27. THE COOPERATIVE GENETICS PROGRAM

AT THE UNIVERSITY OF FLORIDA 1/

Thomas 0. Perry
School of Forestry, University of Florida
Gainesville, Fla.

Forest genetics research at the University of Florida has been expanded into a cooperative program between the forest industries of the Southeast and the University. The cooperative program in genetics has three major phases: basic research, education, and direct assistance to industry in application of forest genetics research results. Dr. T. 0. Perry and Dr. Chi Wu Wang have charge of the genetics program.

Forest Genetics Education at the University of Florida

Both graduate and undergraduate instruction in forest genetics is offered at the University of Florida. One scholarship for $2,50 0 is being offered for Ph.D. candidates in the fall of 1955. Eventually, two such scholarships will be offered. A program of forest genetics extension courses is also being offered which will enable practicing foresters to utilize genetics research results in forest management. Ordinarily, it would take about 10 years to train the 25 to 30 Master's degree students needed by Southeastern industries to supervise the applications of new genetics findings. By offering a special six weeks' course to selected foresters from industry we hope to supply this need promptly. We will offer this special course during the winter of 1956. Students taking the course will receive sufficient theoretical and practical training to be able to supervise progeny tests and other experiments involved in developing supplies of superior seed for the industries they represent.

Assistance in Application of Genetics Results

In spite of the newness of genetics on the forestry scene we have available enough research results to show the way to increased profits through controlling the inheritance of our trees as well as their environment. The University of Florida is providing technical assistance and guidance in application of these results. Our plan for establishing seed orchards of selected trees is described in an earlier paper. Field demonstrations of selection procedures, assistance in progeny testing, and a grafting service are all aimed at establishing reliable supplies of high quality seed.

A 4.5 acre nursery is being established to produce about 6,000 grafts a year. Most of the grafted plants will be planted in industry seed orchards.

1/ Read by Dr. C. M. Kaufman, Director, School of Forestry, in the author's absence.

A number of practical research studies are being conducted, of which studies of seed orchard management are an example.

Basic Research Studies in Forest Genetics

The cooperative genetics program at the University of Florida will involve a large amount of practical work and direct technical assistance to the cooperating industries. However, the program has been designed so that much of Dr. Perry's and Dr. Wang's time will be devoted to basic research studies.

A number of projects are now being initiated to determine the genetic variation in response to soil types, rainfall patterns, photoperiod, disease, and other factors of the environment. Ecological and geographic variation in plant species will be the major basic research study conducted at the University of Florida. Most research efforts will be devoted to study of the commercially important conifers of the Southeast. However, a significant amount of energy will be devoted to studying cypress and hardwood species.

The genetics of the grass stage in longleaf pine, drought resistance, and adaptability of sand pine to oak ridge sites will be under consideration in the next two years. Experiments on the genetics of fall color change in red gum will serve to reveal why some trees turn red and some remain green with the onset of cold weather.