

One advantage of the late sowing is that it furnishes a great opportunity for weed destruction before the crop is sown, and while this is going on, by means of the cultivator and harrow, the land is being put into the best possible condition to receive the seed.

The mode of culture and sowing is pretty generally the same on different well-tilled farms. As already mentioned, a liberal dressing of manure is a necessity on land usually sown to this crop. The time of application varies greatly on different farms. While some stick to the old plan of manuring in the fall, we find that many are changing their time of application to winter or spring. Many who preferred March as their month for this work were unable to carry out their desires this spring because of the continued rough weather. The next opportunity presents itself at the end of grain and corn sowing and potato planting. The great pity is that this year, especially in the Province of Ontario, there is far too little manure to apply to any crop. Having the manure plowed down not more than five or six inches, harrowing and rolling should at once be done, and then a little time allowed for the germination of weed seeds. When a green cast is noticeable over the field the cultivator should be put on, followed by the harrow and roller. The piece may then be left until the time of sowing, when the ground should be carefully plowed a little deeper than the manure was buried. This should be harrowed well within a few hours of plowing, then rolled, ridged up, and sown in quick succession. The ridges are best made by means of a double-moldboard plow. It is not well to raise them more than five or six inches at most. Only first-class seed should be sown, of the varieties most highly spoken of in the seed grain reports published in March 16th issue. When the land is moist and mellow, from a pound and a half to two pounds of seed per acre is sufficient; that is, when sown in drills 28 to 30 inches apart after the 15th of June. Before that time it is well to sow a little thicker to feed the beetles that are almost certain to be present. Thin sowing aids the singling very much. Seed drills that roll the rows should be used, and this should be again run over the drills after sowing, to fit them to better retain moisture.

It is not well to commence thinning until the plants are at least about three inches high, as by that time they will have sufficient root-hold to take no harm from falling down by having the earth drawn away from their sides. The field should be scuffed before thinning and frequently afterwards, to provide thorough surface cultivation, which is so necessary to the best results.

Clover vs. Corn for Soiling.

An extended series of experiments with leguminous and cereal crops for soiling purposes was conducted during the summer of 1895 at Storrs (Conn.) Agricultural Experiment Station. The object was to compare fodders rich in protein with those containing less of this important element in their effects upon milk and butter production. The foods high in protein were mainly legumes, and consisted of oats and peas, clover, soy beans, cow peas, rowen, and barley and peas. The other line of foods was made up of cereal fodders, consisting of green oats, Hungarian grass, and corn fodder. Seventy pounds of most of these crops were fed per cow daily, although eighty pounds of the corn were used. Two pounds of wheat bran and one pound of corn meal per cow were fed daily in connection with the green fodder.

Two groups of cows of three each, as nearly alike as could be well obtained, were chosen for the experiment, all of which had calved within four months previous to beginning the test. A two-days' supply of fodder was brought in and weighed at a time.

The results of the experiment show that the best results on quantity of product were obtained from rations relatively rich in protein. Although one-seventh larger rations of corn fodder were used than of those rations made up mainly of the legumes, the latter generally gave larger yields of milk, of butter-fat, and of solids in the milk.

Digestion experiments conducted with sheep indicated that the legumes not only contain larger quantities of protein when harvested than the cereal fodders, but that they are also more thoroughly digested. It can therefore be concluded that as a rule the best crops for early summer feeding seem to be those of the pea and clover family, containing a relatively large amount of nitrogenous matter. Although smaller yields are usually obtained with the legumes than with fodder corn, the fodder from the legumes is richer in nitrogen and protein and a larger percentage of this protein is digested by the animals, and hence these fodders are of more value in the production of milk, cheese, butter, and beef.

A Barley Blight.

SIR,—Your favor of 14th inst. duly received, with stalks of barley affected, apparently, with some sort of blight. I observed the same thing in a few patches in our spring wheat, oats, and barley. I called the attention of Mr. Harrison, our bacteriologist, to the matter. He finds the roots and center of plants all right; it is simply the tips of the lower leaves that are affected with blight, caused, no doubt, by the unusually warm weather in beginning of May, which hastened vegetation while the soil beneath was cold. I do not think this will materially injure the crop.

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ENTOMOLOGY.

Injurious Insects--June.

BY JAMES FLETCHER, LL.D., F.R.S.C., ETC., OTTAWA.

The month of June is not only the season when all vegetation seems to make a sudden rush forward to maturity, but also the month when insects of all kind are most noticeable. The fruit grower and farmer must be at work early and late if he would successfully prevent injury to his crops by his insect enemies. Fruit trees must be sprayed with Bordeaux mixture and Paris green if fungous diseases and leaf-eating insects are to be kept in check.

Early in June, in most parts of Canada, the young emerge from beneath the old scales of the OYSTER SHELL BARK-LOUSE of the apple, and this injurious pest can be easily destroyed at that time if the trees be thoroughly sprayed with a kerosene emulsion wash made by diluting the ordinary stock emulsion with nine parts of water.

Spraying fruit trees is now so generally practised by progressive fruit growers that it is unnecessary to devote much space to pointing out the benefits of this operation. It has been shown by many experiments the extraordinary advantage which follows the spraying of apple trees with Paris green, 1 lb., fresh lime, 1 lb., and water, 200 gallons, to prevent injury by the CODLING MOTH. This spraying must be done within a few days after the blossoms fall. The same mixture sprayed over plum and peach trees prevents to a large measure injury by the PLUM CURCULIO. Another pest of the apple orchard, which may be successfully treated by spraying with Paris green in June, is the CANKERWORM, the green or brown caterpillars of which sometimes strip whole orchards of almost every leaf, leaving the trees brown and sere as though scorched with fire.

The second brood of the IMPORTED CURRANT WORM appears during this month, and a close watch must be kept so as to treat the gooseberry and currant bushes with hellebore as soon as the caterpillars show themselves. For the first brood, which appears in May, Paris green may be used, but for the second brood, which comes when the fruit is almost full-grown, this poison is too dangerous, and hellebore must be used. This latter is a vegetable poison and soon loses its virulence when once wetted, either when applied in water or when moistened two or three times by the dew. The injury to currant bushes consequent on allowing them to be stripped of their leaves is not confined to the year when this injury is done, but bushes stripped one year only produce small and inferior fruit the following season.

In the vegetable garden the most troublesome June pests in all parts of the Dominion are certainly the many kinds of cutworms. These are dull-colored, smooth, greasy-looking caterpillars. The head is smooth and shining and sometimes of a different color from the rest of the body. They do their injuries at night time, and lie hid by day beneath the soil; frequently much harm has been done before their injuries were observed. When full-grown these caterpillars change to a chrysalis in the ground, and eventually issue as inconspicuously-colored, active moths. The habits of most kinds of cutworms are probably as follows: The eggs are laid by the female moths in autumn or late summer, and the young caterpillars hatch and make part of their growth in the autumn. They pass the winter in a torpid condition, and are ready to attack any young vegetation as soon as it starts in spring. There are many kinds of cutworms, and these differ somewhat in their habits; but most of those which come prominently before the farmer and gardener come out from their hiding-places by day and cut off young plants just at the surface of the ground, and then, burrowing a short distance into the soil, devour the cut-off plant at their leisure. There are two remedies which may be successfully used against those which work in this way. One is to wrap a piece of paper around the stem of young plants when putting them out in spring so as to leave a collar an inch above the ground when the plant is set. For tomatoes and cabbages old tomato cans with the tops and bottoms melted out form a perfectly impenetrable barrier to all cutworms. The second plan referred to is known as "poison traps," and this plan is very popular with all who have tried it. It consists of tying up bundles of weeds, grass, clover, or any other succulent vegetation, and, having dipped the bundles in a strong mixture of Paris green and water, placing them about at intervals on the surface of the infested ground. The cutworms are attracted to them to feed or for shelter, and large numbers are thus easily destroyed. A plan of a similar nature has lately been adopted with good results. It consists of mixing enough Paris green with bran to give it a greenish tinge and then moistening it with enough water to make it adhere slightly. A little of this mixture (about a teaspoonful) is put at short distances along rows of beets or other plants, and is claimed to be very attractive to all kinds of cutworms. It has been used at the base of orchard trees for climbing cutworms, as well as in gardens for the ordinary varieties.

There is a class of cutworms which have rather different habits from the above, because they spend the greater part of their time in the soil, feeding on the roots of grasses, and are sometimes very destructive to the small grains. One of these has attracted

a great deal of attention lately in Western Ontario. Several correspondents have sent in the dirty white or greenish white caterpillars, with accounts of their serious injuries to fields of oats, barley, and wheat. Last summer, too, wide-spread complaint was made of their injuries to corn. These caterpillars are about 1½ inches long, of a dirty white color, with chestnut colored heads. They are most destructive to crops grown on sod, because, the natural food being grasses, the eggs are laid by the female moths on the meadow grasses the previous year, where the young caterpillars will have a supply of food. Unfortunately, it is almost impossible to suggest any remedy short of plowing up the crop and sowing something else which can be put in later, such as Hungarian millet, buckwheat, or possibly late turnips. The moths from which the caterpillars which are doing so much harm this spring originated are beautifully-marked creatures with soft tints of red and gray, which is



well illustrated in the accompanying cut. They were so abundant last June and July that frequent letters of complaint were received. They swarmed into houses at night and made themselves obnoxious in many ways, getting into food and dirtying house linen and papers, flying into lamps, and giving great trouble to shop-keepers by requiring frequently to be swept out of the windows.

DAIRY.

Care of Milk, from the Cow to the Cheese Vat.

BY T. B. MILLAR, INSTRUCTOR FOR THE WESTERN ONTARIO DAIRYMEN'S ASSOCIATION.

Of late years so much has been said on this subject that it almost seems like presumption on my part to say anything further about it, yet in connection with my work in visiting cheese factories I found during the past month that a lot of milk delivered at the factories might have been in a much better condition if the patrons had paid a little more attention to the care of it.

At this age of low prices it should be the aim of every one connected with the business not so much to increase the quantity but rather to improve the quality, and as the patron of a cheese factory is an important factor in the production of fine cheese, therefore it behooves all patrons to take the best possible care of the milk, thus enabling the cheesemaker to turn out a fine article of cheese.

Good Food and Pure Water.—The care of milk should begin with the person who feeds and takes care of the cows. The cows must be supplied with suitable food and an abundant supply of pure water to produce good milk; without these it is impossible to get first-class milk.

Cleanliness.—Owing to the scarcity of straw for bedding last winter a great many of the cows are coming out this spring in a very dirty condition. Care should be taken to see that the udders are washed or brushed well before milking is commenced, and do everything as cleanly as is possible. Strain the milk immediately after milking, then, as soon as possible (the earlier the better), air well, in a pure atmosphere, by dipping or pouring the milk from one pail to another; continue this for fifteen or twenty minutes after the milking has been completed and occasionally during the evening and again the first thing in the morning.

Airing.—The morning's milk should be aired before mixing with the night's mess, at least for a few minutes, to allow the animal odor to escape. It is quite as necessary to air milk in cool weather as in hot, although the milk will keep sweet in the cool weather without airing, but the airing will improve the flavor, and a can of bad or off-flavored milk is more objectionable than a can of nice-flavored milk partially soured. And bear in mind that if milk is properly aired and kept in a place where the atmosphere is pure it will keep sweet during the hottest night in summer without cooling by the use of water or ice.

A Bad Practice.—A mistake that a great many patrons make is putting the milk can in a tank of water before they commence milking and pouring in the milk as it is milked, without straining or airing. The milk is thus cooled down to the temperature of the water and allowed to stand in that condition over night. Although this milk may be delivered sweet, yet it is in a very bad condition, as any germs or bad odors that were in the milk are still in it, and as soon as heated will produce very bad flavors. The time to get rid of these germs is immediately after milking, by straining properly and airing thoroughly. After airing, but never before, if it is thought desirable it may be placed in water for a short time to reduce the temperature to the desired point.

The Milk Stand.—Milk keeps better in small quantities, and should be kept in a clean place. Never leave it on a stand by the milking-yard,