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years of experience in successful farming do not anord the public an opportunity to profit by these experiences, as they never write articles on farm subjects nor speak on a public platform. Hence the Farmers' Club opens a door whereby knowledge may be gained from these intelligent farmers, as they will often freely discuss subjects with men of their own communities at these meetings. Another very important phase of the work of the Farmers' Club is to produce intelli-gent speakers. It has been remarked many that farmers are handicapped by not be-Limes ing the to express themselves in an intelligent manner before the public. This is not due to lack of education or ability, but lack of opportunity to practice public speaking. When some agriculturists are sent to parliament they ap-parently do not feel capable of speaking of their interests in an intelligent manner, and as a result, we frequently have men of other professions representing us, whereas men actually engaged in agricultural pursuits would be better acquainted with the needs of the farmer, and naturally would have a greater interest in the development

of the industry. The Farmers' Club is an exceedingly beneficial society in assisting the farmer in the various ways already mentioned and in many more. Every rural community should make an earnest effort to organize a club of this kind, and each farmer should feel it his duty to become an active member and endeavor to make the society

 flourishing one.
Middlesex Co., Ont. H. WYE.

Two Crops for the Summer-fallow.

Many farmers are now in the height of the busy season and those having summer-fallows to attend to very often wish that they could in some way get around the work which these fields necessitate. A dirty summer-fallow is almost as bad as, in fact may be worse than, none at all and where the field has been well cultivated and worked up to the present time it is possible by sowing either rape or buckwheat to escape further work on the fallow during the summer and at the same time have it in fairly good condition in the fall. Of course, if the field has not been properly worked up to the present and is not in good condition as far as cultivation is concerned it would not as a general thing be wise to at-tempt the growing of either one of these crops successfully, but most summer-fallows have been sufficiently worked at this season to permit of taking a chance with the rape or buckwheat.

Rape is one of the best cleaning crops which can be sown on any field. For best results, the land should be prepared much as it generally is for mangels or turnips. Once it has been harrowed fine and rolled down it should be ready for the seed. Best results are always obtained from sowing in drills where a smothering crop to kill weeds and keep the land clean is desired. The land should be drilled up in the same manner as it is for root crops and the seed sown at the rate of a pound and a half per acre. Sown in this manner the rape may be cul-tivated, in fact it should be cultivated until the time that it reaches such a size that further working with horses is impossible. This insures a rapid and stout growth and the land will be so thickly covered with this rank-growing crop that weeds and all other forms of vegetation will have little chance to show themselves. The rape may be sown broadcast four or five pounds to the acre, but as a general thing this does not give anything like as good results as where it is drilled in and given subsequent cultivation. We would not hesitate to try this crop even yet. It may be pastured in the fall and will yield a large amount of good feed when pastures have become dry and parched and green feed is much needed for the stock. The buckwheat is a good crop where the land is not too dirty. Where it is sown to smother weeds a heavier application of seed must be put on. As a general thing where buckwheat is grown for a grain crop one-half bushel per acre is thick enough and in fact if the land is rich this seeding may produce a very heavy stand of the crop, but to be sure of rapid growth and a thick covering of the ground from three pecks to a bushel is more reliable. This should be sown as a general thing about the first week in July if it is intended to harvest it in the fall. Later than this will do if grown as a green crop to plough under, which is quite a common practice in some localities where the summer-fallows are sown to fall wheat. Buckwheat is a rapid grower and soon gets such a start that weeds have little chance to get the sunlight necessary for growth. Even with the thick seeding a fairly satisfactory yield may be harvested if it is decided to use the crop as a grain crop and it will be found that the buckwheat is, when mixed with other grains, a quite satisfactory feed for cattle and hogs and fed alone is one of the best single grains for laying hens.

THE FARMER'S ADVOCATE.

the entire summer. We would suggest to those having large summer-fallows which are likely to give them trouble or which are likely to be neglected or to cause other crops on the farm to be neglected to try either one of these two crops this summer and we feel sure that results would justify the undertaking.

The Science of Soil Re-generation. Editor "'The Farmer's 'Advocate'':

Soil re-generation is getting to be more and more of a necessity in the older and early-settled parts of our country. Western Canada is still benefiting from the vast store of plant food that has been deposited during the ages by the decaying grass of the Western prairies, but Eastern Canada has not been so favored. It is true that our Eastern soil, too, was very fertile in the pioneer days, but it does not seem to hold out as well as that of the West. Still older countries, such as the countries of Europe, have long felt the need of replenishing the soil with plant food, and the economy and the methods practiced there, with the resulting large crops, would astonish many of the farmers of Canada.

We cannot crop our land continually and expect maximum crops unless we supply the soil with the material that is yearly taken off by succeeding crops. It is impossible to take away and leave as much there as there was before. Neither is it possible to keep up the supply of plant food by the returning of merely the straw and feed that was raised on it. Part of that fertility goes away in the form of butter, eggs, stock, grain, etc. This is lost to the land, and must be made up by buying concentrated foods and the application of commercial fertilizer.

The necessary elements in our soil for the best results can be divided into two classes, the

The fertility of the land depends upon our supply of humus, and this can be best kept by either applying barn-yard manure or plowing down growing vegetable matter. In applying barn-yard manure many practices are followed, all of which prove generally satisfactory. The common practice that has been and is yet often followed is to pile the manure in a big pile in the yard till mangel sowing time. But this practice is be-ing discarded as being too wasteful of both time and value. Much of it is now drawn out during the winter as it is produced, and spread from the sleigh or placed in piles. The advantages of this plan are a saving of time in spring when everything has to be done with a rush, preventing decomposition of manure in the pile in the yard, thus saving much nitrogen and ammonia. The liquid manure that would be lost in the yard through leaching away, as a result of copious spring rains, is saved and allowed to soak into the soil where it is needed. Spreading in the field acts as a mulch and prevents the escape of much moisture from the land that would otherwise evaporate, resulting in a hard, baked surface. Any available manure in the fall should be hauled out and plowed down. Manure applied in the fall should not be plowed down too deep, as the fertilizing elements have a tendency to soak downwards. All that is necessary is to cover it enough to keep it damp to cause decomposition. In the spring, of course, shallow plowing would cause the manure to interfere too much with the cultivation so it should be plowed down deeper. A manure having plenty of straw will produce more humus than if that straw were fed, it, therefore, is advisable to raise corn and bed with straw.

The second method of increasing the supply of humus is by plowing down standing green crops. This plan is not often used, but has proven its organic and the inorganic. The organic element value on many a worn-out farm. Plants having

deep rooting systems are the best for this purpose. They gather plant food from below the cultivated depth and bring it to the surface, and when the plant is plowed under this deeply-gathered plant food is in-corporated in the surface soil. That is why a summerfallow with a good crop of thistles will produce such good crops, if the thistles are proper-ly killed. Plants that have the ability to gather nitrogen from the air, such as legumes, consisting of clovers, beans, peas, etc., are of high value for this only supply a quantity of humus, but they supply at the same time a quantity of nitro-gen that has been



However, it is not for the grain crop that most summer-fallows are sown, but rather to avoid the extra work necessary to keep them clean, under the system of clean cultivation for

The Modern Ditcher.

Doing good draining, which, because of scarcity of labor, would otherwise go undone.

is the result of decaying vegetable matter and is called humus. It is that element that gives the soil its dark color, retains the moisture, keeps it porous and prevents baking and caking, after rain. It is also necessary for the proper growth and development of the beneficial bacteria that Without an are found in all fertile soils. adequate supply of humus an application of artificial fertilizer would be almost wasted. The importance of a good supply of humus will be readily seen, as it forms the foundation for fertile soils.

The inorganic element is composed of acids and salts of mineral origin, and are found in all soils to some extent. Eventually these plant foods are absorbed by succeeding crops, and it becomes necessary to supply them before we can again raise good crops. Both these elements, the organic and the inorganic are necessary to get the best results, so our aim will be to consider the ways and means to get these things back into the soil after it has been robbed by preceding crops. We will pass by the natural way in which an All-Wise Providence has prepared our land for the growth of vegetation, and consider the artificial way in which it is necessary for man to become an active operator.

The processes for artificially building up our soil consist of:

1. Applying and plowing down barn-yard manure

2. Plowing down standing green crops.

3. Applying artificial fertilizer

The first of these is the one most universally adopted, and if supplemented by the other two will prove most satisfactory.

gathered from the air, in a form that is easily taken up by the succeeding plants. Clovers are the best, as their large and deep root system will produce, when decayed, a large quantity of humus. A good growth of clover in spring plowed down for a crop of corn will easily prove its value. A crop of buckwheat preceding fall wheat has often proved beneficial. It not only chokes all weeds but makes the soil loose and friable, and capable of holding more moisture.

The last method of building up a soil is by the application of commercial fertilizers. though this plan has been followed extensively in the Old Country and by market gardeners in this country, it has not yet passed the experimental stage on the farms of this country. In analyzing plants it is found that they contain, besides the tissue or organic matter, three elements of mineral origin, namely, nitrogen, potash and phos-phorus. Because they are found in the plant they must have also existed in the soil that grew the plant, and as we remove these elements with every crop we must devise some plan by which to re-supply our ground with them. In their pure state they cannot be easily handled, so we combine them with other chemicals to form soluble compounds and easy to handle. The element, nitrogen is applied in the form of nitrate of soda. Potash is applied in the form of sulphate or muriate of potash and phosphorus, is applied as acid phosphate or basic slag. Besides these mineral fertilizers there are also fertilizers of animal origin, such as blood meal, bone meal, tankage, etc., which contain certain percentages of nitrogen and phosphorus, and have the advan-