

Dec. 15, 1950

181(2273): 322

## Improvement Cut

Early effects of partial cutting on diameter growth in bottomland hardwood forests have been measured recently near Vance, Mississippi, according to a report by J. W. Johnson of the Southern Forest Experiment Station, New Orleans, La.

A stand of mixed hardwoods, principally cow, cherrybark, bottomland red, and willow oaks and sweet gum, was marked for a commercial improvement cut and logged in the summer of 1947. Before cutting, the stand averaged 105 sq. ft. of basal area per acre in trees of all sizes from saplings to large saw timber. It contained 2,900 bd. ft., Doyle rule, per acre in logs 14" in diameter and larger. The cut removed 1,500 bd. ft. per acre—25 ft. of basal area—in trees 18" d.b.h. and larger.

Two growing seasons later, 200 sam-

ple trees were classified by the degree of release they had received. Heavy release included removal of more than one-half the effective competition to suppressed trees and more than three-fourths of the competition to intermediates and codominants. Medium release ranged from removal of one-third the effective competition to suppressed trees to over two-thirds of that to dominants. Light release ranged down from medium release.

Trees that had received heavy release were found to be increasing in diameter at a rate 26% faster than in the 10-year period before the cut. Trees that received medium release showed no appreciable change in growth rate. Those with light or no release decreased 17%. The latter figure reflects the loss in rate that could have been expected for the entire stand if no cut had been made. The actual decline for the stand as a whole, however, was only 4%, the cut having forestalled a greater deceleration.

The best response came from trees less than 18" d.b.h. Forty-five per cent of these trees had received medium or heavy release. If more of them had been released, the average diameter growth rate of the stand would have been speeded considerably.