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Everyone asks this question many times daily. Our lives are regulated by our watches. You are beginning a New Year. Begin right by having your watch thoroughly cleaned and adjusted.

W. F. Laraway, Jeweler and Optician EXPERT SWISS WATCH REPAIRING

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When you own your own home you know you have a refuge at all times. You take a pride in beautifying YOUR dwelling. Your children instinctively turn toward HOME against outside attractions.

Your merchant looks on you with favor, because he knows that a HOME-OWNER is permanent; that he will strive to keep his bills paid and his credit good; that his example will induce others to do likewise, thereby insuring greater communal permanence and stability.

Should reasons of business or health necessitate a change of location, you have a bankable resource to secure needed funds, which rent receipts, no matter how numerous, can never afford.

In your OWN HOME you can live as you want to live without interference from anyone, and without considering the whims of an owner who might have very different ideas from your own.

You are your own master--you are free to do as you will--and this very independence of material conditions gives you an independence of thought that make you a better father or mother, and a better citizen.

Two hundred designs of modern, convenient, modern priced Beautiful Homes ready for your inspection, together with information on HOME BUILDING.

This means no obligation on your part. We sell Rock Springs lump coal.

"See J. S. Anderson about it"

Tum-A-Lum Lumber Company

Happy New Year

For your loyal support in the past we thank you, and solicit your patronage in the future. We wish each and every one of you a Happy New Year abounding in prosperity and achievement.

Sincerely yours,

Pacific Power & Light Co.

"ALWAYS AT YOUR SERVICE"

Advertisement for 'The People People Meet' featuring winter tours of California. Includes an illustration of a group of people and text describing the tours.

NOTES ON CONTROL OF LEAF-ROLLER

(By LeRoy Childs)

In the face of the already valuable information that is available on the life history and the control of the leaf-roller, this paper and the work that it represents might appear to some as superfluous. In doing the literature, however, I find little or no published experimental work dealing with the control of this serious and numerically increasing apple pest on the Pacific coast. A still more important point which made experimentation, at least with oils, imperative, was to determine if possible what influence spring application of oils have on the adhesive properties of fall applications of Bordeaux mixture.

The fourth spray of the season or the second cooling spray was applied May 29. This consisted of arsenate of lead, three pounds to 50 gallons of water plus the lime-sulphur 1 to 30. Fruit only received attention at this time, all of which were thoroughly covered. In early June a great deal of fruit injury was noted taking place and in many places the foliage was being eaten largely consumed. The worms in folding and rolling the leaves often incorporate many of these little apples, and those so surrounded with foliage are invariably ruined. This feeding on the leaves has been very extensive, devitalizing the apples to such an extent that they stop growing and drop. On account of this existing condition, it was thought best to check up the experiments as soon as the feeding period of the insects was over rather than waiting until harvest time. In so doing, thinning of the fruit was permitted on the plats where it was found to be necessary.

At no time in Hood River has the infestation occurred to such an extent as to cause noticeable defoliation; occasionally the tender foliage of growing terminals is severely injured, but in no place has there occurred the complete defoliation that has been reported in different sections of the country. The injury to the fruit, however, in several orchards where extensive countings were made produced surprising information. The losses incurred by the feeding of the leaf-roller approached 40 per cent of the entire crop. It was found that the injury was even more severe on trees in light bearing, where the percentage of injury amounted to more than 50 per cent. This loss, together with the other losses, was estimated to be in the form of scab, codling moth, bruises, etc., make it imperative that some means of be employed in reducing this waste.

In order to determine the most advantageous method that could be employed under Hood River conditions, a series of experiments embracing lead arsenate in various strengths, crude oil emulsion, kerosene emulsion, distillate emulsion and a miscible oil were used during the past spring. Owing to the fact that it is necessary to make four or five spring and early summer applications of fungicide for apple scab control in Hood River lead arsenate, if efficient, seemed to offer the least expensive plan (at least from the standpoint of labor) in bringing about leaf-roller control for this material is usable in combination. Six different plans of procedure were outlined. Lime sulphur was the material employed throughout the season. Spraying in the spring began in what is termed at Hood River the delayed dormant spray, or an application applied at a time when the more advanced foliage has reached the size of squirrel ears. At this season it was very difficult to find any hatched leaf-roller eggs.

The orchard in which the experiments were conducted was planted to Spitzenberg apples which are now about 12 years old. Two rows across the orchard were used in each experiment. Between each was left one as a check. The degree of infestation, based on the presence of eggs, was indicated that it was at least typical of the conditions as existing in the valley. A power sprayer fitted out with a "New Way" engine and two leads of hose was employed throughout the season in applying the material. The material was applied with a medium sized hole in the disc were used.

Two essentials were considered in the scheme of the arsenate experiments: First, to determine, if possible, the least amount of poison that must be used in bringing about control, and second, to determine if possible the insect's most susceptible period to poison.

With these thoughts in mind, six experiments were outlined. The delayed dormant spray lime-sulphur was applied at the rate of 1 to 18 throughout. A fungicide was added in experiment 1 and 3, arsenate of lead (paste in all cases) at the rate of two pounds to each 50 gallons; in experiments 2 and 4, four pounds to each 50 gallons and in experiments 5 and 6, six pounds to each 50 gallons of water. A large number of egg masses were examined at this time; the eggs were found to be hatching, the embryonic development was far advanced. The date of this application was April 3.

A second or "pink application" (i. e., at the time the flower clusters were beginning to show pink) was made in April 14. The fungicide employed was as in the first, lime-sulphur, used however in a more dilute ratio 1 to 27. The arsenate of lead was omitted in experiments 4, 5 and 6. The poison applied at this time in experiments 1, 2 and 3 was in the same strengths as used in the delayed dormant spray, two four and six pounds respectively. To determine the condition of the eggs a large series of egg masses were examined and it was found that hatching was actively taking place, 58 per cent of the worms having emerged. On the 20th of April, or four days later, no unhatched eggs could be found. At this time a large portion of the foliage was still well covered with the poison. From these observations it is clear that material placed upon the trees during the time that the blossom buds are showing is most advantageous with reference to the emergence of the worms.

Unfortunately, a series was not run in which a "pink" spray only was used; a series of this sort would undoubtedly show more clearly the relative values of this application than can be shown with the data at hand. At the time of the early application, May 1, a large majority of the worms were found beneath the folded, web-

covered leaves and so located that their food was protected for the most part from materials that could be applied in the form of spray. In view of this fact, a cooling moth spray of three pounds to 50 gallons only was added to the lime-sulphur 1 to 30 in all of the experiments. For fear of codling moth infestation, the check rows were sprayed at this time also. The data gathered from the counts made on the check rows, consequently, hardly give accurate information relative to the losses that might occur should all spraying be omitted. In looking over the experiments after the early spray, many ailing worms were found and others that were dead, all of which seems to indicate that, where available, this strength is sufficient to destroy the worms.

The fourth spray of the season or the second cooling spray was applied May 29. This consisted of arsenate of lead, three pounds to 50 gallons of water plus the lime-sulphur 1 to 30. Fruit only received attention at this time, all of which were thoroughly covered. In early June a great deal of fruit injury was noted taking place and in many places the foliage was being eaten largely consumed. The worms in folding and rolling the leaves often incorporate many of these little apples, and those so surrounded with foliage are invariably ruined. This feeding on the leaves has been very extensive, devitalizing the apples to such an extent that they stop growing and drop. On account of this existing condition, it was thought best to check up the experiments as soon as the feeding period of the insects was over rather than waiting until harvest time. In so doing, thinning of the fruit was permitted on the plats where it was found to be necessary.

At no time in Hood River has the infestation occurred to such an extent as to cause noticeable defoliation; occasionally the tender foliage of growing terminals is severely injured, but in no place has there occurred the complete defoliation that has been reported in different sections of the country. The injury to the fruit, however, in several orchards where extensive countings were made produced surprising information. The losses incurred by the feeding of the leaf-roller approached 40 per cent of the entire crop. It was found that the injury was even more severe on trees in light bearing, where the percentage of injury amounted to more than 50 per cent. This loss, together with the other losses, was estimated to be in the form of scab, codling moth, bruises, etc., make it imperative that some means of be employed in reducing this waste.

In order to determine the most advantageous method that could be employed under Hood River conditions, a series of experiments embracing lead arsenate in various strengths, crude oil emulsion, kerosene emulsion, distillate emulsion and a miscible oil were used during the past spring. Owing to the fact that it is necessary to make four or five spring and early summer applications of fungicide for apple scab control in Hood River lead arsenate, if efficient, seemed to offer the least expensive plan (at least from the standpoint of labor) in bringing about leaf-roller control for this material is usable in combination. Six different plans of procedure were outlined. Lime sulphur was the material employed throughout the season. Spraying in the spring began in what is termed at Hood River the delayed dormant spray, or an application applied at a time when the more advanced foliage has reached the size of squirrel ears. At this season it was very difficult to find any hatched leaf-roller eggs.

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Wishing You All A Happy and Prosperous New Year. Nichol & Company

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