

## **TREE BREEDING, WASHINGTON, D.C.**

The second World Consultation on Forest Tree Breeding was held in Washington D.C. from August 7th to 16th, 1969.

The theme of the consultation was the Practical Advantages of Forest Tree Breeding. It was attended by over 200 scientists from 41 countries. The opening ceremony was performed by Dr. E. Cliff, Chief of the U.S. Forest Service. In the unavoidable absence of Prof. Jemison, President of I.U.F.R.O., the keynote address was delivered by Dr. John Gray, Dean of the School of Forestry, University of Florida. He called for the development of superior trees that will produce, on less land, more of the products the world needs from its forests. He emphasised the need for increasing the productivity of trees on a large scale as quickly as possible. It was important to realise that the science of genetics should not be applied alone to production forests, but should also take into consideration breeding of trees for resistance to pollution, for recreation and for amenity. He concluded by stating that our objective is to get what is known applied to those areas of the world where the opportunity and need are greatest. The final business of the opening ceremony was the election of Dr. John Duffield of University of North Carolina as Technical Chairman of the meeting.

To allow for complete coverage of all aspects of tree breeding the meeting was divided into 14 half day sessions. The position paper for each section was presented by an invited speaker. Dealing with breeding for growth and yield, Dr. Nickles (Australia) stated that evaluation of population—environmental interaction for yield would minimise incorrect selection of provenance and siting of plantations and facilitate subsequent population improvement and hybridisation. It has been shown experimentally that by following the correct procedure a gain

in volume of 30% at 15 years in *Pinus elliottii* can be achieved. When breeding for stem quality, Dr. Ehrenberg (Sweden) stated that experimental evidence is available showing that improvement seems feasible in most of the properties. Stem and branch characteristics are continually varying traits controlled by quantitative inheritance while simple Mendelian inheritance is indicated for forking, fasciation and branch formation. Dr. Harris (New Zealand), dealing with "Opportunities and Practical Advantages", stated that the question of wood quality improvement must ultimately be decided in terms of economic gain. Programmes should look forward to meet the requirements of changing technology 30 or more years hence. These programmes must be flexible and adaptable to meet changing demands. In a review of 10 years' work in the field of resistance breeding, Dr. Gerhold (U.S.A.) stated that indications of significant breakthroughs in species hybridisation and vegetative propagation techniques may profoundly influence resistance breeding programmes in the near future. Practical progress has been made in creating disease resistant varieties and in making them available. In dealing with breeding for other characteristics, i.e., cold, draught resistance, etc., Dr. Cram (Canada) pointed out that though they have practical advantages, progress is restricted by limited resources. When planning a development and action programme, Dr. Squillace (U.S.A.) stated that the researcher can choose a procedure in accordance with the facilities he has available and his needs. At present the procedure taking advantage of natural variation among species races and individual trees have the greatest potential for use by most organisations. In conjunction with the choice of programme the study of the economics of mass production of improved material was stressed by Dr. Fielding (Australia). Research should be carried out into all aspects of mass controlled pollination and the rooting of cuttings. In the final position paper on the evaluation of costs and benefits of tree improvement, Dr. Bergman (Sweden) stated that exact costs are difficult to assess due to the many interdependent factors involved. He pointed out that tree breeding should be seen as one among several alternatives for increasing improvement of wood production. The first approach should be to analyse alternative solutions and the costs entailed in each of these. Dr. Schreiner (U.S.A.) brought the meeting to a successful conclusion with a review of tree breeding in the United States Forestry practice.

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