

simple. Up to the time the seedling is about six inches in height the leaves come right down to the ground, as has already been mentioned. On taller seedlings, however, the lower portion of the stem does not bear leaves, and the only protection the seedling has against fire is a layer of bark. The bark of the tree is a poor conductor of heat, and provided it has reached a fair degree of thickness the heat of a grass fire will not penetrate it. Unfortunately many longleaf pine seedlings from six to twenty-four inches in height have not developed a great enough bark-thickness to protect themselves against fire, and in 1921 11.7 percent of the seedlings between these heights was killed outright by the fire, and an additional 9.1 percent was killed so far as the stem was concerned. These latter seedlings have sprouted, however, and if protected from further fires may survive.

The effect of the fire which got away into the plot protected for more than seven years was even more disastrous than in the repeatedly burned plot. Here 32.2 percent of the seedlings were killed by the fire, although there still remains a splendid growth of thrifty saplings which, thanks to the earlier protection, had gotten beyond ordinary fire damage.

A word of warning is necessary in applying the conclusions which have been reached on the Roberts' plots. First, it should not be judged that razor-back hogs alone