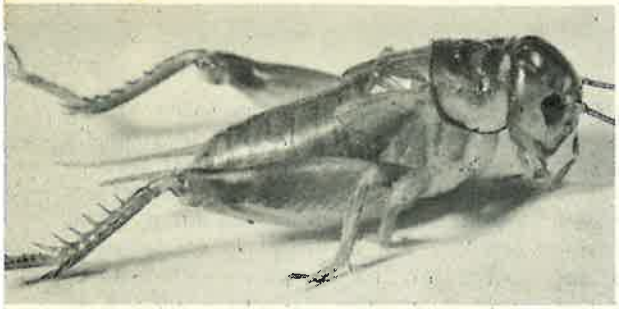

The culprit, Mr. Cricket, is about ¾" long

CRICKET HAZARD

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It's about time we took a good look at the short-tailed cricket — and his appetite for pine seed and seedlings!

Short-tailed crickets must be added to the long and growing list of insects, birds, and mammals that are known to destroy pine seed and seedlings. Though these insects are widespread throughout Louisiana and possibly other southern states, they have only recently been recognized as a potential threat to pine reproduction.

Cricket damage was first detected in January 1957, near Alexandria, Louisiana, on areas that had been direct-seeded with repellent-treated slash or longleaf pine seed. The insects, with the name of *Anurogryllus muticus* (DeG.), clipped slash pine seedlings off near the ground line and carried them away, leaving only short stubs of stems to mark the losses. Many longleaf seedlings were picked off also, but sometimes only the juvenile needles were taken.

The greatest damage occurred to slash pine seedlings, and those on disked strips suffered more than those on undisked grass-rough areas. On these grass-rough areas, seedling losses due to clipping averaged 25 percent. On disked strips, 81 percent of the young seedlings were lost. Parts of the area had 2,000 to 3,000 active cricket burrows per acre; here 95 percent of the seedlings on disked strips were destroyed in less than a month.

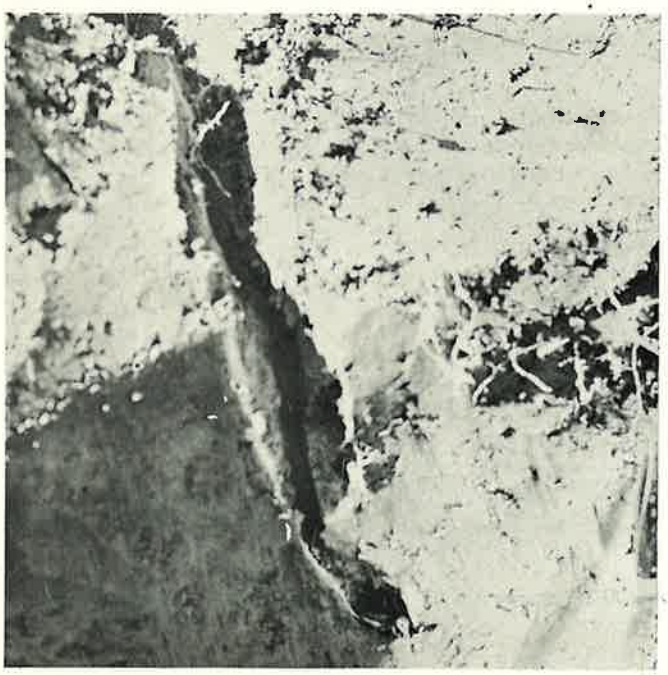
Damage to longleaf pine was less severe than to slash pine, possibly because longleaf was seeded only on grass roughs. Furthermore, longleaf seed germinates rapidly and the seedlings develop so quickly that they may soon become too large and tough for the crickets. Where only the juvenile needles were cut off, many longleaf seedlings recovered and resumed growth. This ability to recover from partial clipping may make longleaf somewhat more resistant to cricket damage than slash pine.

Clipping started in January and continued into March, but the heaviest damage occurred during the last week in January and the first week in February. The crickets' diet changed as soon as new, tender grass and weeds appeared in the spring. After March, no more pines were damaged on this area.

In late October 1957, crickets were again observed feeding heavily, this time on natural seedlings under slash and longleaf pine seed trees. Inspection of their burrows showed that large quantities of the seed had been gathered and stored. The several thousand active crickets per acre on this area were an obvious threat to successful natural regeneration. Activity ceased almost completely after the first of November, however, when heavy rains began to fall—a total of 15 inches for the month. Cricket activity is generally low when the soil is very wet, and the unusually heavy and prolonged rainfall possibly saved the seedling stand from extinction.

Short-tailed crickets are often inconspicuous and can easily be overlooked,

The main burrow of the cricket is connected to the surface by a narrow passage. Here he stores pine seed, fragments of seedlings



Mound at entrance of cricket's burrow often contains subsoil particles, and hence may be of different color from the surface soil

especially during prolonged cold or wet weather. The fact that they usually feed at night helps them to escape detection. When conditions are favorable, however, the crickets can be located easily by the typical small mounds of fresh soil that they pile up at the entrance to their burrows. Mounds are about three inches across and one inch high. They resemble piles of earthworm castings except that the soil granules are much rougher.

The main burrow or storage chamber of the cricket is beneath the mound and is connected to the surface by a short, narrow passage. It is a wide, shallow, horizontal chamber, oval in shape, two to four inches in diameter, and about one-half inch in depth. These chambers often contain pine seeds or fragments of grass, weeds, and pine seedlings.

A narrow tunnel leads downward from one side of the chamber for a distance of 12 to 18 inches, providing the cricket with a retreat from predators. Some tunnels, or retreat shafts, penetrate straight down, but the majority angle off for about six inches before crooking sharply downward. A secondary chamber is often located about halfway down the retreat shaft and occasionally multiple or branched tunnels are found.

In Louisiana, the characteristic cricket burrows have been found on a wide variety of upland soils. However, they are most abundant on areas with moderately poor drainage, and the heaviest infestations occur on the sandy hummocks that dot these sites. Concentrations as high as one cricket per square foot have been found on such hummocks. The crickets apparently prefer grassy, cutover areas to timbered or brushy sites.

When cricket populations are high and other foods scarce, heavy losses of pine seed or seedlings may occur. Two thousand or more active burrows per acre indicates a dangerously high cricket population. As the crickets build mounds only when the soil is fairly dry, some areas may have numerous crickets with only slight or intermittent signs of their presence. Any form of site preparation prior to pine regeneration probably increases the risk of cricket damage.

The crickets seem most active in fall, late winter, and spring, but they can be observed at any time in winter when a few warm, dry days occur. About the first of June, one to two dozen young crickets can be found in the burrows. After July, the old burrows are vacated and it becomes increasingly difficult to find the crickets. This may be a time when the young crickets disperse and forage above ground, while the fall spurt of mound-building activity may occur as the new brood digs in for the winter.

The short-tailed cricket is no newcomer to the South. As early as 1887, it was reported damaging farm and garden crops near Jena, Louisiana. Although it is known throughout the Atlantic and Gulf Coastal Plains, it is evidently not a serious pest with agricultural crops. It is believed that the seed and seedling losses observed in Louisiana during 1957 were the first indications that this insect might interfere with the natural reproduction or direct seeding of pines. However, detailed life histories and observations will be needed before the insect's probable impact on pine reproduction can be fully evaluated.

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