

# The Need For Forest Genetics

By  
ROSALES A. JUNI

Until now very little is being done or attempted in general silvicultural or forest management work in this country, to improve the genetic quality of forest trees. We are still using planting stock in reforestation projects without seed selection. In logged-over areas it is very common that the residual stand is composed of many deformed, defective and poor quality trees.

These unsound practices obtaining are perhaps due mainly to limited funds and labor and should not become habitual. As custodians of our forest resources the future quality of our forest should overly concern us. The quality of present residual stands and artificial tree plantations points conclusively to the urgent need of tree improvement by the use of the modern science of forest genetics.

We tend to collect seeds where they are abundant and cheap without due regard to seed quality and high resistance to pests and diseases. In logging, the high quality trees are apt to be cut instead of leaving them to regenerate future stand. What we have been doing is dysgenic—they lead to the degeneration of the tree crop—a thing which no horticulturist would dare to do.

While some of our unsound practices may be due to expediency, there is no reason that we allow these to be habitual. We can improve the genetic quality of our forest trees if we begin to do some important steps in tree improvement as:

1. Planting seeds gathered only from superior or "plus" trees.
2. Leaving high quality trees in residual stands to regenerate logged-over areas.
3. To make tests with seed, grafted or cutting materials of superior trees to select or

isolate the best types—so as to produce superior seeds.

4. Start a tree breeding program to create new types.

5. A nation-wide search for superior trees be made and catalogued and seed, cutting and grafting materials obtained from these selected trees for propagation.

6. Establishment of seed-source gardens or plantations wherein are grown the progenies of plus trees either from seeds, cutting and grafts.

We must preserve for the future the best types of trees we have at present, which will be available for future use in tree improvement work, and a safeguard against their loss be provided. An arboretum, besides the seed source gardens, would be of immense value for preservation of tree types, as an aid to identification of trees and as a field laboratory for plant-physiological and plant-pathological studies or for phenological observations.

Forestry must not lag behind agriculture and horticulture in using the powerful weapon of genetics. While it is true that the forester has to work with trees which take long time to mature, yet this handicap may yet prove to be a decided advantage in that trees having longer lives, will enable the forest geneticist to observe without interruption a tree type, unlike farm crops wherein several generations have to be grown for genetical observations owing to their fast succession of generations.

Some concrete steps toward forest tree improvement must be taken now, for to start after most or all of our present stock of superior trees are either already cut or dead would be too late. Europe and the United

States have gone far ahead in forest genetics—they have at least begun working on tree improvement work during the last thirty or more years. Even Japan and Australia and other countries have been active during the last ten years in forest genetics.

Forest depletion is not the only concern of forestry in this country today. Tree quality should merit our attention because the time is soon coming when we will not have enough land or growing trees and not have enough good soil to grow high quality timber. To forestall such eventuality, we Filipino foresters must avail ourselves of the example of farsighted European and American foresters who are now using the useful tool of genetics to make forestry march in line with other progressive sciences.

To refuse to recognize the vital role of genetics in forestry is for us to be blind to scientific facts. If we don't begin at once to initiate some steps towards tree improvement in this country, it might prove so costly a delay later on.

Let us take a look at our reforestation projects: The mongrel-looking trees show that there is a lot to do in improvement of their growth rate, form, wood quality, resistance to damaging agents, seed production and other combinations of these characteristics. A Molave, Narra, Akle or Banaba which are long-boled are seldom found in these artificial plantations.

The Benguet Pine plantations of the Bureau of Forestry in Bukidnon are old enough to produce plenty of cones. Yet the trees don't bear abundantly. Is this due to inherited characteristics, or due to climate, latitude or soil conditions? Genetics may furnish the answer in much shorter time than other approaches.

This article is too short to fully discuss the urgency of genetics in forestry in this country. The attention of Filipino foresters to this need is called forth with the ultimate objective of implementing a program of tree improvement before it is too late.

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