of the greater number of people who visit such places to inspect the stock, and of the necessity for purchasing animals to keep up an experimental herd.

Breeding of Dairy Stock—Don't Mix Beef and Milk.

We (*Hoard*) copy the subjoined communication from the *Rural New Yorker*, and present it to our readers, not because it is new doctrine in these columns, but in corroboration of the testimony we have been giving these many years and to show that we are by no means alone in advocating the doctrine of breeding specific dairy cows for dairy purposes. It is just as silly to expect the best dairy results (and the best results are none too good) from the general purpose cow—or the granger's cow, as her apologists have named her in recent years, as it would be to expect to succeed in raising the best crop of corn with a general purpose soil stirrer, to be used in succession as a plow, or harrow, or cultivator. The agitation of this subject is, as Mr. S. says, "always in order."

The principles of the breeding of our dairy stock are penetrating the farming community and the agitation of such ideas in our farmer's papers and at farmers' meetings, should always be in order. To start right is a great way towards success; for in starting a dairy both quality and the volume of the cow's milk should be determined. Food must create an important part, and then feeding and breeding must continue. To raise a dairy breed of cattle without a definite end in view, or to attempt to improve our dairy stock without having in mind a well defined animal for the purpose intended, is simply haphazard business. Then how important that our stock should be added to the purpose intended; either as milkers for the dairy or as beefers. Each are what they naturally are, from heredity. Heredity cuts both ways, and it applies to bad breeding just as clearly as to good breeding.

It matters not which of the different breeds of cattle we are using for dairy purposes, if we have those that, in the milking season, lay fat on the body from the food consumed instead of the flow of milk in the pail, abandon them as milkers. The great milkers are produced at the expense of flesh and quality of milk. The butter cows are produced at the expense of flesh and quantity of milk. The beef cows are produced at the expense of both milk and butter qualities. How essential that we ferret out these differences in your dairy cows, and get on a line of breeding much better than many of us

have at present. By making marked selections, the dairymen of the country could better themselves from 25 to 50 per cent in a very few years. I wish to emphasize this care in breeding, that whatever the breed or cross-breed, those that lay on flesh, and those that give a good flow of milk from the food consumed, should never be bred together. An animal, from a breeder's standpoint, represents its entire ancestry rolled into one, and breeding for the motherhood and fatherhood of our coming dairies is emphatically a work for the future. Many dairy breeders claim that it is quite possible to breed cows that are suitable and adapted for both purposes, a milk and beef combined. My word for it, it can't be done. That is where and how we get the go-betweens. No one can determine the character of a sire or cow by looking at the outside of the father or mother. The sires for our common dairies should be selected with great care. A careful knowledge of the performances of the ancestors in the female line will usually reveal the qualities of the male. He should be descended from a long line of dairy cows of great natural capacity. He should have age, from three years old to as old as he is of service. Some say an old bull is too dangerous. Dishorn him; put him to work, then there is no danger. It is a great drawback to the progress of good dairy breeding that so large a proportion of the men who own the cows of the land, either have no idea at all about the true principles of dairy breeding, or else they are controlled by very unsound ideas.

Ellicottville, N. Y. O. H. S.

FATTENING CALVES ON SKIMMILK.

To fatten calves successfully on skim milk and grain to supply the butter fat, the calves should first be fed a moderate amount of new milk for a few days and then skim milk should be gradually substituted so that at the end of a few weeks the calves would be fed entirely on skim milk. If 7 lbs. of corn meal, the Western variety preferred, is mixed with 1 lb. of linseed meal, old process preferable, it will make a fairly good substitute for the butter-fats of the new milk. This meal should be fed in very broad bottom troughs, so that the calves will be compelled to lick it, thereby insalivating it. Care should be taken not to feed too much skim milk. The very best quality of fine clover hay should be placed where it will be accessible to the calves at all times. To properly fatten calves either by this method or by letting them have new milk from the cow or otherwise, it should be remembered that for at least two weeks at the beginning, the calves should not be fed all they want, but should be somewhat restricted if the best results are to be obtained. The last two weeks before sending the calf to market the feed may be increased and the calf given all or nearly all it will eat provided the bowels are not affected. Success will depend almost entirely upon the watchfulness and the skill of the feeder. As the calves get to be 4 to 6 weeks old, very often they will eat a few roots but they should in no case have many. It will take some two weeks longer to make good calves by skim milk feeding than it would by giving new milk. Again let me repeat that success will be due to the judgment and watchfulness of the man who has the calves in charge.—[J. P. Roberts, Director Cornell Exp. Sta.