

NOTES FROM THE BIOLOGICAL DEPARTMENT, ONTARIO AGRICULTURAL COLLEGE.

1. *More about the Home of the San José Scale.*

IT is interesting to note the efforts which have been made, and are being made to determine the original home of the San José Scale. Ever since its dread presence in the eastern portion of this continent was detected in 1893, entomologists and practical fruit-growers have been anxious to secure a natural remedy—one which would keep the Scale in check, as the imported lady-bird from Australia now keeps the Cottony-Cushion Scale in subjection in California. Any doubt as to the realization of such a wish should not prevent a search for the native home of the Scale, for it would appear that there the pest is kept under control by some agency. To determine this controlling factor and to introduce the factor into this country is thus the object of the laudable efforts to locate the home of the San José Scale.

For many years after the California orchards were first attacked, it was supposed that the Scale had been introduced from Chili, for it was discovered in that country in 1872; but later investigations in Chili showed pretty conclusively that the Scale was not a native, but an introduced insect. So this theory was in time abandoned.

Next, Prof. J. B. Smith suggested, in 1895, that the native home of the San José Scale was probably in one of the Northern Pacific States. This theory was, however, never very seriously entertained by many of our best entomologists, and was also soon abandoned.

Japan was next pronounced the home of the Scale, and many evidences seemed to point to its introduction from that country :

1. The agents of the quarantine station in California found Scale on nursery stock imported directly from Japan ; 2. Mr. Kuwana, a Japanese student at Stanford University, California, found the Scale so widely spread throughout the Japanese Empire that he came to the conclusion that his native land was also the native land of the San José Scale. He announced, moreover, that the Scale was there kept in check by certain parasites and lady-birds.

Following immediately in Mr. Kuwana's important announcement, Dr. Howard, chief Entomologist at Washington, sent Mr. Marlatt early last summer to Japan to investigate the conditions there, and if possible, to bring back to America some of the parasites and predaceous insects which were instrumental in keeping the Scale in check.

At a recent meeting of the Biological Society at Washington, Dr. Howard stated that he had just received a letter from Mr. Marlatt announcing that the original home of the San José Scale was not in Japan, but in that region of China immediately south of the Great Wall, and that a consignment of living lady-bird beetles which were found preying on the Scale in China, was on its way to America.

I am sure it is the ardent wish of every fruit-grower that these lady-bird beetles may arrive in a healthy condition, and begin work immediately on Scale-infested orchards.

2. *The Haseltine Moth-Catcher.*

This moth-catcher has been widely advertised as a codling-moth destroyer. To test the merits of the moth-catcher, I had two of them placed in the College garden among apple trees. They were kept burning every night, with but a few exceptions, from June