

which will at least pay for the keep; and when your neighbors see what fine calves you are having by your thoroughbred bull they will soon make it a paying investment to have and keep such a bull, aside from the use you have for him in your own herd. A good bull calf, or young bull, can be bought at from \$25 to \$200, according to qualities and age.

Notes from the Annual Meeting of the North Iowa Butter and Cheese Association.

The President—During the past few years much attention has been paid to the improvement of pure bred, and in that direction our agriculture has received much benefit. But now the branch of industry which has brought together includes the most profitable common and grade stock in the interest of the dairy, the cows that can be used to the most advantage in the manufacture of dairy products.

Sale reports of Eastern markets are very much changed. A few years ago our produce (if any reached there) had to be sold at low prices. One year ago our winter creamery butter sold at a price more than equal to that of the best Eastern butter, and now we are five cents ahead in New York and Boston. So the products are sent forward, new markets and fresh demands are presented nor need there be any fear about over-production. Our improvements have put us ahead, and having gained that position, we propose to keep it. We cannot make dairying a success if we make an inferior article. We can only succeed by making the best.

Mr. Tolson—The question of skim milk cheese is of great importance. Could not encourage them with their present creditable reputation in the product of the dairy, to enter upon the manufacture of skim cheese. In the estimate of a large crop the same rule will govern us, as in butter and other products, the best sells most rapidly, and consequently the manufacturers of the full cream cheese will be most likely to win. Ohio dairymen used to manufacture full cream cheese and obtain a good reputation, till they were persuaded that more money and still a good cheese could be made that would find sale. It is true that much of such cheese had been sold, and it was also true that very much had rotted down in the warehouse. If the quality of our cheese be what it ought to be, our home consumption will not only be greatly increased, but our cheese in competition with others would be more than doubled.

Mr. Woods—The importance of cheap feed is of no small importance. One hundred pounds of feed worth fifty cents fed to a good cow will produce one hundred pound of milk, worth, at present, from \$1.40 to \$1.50. Would say to those about to commence in the business: begin on a small scale, study the surest plan to secure the best returns from even a small number of cows. Go a little slow at first, keep out of debt, make good butter or cheese, and you will come out all right.

Mr. Childs—The past has shown us that the demand for the good article has increased in greater proportion than our supplies can furnish, though our little additions had amounted to almost 12,000 lbs. per day.

Mr. Sherman—Unless we can make a superior article we can not compete with the manufacture of oleomargarine, which is now taking the rank of middle butter. Very much butter is now in Eastern cellars not good enough for competition. In value it is fast approaching cheap grease, which, as has been stated, sells in Chicago at two cents per pound.

Cheese as an animal food may with advantage be substituted for butchers' meat, at the current prices. There are good and substantial reasons for regarding cheese as a wholesome and valuable food, and is worthy of even a more liberal consumption than it now receives. English people probably consume more cheese than any other nation on the globe, or in the proportion of about ten pounds yearly to each inhabitant. In the United States the consumption is only about half that quantity.

A good well and wind pump with the automatic reservoir and water tanks are just the thing, and give to the prairie States better water than can be found in mountain streams.

A stack of good straw in the yard, and on pleasant days a run to the corn field, fill the measure of fair treatment.

Improvement of Grade Stock.

BY PROF. MANLEY MILES, OF LANSING, MICH.

The systematic improvement of the grade animals, which for many years must constitute the principal stock of our farms, is too generally neglected.

If the same judicious care and skillful development of useful qualities in our improved breeds had been exercised in the improvement of grades, the advantages arising from the feeding of live stock would be better appreciated.

The laws of inheritance apply alike to animals of all kinds, and the rules and experience has shown to be the only safe guide in the breeding of animals belonging to what are recognized as distinct breeds, are of equal importance in the breeding of grades.

As the male, in all cases, should be of better quality than the females with which he is coupled, and capable of impressing upon his offspring his own peculiar excellence, the selection of a pure bred male, will be acknowledged by breeders, as the first essential step in the improvement of grades.

When a cross bred, or grade male is bred to the best females of mixed blood, the offspring will not be likely to resemble either parent in their best qualities; the improved characters being obscured by the predominance of the original peculiarities of the native element of the constitution of the parents.

The most desirable characters of the improved breeds have been produced by artificial treatment, and it is impossible to retain them, without strictly limiting our selections of breeding to the best developed type of the breed, and continuing the same system of management that originally led to their development.

The tendency, under improper management, including careless selections of breeding stock, is to diminish the intensity of the desirable artificial characters, and to develop or bring into prominence the original unimproved characters of remote ancestors that have been transmitted through many generations in the latent form.

In the grade male the improved characters are necessarily unstable, and we cannot reasonably expect them to be transmitted to his offspring, in which the peculiarities of the original unimproved type will prevail.

The greatest improvement will be effected by the first cross of a pure and well-bred male upon native stock, and as the characters of the grades thus produced gradually approximate to those of the pure breed by successive crosses, the rate of improvement will constantly diminish with every successive step in the improvement of the form and feeding qualities of grade females, it therefore becomes necessary to exercise the greater care in the selection of males to secure a predominance of their characters in their offspring.

The males that are selected, from time to time, for the improvement of the flock or herd, should be of the same general type, so that progress may be made in a definite direction.

When they present wide variations in form and qualities the improved characters of the offspring by one male will be lost in the offspring of the same animals by another male, and a lack of uniformity in the flock or herd, which is decidedly objectionable, will be the result.

The highest improvement in paying qualities can only be obtained by constant and systematic efforts in the same definite direction, and any change in the standard of excellence adopted by the breeder will necessarily retard the progress of improvement.

If, in connection with the judicious selection of a

pure bred male, a careful, vigorous, weeding out of undesirable variations in the offspring is practiced, our grades will soon be unsurpassed in the high development of valuable qualities.

Agriculture.

Hessian Fly.

BY P. FISHER, BURLINGTON ONT.

In looking over some back numbers of the ADVOCATE I see an article in the Jan. number on "our insect enemies—The Hessian Fly," in which you recommend starving out "bugs" and "flies" by the farmers ceasing, for a time, to raise the productions on which they feed.

As to the "potato bug" it is comparatively a new enemy, and, perhaps *experience*, that great teacher, may find a remedy for it; but no doubt a general cessation from raising the potatoe would, for a time, have an effect in reducing them, but unless the ceasing to raise it, became *universal*, we might expect a return of them again in time. And so with reference to the pea bug; I have in my long experience in farming known the farmers of a location, at several different times, unitedly to cease raising peas on account of their becoming so extremely buggy, and the result in each was—the extinguishing of the bug for a time.

And now, permit me to state some of my experience in reference to the Hessian fly, and I feel the more anxious to testify what I know on this matter as I noticed that even the *Globe* last fall advised the farmers to plow up the wheat in fields effected by the "fly," and by all means, and in every way endeavour to prevent the propagation of these destructive insects, and I know one farmer in this neighborhood who acted on its advice. You state "the starving-out of the fly was carried out successfully in the Genessee Valley, some years since, by ceasing to grow the feed for them." "And that fifty years ago this pest was so destructive that no wheat could be grown within thirty miles of Philadelphia, and the only remedy seemed to be, to discontinue early fall sowing." Now, Mr. Editor, I have recollections of the failure of the wheat crop, both in the Genessee Country and in Pennsylvania State, for quite a time, but my impression is they in those localities had other pests to contend with as well. But it is in reference to the Hessian pest in Canada I wish to make a few statements by your permission. It is more than fifty years since this pest first came in this country, and its coming and leaving have been frequent, all owing, as far as I know, to early frosts. If any of these came before fall seeding, we old farmers did not dread the fly injuring the crop for the next season, and generally not for a number of seasons. But when there were a number of seasons without early frosts, we had reason to fear the coming of the Hessian Fly, but I have never known it in wheat sown even before the fall frosts, providing it did not come above ground until after the frost came. My practice has been, especially when there were signs of the fly the previous year, (for this pest like other pests usually is several years ere it becomes very destructive,) to prepare the ground and be ready for seeding the second week in September, and in seasons like the next will be, especially, let it lie until a light frost kills the very tender fly, and then I consider danger from the fly over and past. But the Hessian Fly pest is not the worst of pests, it generally leaves a half crop, true what is left is hard to gather, as it falls to the ground in every direction, but the heads generally are filled with plump wheat, whilst the midge and some other pests, sometimes take all.