17. SEED ORCHARDS FOR THE SOUTH 1/

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The initial results of Forest Genetics research are in. They are sensational. Not so sensational as many promoters would lead us to expect but certainly striking enough so that the forestry profession would be very negligent if it failed to apply genetic principles in forest management.

Nearly every conceivable tree character of economic interest to forest industry is markedly influenced by inheritance. The work of Australian forest geneticists with slash and loblolly pine has shown that selection and breeding can produce three to five times as many trees of acceptable form and vigor as can be produced through random seed collection 2/.

Similarly, Monterey pine trees have been shown to differ inherently as much as five times in vigor, by as much as 20 percent in wood density. Fibril angle, fibre length, degree of knottiness, gum yield, disease resistance, and many other characters are rigidly controlled by the inheritance of a tree.

Simple selection of parent trees for superior form and vigor can produce seedlings with three times as many acceptable trees per acre when compared to seedlings from randomly selected parents.

Further research findings reveal that 17-year old seed orchards spaced at 80-100 trees per acre can produce 80 pounds of slash pine seed or 70 pounds of loblolly pine seed in a good seed year. At 13,000 seed per pound, this would be more than a million seeds per acre for slash pine, and at 22,000 seeds per pound this would be more than one and one-half million seeds per acre for loblolly pine. Twenty acres of seed orchard can supply seed for all of the planting needs of any industry. One hundred acres should take care of the state of Florida!

Even when genetic considerations are ignored, the economic advantages of collecting seed from a concentrated acreage which can be so managed as to avoid crop failures cannot be discounted. The tremendous and fantastically unsound practice of chasing all over the southeast to collect thousands of bushels of slash pine cones can be eliminated at a great saving.

1/ Because of the absence of the senior author, this paper was not read at the conference. The junior author, although handicapped by lack of both manuscript and slides, gave an excellent and spirited. resume of the paper from memory. The paper as originally prepared is included here to make the record complete.
2/ Jim McWilliam, Queensland Forest Service, Queensland, Australia, in personal correspondence, 1953-1954.