

Fighting Insects by Means of Aeroplanes

An Account of the Successful Use of the Flying-Machine in Dusting Tall Trees Infested with Leaf-Eating Caterpillars.

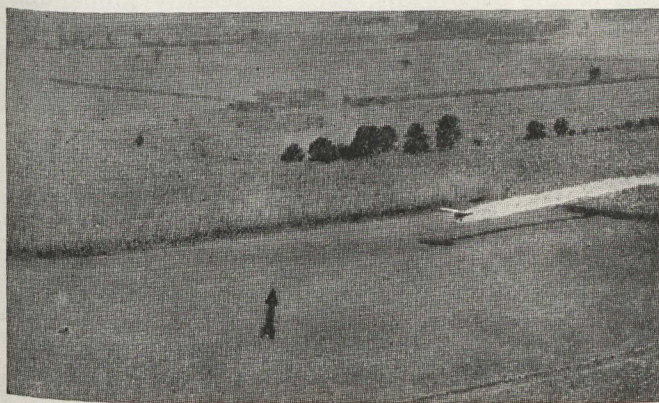
By C. R. NEILLIE AND J. R. HOUSER

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IN THESE very modern times one should be prepared to expect the unusual, but to be told upon inquiry for a man at his office that "He is up in the air; I don't know when he will come down" is so ultra modern that the average person would be taken somewhat aback.

Such, however, was the experience of the writers one day last summer during the course of the work herewith reported. And after a short time, the one for whom inquiry was made did safely "come down." This was Lieutenant J. A. Macready, Acting Chief of the Flying Section of the Government's Aviation Experimental Station at McCook Field, Dayton, Ohio,—the man who piloted the machine which was an epoch maker in the annals of insect warfare.

Heretofore the usual method of controlling leaf-eating insects affecting tall trees has been by the use of liquid



LAYING DOWN A POISON POWDER BARRAGE AGAINST CATERPILLARS

Flying at the rate of 80 miles an hour, at an altitude of from 20 to 35 feet and on a line parallel with and 53 yards to the windward of a catalpa grove. A wind, varying from 8 to 11 miles an hour, was blowing in the direction indicated by the arrow. The grove lies directly ahead of the point of the arrow, and is surrounded on the two sides by fields of growing corn. This, as well as the following pictures of the machine in action, was taken from an accompanying plane.

poisons sprayed on the trees by means of engine-driven pumps, these outfits having reached their present development in the New England States in combating the gypsy and brown-tail moths and elm-leaf beetle.

However, the difficulties encountered in spraying very tall trees with liquids are legion, particularly when the trees are situated on ground so uneven that the spraying machine cannot be operated in their immediate vicinity. In such instances it is no uncommon thing to use several thousand feet of hose, and since this must be dragged about over the area under treatment, the labor cost of operating under such conditions is enormous.

Moreover, progress is so slow that it is not always possible to cover the infested area at the time when the application would be most effective from the standpoint of insect control. Dusting by aeroplane at least gives promise under some conditions of overcoming a few of these difficulties.

Early in the spring of 1921 the authors began seeking an opportunity to conduct a practical test of the aeroplane as a distributor of insecticides. In a few instances the

plan was received with favor; in others it was considered a theoretical, impracticable and foolish undertaking and from many sources much good-natured chaffing was endured. Finally, however, a co-operative project was arranged with the officials of the Federal Aviation Experimental Station at McCook Field, Dayton, Ohio.

These officials entered into the spirit of the undertaking in a whole-hearted manner giving it priority over everything in the Field for one entire day. Those chiefly concerned were: Major T. H. Bane, Director of McCook Field; Major H. S. Martin, Chief Engineer and his assistant Mr. E. Darmoy, who designed the hopper to carry and distribute the poison and who operated the

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