

Efficacy of Plant Quarantines

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Friends: I wish to tell you about some varieties of pests about which you have not heard. The Bureau of Plant Quarantine is busy night and day repelling insect invaders. Our men are located at the state boundaries, principally, because our organization is not large enough to attend to all the details of quarantine involved in interior areas. Besides we, fortunately, have the cooperation and help of each County Agricultural Commissioner together with his competent corps of deputies who take care of shipments of an agricultural nature which arrive by certain common carrier means of transportation at interior points.

Quarantine inspection, as a rule, causes some inconvenience because it retards to some extent the normal movement of commerce. To the end that as little inconvenience as possible be occasioned to the movement of people or the transport of goods, a continual study is made by our personnel of ways and means of reducing friction and expediting traffic while at the same time maintaining efficiency of inspection. The work consists of actual detailed inspection of shipments, passengers' baggage, automobiles, and cargoes of all nature. We have found it desirable to furnish transportation companies previously with all changes in rules and regulations which become necessary from time to time. We do not allow them to meet with changed routine abruptly. This policy reduces criticism and secures more cooperation from the transportation trade as they come to realize that we are striving to cause them as little inconvenience as possible.

Pests are spread by both natural and artificial means. California enjoys a degree of immunity from natural spread on account of being bordered by natural barriers such as mountain ranges, desert areas, and large bodies of water. This applies to both insect pests and plant diseases. We must have a fair knowledge of all possible means of entrance of insect pests. It is necessary to study this continually. Years ago, when quarantine first became a matter of importance, steamships with their cargoes and passengers were about the only avenue of invasion from foreign countries, and even that was not as serious as now. Fifteen or twenty years ago it required from thirty days to six weeks for shipments to arrive here from Africa, about the same time from Australia, and ten days to two weeks from Hawaii. These countries are known to harbor the Mediterranean fruit-fly which is the worst pest in agriculture today. At present you can arrive from Australia in less than three weeks, and from Hawaii in four days! Now, fruits are kept in improved refrigeration and ice boxes, and arrive in very good condition. As a matter of fact host material can be carried under refrigeration and still have healthy fruit-fly larvae in it. We feel that our department is efficient because since quarantine action has been in effect in California, we have never had the presence of a major pest within our borders. You frequently read comments to the effect that Southern California

would be abandoned in case of attack by a military enemy because we are so vulnerable. I can cite numerous instances in which fruit-fly larvae or host material has been taken at San Pedro about twenty miles from Los Angeles, yet the pest has not become established.

There are several other species of fruit-flies which are continually arriving. The Japanese beetle, a pest from the orient, when introduced into the Eastern States on a small shipment of iris soon developed into one of the most serious pests of American agriculture. It attacks 212 hosts, and while not yet found on avocados because not established in avocado growing areas, there is no reason to doubt that, if established, it would become a serious pest to this industry. I have seen pictures of the destruction wrought by Japanese beetle where only the skeleton of the leaves was left, and the fruit completely consumed, leaving nothing but the bare seeds attached to the stems.

There are numerous other serious insect pests attacking avocados with which we come in potential contact every day, inspecting host material which is the equivalent. Many scales, mealy-bugs, and weevils exist in Central America, South America, Mexico, Africa, and Hawaii. In fact, all of the major countries with which we have commerce. The avocado weevil is of such consequence in Central America that the U. S. Department of Agriculture saw fit to issue a quarantine against a single insect in order to protect a single crop. That is significant.

Most quarantines take into account large groups of host materials, but in this case the avocado industry is singular in having that type of protection. We frequently take this insect in avocados carried in ships' stores, or the like, and being offered for entry in various ports of the state. Besides inspecting avocados for avocado pests we frequently find mealy-bugs and scales carried on ornamentals, a plant or a bouquet. Our men are required to be interested in inspecting not only avocado fruits, but all other possible means of introduction. A passenger leaving a ship with an innocent looking bouquet is detained till inspection has shown that the flowers do not harbor any potential avocado pests.

Years ago, when the Federal Department of Agriculture permitted the entry of sour limes, no provision was made for disinfection as it was felt that none was necessary. In the course of our inspections we found a total of nineteen different kinds of scale insects on limes. At first fumigation was required, which caused considerable burning and damage to the appearance of the fruit. We then worked out a method of dipping in oil which has been 100% effective and actually improved the appearance of the fruit. I have been informed by some growers that now they never ship even locally grown limes without dipping as it improves the appearance and keeping qualities of the fruit. In this instance our regulations have resulted in an improvement of product rather than a hindrance to commerce.

The introduction of a major pest into this state would cost the industry considerably more than has been spent to date on all quarantine action. You are all familiar with the details of Florida's experience in getting rid of the Mediterranean fruit-fly. You are more or less familiar with the turmoil attending the eradication of the foot-and-mouth disease of cattle, three epidemics of which have occurred in California, and you can imagine the chaos and difficulty that would arise should the avocado weevil get in.

To show you some of the work which we are accomplishing, I have to present a few figures. During 1933, eight thousand ships were examined in our maritime ports. Luggage of over 55,000 passengers was examined. Shipments of plants and plant products totaling 76,000 and comprising almost 12 million parcels were inspected for dangerous pests. Out of this 7,500 were found to be contraband material and could not be admitted. One out of every ten shipments was found to be of a dangerous nature.

At the same time our border inland stations encountered over a half million automobiles coming in from other states in which were found 17,000 lots of contraband material. That means that cut of every thirty cars which came across our borders, one carried dangerous host material of one kind or another. The total number of cars carrying dangerous insects amounted to nearly four thousand; or ten automobiles coming into California for every day of the year 1933. Some of these were European corn borer, cherry fruit-fly, pink boll-worm, alfalfa weevil, and a number of others. One interesting instance occurred when citrus white-fly was found on gardenia cuttings from Colorado. Colorado is not listed as a white-fly infested area, but on further inquiry it was established that this shipment originally originated in a white-fly area in Texas and came by way of Colorado. This illustrates the Importance of always being on the job. Pink boll-worm was found in the pillow of a passenger from India. Who would think that the stuffing of a pillow carried by a passenger would harbor live boll-worms?



Left: Inspectors at port examining vegetables from China. Right: State quarantine station at Blythe, Calif., where baggage on westbound automobiles, and contents of trucks is inspected.

In two cases we have come near to introductions of animals which are considered serious pests and which are prohibited entry to this country. They are the mongoose, a serious pest of poultry; and the flying fox which is very injurious to fruits. A captain arrived with two mongooses in his possession. When the inspector told him that they would either have to be killed or returned immediately to the country of origin he was quite exercised over the fact, saying, "why they are valuable, I have an order to sell

them to an Eastern Zoo." He was very anxious to keep the animals, so in the controversy they got hold of me concerning quarantine, and I had them promptly locked up on board ship. In the meantime the medical corps of the public health went down to fumigate the ship and because of our refusing to allow the animals to land, they were given the works. Now the Los Angeles Museum has one and Mr. Ryan, the Agricultural Commissioner, has the other one in his office.

A similar situation arose when a large bird fancier brought in three flying foxes. They are huge bats with a wing spread of five feet—rather interesting and unusual. In their native countries they do great damage, being feeders on fruit I they fly from tree to tree not only knocking off much fruit with the weight of their clumsy movements, but sticking their short snouts into a number of fruits to see which are best ready for eating, thus destroying a great quantity. For this reason they are prohibited entry into this country. It was necessary to kill the animals. The collector was very sorry—there were no specimens in the country, etc.—but he, having lived here was easier to approach. Knowing that the Los Angeles museum desired to have the bodies unharmed, we ordered them killed with gas. They were given the cyanide treatment under canvas just as a Japanese ship was sailing. The Japanese and many passengers were very curious as to what was going on and crowded very closely around. Some of the gas leaked through the tent and caused quite a commotion both among our men and the many bystanders. So you see we sometimes have our moments.

A very serious disease of oranges and other citrus fruits is known as citrus canker. We have intercepted several shipments of citrus coming in from the orient with this disease. One instance is of considerable interest. A Chinese importer in Mexicali imported some rice and certain permissible vegetables (at least they were manifested as such). While we have access to dock records of cargoes so we can tell what is agricultural and what is not, we never stop there but continually go through crates, boxes of cargo, merely to satisfy our own hunches or to have a positive check on what is being passed over the docks. This material was of an innocent character, but the inspector found a considerable amount of Chinese grapefruit infested with citrus canker. This shipment, while it was going to Mexicali, would certainly go into an area very close to our large grapefruit growing district in Imperial Valley. It is in these unusual instances that we find a most serious potential menace. We cannot rely on any routine alone to insure protection. It is where you least expect something to crop up that everything seems to break loose.

As avocado growers, you people don't want any additional pests in this country. You probably have enough troubles of that kind already. Remember that you have a corps of men all around this state repelling invading pests. This work goes on 24 hours a day as our men are subject to duty Christmas, holidays, night and day, and at all times, not only at San Pedro and the other maritime ports, but all of the inland gateways where automobile traffic arrives. So when you are out at night irrigating, thinking, perhaps, that you are the only unlucky goat, remember the ports where many men are always on duty in your protection. California's agricultural income is more than half a billion dollars yearly. We grow about one-third of the nation's fruit and vegetables. We ship nearly 300,000 cars of produce annually. To protect this business your Bureau of Plant Quarantine sees to it that pests are repelled at the borders.