Army Worm Control Through County Organization.*

W. H. Larrimer.

A very general outbreak of the true army worm, *Cirphis Unipuncta*, Haw., occurred throughout the Central United States during the late spring and early summer of 1919. Since the distribution and general facts concerning this outbreak have already been recorded, it is intended to select a typical county where the infestation was most severe and cite it as an example of complete control of this pest through the co-operation of county farm organization.

As a matter of convenience, Henry County, Indiana, will be taken as an example, though any one of a dozen or more equally infested sections might be selected. Here the army worms appeared suddenly, as is their custom, in the timothy, rye, and wheat fields throughout the whole northern portion of the county. Many farmers were immediately in trouble and as is their custom in such a case, they began to make life miserable for the County Agent who, in turn, sent out an S. O. S. to every possible source for information and assistance in combating the pest. In response thereto the writer arrived at Newcastle, the county seat, at 10 a. m., June 18. Very few welcomes can equal that accorded to a Bug Man by a county agent who is besieged by farmers, who in turn, are besieged by army worms.

A very hurried survey of the situation was made. Owing to many of the reports and superstitions regarding the habits of the pest, the whole population, both of county and towns was verging on a panic. The idea prevailed that the worms were traveling south from the north end of the county and were eating every green thing and that nothing could stop them until frost had put an end to their depredations. Many infested fields of grain had been burned on the supposition that this was the only way the worms could be destroyed. Many barrels of gasoline had been wasted in not only useless but destructive fires of this nature. Furrows had been plowed through the center of grain and hay fields as well as around them, for no particular reason other than to stop the supposed general southward march of the worms.

One farmer said that he singled out a worm and followed it while it traveled three miles in one night. A poor woman, with tears running down her cheeks, anxiously inquired if something could not be done to prevent the worms from entering her house and eating up her carpets. The mayor of one town, was reported to have prepared a proclamation, declaring stores and factories closed and requested that the entire population be released to join forces with the farmers in combating the pest.

A short trip through the infested section revealed the fact that there was nothing unusual about this outbreak. The most heavily infested fields were plainly indicated by a group of farmers engaged in

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digging trenches. Several groups of from fifty to one hundred of these men were assembled, and the facts regarding the habits of the pest were imparted and control measures recommended. The most remarkable and outstanding feature of the situation was the near-panic caused by the absolute lack of any reliable knowledge whatever concerning a pest with which practically every entomologist is familiar. After a hurried conference with the county agent, a definite plan of action was formulated. Obviously the first thing to be done was to allay the popular fear due to the exaggeration of the threatened danger, and next, to organize the community for a definite plan of control, based on methods known to be effective. The mayor was advised that his proclamation need not be published. When it came to organization, the county agent was in his element. Through the Secretary of the Farm Bureau, a general call was sent out asking for representatives from every township in the county. The line call was sounded on the country telephones and a whole line was given the information at once. Each township chairman designated the representatives for his township to report at the Court House immediately. As soon as they arrived, a mass meeting of several hundred farmers was held. Any available hall being too small to accommodate half the crowd, the writer stood on a large boulder in the Court House yard and looked down on a most painfully attentive audience. A few brief facts concerning the life history and habits of the pest were given, emphasis being put upon the fact that practically all of the worms would disappear into the ground in less than a week and that an army worm never traveled any great distance as a worm. Assurance was given that the control measures recommended, namely, the combination of dust furrows and poison bran mash, had been frequently demonstrated and found to be thoroughly effective. Instructions for the construction of the dust furrow barriers and the preparation and application of the bran mash were given in detail. The recommended dust furrow barrier is made as follows: Throw a furrow with a plow toward the oncoming worms. Dress up with a shovel the straight side, which is toward the protected crop, so that a small bank of loose soil or dust comes flush with the top of this straight side. At frequent intervals, say 12 to 15 feet, dig shallow post holes in the bottom of the furrows. The worms coming into the furrow, try again and again to climb out over the straight side. They can easily climb the hard straight side until they reach the loose soil or dust which gives way under them and back they fall. After several vain attempts they crawl along the furrows until they drop into the holes where they can be killed by oil, burning, or merely mashed with a suitable chunk of wood. If left to themselves, very few caterpillars either in the furrows or the post holes, survive the hot sunshine of the next day. The standard bran mash was recommended to be applied wherever the worms were present and the crop was such that they were capable of causing further injury.

As to organization, under the leadership of their chairman, the farmers of each township were to work as a unit, concentrating their efforts on the worst infested farms first. In case a township in the more heavily infested portion of the county needed help, the chairman was

to report his needs to the county agent, who could then furnish assistance from a township where the infestation was light. The farmers went to work on this simple plan.

Very few additional furrows needed to be made since by connecting those that had already been made at random and shaping them into an effective barrier was all that was necessary. The crop most seriously endangered was corn and where a portion of the field was infested, it was separated from the uninfested portion by a furrow and the poison mash used in preventing further injury.

A trip through the infested sections about sundown showed groups of farmers busily at work on a definite plan. Confidence in their method of protection had now almost entirely replaced the excitement of the forenoon. Now and then a group could be observed very much interested in watching the worms in vain efforts to cross the dust furrow. They would breathlessly watch a poor worm laboriously climb the straight edge of the furrow and as it reached the loose soil at the top and fell sprawling back again, a whoop of glee would burst forth from the watchers. Late that night many a farmer went home to his first sleep in three days.

The next day each farmer repaired his furrows and eagerly examined the results of poison bran mash put out the night before. Favorable reports came in from everywhere. On one particular farm where the farmer made and applied the mash as directed, absolutely no further injury to his corn occurred, while a small area which his slightly skeptical mind caused him to leave as a check, was totally destroyed.

The county agent now had the situation well in hand and professional assistance was in demand elsewhere. His final report came a week later, and being quite typical, is quoted as follows: "All you said has come true."

U. S. Bureau of Entomology, West Lafayette, Indiana.