

FARM AND ORCHARD

Notes and Instructions from Agricultural Colleges and Experiment Stations of Oregon and Washington, Specially Suitable to Pacific Coast Conditions

APPLE SCAB AND CODLING MOTH.

By Professors H. S. Jackson and H. F. Wilson of the Oregon Agricultural College.

The time to spray for the apple scab and codling moth is at hand, and since these pests are, generally speaking, the most important troubles of the apple for which spring and summer spraying is necessary, it was thought advisable to issue at this time this bulletin of information regarding their life history and methods of control. The spray for these troubles may be applied in part at the same time, hence for convenience of the growers are treated together.

The proper time for treatment of fungus diseases or insect ravages is always determined by the life history of the organism causing the trouble, hence the life history of each will first be given, followed by the combined method of treatment.

Life History of Apple Scab.

Apple scab is caused by a fungus which attacks both foliage and fruit. On the foliage the spots are at first more or less circular in outline, olive green or brown in color, becoming darker and irregular in shape as they mature. The leaves are frequently more or less curled or wrinkled. When the spots are abundant, the leaves fall prematurely. Considerable defoliation may take place where infestation is abundant.

On the fruit the fungus produces more or less circular spots of the greenish black color. The vegetative stage of the fungus develop under the cuticle of the apple fruit finally rupturing it by the elongation of the threads which bear the spores. The ruptured cuticle may frequently be seen clinging as whitish membranous shreds about the edge of the recently developed spots. As the spots become older all trace of the fungus may be obliterated and only evidence of the former spot is seen in a large or small rough russeted spot. Frequently the fruit is distorted when mature as the result of early scab infections. Where scab spots are abundant the fruit may become cracked. Scab in any degree of severity on the fruit renders it unsightly and unmarketable.

The spores of the fungus are produced in the spots on leaves or fruit in great abundance and are disseminated by the wind, thus spreading the disease to other leaves and fruit, either in the same or other trees. Several generations may thus occur during the season. One finds the scab spots first appearing in the spring on the under side of leaves on the lower branches. Spores produced in these spots serve to spread the disease to young fruit and to other leaves.

The development of the scab fungus is found to be very much influenced by weather condition. Moisture on the surface of leaves and fruit is essential to the germination of the spores and the consequent infection of the plant. On that account scab is found to spread most rapidly in spring, early summer and fall in the Northwest. The disease spreads little, if any, during the dry season. The mycelium of the fungus present on the leaves which fall to the ground in the fall does not die, but develops in these leaves during the winter as a saphrophyte and in the spring produces spores quite different from those borne in the spots on living leaves and fruit, both in the manner of formation and in the shape and size. The spores found in the spots on leaves and fruit are one-celled, rarely two-celled, and are borne on the ends of short threads, while the spores developed on the dead leaves in spring are always distinctly two-celled and are borne in little cylindrical sacs called asci. Eight spores are always developed in each sac. A considerable number of these sacs are borne in hollow more or less pear-shaped receptacles imbedded in the tissues of the leaf. These receptacles containing the asci, known as perithecia, project from the surface of the leaf when mature as little black elevations. These are barely visible to the naked eye. At maturity an opening appears in the projecting elevations. The asci elongate through this opening and the spores are ejected forcibly, and, wafted by currents of air, may be carried to the young leaves of the apple, where they germinate and produce the first scab spots.

This ascus spore stage of the fungus which develops on the fallen leaves is sometimes called the "sexual" or "perfect" stage. The stage which develops on the living leaves and fruit is called the conidial or "summer spore" stage.

The ascus spores are disseminated about the time the blossoms open. So far as is known all primary infection of the leaves and fruit in the spring takes place following the dissemination of the sexual spores.

Life History of Codling Moth.

The codling moth spends the winter in the larval stage within a silken cocoon under the bark or in crevices of the tree, or under rubbish on the ground. With the warm days of spring they undergo a complete change, and transforming to pupae later emerge as adults. In this stage the insect is seldom seen as it remains quiet during the day and flies about at night depositing eggs upon the leaves and fruit in the evening about dusk.

The eggs of the spring generation of moths are deposited during June and July and the first young larvae hatch out about June 20th to July 1st. As soon as the larvae hatch out they seek an entrance into the fruit, and in the case of the first generation, mostly enter through the calyx end.

They feed and develop for about sixteen to twenty days, until mature, and then pass through the same stages as the over-winter larvae, namely: pupae and adult. In the Willamette valley the earliest individuals of this brood of moths begin to appear about the last of July and deposit their eggs upon the fruit and leaves. The egg deposition continues until late in the fall. The eggs begin hatching about August 1st, and the larvae enter the fruit from the sides. These are the over-wintering forms, and when full grown they leave the fruit, and seeking protected places near by, spin winter cocoons.

The reason for the lack of fertility of pine land soils is not due to the pitch which such land contains, but to an absence of a supply of available nitrogen. The foliage from evergreen trees adds very little to the supply of nitrogen in the soil, while the trees themselves constantly take it from the soil. In soils which have been burned over, the heat burns out a good deal of nitrogen in the upper layers of soil. The ashes are not injurious, but are highly beneficial to the soil.

The real difficulty is that the growing of pine and fir trees on soil poor in nitrogen takes away so large a proportion of the available nitrogen that when the soil is first brought under cultivation it will rarely produce satisfactory crops. After two or three years of cultivation the soil gets into better condition and the nitrogen becomes more available and better crops are obtained. The only remedy for this condition is thorough cultivation supplemented by the use of some fertilizer to put available nitrogen in the soil to start with. For this purpose, barnyard manure is best. Clover would be still better, but clover itself will rarely grow on this soil without artificial fertilizer to start with. The best commercial fertilizer to use on this kind of soil is dried blood, applied either in the fall or early spring. If field peas would grow at all on this soil, they would make a most excellent fertilizer if seeded early in the spring, plowing them under as soon as they have attained their maximum growth.

Repeated attempts have been made to use potassium cyanide as a squirrel poison. The difficulty is to get the odor of the cyanide disguised so that the squirrels will eat anything that has been treated with the chemical. All attempts which I am familiar with have failed. The use of cyanide in the holes late in the season might be effective if some means could be devised for generating the hydrocyanic gas from it. This will require the presence of some acid in the hole to come in contact with the potassium cyanide, or otherwise the poisonous gas will not be given off. The chief difficulty with all these gas poisons is that the holes are so long and crooked that there is difficulty in getting the gas to penetrate far enough to reach the animal before it is absorbed by the soil.

Wherever sagebrush and cactus flourish, there agricultural crops will also grow. If the prevailing vegetation is greasewood or salt grass, the amounts of alkali are sufficient enough to injure most agricultural crops. If the alkali is excessive, however, no vegetation of any kind will grow on the land.

Another indication of alkali is the presence on the surface of the ground of a white crust in the latter part of August. Alkali is simply an injurious excess of soluble salts, and at this season they are brought to the surface by excess of evaporation, and will always appear on the surface in the early fall. White alkali includes any of the soluble salts. "Black alkali," as it is called, is sodium carbonate, and causes the vegetation on the surface of the ground to turn black because of its corrosive effect on vegetation.

When summer comes an array of jars and glasses and a big kettle join hands with bat boxes and shoe bags and travel countryward. A temporary stove is built of stones not far from the house, and here simmers slowly the year's provision of preserves and jams and jellies, absorbing at the same time great doses of sun and fresh air.

Supplementary Methods of Controlling Apple Scab. Since the fungus causing apple scab winters over in the decaying leaves on the ground, it is advisable to destroy

Her Period of 4-10-1910. It is said to be customary in Bulgaria for a newly married woman to exchange no conversation with any outsider during the first month following the wedding. She is permitted to open her mouth only for the necessary purpose of eating and drinking and is allowed to reply to her husband when the latter chooses to address her. To this custom is attributed the fact that the honeymoon in Bulgaria lasts an entire month.

Treasured Trees. Two trees to be seen in the main street of Thorshavn, the capital of the Faroe Islands, have an interesting history. Trees resolutely refuse to grow in these islands, except in some few sheltered spots, and the inhabitants therefore prize them greatly. When the road was made it was decided to leave the trees in the middle of the carriage way rather than be guilty of the crime of felling them.

the leaves by burning or early plowing before the time for the first spraying.

The usual application of bordeaux for apple tree anthracnose just after the fruit is picked may have a beneficial effect in reducing the late spread of the disease on the foliage and hence a reduction of the "sexual" spore stage in the spring.

Codling Moth.

Much good can be done by scraping the rough bark from the trees in the winter, and by the practice of clean culture; especially is this true of old neglected orchards.

Be careful not to carry infested fruits into the store house in the fall, as the larvae find many excellent places therein to spend the winter.

EXPERIMENT STATION NOTES

By R. W. Thatcher, Director, Washington Experiment Station.

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SOME COOKERY FRILLS

POTATO SOUP IS IMPROVED BY A DASH OF VINEGAR.

Individual Pate is Out of Date—Delicious Salad of Different Nuts and Fruits and Shredded Celery.

The usual insipidity of potato soup is improved by adding a dash of vinegar just before serving. As all may not like the flavor the crust can be passed.

All fruit salads are improved by marinating in French dressing, though later served with mayonnaise.

Instead of the individual pate, it is more popular now to pass one or two large pates, each guest serving herself. Fill with mushrooms, oysters or creamed sweetbreads.

Biscuits or French rolls for formal use are more diminutive than ever. The former should be the size of a 50-cent piece and a quarter-inch thick. A delicious salad was made from different nuts, white grapes, a little shredded grape fruit, pineapple cut into cubes and shredded celery. Mask in mayonnaise or serve with a cream dressing.

When a boiled egg is the usual breakfast dish, vary it by breaking it raw into the eggcup and cooking in hot water to the desired consistency. The flavor is quite different than when cooked in the shell.

Fingers of bread about four inches long, quarter of an inch wide and the same thickness buttered thickly and browned in a quick oven are delicious to serve with boiled eggs.

Salad is now usually passed in a salad dish, but when served directly on the individual plates an appetizing and artistic effect can be had by making nests of shredded lettuce or endive, in which are eggs made of cream cheese colored with spinach juice and sprinkled thickly with paprika or black pepper. Cover with mayonnaise.

In baking a cake, stint the flour in the batter and you will have a much more tender cake.

Good cranberries cannot be made if the sugar is allowed to boil in with the berries. After the cranberries are soft and strained through a colander add a scant pound of sugar to a quart of berries, bring to a boil and cook four minutes. Put three-quarters of a pint of boiling water on the berries when first cooked.

HOUSEHOLD.

For darning stockings use crochet cotton. It is preferable to darning cotton, as it does not harden when washed.

If your pies overflow in the oven insert a short piece of uncooked macaroni in the top crust. This is better than the paper funnel.

An excellent cleaner for painted surfaces is made as follows: Two quarts of hot water, two tablespoonfuls of turpentine, a pint of skimmed milk and enough soap to make a weak suds.

When steel knives and forks have become tainted with fish they can be rubbed with fresh orange or lemon peel, and the taint will disappear entirely.

When making a mayonnaise in which only the yolks of eggs are used, the economical housekeeper will use the whites for a dessert, such as apple snow, for frosting, or for meringue on a pie.

For Silk Cushions.

If you have silk-covered cushions in your house, you must have noticed how often the feathers or down comes through, giving the pillow a fuzzy, unsightly appearance. This could have been avoided, and can be the next time, by ironing the inside of the silk with an iron that has been rubbed with shoemaker's wax.

This ironing, done before the pillow is made up, will act as a sort of thin varnish on the silk, and will prevent the feathers from working through.

Coffee Cream Cake.

One and one-half cups sugar, two of flour, two eggs, 2½ teaspoonfuls baking powder, pinch of salt, about three-fourths of a teaspoonful lemon, one-fourth cup butter, one tablespoonful cocoaanut. Melt butter, break in eggs without beating, pour in one-third cup of milk half cup cold coffee; make in three layers.

Cream for filling—One pint milk in double boiler, one-half cup of flour, two eggs beaten, salt, essence, one cup sugar; boil ingredients.

Orange Baskets.

Cut as many oranges as will be required, leaving half the peel whole for the basket and a strip half an inch wide for the handles. Remove pulp and juice; use juice for making orange jelly. Place baskets in a pan of broken ice to keep upright. Fill with orange jelly. When ready to serve put a spoonful of whipped cream over the jelly in each basket. Serve in a bed of green leaves.

If by chance paint spots stick to window panes, do not use a knife to loosen them. A cloth wet in hot vinegar will clean them perfectly.

A white porcelain bathtub that has grown brown may be most perfectly cleaned by the use of spirits of turpentine applied with a flannel cloth.

Sausage Roll.

Make a rich biscuit dough, roll out, put in each a fried sausage and pinch over like a turnover. Bake until brown.

WIT and HUMOR



ONE WAY OF GETTING EVEN

Policeman is Willing to Allow Dentist Torture Patient After Latter Tells His Story.

"Here," said the policeman after he had hurriedly entered the dentist's reception room, "what's goin' on? You've had a man in there hollerin' bloody murder for nearly half an hour. Why don't you give him something to stop his pain?"

"Give him something to stop his pain? My dear sir, you don't understand. I had occasion to take a lady to lunch one day last week—oh, it was a business matter, nothing more—and this chap saw me. Well, the next day he happened to meet my wife, whom he knew before she was married, and he mentioned that he had seen me and wanted to know what the other lady's name was. Of course, I—"

"Oh, never mind. Go ahead and kill him."

Too Much of a Risk.

The beautiful girl had fallen into the lake, and much to the displeasure of the moving picture man, the tried and tested hero refused to go to her aid.

"What's the trouble with you?" demanded the moving picture man angrily. "Why didn't you jump in and rescue the maid?"

"Skeered I might get drowned," responded the hero nonchalantly.

"But you are wearing your new hero medal?"

"That's just the trouble. The blamed medal weighs so much I'm skeered I'd sink."

May Be for Effect.

"I never before saw a man so enthusiastic about the future of his town."

"He does indeed seem to be very enthusiastic about the future of his town, but I have often wondered if he really feels that way or is merely playing a part."

"Why do you question his sincerity?"

"I happen to know that most of his money is invested in 'town lots he would like to sell."

Overdone.

"The doctors are urging all kinds of sanitary measures and precautions upon the public."

"Yes, if all the recommendations and warnings were followed, a man's home would look like a hospital."

A MARINE JOKE!



Midshipman Easy—I wonder what people will say when they hear I am going to marry old Widow Billyluna?

Lieut. Blunt—They'll probably say you're a mariner for money.

His Finish.

"I was surprised to see old Titewad's death notice in your paper this morning."

"You must be mistaken. The only notice concerning Titewad was the account of how he lost a thousand dollars in speculation."

"Well, he didn't live after that, did he?"

The Usual.

City Editor—Anything new about that accused deaf mute?

Reporter—He got his hearing today.

City Editor—What happened?

Reporter—He'd nothing to say.—Puck.

Discovered.

"Why do you think Myrtle is in love?" asked the girl's father.

"I noticed this morning when I was in the library that a book of poems by Owen Meredith had been tampered with."

Practical.

He—If I should kiss you, I suppose you'd go and tell your mother.

She—No, my lawyer.—Boston Transcript.

A New Jiriksha. A one-wheeled Jiriksha, on the monocycle principle, is being introduced among the Chinese of the Malay states. It is said to be safe, and to have many advantages over the old-fashioned vehicle. The wear and tear is reduced to a minimum, the work on the pulleys reduced and speed increased.

America's Sweet Tooth. If America's annual candy supply were loaded on one train there would be over eight thousand trucks full of boxes, buckets and glass jars. This load of sweetmeats for the sweet tooth of the American girls costs the consumers about \$125,000,000 every year.

YES! IT'S TRUE

that the famous

HOSTETTER'S STOMACH BITTERS

is the best medicine and tonic you can take when the system is run down—when the stomach is weak—when the liver and bowels are inactive—when a real health-maker is needed.

Try a bottle today. It always gives satisfaction.

Oil for Leather. Leather furniture, especially when placed near the register, is liable to dry and crack. An excellent method of keeping it from looking old and showing cracks is to go over the leather with a soft rag dipped in olive oil and then going over the whole surface again with a dry rag. It is not necessary to go over the leather more than once in three or four months, just enough to keep it soft.

SOUR STOMACH

"I used Cascarets and feel like a new man. I have been a sufferer from dyspepsia and sour stomach for the last two years. I have been taking medicine and other drugs, but could find no relief only for a short time. I will recommend Cascarets to my friends as the only thing for indigestion and sour stomach and to keep the bowels in good condition. They are very nice to eat."

Pleasant, Palatable, Potent, Taste Good, Do Good, Never Sicken, Weaken or Grip. No. 25c, 50c. Never sold in bulk. The genuine tablet stamped C.C.C. Guaranteed to cure or your money back.

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4. A "Rural School Course" while not leading to a certificate without examination, will materially aid in passing state examination.
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J. H. ACKERMAN, Monmouth, Oregon.

Cause of Faintness. Fainting is a loss of consciousness due to the diminution of blood supply to the brain. It occurs most frequently in weak, sensitive women, but may occur also to men as well. It usually occurs in crowds or in crowded halls, theaters and churches where the atmosphere is close and the air foul.

Non-alcoholic Sarsaparilla

If you think you need a tonic, ask your doctor. If you think you need something for your blood, ask your doctor. If you think you would like to try Ayer's non-alcoholic Sarsaparilla, ask your doctor. Consult him often. Keep in close touch with him.

We publish our formulas. We banish alcohol from our medicines. We urge you to consult your doctor.

Ayer's

Ask your doctor to name some of the results of constipation. His long list will begin with sick-headache, biliousness, dyspepsia, thin blood, bad skin. Then ask him if he would recommend your using Ayer's Pills.

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