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APPRAISAL SURVEY OF A LOOPER, PHIGALIA TITEA, ON THE LEE DISTRICT, GEORGE WASHINGTON NATIONAL FOREST, VIRGINIA

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INTRODUCTION

An aerial and ground survey on the Lee District of the George Washington National Forest was conducted on May 31, 1966 to determine the present status and trend of a hardwood defoliating looper, Phigalia titea, Cramer (Lepidoptera: Geometridae). The survey was made by personnel of the Forest Insect and Disease Control Office and William Leichter of the Lee District.

The infestation, which is situated in two areas approximately two miles apart, comprises 2,500 acres and is located on the northwestern aspect of Short and Kerns Mountain, east and southeast respectively of Mount Jackson, Virginia. The outbreak was first detected in 1961 and has been surveyed annually since that time.

The results of this survey indicate that P. titea activity is decreasing.

METHODS

A Cessna 172 was used for the survey. The survey was flown at an airspeed ranging between 90 and 100 MPH at an elevation of approximately 1,000 feet above ground surface. The infested areas were circled and crossed so as to give 100 percent coverage. The location of the infested areas surveyed are shown in Figure 1.

A ground check was made following the flight. P. titea larvae were collected and prepared for rearing.

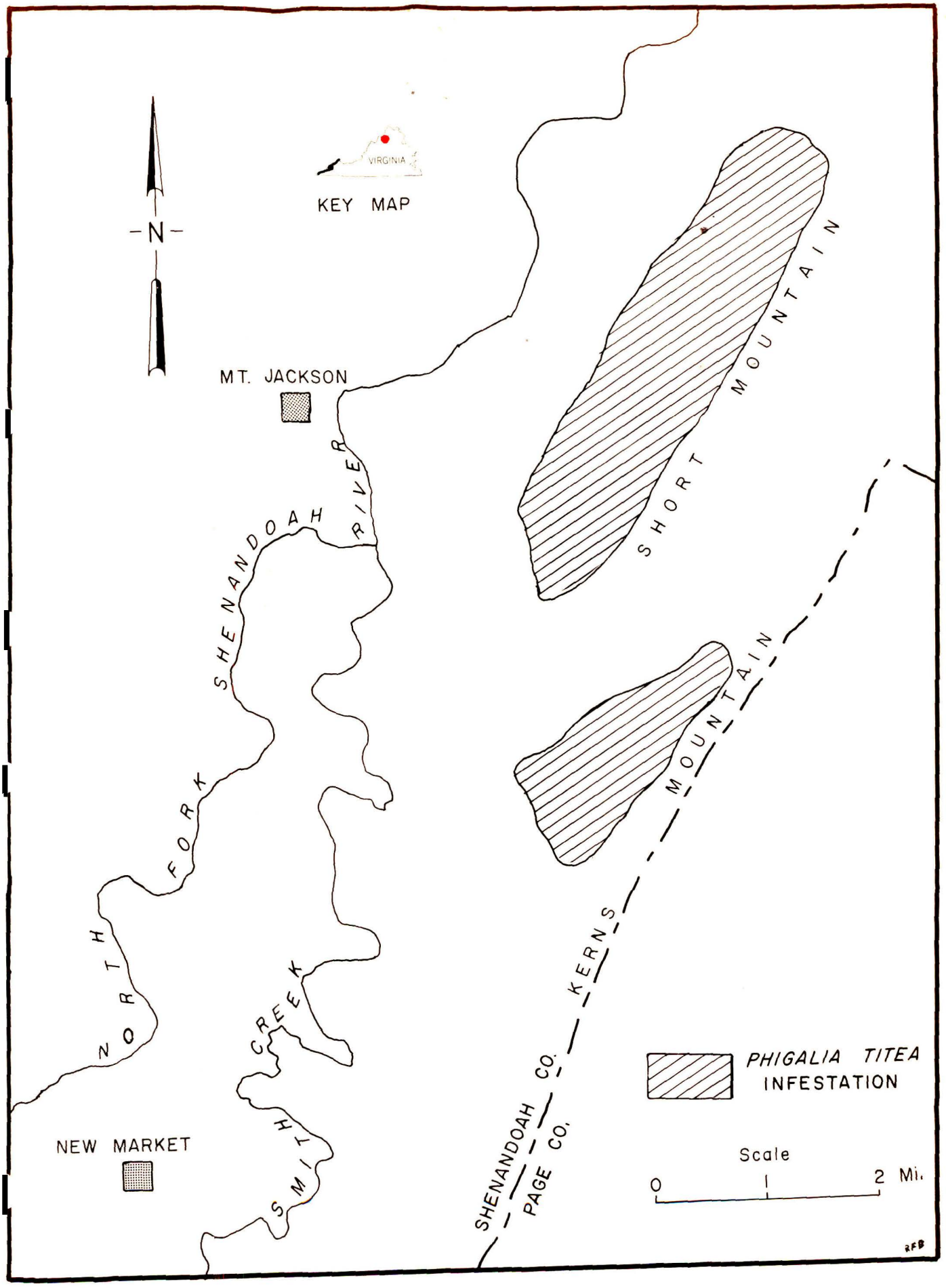

FIG. 1 LOCATION OF PHIGALIA TITEA INFESTATIONS

RESULTS

The aerial survey revealed a scattered pattern of defoliation centers within the general infestation boundaries. The infestations of previous years displayed a more consistent and extensive defoliation throughout the same area. The overall perimeter of the infestation area has not changed to any significant degree. Approximately 2,500 acres are infested.

Ground checking revealed that the infestation level of intensity has decreased. Although P. titea larvae were numerous and were found feeding on a wide variety of hardwoods and ground cover species, their relative abundance has decreased from 1965 levels in the areas checked.

Four species of P. titea larval parasites were collected and are in the process of being reared for identification. Their effect and abundance is unknown at present.

DISCUSSION

Ground observations were made on May 12 and May 17, 1966 by personnel of Forest Insect and Disease Control, previous to the aerial survey. Based on these ground checks and the insect collections made at those times, May 31, 1966 was decided upon as the most appropriate date for the aerial survey. However, unseasonably cold weather and frost damage rendered ground conditions less than desirable for aerial surveillance. In addition to the effects of cold temperatures on ground cover, there was also probably an effect on P. titea feeding and development. While damage was visible, infestation area boundaries were not as clearly defined as desired.

The quality and site index of the infested forest stand is low. The resource threatened is primarily aesthetic in nature. The two infested areas are situated at an elevation and location so as to be readily visible from nearby communities and U.S. Route 11. To somewhat alleviate this situation, the Lee District in December, 1965 aerially seeded Virginia pine to 220 acres in the infested area. This was done to take advantage of open hardwood overstory due to defoliation anticipated in 1966. Seed germination to date has been good.

RECOMMENDATIONS

1. The area should be examined on the ground again in late June. It is possible that the cold weather and frost damage provided only a temporary set-back to the populations and that heavier damage will be present later.

2. The results of the pine underplanting should be studied in detail for possible application in other situations of similar conditions.

3. Another appraisal survey should be made by Forest Insect and Disease Control personnel in 1967 to detect any changes in the status and trend of this outbreak.