

# Home Course In Modern Agriculture

## X.—Some Insect Pests

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**A**MONG the enemies which the farmer has to combat perhaps none are more troublesome than insects. Nothing is more aggravating than to have a promising crop of fruit or grain attacked by a horde of "bugs" and greatly injured if not entirely ruined.

Insects, like weeds, are very difficult to deal with if you go at them one at a time, but if properly managed they can be easily held in check. From the standpoint of the damage they do, insects may be divided into two classes—those which attack field crops and those which are injurious to fruit and garden crops.

There are a number of insects which attack corn. While these are seldom present in large enough numbers to destroy any considerable part of the entire crop, the money value of the damage they inflict on the corn grown on a quarter section each year amounts to no small sum.

One of the most important of these pests is the corn root worm. The eggs, which are laid in the cornfield during August or September, hatch during the next June or July. The worms when full grown are about one-third of an inch long and as big around as a pin. They bore up inside the roots, injuring them so badly that the growth of the plant is seriously checked. Often, too, the roots are so weakened that the corn blows down badly. Some time during August the worm goes through a transformation called pupation, which changes it into a small light green beetle. This beetle feeds on the silks and tips of ears and lays eggs for the next year's crop of worms.

Another insect which lives on the roots of corn is the root louse. These lice are very small and helpless. They are kept through the winter in the egg stage in ant hills. In the spring after they hatch they are placed on the corn roots by the ants. The ants are very fond of a sweet fluid which is secreted by the lice, and they take care of them for this purpose.

Other insects which do more or less damage to the corn crop are the stalk borer, wireworm, white grub, bill bug, cutworm, etc. These insects live and multiply in grass land and from there find their way into the adjoining cornfields. They do the greatest damage, however, when the grass land is plowed up and put into corn.

The damage from nearly all insects affecting corn, small grain or grass can be readily prevented by a good system of rotation. This is especially true if clover is used, since such insects as cutworms and grubs do not work to any extent on clover. The frequent plowing of the ground and change of crops where a rotation is followed are fatal to most insects. Damage from these pests will be still further reduced if the soil is kept so well supplied with plant food that the plants can get a quick start in the spring. Treated in this way, they are more vigorous and better able to withstand insect attacks.

These remedies, with the exception of the last, cannot be applied to or-

chard and garden crops, since these must be grown on the same land year after year. For the insects affecting these crops spraying is the best remedy.

The principal insect that attacks the apple is the codling moth. These insects pass the winter in a ball of silk, or cocoon, which they spin around themselves. These cocoons are hidden beneath the bark and under rubbish. Such as happen to escape the hungry search of woodpeckers and other birds change to the pupa stage in the spring. In this stage changes take place inside the body of the worm which so transform it that early in June it comes out of the cocoon as a small brown moth.

These moths lay great numbers of eggs, which hatch into small worms. These worms eat their way into the apple through the blossom end. The apples thus affected usually fall off, and in a short time the worms crawl out and again spin cocoons around themselves. The life cycle is lived over again, and a second brood of the

moths appears about the middle of July. It is this brood which does the most damage. It is the worms which hatch from the eggs laid by them that are so often found in fall and winter apples.

Many poisons, of which Paris green is the one most commonly used, are effective in destroying the codling moth. Paris green is usually used in connection with Bordeaux mixture, which is a remedy for the various fungous diseases which affect the leaves and fruit.

To make this mixture dissolve five pounds of copper sulphate and five pounds of lime separately in twenty-five gallons of water each. When they are thoroughly dissolved mix the two solutions and add four ounces of Paris green. The lime in this solution is added to prevent the chemicals from injuring the leaves and to make the mixture stick better.

Three sprayings are sufficient for the codling moth. The first should be given immediately after the blossoms fall, the second from ten to twenty days later and the third about the last of July.

One of the chief insect enemies of the plum and one which also attacks many of the other fruits is the curculio.

The curculio beetle lays its eggs in the young fruit shortly after it sets. In doing so it leaves a half moon shaped scar, which is its trademark. One of the surest ways of getting rid of this insect is to jar the beetles from the tree at this time. Spraying is also an effective remedy. The Bordeaux-Paris green mixture may be used, but arsenate of lead is better, since it is less liable to injure the leaves. It is applied at the rate of three pounds to fifty gallons of water. The spray should be applied just before the blossoms open, just after they fall and again about fifteen days later. Poisonous sprays should never be applied to fruit trees while they are in blossom. It is not necessary in order to destroy the insects and will kill many of the honeybees, upon which the blossoms are so dependent for pollination.

The insects that have been mentioned so far live by eating the leaves and fruit and in doing so take up enough of the poison to put an end to their destructive work. There is another class of insects, however, for which such remedies are not effective. These are the sucking insects, of which plant lice are the most common examples. Insects of this kind feed by drilling through the outer layer of the leaf or bark and sucking the plant juices. They thus escape damage from any poison which may be on the surface.

To get rid of sucking insects some substance which will kill by coming in contact with them must be used. There is nothing better for this purpose than kerosene emulsion. This is made by dissolving half a pound of soap in a gallon of boiling rainwater. This mixture is then taken from the stove and two gallons of kerosene added. The compound should be churned violently for a few moments by pumping it up with the spray pump and back into the pail. This causes the oil to mix thoroughly with the water. Before using, this original mixture is diluted with six to ten parts of water.

A common insect affecting garden crops and one that is hard to handle is the striped cucumber beetle. This is a serious enemy of cucumbers, squashes, melons and other plants of like nature. Spraying does little good and is liable to injure the tender plants as well. Where but a few hills are raised, covering them for the first two weeks with a small box with mosquito bar stretched across the top is a good preventive measure. Another effective plan is to go over the patch in the morning while the dew is on and the beetles cannot fly, knock them to the ground by giving the plant a slight blow and put a drop of kerosene on each one.

Where any of these crops are raised on a large scale the most effective remedy is the use of "trap plants." Plant the field to squashes a week or ten days before time to plant the main crop. The beetles are especially fond of squash plants and will gather on them in large numbers as soon as they come up. Just about the time the other plants begin to peep through the ground the squashes can be sprayed with very strong kerosene emulsion. This will destroy both the squash plants and the beetles. There will usually not be enough of the latter left in the neighborhood to do much damage.

Foley's Honey and Tar is a safeguard against serious results from spring colds, which inflame the lungs and develop into pneumonia. Avoid counterfeits, by insisting upon having the genuine Foley's Honey and Tar, which contains no harmful drugs. Burnaugh & Mayfield.

**Euclre an Old French Game.**  
Euclre is the ancient French game of triumph. The early French settlers brought the game to America and played it with thirty-two cards. As commonly played in this country today twenty-four cards are used in four headed games.

People past middle life usually have some kidney or bladder disorder that saps the vitality, which is naturally lower in old age. Foley's Kidney Remedy corrects urinary troubles, stimulates the kidneys, and restores strength and vigor. It cures uric acid troubles by strengthening the kidneys so they will strain out the uric acid that settles in the muscles and joints causing rheumatism. Burnaugh & Mayfield.

**The Cotton Gin.**  
Mrs. Catherine Greene of Rhode Island, widow of General Nathaniel Greene of Revolutionary fame, is said to have invented the cotton gin, but to have allowed Eli Whitney to take out the patent through modesty.

Mr. F. G. Fritts, Oneonta, N. Y., writes: "My little girl was greatly benefited by taking Foley's Orino Laxative, and I think it is the best remedy for constipation and liver trouble." Foley's Orino Laxative is best for women and children, as it is mild, pleasant and effective, and is a splendid spring medicine, as it cleanses the system and clears the complexion. Burnaugh & Mayfield.

**Wear of Coins in Circulation.**  
The loss incurred by the wearing of coins in circulation has been made the subject of a number of precise experiments, from which it was ascertained that \$500 worth of five dollar gold pieces lost over \$15 of their value in 100 years.

If you have backache and urinary troubles you should take Foley's Kidney Remedy and strengthen and build up the kidneys so they will act properly, as a serious kidney trouble may develop. Burnaugh & Mayfield.

**National Uncles.**  
National pawnshops are maintained by the French and Italian governments.

During the spring every one would be benefited by taking Foley's Kidney Remedy. It furnishes a needed tonic to the kidneys after the extra strain of winter, and it purifies the blood by stimulating the kidneys, and causing them to eliminate the impurities from it. Foley's Kidney Remedy imparts new life and vigor. Pleasant to take. Burnaugh & Mayfield.

**Spanish Marriages.**  
In the announcement of marriages in Spain the ages of the contracting parties are always given.

**For Constipation.**  
Mr. L. H. Farnham, a prominent druggist of Spirit Lake, Iowa, says: "Chamberlain's Stomach and Liver Tablets are certainly the best thing on the market for constipation." Give these tablets a trial. You are certain to find them agreeable and pleasant in effect. Price 25 cents. Samples free. For sale by Burnaugh & Mayfield.

**Longwood.**  
Longwood, the house Napoleon occupied on St. Helena, was given to the French by Queen Victoria.

Now is the time to use the squirrel poison, when they are first coming out. Get Strychnine, the kind that kills. Don't be fooled by a cheap and inferior quality. The genuine is for sale by Burnaugh & Mayfield, the druggists.

**Peru.**  
Peru received its name from its principal river, the Rio Paro, upon which stands the ancient city of Paruru. The Brazilian term para, however modified, is at all times suggestive of a river.

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We have in our packing ground trees in first-class condition we will sell at the following prices:  
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Peach trees, 15c each  
Box Elder trees, 10 to 15c each  
Roses, 25c each  
Strawberries, \$3.50 per 1000, fresh dug.  
Raspberries and blackberries, \$2.50 per 100.  
We will pay express on orders amounting to \$10.  
**UNION NURSERIES**  
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**Up Before the Bar.**  
N. H. Brown, an attorney, of Pittsfield, Vt., writes "We have used Dr. King's New Life Pills for years and find them such a good family medicine we wouldn't be without them." For Chills, Constipation, Biliousness or Sick Headache they work wonders 25c. All druggists.

**Camels of Asia.**  
What are known as camels in Asia Minor are in reality a common species of dromedary. Camels have two humps, while the race found in Smyr-

**I'd Rather Die, Doctor,**  
than have my feet cut off," said M. L. Bingham, of Princeville, Ill., "but you'll die from gangrene (which had eaten away eight toes) if you don't." said all doctors. Instead he used Bucklen's Arnica Salve till wholly cured. Its cures of Eczema, Fever Sores, Bolls, Burns and Piles astounded the world. 25c. at all druggists.

**The Illusion of Night.**  
I sometimes fancy that every great city must have been built by night. At least it is only at night that every part of a great city is great. All architecture is great architecture after sunset. Perhaps architecture is really a nocturnal art, like the art of fireworks. At least I think many people of those nobler trades that work by night (journalists, policemen, burglars, coffee-stall keepers and such mistaken enthusiasts as refuse to go home till morning) must often have stood admiring some black bulk of building with a crown of battlements or a crest of spires and then burst into tears at daybreak to discover that it was only a haberdasher's shop with huge gold letters across the face of it.—G. A. Chesterton in London News.

"Most ordinary colds will yield to the simplest treatment," says the Chicago Tribune, "moderate laxatives, hot foot baths, a free perspiration and an avoidance of exposure to cold and wet after treatment." While this treatment is simple, it requires considerable trouble and the one adopting it must remain in doors for a day or two, or a fresh cold is almost sure to be contracted, and in many instances pneumonia follows. Is it not better to pin your faith to an old reliable preparation like Chamberlain's Cough Remedy, that is famous for its cures of colds and can always be depended upon? For sale by Burnaugh & Mayfield.

**An Eccentric Russian Doctor.**  
The famous Russian, the late Dr. Zaharin, was noted for his eccentric methods. When summoned to attend Czar Alexander III. in his last illness, Dr. Zaharin required the same preparation for his visit to the palace as to any of his patients' houses. That is to say, all dogs had to be kept out of the way, all clocks stopped and every door thrown wide open. He left his furs in the hall, his overcoat in the next room, his galoches in the third, and, continuing, arrived at the bedside in ordinary indoor costume. He sat down after walking every few yards and every eight steps in going upstairs. From the patient's relatives and every one else in the house he required absolute silence until he spoke to them, when his questions had to be answered by "Yes" or "No" and nothing more.

Banish pimples, blotches and boils by taking Levy's Oregon Grape Compound. Sold and guaranteed by Burnaugh & Mayfield, Enterprise, Ore.

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Read in this paper this thrilling story of life in the United States Senate, of political intrigue and of love. Novelized from Thomas Wise's great play.

Illustrated by Berger, Ryder and Will Jones

**Words to Freeze the Soul.**  
"Your son has Consumption. His case is hopeless." These appalling words were spoken to Geo. E. Blevens, a leading merchant of Springfield, N. C., by two expert doctors—one a lung specialist. Then was shown the wonderful power of Dr. King's New Discovery. "After three weeks use," writes Mr. Blevens, "he was as well as ever. I would not take all the money in the world for what it did for my boy." Infallible for Coughs and Colds, its the safest, surest cure of desperate Lung diseases on earth, 50c and \$1.00. Guarantee satisfaction. Trial bottle free. All druggists.

**WALLOWA BRANCH TIMETABLE.**

Eastbound	Distance from	Westbound
am.	La Grande Station	p.m.
9:45 Lv.	0 La Grande	2:30 Arrv.
9:50 "	2.5 Island City	1:55 Lv.
10:00 "	8.3 Al-el	1:40 "
10:10 "	12.3 Imbler	1:25 "
10:30 "	29.5 Elgin	1:00 "
		p.m.
11:25 "	33.2 Palmer Jet.	11:35 "
11:40 "	35.7 Looking Glass	11:30 "
		p.m.
12:45 "	47.1 Minam	10:30 "
2:00 "	60.0 Wallowa	9:00 "
2:45 "	67.8 Lostine	8:15 "
3:45 "	78.0 Enterprise	7:30 "
4:45 Arr	88.5 Joseph	7:15 "
		a.m.

La Grande Observer: Mr. Yoke of Ohio was in the city today (Monday) enroute to Wallowa from Ohio. He is after timber and lumber.

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FIG. XIX.—CORN PLANTS INJURED BY ROOT WORM.



FIG. XX.—A SPRAYER AT WORK.