

REPORT ON STUDY TOUR ON FORESTRY RESEARCH
IN SOME COUNTRIES OF AFRICA AND EUROPE:

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From last issue:

COUNTRY REPORT:

UNITED KINGDOM:

September 8 to September 21, 1970.

There are many organizations that are carrying out research on subjects directly or indirectly connected with forestry . The Commonwealth Forestry Institute and the British Weed Research Organization were visited . The Forestry Commission research station at Alice Holt could not be visited as the organization was preoccupied with other visitors during the period .

At Oxford opportunity was taken to discuss the research programme in East Pakistan in general and the experimental designs in particular . The consensus of opinion was that replications should be introduced in each research station. The plot size should be reduced from one acre to quarter acre and four replications introduced .

The problem of fluting in Teak was discussed with the Forest Geneticist. To begin with the main problem was of measuring fluting . For this purpose a proforma was prepared for collection of data which could be statistically analysed by him . It appears that the Commonwealth Forestry Institute organizes a 3 month course on Biometrics and it appears advisable that the young research officers should take this course . These young men could collect data on the practical problems such as mentioned above and analyse under the supervision of the Biometrecian at Oxford which will give a practical training to him .

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It appears that the Institute has collected the seed of a number of provenances of Pinus merkusii from Southeast Asia and Indonesia and Pinus caribaea and P. tropicalis from Cuba and all the seeds has now been purchased by FAO for whom the Institute is holding stock . These provenances could also be tried in East Pakistan if FAO could arrange the supply of seeds from the stock at Oxford . The Institute also organized international provenance trials on Pinus merkusii and Cedrela odorata .

At the weed Research Organization at Kiddington experiments on various methods of weed control and a number of chemicals were being tried. This organization also produces the " Weed Abstract".

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HOLLAND

September 22 to September 27, 1970. .

The Forest Research Institute at Wageningen is located on a 75 hectar estate . The Institute has a five year plan of research and an annual research programme is prepared every year . For the purpose of reporting each research worker has to report the number of hours they put in for each research project. The main problem in Dutch Forestry is the afforestation of agricultural land that is being taken up to reduce the agricultural production. It has also the purpose of creating green belts between cities which are tending to join up due to expansion and industrialization, providing recreation grounds and reducing air polusion . After agricultural land is acquired soil survey is made and the promising clones of Poplars, Alders etc. are planted . The main research is based on trying out clones in each region and finding the most suitable ones . Such trials at Gorinchem and Sifterbunt were visited , and clonal trials with poplars seen .

Manurial trials are being carried out both in the nursery and the plantations . The manurial trials include the application of fertilizers and growing with leguminous crops . The results appear to show that application of NPK enhances growth but the application of N.P. and K. separately depresses growth . The application of compost and farm yard manure tended to increase the damage by insects which is most probably due to the suitability of soil treated with organic manures for the breeding of insects .

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Separate trials with a number of species and trials with 1, 2 and 3 year old planting stock of Sitka Spruce and other broad leaved species are being carried out near Lelystan . Herbicide trials are being carried out in the plantation of Scots Pine/^{which} also includes a treatment of thorough ploughing .

Growth studies are being carried out by a different section. The data for volume and yield tables is being collected and analysed. Detail data is collected and interpretation is carried out by computers, A programme of punching cards has been prepared. The cards are punched at the research centre and the computer of the Agricultural University is used . Computer is also being used for analysing thinning and spacement trial .

The Tree Improvement section has a nursery where vegetative propagation of selected poplars is in progress . The nursery is also growing seedlings of half sibs and crosses. All seedlings go through a vigorous selection before it goes to the plantation . The nursery also has a glass house where temperature and light can be controlled for experimental purposes . The seed orchard of Douglas Fir and Japanese Larch are located in the institute estate . In the seed orchard of Japanese Larch the leaders have been cut back to make the trees bushy for ease of making crosses and collection of seeds .

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DENMARK

September 28 to October 2, 1970.

Forest Tree Seed Centre at Horsholm deals with tree improvement and tree breeding . The centre has an arboretum which has a collection of a number of broad leaved and coniferous species. The conifers are arranged on regional basis and the broad leaved species on a botanical pattern i.e. according to families .

Trials are being carried out to force young Norway Spruce clones to produce flowers . It has been found that keeping the clones for two months in glass house during the summer helps the clones to produce flowers and cones to the maximum extent. The extraction and storage of pollen was demonstrated and explained .

In the provenance trials it has been found that the exotic provenances of most of the species do much better than the indigenous provenances . Among the conifers Douglas Fir and Norway Spruce are the most important and among the broad leaved species Beach is the most important species. The nursery at Fordenberg, at the time of visit, was producing various provenances of a number of species for trials .

The Danish/FAO Forest Tree Seed Centre at Humlebaek is responsible for collection of seed required in Denmark . The seed of various species is collected from selected seed stands, is processed at the centre and distributed to the indenting people . All the processes i.e. drying of cones, seed extraction, dewinging and cleaning are all done mechanically. The working of all the machinery was demonstrated. This centre is also interested in some tropical species such as Teak and tropical Pines . Various provenances of Teak and tropical Pines are being collected which will be distributed to interested countries for trials. The interest of East Pakistan and the desire to take part in any such international trial has been made known to them .

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SWEDEN

October 1, 1970.

The Forest Research Institute at Stockholm was visited. The seed section, the Silviculture section and the tree improvement section were seen where the work in progress was explained .

In the seed section work on finding out the causes of defects in seed is being carried out . X-ray photographs of seeds are taken by which the quality of seed can be estimated quickly. With these studies it has been found that seeds get damaged at every stage beginning from the development of the embryo, during extraction, in storage and even at the time of germination . In certain cases of storage chromosomal aberrations have been observed to occur. Further studies are being carried out on the changes that occur in the embryo due to forestry practices such as extraction of seed etc.

In the Silviculture section the main work ~~is~~ on the development of machines for plantation work . Machines for filling soil in polythene tubes, sowing of seed and planting the tubes in the field have been developed .

In the Genetics section the main study is on hybrid vigour in crosses between provenances .

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CZECHOSLOVAKIA

October 3 to October 7, 1970:

The Beach forests near Jevany village in the Voderady Forest Division were visited . The Forest School in Kostelec of black forests was seen . Rest of the time was spent in Forest Research Institute, Zvolen . There was a lot of discussion about the proposed research work at the Forest Research Institute, Chittagong, with all the specialists assigned to come to East Pakistan .

In the watershed management Division of the Institute at Zvolen data is being collected on the effect of land use on the watershed . Other trials of Silviculture and Tree Improvement Divisions visited were attempted natural regeneration of Fir forests and provenance trial of Larch . The seed orchard of Pinus mungo is at Yawariane near the seed research centre .

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ITALY

October 9 to October 18, 1970.

Most of the time was spent at the FAO Headquarters talking to and discussing silvicultural research that has been seen during the tour with officers of FAO . One day was spent at the National Institute for Cellulose and Paper, Rome . Research is being carried out in Ecology, Biology, Applied Genetics, cultivation, paper technology, microbiology, Entomology and Wood technology . The species on which work is being done are a few species of Eucalyptus, Poplars and some conifers such as Pinus radiata , Pseudotsuga menziesii etc.

The centre has an up-to-date laboratory facilities, nurseries and green houses and an experimental estate of 44 hectares where there is a collection of 120 Eucalyptus sp. and a number of conifers and Poplars . The most interesting study in relation to East Pakistan is the pattern of growth of various species of Eucalyptus . An instrument has been developed for measuring the day to day growth in diameter . These studies have shown a presummer slowing down or stopping of growth corresponding to the period of maximum leaf formation which can be attributed to competition for nutrition between the two phenomena .

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