

The Farm.

A Clay Subsoil.

The value of land for farming greatly depends on the portion that the plough never reaches. Roots of all crops usually go lower for either moisture or plant food than does the plough, and it is through the roots chiefly that the soil is deepened. Not that the roots will go where there is no plant food for them. But if there is mineral fertility in the subsoil, as there must be in all land worth cultivating, it is the roots which reach down, and as each carries at its point some carbonic acid gas, so soon as the insensate clod is touched by this living root point a part of the fertility is released, and it is carried up to become a part of a living plant. In hard clay soil this process is very slow unless they are drained, when the action of frost, admitting more air to the soil, with some carbonic acid gas mixed with it, enables the roots to make more rapid progress in disintegrating its fertility.

Usually very fertile soil is marked by a great depth of soil, which when brought to the surface and exposed to freezing and thawing will produce good crops. Such soil is not adapted to growing corn or garden vegetables. But for the grains which will thrive in a hard soil if they can only get phosphate of lime, this deep, dry soil is just right. We have seen excellent wheat grown where clay from a well thirty feet deep had been drawn up and spread upon the surface. It was in a field that had been long cropped with wheat, and the crop where this deposit of clay had been spread was decidedly better than that on other parts of the same field. It was before farmers had begun to use phosphate for wheat, and when we began to drill phosphate with all grains, we soon learned that this was the mineral that this wheat-cropped soil had long needed. It would be impracticable on any large scale to dig deep wells to bring up clay subsoil filled with phosphate to be used as manure. Yet the work of underdraining had already been begun on this farm, and the experience with the subsoil thrown on top of the land satisfied us then that deep underdraining to allow wheat roots to go deeper was to a considerable extent a substitute for mineral manuring.

Where the soil is clay very nearly to the surface, as some of this farm was, the best way to bring it up is to plough a little of this clay at first, but run the plough a little deeper each time it is ploughed, especially in the fall, and let the frosts and snow and rain mellow it. If a very little manure is used as top dressing, and clover-seed is sown in the spring, there is likely to be a strong clover catch. This is what such lands most need. Clover is a great consumer of both lime and potash. It succeeds best on clay soils, for these are generally rich in both these important minerals. The effect of clover roots to deepen soil is really remarkable. The first year little of the root growth will be below the depth of the furrow. But a few roots will in a dry season make their way into the unbroken subsoil. The next clover seeding will do this, and each succeeding season the clover roots will go deeper, as each follows where some previous clover root has died, and has prepared the way.—(American Cultivator.)

Treatment for Apple Scab.

Some horticulturists have held that plant diseases could be successfully met by promoting vigor of the plant or tree through proper fertilization. This theory was proved groundless several years ago, so far as peach yellows is concerned; and a recent bulletin (No. 140) of the New York Agricultural Experiment Station (Geneva) shows conclusively that fertilization with ashes will not prevent or lessen the injury from scab in apple orchards.

The experiment was made upon an extended scale and continued for five years. Upon half the plants in the orchard a sufficient amount of ashes was given each year to insure a liberal fertilization with potash and a fair amount of phosphoric acid, while the other half of the plots received no

fertilizer. Cultivation and care were alike upon all plots and careful records were kept of the condition of the foliage and of the percentage of scab upon the fruit.

In certain seasons and upon certain varieties the plots receiving the ashes showed better foliage than those untreated; but it cannot be said that this improvement is due to repression of scab, for other causes of injury to the leaves existed, and no distinction could be made between the different classes of injury. On the fruit, however, the scab injury alone was considered; and slight differences were noticed upon several varieties. These differences for some varieties or for some seasons seemed to favor the treatment with ashes; but upon other varieties or in other seasons the reverse was true. The only conclusion possible is that the ashes have no effect as a scab preventive.

It was found, however, that the ashes exert a hastening effect upon the development of the fruit, which in seasons of slow growth, might be of advantage in heightening the color or producing proper maturity. In other seasons when conditions of temperature and weather would naturally produce perfectly ripened fruit the action of the ashes seems to exert an unfavorable influence in advancing the maturity so far at harvesting time that the apples do not keep as well as those from untreated plots.

The yield, except with the Baldwins, was increased by the application of the ashes.

The experiment brought out very clearly the differences which exist between certain varieties as regards susceptibility to the disease, and it is thought that the best chance for work against the disease lies in the development of scab-resistant varieties.

The Bordeaux mixture treatment can be depended upon to give good results against the scab and is the remedy immediately available and practicable.

The bulletin will be sent to any apple grower who is sufficiently interested to apply for it.

The Ohio Experimental Station recommends farmers to mix their own fertilizers. It is claimed that this can be done quite readily, and will save the farmer considerable outlay in purchasing fertilizers. The mixed fertilizers sold in Ohio are known to contain practically three materials, tankage, acid phosphate, and muriate of potash. The station claims that these materials can be purchased separately, and mixed by the farmers themselves, and would lessen the cost at least one-sixth, as compared with the cost of commercial fertilizers.

BUILDER AND STRENGTHENER.

That is the Term an Ottawa Lady Applies to Dr. Williams' Pink Pills.

Among many in Ottawa and the vicinity who have been benefited one way or another by the use of Dr. Williams' Pink Pills for Pale People, the Journal has learned of the case of Mrs. Gilchrist, wife of Mr. T. V. Gilchrist, of Hintonburgh. Mr. Gilchrist keeps a grocery at the corner of Fourth Avenue and Cedar Street, and is well known to a great many people in Ottawa as well as to the villagers of this suburb of the Capital. Mrs. Gilchrist states that while in a "run down" condition during the spring of 1897, she was greatly strengthened and built up by the use of Dr. Williams' Pink Pills. Speaking of the matter to a Journal reporter, she stated that while able to go about at the time she was far from well; her blood was poor, she was subject to headaches, and felt tired after the slightest exertion. She had read at different times of cures effected by the use of Dr. Williams' Pink Pills, and decided to try them. She was benefited by the first box and continued their use until she had taken five boxes, when she considered herself quite recovered. Mrs. Gilchrist says that she always strongly recommends Dr. Williams' Pink Pills as a builder and strengthener when any of her friends are weak or ailing.

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