

cause the tales of the Yukon to sink into insignificance.

In 1892 I addressed the Provincial Teachers' Association upon this subject and my opinions of that year are stronger and more decided in 1898. I shall close this paper with the concluding paragraph of that address:

Instruction in agriculture in our schools may be very limited, but if nothing more be done than to start our rural pupils thinking, to give them an impetus or a turn in the right direction, to develop in them a taste for agricultural study and investigation, to arouse in them a desire to know more and to read more about agricultural affairs, and especially to increase in them a respect for their work and a pride in their calling, then the most important end of their education will have been attained.

REMEDIES FOR SMUT IN OATS

By Dr. Wm. S. SPERS, Director Experimental Farms, Ottawa

Smut in oats is very widely prevalent, and causes a large annual loss to the farmers of Canada, and has in the past been found difficult to subdue. The ordinary treatment which is found so effective when used for smut in wheat, namely, one pound of copper sulphate dissolved in three gallons of water, and sprinkled on ten bushels of grain, has not been found a reliable remedy for smut in oats.

Soaking in hot water for ten minutes, the water being kept at a heat of about 133° Fahr, has the effect of materially reducing the amount of smut in oats; but it is difficult and troublesome to treat large quantities of seed in this way, and at the same time keep the temperature up to the point required.

Potassium sulphide (liver of sulphur) has proved an effective remedy when used in the proportion of one and a half pounds of the potassium sulphide dissolved in twenty-five gallons of water, and the oats soaked in this solution for twenty-four hours; but the long soaking swells the oats and makes them difficult to handle in sowing; while soaking for a shorter time is only a partial success.

During the season of 1897 some comparative experiments were made by my assistant, Mr. W. T. Macoun (now horticulturist of the Central Experimental Farm), with smutty oats, treated before sowing with potassium sulphide, one and a half pounds in twenty-five gallons of water, and Bordeaux mixture, the oats being allowed to soak for different periods. The oats used were a very smutty sample: the size of the plots on which the heads were counted was 33x3 (ninety nine square feet), and the following results were obtained:

Number of smutty heads.	156	102	27	2	2	1010
Number of good heads.	2500	2575	3011	3264	3058	2715
Total number of heads.	2502	2711	3013	3306	3060	2725
Hours soaked.	4	8	12	12	24	24
Treatment.	Bordeaux mixture	Potassium sulphide	Bordeaux mixture	Potassium sulphide	Bordeaux mixture	Potassium sulphide
	Untreated					

From the above experiment it would appear that smutty oats used for seed, if soaked in Bordeaux mixture for four hours, are rendered as free from smut as when soaked for the longer periods of eight, twelve and twenty-four hours. But where sulphide of potassium is used it appears to be necessary to steep the grain in the solution for twenty-four hours in order to entirely free it from smut. The Bordeaux mixture is a cheaper remedy than the potassium sulphide, and more easily obtainable.

The Bordeaux mixture in this instance was made with four pounds of copper sulphate, four pounds of lime, and one kerosene barrel (forty gallons, imperial measure) of water. To make this mixture, fill the barrel partly full of water; enclose the copper sulphate in a cotton bag, and suspend this by hanging it on a stick placed across the barrel so that the bag may be entirely immersed. By this method the copper sulphate will dissolve rapidly. In another vessel slake four pounds of fresh lime with about four gallons of water; when fully slaked, strain the creamy fluid through a piece of coarse sacking or a fine sieve into the barrel containing the sulphate of copper solution; fill the barrel with water; stir well and it will be ready for use.

This remedy can be so easily and cheaply prepared that it should be widely used.

[NOTE.—Dr. Saunders' article arrived too late to be of much practical benefit this season, but the information it contains is valuable indeed.—Ed.]

A NEW METHOD OF DETECTING THE TUBERCULOSIS BACILLI IN MILK.

A new method has been formulated by a Russian for the detection of the tuberculosis in milk. The process is founded upon the fact that such bacilli can be precipitated by a rapid centrifugal motion and a modified lactant, which makes 3600 revolutions per minute, is used for this purpose. The milk is first coagulated by dilute citric acid, the whey is separated by filtration and the casein is dissolved by a phosphate of soda solution. To this are added six cubic centimeters of sulphuric ether, mixed with water in order that the emulsified fat corpuscles may be set free.

The action of the ether is hastened by shaking the mixture in a glass cylinder for fifteen minutes. The solution is allowed to stand, and, after the fat has been separated, the remainder of the liquid is allowed to run out. Dilute acetic acid is added to this until the first sign of coagulation appears. It is then transferred to the lactocrit, and the machine set in motion for fifteen minutes, when the vast majority of bacilli sink to the bottom. This deposit is then conveyed to two slides, stained, and examined with an oil immersion. If bacilli are present in the milk they will be found in this precipitate. This method is considered by the author to be more certain than the inoculation of animals with the suspected milk.

Mr. W. J. Black, Stanton, Ont., says "I cannot afford to lose a single copy of FARMING. It is a welcome visitor, especially since it became a weekly."

AMALGAMATE LOCAL SHOWS.

SIR,—I see there is a discussion opened in your valuable paper as to the number of "fairs" held in the province. Some years ago in England it was found that agricultural shows had become too thick on the ground, and did not bring together such good exhibits as they might, and many of the smaller shows amalgamated with good results.

I quite agree with Mr. Richardson that three shows in Ontario should be enough, but do not think such an arrangement would be a success at present, financially or otherwise, for many exhibitors would not exhibit or attend, for they would to some extent be "piqued" because the annual fete for themselves and families had been done away with. But take this district, for instance, within a radius of twenty miles, how many fairs are there? Woodstock, Paris, Drumbo, Brantford, Burford, Norwich, etc. Now, suppose these, or even half, amalgamated to make one good show of three or four days, and made one good "exhibition," with better prize money and better accommodation, would it not tend to improve the class of exhibits and improve stock generally, more than having a show in every little village with twenty houses in it?

From Mr. Edwards' letter he must have a poor opinion of Canadian judges at the shows, for he says it would tend to make a show of "beef cattle," and not of "breeders." Now who worthy the name of judge would not pass over any over-fed animal and give a prize to one in proper breeding condition? I have seen judges at shows go through a class and disqualify every entry not in proper condition for stock purposes before they began to judge "points," and so save much valuable time at the private parade.

No doubt the system of fewer fairs would do away with much of the pleasure part, but that would soon be taken up by people who know more about catering for a pleasure fair or garden party than they do about a good "Jersey" or a sample of grain, and I am sure the greater part of those who attend our fairs would derive more enjoyment in such a case, and exhibitors of stock, etc., would take greater pride and satisfaction in competing at a larger show than they do at half a dozen such as we have at present.

R. M. WILMOT.

Gobles, Ont.

CENTRALIZE THE PRIZE MONEY AT LOCAL FAIRS.

Editor of FARMING.

In your issue of the 12th inst. appeared a letter signed by "W.B.F." dealing with a very pertinent question and one which should bring out some discussion. The subject is an important one, and well worthy of the consideration of our local fair managers.

So far in Ontario there has been little if anything done in the way of centralizing the various breeds of live stock. There are, however, one or two sections of the province in which one or two breeds predominate above all others. Take, for instance, the Ayrshires in Eastern Ontario and some of the counties of Quebec. And perhaps the most noted district for turkeys is this eastern section, with Smith's Falls as a centre. But, as a rule, the various breeds are very much scattered, and a purchaser has to be content to select from a limited number or spend time and money travelling through the province.

The advantages of such a plan would, I think, be a benefit to both buyer and seller. We have had, and no doubt will continue to have, a larger number of buyers from the

Western States and our own Northwest, to purchase car lots of bulls, rams, etc., and in the majority of cases these are wanted all of one breed. We have to some extent our Shorthorn and Ayrshire centres. Why not the other breeds? And would it not also be an advantage to have our Shropshire and Southdown as well as Yorkshire and Tamworth centres where intending buyers could secure the quantity and quality wanted? Is it not a great measure due to the centralizing of the various breeds with a common object in view and the resulting competition that such excellent specimens are produced in Great Britain?

R. R. ELLIOTT,

Herdsman.

Central Experimental Farm,
April 16th, 1898.

WHEAT SPECULATION AND THE FARMERS' INTERESTS.

Editor of FARMING:

Your journal, FARMING, has been coming to me for two or three weeks past, and as you say that if I have any comments or suggestions to make that you will be pleased to have them, I therefore make bold to offer some impressions which have been forcing themselves on me for some time past.

First of all, let me say that I heartily endorse the sentiments contained in your article re "Wheat Speculation" on page 195. That the producer of wheat likes a good price goes without saying, but while he has, year after year, to sell his wheat at a low price on the other hand he sees the consumers' ability to consume reduced, as it inevitably must be, by the speculative prices that obtain. He sees but dimly if he does not see in it a double calamity in that his real dependence, the consumer, is being crippled as well for the future as for the time being, while those human "sharks" of the Leiter and Armour school are being fattened on the very life-blood of the country. Pardon me, however, if I suggest that there is one grave omission in your article. While, to quote your own words, "Why people allow this condition of things to exist is a marvel" yet you fail to offer any practical suggestions as to what remedy would be effective in doing away with the evil complained of.

With reference to your articles on the methods to be practised with most advantageous results to the farmer I have no complaint to make, they being doubly correct in principle and carefully thought out. But, Mr. Editor, is it in reality better methods that we require to assure the success of the farmer? Is it not a most palpable fact that, to-day, the world's farmer is producing in superabundance every commodity required at his hands? Now, if this statement be true, and I think it will stand unquestioned, it seems to me that while the practice of superior methods would be an advantage to the individual where better methods were not common as compared with those who did not practise them, yet if they become general, with the prevailing distribution the result must be the very opposite to what I as a farmer should desire.

Speaking in reference to the question of the distribution of the results of labor, what is the farmer's position to-day? Simply this, that while he constitutes at least 75 per cent. of the population of the country, and is therefore fairly entitled to the credit for the production of 75 per cent. of the wealth of the country, he is permitted, in common with his other brothers of toil, to appropriate as his share only the magnificent amount of 13 per cent. This is not a mere guess work conclusion, but is taken from statistics based upon the official census returns of the United States. These of this country will show but a trifling difference, as we follow the United States closely in everything, perhaps, but their virtues, that is to say, if they have any, a thing to be seriously doubted if we take certain things that transpire there occasionally as a criterion to judge by.

Now, Mr. Editor, would it not be well, as farmers, that we should try and gain some light on this very important question, viz.: the best method of securing to the great mass of humanity a larger share of the proceeds of their toil? This question, which has been but very cavalierly dealt with at best, is, I think, of the first importance, as it, if satisfactorily settled, would redound to the advantage, not only of farmers, but of every class of legitimate business men. The class known as "exploiters of labor" or "human sharks," would alone be liable to suffer. The world, however, can afford to let them suffer a little now.

S. THOMSON,
Brandon, Man.