

Effects of Cultivation on Plant Growth.

This is the season for the hoe; the horse hoe and the hand-hoe are now needed, and to no other crop is hoeing of greater benefit than to Indian corn. The benefit of cultivation is explained by the Massachusetts *Plowman*:

By keeping the soil loose and well pulverized we not only give the roots of the plants a better chance to push their way through the earth, but we give the descending rain a chance to settle down in all parts of the soil and to reach every particle of the manure applied; it also gives the air a chance to mingle with the soil and the heat to penetrate and warm the earth; these things are important, for plants cannot grow without large quantities of oxygen, and plenty of heat as well as moisture. The thorough preparation of the soil, before planting, and the frequent stirring after, does more than secure these, for thorough preparation means not only pulverizing of the soil, but it also means thoroughly incorporating the fertilizer with the pulverized earth, thus not only bringing it in contact with all portions of the soil, but also with the descending moisture, and every time the earth is cultivated the particles of both soil and the moisture are changed and a new chemical action takes place, thus hastening the decomposition of the material applied to furnish the plant food. The moment the earth becomes hard, rapid decomposition ceases, the rising moisture stops and the oxygen of the air is shut out, and the descending rain cannot readily find its way down, so it stands in ponds until it breaks through the hard crust of the soil, in some hollow, and descends in large streams; and as it cannot find its way back through the hard crusts of the earth it settles down into the underground streams, and finally reaches the ocean by way of river, without having in the least aided plant growth; when this takes place the plants must suffer. The moment the earth around growing plants becomes crusted over, that moment it ceases to be in good condition for plant growth, for reasons already stated."

Hungarian Grass.

Dr. E. L. Sturtevant writes the Elmira Farmers' Club:

If we study the plant we find that it has two peculiarities. First, it is a plant of warm regions. Second, it is a drouth plant. The inference from this is, what my experience in light soil confirmed, that the ground must be warm at the time of planting, and the soil must be a dry one, that is free from standing water. A careful examination has shown me that the Hungarian is a very shallow rooting crop—it feeds very near the surface, when the temperature of the soil is the highest. Another peculiarity with me has been that a single cold, or cool, night checks the growth of leaf, and forces a growth of seed. Bearing these observations in mind, I have not failed in obtaining a very large crop by pursuing the following course: First, planting not earlier than June 20th, in order to secure the warm soil, and the certainty of no cool nights during the ensuing six weeks. Second, manuring or fertilizing close to the surface, and just scratching in. Third, planting at least six pecks of seed per acre. In order to have the stock relished by cattle, I have found it necessary to sow thickly, and to cut just as the heads begin to be discovered. By this course I have a hay the cattle prefer to timothy, and pound per pound it expends better than timothy, and my eye detects no falling away in condition, and the scales detect no change in the milk yield. If over ripe (and most people cut too late) the cattle do not relish it as they otherwise could, and the eye and scales show inferior feeding value to the best hay."

The peach curl is caused by fungi, and the only remedy known is the free use of the knife when the disease first makes its appearance, but cutting alone is not enough; cutting must be followed by immediate burning.

Under drains were used by the Romans and constructed of wood. Even brush drains have been made in various parts of England. Thorough drainage came into practice about the middle of the present century, through the exertions of Mr. Smith, of Deanston, and for a time stone was the principal material used in their construction. They were either thrown in promiscuously or laid out in throats or channels. When tiles or pipes came into use stones were laid around them, but it is found that less soil percolates into the tile when the earth is close around it.

CORRESPONDENCE

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SPECIAL NOTICE.—We receive numerous communications to which no names are attached, and asking for very lengthy and full information without enclosing stamps for reply. We require that the name of the subscriber should be signed, not necessarily for publication, but as a guarantee of good faith. Letters sent without conforming to the above, find their way into the waste paper basket.

SIR,—Can you tell at what time of the year cutting suckers at the root of apple trees would be likely to prove most effective?

E. A. O., Simcoe.

[If suckers are one-year or two-year-old wood, remove them at once, and at any time an opportunity with a good knife may present itself. Afterwards rub the young sprouts of this season's growth off, as soon as they make six or eight inches growth.]

Can you let me know through your valuable paper where the "Bonanza" grain cleaner and seed separator can be had, and at what price?

[The manufacturer should advertise his grain cleaner in the usual columns.]

SIR,—Does the bark louse attack and destroy pear, cherry and plum trees; if not, where can pear trees suited to this climate be had?

W. B. H., Salisbury, N. B.

[The bark louse, or aphid, does not trouble the cherry or plum; the pear but slightly, not sufficient to make it a nuisance. It preys principally upon the apple, and, with little care, is easily removed. The eggs of the bark louse hatch out from the first of June to the fifteenth, the time varying according to season and locality. They are very minute objects, but can be easily discerned crawling about the stems and bark, and sometimes on to the blossoms, and locating themselves on the embryo fruit. At this stage they can be at once and finally destroyed by a syringing of coal oil and water, the proportion of oil being one part to nine of water; stir the oil through with the syringe and then apply. Pear trees suited to climate of New Brunswick can be procured from the various Ontario nurserymen, whose advertisements are to be found in *ADVOCATE*.]

RAPE FOR SOILING—MILK COWS.

SIR,—How many lbs. of rape seed are required per acre? How is it sown? Will it taint the milk or give it an objectionable flavour? Do factorymen object to its being fed to milk cows? Is the large and Mammoth Russian sunflower identical? I can't find the latter in the various seed catalogues.

W. T. R. Hatchley, Ont.

[From eight to twelve pounds of rape seed to the acre are used for seeding. Rape fed in moderate quantities with hay, does not impart a disagreeable flavour to milk, so we have found in our experience. Any of the brassica family of wheat rape will, if fed too freely, affect the flavour of milk. The seed of the Russian sunflower is striped, that of the common variety is black.]

OLEANDER NOT BLOSSOMING.

SIR,—Kindly inform me through your valuable paper the cause of Oleander not flowering in the house; mine put forth buds and then blight; seems healthy and in good condition; I keep it in my living room.

E. W.

[Your plant is suffering from the want of pure, fresh air. Plant life, as well as the life of human beings, needs a liberal supply of pure air. Oleanders may live and appear healthy when they are incapable of producing even a blossom. Place your plant outside in the balmy breezes, and you may look for flowers.]

SIR,—I have lost a valuable dog by straying into the premises of a neighbor who shot him, who says, owing to their being no tax on dogs, they are liable to be destroyed by any one who finds them on his premises doing damage or not. Please inform me through the columns of your valuable paper is such legal?

A SUBSCRIBER, Bowesville, Ont.

[Your neighbor had no right to destroy your dog unless found chasing sheep.]

FARMERS AND RAILWAYS.

SIR,—I consider the farmers of this country do not receive fair play at the hands of our railway companies. To start with, no railway can live without a farmer's traffic, such as his grain, live stock and produce of every kind—indeed, he may be said to be the main stay of the companies. The farmers of this country have been taxed to build these roads in the shape of bonuses, and they have to pay exorbitant freights or just what these companies have a mind to ask. Along with this these railway bodies are allowed to obstruct and infringe on our public highways, and by so doing endanger the lives and property of the people. Scarcely a day passes but we hear of some person or some stock being killed at a railway crossing, where the railway authorities have failed to provide proper safeguards for public safety. It is high time that something was done by our representatives in Parliament to compel companies to afford better protection to the public at railway crossings in the country. Hoping you will advocate this in your valuable paper, I remain, truly yours,

G. W., Glanworth, Ont.

SIR,—I take the liberty of making a few remarks on subjects which may have been well ventilated by you, yet, feeling assured that, if you will kindly give expressions of your opinion on the same in your columns, farmers generally will feel grateful to you.

It is well known that many plants such as turnips, cress, &c., have their insect enemies, which, in many cases, totally destroy the crop. Now, the question is, are not these insects on the eve of germination when the plant first comes up, latent as it were, germinate and grow with the growth of the plant, and mature at a stage when the plant is best adapted for their food, and also, do not the presence and destructiveness of these insects vary with the nature of the soil? Take, for instance, wheat. I am told that, on many farms surrounded with plaster (gypsum) quarries, the yield of wheat is excellent and free from the weevil; how far this is general I am not informed. Can it be that owing to the presence of plaster the wheat plant is so far of a different nature, or the nature of it is so changed that the weevil does not germinate? On the other hand, can it be that wheat grown on land devoid of plaster, by the very absence of that element, is in its nature so changed that the weevil naturally germinates on the eve of germination in the plant at a very early stage, maturing and destroying or injuring it at the time when it best affords nourishment to the insect?

Again, I have seen fields covered deeply with clearing from plaster quarries, consisting of earth and broken and pulverized plaster, on which clover sprang up luxuriantly and remaining on the ground for many years.

An intelligent farmer informed me that he sowed on his wheat field some pulverized plaster in zig zag directions, in order to ascertain the effect of plaster in comparison with the unplastered; to his surprise he found that the growth of the wheat on the plastered strips far surpassed the other the whole season, besides being much greener, and easily distinguished from his house.

And again, a farmer of note gave his experience as to the effect of plaster on his pea crop; on part of this pea field he sowed pulverized plaster; the yield of peas on the plastered part far surpassed the other, besides it was from six to twelve inches higher, and far greener throughout the season.

You can readily see that I have placed the subject at issue open to your fertile mind, feeling that you are fully capable of elucidating the same. Trusting that the above will not be considered visionary, I remain,

Yours, &c.,

W., Windsor, N. S.

[Perhaps the Board of Agriculture might be asked to furnish a brief reply to the part of this letter touching on insect pests, in the part of the paper allotted to them.]