

food are insoluble, and can be but slowly brought into a form that is suitable plant food. Hence we cannot waste these materials, and it is only by practicing good methods of cultivation that we can render them available. To bring this about is one of the great functions of decaying organic matter.

But even when we have plowed down all the vegetable matter possible in a rotation, we may not be able to bring into an available form enough of these mineral plant-food substances to supply the needs of the crops. Farm-yard manure supplies some of these desired substances; it also contains much vegetable matter and is loaded with germ life, so that it quickly decays in the soil and thus helps to bring the stores of mineral food into an available form. Yet, even the manure and the food got from the soil constituents may not furnish all that is required to produce maximum crops. Naturally the stable manure is applied for the root and corn crops, because these are the crops that take up large amounts of food, and the lighter-feeding crops follow later in the rotation. Even in this class of farming and when fairly large quantities of manure are made and applied, supplementing with special fertilizer constituents may be decidedly advantageous. The addition of nitrogenous manures to such crops as mangels and phosphates to turnips usually gives good results. At this season of the year the judicious use of nitrate of soda on fall wheat may be found profitable. Much of the heavy land of the province will respond to the use of phosphoric acid. Possibly it would not be far wrong to say, provided a rotation is being followed that makes it possible to plow down considerable vegetable matter, thus getting a fair amount of nitrogen, and that the soil is not decidedly acid, that money spent on phosphoric acid is surer to give profitable returns in increased production than any other fertilizer constituent we may purchase.

In the case of market gardens and fruit growers, where heavy feeding crops and crops of the same kind are grown year after year on the same land, the use of fertilizers is more necessary. Even if stable manure can be procured in abundance, it is probable that a better quality of material would be grown if a partial substitution with fertilizers was made. If, however, this is to be done it is essential that the grower be familiar with the functions of the various plant-food constituents and the different forms in which they may be purchased.

In general, we may say that nitrogen forces leaf and stem growth and retards maturity; phosphoric acid particularly aids in the formation of the seed and forces maturity, while potash is more especially essential for all big, fleshy leaf plants where storage of carbohydrates is important. Thus, nitrate of soda may be used very freely on such crops as lettuce and spinach, for quality is dependent upon quick growth and maturity is not desired. A similar application of a soluble nitrogenous fertilizer in growing tomatoes would probably destroy the crop by forcing the growth of a big plant that would not ripen what little fruit it did set before the frost cut it off. It may also be pointed out that while nitrate nitrogen is valuable for quick results, the organic nitrogen may be just as valuable for its continued action throughout the season.

We have comparatively little information on the influence of mineral fertilizers on the quality of garden crops, but it is probable that in these crops, as well as in many other food materials, a very small quantity of essential ash constituents may very materially affect the quality of the product. The poor keeping quality of celery grown in soil which was formerly very heavily dressed with potash, but which received little or none of this constituent in the last three years is a case in point. Schreiner's studies on the influence of potash hunger in potatoes and the possibility of malnutrition being responsible for some of the diseases that have caused so much trouble the last year or two may also be cited.

Many people imagine that a simple chemical analysis of a soil will furnish the information required to determine the kind and amount of fertilizer that may be used on a soil to produce maximum results. But such analysis only tells us how much of each constituent there is present in the soil, not the amount that is available.

Unfortunately no satisfactory method of determining the amount of plant food that will be rendered available during the growing season has yet been devised. The difference in ability of plants to assimilate food, the variation in period of growth, time of growth, and the many different conditions in the soil as influenced by weather, season, etc., render it difficult, if not impossible, to determine what amount of plant food will be rendered available during the growing season. The chemical analysis does show what amount of plant food material there is to work on, and the decaying organic matter is the natural agent for bringing it into an available form. Good cultivation hastens the action. It also increases the possibilities of good root development, and, consequently, increases the feeding power of the plant. Therefore, it will be seen why factors are so important, and they should go hand in hand with the use of fertilizers.

If the seed grain is not extra good, run it through the mill once more.

Make a thorough test of the seed corn before planting. Vitality is quite important and one must have germination before a crop can be started.

Pastures and new seeding can often be improved by the use of the roller. In most cases the rains have beaten the soil down but where the plants have heaved badly the roller might still do some good.

CANADA'S YOUNG FARMERS AND FUTURE LEADERS.

Don't Disparage Your Job.

EDITOR "THE FARMER'S ADVOCATE":

This question of how to keep our young men from leaving the farms is a problem which as yet has not been solved, as they are daily flocking to the cities. The reason which is generally given for this is that the farms lack the modern conveniences and pleasures which the city has. This is an inducement which lures a few to the city; yet, if such a small thing as modern conveniences and pleasures, and I might add an easier way to make money, is taking some from our farms, we are much better without those which it takes, for if their idea of life is no larger than pleasure and money they have lost life.

Every young man at some time or other has the desire to do something great and good for the world. That is, he has ambition. Given that ambition he has to have something on which to work out that ambition and where better than on a farm. But he does not see it that way and why? The answer to that "why", is this. Farming is not held in as high a social light as it should be. I'll admit there are some people who take the proper view of farming; but speaking generally and of people in general it is not held in as high a social scale in our country as it should be. True it is one of the grandest and noblest callings but people do not see it in that way. This I think is the reason our young men leave the farm.

The farmer has too poor a conception of his occupation. I think the idea is growing among the farmers that he has not much of a job. Now this is a wrong idea and the sooner it is got rid of, the better; for what is more natural than that our young men get hold of the same idea and subsequently leave the farm.

I believe it is the purpose of the U. F. O. to raise farming up to a higher level, but from the meetings I have attended I have come away with the impression that this purpose is being lost sight of by a desire to make more money easily. Oh! that almighty dollar. When are people going to get hold of the idea that there is more in life than money. True, it is a necessity of life, but when it becomes our all we lose our life.

When we start out to farm let us get in a mad rush to see who can get rich the quickest and get off the old farm to the city to have a good time. For we will not find the good time waiting for us there. It is contrary to natural law that we can jump from work to vain pleasure-seeking and enjoy ourselves. It is well that is so, for what a poor end in life that would be.

When we start out to farm let us enjoy the work; not merely the money it gives, but the work in itself, for therein comes true joy. Let us make our farm life such that when we come to our declining years we will be able to say: I have had the best life that was possible right here on the old farm.

What we must instill into our young minds is a love for the farm. Make them feel that the biggest thing in life is not dollars and cents, but instead, how much greater it is to be able to go out and commune with nature, to be able to listen to her whisperings on every side and to put it simply, to feel nature.

Victoria Co., Ont.

JUNIOR FARMER.

Congeniality in Farm Life.

EDITOR "THE FARMER'S ADVOCATE":

Before rural life is attractive there must be a strong community spirit of friendliness and sociality tinged with sympathy, and devoted to the enlightenment and happiness of the younger generation.

Humanity is devoid of strong discerning facilities. Farmers are heart-broken to see their sons regard with disdain and contempt the old homestead. They cannot fully comprehend why the youth's ambitions and aspirations are so different from their own. Nevertheless the reason is obvious to a student of human nature. A philosopher said, "If people harbor opinions adverse to the beliefs of others, it is only because they have inherited different instincts of character, or the environment has so greatly modified their traits, that it is by their own ignorance, they fail to understand each other." In all probability the inherited characteristics of father and son are quite similar; therefore the environment must be accountable for the variances.

The early days of the modern country boy are spent in school, and here we find the seed of attraction, which lures him from the land. Early mental culture is a necessity. An education is invaluable, since it is essential for the development of brain power, as exercise for the healthy growth of muscle. If, however, the acquirement is limited to the gaining of knowledge, which is of no practical value to a young farmer, it is evident that the growing powers of intellect in the community will be concentrated upon study unrelated to agriculture. In the average school the student is taught geometrical theorems and dead languages, but not a word of the growing plants about him; he studies geography and learns the curious animals in foreign countries, but finds out nothing concerning the proper care of farm stock, which he perhaps feeds twice a day; he discovers the properties of elements and compounds but fails to find out the symptoms of the common diseases of our domestic animals. Ultimately, the education renders him incapable of being contented with the

farm, he is prepared instead for a law office, commercial enterprise, or other city vocation.

The Junior Farmers Association may counteract this defect in our educational system, if they will petition and interview the high school boards of each district, requesting and urging that they engage the services of an agricultural teacher. Moreover, the organization may make farm life more interesting, educative and inspiring by establishing a Science Club Library in each locality. I would not infer that the majority of farm homes are without suitable reading material. Many of them contain valuable books, but literature of the educational variety, such as the ambitious youth desires to read, is often sufficiently expensive to prevent its purchase. Libraries are constantly being stocked with cheap literature, fictitious tales without an atom of truth, while the desired types are rarely seen. Fiction at its best can only teach us a little of the English language, or excite our emotions; science books and studies of nature, develop clear and independent thinking, teach us practical lessons, show us a real beauty in life and are in themselves a lasting source of information which would enable even the poorest farmer's son to work more scientifically, and indirectly place at his disposal money with which he could beautify his home and purchase better live stock and farm conveniences.

"Man liveth not by bread alone." Recreation is necessary for vigor and longevity. The play spirit should prevail among the junior farmers. Dignity and ceremonies should be laid aside at times. Athletic Associations should be formed and the young fellows dress in old clothes and have a good time in an old-fashioned rough-and-tumble style once a week. The program should consist of running contests, tug-of-war and wrestling matches, anything in fact, which combines physical activity with freedom from conventional ideas.

The older people may make life more satisfactory for the boys and girls by carefully studying their character, and learning to sympathize with them in their fancies and changing ambitions, by allowing them ample time for recreation and by teaching them the beauties and superior advantages of country life. Moreover all parents or guardians should encourage sociability, but not favor the butterfly society of the cities. They should have parties regularly in their homes for the purpose of entertainment. The young people in becoming better acquainted would undoubtedly secure friends whose influence would cause them to conclude, that the country is man's natural abode, a garden of nature without an equivalent, either as a health-builder, a source of beauty, or a store of wonders.

Dundas Co., Ont.

LEONARD LA ZERTE.

Make Your Calling Attractive.

EDITOR "THE FARMER'S ADVOCATE":

The greatest measure of success in an endeavor to improve rural conditions will result from the combined efforts of the Junior Farmers rather than from individual action; therefore, the initial movement must be to co-operate; to combine into some form of club or society, created for the purpose of improving rural life.

Following upon the establishment of a club, the next item is the procuring of a meeting place, and I would suggest the erection of a hall, size and style in accordance with the number and wealth of the surrounding population, the building to be known as a "Community Hall", erected for the purpose of holding business meetings, social gatherings educational classes, and the various rural functions for which a hall is necessary. Such a building, erected by the community for the community, and not the special property of any set or clique would prove of benefit in ways too numerous to mention. The Junior Farmers could inaugurate a campaign for this object, and the "old folk" could support them in every way possible. A drive shed in connection with this building would prove of great practical value, the provision of horse shelter permitting the attendance of those living at a distance. The club formed, and a meeting place procured, an improvement program can now be arranged.

To ensure satisfaction in any walk of life, a measure of success must be obtained and a degree of amusement or recreation must be procurable. Education is to-day one of the prime factors incidental to success; much of rural amusement is obtained by concerts, dances, and various forms of social gatherings; thus it can be shown that the club can justify its existence by providing both education and recreation to its members and the community at large. In connection with the organization, a debating society should be formed. Agricultural methods, types of stock and varieties of seed, and topics of every day interest can be discussed. Beside the beneficial influence exerted over all by this procedure, the ability to speak fluently will be developed in many, the good results of which may very reasonably be beyond calculation. Due attention must be paid to the recreative side of the question; arrange for as much social intercourse as possible; endeavor to cater to the varying tastes of the community; increased opportunity for meeting one's neighbors produces a sense of satisfaction with one's surroundings, make the community hall the social centre of the neighborhood and much of the discontent at rural conditions will vanish.

Congeniality of conditions can be improved individually by the adoption of modern methods of farming, with the introduction of as much labor machinery as possible. This is a machine age, and in the manufacturing world few operations are performed manually that can be more easily performed mechanically; and the same rule is applicable to the farm. The milking

machine, lift increase the folk can mal to the young circumstances increased efficiency this work circumstances d put in a kitchen woodshed or to and from save mother for every little tion along the numerous wa house, thereby for the women machinery in handiness of for much rural naturally wish in convenient conditions do is sought, usu young farmer be materially represented, because "Dad" proposes to ha ers and test legislate for ag Therefore, cultural world surroundings at education and improvements, all callings, ha endeavor to c disposition an many counter-city. Temiskaming

AUTOMOBILES AND

How can I cl without spoiling

Ans.—The r a composition t is almost imp By the gentle beneficial effect

Things to Insure

1. When t from the centre end at bottom centre.
2. Do not sharp or rough over another pa
3. Do not s thoroughly.
4. Do not s acid is stored slightest trace of Keep the rope of
5. Slings an up in dry places should be stored
6. When t the accepted ru
7. Always l member that h ardized by the b

The

There are t through the car motor car. The gasoline tank be above the carbur seat, and another this arrangement there is always practically empty that the gasoline instances are no stances drivers h up stiff hills. gravity system, perhaps the saf the car, where it smoking or the readily understa the gravity syste body unless it is and this for ovi The second commonly call calls for the dev