

If we cannot agree on the other matters discussed, we certainly can agree to disagree.
Essex Co., Ont. L. C. PALMER.

Cultivation of Corn.

Editor "The Farmer's Advocate":

In growing a crop of corn we try to conform our doings to the furtherance of the demands of plant growth. The conditions of growth are five, viz., warmth, air, moisture, plant food and sunlight. Sunlight is provided for by planting 42 inches apart in hills, aiming at about 3 plants to the hill, which, however, may need six seeds planted. Our observations are that too many growers of corn do not provide for sufficient sunlight.

As to plant food, that must be provided for in a proper system of farm practice, and if not right, cannot be remedied all at once; but a good clover sod and fresh barnyard manure abundantly supplied will give a humifying condition in the soil which is quite favorable. The three factors still left, as well as the humifying of the vegetable matter in the soil, are all promoted by thorough and consistent tillage or surface cultivation. The proper cultivation of the corn is the most immediately effective condition the farmer has at his control, and in our practice we have never felt that it was overdone, though we have seen considerable ineffective cultivation.

I will not say how often a field of corn should be cultivated, but I have seen men cultivate two, three or more times in succession when once was sufficient, and then neglect cultivation for weeks after another cultivation should have been given, and thus lose the real benefits that should have come from judicious cultivation. The benefits depend not so much upon the number of cultivations given as upon the timeliness of doing the work, and for warmth, air, moisture, and the benefits these bring, we aim at never allowing a crusted or compacted surface to remain unbroken. The hoe should be used early and close about the plants; later tillage must recede from the plant, and also become slightly more shallow, but good judgment is the only exact rule to lay down. We use a two-horse cultivator while the plants are not too large; if the corn is growing fast and succulent it will easily break off, except during the heat of the day, when it is a little wilted, it will stand more rough usage; but when too large a one-horse cultivator does the work, until the tassels appear and the horse is hid from view. A two-horse cultivator should go over one and a quarter acres per hour, or more, and a one-horse outfit about half that much.

The amount of man and horse labor to take care of an acre of corn will vary considerably with weather and conditions, but with hand hoeing and all, a man and a horse for one day to the acre will be more than is usually expended on the corn crop. We have never had a weeder, and, usually, with our system of keeping both the sod and manure in the surface soil, there is too much on the surface to drag with the teeth of the ordinary harrow to do much dragging after the corn is up; but, however it be prevented, there must no crust remain on the corn ground.

Waterloo Co., Ont.

ANSON GROH.

Corn Cultivation in Essex.

Editor "The Farmer's Advocate":

In answer to your inquiries re the cultivation of growing crops, there are a great many things to be considered. The objects are: Conserving of moisture, keeping down weeds. Excessive cultivation may be done, but so far as I know, it has not been practiced. Where land is not drained it is inclined to run together.

We cultivate corn four or five times during the season: the last few years we have been later in getting corn planted, so there is less time for cultivation. We use single and two-horse cultivators, doing from three to six acres each day, according to ground and height of corn. We do not use a weeder. About three inches in the beginning of the season, and about two inches in the end, is depth of cultivation.

We cultivate until corn is tasselled, and sometimes longer. We usually go through corn with hoe and remove weeds left by cultivator. For the summer cultivation of an acre of corn it takes about four to six days' horse time, and about ten days' labor for a man. I am not able to answer this latter question in a satisfactory manner, never having kept account of labor, time, etc. There is a vast amount of difference in time spent, as the ground, when not properly prepared, is harder to cultivate; and again, when haying and harvest starts, there are usually broken days. It may be two or three hours in the corn field and balance of day in hay. I may state that in this vicinity the corn, especially, does not get enough cultivation. Help is scarce, and as I said, the harvest comes when cultivation should be going on.

JAS. W. ROBINSON.

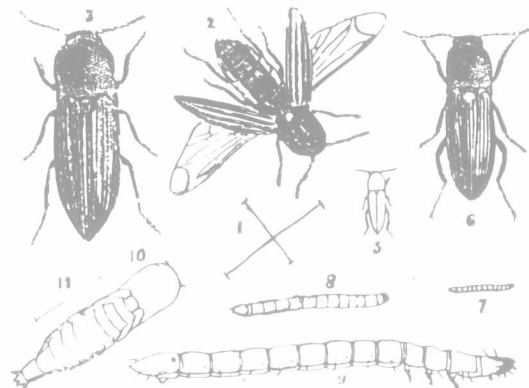
Essex Co., Ont.

Wireworms and White Grubs.

Both of these destructive insect grubs were very numerous in Ontario last year, and from enquiries received at this office this spring it is to be feared that their ravages will be continued this season also.

These pests are not usually found to any serious extent in land which is worked in a regular rotation of crops, particularly if the rotation be a short one. In land that has been in grass for many years the white grubs occasionally become so plentiful as to kill all the grass over a large percentage of the area, as happened to many Western Ontario pasture fields last year. But even where their presence is not made known by the destruction of grass, when such old sod fields are plowed up and put into root or cereal crops, the havoc that white grubs and wireworms work on the crops sown or planted, especially potatoes, is very great indeed. Unfortunately, the damage is not confined to one season alone. During the first summer after being plowed these creatures are able to get considerable sustenance from the roots and rootstalks of the grass which has been plowed under. The second season, when none of this food is available, the attack is altogether on the roots of the growing crop, and frequently more loss is occasioned than in the previous year.

Dr. C. Gordon Hewitt, Dominion Entomologist.

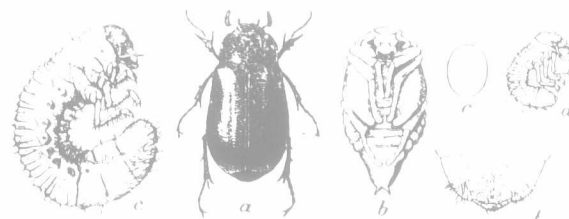


Wireworms (7, 8, 9); pupa (10)—enlarged; click beetles (1, 2, 3, 4, 5, 6)—natural size; 2, 3, 6—enlarged.

In his evidence before the Select Standing Committee on Agriculture and Colonization last December, gave much detailed information concerning the life history and habits of wireworms and white grubs, from which we cull some points which may be useful to "The Farmer's Advocate" readers.

WIREWORMS.

Wireworms are the larvae of the family of beetles known as "click beetles," those insects which when turned on their backs spring up into the air with a sharp click and regain their normal position. Their life history is as follows: The eggs are laid by the beetle in the spring or summer, and then the larvae hatch out and begin to feed on the roots. They move about at a depth of a few inches below the surface, and the more loose the soil is the easier it is for them to do so. They live in the worm condition for two, three or four years, according to species, and when fully grown



May Beetle or White Grub: (a) beetle, (b) pupa, (c) larva or grub.

go a little deeper into the soil and enter the pupa stage, from which in a few weeks they change into the perfect insect.

WHITE GRUBS.

The white grub is the larva of the June bug, and, like the wireworm, has a life history which extends over several years, generally about three years. The different stages in its career from the egg to the adult insect are also so similar that it would be but repetition to enumerate them.

REMEDIES.

While a heavy dressing of 600 to 800 pounds of salt per acre will often clear the land of white grubs and wireworms, and heavy dressings of nitrate of soda, superphosphate and kainit have also been found useful, the chief dependence must be placed on cultural methods. Dr. Hewitt recommends instead of roots or cereals being grown on old infested sod that clover, which is not subject to attack, or flax, which is also believed to be resistant, be grown, or, better still, if it can be afforded, that the land be summer-fallowed. These to be preceded and followed by deep plowing of the land late in the fall. Between

starvation and being twice exposed to winter frosts most of the insects will be exterminated. Where white grubs abound the turning of hogs into newly-plowed land is strongly advised.

Extensive experiments made by Prof. Forbes in Illinois go to show the difficulty of clearing wireworms out of the land, and scarcely agree with Dr. Hewitt's ideas. He found that coating seed grain with poison, the surface application of salt and other chemicals, and even the attempt to starve them out by a clean fallow—a costly method at best—were practically useless. Cultural methods were the only ones of much avail.

Summer Cultivation of Hoed Crops.

The amount and kind of summer cultivation given to corn and root crops is of great importance, both to the crops themselves and to those which follow. The objects of such cultivation are: Control of moisture, liberation of plant food, and destruction of weeds, the securing of these providing the best soil conditions for plant development. Generally speaking, the more cultivation, the greater will be the crop, and "excessive cultivation" is hard to imagine, except, perhaps, in the stiffest clay, where there might be a tendency to run together and bake in the following season.

To secure the above-mentioned object, the implements I use are the harrow, cultivator and hoe, and I shall briefly describe our method of cultivating these crops. The roots are sown on raised drills, 27 inches apart, and the drills are rolled with the land roller four or five days after sowing. The one-horse sculler is started when the plants are about two inches high, and used twice before thinning, which is done when plants are about three inches high. We calculate to cultivate five or six times through the season, especially after heavy rains, going deeply at first, and shallower as the growing season progresses. We hoe the roots twice, the second time about two weeks after the first. In a very weedy piece of land, a third hoeing would be very advantageous.

With ensilage corn the harrow is used when the seed has well sprouted, and again when the plants are about two inches high. I do not use a weeder, but if I had one I would use it three or four times before the first cultivating. The two-horse cultivator is started shortly after the last harrowing, going about four inches deep, cultivating close to the plants, the shields preventing the small plants being covered by the soil. We use this implement frequently until the corn is too high for its use, each succeeding cultivation being slightly shallower than the previous one, and slightly farther from the row. After this, the one-horse sculler is used, and continued every two weeks until the tassels appear, and, as before, gradually getting shallower, just to keep a constant soil mulch. It is important to stir the soil after each rain. We hoe the corn when it is about four inches high, and again at about 18 inches high. I count on covering six acres of corn in a day with the cultivator.

It is difficult to state exactly the amount of horse and hand labor that an acre of corn requires by this plan, but I would estimate it would take two days' work for a team of horses, and three days' work for a good man.

Perth Co., Ont.

J. M. McALLUM.

Some Farm Problems.

The subject for discussion at the recent meeting of the Brant Township Farmers' Club was, "The Greatest Farm Problem of To-day," and it seems there is more than one "greatest farm problem." Several were discussed, and the following is a synopsis of the different problems as they were presented:

1. The Market Problem.—Everyone has personal problems of his own, but this is one in which all farmers cannot help but be interested. In fact, it is the business end of the farming occupation. How to make the most money out of one year's operations, is a problem which all are trying to solve. In the first place, the farmer should study the markets a little more. He should have an idea of the supply and demand of his products. He should know how much of a certain product is in existence in the country, and whether and why that supply is increasing or diminishing. He should also know what time of year the supply runs low, or the demand high. The business man always looks at the prices of things he deals in before reading anything else. There should be a little more system as to when to market our products.

In rearing, the farmer is the only person that does not control the price of his products. He takes what others give him, often not knowing whether he is selling at a profit or at a loss. The farmer should know what it has cost him to produce what he has to sell. To this he should add the value of his time required in producing it, at the general wage, and if he can't get that price, he had better quit producing it. Better do nothing at all than to go down hill.

Another thing in connection with marketing is