executive ability to keep things running smoothly. I think as a general thing the older and more well-to-do farmers seem to favor the small outfit, although that is a rather hard point to give any definite opinion upon. The thresherman, take it all around, has a hard lot, and anything that can be done to help the fraternity should be given favorable consideration.

Sask. H. N. BINGHAM.

Believes the Course One That Every Young Farmer Should Attend.

EDITOR FARMER'S ADVOCATE:

I take this opportunity to say a few words about our course in the Agricultural College of Manitoba

The course includes everything bearing on agriculture and I do not think there is a single subject that could be left out. I think it is just what every young man should have before starting out as a farmer. The principles underlying agriculture are taught, and also those underlying other branches of work that go hand in hand with farming. A man learns *the why* and is therefore able to work intelligently. He learns in two winters what other men have learned from years and years of experience.

Although I liked and appreciated all the subjects, yet I think I liked agriculture the best. The subject is very interesting and of practical value to the farmer. It comprises the study of the soil, its formation, composition, and cultivation, maintenance of soil fertility, plant food, plant-growth, and diseases of plants. The subject also embraces the selection and judging of seed grain.

Another subject that I thought very much of was animal husbandry. This takes up the study of the various breeds of animals, care, feed, and management; also the selection and judging of the various types of the different classes of animals.

These two subjects are of the utmost importance to us, as farmers, but I am sure we cannot afford to do without a knowledge of English, mathematics, mechanics, veterinary science and dairying. We, as well as any other business or professional men, must or should, know all about the ins and outs of our business.

From the practical side I am sure all the students will agree with me that we got our money's worth in good measure, and by intelligent work I think we shall prove it this summer. From the social standpoint I think we received much benefit, both from being associated with, and acquainted with, men who were "doing things." Our lecturers were first-rate men, ever ready to lend a helping hand, and each and every one was highly esteemed by us. The boys themselves were bright, generous, good-hearted fellows, who worked when they worked, and when at their games played for all they were worth.

There are two associations that will do much for Manitoba, the literary society and the research association. The aim of the literary society is to educate the boys as to the proper ways to speak and also to conduct meeting of various natures along parliamentary rules. To be able to think and speak clearly and readily before others is the principal aim of the society. We received much benefit from this, as could be seen from the improvement the boys made during the winter, both in the way the meetings were conducted and also in the manner of speaking.

The research association, to which all the boys belong, has for its aim the answering of such questions as are before the province to-day. By united effort we think much can be done. I think that Manitoba will receive very much benefit from the Agricultural College at Winnipeg.

HARRY N. THOMPSON.

Rape on the Summer Fallow.

Some few have tried a light sowing of rape on the summer-fallow with a view to securing some pasture for cattle in the late summer or early fall and with the greater advantage of packing the soil down well by means of the tramping given by the cattle. A short time ago we queried a stockman who has tried this method for years and although he does not condemn it altogether, he is not enthusiastic, for the following reasons. Either it leaves the ground too hard, especially in spots in the hollows where the plowing may have been too shallow, and as a result the young cereal plants are killed by the early spring frosts, or there is increased liability to grubs which have found a suitable host plant in the rape. In order to see if the difficulty mentioned cannot be overcome, he suggests plowing the summer-fallow late in the fall and running the packer over it early in the spring, and if this does not have the desired effect to sow the land to barley. We should be pleased to have the experiences of others who have tried this combination method of soil packing and pasturing.

Would Sow Timothy.

EDITOR FARMER'S ADVOCATE:

I have read the articles in the FARMER'S ADVOCATE of late, re soil fertility and seeding to grass to keep humus in the soil, and I wish to say that this is likely to be a very important matter with us before many years. The summer-fallow has been very successful with us so far, but some are taking to seeding with grass as an experiment. Others think sowing barley will clean the land and also put it in good condition for wheat again. I have had very little experience with grasses yet, but think from what I have observed that timothy is the best grass seed to sow, not leaving it more than two years. It may be sown with any grain crop and appears to be a sure enough grower if there is plenty of moisture. I believe in putting all the manure I can get on the land, hauling it as made during the winter. We spread it evenly and then when dry in the spring burn off the straw so that it can be plowed in with satisfaction. The burning also kills most of the seeds in the manure. I take about three or four crops off after summer-fallow and then fallow again. I have plenty of slough hay so far, but think the cultivated hay is better as it is more healthy for horses. I have been farming here for over twenty years, and land seems as good as ever it was when fallowed properly.

JNO. DEYELLS.

East Assinaboia Municipality, Sask.

Advocates Private Ownership of Outfits.

EDITOR FARMER'S ADVOCATE:

In connection with the question of threshing, I may say that much confusion of ideas has arisen by farming being regarded as an industry, but if an industry is a distinct line of business, then farming cannot be regarded as such. Looking back through the historical telescope it appears more like the nebulæ of the astronomers, out of which in the gradual process of evolution, industry after industry has been formed. The invention of a machine suited to put the labor stamp on some particular raw material of the farm formed the nucleus of a new industry. Gradually the machine developed from the simple to the more complex, and the management from a partnership to the corporation and finally to the trust.

Now threshing is one of those industries which on account of the introduction of complex machinery has broken away from the farm, and if we reason from the analogy without regard to logical precision, we must infer that the tendency will be towards larger outfits, etc. On closer investigation it is seen that all the specialized industries put the labor stamp on transportable raw material, and operate the year round, which provides for skilled workmen; while the thresherman puts his stamp on material not transportable to industrial centers. Hence threshing must always remain a satellite to the grain growing industry, and as such is absolutely under the control of farmers themselves. Threshermen might form a trust this year and raise rates beyond a fair profit. Farmers could next year by co-operation not only smash the trust, but practically ruin some of the threshermen. This condition, the short period in operation, the amount of capital involved, the scrub gangs of unskilled workmen of the migratory class, and the undesirable nature of the work, all tend to restrict private ownership, or development to larger outfits.

Some years ago the threshermen in this district formed a combination and raised rates beyond what was considered a fair profit. A meeting of farmers followed and satisfactory arrangements were made for that year. Next year a joint stock company of sixteen members was formed under a provincial charter, with $5,000 stock subscribed by members. A board of five directors was appointed to manage the concern and a large Battle Creek Advance outfit purchased. This enterprize was a success in so far as the object for which it was undertaken was concerned. Rates were struck to cover running expenses, and the outfit was to be paid out of the stock.

Year after year wages rose till last year they were about double what they were when we organized, but we could not agree to a commensurate advance in rates, as it was profitable for the larger farmers to have low rates and if need be draw on the shareholders for deficits.

Last year the directors manned the outfit, gave the manager a free hand to thresh where he could make most money, did not arrange rotation, and kept little or no supervision over it, with the result that several members were compelled to get outside machines. When the outfit pulled in it was found that receipts did not cover expenditure and when the proposal was made to draw on the stock for the deficit the majority decided that the time had come for the outfit to go under the hammer.

This company was too large. To arrange a rotation that would satisfy sixteen farmers who were nearly all ready to thresh the same week was impossible. To distribute shares and adjust rates so as to make an equitable distribution of obligations and benefits is mathematically possible, but to apply such adjustment to a group of co-operating farmers seemed impossible. The expense of a provincial charter is in my opinion unnecessary for such a small concern, while a board of five directors is too cumbersome in a business that can be more efficiently handled by one.

There is one striking feature about threshing, and that is that it has never developed co-operation as a business. Hence we must infer that the nature of the industry is such that individual effort gives better results than co-operation.

It must be conceded that private ownership and management give better results in a vigorous "push" in such concerns. It must also be conceded that co-operation is necessary to regulate rates where the tendency is trust-ward. The FARMER'S ADVOCATE furnishes the best plan of co-operation, combining as it does the merits of private ownership and management with those of co-operation in the production and distribution of agricultural knowledge. These reciprocal benefits, together with ten cents an inch for published material that comes up to a certain standard, is the ideal plan for farmers. Let farmers in a district co-operate to grow clean grain, to arrange stacks for convenience, and a rotation that will mean the least possible moves, to have no cramped quarters, nor manure heaps for the thresher to go through, to have an adequate supply of water and fuel, to make prompt payment, etc., and it appears to me that any thresherman in the district will give reciprocal advantages in rates and careful threshing.

If, however, conditions arise when co-operative ownership and management is necessary, the number in the company should be limited, and one member should manage and accompany the outfit.

When one considers the waste in agriculture from the number of traction engines that are rusting in sheds or in the open for ten months in the year, the number of horses that are eating their heads off for six months, the amount of money in windmills, etc., the tendency for the future should be to eliminate this waste by perfecting a motor that can be attached to any farm implement or machine. Steam power will never fill this need. The gasoline outfit which combines lightness of carriage and less labor expense is gradually working that way, and if Edison's latest invention of an electric motor that can be attached to any farm implement or machine will be the success claimed for it, threshing will gradually find its way back to the farm, and the size of the separator will be measured by the power necessary to run other farm machinery.

Woodlands Municipality. A. M. CAMPBELL.

Defends the Manure Spreader.

EDITOR FARMER'S ADVOCATE:

I am a subscriber to your very valuable paper, and would like to give my ouinion on the manure spreader I invested in a large size manure spreader. I never invested money on any farming implement that gave so much satisfaction. Have never had to put three horses on it to do the work, and think with the manure spreader one man can draw out as much manure as two men can the old way, and it is much more satisfactory, as it is spread so much more evenly, and not only as a manure spreader, but for drawing roots it cannot be beaten. There is a crank goes with it which I use for unloading, and can unload in less than a minute.

I have been keeping my yard cleaned out all winter with the manure spreader, and have used it every winter since I got it. I have had mine four years, and up to now have only laid out one dollar for repairs. I think I am right in advocating the manure spreader as a farm implement, one that no farmer should be without; and I also think, by taking care of it twenty years will still find it doing the work.

RICHARD YELLOW.

Good Words for the Manure Spreader.

EDITOR FARMER'S ADVOCATE:

I should like to say something about the manure and spreader question. I think this subject cannot be too well considered, as it is a very important item to the farmers.

I apply manure with the spreader in the spring at the rate of twelve loads per acre for top-dressing grain, and eight for grass, with a medium-sized machine, with good results. This way is better than spreading by hand in winter, as the machine does a better job, covers more ground with the same manure, and spreads it more evenly. There is also less loss in this way, because the winter-applied manure will be considerably washed away by spring rains. It also keeps ground cold and damp in spring, and early-sown grain is generally the best. I have used a machine for three years, with a cost of $1.25 for repairs, there being two tires set, and one link or drive chain. The spreader will spread faster than five men, if they will cover as much ground and do as good a job. With a good team you can spread a load in from three to four minutes on an average, with a medium-sized machine, spreading twelve loads to the acre. One load equals about one and one-half ordinary wagon loads. The wheels are five inches wide, and will not cut up fields so badly as a wagon, being a good advantage in a grass or grain field. The manure is distributed very evenly, and coarse manure made much finer than it can be made by hand with a fork. On a farm, where from two to three hundred loads of manure are handled yearly, the spreader will pay for itself in a few years in extra profits, as you can put the manure where you want it most, and with best results. A machine, properly cared for, should last from fifteen to twenty years. I mean by this, well cleaned after using, and put inside; also well oiled when in use.

GEORGE SHARP