

Preparing for Fall Wheat.

Recently, we were made the third party in an argument as to how best to prepare a piece of sod land for wheat. The field had been cleared of hay early in July, and there was plenty of time before wheat seeding to apply manure which had accumulated from a large herd of milch cows during the summer. The point of difference was whether the field should be plowed deeply after the manure had been applied, or plowed shallow, manured, and then plowed deeper, and we revert to the question now, because there are many such fields that are awaiting preparation for wheat. An old sod field is not the easiest class of land to work up for wheat, neither is it the most likely to return a good crop, unless correctly treated. The hay crop, unless there is a large proportion of clover, is a shallow feeder, and as in the natural processes of plant-food preparation most of the fertility is liberated near the surface, the hay crop leaves but little in an available condition for a succeeding crop. The object, therefore, is to liberate plant food between the time the hay crop is off and fall-wheat seeding.

Within recent years, farmers have come to appreciate the importance of cultivation in the conservation of moisture, but it is everywhere obvious that its value in the work of increasing the fertility of the soil is not conceded. Early in the eighteenth century, Jethro Tull advanced a very good theory on the value of cultivation, and sustained it by practical demonstrations on his own farm. According to this early investigator, "tillage, and tillage alone, creates and supplies the food of plants, and in most cases renders manure wholly unnecessary." To such an extent did Tull improve the fertility of his fields by tillage that his theory seemed almost completely proved. Tillage, then, it is what a sod field requires to make it in fit condition for wheat. The question, then, arises, how shall the tillage be given most economically? Certainly not by a deep plowing just before seeding, with only enough subsequent cultivation to prepare the seed-bed. For while this would bring a fresh supply of new soil to the surface, it would be in such a crude condition that the wheat plants would be insufficiently fed until the action of the weather had operated for some time in liberating plant food, and the vegetable matter of the sod would be turned too far below the surface. The manure, also, would be buried too deeply, and would not be sufficiently rotted to return the best results.

The best practice on fields of this kind is to break the sod as shallow as possible, roll well, to pack it, and, after a few weeks, cut the sod to pieces with a disk harrow. This keeps the humus on the top, and also liberates considerable fertility. After this, the manure may be applied at the rate of about eight to ten tons per acre, and incorporated into the soil by surface cultivation. On some light, easily-worked lands this is all that is required for the best preparation of wheat lands, but on the more heavy soils a plowing just before seeding is necessary to open the subsoil and provide surface drainage. This plowing, however, should be shallow, especially if the land has been manured. In some cases, it would answer a better purpose to apply the manure after the plowing had been done, provided the hoeing of the manure would not interfere with the hoed of the sower. We have even spread the manure on wheat land after the seed had been sown and had excellent results, but of course the application must be light. The principle to follow is to keep the vegetable matter of the sod and the manure as near the feeding ground of the plants as possible, which with the cereals is at the surface, and to liberate as much plant food as possible by cultivation without turning the fertility so produced to lower levels than the roots of the wheat descend.

In mowing or reaping, the opinion prevails that time is economized by going 'round and 'round a square field, on the mistaken assumption that splitting it into two parts would increase the turning. The number of rounds will be exactly the same in either case, but by making two strips you save the inconvenience of so many short turns at the last, and if the land is ridged the crossing of furrows is minimized. The long strip has an advantage also in enabling you to circle around the end, instead of stopping to turn and cut across it. There is considerable practical advantage in dividing a square field, not only in the time saved in the cutting, but also in having the crop on one side of the field dried and ready for hauling in before all is ready.

Worth Twice as Much Now.

The "Farmer's Advocate and Home Magazine," as a weekly, is more than doubled in value. Chilliwack, B. C. H. F. KERR.

Our Crop Will be a Bumper One.

What sounds are these our senses greet?
'Tis the chinch of the chinch bug chinchin' wheat.
The grinding sound
Comes from the ground.
In awful greed
It eats the seed.
And not a spear of wheat will grow
With the chinch of the chinch bug chinchin' so.



An Up-to-Date, Well-lighted Piggery.

At the Van Herne Farm, Selkirk.

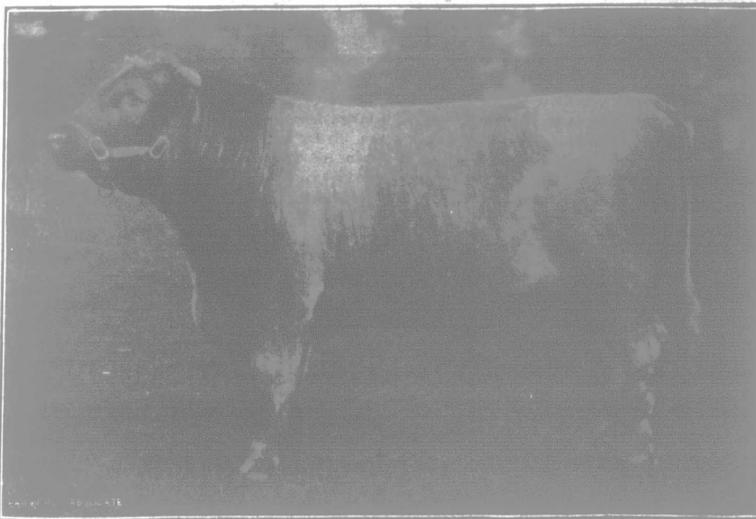
What sound is this of measured tread?
'Tis the army worm we so much dread.
He marches on
And the wheat is gone.
His awful boots
Kick up the roots.
And not a blade of wheat will grow
When the army worm struts to and fro.

Methinks I hear from the fields a sigh.
'Tis the swish of the wings of the Hessian fly.
These monsters seek,
With pointed beak,
And awful claws
To fill their maws.
And not a blade to grow will try,
But it's gobbled up by the Hessian fly.

The hopper and the locust too
Are doing all that they can do.
The insects all,
And grubs that crawl
And sun and sleet
Are killing wheat.
But still, when all is said and done,
Our crop will be a bumper one.—[N.-W. Miller.]

Trade with England.

Mr. W. A. MacKinnon, who has lately been appointed commercial agent in England for Canada, with headquarters at Bristol, is visiting principal cities, for the purpose of consulting with leading exporters regarding the extension of Canadian trade in England.



Rolleston Serf.

First-prize two-year-old Shorthorn bull at Royal Agricultural Society's Show, Elglard, 1904.

Crops in the West.

Reports from all parts of Manitoba and the Territories indicate that this year's crop will be a good average one, and in some places a bumper. The rainfall has been decidedly variable this year, the Red River Valley getting too much and Alberta too little. Northern Manitoba and the Territories will not produce as much straw as usual. Summer-fallow and new land are carrying heavy crops everywhere. In most places the crop is at least a week later than usual.

DAIRY.

Uniform Quality of Milk.

Prof. Clinton D. Smith, of the Michigan Agricultural College, after five years of investigation of the milk question, publishes the following conclusions:—"1. A cow yields as much rich milk as a heifer as she will as a mature cow. 2. The milk is as rich in the first month of the period of lactation as it will be later, except, perhaps, during the last few weeks of the milk flow, when the cow is rapidly drying off. 3. There is little difference in seasons as to the quality of the milk. While the cows are at pasture the milk is neither richer nor poorer, on the average, than the milk yielded when the cows are on winter feed. 4. The milk of a fair-sized dairy herd varies little in composition from day to day, and radical variations in this respect should be viewed with suspicion.

Advice on Milking.

A correspondent of the Dairyman offers the following sensible suggestions, which, if adopted, may help to make the task of milking more agreeable. First, have the cows in a comfortable, well-ventilated stable. Keep the cows and stables clean. In winter cows are kept in the stable nearly all the time, but with a little trouble they can be reasonably clean by moving the manure back from the cows, or covering with straw, before she lies down, which she will usually do after eating.

Use plenty of absorbents—horse manure is good—which will prevent cows from getting their tails dirty. Wipe each cow's udder with a cloth wrung out of warm water before milking. Try using vaseline or some other lubricant—lard is good—on the cow's teats and udder. It will prevent small particles of dust from falling into the milk, besides making milking much easier. Have a damp cloth hanging handy by to wipe the hands when they get dirty. Have a clean suit that can be washed, to slip on for milking. Weigh each cow's milk. This will tend to keep the milkers more interested in their work, besides showing the effects of irregular milking and varying conditions under different care and attention.

Milk at the same time each day, and have each milker milk the same cows as far as possible. Teach each cow to go in the same place in the stable. Put a little feed in the mangers, and they will come in more readily. Have the cows gentle, and they will come in by calling, which is better than driving. Have the mangers separate, so they will not be reaching after each other's feed. Also have the mangers slant toward the cow at the bottom. In fly time, throw a light blanket over the cow while milking her, and she will stand quite still. If you try these suggestions, I think you can get the milk without grabbing the cow and taking it from her.

How Errors May Occur in Testing.

Many States have passed laws in regard to the testing of the graduations of glassware used in the Babcock test. This is a very important matter, and one that should be carefully watched. A small variation in the graduation of a pipette, or the neck of a test bottle, will have serious effects on the accuracy of the results obtained with such apparatus. One of the best preliminary tests of accuracy of the test bottles is to measure test from one sample of milk into all the test bottles on hand, add the acid and complete the tests in the usual way. If the results agree in all the test bottles, this is fairly good evidence that they are calibrated in the same way. It is possible, however, for them all to be wrong.

In order to determine whether this is so or not, it is necessary to measure the capacity of the neck of the test bottles from 0 to 10 mark. This space ought to have a capacity of 2 c. c. If it does not, the test bottle should be destroyed. The pipette should have a capacity of 17.6 c. c. This will deliver 17.5 c. c. of milk, which will weigh 18 grams. The relation between the amount of milk measured out, and the capacity of the test bottle is such that each graduation represents two tenths of one per cent. fat. The 2 c. c., which is the capacity of the neck, will hold 1.8 grams of fat, and this is ten per cent. of the 18 grams of milk tested.

These figures show briefly the basis on which the graduations are made, and it is a matter of great importance that both the pipette and the test bottle neck