Evening Discussions at Rochester State Fair.

THE CULTURE OF WHEAT.

The subject of discussion on Monday evening was the Culture of Wheat, and it was opened by Jos. Harris, Esq., Moreton Farm, Rochester, in the following interesting and practical remarks:

On my own farm I have not, till this year, attempted to raise any of the choicer varieties of wheat. I have been waiting till I could get the land in good condition. There is little chance of growing a good crop of choice white wheat on poor, half-tilled, weedy land. Animals and plants adapt themselves, sooner or later, to the conditions in which they are placed Animals that have an abundance of food at all seasons of the year, with necessary shelter, soon manifest a capacity for taking on flesh rapidly; and in the hands ef a judicious breeder this capacity, in the course of a few generations becomes, an established quality. Such a breed will not stand starvation as well as those which have always been accustomed to scanty and uncertain fare. It is so with wheat. A variety that, with a sufficient quantity of appropriate food, will produce 40 bushels per acre, will not do as well on poor land as a variety that is incapable, even on the richest land, of producing over 25 bushels per acre. It is vain for a farmer to expect a good crop of wheat on poor land, because he has taken pains to obtain a choice variety of seed. He must first get his land in high condition, and he should then select the best variety he can find. If he will not, or cannot, put his land in good condition, he had better select a variety of very inferior quality. The poorer it is the more likely is he to obtain a crop.

Is is far more profitable to have the land better than the variety, than to have the variety better than the land.

The Mediterranean wheat, when first introduced, was very inferior in quality and productiveness. It was probably the offspring of poor land and hard treatment. When sown on the superior wheat soils of this country, it rapidly improved, and it is probably to-day the most extensively grown variety of wheat in the United States. The fact does not speak well for our agriculture, though it does for our common sense. We had better be content with Mediterranean till our land is in better condition.

I know a farmer in this neighborhood who raised this year, over one hundred dollars worth of Soules wheat per acre, and another who raised only twenty-five dollars worth of Mediterranean. For the latter to sow Soules wheat in hope of getting a good crop, would be as absurd as to turn a flock of Cotswold sheep on to a poor, hilly pasture, where Merinos could hardly find a scanty subsistence.

But I must leave this branch of the subject to tnose who have had more experience.

In regard to the culture of wheat, one rule may be laid down that it will be always safe to adopt; Never sow wheat on land that is not in good order. There is no profit in a poor crop of wheat.

If a manufacturer has a quantity of goods on hand, I can understand why he might be willing to sell them below the cost of production, but to deliberately pay out one hundred dollars for material and labor to produce goods that he knew would not sell for ninety dollars, would be a very unbusiness-like proceeding. And yet this is what some farmers do. I have done it myself more than once, but I tried to console myself with the reflection that I was improving the land.

Those of us who do our own work, are apt to think, when we sell ninety dollars worth of wheat, we have made ninety dollars, while in point of fact the wheat may have cost us a hundred. This habit of regarding all the money we get as profit is one source of poor farming.

The expense of raising and harvesting a crop of wheat is not far from $20 per acre. With a yield of 10 bushels per acre, at $2 per bushel, all the profit we make is the straw, say 500 lbs. at $4 per ton, or *one dollar an acre.* If we raise 20 bushels per acre, or $40, the *profit* is $20 per acre, or *twenty* times as much as from a crop of ten bushels per acre—for the extra straw will nearly pay for the extra expense of threshing, and the land will be in enough better condition to pay for all other expenses. Double the crop once more, and raise 40 bushels per acre, or $80, and the profit is $60 an acre, or *three* times as much as from the 20 bushel crop and *sixty* times as much as from the *ten bushel* crop! In point of fact however, it is more than this, for a crop of this kind would probably be choice white wheat, worth from 25 to 50 cents a bushels more than the other.

In the culture of wheat, therefore, the great aim should be to get a large yield per acre. Forty bushels per acre once in four years is vastly more profitable than ten bushels per acre every year. How this can best be done depends on circumstances, and I hope the discussion which is to follow will throw light upon this point.

It will sometimes pay to go outside the farm for artificial fertilizers or cattle foods. At the present time, owing to the high prices of wheat, barley and beef, it will pay well. But as a general rule, we must depend on the farm itself. Ordinary wheat land, if means were taken to keep it clean, would produce ten bushels of wheat per acre every year, and our richer calcareous loams would produce more. In other words, the soil, the rains, the dews and the atmosphere, furnish food for ten bushels of wheat per acre, every year. On Mr. Lawes' experimental wheat-field at Rothamstead, the plot which receives no manure, averages about 15 bushels per acre. The yield on this plot the past harvest, which if I mistake not is the twenty-sixth crop, was 16¾ bushels per acre. This field is sown to wheat every year, and for twenty-six years the plot, which has been continuously unmanured, averages about 15 bushels per acre. When fertilizers are supplied, the yield on some of the plots is 20, 30, 40, 50, and in one instance 55 bushels of wheat per acre.

We may assume, therefore, that a good wheat soil is capable of yielding from 10 to 15 bushels of wheat every year, without manure. The soil and the atmosphere furnish sufficient plant-food for such a crop. But ten bushels of wheat per acre every year will not pay. To keep the land clean and to accelerate the decomposition of plant-food in the soil, and the absorption of ammonia from the atmosphere, it is necessary to plow the land once or twice, to harrow, cultivate, &c., as well as to furnish seed. And Mr. Lawes hoes the crop while growing.

If we could raise 20 bushels per acre every other year, it would pay much better. If 30 bushels every third year, it would pay better still, and if 40 bushels every fourth year, it would pay much better still. The soil, the rains, the dews and the atmosphere, are capable of doing this very thing—or at least the facts named would seem to warrant such a conclusion.

Let those who doubt it ask themselves whether a rather heavy wheat soil, summer fallowed for three years in succession, would not be likely to produce 40 bushels of wheat per acre; or whether a year's growth of clover turned under, and the land well cultivated, and sown to peas the next spring and then turned under when in bloom, and the land cultivated and sown to peas again the next spring and turned under such land would not be rich enough to produce 40 bushels of wheat yer acre. I do not say that we should get it, because there would be too much carbonaceous matter, but the land would certainly be rich enough. And yet all we have done is to avail ourselves of the annual supply of plant-food furnished by the soil and the atmosphere for three years and let the wheat, the fourth year, have the whole for one crop.

I think there can be no doubt that good wheat land is capable of producing a crop of wheat of 40 bushels per acre every fourth year without the direct application of a particle of manure. Mr. Lawes, on the average, from his unmanured plot, gets 60 bushels in four years, and not a pound of the grain or straw or chaff or manure of any kind is returned to the soil. It is done simply by good cultivation, and by not suffering a weed to rob the soil of plant food.

One of the most experienced millers of Western New York remarked, a year or two, that ever since the farmers began to manure their land, the wheat crop had deteriorated in quantity and quality. It