

by fright and surprise. A sight of his own shadow will startle him, and I have seen an old stump awaken emotions of the liveliest curiosity. He is afraid of all things, and rushes from one side of the lot to the other until his unaccustomed muscles are quite exhausted, after which he quiets down and gradually learns that all nature is his friend. Another benefit derived from confining the calf for the first few weeks of its life is that it is thus prevented from eating grass and other foods of like character until its ruminating stomach has sufficiently developed to manage them. A little bunch of sweet hay placed within reach during the latter part of its stall life will tempt the young calf to exercise its chewing and ruminating faculty. I have seen one take a single straw and follow it to the end.

If we need more cream to fill butter engagements when the calf is one month old, sweet skim-milk may be warmed and fed for one-half its ration, which may now be increased to 20 lbs. a day. A few spoonfuls of flaxseed jelly should be added to the skim-milk, in the manner described by Prof. Stewart, (page 752), gradually increasing the quantity of jelly, until when two months old all skim-milk may be giving, mixing in a small quantity of corn meal, wheat bran, oat meal and linseed meal. Or, what is still better, make a combination of such of these foods as we have, and begin by putting in a few spoonfuls of the mixture, gradually increasing the quantity as the calf grows older and becomes more accustomed to it. The milk ration, however, is never increased above 20 lbs. a day, even after skim-milk is substituted entirely for whole milk, because other more nutritious foods are added. Flaxseed jelly seems better suited to young calves, and linseed meal to older ones. After the calf is two months old let it have all the green grass it wants, or fresh sweet hay if during the winter season, keeping up its milk ration at the same time, for until six months old the calf should be allowed to get fat as well as induced to grow rapidly.

Fed in this way, our calves, pure Holsteins, weighing at birth from 80 lbs. to 125 lbs., will easily weigh when six months old from 500 to 600 lbs., and this we think amply sufficient for cows intended for dairy purposes.

Logan County, Ky

HORTENSE DUDLEY.

#### A Practical Man's Standard.

The American owners of dairy cattle which have been mostly brought from the other hemisphere, have succeeded in producing some wonderful results by feeding for the specialty. For 30,000 pounds of milk to be drawn from the udder of one cow within twelve months is not less astonishing than for one day's milk-make of another cow to yield at the obura six pounds of veritable butter, or for another cow to give milk so rich that five pounds will contain one pound of butter. The scientific world, and especially the lovers of *boviculture*, will thank these men for what they have done. And although they may not yet have demonstrated the extreme possibility of the cow, they have gone so far in that direction that those who are working along in what they consider a practical way need never try to overtake them. The humane and practical man wants his cow to live as long as her inherited constitution with good treatment will permit. He will not feed her with succulent foods and tempting drinks with the view of making her secrete more milk than she can conveniently enrich with from 12 to 15 per cent. of milk solids. He wishes her character in this respect well sustained whether he expects to sell her or use her in his dairy. He thinks that a great many more cows have been killed or permanently injured by too much food than have been reported in the papers. It has been the

successful tests, not the failures, that we see in print. Nor does the practical man breed his cattle in-and-in until he has taught them to secrete milk with abnormal proportions.

Are not casein and milk-sugar valuable ingredients in normal whole milk? As Colonel Curtis says, "The cow should be tested for her adaptation to the cheese factory as well as the butter factory." Milk well balanced between casein and butter fats will make cheese of a quality superior to that made from milk poor in those elements which go to make butter. The tendency is to develop the butter fats at the expense of casein, and when this is done the quality of the milk as a food is lessened; for we must remember that casein as a food will grow a child or a calf healthier and faster than butter fat.

Neither should there be such a war upon the water that the chemist finds in the whole milk. One half the weight of our bodies is water, and 75 per cent. of the blood that courses through the veins of all animals is water. All animals as well as vegetation digest or assimilate their food in a solution of water. If we send a solid as food to our stomachs we must furnish from our own bodies or otherwise a fluid to assist in its digestion and appropriation. Why should we wish a cow to put less water in her milk than she or we either have in our blood? She can put the water there in better proportion than we can. And if she does not, we would have to dilute the milk before feeding it, or the cream before churning it. Besides this, she will mix along with the water the usual amount of casein (the cheese quality) and sugar of milk, for these ingredients are nearly the same in all milk whether rich or poor in butter fat. But the advocates for a milk rich only in butter say that they do not wish their cows to waste their strength in the production of things they do not want. From their standpoint they argue well; yet we plain practical people are afraid that if we attempt to convert our cows into butter machines exclusively, the quality of the milk for other purposes quite as important will be deteriorated, and the constitutions of the cows themselves on which we depend for future herds will be materially injured.

Yet we thank these specialists for travelling the road as far as they have gone, for demonstrating to us the nutritive value of certain foods used in this direction, the necessity of close personal supervision, and the good of devoting only those cows to the dairy whose suitability can be proved in actual profits. They have also taught us the distinguishing marks of a good milch cow, and showed us how to develop her latent qualities, asserting that the majority of cows of all breeds yield less than half the quantity of butter they might be made to produce. Still, lest there be many disheartening failures, the practical farmer or dairyman must not set his standard at a point which he may not easily and safely attain, which is, that his cow will give daily from 40 to 50 pounds of milk, and a well-balanced milk too, that will be good, healthy, nutritious food for the table, and which will yield, when all of it is churned, 21 pounds of butter per day, or four whole-milk cheese per day.

HORTENSE DUDLEY.

A RECENT report from Secretary Rusk's department declares that the purpose for which agricultural colleges were established in the several states, and to which the government contributed by liberal grants of land and money, has not been realised. The colleges do not educate men for the farms, but for professions, and the tendency of their teachings has been to draw young men from the farms, instead of fitting them for work on them. If 'Uncle Jerry' is correct in this, we hope our good Senator Morrill, who must feel in some sense responsible, will see whether something can not be done about it.