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(Continued)

Afternoon Session, Saturday, December 31, 1921, 1.30 p.m.

PRESIDENT GEORGE A. DEAN: The first paper on the program is entitled "The Argentine Ant in Mississippi," by R. W. Harned and M. R. Smith.

ARGENTINE ANT CONTROL CAMPAIGNS IN MISSISSIPPI

By R. W. HARNED and M. R. SMITH

Fourteen years ago at the Chicago Meeting of the American Association of Economic Entomologists, Wilmon Newell, then of Louisiana, began a paper on the Argentine ant with the following remarks:

"It is not often that the economic entomologist is privileged to behold the coming of a new and dangerous pest, to see its numbers rapidly increasing for several years before it attracts more than casual attention from the 'layman,' and yet be practically powerless to avert the threatened catastrophe.

An insect problem practically unheard of by the majority of the members of this Association, is now presenting itself in the State of Louisiana, and will shortly present itself to most if not all of the southern portion of this country. It is, withal, a problem which in the writer's humble opinion will rank in magnitude alongside the problems presented by the San Jose scale, gypsy moth and boll weevil, but in marked contrast to these it is not likely to admit of remedial measures being as easily applied.

In his brief experience as an entomologist, the writer has not encountered or heard of any species which exercises its destructive abilities in so many different directions. As a household pest I venture the opinion that this ant has no equal in the United States. It is both a direct and indirect enemy of horticulture; direct by actual destruction of buds, blooms and fruit, and indirect by its fostering care of various scale insects and plant lice. In the latter role it becomes also an enemy of importance to shade and ornamental trees and plants. By its association with *Pseudococcus calceolariae* (Mask.) it may wipe out, or at least make unprofitable, the production of cane sugar in the South. By its successful antagonism of beneficial forms it becomes doubly injurious."

Although these statements were made fourteen years ago and this pest has been under observation in Mississippi during the years since then, the writers do not feel that they can improve on Newell's description of the injurious nature of this insect. As a prophet, however, he was not quite so accurate in predicting that the Argentine ant would not be likely to admit of remedial measures being as easily applied as for the San Jose scale, gypsy moth and boll weevil. In our opinion the remedy¹ that has been developed for the control of the Argentine ant compares favorably with the remedial measures that have been discovered for any of the insects with which it was compared.

The first Argentine ants were probably brought into Mississippi from Louisiana over 20 years ago. Twelve years ago there were about a dozen towns in the state that were known to be infested. The number of infestations has gradually increased from year to year until at the present time there are over forty different towns that are known to be infested. There are probably more that have not been recorded, as complaints seldom reach us until the ants have been present for several years and have become firmly established. All the entomological workers in the state have during the past year been on the lookout for new infestations. The nursery inspectors always look for the Argentine ant when inspecting nurseries, but so far this pest has not been found in any nursery in the State. Of its own accord the ant spreads in all directions only a comparatively short distance—not more than a few hundred yards each year. It makes "commercial jumps." This accounts for its appearance in practically all of the larger towns in the state, and investigations indicate that the ant generally first becomes established in a town near the freight depot or in the wholesale district.

During the past two years the Plant Board in Mississippi has been putting on Argentine ant control campaigns in cooperation with the various towns. Usually we receive complaints in regard to this pest from a few individuals and organizations. The people in the infested areas want help. We notify them that upon request of the Mayor we will send a man or two to make the preliminary survey at no cost to the town. Of course, a prompt and cordial invitation is usually received from the Mayor. We do not want to appear to be forcing ourselves upon any community. If any disgruntled citizen does not like it because we are looking for ants on his trees and fences, we can simply explain that we are there at the request or invitation of the Mayor of the city. In making the preliminary survey we map the limits of the infestation,

¹The remedy is discussed in Farmers' Bulletin No. 1101 entitled "The Argentine Ant as a Household Pest," by E. R. Barber.

then estimate the number of cans of poisoned syrup necessary for each block. This is usually between 150 and 200 cans, depending upon the size of the block, the number of trees, and the degree of infestation.

After the preliminary survey has been made we furnish the city authorities with a detailed estimate of the cost of the Argentine ant campaign. Experience has shown that one of these campaigns will cost about \$75 for each thousand cans of syrup that are used—this includes cost of cans, syrup, sponges, freight, express, drayage, labor, lumber, and nails.

The Plant Board furnishes men to supervise and to do a large part of the actual work. The city pays for everything except the salaries and expenses of the Plant Board men. Two working together as a field party are expected to put out from 600 to 700 cans in an eight hour day. One man in a Ford car can ordinarily keep 5 field parties supplied with cans of poisoned syrup. To do this, at least two fast workers are needed at the filling station. They must place the sponges in the cans, crimp the cans on two sides, fill the cans with syrup (usually about $\frac{2}{3}$ full) place the tops on the cans, and place them in baskets. Each basket holds 48 cans. Usually about 6 baskets are carried to the field on each trip by the automobile. The man in the car has a map of the city on which is indicated the estimated number of cans needed for each block. He instructs the field parties as to the number of cans allotted to each block. The field parties work one section of a city at a time in parallel blocks. This saves time and makes it easy for the man in the car to locate the field parties.

Through the courtesy of the U. S. Bureau of Entomology, Mr. E. R. Barber kindly took charge of the first campaigns put on in Mississippi. During the Fall of 1920 (under Mr. Barber's direction) Woodville, Durant, Crystal Springs and Laurel put on successful campaigns against the Argentine Ant. Each of these towns wished to repeat the work during 1921, while Columbus, Aberdeen, Gulfport, and Hazlehurst have also put on campaigns this fall. Many other towns have the subject under consideration. In every case the city authorities and the people generally are delighted with the results. This year Mr. Barber could not assist us directly, but instead of preparing the poisoned syrup at each town, we bought it in large quantities in New Orleans where it had been prepared under Mr. Barber's supervision. This year the city of New Orleans is making a determined fight against this insect and under Mr. Barber's direction is putting out 300,000 cans of poisoned syrup. Reports have reached us that various other towns in Alabama, Louisiana and Texas have been following the same method of fighting the ant.

We feel that the Argentine ant has not received the attention that it deserves. It is a pest of National importance, and should not be considered as a local problem. It is now established in many towns in at least ten states. We hope that it will soon receive attention from the Federal authorities similar to that now being given the European Corn Borer, Green Japanese Beetle, Pink Bollworm and Gipsy Moth, with which it ranks in importance as a pest. It is almost certain that the further spread of this ant could be greatly checked. It could be brought under almost complete control in many of the infested areas at a cost far below what it costs to leave it uncontrolled, and it would pay to completely eradicate it from certain areas. Our experience indicates that this is entirely possible.

MR. E. O. G. KELLY: I would like to ask Mr. Harned what size the can is?

MR. R. W. HARNED: The size of an ordinary tumbler. It can be secured from the American Can Company of New Orleans.

PRESIDENT GEORGE A. DEAN: The next paper is illustrated by moving pictures.

IMPORTANT BIOLOGICAL FACTS ON THE OX-WARBLE CONTROL

By F. C. BISHOP, E. W. LAAKE and R. W. WELLS

(Withdrawn for publication elsewhere)

MR. R. C. TREHERNE: Does that apply for both species?

MR. F. C. BISHOPP: Yes, the film was designed to cover both.

MR. L. CAESAR: Would four treatments be sufficient, do you suppose?

MR. F. C. BISHOPP: I would say that would be ample. We give those at intervals of about thirty days. In that way we catch all of the grubs that come up from the internal anatomy of the animal and develop on the back.

MR. E. G. KELLY: Could you tell us some remedy other than just squeezing the grubs out?

MR. F. C. BISHOPP: There was a part of this film relating to the application of iodoform-vaseline to the grub holes, which was eliminated. We have found that a considerable percentage of the grubs killed by this ointment will emerge from the animal and others will be absorbed, but without harm.

MR. E. G. KELLY: What percentage of the grubs that you squeeze out of the hides mature as adults?