VOLUME 8 — NUMBER 2 & 3 FORESTRY DAY ISSUE

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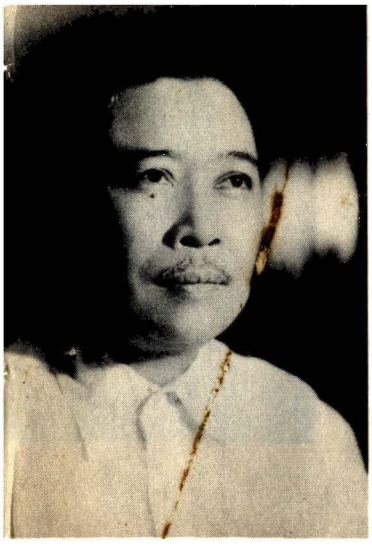
FORESTRY leaves

STUDENT BODY AND ALUMNI ORGAN, COLLEGE OF FORESTRY, U.P.

SECRETARY RODRIGUEZ PLANTING HIS TREE (Narra-*pterocarpus indicus*) IN DAVAO



Republic of the Philippines
Department of Agriculture and Natural Resources
Office of the Secretary
Manila

M E S S A G E

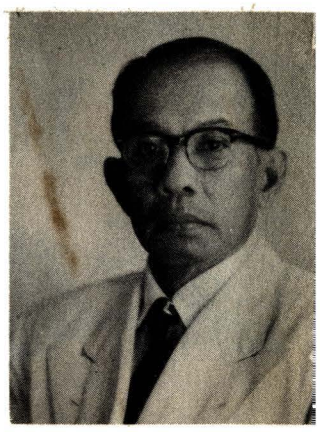
One of our greatest natural wealth consists of our forested mountainsides, several thousand acres of which combi. to make the Philippines one of the world's major sources of timber and forest products.

The U.P. College of Forestry is one of the pioneering institutions dealing with the training of competent personnel charged with the function of conserving our forest resources. The country stands to gain tremendously from a rigid observance of our forest conservation regulations. It must be remembered that the indiscriminate cutting of timber has lost and is losing for our economy untold thousands of pesos in denuded forest areas and wasteful soil erosion.

I, therefore, congratulate the College of Forestry for the steadfast endeavor of its faculty and the members of its student body, as well as its alumni, in the continuing program of conservation and reforestation. Their labors, combined with the work of our Bureau of Forestry and other government instrumentalities having to do with our forest resources, guarantee future generations the benefits accruing from our natural wealth in timber and forest products.

Manila, November 30, 1955

JUAN DE G. RODRIGUEZ
Secretary of Agriculture
and Natural Resources



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF AGRICULTURE AND NATURAL RESOURCES
BUREAU OF FORESTRY
MANILA

In Reply, Address
DIRECTOR OF FORESTRY
Manila, Philippines

M E S S A G E

Simply stated forestry treats of the relations of forests to human welfare. It means the best use of the forests with continuity of production and use as the central theme. With these thoughts this year's "Forestry Day" celebration should bring home to each and every student and alumnus of the College of Forestry not only tremendous responsibilities but also splendid opportunities to give life to the essence of forestry.

To serve the manifold social and economic benefits of our people, perpetuation and continuous productivity of the forests should be recognized as one of the most important aspects of our internal development. In the economic structure of our nation, forests have always played an important role. They should be used wisely for the continued economic and social betterment of our people.

We are still fortunate to have fallen heir to a very valuable forest wealth. But I hasten to caution that if we do not take care we will soon find ourselves destitute of forests. Although forests are a renewable resource still they are by no means inexhaustible. If our people will learn how to use them properly, we can rest assured that they will continue to contribute substantially to our strength, prosperity, and general well-being indefinitely.

Destructive development of the forest in any guise or form is a luxury which this or any generation cannot afford. The road back is never an easy one.

FELIPE R. AMOS
Dean College of Forestry
(Director of Forestry)

Communal Forest for the People

By FELIPE R. AMOS
Director of Forestry

One phase of the many public services of the Bureau of Forestry directly benefitting the people is the establishment and administration of communal forests in accordance with Section 1839 of the Revised Administrative Code. Communal forests are specific tracts of forests delimited and set aside by the Bureau of Forestry where bona fide residents of certain cities, municipalities and municipal districts can cut, gather and remove timber and minor forest products free of forest charges for their personal use. This is also referred to as the free use privilege.

In availing of this free use privilege in communal forests, residents in need of only second and lower groups timber and minor forest products should first apply for gratuitous permits from their respective mayors. It is called gratuitous permit because it is free of charge. First group timber, however, has to be procured under gratuitous licenses issued by the Bureau of Forestry. A nominal license fee of ₱5.00 is charged for each license granted. Residents of municipalities without communal forests can also avail of the same privilege. They have to secure a gratuitous license from the Bureau of Forestry. A license fee of ₱5.00 is charged for every license issued irrespective of the groups of timber and other minor forest products desired to be cut and removed.

There are presently 2,172 parcels of communal forests distributed among 809 cities, municipalities and municipal districts covering an aggregate area of 279,577 hectares. Many municipalities and municipal districts are still without communal forest. For some, the number of parcels established is insufficient. This is either due to the absence of adequate forests in their respective territorial jurisdictions, or whatever forests therein or in neighboring municipalities are not available, too far for economical use or located in inaccessible places. This may be attributed to lack of interest on the part of the local officials and of the people themselves, particularly in protecting and conserving not only the communal forests that have been established for them but also the other public forests in their municipalities. However, there is still room in some localities where communal forests can be established. The initiative should come from local officials and the residents. Requests for the purpose may be submitted to the Director of Forestry in the form of petitions or resolutions of municipal councils.

The Bureau of Forestry spends time and efforts with its limited funds and personnel in delimiting and establishing communal forests as a public service. Communal forests being as they are should deserve the protection and conservation by the municipal officials and the residents themselves not only for the use of the present generation but also for generations to come. It should be well to keep in mind the fact that forests are getting limited, mostly occupied by licensees, and fast receding to less inaccessible places.

Considering and realizing all these, and looking forward to the future, what can local officials and residents fortunate enough to have communal forests do to perpetuate the usefulness of these forests? *First*, each resident should consider himself as part owner and should not allow the unlawful use and

destruction of his communal forest. Any violation should be reported immediately to local officials whose duty should be to act promptly to stop any and all violations instead of merely reporting to the Bureau of Forestry. While the Bureau of Forestry is duty bound to act on such cases, still field officers are so few in number, considering their vast territorial jurisdiction that they cannot possibly devote much time for the protection of communal forests. It must be taken into account also that once a forest is destroyed it will entail very great amount of time and money to bring the forest back. Most municipalities are not in the position to appropriate funds for this purpose. *Second,* the local governments should, whenever possible, appropriate funds for the employment of communal forest guards to protect their communal forests. The idea is to prevent violation and destruction, bearing in mind the adage that "AN OUNCE OF PREVENTION IS BETTER THAN A POUND OF CURE." If the employment of communal forest guards is not possible, a regular or even intermittent detail of policemen for the same purpose, particularly during the critical kaingin season will prove of decided advantage. *Third,* last but not least, the municipal officials and residents should take the initiative to reforest blank or open spaces therein and plant trees where they are depleted. The national government has no fund for this work, that at its disposal being barely adequate to carry on work in existing reforestation projects. Thus, the planting or reforestation of communal forests depends on funds that can be appropriated by the municipal governments. In this work, however, the Bureau is ready to cooperate by furnishing technical help and furnishing planting materials whenever necessary and possible. In the absence of funds, or if these are inadequate, still something can be done to reforest and improve communal forests. Through self-help or community efforts and assistance, no doubt the same objective can be accomplished. This is being realized in many municipalities through the initiative of active local officials and civic leaders having at heart the present and future welfare of the people. The "Arbor Week" (formerly "Arbor Day") and other days or weeks devoted to civic purposes are taken advantage of by doing mass planting of forest trees in the communal forests with the cooperation of civic conscious residents, school authorities, school children and students, boy and girl scouts and other civic organizations. If some municipalities could do this there seems to be no reason why others can not duplicate the same. It is for the common good and for posterity.

The existence of well protected and conserved communal forests is a boon to the people having them. Besides, the timber and other forest products that they provide directly for the people to meet their personal needs, they prevent erosion of the hillsides, conserve stream flow, ameliorate the climate and render such other benefits worthy of consideration and appreciation. To better enhance all these, communal forests as well as other forests in different localities should be conserved by wise use. This of course depends on the cooperation of all.

The Role of Forest Products Research in the Utilization and Conservation of Our Forest Wealth

By

EUGENIO DE LA CRUZ

Chief, Forest Products Laboratory

Bureau of Forestry

The forest, distinct from all its other services and benefits, supplies a basic raw material—wood—which from the earliest times has furnished mankind with necessities of existence and with comforts and conveniences beyond number. Forests will return maximum values to the people of the Philippines, only if they are fully and profitably utilized and conserved—in vigorous condition of timber crops.

The relative importance of the different values varies with the character and location of the forest and with the stage of culture of the people who use it. In earliest history the chief forest value was derived from its wildlife which provides both food and clothing. As civilization advanced, wood products became increasingly valuable, and for many centuries forest value was almost considered synonymous with timber value. Only recently have environmental values become fully understood, and it took a lot of forest destruction to drive home their importance. Perhaps even yet the lesson has not been fully learned. It cannot be said that these values are greater than those of wood products, but there are places where they may be.

While the growing of timber on these lands for the many products demanded by modern civilization represents the more tangible economic value or use, the mere production of an increased timber supply does not satisfy the demands of economic forestry. The utility of value of wood must also be maintained and increased. The better adaptation of wood to modern consumption requirements is a matter of direct concern to consumers, whose proper housing and standards of living are bound up with the satisfactory use of wood products; to workmen, who need the hundreds of millions of pesos in wages furnished by employment in the woods, the sawmills, the plywood mills, and broadly diversified fields of wood construction and manufacture; to local communities, towns, cities, provinces, and the nation, all of which have a vital interest in stable revenues from forest, forest lands, and successful forest industries. The forest resource of this country being almost wholly government owned, to the nation belongs the responsibility for its wise conservation and utilization which requires a broad program of research.

Forest products research must aid in solving many difficult problems, such as:

1. How to create values for the residues that develop during the logging and the conversion of trees and other forest products into articles of commerce.
2. How to secure useful service from the numerous tree species that are now used little if at all.
3. How to utilize more efficiently the smaller-sized and second-growth trees which will form the bulk of vegetation of cut over-areas.
4. How to secure greater service and economy from wood through selection of material, control and modification

of its properties, improvement of new and better methods of wood fabrication and conversion.

5. How to find methods of prevention and control of insects and fungi injurious to woods and wood minor forest products in order to reduce the degrade of logs and lumber, and to prevent the deterioration of wood structures and wood products.
6. How to place at the disposal of wood industries the results of research through dissemination and consultation.

The research program can be restated for more comprehensive description of each group as follows:

1. *How to create values for the residues that develop during the logging and the conversion of trees and other forest products into articles of commerce.*—From the felling operation wood waste begins to appear and the same can be observed in every subsequent step in the progress of processing and conversion of the wood to its ultimate useful form with the result that 2/3 to 3/4 of the volume of the average standing tree is lost as waste. The volume of waste depends upon the kind of timber and the character of the final product manufactured, which is less in products like poles or piles that require little effort to prepare them for use than in wood turning and other articles where more elaborate operation in cutting and shaping are necessary. Through improvements in equipment, processes, and methods of handling and conversion, waste may be considerably reduced. Another fertile field exists in finding profitable uses of low grade material and unavoidable conversion wastes. All of these contribute to the substantial increase of percentage of the tree and of the forest crops converted to profitable use. This will readily reflect in enhancing the value of the log and affording greater financial returns to the timber producer or processor besides lowering the costs to the consumer.

The finding of increased uses for low grades of logs, lumber, and timber which are hard to dispose of, even at a price that will return the money unavoidably invested in them, is in effect a forest conservation measure. It tends to extend the life of the wood supply and makes the practice of forestry an attractive venture.

2. *How to secure useful service from the numerous tree species that are now used little if at all.*—One of the many problems we are confronted with is how to find uses for the thousands of tree species which are practically unmarketable, because their form, size or properties are either unknown or not so desirable for conventional uses as those of the so-called commercial species. During the past fifty years, many of these "wood species" once considered useless have found ready markets not because of forest depletion but largely because of the removal of old prejudices or disadvantages through technological research. Dao (*Dracontomelom dao*) is one of the best examples. About sixteen or eighteen years ago no one would think of using this wood. But once its physical properties have been determined and a drying schedule was worked out, dao became No. 1 glamour wood of the Philippines that, because of its beautiful figure and grain, has easily captured a dominant position in local as well as foreign markets as a cabinet wood.

Inherently, the wood of many of these unpopular species is valuable for many purposes once their characteristics and properties are known and they would be freely used if the preferred species were not so readily available. While it could be expected that forest depletion will continue to bring additional little used species into fuller use, their utilization can be greatly accelerated by research effort to remove the technological obstacles that makes them undesirable or unmarketable. It is here where the activities of the Forest Products Laboratory can be directed to advantage to reduce the technical difficulties to a minimum, and make the entire wood crop of our forest into accept-

able raw materials for industries. This has a far reaching effect in simplifying the problems of silviculture and forest management to the end that the ever illusive sustained-yield forestry will yet have a permanent place in the scheme of tropical forest administration. Developments such as these can assist greatly in the preservation and perpetuation of industries and the communities that grow around them and the ultimate conservation of the forest resources, and thus have a highly salutary effect on our national economy.

3. *How to utilize more efficiently the small-size and second-growth trees which will form the bulk of vegetation of cut-over areas.*—The old concept that our forest resource is inexhaustible has lead us to follow forest policy of unregulated cutting which unfortunately made heavy inroads into the stands of timber, leaving practically nothing but stumps and badly damaged residual trees. The fact remains that the prized tree species are all gone, and what is taking their place is something entirely different—mostly small, second-growth less valuable species. What to do with this type of wood is a problem that demands serious consideration. Here is where forest products research can be called upon to look into the possible utilization of these tree species which are now considered as mere "woods". Progress in wood conversion techniques attained by other countries like the United States paves the way for the use of all kinds of wood as raw materials for industries. As a matter of fact, the wide range of non-usable unpopular species can be narrowed down to practically nothing today through the application of modern wood technology. There are already two big companies in the Philippines which are considering the utilization of second-growth species for pulp and fibre boards.

The tapping of the wood crop of second-growth areas may offer an opportunity to develop the forest into its original climax type much faster than letting the natural ecological factors to take care of plant succession. Besides, it afford a ready source of wood supply for other purposes than lumber which will greatly relieve the drain upon the virgin forest, thereby conserving the country's wood supply.

4. *How to secure greater service and economy from wood through selection of material, control and modification of its properties, improvement and better methods of wood fabrication and conversion.*—Wood is now facing a very keen competition with materials such as metals, glass, ceramics, plastics, concrete, and a variety of other products. Wartime developments have made many of these materials more serviceable and attractive than ever before and manufacturers, dealers, and users of wood products are not bound to continue the use of wood unless aggressive action is taken to make wood products more satisfactory, economical, and convenient to the consumer.

Wood, in order to meet its thousands of uses, must be properly selected and that requires intimate knowledge of its properties and characteristics and the extent of its variability within species and among species. It must be selected in accordance with the requirements that it must meet in service. That is, weak wood must not be used where wood of maximum strength is required, heavy wood is not suitable where minimum weight is paramount, wood that decays rapidly is useless where high decay resistance is desirable, and so on.

Among the varied opportunities in forest products research for making natural or improved wood serve the user better are the following:

(1) Reducing the shrinking and swelling of wood.
(2) Improvements in the selection of wood to meet use requirements.
(3) Improving wood house and small building construction to cut costs, increase convenience, and improve serviceability.
(4) Protection of wood against deteriora-

tion in service.

(5) Improvements in the use of wood for fuel and power.

(6) Improvements in seasoning and storage.

(7) Improvements in wood bending.

(8) Improvements in gluing and extending the usefulness of glued products.

(9) Developing new uses for wood through resin impregnation or densification.

(10) Improvements in the use of wood and wood products for shipping containers and packaging.

(11) Improvements in the use of wood for structural purposes.

(12) Improvements in the uses of wood and wood-products in aircraft manufacture.

(13) Assisting in industrial difficulties and related consumer acceptance difficulties.

5. *How to find methods of prevention and control of insects and fungi injurious to woods and minor forest products in order to reduce the degrade of logs and lumber, and tc prevent the deterioration of wood structures and wood products.*—With the increasing volume and diversity of wood uses in the modern era, the aid of research in examining, improving, and developing all kinds of treating processes has become increasingly important The effectiveness and relative costs of many kinds of preservatives in protecting wood against decay, insects and other destructive organism are a rich field of study and experimentations. Research in impregnation processes will pave the way to better treating methods and greater certainty of long-service life of wood at lower cost. It will give an additional benefit in making it possible to give preservation treatment to wood species not before successfully treated.

It is universally recognized that decay is by far the greatest destroyer of wood in service. Practical methods of preventing it will mean large money savings to wood users, more lasting and satisfactory wood structures and utilities, and the eventual curbing of a heavy drain on our forest resources.

6. *How to place at the disposal of wood industries the results of research through dissemination and consultation.*—The result of laboratory research can only be of immediate benefit to the wood industries in particular and to the people in general in proportion to the facilities afforded by the laboratory in the way of disseminating information through publications, reports and other means. Interested parties can avail themselves of information and advice on their wood conversion and wood use problems through technical consultation or by letters of inquiry. Every opportunity must be used to place within the reach of the people directly concerned all the results of forest products research. Then and only then, can the Forest Products Laboratory fulfill its mission of service to the industry, the people, and the nation.

Our Crowned Friends—The Trees

By P. San Buenaventura
Chief, Division of Reclamation and Reforestation

Some years ago I wrote the following food-for-thought:

"In what are trees and kings similar?
In that both have *crowns*
In what do they differ?
The people serve the kings
The trees serve the people."

Yes, the trees have *crowns* but not the type of the crown of thorns that the enemies of Our Lord placed on His head to mock Him as king of the Jews; nor the crowns that kings and potentates wear on their heads upon assuming the duties of their high office; nor much less the crowns worn by beautiful young ladies who reign over carnivals, fairs, beauty contests or *santacruzans*. The crown of the the tree is one of its three integral parts. It is the part that consists of the branches, the twigs, flowers and fruits, and that gives the shade which weary travelers seek. The millions of crowns of trees in the forest form the verdant green that covers the mountains.

Trees and the community of trees we call forest, and mankind have been very closely associated since the beginning of civilization. We learned of Noah's going up Mt. Sinai, and out of the wood from trees built his ark to save himself and his kin from the Great Deluge, and only when the bird which he released returned with a twig and leaves of a tree did he know that the water was receding. We also learned that the early Christians, to save themselves from their enemies, assembled under the trees in the forest to perform their rites and worship, thus the forests have been considered as the "early temples of Christianity." Medieval men followed Noah's use of wood, and built galleons and ships to scour the seven seas in search of the new world and new things. It was in these ships that Columbus discovered America, and it was in these same wooden ships that Magellan in search of spices produced from tree, discovered our own country.

Modern civilization is still dependent on trees and forests of which the principal product is wood. Researchers have found substitutes for wood in some cases, but for many uses wood is still irreplaceable, and significantly, when substitutes for wood are found, new uses for wood are also discovered.

Yes, trees are our friends and more than friends they are our servants. We should, therefore, learn to love them. We need trees to adorn our gardens. plazas, streets, and highways. Have you not noticed the change in the panorama of Manila with the beautiful trees lining its boulevard? We need trees for their edible fruits, flowers or leaves, or as cure for our ailments.

But when we think of trees, let us not confine our thoughts only to trees as individuals. Let us think of the million and millions of trees that make our forest. The forest is the most valuable of our natural resources. The evaluation of such resources recently made by the Secretary of Agriculture and Natural Resources is as follows:

As my life today has been determined by the way I lived yesterday, so my tomorrow is being determined by the way I live my to-day.

	Actual Value	Potential Value
Forest Resources	₱27,860,611,000	₱49,496,171,000
Land Resources	4,387,773,000	13,285,103,000
Mineral Resources	1,409,990,000	13,985,500,000
Animal Resources	861,108,000	2,220,651,000
Fishery Resources	298,092,000	798,451,000
TOTAL	₱34,862,574,000	₱79,785,876,000

The forest resources presently valued at about 28 billion pesos with a potential value of 50 billion pesos, are a big asset in Philippine economy. The ultilization of timber and minor forest products and special uses of forest lands among which is grazing, give a direct revenue of over 7 million pesos to the government aside from indirect income in the form of sales tax, income tax, merchant tax, motor vehicle exchange tax and wharfage tax paid by forest and forest-dependent industries, which is estimated to exceed the direct income. In timber alone, 35 million *dollars* are brought into the Philippines every year from the export of logs and sawn lumber. Forest industries have supplied all our local needs for lumber, thus import has been totally eliminated and dollars have been saved.

But the economic values of the forests are not confined to the money it gives to the government and the people. What counts more are the services of the forests in protecting the soil fertility and water supply, so necessary for successful agriculture, which cannot be evaluated in terms of cash. Ours is eminently an agricultural country now. The increase of population would require our economy to include industrial expansion. However, agriculture must be developed to the highest degree to produce what industries would process.

Also, the use of forest for recreation and the conservation of game and wildlife is of paramount importance. National forest. parks, game reserves, wildernesses, etc., are being established and maintained in many countries. We have also done these; many of our people now are enjoying their weekends in national parks throughout the country.

Arbor Day has been changed to Arbor Week, not only to arouse better appreciation for trees, but to give more time to the planting of trees and taking care of them; and not only trees for our surroundings, but trees for our future forests. Let us, therefore, plant trees and more trees and protect the forests. For certainly, we owe much to Our Crowned Friends—the Trees.

Lift up your hand to heaven, and thank your stars if they have given you the proper sense to enable you to appreciate the inconceivably droll situations in which we catch our fellow creatures.

Necessary Balance of Forest Cover

By

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I. INTRODUCTION

(a) *Why Necessary Balance.*—Likened to a balanced budget with appropriate reserves to cover unforeseen deficits, there should be also in any country the necessary balance of soil cover. In order to strengthen and stabilize the economic structure of the nation, said necessary balance including FOREST COVER must be consistently maintained.

(b) *Scope of this Paper.*—As stated in the title, this dissertation is mainly concerned with the necessary balance of forest cover in the Philippines which according to official figures is about 12,500,000 hectares or 42% of the 29.74 million hectares land area of the country. It is within this area where the Bureau of Forestry will implement sustained yield management, forest conservation, soil and watershed protection, range management, parks and wildlife, reclamation and reforestation of denuded and cut-over areas. In short, the art, science and business of forest and forestry can be practiced from now and forever in said permanent forest cover.

It should be borne in mind, however, that it is impossible to apply the 42% allocation for forest purposes in every province, because of the various existing conditions like watersheds, topography, soil, season, population, social economic expediency, method of cultivation employed as well as the peculiarity of crops raised in each locality. Thus, in some provinces or regions, the allocation is much less or much more than the 42% figure for the whole Philippines.

II. PHILIPPINE FOREST POLICY

(a) *Constitutional Mandate.*—The conservation and utilization of our natural resources, of which forests and forest lands form a significant part, is expressly stipulated in Article XIII of our Constitution. It has a background dating back as far as 1863 when the Spanish Government then organized a Forest Service wherein among other things, the delimitation of public lands for disposition was aptly provided. This stipulation accounts for the almost exclusive ownership of forests and forest lands by the Philippine Republic to the extent of approximately 97.5%, leaving only 2.5% under private ownership.

(b) *Forest Laws, Acts, Rules and Regulations.*—Upon occupation of the Islands on August 13, 1898 by the United States, the policy of forest conservation was made potent by creating the Bureau of Forestry on April 14, 1900. A series of Acts of the U.S. Congress and that of the Philippine Commission followed like the Spooner Amendment (March 2, 1901), the Philippine Bill (July 1, 1902), and the Forest Act (May 7, 1904). Pursuant to the Philippine Bill, the Philippine Legislature enacted the Administrative Code on February 24, 1916 which was revised in 1917. This is still our basic Forest Law as amended by subsequent Acts of the Philippine Legislature, the National Assembly and the present Congress. Special forest laws have also been passed to promote forest conservation and more efficient forest administration implemented by appropriate

rules and regulations. Among these special laws may be mentioned the Game and Fish Law (Act 3983), Grazing Act No. 452, Reforestation Law (Act 115) and the recent creation of the Parks and Wildlife Commission.

III. Basic Forest Administration

(a) *Revised Administrative Code of 1917.*—The principle underlying the forest administration ever since 1863 has been the proper protection, delimitation, conservation and utilization by wise use of the forest resources of the nation. The Spanish laws were exceedingly conservative and embraced provisions which were far reaching particularly in the way of conservation and protection against human destruction and unwise utilization. Practically same were adopted in the inauguration of the Forest Service under the American Regime wherein the same was carried with little modifications to the Commonwealth Government and later on to the Republic. Thus, ever since and by law, the Bureau of Forestry is given the priority of determining which portion of the public domain should be retained for forest purposes and to segregate such from the rest to be alienable and disposable or lands not needed for forest purposes.

(b) *Implementation.*—The implementations of the necessary balance as blueprinted by the Bureau of Forestry was and still is progressively carried on along with land classification work which is practically being executed all over the Philippines. Land classification is simply the zonification of the land areas into the various essential economic uses which will redound to and promote the best interest and well-being of the people not only for the present, but also for the generations to come. The work was rather slow due to lack of trained personnel to undertake the delimitation and necessary funds for expenses. However, the passage of Commonwealth Act No. 2874 in 1919, known as the Public Land Law aided much in augmenting funds for land classification. Later, Commonwealth Act No. 141, the amended Public Land Law was passed which classifies the public domain into three categories — (1) alienable and disposable, (2) timber lands and (3) mineral lands. The phrase then in use in releasing the land, GOOD FOR AGRICULTURE, is outmoded, instead, NOT NEEDED FOR FOREST PURPOSES is adopted.

(c) *Land Classification under PHILCUSA-FOA.*—Then land classification was further accelerated upon the availability of the PHILCUSA-FOA joint aid effective February 1, 1952. This enabled the Forestry Office to organize 40 field parties of three forest officers each team which have been assigned to execute land classification in different parts of the Philippines as follows: 25 in Mindanao, 9 in Luzon, 4 in Visayas, and one each in Mindoro and Palawan. As of June 30, 1954, of the 29,740,972 hectares area of the Philippines 10,632,500 hectares or 35.75% has been classified alienable-disposable lands, 2,043,761 hectares or 6.87% timberlands, leaving a balance of 17,064,711 hectares or 57.38% still unclassified.

IV. Soil Utilization and Conservation

(a) *Utilization.*—As already mentioned the Bureau of Forestry is charged to classify first publicly owned forest lands to determine the best permanent use, whether for forestry or for agricultural purposes. The proper utilization of lands in order to achieve the most effective use is, therefore, very important in any economic planning for developments of a country. Countries which have misused their lands have suffered tremendous misery, privation and sufferings. Outstanding examples of abuse in the use of forest lands are found in many countries, which are not only suffering from destructive floods but also spending enormous sums of money to reforest the barren areas and to control rivers, which had been unmanageable partly on account of deforested river banks

Deforested areas in reserved forest lands

are being reforested and the work is being pushed through as funds for the purpose become available. Deforested watersheds of destructive rivers are given preferential attention, in order to minimize floods as much as possible and to reduce soil erosion.

The work of correcting torrents in this country is not as yet given the attention it deserves. Reforestation of hillsides along torrential streams is the only one being done, which will ultimately effect the correction with irrigation projects on agricultural lands.

Soil conservation is under the charge of a newly created Bureau of Soil Conservation, which is doing a great deal of work along this line. The Bureau of Forestry, in its reforestation activity and in its general work of forest conservation, cooperates closely with this Bureau in conserving the soil resources of the country.

The greatest enemy of our forest conservation is the clearing of forest lands for temporary cultivation, known locally as "kaiñgin" making. Through this process, big volume of timber worth thousands of pesos have been destroyed annually. The destruction was greatly increased during the Japanese occupation of the country, because the people not only took refuge in the forest, but also made clearings to produce food crops. The Bureau of Forestry has been exerting efforts to protect the public forest from said pernicious clearing.

Clearing of forest lands for temporary cultivation is not entirely prohibited by the Bureau of Forestry. After great calamities, such as storms destroying agricultural crops, famines, etc., small areas in public forest lands are allowed for cultivation after watersheds, soil condition, topography, etc., have been thoroughly examined without endangering soil erosion. For the use of forest lands for temporary cultivation, the permittee pays a nominal rental for the land.

(b) *Protection.*—Forest protection is very essential in any forest management. Fortunately in the Philippines, we do not have devastating forest fires, like the United States except at times in the Mountain Province, to which the coniferous forest (Benguet pine) is susceptible. Insects and diseases as enemies of our forest do not come to alarming proportions because of the nature, type and composition of our forests, consisting many species growing in mixed stands, not like the pure forests of the temperate regions. Consequently, the protection of our forests from insect pests and diseases is not a big problem. Control of pests and diseases is sometimes needed in our forest nurseries, where seedlings are raised for planting purposes.

Although forest fires do not occur in our broad-leaved forests, grass fires are inimical tc reproduction, especially during the dry season when the fires encroach upon newly planted areas. Surface fires on newly logged-over areas cause considerable damage to existing forest vegetation. Grass fires may be controlled by constant patrol and organized fire fighting crews so that the damage may be minimized.

Illegal clearing caused by man is, of course, the greatest enemy of our forest. To control and to stop illegal kaiñgin-making, a law is in effect, which has increased considerably the penalties imposed on the violator according to the kind of forest destroyed.

V. What Should Be the Necessary Balance?

(a) *Factors.*—The idea underlying the implementation of the necessary balance of soil cover is based on the result of observations all over the world that forest trees and other plant growths when undisturbed in their natural conditions are the best protective cover of the soil. Regions, therefore, which are susceptible to accelerated soil erosion should be kept under the protective cover of trees or some form of vegetation.

In the directive for land classification, it is considered conservative to use 10 degrees (18%) as the maximum gradient of slope for lands to be released as alienable and disposable, but in many instances we find exception as in the case of areas devoted to

the planting of coconuts, orchards where 30 or more degrees are the prevailing gradients. This condition is also true in many places in the Mt. Province where the prevailing practice of natives is the use of terraces in cultivating their farms on steep slopes. In other words, the objective is to designate and assign area to which it is inherently capable of producing the maximum return with the least expense possible. Generally, even the area is slope from level to 10 degrees provided not sandy or stony, neither is reached by salt water, said area is suited for general farming purposes.

If still forested, as soon as the commercial timber therein is utilized, it would be more advantageous and beneficial to have the land dedicated to farming. However, if it is covered with climax forest, like the towering dipterocarps, much more if it contains beautiful and unique scenery or inhabited with wild life especially rich flora and fauna, such land should be kept and maintained for forest purposes. In addition, areas with steep slope even the soil is rich same may be tentatively demarcated for cultivation provided terracing is to be resorted. This practice is prevalent along the Baguio-Bontoc Road. Therefore, areas that have a slope higher than 10 degrees or 18 per cent should be kept for permanent forest purposes, because such areas are inherently adapted to the raising of forest crops and not only to maintain soil fertility and to conserve moisture, but also to prevent soil erosion and to minimize the effect of climatic extremes.

Summarizing, the factors to be considered in maintaining the necessary balance of forest cover are as follows:

(a) Watershed
(b) Topography
(c) Soil Fertility
(d) Economic exigencies, like production of special timber species and minor forest products, as well as protective forest springs, game refuges, grazing areas and/or recreational areas.

(b) *Multiple Uses of Forest Lands.*—Since forestry embraces the art, science and business of whatever can be produced from the forest for the use of man, its multiple uses appear unnecessary to enumerate. Suffice it to mention here, that aside from the conservation and utilization of forest products, forests mitigate the effect of destructive floods, prevent soil erosion, temper extreme weather conditions, preserve aesthetic values and unique scenery as well as forest grazing areas both for wild life and domestic animals. Land uses under special use permits will be discussed more under Section 1838 of the Administrative Code as one of the appendices.

Trends in Other Countries.—The 42% figure for the necessary forest cover is the minimum requirement for the entire Philippines. The objective is to make it more rather than less. In other countries like Canada and Japan, the percentage of the necessary balance for forest cover is over 50%. The latest report shows, however, that Japan is already 60% compared to 42% in the Philippines as necessary balance of forest cover.

VI. Conclusions, Remarks, and Recommendations

(a) *Conclusions.*—As of June 30, 1954, of the 29,740,972 hectares area of the Philippines 10,632,500 hectares, or 35.75% has been classified alienable and disposable lands; 2,043,761 hectares, or 6.87% as timberland; leaving a balance of 17,064,711 hectares, or 57.38% unclassified. It should be noted in this connection, that barely 7% has so far been classified as permanent forest areas, while more than 50% to be exact about 57% is still unclassified. These figures are broken down into 52 provinces and cities including 12 sub-provinces.

That our forest resources have been destroyed to a level resulting in lower than the safe minimum requirements, and that many provinces suffered, especially during the Japanese occupation. This includes established

forest reserves proclaimed national parks, communal forests and communal pastures which are already classified as permanent forest areas.

That immediately after the war, and up to the present, our lumbermen and other forest users have been asking the question as where to cut and operate after their present licensed areas have been already operated. In other words, our formerly inexhaustible forest resources are no longer there. As a matter of fact, the history of forest and forestry is characterized for the last 50 years, by the reduction of our forest cover from 70 to 50%. In area, this is equivalent to 20.8 to 16.5 million hectares, respectively, and that they are no longer ideally distributed throughout the Philippines as they should.

(b) *Remarks.*—As can be gleaned from the foregoing facts and figures, it is very clear that something should be done. This is described by former Department Secretary Araneta, as published in newspapers that our forest resources are no longer inexhaustible. *"If we are farsighted, if we understand the problem fully in all its gravity, and implications, we must act boldly and fast to change the course of events in the administration, protection and conservation of our forests. The problem must be tackled from the two angles of conservation and reforestation."*

Thus, it is believed that the holding of the First National Conservation and Reforestation Conference this year, is very timely. And as already mentioned *something must be done* to change the course of events in the administration, protection, and conservation of our forest resources.

(c) *Recommendations.*—

(1) That the permanent forest areas as necessary forest cover (42%) should be determined as soon as possible. Bearing in mind that barely 7% only has been so far, demarcated as timberland.

(2) Likewise, in order to provide land for the landless, more alienable and disposable lands should be classified and certified because at present, of the 56% earmarked for agricultural lands, barely 36% has been classified.

(3) Our 33 national parks throughout the country set aside including forest reserves, should be *re-examined* because during the Japanese occupation many of them were practically cleared and/or squatted and even exploited by sawmill operators and illegal cutters.

(4) The necessary balance both soil and forest cover of the Philippines is as follows:

Vegetative Cover	*Area in Hectares*	*Percent*
Under Bureau of Forestry		
(Forests & Forest Lands)	(12,515,200)	(42.08)
Production Forest	6,935,200	23.32
Production-Upland	3,976,400	13.37
Reforestation	1,390,600	4.68
Forest Grazing	955,500	3.21
Lowland	612,700	2.06
Fresh Water (Marsh)	(169,300)	(.57)
Salty (Mangrove)	(443,400)	(1.49)
Protection Forest	5,580,000	18.76
From Commercial	4,775,800	16.06
From Non-Commercial	804,200	2.70
Under Bureau of Lands		
(Non-Forest Lands)	(17,225,772)	(57.92)
Cultivate-Alienated	8,180,072	27.50
Potential-Unclassified	9,045,700	30.42
From Commercial	3,559,500	11.97
From Non-Commercial	2,759,000	9.28
From Cogonal	2,727,200	9.17
Grand Total	(29,740,972)	(100.00)

Because of the disturbances of our forest resources, the bringing up-to-date of the actual SOIL COVER of the Philippines including *Forest Cover* is strongly recommended before revising the blueprinted NECESSARY BALANCE OF FOREST COVER as presented in this paper.

Republic of the Philippines
Department of Agriculture and Natural Resources
BUREAU OF FORESTRY
Manila

The Area in Hectares of Each Province in the Philippines With Its Actual Necessary Balance of Forest Cover for the Purpose of Utilization and Protection
(Computed as of June 30, 1953)

Province	(Actual Necessary Balance of Forest Cover) Production Forest Area	Percent	Protection Forest Area	Percent	Area Total	Percent Total	Area Total Land
Abra	84,900	22.29	68,400	17.95	153,300	40.24	380,989
Agusan & Butuan City	205,400	19.25	463,600	43.44	669,000	62.69	1,067,102
Albay & Legaspi City	43,200	16.75	12,600	4.89	55,800	21.64	257,905
Antique	92,300	34.32	43,600	16.21	135,900	50.53	268,927
Bataan	63,800	47.65	25,300	18.89	89,100	66.54	133,900
Batanes	8,000	40.44	1,600	8.09	9,600	48.53	19,780
Batangas & Lipa City	42,400	13.74	17,800	5.77	60,200	19.51	308,587
Bohol	128,200	31.43	15,600	3.82	143,800	35.25	407,837
Bukidnon	236,100	29.37	154,500	19.22	390,600	48.58	803,840
Bulacan	52,100	19.70	74,300	28.09	126,400	47.79	264,439
Cagayan	199,700	22.21	239,500	26.65	439,200	48.86	898,813
Camarines Norte	34,500	16.07	51,100	23.81	85,600	39.88	214,663
Cam. Sur & Naga City	75,300	14.11	58,300	10.93	133,600	25.04	533,605
Capiz & Roxas City	100,100	22.69	65,600	14.88	165,700	37.57	441,011
Catanduanes	8,100	5.64	32,900	23.01	41,000	28.65	143,084
Cavite & cities of Cavite & Tagaytay	16,200	12.57	7,100	5.51	23,300	18.08	128,858
Cebu & Cebu City	106,700	21.91	38,200	7.85	144,900	29.76	486,850
Cotabato	405,800	17.67	553,700	24.11	959,500	41.78	2,296,791
Davao & Davao City	489,800	25.12	311,400	15.97	801,200	41.09	1,949,895
Ilocos Norte	91,800	29.35	61,700	18.22	153,500	45.32	338,679
Ilocos Sur	102,300	38.10	18,100	6.74	120,400	44.84	268,535
Iloilo & Iloilo City	80,500	15.18	43,500	8.20	124,000	23.38	530,449
Isabela	256,400	24.33	250,700	23.78	507,100	48.11	1,053,986
La Union	28,400	20.68	5,300	3.87	33,700	24.55	137,290
Laguna & San Pablo City	22,500	18.69	15,600	12.96	38,100	31.65	120,375
Lanao & cities of Dansalan & Iligan	146,700	21.37	200,500	30.70	347,200	52.07	666,809
Leyte & cities of Ormoc & Tacloban	126,500	15.85	109,000	13.64	235,500	29.49	798,690
Marinduque	13,000	14.12	7,600	8.26	20,600	22.38	92,027
Masbate	143,200	35.18	27,200	6.69	170,400	41.87	407,001
Mindoro Occ.	164,800	30.66	105,200	19.57	270,000	50.23	537,550
Mindoro Or.	144,200	30.67	92,000	19.56	236,200	50.23	470,243
Misamis Occ. & Ozamis City	43,500	20.96	35,400	17.04	78,900	38.00	207,651
Misamis Or. & Cagayan de Oro City	92,100	23.52	97,700	24.94	189,800	48.46	391,681
Mt. Prov. & Baguio City	426,300	30.15	292,700	20.71	719,000	50.86	1,413,622
Neg. Occidental & Bacolod City	178.200	23.02	136,400	17.62	314,600	40.64	774,064

Negros Oriental & Dumaguete City	153,600	28.89	70,400	13.24	224,000	42.13	531,640
Nueva Ecija & Cabanatuan City	100,000	18.21	76,800	13.98	176,800	42.19	549,168
Nueva Vizcaya	193,800	28.48	176,000	25.87	369,800	54.35	680,393
Palawan	262,600	17.81	359,700	24.39	622,300	42.20	1,474,576
Pampanga	73,800	34.46	9,400	4.38	83,200	38.84	214,193
Pangasinan & Dagupan City	65,100	12.43	38,800	7.42	103,900	19.35	523,383
Quezon	286,900	24.00	276,100	23.09	563,000	47.09	1,195,658
Rizal & cities of Manila, Pasay & Quezon	26,900	12.90	39,200	18.79	66,100	31.69	208,575
Romblon	33,500	25.24	19,400	14.62	52,900	39.86	132,704
Samar & Calbayog City	236,500	17.19	177,700	12.93	414,200	30.12	1,375,098
Sorsogon	18,000	8.77	19,900	9.68	37,900	18.45	205,450
Sulu	86,500	30.75	32,700	11.62	119,200	42,37	281,321
Surigao	235,500	29.52	120,900	15.16	356,400	44.68	797,583
Tarlac	104,200	34.25	20,700	6.80	124,900	41.05	304,232
Zambales	158,900	43.59	73,600	20.19	232,500	63.78	364,558
Zamboanga del Norte & Zambo. City	228,000	26.45	171,100	19.84	399,100	46.29	862,167
Zamboanga del Sur & Basilan City	218,400	26.45	163,900	19.85	382,300	46.30	825,750
TOTAL	6,935,200	23.32	5,580,000	18.76	12,515,200	42.08	29,740,972

Note that the 42.08% for the whole Philippines is grouped into Production (23.32%), and Protection (18.76%) forests. The former is divided into Upland, Reforestation, Forest Grazing and Lowland Forest. The last covers Marsh and Mangrove areas.

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The percentages by provinces under two groups (A-Above 42%) and (B-Below 42%). They are listed from the highest (67%-Bataan) to the lowest (18%-Cavite).

A. Above 42%

1. Bataan 67
2. Zambales 66
3. Agusan 63
4. Nueva Vizcaya 54
5. Lanao 52
6. Mt. Province 51
7. Antique 51
8. Mindoro Oriental 50
9. Mindoro Occidental ... 50
10. Cagayan 49
11. Bukidnon 49
12. Batanes 49
13. Misamis Oriental 48
14. Isabela 48
15. Bulacan 48
16. Quezon 47
17. Zamboanga del Sur ... 46
18. Zamboanga del Norte . 46
19. Ilocos Norte 45
20. Ilocos Sur 45
21. Surigao 45
22. Sulu 42
23. Palawan 42
24. Negros Oriental 42
25. Masbate 42
26. Cotabato 42

B. Below 42%

1. Davao 41
2. Tarlac 41
3. Negros Occidental ... 41
4. Abra 40

5.	Camarines Norte	40
6.	Romblon	40
7.	Pampanga	39
8.	Misamis Occidental	38
9.	Capiz	38
10.	Bohol	35
11.	Nueva Ecija	32
12.	Rizal	32
13.	Laguna	32
14.	Samar	30
15.	Cebu	30
16.	Leyte	29
17.	Catanduanes	29
18.	Camarines Sur	25
19.	La Union	25
20.	Iloilo	23
21.	Marinduque	22
22.	Albay	22
23.	Batangas	20
24.	Pangasinan	19
25.	Sorsogon	18
26.	Cavite	18

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Forest Policy on Kaingin in the Philippines

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INTRODUCTORY

The people of the Republic of the Philippines being fully aware of the fast receding timberline and the ever increasing area of open cogon and grasslands brought about by the willful destruction and thoughtless unabated clearing and cultivation of forest lands for illegal kaiñgins; where agricultural development and practices have lagged behind the yearly increases in population; where there is not now enough food to feed a hungry nation; where only about *five per cent* of the population appreciates the value of forests; where illegal kaiñgins have always been a problem that has not yet been solved after over a century of continuous and sustained effort; where fears of an impending timber shortage brought about by the brisk activities and exploitation on the part of agriculture and forestry makes imperative the launching or restatement of a national forest policy on kaiñgins before it is too late, or else the nation may some day wake up to find the timber resources of the country gone which condition will need years and years to regenerate and restore the forests to their former state and may bring about the attendant farm bankruptcy, national bankruptcy, and wanton destructions occasioned by floods and soil erosion; where the young and independent republic with its various problems besetting its very existence cannot undertake the job without great sacrifice, it behooves the Filipino people to take positive action before the situation gets beyond control.

STATEMENT OF POLICY

Philippine forest policy on kaiñgins, pressured on all sides by the country's economic, social, and political policies, ignorance and indifferent public consciousness and now impotent before such pressures, needs to be envigorated with a *new restatement* of policy; *realistic and practical to be workable, Philippine made* to apply to local conditions, hammered out and fashioned by dominant forces in its own environment; resilient, strong, and durable as the molave as an expression of national character, and yet sensitive to popular and reasonable demands. The yardstick to be applied to test the wisdom of such demands should be whether or not they will redound to "the greatest good of the greatest number in the long run."

The interdependence of the forces of agriculture and forestry, recognized but oftentimes wholly ignored, should be a deciding factor in determining what lands should be devoted to agriculture or forestry, providing in between marginal and sub-marginal types of lands pulsating to cycles and demands of social, political and economic forces, rising and falling with the undulating tide of prosperity and depression. So that if agricultural production is inadequate to satisfy the demands of a fast-growing populace, and if forest lands must give way to economic, social and political demands, then kaiñgins, in the interest of national economy, must only be confined within shifting cultivation blocks in the intermediate types of marginal and submarginal lands mentioned above, where their problems, activities, and techniques could best be directed, supervised, and managed for the public good. Forest absolutism under excessive pressures may give way to public agricultural demands provided the productive, protective, and accessory benefits

of forests are not impaired. Likewise, agricultural interests must give way to forestry demands if the national interest is endangered, but both meeting halfway on common ground in the shifting cultivation blocks worked on a system of rotation where production and protection become common objectives of agriculture and forestry.

There should be no distinction as to what comes first, agriculture or forestry for both are interlocking, supplementing, and co-existing for balance and harmony. Each has its own place however, where one can not and should not encroach upon the other, but both should meet on a common strip of marginal and submarginal lands where shifting cultivations can be made to oscillate along rhythmic movements of economics.

Forest properties, 97.5% of which is owned and administered by the national government through the Bureau of Forestry should be considered as highly complex biological units where if ordinary or faulty methods of agriculture avail, forestry comes to the rescue and takes over the lands for the application of corrective treatments.

IMPLEMENTATION OF POLICY

To put this policy into full force and effect, the Bureau of Forestry must endeavor to do the following:

1. Establish clear-cut, visible, and permanent forest zone boundaries.
2. Classify all lands of the public domain into alienable and disposable and forest lands.
3. Secure the right to recommend the expropriation without cost if possible of private marginal and sub-marginal lands where faulty methods of agriculture imperil the national economic safety by depriving the public of the productive, protective, and accessory benefits of forests.
4. Reinforce and/or introduce ground and aerial patrol to meet the threats of fires and kaingins.
5. Undertake mass education in forestry.
6. Enforce all present and future laws and regulations.
7. Secure additional government backing and sponsorship with the appropriation of more substantial funds exclusively for the implementation of this policy.
8. Provide economic incentives.
9. Provide reservations, community and settlement sites.

Forest Zone Boundaries.—

When there are no clear-cut, visible, and unmistakable forest zone boundaries, the public cannot be expected to be able to distinguish between alienable and disposable lands from forest lands. Even some forest officers find difficulty in relocating old forest zone boundaries because these lines at present are hidden from view, superficial in nature, and at times only imaginary.

Henceforth, all forest zone boundaries already established should be relocated, and those to be established should be provided with a cut line or patrol trail following the zoneline, painting the trees on one or both sides of the trail or line with a conspicuous color, and monumenting the line at important points. At intersections of this line with trails, roads, waterways or along natural boundaries like rivers, streams and creeks, signboards indicating the direction and distances of the line and carrying "No Trespassing" warnings must be posted.

Land Classification.—

The Division of Land Classification of the Bureau of Forestry being equipped with all the facilities for forest surveys should undertake intensive land classification in all the provinces. Land classification parties should not only be concerned with the release of alienable and disposable lands but should also "block out" and delimit pasture lands, mangrove swamps, protection forests, production forests, parks, communal forests, license areas, shifting cultivation blocks, and all other types of forest lands establishing the boundary lines as in forest zone lines,

with clear-cut, visible and permanent, unmistakable lines.

Secure Passage of Additional Forest Legislation.—

Additional forest laws and regulations to supplement or amend existing ones should be passed by Congress. One of such laws should empower the Director of Forestry to recommend the expropriation of unproductive marginal and submarginal lands brought about by economic conditions, or inadequate or faulty methods of agriculture when they imperil the national economy as regards production, protection, and accessory benefits.

Reinforce and/or Introduce Ground and Aerial Patrols.—

Where effective patrol is lacking or inadequate, it should be organized or reinforced, and where conditions make it urgent and necessary, aerial patrols with piper cubs or helicopters synchronized with ground units should be created. These patrols while civilian in nature could easily be converted into army units for defense in cases of national emergency. To make these units more effective, they should be furnished with radio equipment, like radio telephone, walkie-talkie, and the like, and their activities should be synchronized with the Philippine Air Force.

Mass Education in Forestry.—

A vigorous educational campaign headed by an assistant director of forestry, or a forester of equal rank, as public relations officer in the office of the director must be undertaken. The public relations office must be designed and equipped to arouse and create public opinion or bring about the enactment of forest legislation. In collaboration with the Bureau of Agricultural Extension, Bureau of Soil Conservation and Bureau of Public Schools, the public relations office of the Bureau of Forestry could bring about the successful dissemination and diffusion of forestry knowledge to arouse and create the needed public opinion, and to secure the best results in the efforts of all parts of the forest service and bring about better protection. The masses could imbibe such forestry education better if enough efforts and pressure are brought to bear on the common mass at barrio levels. Likewise the PRO should seek the cooperation and awaken the interest of provincial, city and municipal officials, and even barrio lieutenants that they may help in obtaining better result in this educational campaign.

Schoolchildren in the primary grades could be an important medium in spreading forestry knowledge through the use of a combined agriculture and forestry primer to inject wholesome and beneficient agriculture and forestry ideas into the young receptive and pliable minds of school children As an example of this we may cite Vocational Bulletin No. 9, series of 1936, prepared by the writer which has already been adopted as standard text by the Bureau of Public Schools in the yearly celebration of Arbor and Bird's Day in all the public schools of the Philippines since 1936 to date.

Formal and informal talks in groups or even to individuals by forest officers in the course of their contacts and associations with the public especially with barrio folks will go a long way in spreading forestry education designed to bring about public appreciation of the important role of forests in national life and the multiple benefits derived therefrom.

Handbills, posters freely distributed, newspaper publications, audio-visual projections, lantern slides, and radio talks in principal common dialects drummed into the public consciouness could bring about the much desired results.

In this connection, a *Special Poster* addressed to the Filipino people and signed by the Chief Executive enjoining the nation not to destroy the public forests and to observe the role and importance of conservation by wise use be framed. Direct and indirect benefit derived from the forests together with a list of the important forest laws and their

corresponding penalties should be included in this poster. This could be very effective in curbing the pernicious practice of shifting cultivations, and in helping promote a national forestry education. These handbills and posters, in English and vernacular, should get the widest distribution throughout the Philippines.

Enforcement of Present and Future Laws.—

A forest officer must not only be upright, but also fearless and courageous in the enforcement of forest laws and regulations. Politics should not enter into the enforcement of laws and where there is absolute necessity, the Constabulary and/or the Army devoid of any partisanship or political interference may be used in the enforcement of these laws and regulations including all future laws which may hereafter be enacted.

Secure Additional Government Backing and Sponsorship With the Appropriation of More Substantial Funds.—

The government should give to the Bureau of Forestry more of its earnings by increasing its budget for the implementation of this policy and as a means of getting more revenue, stabilizing the lumber industry and other industries dependent on wood, decreasing unemployment, and perpetuating the forest resources of the country. The Bureau realizes an average yearly income of over 6 million pesos and is presently allotted only from 2.5 to 3 million pesos in the budget. An increase of another million pesos to alleviate the present understaffed and undermanned bureau is necessary.

Provide Economic Incentives.—

Government subsidy is rarely, if ever, practiced in the Philippines. The people are inclined to be materialistic, and so is the government with an income that has always been said to be insufficient to meet its obligations and provide services. It has dispensed with the giving of economic incentives whether in business, agriculture or forestry.

With the present reforestation and nursery facilities of the Bureau of Forestry it is now in a position to distribute seeds and seedlings including the furnishing of technical aid and this should be exploited to encourage the planting of forest crops in kaiñgins inside forest lands owned by the state. Of the more than five million hectares of grass and open cogon lands, those areas which are adapted and needed for grazing purposes can be segregated and the rest could be reforested either by the state or by private enterprise with the government taking the initiative and providing economic incentives which may take the form of subsidies, tax concessions, and some controls. The same economic incentives could be applied to privately owned woodlands.

Provide Reservations, Settlements, and/or Community Sites.—

With all the above incentives, benefits, and remedies, there should also be a provision made to confine the non-Christian tribes in reservations. The Penal Code penalizes vagrancy as a criminal offense and while forced migration may sound undemocratic and too high handed, it might be the key to get rid of the country's economic parasites who sap the vitality of the nation.

A census by economic officials should be made to determine and make a record of all the unemployed and landless farmers in all towns and barrios of the Philippines. These landless and unemployed people who may be considered the economic parasites of the country should be "invited" (to use the term of the papers) to immigrate to certified alienable and disposable lands open for the landless especially where there are more lands than farmers and where communities and settlements with the maximum government inducements are not only offered but really provided in advance even at free cost to the settlers. In the long run the government will reap the benefits from those settlements in the form of up-to-date payments of real estate taxes from solvent farmers, happy, con-

Forestry Management in Burma

With Particular Reference To Teak Forests
And The So-called "Taungya Forestry"

INTRODUCTION

Burma, including the Federated Shan States, has an area of 167,453,650 acres, of which 96,562,180 acres or 58 per cent is covered with forests.

Burma may be divided into three (3) principal regions, namely, (1) the Western Mountains (Arakan Yoma) with the Arakan coastal zone; (2) Burma Basin comprising (a) the Irrawaddy-Sittang Delta; (b) Pegu Yoma, (c) Central Burma, and (d) Northern Burma; and (3) the Shan Plateau and its southern continuation, the Tennasserim ranges,

In the forests of Arakan Yoma grows teak, the typical and the most valuable type of vegetation along the lower reaches, while higher up in the slopes, oak and pine form the forests. The Burma Basin is one of the foremost rice-exporting regions of the world. It is also a region of valuable teak forests—the monsoon forests. In the higher elevation, pines and rhododendron grow. Vast expanses are still unexplored and unknown. The Shan Plateau is an area of evergreen forests, grasslands and pine forests.

FOREST RESOURCES

In Burma, all forests belong to the State. The one important species is teak which forms ten to twelve per cent of the entire forest composition. The rest, with the exception of the several less known species with limited markets, is made up of useless trees and "weeds".

The first step in describing the forest resources of a country must be the determination of total forest area. Until the area is known with at least approximate accuracy, formulation of a national forest policy is virtually impossible. The major land use classification is presented below:

Forested lands:		
Productive forest .	62,668,840	acres
Other forest	33,893,340	"
Total	96,562,180	" —58%
Non-forested lands:		
Cultivated and grasslands	21,622,380	" —13%
Other lands	49,269,090	" —29%
Total	167,453,650	"—100%

Forested lands include lands bearing vegetative associations dominated by trees of any size capable of providing timber or other forest products or of exerting an influence on the climate or on the water regime. Also, lands from which forests have been recently clear cut or burned, but which will be reforested in the near future.

Productive forest includes lands physically capable of producing crops of usable wood. Other forest includes lands incapable of yielding products other than fuel because of adverse site situations. This category includes forests of slow growth and of dwarfed or stunted forms.

Cultivated lands and grasslands include lands under cultivation, and natural grasslands whether used for grazing or not. Other lands are brush lands, moors, deserts, sand dunes, bare rock, swamps or bogs, also areas occupied by towns, roads, and other uses.

From utilization stand point, the forests may be divided into three categories: (1) Hill forests, (2) Accessible hill reserves, and (3) Plain forests. The needs of the local population for timber and other forest pro-

ducts are taken from the plain reserves: the accessible hill forests are worked for valuable hardwoods, in addition to teak, for local trade; while the hill forests (inaccessible) are worked for teak alone, mainly for export which contributes roughly 60% of the entire forest revenue of the country.

The forests may also be classified into types; namely: (1) tidal forests, (2) beach and dune forests; (3) swamp forests; (4) tropical evergreen forests; (5) mixed deciduous forests, with three main forms consisting of (a) moist upper—, (b) dry upper—, and (c) dry mixed deciduous forests; (6) dry forests; (7) deciduous dipterocarp forests; and (8) sub-tropical and temperate evergreen forests.

The type that concerns us is the mixed deciduous forests where teak grows. The rainfall in the regions of this type varies from 40 to 120 inches a year, which explains for the three forms under this type. Most of the trees in forests of this type lose their leaves during the hot season, February to May. They put on new leaves towards the end of that season or at the beginning of the rains. The forests are fairly open. The three forms may be briefly described as follows:

(1) Moist upper mixed deciduous forests in lower and upper Burma are characterized by the presence of bamboos. These bamboos are useful and are of economic importance. These forests contain the finest of teak. The bamboo forests of Arakan may be included in this type.

(2) Dry upper mixed deciduous forests are also characterized by the presence of bamboos of another species. Teak is mixed with other species in the forest. These species belong to the genus *Terminalia, Pentacme* and *Shorea.*

(3) Lower mixed deciduous forests occur on low ground, sometimes alluvial, usually clayey, and are characterized by the scarcity or absence of bamboos. These forests also contain teak in association with other trees producing beautiful wood for furniture and paneling as well as excellent fuelwood.

DEVELOPMENT OF FORESTRY

Historical background.

Forest administration in Burma may be said to have started in 1826 when the coastal provinces of Arakan and Tenasserim passed into British hands. It may, however, be worthwhile to mention some facts, particularly relating to teak, long before this year. In Southeast Asia, the destruction of the forests had gone on from time immemorial in order to open up lands for cultivation and grazing, and to provide timber and other produce for domestic needs of the people and for trade. It is reported that during the Alaungpaya dynasty in Burma from 1752 onwards, teak was proclaimed a "Royal" tree and disposal remained the prerogative of the king. This acted as a deterrent to the indiscriminate exploitation of teak but did not stop shifting cultivation. Although the trees were not cut but they were killed in the process of burning. Up to 1824, however, vast areas of teak forests still remained.

It may be mentioned here that Burma teak was known to the Arabs from the eighth to the sixteenth century. In the seventeenth century, a large indigenous shipbuilding industry was in existence in the Irrawaddy Delta. In the eighteenth century shipbuilding on European lines was being undertaken at Syriam and Rangoon.

All the forests of Burma passed into British control in 1885 when upper Burma was annexed. This was preceded by the annexation of Pegu in 1852.

The year 1826 marked the beginning of large scale exploitation of the teak forests of Burma. The period 1826-1854 witnessed an increase in the rate of destructive exploitation of teak forests. Exploitation was left in the hands of licensees or concessionaires over whom little or no governmental control was exercised.

Due to the rapid rate of destructive exploitation, there was some agitation to ex-

ercise some sort of control, realizing that no forest existed which can be called inexhaustible. The Moulmien forests were badly damaged so that anxiety was beginning to be felt in regard to the maintenance of the supplies of teak.

Beginning of scientific forestry.

In 1855 the Governor-General laid down the policy based on the principle that all teak timber in the forests should be retained as State property; and that the selection girdling of green standing trees should be done by the Government agency and their removal from the forests carried out under Government supervision. In 1856 Dr. Sir Dietrich Brandis, the father of Indian forestry, took charge of the forests of Burma. He was the first scientifically trained forester to come to Burma.

Brandis inaugurated the first forest working plan for Burma. The plan was the result of forest valuation surveys by which estimates of stocking of teak trees by girth classes were prepared. From estimates of rate of growth he estimated the annual yield in terms of trees of exploitable girth. He also initiated the working of teak by Government agency in Tharrawaddy forests and Government auction sale of teak logs in Rangoon, which were continued without interruption up to 1942.

The work so well founded by Brandis was carried on by successive generations of forest officers and the development and systematic organization of forestry in Burma can compare favorably with that in any country in the world. He put into operations measures to protect the forests from injury by man, which included the control of the system of taungya or hill cultivation. He convinced the Government of the importance of administering the forests on the principle of sustained yield and entrusting their management to a trained forest service of the best quality.

After the war forestry work was resumed on about as high a level as pre-war, circumstances and conditions permitting. After independence the forest department continued to function retaining practically the same administrative set-up, with some modifications introduced to suit new conditions.

FOREST ADMINISTRATION

Policy.

The chief objective of forest conservancy in Burma is to ensure the permanent production annually of a sufficient quantity of teak and other valuable kinds of timber and other forest produce, to provide for the requirements of Burma and other countries.

For purposes of forest administration, the forests of Burma may be divided into four classes, namely;

(1) Protection forests which are essential on climatic or physical grounds;

(2) Commercial forests which afford a supply of valuable timber for commercial purposes;

(3) Local supply forests, the use of which is to provide the local people with essential needs in respect to timber, firewood, etc.; and

(4) Pasture lands.

Burma Forest Act of 1902.

The basic forest law is the Burma Forest Act of 1902. It includes, among other things, provision for the constitution of reserved forests and general protection of forest. This Act contains definition of terms, among which are as follows:

(a) "Land at the disposal of the Government" means lands in respect of which no person has acquired either—

(1) a permanent, heritable and transferable right of use and occupancy under any law for the time being in force; or

(2) any right created by grant or lease made or continued by, or in behalf of, the British Government.

(b) "Public forest land" means land at the disposal of the Government and not included in reserved forest.

(c) "Reserved forest" means and includes a forest and every part of a forest—

(1) declared to be reserved forest under the provisions of Sec. 18 of this Act or the corresponding section of any act previously in force in Burma, or

(2) declared to be reserved forest under the provisions of any rules in force in Lower Burma previous to the 1st of July, 1882.

(e) "Shifting cultivation" includes taungya cultivation and cultivation of such other kinds as the Local Government may by notification declare to be shifting cultivation for the purposes of this Act.

(f) All standing trees wherever situated, except such as have been expressly alienated by grant or lease made by or on behalf of the British Government, shall be deemed to be the property of the Government and shall be reserved trees.

Provisions on shifting cultivation.

In the case of a claim relating to the practice of shifting cultivation, the Forest Settlement Officer shall pass an order specifying the particulars of such claim and permitting or refusing to permit such practice wholly or in part.

If the practice of shifting cultivation is permitted wholly or in part under the foregoing provision (Sec. 8 (3), the Forest Settlement Officer may—

alter the limit of the forest proposed for reservation so as to exclude land of sufficient extend, of a suitable kind, and in a locality reasonably convenient for the purposes of the claimants; or

cause certain portions of the forest proposed for reservation to be separately demarcated and give permission to the claimants to practice shifting cultivation under such rules and conditions as he may prescribe.

The practice of shifting cultivation shall be deemed a privilege subject to control, restriction and abolition by the Local Government, without payment of compensation and unless otherwise expressly permitted in the notification issued (Sec. 18), such cultivation shall be practiced only by the person to whom such permission is granted.

Claim to the privilege of practicing shifting (taungya) cultivation.—It should be clearly understood that the practice of taungya cultivation cannot be claimed as a right. It is merely a privilege which can, at the time of reservation, be controlled or restricted in any way, or abolished without payment of compensation by Government. In his inquiry into such claims the Forest Settlement Officer has first to decide, on the evidence before him, whether the practice should be permitted or not.

If, for example, he considers that the persons making the claim can, without inconvenience, find sufficient land within easy reach of their village, outside the proposed reserve, the practice of taungya cultivation should not usually be permitted, unless for special reasons it is considered desirable to continue it under conditions accepted by the Forest Officer. The Forest Officer should explain it clearly to the Settlement Forest Officer what objections, there are, from a forest point of view to permitting the practice within the reserve. No compensation is permitted under Sec. 10 (last paragraph, page 9) to persons who have been in the habit of practicing taungya cultivation within a proposed reserve, merely on the ground that this practice is prohibited by an Order of the Forest Settlement Officer. But other rights of taungya cutters, e. g., the right to occupy existing houses within a proposed reserve or to extract fuel or other forest produce, etc. may, with the sanction of the Local Government, be surrendered by agreement or commuted by a money payment.

If it is necessary to allow taungya cultivation in a proposed reserve, the Forest Settlement Officer may deal with the matter in one or two ways. He may either alter the limits of the proposed reserve, so as to exclude from it land suitable for the purpose and sufficient for the needs of the person claiming the privilege, or he may permit taungya cultivation inside the reserve with-

in accurately defined and demarcated limits, subject to such rules and conditions as he may prescribe. In considering which of these two methods of providing for the practice of taungya cultivation should be adopted and in revising the boundary or, if the second alternative be adopted, in selecting a suitable area, fixing conditions and making rules for taungya cutting, the Forest Settlement Officer should take into consideration the views of the Forest Officer whose duty it is to assist him with advice on these points.

It should be borne in mind that an order cannot be passed permitting the practice of taungya cultivation in the whole of the proposed reserve, and that if an order is passed permitting the practice in any part of the reserve, as finally constituted, it must prescribe the conditions subject to which permission is granted. Finally, any permission granted by the Settlement Forest Officer must be granted to certain persons by name and not to the people of the village or part of a village. Such permission applies only to the persons to whom it is granted and not to their decendants. If the Forest Settlement Officer thinks that a general permission should be granted to the inhabitants of any local area, or to the people of any race or class, he should make a specific recommendation to that effect, in order that the Local Government may sanction the grant of such permission.

Forest service.

The administration and management of the forest resources of Burma is entrusted to the Forest Department under the Ministry of Agriculture and Forests. It is headed by the Chief Conservator of Forests. The main territorial units of administration are the Circle, of which there are five in Burma proper, each under the charge of a Conservator, while the forests of the Federated Shan States are under the charge of a Principal Forest Officer, all of whom are directly responsible to the Chief Conservator of Forests. The Circle is further sub-divided into Forest Divisions, each under the charge of a Divisional Forest Officer who is directly responsible to his corresponding Conservator. The Forest Division is parcelled into Ranges under the charge of a Range Officer who is directly responsible to his corresponding Divisional Forest Officer. A Beat is the smallest administrative unit. Besides, there are two other Specialist Circles—the Working Plan and Training and Research. Working Plan Officers are performing the functions of the former while the Silviculturist, Forest Economist, Botanist and Entomologist are functioning under the latter.

FORESTS MANAGEMENT

Circles.

For forest management purposes, the forests of Burma proper are divided into five working circles and that of the Federated Shan States form a separate working unit. The forest areas within the circles and working unit fall under two clasifications—the reserved forests and unclassed forests and these are shown below:

Circle	*Reserved Forests*	*Unclassed Forests*
Maritime	5,876,508 acres	16,568,320 acres
Hlaing	1,943,601 "	3,433,600 "
Sittang	3,111,545 "	3,486,080 "
Upper Chindwin	4,583,148 "	13,197,440 "
Lower Chindwin	4,733,035 "	13,893,760 "
Total for Burma	20,247,837 "	60,579,200 "
Federated Shan States	2,023,947 "	10,159,360 "
Total	22,271,784 "	70,738,560 "

Of the reserved forests in Burma, 8,208,706 acres are classified as merchantable (teak only), 7,886,785 acres as merchantable (all species), and 4,152,346 acres as unprofitable or inaccessible Of the unclassed forests in Burma, 11,328,640 acres are classified as merchantable (teak only), 23,093,760 acres as merchantable (all species), and 26,156,800 acres as unprofitable or inaccessible.

In Burma proper, three square miles of reserved forests have not been surveyed while 6,327 square miles of unclassed forests remained unsurveyed. In the Federated Shan States, all the reserved and unclassed forests have been surveyed.

Of the unclassed forests in Burma proper, 14,277,120 acres are unexplored, 41,125,760 acres are unfit for reservation, and 5,176,320 acres are possibly fit for reservation.

Silvicultural systems.

The Hill Forests are worked solely for teak under what is known as the Burma Teak Selection System. This is a modification of the true Selection System practiced in Europe. The yield is fixed by the number of trees for each felling series after the growing stock, rate of increment and survival have been determined. The present formula for determining annual yield is.

$$\text{Annual yield} = \frac{\textit{Number of trees 1 foot below girth limit}}{\text{Felling cycle}}$$

The felling cycle of 30 years is adopted and a minimum exploitable girth of 7-1/2 feet (6-1/2 ft. for dry forests) is fixed on the assumption that teak takes 150 years on the average to mature.

Three years prior to extraction teak is girdled and allowed to dry while standing. At the time of girdling or subsequently after extraction, extensive improvement fellings and climber-cutting are carried out not only to ensure regeneration, to assist saplings and poles to establish, and free bigger stems for proper growth, but also to reduce the proportion of other hardwoods.

Comparison of the results of enumerations after a period of years shows a definite increase in the teak stock. Subsequent results show that there has been a general increase in the number of trees three feet in girth. This increase is shared by teak but its increase in relative proportion with other species in the crop has failed.

To increase the proportion of teak in such forests, advantage is also taken of the phenomenon of gregarious flowering of bamboo, which is invariably followed by the appearance of abundant natural regeneration of teak. Where regeneration is scarce, it is supplemented by planting of teak stumps and sowing, and subsequently tended by weeding, clearing, fire protection and thinning. Observation has shown that the most prolific regeneration takes place in the dry upper mixed deciduous forests.

In the past stress was laid on the necessity of fire protection of the young crop and the dead stock. Observations and experiments tend to prove that in many types of forest it was decidedly harmful in that it favored the valueless species. This was more so in the case of teak. The result was the general abandonment of fire protection except in plantations in their young stages of growth.

In Accessible Hill Forests, all valuable hardwoods are taken out in addition to teak. Selection system is also practiced and improvement fellings in favor of teak are carried out where teak regeneration is abundant. The objective here is the final production of a uniform or even-aged mixed forest of teak and other valuable hardwoods. Most of the forests are now in the conversion type.

Almost every species is taken out in the Plain Reserves. Coppice with standards system is practiced in these forests. In other suitable areas, clear cutting is carried out, after which plantations are made by taungya with paddy and vegetables as the crop. The other system used is natural regenera-

tion without seed bearers. In this system, the area is clear-felled and burned after all trees needed by the villagers have been removed. Satisfactory regeneration of all species is obtained.

TAUNGYA FORESTRY

Forest cover in deserted taungya.

Brandis reported in 1856 of an observation he had of deserted taungyas. There was an abundance of young trees with due proportion of teak. Another observation was made in 1861 to 1862 in Irrawaddy Division in Upper Zamayee forests. The forests were classified as Class C as the second class trees were about four times as numerous as the first class trees. The forests as a whole had the appearance of a young forest.

It is the tradition among the inhabitants of this part of the country that the hills were once densely populated by the Karens, who under their own Chiefs kept at bay the Burmans of the plains. The population is stated to have gradually decreased and to have been reduced to their scanty numbers then by the famine of 1853 caused by rat infestation. At the time there were only ten Karen villages left. The taungya clearings of these ten villages destroyed a space of nearly two square miles every year, and the injurious effects of even this limited taungya cultivation on teak was very apparent.

The hills of Upper Zamayee forests covered an area of over 200 square miles. It was speculated that this area must have been inhabited by about 50 villages for over 40 years and the whole area must have been laid under taungya cultivation. As there was no restriction at all as regards teak, taungya cultivation must have destroyed these trees together with most other large trees. The new forest springing up while taungya clearings gradually were reverting to their original character would, after the lapse of 60 or 70 years, present the character of the teak forest which at that time covered the hills of Upper Zamayee District—few trees of large girth with a big number of trees of smaller classes.

History

In 1858, the Karens inhabiting the Attaran forests offered to plant teak in their taungyas provided that trees so planted would be regarded as their personal property. However, teak plantings in taungyas were made to replace all teak which were killed due to fire in the course of taungya cultivation.

Real progress was made in 1868 when Karens in Thoonzai and Beeling forests were induced to plant teak in their taungyas at certain rates of remuneration. There were 2,515 acres planted with costs ranging from Rs. 9-14 an acre. In Pegu where the Karens collected the seeds, the payment was Rs. 10 per 1,000 plants (one acre) while in Tenasserim where seeds were provided by the forest department, the payment was Rs. 8 per 1,000 plants. Plants in excess of 1,000 per acre were not paid. Capitation (poll tax) and taungya taxes were paid for them. Plants were counted at the end of the rainy season and were about 6 to 12 inches high. In burning the taungyas they see to it that fires did not spread and they also assisted in protecting the reserves from fires originating outside the reserves.

Teak plants were planted at a spacing of 6 feet by 6 feet or about 1,210 plants to an acre. During the first three years the plants require to be kept clean of weeds as bamboos if not kept down would attain a height of 10 to 15 feet. Subsequent clearings were paid for separately and in many cases laborers for weeding were procured from elsewhere. In places where bamboos were abundant and fast growing, plant rows were 12 feet apart and plants on the row 3 feet apart to facilitate clearing of bamboos.

Early taungya plantations:

That teak must be sown and planted artificially on a very large scale in order to increase its proportion to meet the needs of

local consumption and export trade had been an objective of forest management in Burma. This objective was hoped to be attained through the establishment of regular plantations and taungya plantations.

Regular plantations were started in 1856 with an initial planting of 16 acres in Attaran District. The work was extended to other districts and by 1880 there were in maintenance 3,389 acres of regular plantations with an average cost of Rs. 88 per acre. In 1868, taungya plantations were started in Thoonzai and Beeling forests. In 1880, 2,515 acres were in taungya plantations and the cost ranged from Rs. 9 to 14 per acre. It can easily be seen that the cost of planting taungya plantations is very much lower than that of regular plantations.

As early as September 26, 1853, a proclamation declared all forests in Pegu to be the property of the Government and prohibited the cutting, marking or felling of teak timber. The Rules of 1865 provided, among other things, that no clearings for taungya cultivation must be made on Government lands in which stood teak trees. The protection of the Government forests, however, had not been quite successful because large areas of teak-producing forests had annually been destroyed by taungya clearings.

Areas in the heart of the forests were assigned to the Karens. Areas were assigned to the community—not to any particular head of the clan. Outsiders who did not belong to the community were not allowed to settle in the area but old settlers could be included. These people were, however, encouragd to settle in wet paddy lands. The average area cleared by each family ranged from three to four acres. A bamboo forest could be cleared again after five to seven years while a tree forest after 15—20 years, although generally much older. As some parts of the areas were not fit for taungya cultivation, the areas assigned must necessarily be much wider.

In 1880, the total area of reserved forests was 1,157 square miles, of which 213 square miles were assigned to the Karens. There were 572 families and the area required was only 44,640 acres, still 136,320 acres or over three times were assigned. The assignment was 64 acres per house or four acres annually on a rotation of 16 years or three acres yearly on a rotation of 21 years.

Early proposals and plans:

As previously stated, the Karens were paid for the trees planted after the end of the rainy season. But for the plants to survive, they need to be clear of weeds for the first three years. It was then proposed not to permit taungya to be cut for planting teak unless the people undertook the responsibility of clearing the plants of weed continuously for the first three years. Clearing was to be paid for separately. No person was permitted to cut fresh taungya for teak planting unless he had complied with the conditions with regard to clearing weeds from older taungya planted to teak.

The problem encountered was the overtopping of teak by bamboos. In four to five years, teak may attain a height of 15—25 feet while bamboos would be 40—60 feet high. If the cutters were made responsible for clearing, they would endeavor to make a good burn of bamboos.

The early plan called for the planting of 1,000 acres a year in reserved forests. It was estimated that these could be done by 330 taungya cutters with families. The cutters lived in 22 hamlets or tays with 15 cutters in each tay. The total population was estimated at 1,200 to 1,800 persons. Under this plan, 10,000 acres could be planted in ten years. However, care had to be taken to have sufficient area of suitable land available and conveniently situated, where the people could raise their paddy with teak for the continuance of these operations and for their maintenance.

Taungya plantations in Arakan:

Teak does not occur indigenously in Arakan. Original plantings in taungyas must have occured in 1872—1880.

Among the hill tribes (Kamis, Chins, etc.) of Arakan, there existed a very consistent and deeply embedded prejudice on their part against having anything to do with formation of teak plantations. This hostility was partly based on the fear that the formation of plantations would restrict the areas available for taungyas, and partly on a very distinct dislike in having any interference from forest subordinates or Arakanese officials. The Kamis and Chins (hill tribes) would as a rule prefer to earn Rs. 10 by a really hard month's work on their own than to earn Rs. 30 by working for the Government under subordinate's orders.

It has been the experience here of having very meager results on very high expenditures on the formation of taungya teak plantations. Weeding was done by women folks who could not recognize teak seedlings from other weeds and as a result many plants were cut down.

A taungya cutter usually preferred a bamboo forest; usually he had neither the energy nor the implements to clear an area properly of large trees. In the case of some tribes, the choosing of the side of his taungya was attended by some occult rites, which determined whether or not it was to be lucky or not. For example, after having chosen tentatively the site of his taungya, he returned home and slept on the matter. If he should perchance dream of tigers, elephants, dead men, etc., the omens were not propitious as far as that particular site was concerned and he abandoned his intentions to clear such site.

In some cases, taungya cutter cooperated and had shown willingness to have their yas planted if offered some reward.

Recent taungya plantations:

For many years forest officers looked upon the taungya cutter as an unmitigated curse. It has later been recognized, however, that he could play a useful part, and that, in the taungya cutter, Burma possessed an extremely valuable asset in the regeneration of the forests. All of the teak plantations in Burma have for many years been made by taungya. The taungya cutter does all the work of cutting, burning, cleaning, etc. for nothing and merely gets a reward at the end of the season for the live trees in his ya.

Taungya plantation procedure depends on getting the cultivator to plant or sow a new forest crop with his food crop so that when he moves out useful trees, and not weeds restock the area. The system converts the existing miscellaneous worthless forests into valuable forests. Taungya plantation varies with families—the area ranging from one to five acres. The advantages of taungya plantation are as follows:

a. It gets over labor difficulties;
b. It is cheaper from financial point of view; and
c. It tends to bring about cordial relationships between the Forest Department and the village folks.

As stated elsewhere in this paper, the practice of shifting cultivation is deemed a privilege. It is subject to cancellation if the permittee omits for a continuous period of exceeding five years to practice such cultivation, either himself or by some member of his family, and if such person has not during such period been engaged in the cultivation of taungya plantation in reserved forests on behalf of the Government. An example of this was the cancellation of taungya rights granted to 50 villagers in Ngamin Reserve in 1919 as they had not been exercised. Another instance was in North Zamayi Reserve where in 1923 taungya rights granted to 50 villagers were also cancelled due to non-use.

As of March 31, 1923, there were carried in the books of the Forest Department 98,840 acres of taungya plantations with an average cost of about Rs. 24 per acre. In 1940, plantations have been classified as "old" or "modern" according to existence of accurate records of expenditure and revenue. No particular date could be used as the dividing line between "old" and "modern"

plantations, as Circles differed greatly in the possession of accurate data. Hlaing Circle was able to adopt 1918 as the first year of "modern" plantations, and Sittang and Maritime Circles, 1921; but Northern and Chindwin Circles could not fix earlier dates than 1935 and 1937 respectively.

In 1940, after writing off areas considered as failures as well as revision and recomputation of areas, there were in record 53,168 acres of "modern" plantations and 83,341 acres of "old" plantations. The average cost of the total area of 136,509 acres was Rs. 32 per acre.

Forest Villages:

It is reported that J. W. A. Grieve, a Conservator, did remarkable job in establishing forest villages, in which it was hoped to find solution of two vexed questions of how to secure adequate labor supply, and what to do with the taungya cutter.

The definition of a forest village was somewhat enlarged by the decision of the Government in 1924-1925 to grade certain villages which have taungya privileges in reserved forests as forest villages for purposes of administrative control. This decision was made in order to allow the control of these villages through the medium of the Forest Department. A forest village proper was a village established by mutual agreement between each individual villager and the Forest Department with the object of undertaking planting operations or otherwise affording a labor supply.

In 1927 forest villages were classified into three categories; namely. "plantation villages" primarily engaged on planting forest crops in connection with shifting culvation, "labour villages" to supply workmen for any other operation, and "enclave villages" which had no obligation to work with the forest department. In 1928 there were 149 forest villages, consisting of 68 plantation, 48 labor, and 33 enclave villages.

In 1930 there were 38 enclave villages all located in Hlaing Circle. It was reported that the position of these villages was most unsatisfactory. The majority of them were inhabited by Karens, the descendants of those who were given rights for taungya cutting in certain areas at the original settlement of the reserves. The right was given in general terms to the Karens of the Pegu Yoma and it was hoped that they would form a useful labor supply. With the exception of one village, none of the Karens have been successfully employed on plantation work. Some had taken to permanent cultivation. Areas for permanent cultivation were for definite location and the Karens increased the areas under permanent cultivation without permission. The areas shown as cultivated were actually less than half the area under cultivation, thereby reducing the area necessary for a continuation of taungya cutting.

In 1929, under Circular No. 13 of the Chief Conservator, a policy was laid down allowing 250 acres for each household still practicing taungya cutting and for the transfer of the Karens to permanent cultivation in the plains with suitable compensation. The offer to transfer did not receive favorable reaction and the Karens' alternative proposals as regards compensation being extortionate showed their unwillingness to leave the areas. Nevertheless, the re-settlement of the Karens on the basis of 250 acres for each taungya cutting household, allowed considerable areas of valuable teak forest being resumed.

In 1931, areas under permanent cultivation were surveyed as well as those areas suitable for permanent cultivation. The purpose was to encourage permanent cultivation and to restrict unregulated taungya cutting inside the reserves. In that year there were 10,332 acres permanently cultivated inside the reserved forests.

It was reported in 1935 that the position with regard to Karen Villages in enclaves in the Pegu Yoma reserves was still far from satisfactory. At the original settlement, very large areas were set aside within reserved forests for the practice of taungya cutting by the Karen inhabitants. These Karen

areas, as they were called, contained some of the best forest soils in the reserves and some of the finest teak forests. Assuming a liberal annual cutting area of six to eight acres and a reasonable margin for unsuitable soils, an allowance of 250 acres per household must be considered an adequate allotment as the taungya rotation does not exceed 15 to 20 years.

Within seven Divisions inside Pegu Yoma Reserves, there were in 1935, 1,130 taungya cutters and the area assigned under the old settlement were 620,381 acres. On the basis of 250 acres per cutter, the area required should only be 282,500 acres or an excess of 337,881 acres.

The population of the Karen areas has not appreciably increased since the settlement of the reserves, rather the contrary. The areas containing teak were not available for cutting as under the privileges for taungya cutting granted at settlement, no teak over one cubit in girth at three feet from the ground may be cut or injured from fire. Cultivation was confined to secondary growth on areas previously cut and the reduction of areas so as to exclude from the Karen areas the forests containing good teak would cause little, if any, hardship to the Karen inhabitants. On the contrary, once the Karen areas were reduced to reasonable limits action could be taken to eradicate all teak in them so that the Karens would be under fewer restrictions, while steps could be taken to place at their disposal areas suitable for permanent cultivation.

There were in 1940, 233 forest villages consisting of 42 plantation, 58 labor and 133 enclave villages. During the year 14,610 acres were under permanent cultivation. Areas under permanent cultivation inside the reserves had not increased considerable since 1925 which were 10,666 acres; 10,687 acres in 1930; 11,485 acres in 1935; 13,762 acres in 1937; and 14,833 acres in 1939.

Recent policy on taungya plantation:

It was recognized as early as 1926 that the policy so enthusiastically inaugurated in 1918 of creating large areas of artificially produced crops was by no means a safe one. The factor of disease was a very formidable one and its existence was only too apparent. Teak was being attacked by wood-boring insects.

It was also recognized that artificial regeneration was the quickest and surest method of getting a crop on the ground. In many cases, for example, heavy bamboo forest, it was the only economical method. Where the extraction demand for timber exceeded the supply available in the natural forest there was no reasonable alternative to artificial regeneration and the risk of disease had to be faced. Where however the demand was light, the same reason did not exist and regeneration should go slow to avoid sacrifice.

Besides, it was becoming axiomatic that artificially created crops required continual attention up to the tenth year and thereafter clearings and thinnings every five years for at least the first half of the rotation if not throughout the rotation. In addition it was found that attack by beehole borer was much heavier in the case of teak trees grown in plantations than in natural forest. As teak plantations were made mainly as a commercial proposition, with the object of growing teak for export, the Government must be certain that growing such plantation would be a financial success. It was therefore necessary to consider the question of the advisability of discontinuing making any further teak plantations on the ground that such plantations could not produce timber of the same quality as that produced in natural forest and also on the ground that it was doubtful whether such plantations would prove a financial success.

The question of future policy with regard to plantations in Burma was discussed at a conference of Conservators some time in 1933-1934. It was the opinion of the Chief Conservator at the time that making any more plantations was financially and silviculturally unsound. However, maintenance

of existing plantations had to be carried on and limited plantings would be done in a smaller scale in suitable areas.

The controversy on the plantation question was resolved by a statement of policy enunciated by the Government. This policy ruled that in view of the speculative nature of the investment and the long rotation necesary to obtain timber of the quality required, further planting of teak for export should cease and at the same time advocated increased attention be paid to natural regeneration. Planting for supply of the internal demands of Burma was fully approved provided that planting was mainly confined to teak and pyinkado (valuable hardwood) and in the case of teak, was restricted to localities where the incidence of beehole borer was not heavy. The Forest Department began in 1934-1935 a review of each plantation center in the light of the policy laid down. It was possible to justify continuance of operations at the majority of centers, but each case was dealt with on its own merits.

A number of centers in the zone where the incidence of borer was heavy have been given up, but efforts were made to redistribute centers and ensured that they were situated only in the localities best suited for growth of the produce required.

The policy of 1934 for the establishment of plantations was revised in 1935 in the following terms:

> "Government consider that planting on the long rotation necessary to produce teak timber of a size and specification suitable for export is too speculative a policy to be justified on any ground and that it certainly cannot be justified on economic grounds Planting, or any other form of production for export trade must be regarded solely as a business undertaking and the assurance of a profit is essential. In view of the long term investment involved, of the risk of damage by natural enemies attendant on the planting of large areas of pure forest, especially with a species such as teak which in a natural state grows in a mixed crop and of the increasing menace by substitutes, it is considered that this desideratum cannot be fulfilled. It follows, therefore, that the policy of planting teak for export should be abandoned and Government have decided that the work of forming such plantations shall be closed down gradually."

In 1938, the Government confirmed the 1934 policy regarding plantations of teak for export, namely, that such planting should be gradually closed down to end in 1938-1939. The 1934 policy regarding maintenance of existing plantation was however modified. The Forest Department was formerly ordered to examine the existing plantations on their merits with a view either to their maintenance on the usual lines or complete cessation of protection and tending at the earliest possible date. It has been accepted that all reasonably successful plantations should be maintained. It was stipulated that a review should be made from time to time to see that only plantations which were proving to be sound economic proposition were maintained.

The aim of the Government to provide for internal demand for teak and pyinkado timber as well as firewood by planting within reasonable access of the more populous centers were confirmed. For this purpose, an annual limit of 1,500 acres of new plantations for the period 1939 to 1943 was fixed, the bulk of these to be for village supply and the balance for commercial sawing timber for use in the country.

As a result of the policy pursued in limiting the areas planted to teak foi export, a gradual reduction of area planted was made. During the period from 1924—'25 to 1928—'29, there were planted an annual average of 3,660 acres; 2,795 acres annualy for 1920—'30 to 1933—'34; 1,729 acres yearly for 1934—'35 to 1938—'39; and 1,448 acres in 1939—1940.

Present policy:

The Forest Department of the Union of Burma is pursuing the same policy enuncia-

ted in 1935—that of limiting regeneration of the forests by taungya plantation to local supply areas. The remaining forests are to be regenerated naturally. Improvement fellings in favor of teak and other valuable species are quite important operations. As a general rule, improvement fellings follows extraction and cover the whole area once in a girdling cycle.

Observation:

It appears that in Burma a practical solution has been evolved at least in restricting the spread of shifting cultivation in reserved forests. Under adequate supervision, taungya cultivation may be confined in definite areas so that encroachment of valuable teak forests has been brought down very considerably.

Permanent cultivation has been encouraged as well as settlement in the plains. A system of control over the population in forest reserves through the establishment of forest villages seems to be workable—to furnish steady source of labor for forest work and for effective control of the activities of those merely engaged in shifting cultivation for their livelihood.

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THE END

Reforestation With Government Fund

By

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INTRODUCTION

Too often people cannot appreciate the value of a thing until they have lost it. History has fully demonstrated this in the case of forests. As man progressed and settled down to cultivate the soil, he began to consider the forest as a barrier and obstacle. The forest must give way to agriculture. This was demonstrated in the oldest seats of civilization in northern Africa, southern Europe, near East and the Orient. However, we need not go far for examples. Right here we have the cases of the denuded regions, the so-called oldest Spanish settlements, the Ilocos and Cebu. The people cut their forest without thinking of the future. They have never known, because nobody taught them, that in order to insure the permanence of agriculture in the lowland the upper slopes of the mountains must be kept forested. Nobody taught them the forest insures the continuous flow of water from springs. Nobody taught them that forest minimize soil erosion, tempers extreme climatic conditions and serves as windbreak. They did not know that forest and forest products can be cut and gathered and can be made to serve indefinitely the needs of the people if it could be allowed to regenerate itself. The people did not know that trees are crops that can be harvested and grow again. Nobody has shown to them the truth that trees are replaceable unlike ores and metals once mined are gone forever.

These, the people in those denuded regions never learned inspite of their claim that theirs is the "first seat of civilization"! Within their lifetime they have seen the effect of their own folly the result of their greed and selfishness—the destruction of their forest. Many of those old folks are the same people now complaining that the climate has become unbearably hotter, the water table has sunk deeper, the rivers that used to have clear flowing water now becomes muddy during rainy days, overflow its bank and deposit sand and gravels over the agricultural lands below causing incalculable damage to property and public work. During the dry season, the rivers are dry.

The land can no longer produce enough to feed the local population and the people are impoverished, they migrate to other places where there are still forests because there the soil is rich — there perhaps to repeat what they or their ancestors have done —destroy the forest.

Indeed, people are hard to convince, and education is a slow process. The government had to do something to solve the problem. Annually, the rivers of the denuded regions unleash their fury spreading havoc, devastation, suffering, death and misery.

REFORESTATION WORK BEFORE WORLD WAR II

These rivers must be tamed and their fury controlled. Dams and levees are too expensive. Reforestation seems the only practical solution. Thus, in 1910 the Bureau of Forestry started to study the possibility of reclaiming cogon lands by planting trees in the vicinity of the School of Forestry at Los Baños, Laguna. The result of trial plant-

ing had been very encouraging and hundreds of species have been tried and found successful.

Members of the legislature must have been so impressed with the possibility of planting barren lands that in 1916 passed Act 2649 appropriating ₱10,000.00 for reforesting the denuded and barren hills of the Government-owned Talisay-Minglanilla Friar Lands Estate in Cebu. Thus was established the Cebu Reforestation Project first such attempt in a big scale. This has proved a success inspite of difficulties due to the hostile attitude of the squatters. This project proved to the skeptics that trees can be coaxed to grow in cogon and barren lands. The work was however, discontinued upon exhaustion of the fund.

To obtain funds for reforestation was very difficult and it was only in 1919 that funds became available in the General Appropriation Act for this purpose. The amount was not much but it permitted the opening up of three more projects besides the maintenance of Cebu and Los Baños projects. Experimental plantings were carried on up to Ilocos provinces and Baguio. This limited appropriation continued in the annual budget up to 1926 and more convincing data were gathered proving that barren wastelands can be made to grow trees if the right species and proper methods are used.

So in 1927 Act 3238 was passed appropriating ₱50,000.00 to continue the reforestation activities of the Bureau of Forestry. This made possible the opening up of four new projects including the Cinchona Plantation in Bukidnon. This could not last long with nine projects to maintain so that in 1932 the maintenance of these projects had to be provided in the regular appropriation for the bureau again. This was barely enough and this condition had to drag on to 1936. Available record shows that ₱310,000.00 was the total amount granted during the five-year period.

Greater impetus was given the cause of reforestation in 1937 when the legislature passed Commonwealth Act No. 245 appropriating ₱258,198.00 for reforestation purposes. This has greatly increased the activities of the existing projects. Planting surveys were conducted to determine areas that need immediate establishment of reforestation projects. As a result of these surveys, twelve new projects were established.

1938 Com. Acts Nos. 300 and 304 provided a total of ₱1,256,370.00 to continue the reforestation work already started. Five more new projects were established and a new Division of Reclamation and Reforestation was organized in the Bureau of Forestry. This work has become a major activity of the government. The people have awakened to the need of keeping the mountain slopes forested and they could see in the reforestation projects that forest can be made to grow again on barren lands.

In 1941 a total amount of ₱1,689,710.00 had been appropriated for reforestation. The reforestation program of the Government with such readiness of Congress to cooperate could not but succeed.

Before the outbreak of World War II the status of Reforestation work by the government was as follows:

Number of reforestation projects in operation	35
Areas extensively studied	2,111.070 Has.
Areas intensively studied	1,851.960 Has.
Found needing reforestation	972,670 Has.
Areas to be reforested in the 35 projects	476,692 Has.
Areas of established plantations	27,983 Has.
Area of Cinchona Plantation	344 Has.
Amount so far spent —	over 3-1/2 million pesos

The last war practically destroyed all the improvements and plantations already established The work of decades of hard work and sacrifices went up in smoke or appropriated for use by the enemy aggravated by the activities of the looters and evacuees who must live at any cost.

REFORESTATION AFTER THE WAR

After the war reforestation work could not be resumed immediately. It was not until January 1946 when funds became available for the purpose. ₱216,000.00 had been released to be spent up to June 30, 1946. Twenty-nine projects were reopened and work had to start from scratch. Where no buildings remained temporary huts had to be made to shelter the project personnel. Work in the projects consisted in retrieving looted property, fixing water systems, cleaning former nurseries or establishing new sites where the old nurseries were over-grown with seedlings left in the seed beds, taking stock of what was left of the project after the war.

For fiscal year 1947 ₱280,000.00 was appropriated under Rep. Act No. 80 for reforestation. The Cinchona Plantation in Bukidnon was granted ₱144,000.00 as revolving fund. During the year, 620 hectares were planted and 117,053 square meters of nursery space used.

REFORESTATION FUND (REP. ACT NO. 115)

Conscious of the necessity of a steady source of fund to finance the reforestation activities of the government, Congress enacted Rep. Act No. 115 constituting a Reforestation Fund by levying ₱0.50 on every cubic meter of first and second groups timber and ₱0.40 on every cubic meter of third and fourth groups timber cut out and removed from any public forest for commercial purposes. This Act took effect on June 7, 1947 and collections are shown below by fiscal year:

Fiscal Year	*Collection*
1947-1948	₱437,515.71
1948-1949	862,985.20
1949-1950	908,087.73
1950-1951	1,192,390.32
1951-1952	1,310,255.44
1952-1953	1,025,694.52
1953-1954	1,440,419.91
TOTAL	₱7,177,348.83

From the fiscal year 1947-1948 to the fiscal year ending June 30, 1954, an average expenditure in round figure of ₱890,000.00 had been spent every year. This, certainly is an impressive figure based upon pre-war values. But considering that today salaries and wages have risen to a level four times that of pre-war level, that amount is certainly not much. However, the following data is here presented to show the status of the reforestation work today:

Number of reforestation project in operation	38
Number of nurseries for cooperative planting	12
Total area of nurseries	174 Has.
Total area of existing plantations left after the war ...	5,230 Has.
Area of plantations established after the war	6,470 Has.
Total area of plantation now under maintenance	11,700 Has.

For a more comprehensive idea on the magnitude and progress of reforestation the following table is presented:

TABLE SHOWING THE REFORESTATION PROJECTS AND THEIR ACCOMPLISHMENTS

Name of Reforestation Projects		Year established	Area of Nursery (Sq. M.)	Proposed Area to be reforested	Area Actually Planted (Has.)	Percentage
1. Makiling	Los Baños, Laguna	1910	77,631	3,900	438	11.2
2. Cebu	Camp 7, Cebu	1916	5,844	2,690	749	27.8
3. Caniaw	Bantay, Ilocos Sur	1919	54,216	35,236	347	0.9
4. Arayat	Pampanga	1919	15,000	3,710	537	14.4
5. Impalutao	Impasugong, Bukidnon	1927	29,998	1,000	330	33
6. Ambuklao	Bokod, Benguet, Mt. Province	1928	4,000	29,980	376	12.2
7. Cinchona	Kaatoan, Malaybalay, Bukidnon	1929	71,260	3,192	453	4.9
8. Paraiso	Nueva Era, I. Norte	1930	45,101	26,160	705	2.7
9. Salinas	Pingkian, N. Vizcaya	1931	56,681	5,400	402	7.4
10. San Jose	San Jose, N. Ecija	1931	68,764	20,000	596	2.9
11. Siquijor	Larena, Siquijor	1937	11,054	488	300	61.5
12. Carranglan	Carranglan, N. Ecija	1937	77,286	14,800	633	4.2
13. Marinduque	Boac, Marinduque	1937	190,000	3,480	138	3.9
14. Itogon	Itogon, Benguet, Mt. Province	1937	13,200	32,500	420	1.3
15. Bohol	Carmen, Bohol	1937	98,559	2,920	633	2.1
16. Bulusan	Bulusan, Sorsogon	1937	10,000	3,673	52	1.4
17. Cabunagan	Bauko, Mt. Province	1937	42,816	27,380	913	3.3
18. Aringay	Pugo, La Union	1938	17,500	14,930	69	.4
19. Roosevelt	Dinalupihan, Bataan	1938	3,390	1,480	127	8.5
20. Magat	Bagabag, N. Ecija	1938	10,000	20,050	138	.6
21. Lagangilang	Lagangilang, Abra	1938	265000	38,500	353	9.1
22. Kennon Road	Benguet, Mt. Province	1938	5,234	5,200	476	9
23. Canlaon	Murcia, Neg. Occ.	1938	22,890	6,120	293	4.2
24. Sto. Tomas	San Marcelino, Zambales	1938	11,465	10,000	119	1.1
25. Baguio	Benguet, Mt. Province	1938	2,333	30,560	804	2.6
26. Consuelo	Sta. Fe, N. Vizcaya	1935	160,000	12,000	101	.8
27. Nasiping	Gattaran, Cagayan	1939	55,690	4,720	200	4.2
28. Malaybalay	Malaybalay, Bukidnon	1939	27,813	1,750	323	18.5
29. Manleluag	Mangatarem, Pangasinan	1939	40,400	91,700	26	2.8
30. Bacnotan	Bacnotan, La Union	1948	30,000	115	16	13.9
31. Nabua	Nabua, Cam. Sur	1949	81,496	1,500	59	3.9
32. Liuanag	Tumauini, Isabela	1949	2,885	5,100	127	2.4
33. Dingle	Dingle, Iloilo	1949	6,885	260	149	51.7
34. Malasag	Cagayan, Or. Misamis	1949	58,499	900	121	13.4
35. Sibalom	Sibalom, Antique	1949	15,000	5,620	34	.6
36. Basilan	Basilan City	1951	15,866	15,000	102	.6
37. Sta. Cecilia	Tagkawayan, Quezon	1953	16,000	16,000	—	—
38. Anakan	Gingoog, Or. Misamis	1953	3,500	3,900	15	.3
12 Forest Nurseries			99,875	——	26	—
	TOTAL		1,744,992*	501,914	11,700	2.3

* The nursery area of Cinchona is not included.

It will be noted from the foregoing table that there are only 11,700 hectares so far planted out of about half a million hectares embraced in the 38 reforestation projects. Yet, this total area is not the only area that needs to be reforested. Those who are prone to look at statistics will call attention to the existence of 5,073,300 hectares of open grass-

lands scattered throughout the country and say without hesitation that this vast tracts of wasteland should be reforested. When they point to the whole five million hectares and see what has been planted so far, they begin to fold under their own delusion and despair, saying and pointing an accusing finger upon the Bureau of Forestry that "reforestation in the Philippines is a "FAILURE". It will take centuries to reforest. This is unfair.

Of the total area of 5,073,300 hectares of open grassland representing 17.06% of the land area of the Philippines, 2,727,200 or 9.17% are potential agricultural lands, 955,500 or 3.21% are pasture lands and 1,390,600 or 4.68% are considered for reforestation. Even this area may reveal upon intensive planting survey that a portion may be non-plantable because it is bare rocks or too steep and another portion may not need artificial planting because of the presence of some mother trees there are plenty of small natural reproductions.

The following table shows the location by provinces of areas that are classified as needed for reforestation, as compiled by the Division of Land Classification of the Bureau of Forestry:

TABLE SHOWING AREAS TO BE REFORESTED AND PERCENTAGE BASED ON LAND AREA BY PROVINCES

	REFORESTATION	
Province	*Area*	*Per Cent*
1. Abra	22,300	5.85
2. Agusan & Butuan City	100	0.10
3. Albay & Legaspi City	29,300	11,36
4. Antique	31,000	11.57
5. Bataan	300	0.23
6. Batanes		
7. Batangas & Lipa City	27,900	9.01
8. Bohol	76,900	
9. Bukidnon	40,800	5.08
10. Bulacan	13,200	4.99
11. Cagayan	37,400	4.16
12. Camarines Norte		
13. Camarines Sur & Naga City	3,200	0.60
14. Capiz & Roxas City	22,400	5.08
15. Catanduanes		
16. Cavite & Cities of Cavite and Tagaytay	6,800	5.28
17. Cebu & Cebu City	83,300	17.11
18. Cotabato	71,400	3.11
19. Davao & Davao City	12,100	0.62
20. Ilocos Norte	37,400	11.04
21. Ilocos Sur	48,700	18.14
22. Iloilo & Iloilo City	23,600	4,45
23. Isabela	48,100	4.56
24. La Union	10,700	7.79
25. Laguna & San Pablo City	4,100	3.41
26. Lanao & Cities of Dansalan and Iligan	26,700	4.00
27. Leyte & Cities of Tacloban and Ormoc	5,500	0.69
28. Marinduque	2,500	2.72
29. Masbate	66,900	16.44
30. Mindoro Occidental	59,900	11.14
31. Mindoro Oriental	52,400	11.14
32. Misamis Occidental & Ozamiz City	3,400	1.64
33. Misamis Oriental & Cagayan de Oro City	5,600	1.43
34. Mt. Province & Baguio City	103,800	7.34

Province	Area	Per Cent
35. Negros Occidental & Bacolod City	32,300	4.27
36. Negros Oriental & Dumaguete City	31,200	5.87
37. Nueva Ecija & Cabanatuan City	60,500	11.02
38. Nueva Vizcaya	35,100	5.16
39. Palawan	26,300	1.78
40. Pampanga	11,900	5.56
41. Pangasinan & Dagupan City	19,900	3.80
42. Quezon	9,400	0.79
43. Rizal & Cities of Manila, Pasay and Quezon	6,900	3.3.1
44. Romblon	4,400	3.32
45. Samar & Calbayog City	3,600	0.26
46. Sorsogon	2,100	1.02
47. Sulu	28,000	9.95
48. Surigao	700	0.09
49. Tarlac	81,800	26.89
50. Zambales	28,100	7.71
51. Zamboanga del Norte & Zamboanga City	15,700	1.82
52. Zamboanga del Sur & Basilan City	15,000	1.82
TOTAL	1,390,600	4.68

Many of the areas indicated above are not comprised in the present reforestation areas but the watersheds of the most destructive rivers are all under the established projects. It is unthinkable to simultaneously reforest all the area indicated above out of present available funds. It would be spreading the work too thinly barely showing any tangible result. As a matter of fact even now we have too many projects.

AN APPRAISAL

A view of the whole situation will give one the impression that reforestation with government funds is too costly and too slow a process. But past experience has proven that it can be done and the writer honestly believes that the pace can be accelerated four times and the cost can be cut down to as low as ₱100.00 per hectare to establish a forest plantation, may be less.

The Bureau of Forestry before the war had to go begging for funds all the time and the work had been desultory and inconstant. Then as well as after the war much of the funds allotted were for construction of buildings, sheds, water systems, seedbeds, paths and ridges, purchase of equipment, supplies and materials so that plantings had to be necessarily much less. Once the nurseries are rehabilitated then more plantings can be done.

In the evaluation of the work many fail to see the other benefits that can be derived from the reforestation projects. These projects have easily become meccas for excursionists and are themselves parks where people go for study and recreation. Thousands visit our projects annually. Then too are the employment of hundreds nay thousands of men who, otherwise would be unemployed.

It is estimated that about one million hectares of open lands will need to be reforested all over the country but the writer maintains that present supply of technical men and with present funds available, reforestation should be confined, at least to the already intensively studied areas inside the watersheds of the principal destructive rivers in order to obtain the best result. These areas total to only about half million hectares.

These areas will cost about ₱50,000,000.00 to reforest at the rate of ₱100.00 per hectare and at the rate of 4,000 hectares annually, it will take 125 years to complete the project. But every year the procedure and methods should be reviewed and studied

(*Continued on page* 44)

Trend of Wood Utilization in the United States, Europe and Japan

By

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It gives me much pleasure to put in writing my observations on the utilization of wood in foreign countries that I have visited early this year which indirectly leads to forest conservation.

The close utilization of wood impressed me much during my recent travels in the United States, Europe and Japan. In the sawmills and allied lumber industries that I visited, careful and decided efforts are always there to make every piece of wood and wood waste into something very useful.

In Memphis, Tennessee, for example, the Nickey Bros. with a large veneer plant-rotary and slice — a finishing mill has also been installed to produce oak flooring out of ripped 2" strips in three thicknesses of 3/8", 1/2" and 13/16", utilizing lengths as short as 9" T & G and end matched. Very remarkable close utilization indeed! In the market, this special brand of flooring is sold under the trade name: NOFMA — NICKEY MADE IN THE U.S. (Nofma stands for National Oak Flooring Manufacturing Association). Their plywood products consist of sliced veneer, rotary veneer and 5-ply panel boards with lumber core and 3-ply veneer core. The lumber core is laminated lumber of 2" wide strips and 9/16" finished thickness made from waste in the manufacture of lumber from Philippine Mahogany. Rotary veneer is cut to 3/16" thick and sliced veneer to 1/24" thinck. Panel boards are manufactured to 3/8"-3/4" thick by 4", 6" and 8'' wide by minimum length of 7' running mostly 8'-12' long. Practically everything is utilized: sawdust is converted into presto logs for firewood. Ribbon grain veneer is usually produced from sliced cut veneer, but for the first time, I saw here figured veneer produced by the rotary. This is accomplished by putting into the rotary machine a crescent-shaped or quarter circle flitch. This method, of course, incurs more waste in roundings, but the advantage is that the veneers produced are quartered, show ribbonbrain and could be matched in the final making of the panel similar to sliced veneer. In the Philippines, our plywood manufacturers usually manufacture rotary veneer by continuous peeling from a log, resulting in plain sawn face with no figure.

Another practice I observed not only with the Nickey Bros. but also other lumber factories is the emphasis given in quality and quantity control. They keep daily graphical statistics of the quality of their products and daily production. The line of the graph should not deviate beyond a certain limit, say 3, so that if the quality or production goes above or below 3, the technician will immediately investigate and the cause therefore removed in time. They are far advanced in this line. Every industry I visited, the laboratory phase is one of the departments of the plant under an expert technician, who keeps watch of the production and its quality to prevent wasteful productions.

In Stockholm, Sweden, I visited and made an observation of the Igelsta Sawmill, reputedly the most modern mill in Europe. It is a gang sawmill — 4 gang saws were

cutting spruce and Swedish redwood. The logs are very small, the maximum being about 26" in diameter and the length is usually 8'. Yet they are exporting their products in Europe and even to South America. Gangsaw is popular in Europe to save waste in sawkerf as they use very thin gauge saws and the logs sawn are usually small diameter. In other words, higher lumber yield could be obtained from small logs by using gang saws.

In Gamon, Belgium, I visited the site of the hardboard plant of the Union Allumettiere which also operates the largest match factory in Europe. Here I saw, due to lack of raw materials, even limbs and twigs of trees as small as my wrist and small bits of wood waste in the match factory converted into chips to augment the supply of wood pulp for the manufacture of hardboard.

I have been informed that most sawmills in Sweden have chipper or hog that convert their mill wastes into chips and sold to pulp wood and hardboard plants. I saw all along the road piles of short pieces of logs for pulp and hardboard plants, some of them as big as a man's arm, and these reminded me of Pansol and Calamba where ipil-ipil firewood are stocked along the road for sale to pedestrians.

The Igelsta Sawmill has a treating tank to impregnate lumber and ties, using a solution of arsenic instead of creosote. Arsenic solution is yellow, but later turns green. They advertise their product in this manner: "Arsenic impregnated Igelstat lumber Swedish Redwood (similar to Oregon pine) with durability of oak." The chemical treatment prolongs the life of the wood, hence reduces the demand for more lumber and ultimately leads to the conservation of the forest. They also run a planing mill and dry kiln. They make joinery articles, car vans and furniture. Their lumber waste is ground into chips and sold to wallboard plants. Logs are barked and the barks are ground, pressed to remove the water and mixed with sawdust for use as fuel in the boiler houses. We can do this here in the Philippines, if and when we lack fuel in the future: grind the barks which are not needed in the wallboard manufacture, press out the water from our sawdust and the two combined produce a very combustible fuel. But the need is remote at least in our generation for the supply of firewood is plentiful at the present time. What we can profit out of what I observed here is the utilization of good lumber, but wasted because they are either narrow or short. We can utilize these narrow pieces into lamination strips and the short pieces converted into parquet floors. What is needed in this kind of factory is a good planing mill and dry kilns, good propaganda and advertisement to sell these new products locally. Abroad, its manufacture is well known and its use already accepted by the market.

In the Forest Products Laboratory in Madison, Wisconsin, U.S.A., I have observed an experiment being conducted on the application of inlaid paper over a finished defective lumber in order to effectively hide defective portions such as big solid knots, ugly appearances, as well as checks and slight cracks. I understand this is also being used on species that do not admit paint easily. All of these practices have the objective of utilizing all kinds of wood that are not used today. Here one can see in action the progress of "conserve the forest by wise utilization."

From what I saw in the mountains that we passed by, Japan does not have thedensity size and height of our trees. This is the reason why they are very careful in taking care of their forest and closely utilizing what timber they possess. The big logs that they have and which I saw in their mills are cedars. Along the road approaching Nikko are lined with giant cedars about 700 years or more similar to the California Redwood but in small scale. In their farms, tree planting is practiced along the border of the farm; they cannot afford to use their arable land to forestry. In all the hills around the resorts, especially in Hakone area, artificial af-

forestation is extensively practiced and fire lines are carefully established. The trees they plant are mostly cedars and Japanese fir. I visited several sawmills both in Osaka and in Tokyo and I noticed that close lumber utilization is done to the highest degree; very little lumber is wasted in the mill. They do not cut slabs about 4-6" thick and this slab is sawn on the narrow gauge bandsaw to produce 2-4" strips, and these strips are resawn to remove the barks resulting in very thin slabs. They utilize for furniture, pieces as small as 1" x 1" x 2' and even as short as 18" in some cases. I saw logs, as big or should I say as as small as my leg, being sawn in their hand sawmill. Eighty per cent of our wastes in our mills in the Philippines, were it in Japan, could be recovered for some uses. This close utilization is one of the secrets of Japan in being able to compete in the United States against the Philippines in the sale of Philippine Mahogany lumber that they manufacture from logs imported from us.

In the Philippines, on account of the abundance of wood no serious thought is taken to conserve wood supply, thinking perhaps that the forest is inexhaustible. But are we conserving our forest thru wise utilization? We have no industries that make use of sawmill refuse that are now burned and thrown away as waste. The Philippine Wallboard plant being erected by the Nasipit Lumber Company, Inc. is one of such wood-waste-saving plants; its product will amplify the use of a given volume of wood consequently in a way reduce the drain on lumber. But this is not enough. Research in utilizing Philippine Mahogany wood pulp for paper making is in order — it will certainly help the economy of the country a great deal for there is abundant raw material supply found in the forest in the form of tops, branches, destroyed and uprooted poles unavoidable in the course of logging operation. Along the Agusan River alone logging wastes can support a pulp industry that could produce thousand tons of paper and could employ hundreds of laborers. That is utilizing resources and at the same time saving dollars that will otherwise go to foreign countries to buy our paper requirements.

My message, therefore, to our capitalists and industrialists is to exploit the potentialities of an industry that will utilize present forest and lumber wastes now found in abundance in logging and sawmill operations. It means close utilization of wood material and conservation of our forest resources by wise use.

FOREST FOLICY . . .

(*Continued from page* 20)

tented and law-abiding people in decent communities increased food production for the nation, savings in the form of forest resources which otherwise would just go up in smoke in the pernicious operations of shifting cultivations, the improvement of health and climatic conditions, reduction of erosion and the conservation and regulation of the flow of rivers and streams, increased game and wildlife, and other intangible benefits.

Reservations for non-Christian tribes established not like penal colonies but patterned more or less after the EDCOR projects with the same incentives and privileges given to captured, surrendered and repentant Huks will confine the non-Christian tribes in areas where they could be educated and civilized to become more useful citizens of the Philippine Republic. Those tribes however who insist on being wild and are not amenable to such treatments may be let alone.

Generally the Filipinos whether Christian, Mohammedan or non-Christian if handled right are not a rebellious people. Justice tempered with mercy, an iron hand in a velvet glove, social justice and equity, with the necessary social amelioration programs will go a long way in establishing a strong and progressive Filipino nation; its people schooled in the doctrine of conservation, not only of forests but also all forms of natural resources, and forestry conscious to insure their economic well-being and comfort.

REFORESTATION WITH . . .

(*Continued from page* 40))

and corrections and improvements be introduced to further reduce costs and increase accomplishment. With well prepared plan, flexible enough to allow proper adjustment, this task of reforesting barren lands can become a reality.

RECOMMENDATIONS

1. Reforestation is admittedly a very expensive and a slow process but it is a challenge that should be met squarely now — it is the price we must pay for the folly of the past. We should put more efforts in it.

2. There may be advocates of leaving the denuded barren mountains and concentrating our efforts in logged-over areas but in the Philippines the people are now clamoring for attention to the barren areas. The rivers from denuded watersheds are causing them untold sufferings and privations. We certainly cannot wait longer. On the contrary the logged-over areas can wait because with the cooperation of the logging companies or operators, proper steps can be taken to insure the regeneration of the logged-over areas. Patrolling is all that may need be done to protect such areas from squatters and kaiñgin making.

3. Politicians have been bearing much pressure upon the operations of the various reforestation projects such that many incompetent workers are admitted, hence the efficiency of the work is greatly affected. Let there be no such interference.

4. Many of the projects are manned only by nurserymen or laborers. Technically trained personnel should replace them.

5. About one fourth of the expenses of reforestation are spent in other works other than actual reforestation activities. All of the reforestation fund should be funnelled to the productive side of reforestation.

In this connection all personnel occupying positions in the reforestation plantilla should work on their intended job.

With the above recommendations, it is the fervent hope of the writer that reforestation with government funds will not be branded anymore as failure.

Your New Forestry Laws

By

TEOFILO A. SANTOS
and
ANDRES C. GARALZA, JR.*

During the Second Session of the Third Congress of the Republic of the Philippines, many important bills on agriculture, trade and commerce, forestry and the like were passed by both Houses. Through the resplendent leadership of Hon. Guillermo R. Sanchez, Congressman for Agusan, and Chairman, Committee on Forests, several forestry bills were introduced. Some were signed by President Magsaysay, and the others are still pending in said Committee for further study and improvement.

Among those signed by the President are:

(1) *Republic Act No. 1252*—A law amending certain sections of the "Pasture Land Act," by requiring persons leasing or using public land for pasture to put up at least one head of large cattle belonging to the lessee or permittee for every five hectares thereof, and providing additional penalty for the violation of said Act. This amending Act remedies the defects of the old "Pasture Land Act." The old provision regulates the issuance of lease or permit to use or occupy pasture or grazing lands but there are no penal provisions for the violation thereof. So that, a lessee or permittee most often uses the land not for pasture purposes, but for agricultural ones, thereby defeating the very purpose of the law. The old provision also fails to provide certain requirement for a lessee or permittee to fulfill immediately upon being granted a lease or permit to use a pasture land. Because of lack of such requirement, a lessee or permittee may not begin the contemplated cattle industry for two or more years after the approval of his lease or permit, thereby making the pasture lands applied for to remain idle and unused. This amending law, with its penal provision, will surely improve our cattle industry, for failure for the lessee or permittee to put up at least one head of large cattle for every five hectares of pasture land within the designated time, will cause the automatic cancellation of his lease or permit. And if our cattle industry is improved, it means also — great saving of our "dollar allocation."

(2) *Republic Act No. 1239*—A law requiring the registration of agents, contractors and dealers in logs, lumber and commercial piles with the Bureau of Forestry. This will add income to the government and at the same time will regulate the *illegal activities* of so many "river loggers" and "subcontractor loggers" who are active in many places throughout the Philippines and, apparently, seem not cooperative with our forest officers.

(3) *Republic Act No. 1273*—A law amending Section 90 of Commonwealth Act No. 141, otherwise known as the "Public Land Act." The amended Section provides, "that the applicant agrees that a strip forty meters wide starting from the bank on each side of any river or stream that may be found on the land applied for, shall be demarcated and preserved as permanent timberland to be planted exclusively to trees of known economic value, and that he shall not make any clearing thereon or utilize the same for ordinary farming purposes even

after patent shall have been issued to him or a contract of lease shall have been executed in his favor." The painful experience of China, United States, and even our provinces such as Cebu, Ilocos Sur and Ilocos Norte where disastrous consequences always occur of allowing farmers to cut down indiscriminately the forests that serve as a protecting cover on the lands that border streams and rivers, greatly impresses our legislators. This amending law will minimize wanton cutting of trees along banks of streams which causes the soil cover to become loose and openly exposed to wind and water erosion; check and/or minimize disastrous floods which always cause and inflict a heavy damage on standing agricultural and commercial crops; conserve the moisture in the soil along the banks of streams; and reduce the effects of sudden inundations.

(4) *Republic Act No. 1288*—A law regulating the planting, gathering or selling of "tubli" and other poisonous plants and to penalize any violation thereof. This will stop the evil and most common practice of fishermen along the coastal towns throughout the Philippines of catching fish by means of poisoning them with "tubli." This will also improve our fishing industry. Incidentally, this provision also applies and regulates government bureaus and agencies which conduct "tubli" planting within the public domain.

(5) *Republic Act No. 1342*—A law providing for the appropriation of one hundred eighty thousand pesos (₱180,000.00) for the procurement and propagation of coffee and cacao seeds and seedlings for distribution at cost to planters in the Philippines, and for other purposes. We take cognizance that the consumption of coffee and cacao all over the world has increased steadily and prices have gone up. The Bureau of Plant Industry, at present, does not have enough funds to undertake this gigantic task, to help develop our coffee and cacao industries. So, this law provides sufficient funds for the acquisition and distribution at cost of coffee and cacao seeds and seedlings to planters in the Philippines. This will minimize the shortage in the supply of coffee and cacao in the islands and to meet the increasing demand of the people who are addicted to those two profitable growing-concerned crops. Much have been said that too much "dollar" can be saved if we give material and technical encouragement to our Philippine agricultural capitalists. This Bureau implements *wise land-use policy* by the *Tree Farm Lease*.

(6) *Republic Act No. 1350*—A law which provides funds for the operation of the government of the Republic of the Philippines during the period from July 1, 1955 to June 30, 1956. This appropriates funds for the expenditure, operation and maintenance of the different branches, departments, bureaus, and other agencies of our government, and for other purposes.

To our fieldmen and other forestry coemployees, we greatly appeal to YOU that it is not enough that we, the more fortunate ones, know some of the forestry laws now existing and enforced; it is not enough that we observe and practice their prohibitions and limitations; and it is of less value if we only memorize them like we pray our "Holy Rosary," for to do so, we will only become like "perfect recording machines" — talking without understanding. What is most important and needed today is to let those people, our brethren, who are living in the remote towns, barrios and other places, be acquainted with our forestry laws. For us, who know less, are less probable to violate them; for those who know nothing, most often find themselves behind the "bars for not knowing." "Ignorance of the law excuses no one from compliance therewith"; ignorance of the people is not a tenable premise for their excuse. It is more of our primary concern in life, to let them know what are those past and recent legislations affecting forestry, rather than to leave them . . . for self-knowing. For unless we do this, unless we let the people love and cherish the forests, and unless we let them know the immediate

(*Continued on page* 52)

Report of Committee to Study the Need for Increasing the Number of Forest Guards to Protect Logged-Over Areas Where Kaingineros are Active to Secure the Aid of the Philippine Air Force

One of the most important problems in the conservation of our forests is their protection against the shifting system of cultivation generally known as *"illegal kaiñgin."* They are responsible for the present denuded areas found in the Ilocos region, Cebu, Bohol and other provinces and the loss in revenue which amounts to thousands of Pesos. The *denudation of the mountain sides due to kaiñgin making results also in soil erosion, uncontrolled floods and prolonged droughts.* The timber destroyed could have furnished raw material for our wood-working industries and given employment to thousands of laborers.

There were many cases of kaiñgin making not detected by forest officers due to lack of personnel or because they are made in very inaccessible places such as in the interior of the forest.

We have an estimated forest area of about 12,515,200 hectares. The Bureau of Forestry has at present 829 technical men which means that there is *only one technical man to supervise about 15,000 hectares of forest land.* It is estimated, however, that of these only about 1,700,000 hectares which are in accessible places are in need of immediate protection.

The problem of forest protection is aggravated by the fact that there *is a great deal of unlicensed firearms* and the *condition of peace and order in many places* of the Islands are far from being satisfactory. Moreover, a great deal of these illegal clearings are made by the nomadic people such as the Mangyans of Mindoro, the Igorots and Ilongots of the Mt. Province, the Manobos and Subanos of Mindanao and other so-called non-Christian tribes whose only means of livelihood is through the making of illegal kaiñgin. They are the ones responsible for the extensive forest destruction and clearings which could be seen in the interior of the forest from the air when one travels by airplane.

The areas, however, which require immediate attention are the logged-over areas of holders of ordinary timber license and license agreements. *These areas need not be reforested if they could only be protected from "squatters"* and *illegal kaiñgin.* It is estimated that we have *about* 250,000 *hectares* of these logged-over areas that *need immediate protection.*

Bringing the kaiñgin cases to the court of justice does not remedy the situation. This is due to the fact that the Bureau of Forestry does not have enough funds to defray the expenses of witnesses the absence of whom results in the dismissal by the court of many cases filed. Moreover, the defendants invariably seek the aid or help of politicians especially their Congressmen. Prevention is better than cure. It will, therefore, be more effective if the people could be educated to the evil consequences of illegal kaiñgin making and prevented from starting illegal clearings. The remedy, therefore, will be to have enough personnel especially rangers and forest guards to patrol those areas so that the people will not commit forest destruction. At present the Bureau of Forestry has 263 forest guards but many of these, due to lack of personnel, are engaged in administrative work and in the scaling of timber for the purpose of collecting revenue. In the case of the 1,-

700,000 hectares which need protection, we will require about 850 forest guards based on the estimate that an area of about 2,000 hectares is the most efficient unit which could be protected and patrolled by one forest guard. Deducting the 263 that the Bureau of Forestry has at present there is, therefore, a need for 587 additional forest guards. We have about 120 concession guards employed by timber licensees. Their work is mostly in the prevention of timber stealing. Since they are employed by licensees they are temporary in nature and their qualification cannot be very well screened.

However, as stated above, the lands that need immediate attention are the logged-over areas estimated to be 250,000 hectares. Based on the estimate given above, this will require about 125 forest guards. At the rate of ₱1,440.00 salary per annum of each it will mean an annual appropriation of ₱180,000.00. Traveling expenses for these forest guards need not be provided. The plan is to allocate for each forest guard in the middle of the 2,000 hectares a place to live with sufficient space to plant temporary crops such as vegetables so that the area could be properly protected. The selection of the forest guards with regards to qualifications, both physical and mental, as well as of the overseers and supervisors are sufficiently discussed in the report of another committee.

In the light of the above data and information, your committee recommends the following:

(1) To make representations to proper authorities for the *appropriation* of ₱180,000.00 to cover the salaries of 125 forest guards to patrol the logged-over areas which need immediate *protection.*

(2) The selection of these forest guards should be in accordance with the standards and qualifications recommended by the Committee on Selection, Qualification, Training and Supervision of Proposed Forest Overseers.

(3) Because of the unsatisfactory condition of peace and order the cooperation of the Philippine Constabulary should be secured so that during the kaiñgin season soldiers should accompany the forest guards in the patrol work as their presence will have a very salutary effect in the prevention of kaiñgin making.

(4) The *cooperation of the air force* of the Armed Forces of the Philippines *should be secured* especially during the dry season to *detect illegal clearings* that are generally started in the interior of the forest. The findings should be immediately reported to the nearest forest officer.

(5) Reservations should be set aside for the non-Christian tribes so that they may have a place to reside and lands to cultivate. In this case they could not only be educated and converted to become useful citizens but will minimize the forest destruction that they generally commit.

(6) More intensive and systematic educational campaign on the evils and destructive effects of kaiñgin making and on the importance and benefits of forest conservation should be made.

(7) The present cooperation between the Bureau of Forestry, the Bureau of Lands and other government agencies entrusted with the occupation or distribution of lands to the landless be activated so that people may be allotted suitable land for them to occupy and cultivate thus lessening or entirely avoiding their going into absolute forest lands and start illegal clearings.

(*Sgd.*) CARLOS SULIT
Chairman
(*Sgd.*) TOMAS N. ROQUE
Member
(*Sgd.*) ISABELO ACHACOSO
Member

Some people are like wheelbarrows—they never go unless you push 'em.

* * *

"Man is like a tack. He must be pointed in the right direction, driven hard, and then he'll go as far as his head will let him."

Some Trees Suitable for Gardens

By PACIANO RIMANDO
Forester, Bureau of Forestry

In tree planting the choice of species is the fundamental principle next to be considered, after taking into account the size, form, topography, soil conditions and the object of planting a lawn or garden, school ground, park, plaza, street, and other utility area, be it a private or public ownership.

There are different qualities of our trees. There are trees planted for display of their beautiful flowers, leaves and crowns. Others are planted to provide good shade during hot summer months for men, domestic animals and birds; give edible fruits for young children and adults alike, and medicinal barks, leaves and flowers for the sick. For the more intricate landscape work some trees are planted to lend harmony of form and color effects of the beautiful landscape contemplated. The gardener and homeowner may avail of these essential qualities of our trees to solve his particular landscape work. He should know what to plant, besides, where, when, and how to plant.

A farmer, teacher, agriculturist, minister or priest, homeowner or gardener may find the following list helpful in his choice of trees that are good for his purpose. The kind of tree, the flower, blooming period, size of crown and sometimes the type of soil the species would fairly develop best are indicated for easier selection. The list is far from complete but shows the more common trees planted.

Common Name (Botanical Name)	Shade Tree	Foliage Tree	Flowering Trees	Flower (Blooming Period)	REMARKS
1. Acasia or Rain Tree *(Samanea saman)*	xx	x	x		Large-sized, wide spreading crown. Grows in a variety of soil at low altitude.
2. Achuete *(Bixa orellana)*	x	x	xx	Whitish terminal August-September	Small tree. Crown small.
3. African tulip *(Spathodea campanulata)*	x	x	xx	Red, terminal November-February	Medium-sized tree. Grows on sandy soil. Will do on partly dry soil. Suitable at low altitude. Crown medium.
4. Agoho *(Casuarina equisetifolia)*	x	xx			Medium-sized tree. Crown medium. Grows well on sandy soil but will do on partly dry soil at low altitude.
5. Alibangbang *(Bauhinia acuminata)*	x	x	xx	Whitish axillary August-October	Shrub or small tree. Grows partly on dry soil. Cultivated. Crown small.

** Indicates the more suitable use of the species.

Common Name (Botanical Name)	Shade Tree	Foliage Tree	Flowering Trees	Flower (Blooming Period)	REMARKS
6. Antipolo *(Artocarpus blancoi)*	x	xx			Large-sized tree. Crown medium. Grows on deep clay, but will do also on partly dry soil.
7. Bagalunga *(Melia dubia)*	x	x	xx	Whitish axillary May-July	Small to medium-sized tree. Grows on sandy soil and will do on partly dry soil. Crown small.
8. Banaba *(Lagerstroemia speciosa)*	x		xx	Lilac-purple May-July	Medium-sized tree, partly deciduous. Grows on wide variety of soil at low and medium altitudes. Crown medium.
9. Banuyo *(Wallaceodendron celebicum)*	xx	x	x	Yellowish, terminal June-August	Medium-sized tree. Grows on sandy soil and will do also on partly dry soil. Suitable at low altitude. Crown medium.
10. Bitaog or Palomaria *(Calophyllum inophyllum)*	xx	x	x		Grows on sandy soil, but will do on partly dry at low altitude. Large-sized tree. Has the tendency of leaning when young. Crown medium.
11. Benguet pine *(Pinus insularis)*	x	xx			Large-sized tree. Crown medium to large. Deep clay soil. Rather delicate to grow unless on soil mixed with soil under mother tree.
12. Caimito or Star Apple *(Chrysophyllum caimito)*	x	xx			Small tree, crown dense small. Grows on clay-loam soil at low altitude.
13. Calachuchi *(Plumiera acuminata)* *(Palaquium philippense)*		x	xx	Creamy white, Pink and red. November-May	Small tree. Grows on dry soil or partly dry soil at low altitude.
14. Camagon or Mabolo *(Diospyros discolor)*	xx	x			Medium-sized tree. Crown medium to conical. Grows on variety of soil, rather slow growth.
15. Golden shower *(Cassia fistula)*	x	x	xx	Yellowish axillary pendant May-June	Medium-sized tree. Partly deciduous. Dry soil at low altitude. Crown medium.
16. Dapdap *(Erythrina orientalis)*	x		xx	Red, terminal or axillary January-April	Large-sized tree. Deciduous. Dry or wet soil at low altitude. Crown medium.

Common Name (Botanical Name)	Shade Tree	Foliage Tree	Flowering Trees	Flower (Blooming Period)	REMARKS
17. Dungon *(Tarrieta sylvatica)*	xx	x			Large-sized tree. Crown large. Grows on variety of soil at low altitude.
18. Fire tree *(Delonix regia)*	x	x	xx	Red, terminal March-July	Medium-sized tree. Grows on deep soil. Will do on partly dry. Deciduous. Crown medium.
19. Fringon *(Bauhinia monandra)*		x	xx	Pink purple axillary. Nearly throughout the year.	Small tree. Cultivated. Partly dry soil. Crown small.
20. Pink shower *(Cassia javanica)*	x	x	xx	Whitish pink. Medium. February-April.	Medium-sized tree. Partly deciduous. Grows on deep soil, partly dry at low altitude. Crown medium.
21. Ilang-ilang *(Cananga odorata)*	x		xx	Yellowish axillary Nearly throughout the year.	Medium-sized tree. Will grow on all kinds of soil. Crown medium.
22. Kalios *(Streblus asper)*	xx	x			Small to medium-sized tree. Crown small. Deep soil. Will do on partly dry soil at low altitude. Slow growing.
23. Kamuning *(Murraya paniculata)*		xx	x		Shrub to small-sized tree. Crown small. Deep clay loam soil, but will do on partly dry.
24. Mahogany (Small leaf) *(Swietenia mahogani* Linn*)*	xx	x			Medium-sized tree. Will do on partly dry soil.
25. Mahogany (large leaf) *(Swietenia macrophylla)*	x	x			Medium-sized tree. Crown medium. Grows on clay-loam soil at low to medium altitude.
26. Malakmalak *(Palaquim philippense)*	x	xx			Medium-sized tree. Crown medium. Grows on deep soil.
27. Maluko *(Pisonia alba)*	x	xx			Small-sized tree. Crown small. Grows on variety of soil.
28. Molave *(Vitex parviflora)*	xx	x	x		Small to medium-sized tree. Crown medium. Grows on rocky dry soil from sea coast to medium altitude.

Common Name (Botanical Name)	Shade Tree	Foliage Tree	Flowering Trees	Flower (Blooming Period)	REMARKS
29. Narra (*Pterocarpus* spp.)	xx	x	x	Yellowish, axillary April-May	Medium to large-sized tree. Deciduous. Will do on wide variety of soil. Crown medium to large.
30. Oringen (*Cynometra ramiflora*)	x	xx			Small tree. Thrives in deep soil in low, moist country.
31. Palosanto (*Triplaris americana*)	x	x	xx	Whitish pink, conspicuous February-April.	Grows on partly dry deep soil at low and medium altitude. Small to medium crown.
32. Sampalok or Tamarind (*Tamarindus indica*)	xx	x			Medium-sized tree. Crown medium. Grows on sandy and partly dry soil at low altitude.
33. Santol (*Sandoricum koetjape*)	xx	x			Small to medium-sized tree. Crown medium. Grows on a variety of soil at low altitude.
34. Saraca (*Saraca declinata*)	x	x	xx	Yellowish Pink December-March	Grows on deep soil at low and medium altitude.
35. Salisi (*Ficus benjamina*)	xx	x			Small-sized tree. Crown dense and small. Grows on a variety of soil at low altitude.
36. Siar (*Peltophorum enerme*)	x	x	xx	Yellow terminal January-April.	Medium-sized tree. Crown medium. Grows on sandy and partly dry soil at low altitude.

** Indicates the more suitable use of the tree.

NOTE:—The Bureau of Forestry furnishes seedlings of common species available from forest nursery, free of charge, for Arbor Week planting.

YOUR NEW . . .

(*Continued from page* 48)

consequences of violating those forestry laws, our effort of planting and protecting trees of our own initiative will all be futile and useless, for "kaingins" will still be rampant, and other forest destructions will still be perpetrated elsewhere throughout the Philippines because of the ignorance of the people. So, we must see to it that forestry laws are well-rooted in the people's mind, and the economic value of our trees is looked upon, for it is only there, that our efforts to conserve the forests, OUR HERITAGE, shall be highly attained.

If a man is locked in a house and all he has is a calendar, a bed, and a piano, how can he live? He could eat the dates in the calendar, drink the water from the bedsprings, and strike the piano till he gets the right key and walk out.

The Narra As the National Tree

By Jose Viado

The narra answers all the requirements for an ideal national tree because of its popularity, utility, aesthetic value, hardiness, rapidity of growth, nativity, and history. It is representative and expressive of the character of the country and its people.

This tree is common throughout the Philippines, and may be taken as symbolic of many things. It is a tall tree, which characteristic seems to be expressive of the lofty aspiration of the people to be one of the independent nations of the world. It is stalwart and enduring, which fact could be taken to signify the steadfast persistence of the Filipinos in their demand for freedom. While other trees are bent or uprooted by tempests, the narra tree usually withstands such disaster. A storm may strip it of its leaves and break off its smaller branches, but the tree itself remains upright. As the narra has resisted the tempest, so has the Filipino fought his oppressors.

When the bark of the narra is injured, a red sap oozes out — a constant reminder of the blood that has consecrated Philippine soil in the numerous daring attempts of Filipinos to free their country from foreign domination, and of blood still running the veins of the people ready to be shed upon their country's call.

During certain parts of the year, the narra tree sheds its foliage, and new leaves grow. Every year it grows anew, undergoes a rejuvenation. This symbolizes the disappearance of old customs and their replacement by new ones, or, in other words, the onward march of progress.

Of all Philippine trees, the narra yields one of the best woods for making furniture. A treaty recently concluded between the Italian Government and the Vatican was signed on a narra table which came from the Philippines.

The appearance, habits, and qualities of the narra and what these may be taken to signify make it admirably suited to represent the country and the character and ideals of our people.

* The author is present a Senior Forester and General Inspector of Reforestation Projects in the Bureau of Forestry.

My Favorite Tree

By
Eulogio Rodriguez, Sr.
Senate President

It takes quite a lot of time for a Filipino to decide just what his favorite tree is. God has been generous to our country, and in its verdant forests and fertile plains, one finds many beautiful, useful, and even symbolic trees. For one like me who has spent a considerable portion of his youth in agricultural pursuits, the selection has been difficult, and it came only after long deliberation.

My favorite tree is the molave — strong, imposing, and useful. Alive, it stands majestically strong, resisting all the buffets of wind and storm. Fallen and converted to man's use, it retains its strength and dependability, serving its purpose for many generations. One cannot help but think of the molave as some sort of a symbol of the vigour of our Malay forefathers, and the hope for our survival as a race in the centuries to come. That is why the molave is my favorite tree.

Farewell, Paul Bunyan

(Condensed from Fortune)

Crown Zellerbach, the second largest corporation in the U. S. paper industry and one of the biggest forest-products companies, eventually may be able to utilize every part of its trees except the leaf rustle. Basically, CZ is trees. These newsprint and almost every sort of paper, as well as a great deal of all sorts of lumber.

The company owns, controls or has a substantial interest in huge Oregon, Washington and British Columbia forest trees which total about 20 billion board feet, in an area of 2200 square miles. Because CZ's future depends on this vast forest reserve, it has laid out one of the industry's best forest-management programs. "Trees Forever" is CZ's operating and planning slogan.

As early as 1889 one papermaking unit now embraced in CZ restocked with seedlings some cottonwood islands in Oregon's Willamette River after logging them out. Forty-five years later CZ harvested the crop, restocked and again turned elsewhere while another crop grew on the islands. Today CZ is a leader in the *tree-farm* movement, with 14 units in Oregon and Washington, whose 625,000 acres are rapidly pushing up raw materials for future pulp years. Since 1945, using hand labor, *seed guns*, planes and helicopters, CZ has put seedling trees or seeds into about 32,000 acres of logged or burned lands on these farms, to supplement natural seeding.

Tree farming means more than just planting and waiting. It means gathering cones, drying them and extracting the seed, cold-storing, raising seedlings to plant, *scattering seed from the air*. It also means aerial baiting of seeded lands against rodents that eat seeds, and dusting against hemlock looper, spruce budworm, bark beetles and other insects and diseases. It means fighting fire with elaborate equipment: lookout towers, two-way radios, fog machines, portable pumps that draw from company-maintained reservoirs. This industrial forestry involves controlling soil desiccation, upgrading seedbed conditions and seed-tree spacing, and otherwise intensifying tree culture.

The industrial tree farmer employs selective cutting. A forest of a 60-year-growth-cycle species will, in early decades, comprise many more trees than could ever reach full growth if none were removed. The tree farmer thins the forest after two or three decades, using the thinnings industrially and leaving the optimum number of trees with increased vigor. Another technique is to leave behind blocks of trees that will reseed cutover areas.

In an effort to line up the small wood-lot owner for such progressive practices, CZ has, since 1945, given away more than a million trees, largely to small landowners for planting on lands adjacent to CZ properties. Someday CZ will want to buy thinnings and eventually mature trees from the small forest farmer.

The development of this complex program required a revolution in forest equipment and techniques. The cry of "Timber!" is still heard in the land, but trees are felled in the Northwest nowadays by power driven chain saws instead of by hand crosscuts. By means of a huge tong mounted on a Caterpillar and powered by air (a CZ idea), the felled tree is loaded onto a truck trailer. With specialized light equipment, small mobile crews can salvage both blowdowns and the cedar poles, true firs and undersized hemlock that are often found as an understory in Douglas-fir stands, thus making

more thorough cleanup of trees economical.

Long hauls of logs are still made by river rafting; at the riverbank overhead cranes pick up logs bound in "asparagus" bundles by steel bands crimped by an automatic gadget. This makes it possible to construct outsize rafts, including logs smaller than were formerly economical, and to prevent losses of heavy "'sinkers" by loading them jointly with floaters.

The revolution in timber technology has profoundly changed the lumberjack. The modern western logger is a trade-union man; 75 per cent of all CZ loggers lived in homes with their families, and half of these own the homes. They are picked up daily by bus, carried to the logging area and taken back to town at the end of the eight-hour day's work. They tote their sandwiches, fruit, pie and coffee in lunch kits. This fare would, of course, have been regarded as an inadequate snack by old-time loggers who worked with hand tools; it is plenty for the modern logger, who is basically a machine operator. The hell-roaring life of the old logging camp is over. These modern loggers produce school and church and Scout leaders, and from time to time a town councilor.

The 25 percent of all CZ loggers who still live in camps are to be found mainly in a few isolated areas, but even some of these commute 20 to 30 miles to their homes for weekends. And the modern timber camp is a world removed from the old stag camp with its smoky cookhouse and flea boxes. Barracks have given way to three-bed cabins, rough bunks to beds with springs and mattresses. There are showers, electric appliances, linen and cleaning service, and a union grievance committee. Beards, booze artists and Paul Bunyans are to be found in percentages no higher than in the population at large. These ordinary citizens can count on a relatively settled lifetime of work, provided only that the yield of the timber in their area can be sustained.

The revolution has reached into the mills themselves.

Not so long ago even the most efficient lumber mills burned enormous amounts of waste—slabs, sawdust and saw kerf—in refuse burners. Today pulp mills convert these slabs into wood chips for the manufacture of pulp, and both lumber and pulp mills burn most of the remaining waste as "hog fuel" for the generation of steam.

Another dramatic way of saving wood is the elimination of mechanical means of removing bark. Now even the largest logs can be debarked by a high-pressured blast of water. Off comes all the bark and none of the wood. Then, instead of being cut into short lengths, the entire log (up to 42 inches in diameter) is thrown into a machine whose power-driven knives quickly reduce it to chips suitable for cooking into pulp. In some pulp mills the resulting saving amounts to 15 percent. At one CZ mill this comes to the equivalent of 600 acres of timber annually.

Inside the newer mills, no peavey (the long polelike tool of the logger) is to be seen. Elk Falls newsprint mill on Vancouver Island is the newest of all. Two men do all its wood-mill operations—handling, debarking, sawing—by push button. The paper machine is designed to produce a whopping 100,000 tons of newsprint annually and has thus far achieved an 83,000-ton rate.

The aim of CZ is such management that the commercial forest will annually add This end — called sustained yield — has not This end-called sustained yield—has not been achieved; but the increasing practice of tree farming by Crown Zellerbach and other leading industrial foresters brings it constantly nearer.

There is inspiration in these words of Bruce Barton: "Nothing splendid has ever been achieved except by those who dared believe that something inside them was superior to circumstance."

Arbor Week Scenes

Pres. Magsaysay emphasizes importance of Arbor Week. At his right, Mr. Roberto Villanueva, Chairman of National Forestry council and at left, Congressman Noel representing former Pres. S. Osmeña.

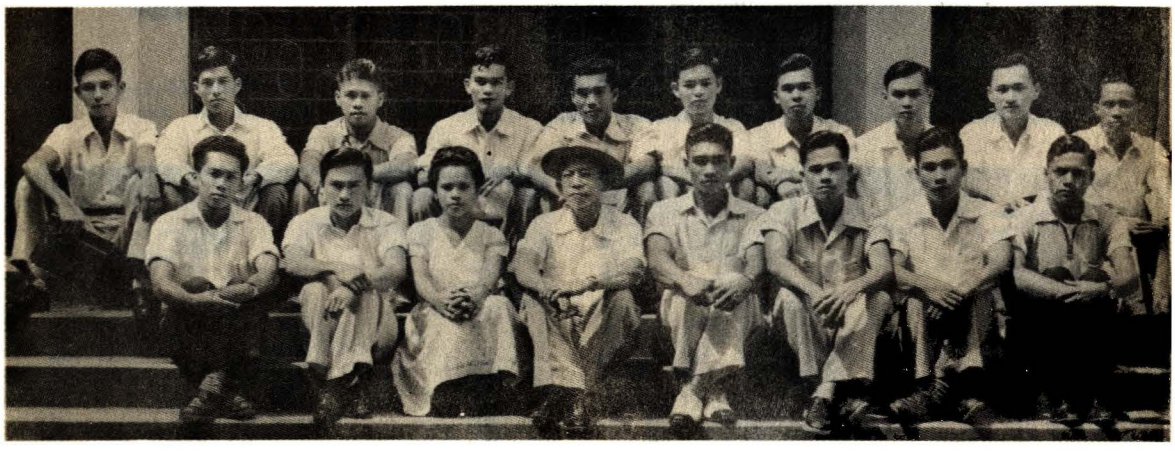
President Magsaysay himself planting his tree.

L to r: Gen. NPC Manager F. M. Zablan, member N.F.C., N.P. Lansigan, secretary, N.F.C. and Mr. R. Villanueva.

L to r: Mr. R. Villanueva, N.F.C. Exec. Chairman, Undersecretary M. Aguilar, Jr., Undersecretary J. E. Barrera, former secretary Antonio Alas and Forester N. P. Lansigan.

College Organizations

Freshman Class Organization with their Adviser Dr. Manza 1st semester 1955-56.



Junior Class organization with their adviser Dr. A. V. Manza. First row: L-r B. Lomibao, P. Sumabat, G. Cañeda, Dr. A. Manza (adviser) F. Milan, J. Albay, R. Ulangkaya and C. Wandisan. Second row: A. Galam, U. Chanphaka, D. Lagura, S. Kittinanda, S. Pachoticharn, S. Sabhasri, C. Chongrak, B. Sabhasri, V. Bhandhaburana and T. Sindhipongsa.

Senior Class Organization 1955-56 with their adviser Prof. J. Blando, Asst. Dean Mabesa, and Prof. Zamuco, College Secretary. L-r (standing) G. Batoon, S. Alegre, J. Ilagan, R. Espiritu, A. Eugenio, R. Baggayan, P. Galinato and F. Abraham, Jr. Seated same order: J. Tadle, Prof. G. Zamuco, Prof. C. Mabesa, Prof. J. Blando (adviser) and F. S. Pollisco.

Miss Remedios Felix
Reelected Sweetheart
Zeta Beta Rho Fraternity

Zeta Beta Rhoans in Diliman during Arbor Week Celebration.

1. *Forestry Coeds with their Adviser Miss H. Jundos. 1st row: C. Verzosa T. Bañaga, V. Flores, B. Tiam, Miss H. Jundos, G. Cañeda, J. Gerardo and R. Felix. Second row: R. Sanchez, T. Bote, C. Salazar, D. Lazaro, A. Rimbon, H. Amis, E. Arcilla, C. Oyam, V. Valida and P. Sumagaw. Third row: R. Ilagan, J. Galicia, M. Alombro, P. Oliveros, E. Maico, L. Borre and S. Paa. Not in the picture are: M. Espregante and N. Ocampo.*

2. *Zeta Beta Rho Fraternity* 1st *semester* 1955-56 *with their Adviser, Dr. A. V. Manza.*

3. *Beta Sigma Fraternity (Forestry Chapter) with their Adviser, Prof. V. Sajor.*

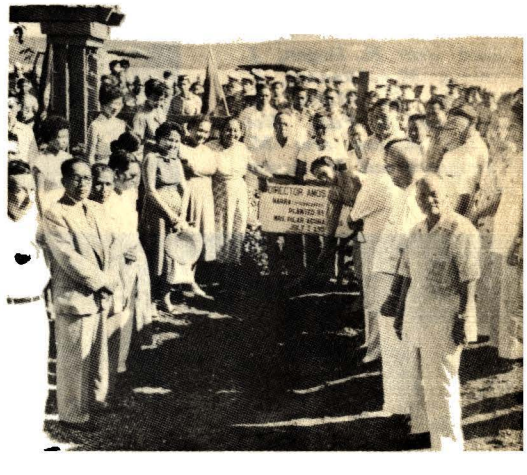
4. *The Forestry Basketball team. Front row, L-r: F. Abadilla, M. Generalao, R. Estioco, G. Batoon (Captain ball) A. Pascua, Jr. and O. Daproza. Second row: For. E. Mabesa (Asst. coach), I. Zamuco, V. Zapanta, Agcaoili, M. Ebron, F. Buenaflor, A. Marquez, Jr. and For. R. Cortez (Coach).*

Here and There

Sec. Rodriguez planting his tree (Tindalo) at the Malaybalay Reforestation Project, Malaybalay, Bukidnon on September 15, 1955.

Gen. Manuel F. Cabal planting a Narra Tree at Maria Cristina Park, Tarlac, Tarlac, on Aug. 6, 1955. At extreme left is District Forester Toribio Manzano.

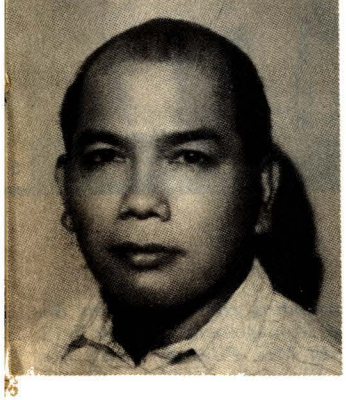
Dir. Amos (right) handing the first five pieces of coupon bonds worth ₱100.00 to District Forester Felix Jucaban of Sta. Cruz, Laguna on October 6, 1955, in connection with the subscription to the ₱1 million worth of government bonds floated by the DANR and under the Payroll Deduction plan of the Central Bank.



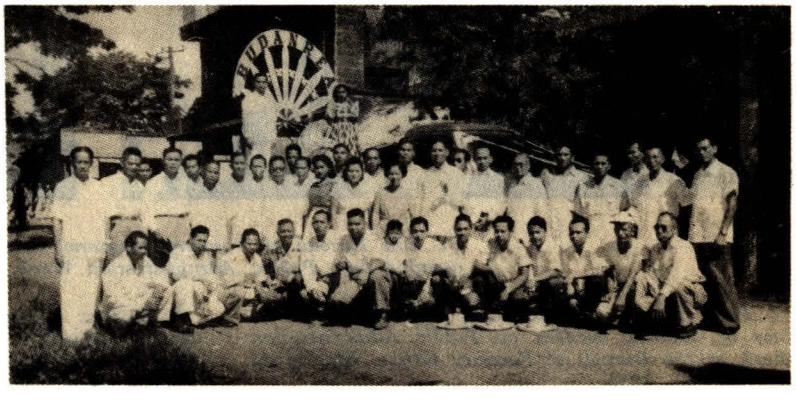
Mrs. Pilar Amos planting Director Amos Tree (Narra) at the start of the seminar on July 7, 1955 at D-44 frontyard.

College of Forestry Float on Loyalty Day, October 10, 1955

District Forester Hipolito B. Marcelo & Personnel of Forest District No. 44, Basilan City (Host to Seminar).



Manuel R. Monsalud
Chief Chemist, FPL
ICA scholarship grantee to U.S.



BUDANREA members and their float after parade of July 4, 1955, Malaybalay, Bukidnon.

D-43 Personnel, Zamboanga City. Seated L-R: Sr. Rgr. L. Torrea, For. H. Rebosura, For. B. Weinmann. Standing same order: Rgrs. C. Agbisit, H. Agpawa, H. Cuenca, M. Sana, E. Mangantulao, J. Camacho, C. Retino, and L. Araojo.

1. *The Bureau of Forestry personnel listen to speakers at opening day, Public Administration Week, Oct.* 17, 1955.

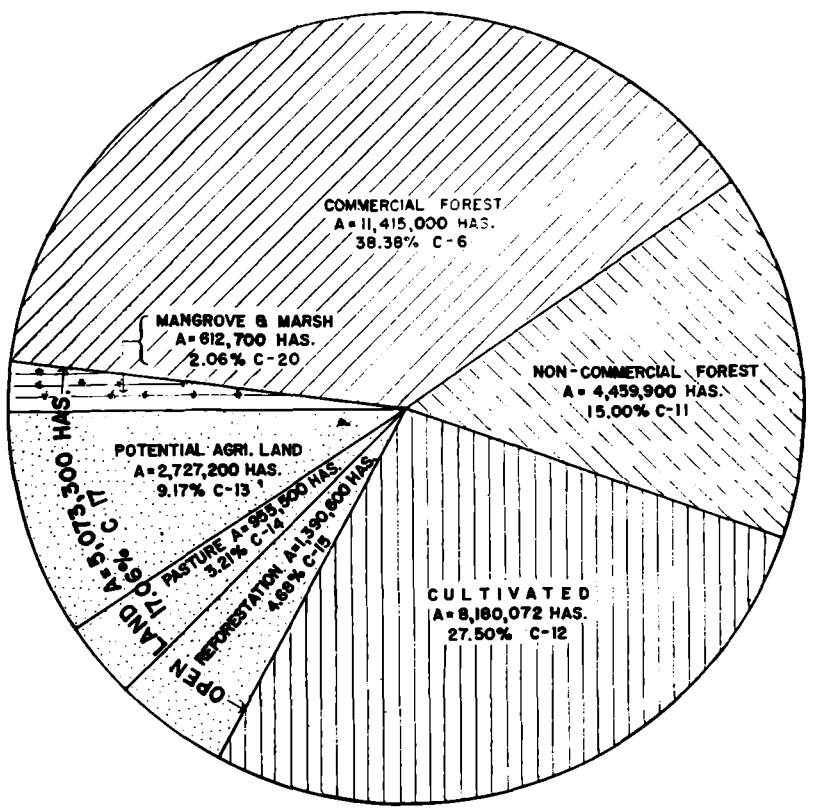
2. *Prof. Hernani P. Esteban, Training Director, City of Manila, speaker on Public Administration Week at the Bureau of Forestry Office, Manila on October* 17, 1955.

3. *Director Amos addresses personnel on opening day of Public Administration Week on October* 17, 1955.

5. *District Foresters attending the seminar on Selective Logging & Forest Management on July* 7-19, 1955 *in Basilan City with Mrs. Pilar A. Amos, Mr. Paul Bedard, Foresters Florencio Asiddao and Rosales Juni.*

6. *Arbor Week Celebration in Rosales Public High School, Rosales, Pangasinan, on July* 30, 1955.

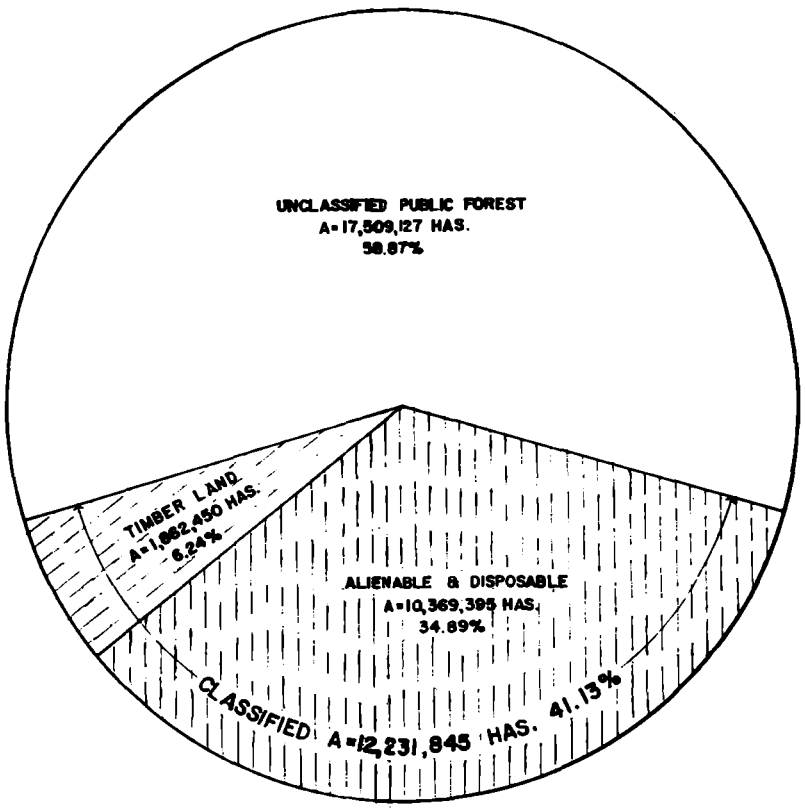
LAND AREA OF THE PHILIPPINES
ACTUAL SOIL COVER AND NECESSARY BALANCE
ALSO CLASSIFIED AND UNCLASSIFIED AS OF JUNE 30, 1953
LAND AREA = 29,740,972 HAS. (29.74 MILLION HAS.)



ACTUAL SOIL COVER
(AS OF JUNE 30, 1953)

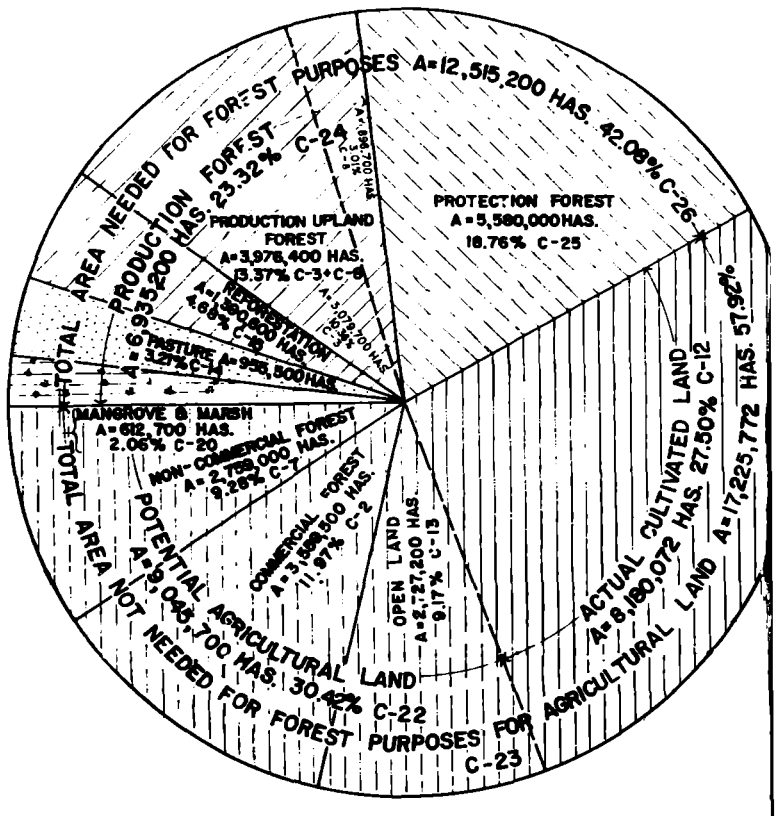
VEGETATION	HECTARES	PERCENT
COMMERCIAL FOREST	11,415,000	38.38
NON-COMMERCIAL FOREST	4,459,900	15.00
CULTIVATED	8,180,072	27.50
OPEN LAND ★	5,073,300	17.06
MANGROVE & MARSH	612,700	2.06
T O T A L	29,740,972	100.00
★ FINAL DISPOSITION		
OPEN LAND★		
★1. AGRICULTURAL LAND	2,727,200	9.17
★2. PASTURE	955,500	3.21
★3. REFORESTATION	1,390,600	4.68
T O T A L	5,073,300	17.06

ADOPTED FROM Md-199
BY: FORESTER VALENTIN SAJOR AND
ASST. FORESTER FILEMON KAPUNO



CLASSIFIED AND UNCLASSIFIED
(AS OF JUNE 30, 1953)

VEGETATION	HECTARES		PERCENT	
UNCLASSIFIED		17,509,127		58.87
CLASSIFIED:				
ALIENABLE	10,369,395	12,231,845	34.89	41.13
TIMBER LAND	1,862,450		6.24	
T O T A L		29,740,972		100.00



NECESSARY BALANCE
OF SOIL COVER

VEGETATION	HECTARES		PERCENT	
FOREST LAND:	(12,515,200)		(42.08)	
PRODUCTION FOREST				
PRODUCTION UPLAND FOR.	3,976,400		13.37	
REFORESTATION	1,390,600	6,935,200	4.68	23.32
P A S T U R E	955,500		3.21	
MANGROVE & MARSH	612,700		2.06	
PROTECTION FOREST	5,580,000		18.76	
NON - FOREST LAND	(17,225,772)		(57.92)	
T O T A L	29,740,972		100.00	

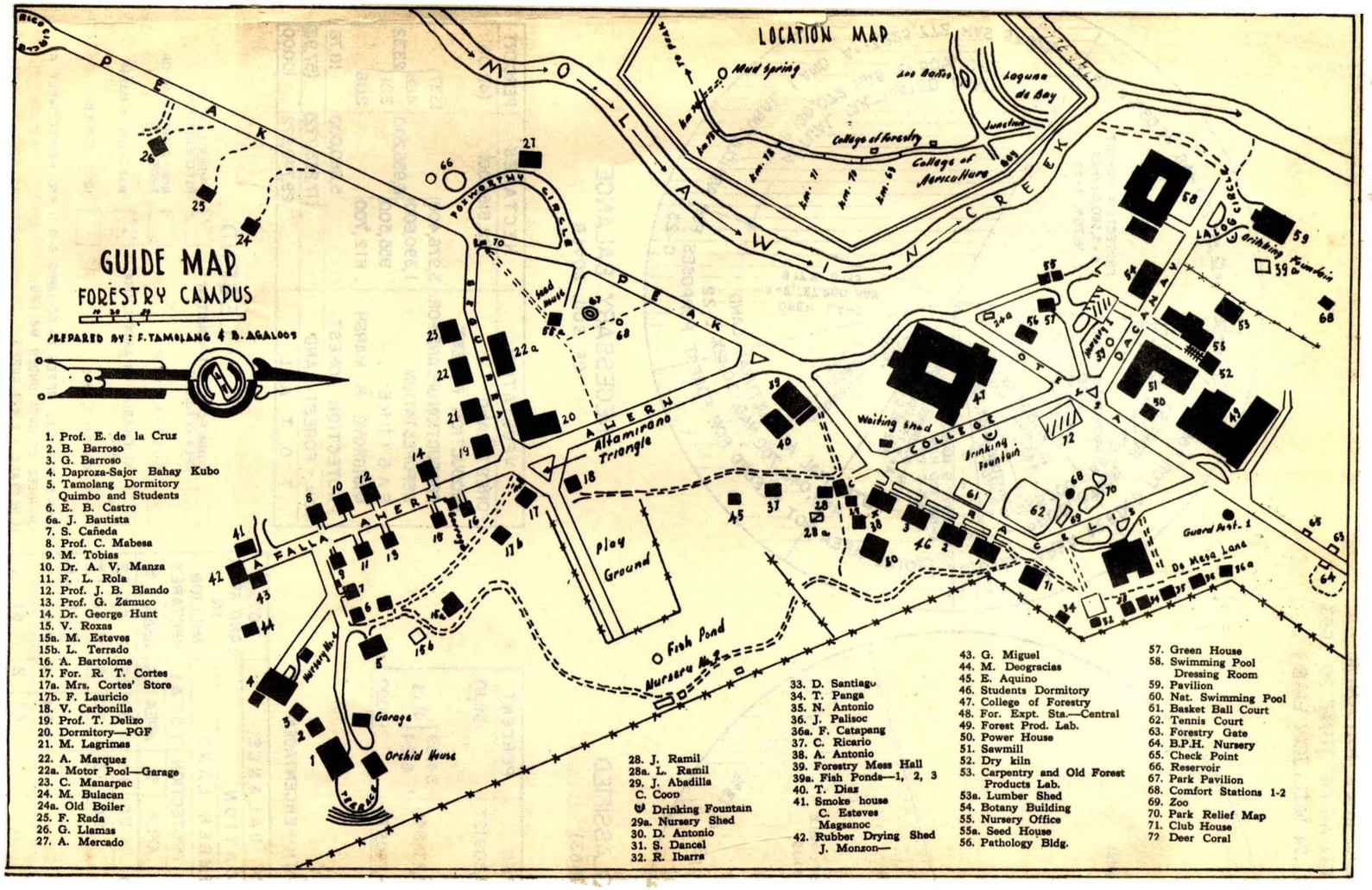
SUMMARY
AREA IN MILLION HECTARES WITH PERCENTAGES

VEGETATION	NECESSARY BALANCE ALLOCATION								TOTAL LAND AREA IN MILLION HECTARES	
	AGRI. LAND		TIMBER LAND							
			PRODUCTION		PROTECTION		TOTAL			
	AREA	%	AREA	%	AREA	%	AREA	%	AREA	%
COMMERCIAL FOREST	3.56	12	3.08	10	4.78	16	7.86	26	11.42	38
NON-COMMERCIAL FOREST	2.76	9	90	3	.80	3	1.70	6	4.46	15
CULTIVATED	8.18	28							8.18	28
OPEN LAND	2.73	9	2.34	8			2.34	8	5.07	17
MANGROVE & MARSH			.61	2			.61	2	.61	2
T O T A L	17.23	58	6.93	23	5.58	19	12.51	42	29.74	100

LEGEND
- COMMERCIAL OR PRODUCTION UPLAND FOREST
- TIMBER LAND OR REFORESTATION
- CULTIVATED
- NON-COMMERCIAL OR PROTECTION
- ALIENABLE OR AGRICULTURAL LAND
- MANGROVE & MARSH
- OPEN LAND
- UNCLASSIFIED

C-6 & C-11 ETC. REFER TO COLUMNS 6 & 11 ETC. RESPECTIVELY AS SOURCES OF DATA UNDER Md. 199.
1 HECTARE = 2.471 ACRES.

Md-202



Mr. Domingo Abarro and family. Standing, l to r Nos. 2, 4 and 5 are sons of Mr. Abarro who are now engineer, lawyer and architect respectively.

THE NEW COLLEGE OF FORESTRY BUILDING

The First Seminar on Selective Logging

By Florencio P. Mauricio
Ty. Ranger, (Basilan City)

In July, 1953, the Bureau sent the late Forester Nicanor Lalog to Basilan purposely to map and plan out the first management plan for dipterocarp forest. For this purpose, he was assisted by six foresters and 16 rangers, forest guards and concession guards. This pilot project covers systematic and regulated timber cutting, reforestation and protection of a solid national forest land of about 35,548 hectares. Called the Basilan Working Circle, it comprised 28% of the total land area of this Island City. In this working circle operate three companies: the Basilan Lumber Co., the Western Mindanao Lumber Co., Inc. and the Sta. Clara Lumber Co.

Briefly, the plan consisted of systematizing and regulating the cut so that there is left in the logged-over areas sufficient healthy residuals able to grow up to harvestable timber after so many years: meanwhile insuring protection of the cut-over areas from squatters and/or kaiñgineros, strict enforcement of flexible diameter limits, protection of healthy smaller trees remaining from injuries and destruction during and after logging operations, and acquisition of the understanding and cooperation of the lumbermen and the public. The area of a licensee is divided into as many as the number of years for a particular tree to grow to a desired harvestable size. If 30 years is required by a 20-centimeter diameter tree to grow to harvestable size, the total area is divided into 30 annual cutting areas. Timber is cut in the first cutting area during the first year; in the second area the second year; in the third area the third year; and so on until the 30th area in the 30th year. In the 31st year, the 2nd cutting cycle begins — the first area logged 30 years ago is again cut and the sequence of cuts in the corresponding areas is followed. In the 61st year, the 3rd cutting cycle begins; and so on — so that there is a continuous harvest with more or less the same quantity and quality of timber.

In October, 1954, Forester Hipolito Marcelo was sent to Basilan to take over the reins of the plan from Forester Lalog who was called back to Manila preparatory to being sent on an observation trip to the United States. (*It is noteworthy that both were professors of Forest Management in the U.P. College of Forestry at College, Laguna.*) A man of action, he convinced the whole city to cooperate with him. Slowly but surely, the problems were solved until the plan was working satisfactorily.

In the First Forest Conservation and Reforestation Conference on September 30-October 1, 1954, the Agriculture Department decided to introduce sustained yield management throughout the country by July of 1955.

On May 22, 1955, Undersecretary Jaime N. Ferrer visited Basilan during his tour of inspection in the South. District-44 Forester Marcelo interested him on the management plan in the island. An aerial inspection of the cutting areas in a low-flying plane finally made him decide. Before leaving Basilan he requested the District Forester to prepare a plan of instruction and demonstration for a workshop the holding of which, as per his recommendation, was approved by the Department to be on July, 1955.

Bureau top officials conferred with Forester Marcelo and decided on sending to the seminar representatives from 25 districts with substantial remaining forest resources where sustained yield management should be practised. On July 7, 1955 the First Seminar on Selective Logging & Forest Management began. Under the management of Forester H. B. Marcelo, it was attended by 25 district foresters and by Forester Florencio Asiddao, Chief of Forest Experiment Stations representing the Director and Forester Rosales Juni, forester in charge of the Forest Experiment Station at Malaybalay, Bukidnon. Following is the proceedings of the seminar taken and prepared by the author:

July 7, 1955—The seminar began with a flag ceremony at District No. 44 headquarters. The flag was raised by the Boy & Girl Scouts of Basilan City. Vice-Mayor Exequiel read Mayor L. S. Brown's welcome address. Forester Asiddao read Dir. Amos' message. After which a one minute of silent prayer was offered for the late For. N. Lalog. Mrs. Amos planted the Director Amos Tree (Narra) in the office front yard.

After the Basilan City Council Resolution was read by For. Marcelo, the group of foresters was oriented to Basilan; maps showing locations, areas and operations of lumber companies were explained to them.

Papers on "Initial Rules and Regulations for Selective Logging", "Ten Steps in Examining a Forest Area for Selective Logging" "Suggested Guide in the Regulations of Cut" and "Residual Stand in Selective High Lead Yarding" were read.

July 8, 1955—Ranger Agbayani explained how he planted Tangile seedlings in the logged-over area of Western Mindanao Lumber Co. with data on the costs and results. This was followed by a discussion on artificial and natural regeneration of cut over areas. Forester Tagudar read his paper on "The Adaptability of Linear Regeneration Sampling in the Residual Dipterocarp Forests of Basilan Working Circle." The afternoon was spent in discussing problems common in forest districts.

July 9.—The group visited the Magnolia Garden and the Lalog Memorial Grove at the Reforestation Project Nursery at Kapatagan, the 5-year old sample plots of the Western Mindanao Lumber Co. showing the effects of selective logging.

The Boy and Girl Scouts of Basilan played hosts to the foresters at the GSP headquarters who donated ₱100 to their annual campaign.

July 10.—Ex-congressman and Mrs. J. S. Alano who were hosts to the district foresters at their Basilan Estates Plantation at Tairan expressed their gratitude to the Bureau for the help extended to them and requested for 5,000 mahogany seedlings for reforestation purposes in their plantation.

July 11.—Visit of the Group to the Sta. Clara Lumber Co. area, led by Mr. Nazario Peñas, Field Manager of the Company. At the open forum, Forester Asiddao recounted his observations of forestry practices abroad, and stressed the importance of schools in forestry propaganda and the necessity of timber stand improvement in a forest. Mr. Bedard explained the fundamentals of forest finance along efficient forest management towards sustained yield.

July 12.—Ranger H. Esteves demonstrated the methods of marking a tree before cutting, the taking of inventory after logging and the establishment of sample plots.

At the U.P. Land Grant, Mr. Denoga oriented the group to the place and explained the tapping of rubber to them.

July 13.—The foresters visited Camp Mahayahay of the Basilan Lumber Co. where Forester Manager Walter Barnes and For. Engineer Perry Donaldson acquainted them with the place and with matters concerning the procedure, and the tabulated data compiled by the Co. were discussed and explained.

July 14.—Various Set-ups were visited. In the open forum in the evening, Mr. Barnes talked on the operations on selective logging by the company, their problems, topography and finance and possible solutions to these.

Former Dir. Tamesis talked on the background of the management plan in Basilan and cautioned the foresters of the importance of knowing the forest conditions first before practicing selective logging for sustained yield in their districts.

Mr. Bedard spoke on the factors to be considered in establishing a forest under management.

July 15.—Permanent sample plots in Abong-abong, under Engineer F. Alcarmen were visited. From there, the foresters visited the company's barker-peeler-clipper at Port Holland.

July 16.—Visit to the Actual yarding area of Watts Selective Timber Co. at Abong-abong then to the company's headquarters at Canas.

July 17.—Visit to the plantation of the Menzi family where foresters were welcomed by Mr. Arnold Winiger.

July 18.—The district foresters planted their trees (Mahogany) in the Selective Logging Grove of the Western Mindanao Lumber Co.

Forester Tagudar demonstrated his linear-regeneration sampling in the logged over area along the road.

At WEMILCO Camp Kapatagan headquarters, the group proceeded to the set-up logged on Dec. 1953. Various sample plots were also visited.

A message of the Wemilco president, Mr. Antonino was read by Mr. Bagamaspad, the Co.'s administrative officer.

July 19.—At a breakfast given by the Basilan Jaycees and Jaycerettes and at the luncheon tendered by the Basilan Lumber Co., different problems were taken up for discussion. The following recommendations were submitted by the district foresters.

Signed by all of them, the district foresters submitted the following recommendations:

1. That the application or request for additional areas and/or additional cut, as the case may be, by licensees should invariably be referred to the District Forester concerned for comment and recommendation prior to approval or disapproval by the Director of Forestry or by the Secretary of Agriculture and Natural Resources;

2. That the technical force of the Bureau of Forestry and the management of Lumber Companies should come to a common understanding concerning selective logging to attain sustained yield management;

3. That before a timber licensee can operate on his licensed area, the Bureau of Forestry must be assured that he is, or at least has in his employ (part of full-time basis) trained foresters with a view to effecting a better and more efficient management of our forest;

4. That land classification and delimitation of our permanent forests be stepped up; but in the meantime that this activity is not yet completed, the District Foresters should require selective logging practices in places which, in their discretion, are not potential alienable and disposable lands;

5. That to carry out an intelligent implementation of selective logging for sustained yield management, a task force should be formed consisting of Forester H. B. Marcelo and his associates to be sent to the different selected districts to set up records and to start the work along said lines, priority of which is at the discretion of the Director of Forestry; and

6. That the Director of Forestry should call a conference of lumbermen, key men of the Bureau of Forestry and District Foresters to thresh out problems that may be encountered incident to the implementation of selective logging as early as possible.

The seminar has ended. The foresters went to Basilan, saw the results of selective logging and management practices therein and returned to their districts. Of course, the plan applied there may or may not work in other districts. Modifications must be adopted to suit the actual conditions therein. In extreme conditions it may not apply at all so that an entirely different plan must be worked out — but the main objective of effective management to eventually achieve sustained yield production of the forest must be aimed at.

Yes, the seminar has ended. But the results are yet to be realized. Only after the recommendations have been considered and effected, only when our forests are being worked under sustained yield management can we know that the first seminar on selective logging and forest management held in Basilan on July 7-19, 1955 is a success and that the pilot forest management project in Basilan is worth the sacrifice. Till that time, let us not be discouraged by trifles, instead let us contribute our share for its successful implementation on our invaluable forest resources.

Pulp and Paper Ideas for Sale

By AURORA C. REYES
Assistant Chemist
Forest Products Laboratory

To a majority of us, paper is something which we write on. Our first mental image of paper is the printed page. This is true as far as the etymology of the word paper is concerned, it being derived from the word "papyrus," a Latin word applied to writing material which was used by the Egyptians as early as 2400 B.C. As literacy advanced, standards of living rose and sanitation improved, paper has found diversified uses not only in the home, but also in the business world. At least 250 kinds of paper have been made in the United States.

This commodity, however, seems to be taken for granted. We only think of it as a convenience. A sheet of paper is used, then thrown away. Are we ever apprised of the way cellulose fibers come together and form the sheet we are familiar with? The fiber is no longer recognizable. It has been transformed, but not destroyed. The unit molecule of cellulose is there, but it is not the same unit as found in its natural state in living plants and trees. That is why the structure of this chain of "noble" molecules has eluded many a scientist. Its behavior, however, towards water and chemical reagents or its response to mechanical treatment is no longer a subject for conjecture. This is where we can capitalize on cellulose fiber, its versatility plus its abundance.

The precursor to paper is pulp. Pulp is the dissolved portion of the raw material (usually wood chips) after undergoing mechanical treatment or cooking with the aid of chemicals under certain conditions of temperature and pressure. What process of isolation is to be used and the quality and quantity of the isolated fibers are the problems of the pulp and paper chemist and determined by the end uses of the products and their commercial feasibilities.

To produce the pulp for paper making, the following are the known processes used:

I. Mechanical or groundwood—The fibers are separated by mechanical means such as grinders.
II. Chemical—The process depends upon the active ingredients used.
    A. Acid
        1. Sulphite—cooking liquor is a solution of calcium or magnesium bisulfite
    B. Alkaline
        1. Soda—cooking liquor is sodium hydroxide solution
        2. Sulfate—cooking liquor contains sodium sulfide and sodium hydroxide.
III. Semichemical and semimechanical—combination of the mechanical and chemical methods.

In the pulp state, the fibrous material is ready to be made into paper. "Paper is made in the beater," so the saying goes, but actually not. The beater is a device whereby the fibers are cut into the desired lengths, compressed, bruised, bent and softened before running the pulp over the paper machine. Although cellulose fibers are separate from one another, when "beaten" under water, "hydration" occurs. This is evidenced by the slimy feeling when you pass your

fingers through the "furnish." * Hence, the fibrous character becomes lost, although not entirely, depending upon the degree of beating.

This phenomenon of "hydration" is not completely understood but there are numerous theories and hypotheses advanced to explain the bonding of fiber to fiber when the sheet is formed upon the removal of water. The fact is water is admitted into the fiber by beating, then subsequently removed as the paper sheet dries. Some investigators attribute the final effect of beating to the fibrillation of fibers as a means of increasing the points of contact, thus giving more surface for attachment and accelerating the binding property.

The combined effects of beating can also be adjusted to give the desired combination of the qualities in the final product. We notice that soft-textured paper such as Kleenex tissue, toilet paper and blotting paper have very low strength properties. They are weak in character, so to say. In the sheet formation, they easily part with water and are said to be "free." Tests for freeness, are therefore, conducted to determine the ease with which the sheets part with water. As beating time is increased, a correspondingly stronger and more coherent structure is obtained, the sheets become less "free" and may produce a sheet similar to parchment. Hence, between the limits of the characteristics of tissue paper and the qualities of parchment paper, we can make as many kinds of paper we can conceive of.

To improve the characteristics and get the desired qualities of paper, manufacturers usually add substances during the process of beating. These materials are called fillers. Sizing is also done to make paper less absorbent and more resistant to moisture. To get the desired whiteness, bleaching is resorted to.

From the papermaking point of view, the following are some of the good qualities that must be sought for in a wood for producing high quality paper:

I. Morphological properties
   A. High ratio of fiber length to fiber diameter. Standard ratio of spruce is 100:1.
II. Chemical properties
   A. Low alkali solubility
   B. High cellulose content
   C. Low content of resin and other extraneous materials such as tannin, etc.

To determine the suitability of a raw material for pulping, the following steps are recommended, although variations may be made depending upon the discretion of the investigators:

I. Preliminary investigation
   A. Microscopical examination and measurement of fiber length
   B. Determination of ash
   C. Determination of resin (including waxes, tannins, and fats)
   D. Alkali solubility
   E. Cellulose content
   F. Soda cook under average cooking conditions
II. Comprehensive examination—carried out on samples which show promise
   A. Determination of the optimum conditions for either soda or sulphite process or both
   B. Assessment of the strength of the pulps and their beating
   C. Bleaching trials
   D. Determination of alpha, beta, and gamma celluloses in pulps with high cellulose content
III. Consideration of the factors concerned in the establishment of an industry
   A. Market studies to determine quantities and qualities that can be marketed
   B. Mill trials on a sample consignment of wood

(*Continued on page* 70)

* "Furnish" is the mixture of fibrous and non-fibrous materials that are blended in water suspension to produce paper of the desired characteristics.

B. F. Notes

Public Relations and Statistics Section

By TEOFILO SANTOS
PRO, Bureau of Forestry

D-1, ARBOR WEEK CELEBRATION

The District Office, Bureau of Forestry, Laoag, Ilocos Norte according to a letter received from Ty Rgr. A. Sanchez did a good work last Arbor Week, the first of its kind in the Philippines. At the end of the celebration the Office has distributed 50,584 seedlings broken down as follows: Narra—30,804; Mahogany—6,508; Benguet Pine—9,676; Fire tree—1,642; Golden shower—118; Bunga de china—317; Tanglin—1,214; Supa—55; Agoho—19; Eucalyptus—13; Bottle Brush—18; and Molave—800.

All these seedlings were potted, grown and prepared by the Paraiso Reforestation Project.

In order to spread the spirit of Arbor Week and to make the people conscious of the importance of trees in our lives, the Office prepared mimeographed copies of Proclamation No. 129 of the President of the Philippines, model program prepared by the National Forestry Council; letter of the District Forester urging the people to cooperate in mass tree planting; and write-ups on the importance of trees and significance of Arbor Week. These were mailed and distributed to the different churches, municipalities and schools.

The Celebration ended with a program held in the town plaza attended by the Provincial Governor, the Municipal Mayor, Provincial Fiscal and the Principals of the different Colleges and High Schools and other prominent officials of the municipality. Diplomas of Recognition were also awarded to individuals who showed great interest in the planting of trees; have the best planted surrounding and the greatest number of seedlings of different kinds planted.

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Mr. Manuel R. Monsalud, Chief Chemist of the Forest Products Laboratory, Bureau of Forestry, enplaned for the United States on August 29, 1955 via a Pan American World Airways' plane as an ICA (FOA) — PHILCUSA pensionado. Mr. Monsalud will undergo intensive training in the manufacture of pulp, paper, and wall board and related research in the United States Forest Products Laboratory at Madison, Wisconsin. He is enrolled in the University of Wisconsin to take up advanced subjects that may aid him in his main objective. He will be away for twelve (12) months.

Mr. Monsalud was formerly a varsity boxing champion in the University of the Philippines during his junior and senior years in sugar technology. He was one of the first two Bailon de la Rama scholars in sugar technology; formerly instructor of chemistry in the U.P.; sugar permit agent in the Domestic Sugar Administration, Office of the President of the Philippines; Chief Chemist of the Paniqui Sugar Mills, Inc., and General Farm Manager of the extensive Cojuangco Sugar cane and rice haciendas in Central Luzon.

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FORESTERS URGE SELECTIVE LOGGING

Some 27 district foresters of the Bureau of Forestry who attended the recently concluded two-week observation study held in Basilan Island approved in principle and urged the immediate adoption of the "Selective logging" method of cutting timber in permanent forests, it was learned from the Bureau of Forestry. This was contained in the official report of the meeting submitted by Basilan District Forester Hipolito B. Marcelo, to the Director of Forestry Felipe Amos.

It was also learned that the Director of Forestry is expected to call to a table conference lumbermen, keymen in the bureau, district foresters and others interested in the lumber trade to thresh out problems that maybe encountered in the implementation of selective logging.

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COIL, FORESTS COMMITTEE

To arouse public interest and build up wholesome appreciation especially among the youth on the importance of soil and forests and their wise conservation, former Agriculture Secretary Salvador Araneta created last August a committee to prepare *suitable reading materials* for use in elementary and high school classes.

Appointed chairman was Director Eduardo R. Alvarado of agricultural information with Soil Con-

servation Director Marcos M. Alicante, Assistant Director Guiang of public schools, and Forester Nicolas P. Lansigan, executive secretary of the national forestry council as members. Forester Teofilo A. Santos, bureau of forestry public relations officer was named member-secretary of the committee.

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FERRER RECOMMENDS NON-RENEWAL OF FOREST LICENSES

It was announced by the Department of Agriculture and Natural Resources that Agriculture Undersecretary Jaime Ferrer recommended the non-renewal of licenses issued for the exploitation of Timber concessions in Cebu.

Ferrer in his observation trip to Cebu and Bohol disclosed that the total forest land area of Bohol and Cebu is 11% and 14% respectively. To prevent further serious floods, droughts and erosion in Cebu, he recommended that no new timber licenses be issued in the province and those that are expiring not be renewed anymore.

The Undersecretary revealed also that 20,000 fruit tree seedlings and 15,000 forest tree seedlings were distributed for planting throughout Cebu province during the Arbor Week Celebration. He also commended the school teachers, school children and the citizens in general for the role they have taken during the celebration.

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OF TREES AND PRESIDENTS

President Ramon Magsaysay led the nation in celebrating the first Arbor Week (July 24-30) by planting the national tree—"Narra", most popular and useful, which fittingly represents his popularity and usefulness to the masses.

The occasion marks the beginning of a long-range program to beautify the Luneta Park area. The Arbor Week Committee, headed by Director Quisumbing of the National Museum, selected trees for planting which aptly characterize Philippine Presidents.

Former President Emilio Aguinaldo of the first Philippine Republic planted the "Tindalo", a bloodshot tree which symbolizes blood shed by Filipinos during the revolution.

The next of kin of past presidents planted their respective trees. "Kamagong", hardest Philippine wood, was chosen to represent Commonwealth President Manuel L. Quezon who fought the hardest throughout his political career. "Banaba" an everlasting tree that survives even when cut, mirrors Senator Jose P. Laurel, President during the Japanese Occupation who is ever on top despite changes of fortune in life. Former President Sergio Osmeña, known for slow but sure decisions, is paired with the "Molave", a hardy wood that grows slowly. "Dao" most spectacular wood and most sought for, fittingly stands for the late President Manuel A. Roxas, most spectacular politician and public servant.

Ex-President Elpidio Quirino in whose term the Philippines gained more popularity throughout the world, is typified by the "Antsohan", the Cherry Blossom of the Philippines.

Each cabinet member also planted a "Golden Shower" tree.

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TO TRAIN LUMBER GRADERS

To meet the demand for experienced and well-trained lumber graders, the Bureau of Forestry will conduct a 30-day in service training beginning September 1 in Kolambugan, Lanao it was announced by Director Felipe Amos.

Selected to undergo the training are the following rangers now in the employ of the bureau: Fernando Pagaduan, Milbuk, Cotabato; Moises Obalos, Esperanza, Agusan; Constante Bersamin, Maranding, Lanao; Fernando Roy, Malabang, Lanao; Pedro R. Layus, Claveria, Cagayan; and Felix Bonilla, Surigao, Surigao. Forester Valeriano Suarez of the Bureau of Forestry will conduct the training.

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TO ALL MEMBERS OF THE FORESTRY RELIEF ASSOCIATION

Notice is hereby given that the beneficiary of Member TOMAS N. ROQUE died on August 17, 1955. Therefore, the amount of ₱580.00 from the Death Relief Fund corresponding to the contributions of 290 active members as of August 17, 1955, at ₱2.00 per capita, was approved by the Board of Directors to be paid to Member Tomas N. Roque.

In accordance with the provisions of the Constitution and By-Laws of the Forestry Relief Association, as amended, all members are hereby enjoined to send in, or remit, to the Treasurer the amount of ₱2.00 to replace the same amount given as relief. The share of the members in the Manila Office and in Los Baños will be collected by the Treasurer and Deputy Treasurer, respectively beginning September 15, 1955, and the share of the field members whose salaries are paid by warrants will be deducted from their deposits. Members admitted subsequent to the above date, August 17, 1955, are exempted from this requirement.

Attention of all the members is invited to the fact that delinquency in the payment of their relief contributions will not entitle them or their beneficiaries to the benefit granted under the provisions of Sections 26 and 27, Article IX, of the Constitution and By-Laws of the Forestry Relief Association, should death occur during the time of their delinquency, but they are not relieved from

contributing to the relief fund in case of death of another member or another member's beneficiary.

VICENTE LEONOR, SR.
Secretary

SUBJECT: *Cooperation in the Anti-Rat Campaign this month of September*

1. There is quoted hereunder, contents of the letter to the undersigned dated September 3, 1955, of the National Rat Control Administrator, for your information.

"I am enclosing herewith Proclamation No. 179 of the President of the Philippines declaring September as Anti-Rat Campaign Month. Please note that the proclamation provides that the Secretary of Agriculture and Natural Resources shall be the Chairman of the National Committee of the Anti-Rat Campaign Month.

"Various departments of the government, particularly the Department of Health, Education, Public Works & Communications, National Defense, Social Welfare Administration and the Office of Civil Affairs of the Office of the President are directed in accordance with the Proclamation as co-sponsor of the Anti-Rat Campaign. These various departments shall, therefore, take part in the campaign. (Attached herewith are the suggested activities of the various departments.)

"By virtue of this proclamation and in his interest to make the rat campaign successful, the President has elevated the rat campaign into an inter-departmental level at least for the month of September. We cannot help but appeal to you, therefore, to sustain the leadership of the Department of Agriculture and Natural Resources in this all-out anti-rat campaign. May we count on your initiative to circularize all your fieldmen to accept responsibilities in the current anti-rat campaign month and to give this campaign their all-out support.

"For our record, it will be deeply appreciated if you can furnish us a copy of your circular to your fieldmen regarding this matter."

2. It is requested that you extend your cooperation and support in this anti-rat campaign.

FELIPE R. AMOS
Director of Forestry

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SUBJECT: *Monthly and Quarterly summary of expenses to be broken down as to sources of funds.*

1. In submitting monthly and quarterly summary of expenses on B. F. Form No. 1 (B), Sheet 1, and quarterly report on personnel work measurement on B. F. Form No. 1 (B), Sheet 2, as called for in Forestry Memorandum No. 154-6, it is desired that when work performed under any PROJECT (column 2) of B. F. Form No. 1 (B) embraces activities chargeable against more than one fund, the corresponding expenses and other information required for each fund should be indicated on the form.

For instance in PROJECT "Forest Protection", this may be sub-divided into three (3) classifications, to wit:

a. Counterpart Project No. 482 (FOA-PHILCUSA)
b. General Fund
c. Special Order No. 512.

The classification C. P. 482 (FOA-PHILCUSA) pertains to the expenses and work accomplished by forest guards appointed under Sub-Project Forest Fires and Forest Protection, C. P. 482 (FOA-PHILCUSA) against this sub-project; General Fund refers to the expenses and work accomplished by personnel appointed or charging such expenses under the General Fund; and Special Order No. 512 refers exclusively to expenses, if and when allowed, and work accomplished by Laborer-Deputy Forest Guards appointed under this special order.

2. Strict compliance with this Forestry Memorandum by all concerned is hereby requested.

FELIPE R. AMOS
Director of Forestry

NOTE: Consult the preceding Forestry Circular and make sure that your set is complete. The non-receipt of a Forestry Circular is no excuse for the non-compliance with same.

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TO ALL CHIEFS OF DIVISIONS AND COUNTERPART PROJECTS, DISTRICT FORESTERS AND OFFICERS IN CHARGE OF STATIONS AND SPECIAL PROJECTS:

SUBJECT: *Additional instruction in the implementation of Performance Budget*

1. As you will note from previous instructions of this Office, our Bureau will begin functioning fully under the Performance Budget during the fiscal year 1956-1957. During the current fiscal year, we are now partially implementing this new budget system preparatory to its full implementation next fiscal year.

2. It is, therefore, necessary that as a general policy, all our personnel should perform duties pertaining to the project and fund under which their positions come. *Example*: Men occupying positions under project "Timber inventory", Counterpart Project No. 482, should devote their full official time to inventory work; men under project forest protection" under Counterpart Project No. 482 should fully use their official time in forest protection; men under project "land classification" should devote their time to this particular work; etc.

3. At present, however, in the interest of public

service, any one when not busy in a project to which his position belongs may attend to any other work under another project with the approval of the chief of division or counterpart project, district forester or officer in charge concerned. The detail of one man from his project to another should be practised sparingly and only in cases where the importance and urgency of the other work so require. This dual or multiple activities of a man should be recorded and reflected always in service and expense reports.

4. But beginning July 1, 1956, when we shall function fully under the Performance Budget, detail of a man from the project where he belongs to another will not be allowed unless previously authorized by the Director of Forestry.

5. Chiefs of divisions and counterpart projects, district foresters and officers in charge of stations and special projects should be guided accordingly by the above in making assignments of work to personnel under them who should be advised hereof accordingly.

FELIPE R. AMOS
Director of Forestry

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FORESTER RETURNS FROM U.S.; URGES EDUCATION IN FORESTRY

"Our people should be educated more in forestry to appreciate better the value of forests", declared Forester M. Reyes who arrived recently from a six-month observation tour of the United States and Puerto Rico.

Reyes left last February to study and observe with the U.S. Forest Service forest management techniques and practices in the U.S. and Puerto Rico as a grantee of the Philcusa-FOA (now ICA) technical assistance program. He returned to Manila last week.

Forester Reyes observed that in the United States the value of forests is so well-ingrained in the average American so much so that the program of the U.S. Forest Service is well supported. "The Americans know that so much products contribute to their high standard of living that they take good care of their forests," he said.

"Once a tract of land is declared as national forest, people respect it as such and they do not clamor for its release, unlike here in our country", he said. He believed that our kind of forest selection system can be successfully employed with controlled power logging.

Reyes visited private and national forest reserves in the southern region and in the Pacific northwest. He stayed for three months in the Tropical Research center of the U.S.F.S. in Puerto Rico.

A graduate of the ranger course in 1934 Reyes is also the holder of the bachelor of science in forestry degree in 1952 from the college of forestry of the University of the Philippines in Los Baños, Laguna. He has been in the service of the bureau of forestry since 1934. He is at present a forester in the management plan section, division of forest management. He is slated to be assigned shortly as a district forester to Basilan.

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O.K. RELEASE OF 3-MONTH CASH ADVANCE TO FIELDMEN

To facilitate speed in the work and avoid unnecessary increase in cost, the fieldmen of the bureau of forestry doing land classification work throughout the Philippines have been allowed each advances equivalent to three months, it was learned from Antonio A. Quejado, accountant of the Philcusa-ICA counterpart projects of the bureau of forestry.

The decision was contained in a recent communication of Cornelio V. Crucillo, executive secretary of the Philcusa, to the director of forestry through the commissioner of the budget, according to Quejado.

Heretofore the practice was to release cash advance equivalent to one month only. Hence after it has been exhausted the men have to stay in their quarters idle and isolated while waiting for the advance fund for the next month which is usually delayed, Quejado said. This proves oppresive and destroys the morale of the men, it was said.

To avoid delay, curtailment in productive activity and unnecessary increase in the cost of work, Forestry Director Felipe R. Amos strongly requested for the change which was subsequently granted by the Philcusa head. Amos pointed out that land classification projects are executed in far-flung places where mailing facilities and vehicular communications are lacking and necessary allotment and checks could not reach them on time.

The bureau of forestry maintains 40 land classification parties under two Philcusa counterpart projects and six inventory parties throughout the Philippines, Amos disclosed.

As of June 30 (1955) the bureau of forestry has classified a total of 2,715,571 hectares covered by 437 land classification projects, it was learned. Classification of forest lands under the joint ICA-Philcusa project has been going on since three years ago. It will be for five years, it was said.

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IN-SERVICE TRAINING FOR FORESTRY EMPLOYEES

The bureau of forestry conducted an in-service training for its officials and employees in line with President Magsaysay's policy towards improving public administration, it was announced yesterday by Director Felipe R. Amos.

The in-service training opened on Monday (October 17) with a brief program in conjunction with the national celebration of Public Administration Week in accordance with a presidential proclamation declaring the third week of October for the nation-wide observance.

All division chiefs and bureau officials with the same rank or capacity are slated to take the training course. The training will last until November 12 with morning session to be held daily, according to Amos.

The Director of Forestry will handle the training course with Forester Teofilo A. Santos, bureau PRO and newly-designated Forestry Training Officer as executive secretary. A U.P. professor from the institute of public administration and several training officers who took the course from the U.P. have been invited to speak during the entire course.

Santos finished recently the training officers' course in public administration from the U.P. He is presently the chief of the public relations and statistics section of the bureau.

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JUNIOR PCAC IN DANR

Agriculture Secretary Juan de G. Rodriguez recently issued a memorandum to all bureaus to complete the organization of their Complaints and Action counterpart units by October 31, 1955, the agriculture department reported today.

This was sparked by a letter of Frisco San Juan, acting chairman, Presidential Complaints and Action Committee, to the agriculture secretary requesting the latter to confirm the designation of DANR officials whose services have been made available to the PCAC.

Rodriguez said this move is done to promote better coordination with the PCAC and to effect prompt action on complaints originating from the committee.

These counterpart units will accordingly be directly responsible for receiving and acting on all communications and representations from the PCAC.

The director of the bureau concerned will have the privilege to determine the size and composition of such counterpart unit in his bureau, depending on the needs and exigencies of the service.

In cases needing immediate action and marked "Priority", the Counterpart Units are expected to finalize action, as far as bureaus are concerned, and to advise the PCAC and the DANR accordingly, within seven working days.

Such counterpart units are also charged with the responsibility of conducting a systematic follow-up of all pending cases in their respective bureaus and will see to it that all these cases are disposed of and finally acted upon within a month.

Where action cannot be finished within such time, the memorandum stated, the counterpart units will apprise the PCAC and the DANR of the status of the cases, through appropriate progress reports.

Along the manner of acting on complaints, the PCAC acting chairman stated that he already received personal instructions from the President.

San Juan revealed his desire to have an audience with all the DANR officials having connections with the PCAC in the near future.

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FERRER WARNS AGAINST SQUATTING IN PUBLIC AGGIE LANDS

Agriculture Undersecretary Jaime N. Ferrer today alerted Bureau of Lands officials "as guardians of public domain inside the agricultural zone established by the Bureau of Forestry," against acts of forcible entry in public agricultural lands.

In a directive seeking strict enforcement of Republic Act No. 947, the agriculture undersecretary enjoined all officials and employees of the lands bureau to "exercise close vigilance over public agricultural lands and report immediately all violations of the law."

The law makes it unlawful for any person, corporation or association to enter or occupy through force, threat, intimidation, strategy or stealth any public agricultural land including such public lands as are granted to private individuals under the Public Land Law and other similar statutes.

For violations of the prohibition, the law slaps a fine not exceeding ₱1,000, or an imprisonment of not more than one year or both in the discretion of the court.

Should the offender be a corporation or association, the President, director, manager, or managing partner will be made to answer for the illegal act.

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₱1 MILLION FORESTRY QUARTERLY COLLECTION

The bureau of forestry reported that collection of forestry fees during the quarter ending September 30 (1955) reached an all-time high with a total amount of ₱1,725,183.56 collected as reforestation fund and forest charges.

Of the whole amount, ₱1,274,533.73 represented forest charges and ₱450,649.83 as reforestation fund on 1,160,249.32 cubic meters of logs manifested and invoiced by the bureau during the given period, according to Forestry Director Felipe R. Amos.

Collection for the same period last year (July 1 to September 30, 1954) amounted to ₱1,653,-134.20 on 1,123,103.30 cubic meters of logs meas-

ured and recorded, or an increase of approximately ₱72,049.36, Amos said.

The collection for the quarter immediately preceding (April 1, to June 30, 1955) was only ₱1,111,341.25 on 761,489.20 cubic meters of timber manifested and invoiced, according to records in the bureau of forestry.

Director Amos said that not included in the grand total is ₱22,937.96 as forest charges on 16,184.37 cubic meters of logs cut under the land grant to the University of the Philippines. The amount goes to the coffers of the state institution.

The biggest cut was registered under the ordinary timber licenses which netted ₱767,943.67 as forest charges and ₱285,737.64 as reforestation fund on 713,848.83 cubic meters of timber cut during the period.

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PROFESSOR ESTEBAN DEFINES PUBLIC ADMINISTRATION IN FORESTRY SPEECH

Professor Hernani P. Esteban of the institute of public administration of the University of the Philippines and training director of the city government of Manila, underscored public administration yesterday morning in a speech during a program held in observance of Public Administration Week at the bureau of forestry.

Esteban defined public administration as "the art of getting work done in compliance with prescribed statute." He cited the five essentials of management or public administration, namely: men, money, materials, space and time.

In his 90-minute speech Esteban stressed the importance of in-service training to both supervisors and employees. He said that the supervisor must set himself as the example in efficiency in getting the work done, who after all gets the credit for it. On the other hand the employee must be trained to adopt his individual skill to the objectives of the bureau or office, he said.

The other speaker, Mr. Paul W. Bedard, ICA forest management adviser urged all employees to participate actively in the training programs of the bureau. He said that in-service training is a lasting job and that both the individual and the bureau staff work as team to develop new ideas for a common objective.

The program which was attended by some 300 forestry employees was part of the celebration of Public Administration Week. It also marked the opening of the first in-service training for forestry division chiefs and other officials with the same rank or capacity. The training course will last until November 12. The Director of Forestry will handle the course with Mr. Teofilo A. Santos, newly designated bureau training officer as executive secretary.

ESTEBAN, BEDARD TO SPEAK AT FORESTRY TRAINING PROGRAM

Professor Hernani P. Esteban of the institute of public administration and training director of the city government of Manila spoke at a short convocation and program sponsored by the bureau of forestry on Monday (October 17). The other speaker was Paul W. Bedard, ICA forest management adviser.

The program marked the launching of an intensive and executive in-service training for the officials and employees including fieldmen of the bureau. After the convocation some 15 division chiefs and officials with the same rank and capacity would formally start their training which would last until November 12.

Esteban was one of the four professors, including Director Carlos P. Ramos, who handled the recently-concluded training officers' course of about 40 employees from different government offices held at the U.P. He has worked as a training officer with the federal government of the United States. Presently he is the training director of the city government of Manila.

The holding of an in-service training course for the bureau of forestry officials and employees is an implementation of a presidential proclamation issued recently. Budget Commissioner Dominador Aytona and Agriculture Secretary Juan de Rodriguez revealed recently that the administration recognized the need for in-service training and that it is willing to set aside funds for the implementation of the training program.

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FORESTRY DELEGATION TO THE MENTAL HEALTH CONVENTION

The bureau of forestry sent five delegates to the convention of the Philippine Mental Health association and the Health Association of the Philippines on September 23 to 24, Director of Forestry Felipe R. Amos announced today.

Named official delegates of the bureau were: Foresters Vicente Parras, Leonor Lizardo and Vicente Caguioa, Mr. Manuel M. Catibayan and Miss Trinidad G. Asis.

The two-day convention which was held at the Rizal Hall of the University of the Philippines on Padre Faura climaxed the week-long celebration of Mental Health Week in the Philippines which opened Sunday, September 18.

The invitation to the bureau of forestry to send five delegates to the convention was extended by Mrs. Geronima T. Pecson, convention chairman. Government bureaus and offices as well as civic organizations will be represented, it was learned.

MEN MAY COME AND MEN MAY GO, BUT LANDS GO ON FOREVER

Regional chiefs of the Bureau of Lands recently relayed to Lands Director Zoilo Castrillo encouraging field service reports on the gathering of patentable materials in various parts of the country, the department of agriculture and natural resources revealed today.

It was indicated that fieldmen of the bureau are bent on producing more "raw materials" for surveys to attain the projected goal of surveying about 388,000 hectares during the current year.

With the present set-up, the lands fieldmen are conducting more investigations and other necessary procedures along land surveying, to maintain the bureau's record last year of having issued more than 50,000 patents.

The bureau is even decided to exceed the peak reached the previous year. Optimism on this matter is registered by the land director, because of the decentralization of authority. Henceforth, by this manner, district land officers have been given the power to approve homestead applications in localities within their respective jurisdiction.

ANNOUNCEMENT:

The agriculture department announced today that Agriculture Secretary Juan de G. Rodriguez is enplaning to Daet, Camarines Norte, Saturday, October 15, to fulfill a speaking engagement with the Camarines Norte Association of Forest Products Producers and Dealers. With him are BAE Director Domingo Paguirigan and Parks Commissioner Vicente de la Cruz.

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IN-SERVICE TRAINING DIVISION UNIVERSITY OF THE PHILIPPINES

Five high government officials have been invited to speak at the closing exercises of the six-week training officers' course sponsored by the Institute of Public Administration of the University of the Philippines tomorrow afternoon (September 29) at the U.P. Little Theatre, Rizal Hall, on Padre Faura.

Scheduled to speak are Education Secretary Gregorio Hernandez, Jr., Budget Commissioner Dominador Aytona, Finance Secretary Hernandez, Public Works Secretary Florencio Moreno, and Malacañang Executive Secretary Enrique C. Quema.

The speakers are expected to speak on "The Need of Government Support in Training Employees". The objective of the course is to train some 40 members from as many government offices and government corporation who in turn will train employees of their respective offices. It was pointed out that the employee training is the process of aiding employees to gain effectiveness in their present and future work through the development of appropriate habits of thoughts and actions, skills, knowledge, and attitudes.

After the speakers have spoken an open forum will follow with the following composing the panel of interrogators: Angel Okol, Chairman, Juan E. Valeros, Maximiniano A. Velasquez, Quirino E. Austria and Trinidad S. Viado, members.

The course opened last August 22 with morning and afternoon sessions and will formally close tomorrow. Instrumental in the successful holding of the in-service training are the following professors who conducted the lectures throughout the whole course: Director Carlos P. Ramos, Professors Roland Robinson, Ruben de Castro and Hernani Esteban.

The officers of the class are the following: president, Angel Okol of the Executive Office; vice-president, Ruben P. Macapinlac of the department of finance; treasurer, Roberto P. Clemente of the bureau of internal revenue; secretary, Lope C. Fernandez of the department of justice; and PRO, Agapito Dimarucot of the motor vehicles office.

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DANR COUNTS "OPERATION KNOCKOUT" IN FINAL SWIPE AGAINST RATS

The Department of Agriculture today (Oct. 14) girded for "Operation Knockout" against rats to be unleashed during the remaining 15-day saturation drive from Oct. 16 to 31.

According to Severino N. Lunar, National Rat Control Administrator the combined might of all forces of the government engaged in rat control, all bureaus and offices of the Department of Agriculture, and all civic agencies and organizations supporting the current anti-rat campaign, will be unleashed in a final 15-day all-out campaign.

Secretary Juan de Rodriguez wired and directed all field personnel of the Department of Agriculture to give top priority to rat control activities for the next fifteen days to insure the success of the operation.

He also appealed to all cooperating government agencies including the Social Welfare Administration, the Department of Health, the Bureau of Public Highways, the Armed Forces, the Bureau of Public School, and various civic groups and organizations to lend their whole-hearted support to the all-out effort to write finish to all forms of rat infestation by October 31.

Meanwhile, in Cotabato, only four towns, Pinagkawayan, Midsayap, Lebak, and Kiamba, remained in the danger zone of heavy rat infestation. All other municipalities of the province passed the crisis with only isolated infestations observed in a few patches.

This was attributed to intensified rat control

activities of joint community-government coordinated forces.

Four L-5 planes of the Philippine Air Force are buckled down to a round-the-clock spraying operations of deadly "1080" impregnated corn grain baits in vast uninhabited areas in Mindanao.

Administrator Luna ordered the aerial dispersal, which involved a 24-hour 3-shift duty, to put final touches to Cotabato "Operation Star" which raked in a total of almost 30 million rats to date in a period of four weeks.

All bureaus and offices of the Department of Agriculture have been put on the ready by Secretary Rodriguez to implement the operation intended to " knock out" the rodent population of the country in one felling blow.

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AGGIE DEPARTMENT TO SELL SURPLUS RICE, CORN TO NARIC

Agriculture Undersecretary Jaime N. Ferrer required the bureaus of Plant and Animal Industry, Soil Conservation and Agricultural Extension to sell their surplus production of palay and corn to the National Rice and Corn Corporation at prevailing government prices.

The directive was issued following the receipt by the agriculture department of an executive order from the President to that effect.

Undersecretary Ferrer intimated that this move is calculated to centralize the function of stabilizing prices of palay and corn to the Naric in as much as corporation buys palay from farmers all over the country.

It was learned that the President also required other government bureaus, agencies and instrumentalities to do the same.

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FOCUS ON PHILIPPINE MAHOGANY

The Philippine Mahogany Association of the United States, in its annual convention held on July 11, 1955, passed a resolution endorsing the activities of the Forest Products Laboratory in the Philippines.

The association, which imports large quantities of Philippine wood, feels that the forest products laboratory in Los Baños, Laguna, will provide vital information on lumber manufacturing techniques and for the utilization of forest products in this country. It underscored the importance of a sound program of wood research and testing of wood qualities which will greatly improve the Philippine lumber industry.

Since the forest laboratory started operation, it has conducted chemical analyses on sections of a mahogany log and tested equipment which turns out handles for tools like hammers, axes, picks and baseball bats. Studies to determine suitability of Philippine wood for the production of tool handles, good quality veneer and plywood will be undertaken.

PULP AND PAPER . . .

(*Continued from page* 62)

C. Survey on the amount and availability of the timber in order to determine whether the stands are sufficient to furnish ample supplies over a long period at a reasonable cost.

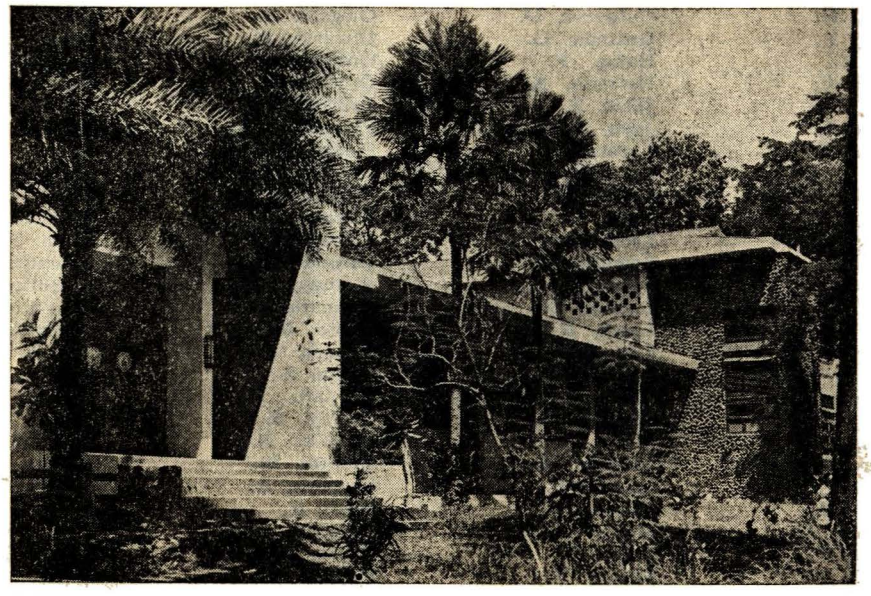
D. Availability of labor, water, electric power, waste disposal, and transport facilities.

E. Studies of production costs

Pulp and paper manufacturing in the Philippines from domestic wood fibers is still in the blueprint stage. Local sources of paper come from the conversion of salvaged paper and paperboard and pulp from the agricultural residues such as bagasse. These are not enough to satisfy our consumption and, as a matter of natural course, we resort to increased importation. The Philippine Government, cognizant of the situation, invited a survey by experts of the Food and Agriculture Organization of the United Nations. The findings were reported and some recommendations made, but much more remains to be done before the $64 question can be answered. Problems such as the timidity of local capital, cost of machinery and cost of labor, in other words, cost of production as a whole, and fear of foreign competition have hampered the progress of of our development program. Our research data and statistics as to the suitable Philippine wood species for pulping, their location and concentration in our forests, the quantity and availability for maintenance of a long-range industry are, unfortunately, very meager. Consequently, these factors all attribute to the lack of interest and incentive on the part of local entrepreneurs and capitalists.

These are the ideas I wish to project in bold relief. Anyone can take up from here

• Campus Notes •



The New College of Forestry Building

COLLEGE BEAUTIFICATION

College beautification started in good earnest last semester with the Assistant Dean's appeal to the student body to "patronize" the college weekly shows so that with the funds earned, the additional flight of stairs could be added to the front approach to the College door. One hundred eighty-two students signed a pledge to attend the ten weekly shows by promising to pay at the end of the semester the sum of One peso and fifty centavos (₱1.50) each, or at the rate of fifteen centavos a show, the fans had also the chance to win at the draw any one of the six prizes to be given to the lucky winners at the last movie showing in the first semester. The net proceeds from these shows amounted to Two Hundred Pesos.

The assistant dean, however, after seeing the dire need of flagstone walks from one section of the building to the others through the interior court suggested that instead of the additional flight of stairs as first planned the sum should be defrayed for the construction of artistic concrete flagstone walks in the interior court.

With this semester, the students will no longer walk through a muddy interior court but on flagstone walks around which the silviculture class will do some landscaping work under For. Domingo Jacalne.

At the back what was once an ugly rise of land due to the excavation work around the site during the construction of the new building has been made more presentable owing to the combined efforts of the Engineering II and lumbering classes under Professor Gregorio Zamuco.

This semester, a new appeal will again be made by the Assistant Dean to the Student Body to help with another pledge to the Movie Project in the raising of funds for the additional flight of stairs.

We hope that this semester we shall have a more responsive student body.

Those who pledged in the first semester were the following:

Abadilla, F.
Abraham, E.
Abugan, E.
Acebido, J.
Acosta, R.
Aggabao, P.
Agcaoili, L.
Aglugub, B.
Agra, M.
Aguda, C.
Agpaoa, A.
Agustin, A.
Alcala, G.
Alumit, A.
Arellano, A.
Atras, D. de
Bacdayan. A.
Balod, M.
Barrairo, F.
Barreras, A.
Bartolome, G.
Battung, B.
Bautista, I.
Bautista, R.
Bernardino, E.
Bihag, G.
Blando, A.
Boco, C.
Bonnit, D.
Borre, L.
Bote, R.
Bullag, R.
Calija, S.
Cabullo, Pros.
Camacho, R.
Caronoñgan, E.

Capili, A.
Carillo, F.
Castillo, S.
Castillon, A.
Cauilan, F.
Ceralde, L.
Collado, N.
Collado, P.
Coleto, C.
Corrales, C.
Corpuz, T.
Costales, F.
Creencia, E.
Dacumos, A.
Deza, R.
Domingo, L.
Domingo, R.
Dimog, P.
Dumlao, H.
Elayda, E.
Duran, D.
Empedrad, C.
Esber, G.
Esperanzate, O.
Esteves, F.
Estrada, L.
Estoque, L.
Fabia, C.
Farrales, M.
Fontanoza, M.
Flotildes, P.
Frias, R.
Fabian, G.
Fortes, P.
Gabot, V.
Galapia, P.
Galutera, R.
Galutira, J.
Generalao, M.
Gonzalez, A.
Guadalupe, N.
Guerrero, E.
Gutierrez, D.
Guzman, G.
Halog, F.
Herreria, A.
Jabla, E.
Juan, T.
Lazaro, D.
Lazo, P.
Layda, R.
Lazo, P.
Lechoncito, J.
Leonilio, J.
Lindayen, T.
Luczon, D.
Lluch, R.
Lonzanida, B.
Lamanilao, J.
Mabesa, B.
Madria, M.
Maico, E.
Mapagu, L.
Martin, P.
Medina, C.
Medenilla, P.
Mejia, J.
Menor, V.
Millet, V.
Medina, C.
Montiague, B.
Matute, R.
Nagasangan, A.
Nave, D.
Nollido, V.
Narciso, P.
Obidos, C.
Ocampo, N.
Olegario, D.
Oliveros, P.
Orden, J.
Ordonio, F.
Pabrua, G.
Padollina, O.
Palacay, F.
Parilla, C.
Pascua, A.
Pascua, N.
Pattaguan, C.
Peralta, A.
Piansay, P.
Piramide, D.
Pobre, M.
Polines, N.
Ponce, S.
Preclaro, P.
Quiray, S.
Quitoles, R.
Quintos, M.
Ramirez, A.
Raiz, R.
Rañeses, S.
Reyes, A.
Reyes, E.
Reyes, C.
Reyes, P.
Reyes, T.
Rimando, M.
Rivera, R.
Rosario, R.
Rivera, A.
Rodrigo, W.
Roxas, F.
Saavedra, A.
Sabate, L.
Sajor, J.
Sallidao, E.
Sarong, A.
Salvador, E.
Sanchez, R.
Somera, R.
Singayan, N.
Tabil, D.
Tesorio, C.
Tiam, B.
Tolentino, C.
Tolentino, Cesar
Tolentino, M.
Tumaliuan, A.
Tomas, J.
Tamiok, T.
Udañga, A.
Unite, T.
Ulanday, E.
Valdez, C.
Valida, V.
Valdez, A.
Veracion, V.
Vibar, C.
Viloria, R.
Vinarao, C.
Visaya, J.
Villegas, I.
Zapanta, V.

The presentation of weekly movie showings were due to the untiring efforts of Mr. Modesto Tobias, the manager, assisted by the energetic president of the Student Body, R. Baggayan, Messrs. A. Eugenio, G. Batoon, T. Reyes, Misses R. Felix, P. Oliveros, J. Gerardo, S. Tabangil, A. Blando, R. Martin and others from the Sophomore class who were willing to sacrifice a part of their time on Friday and Saturday evenings so the "show could go on".

SENIOR CLASS DONATION

Under the very able and enthusiastic leadership of Senior Prexy "Bert" Pollisco, the Senior Class have started the ball rolling in raising funds for the Senior Class donation. A committee was formed to interview the Assistant Dean as to what in his opinion would be the college's most urgent need so the Class would be able to help.

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TRADITIONAL SMOKERS RALLY

The old pavilion was once more the scene of the SBO gathering last July 23rd in celebrating the traditional Smoker's rally.

In conformity to the tradition, the Freshmer were made to wear the traditional skull cap and to follow some rules and injunctions.

Because of the voluminous work in the Bureau, the Director was not able to come as guest speaker of the night. However, Dean C. Mabesa extended the Director's wish and felicitation to the Freshmen.

The night affair was made lively by the presentation of different interesting numbers. In the skit contest, the Freshmen won the first place, the Pensionado Club and the Seniors were awarded the second and third prizes respectively. An Ilocano folk song sung by Florencio Peig won the first prize in the regional singing contest. A very pleasant skit was presented by the Siamese which amused the crowd, while the Makiling Literary Club presented a drama, in 3 scenes.

The affair was attended by the faculty members, student body and visitors.

L. D. Angeles

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SR. FORESTER T. SEREVO CONVOCATION GUEST SPEAKER

A tradition of holding class convocation which was begun in 1937 was revived by the Senior Class and their Adviser, Prof. J. B. Blando when they sponsored a convocation at which Forester Tiburcio Serevo was the guest speaker on August 18.

In his talk, Forester Serevo emphasized the need for a propaganda by the Bureau patterned after that of the US Forest Service whereby peo-

ple especially school children will be enlightened on the disastrous effects of forest fires and kaiñgin makings.

He also imparted how the US Forest Service is organized and the way it functions. According to him, the Philippine Forest Service is highly centralized unlike to that of the United States. He revealed further that in Washington Office, there are six branches of the Service each having an assistant chief acting on the capacity as chief for two months term each. In other words, there are rotations among chiefs of each branch. After two months, another will succeed the other on the same branch and so on. In that way, each feels that he is a part and parcel of any division. It also acquaints him of the different functions of the Service in general. Hence, problems that are hidden could be found by one if not by the other.

After his talk, Forester Serevo elucidated his explanation on water management and fire protection by projecting different slides.

The affair was well attended and the crowd found Forester Serevo an eloquent and an interesting speaker. A welcome speech was given by the president of the Senior Class—F. Pollisco. A short talk was likewise rendered by the SBO Adviser C. Recto. Prof. J. B. Blando introduced the guest speaker. Dean Mabesa accepted the donation of For. Serevo, a picture of Gen. McArthur made of different woods.

L. D. Angeles

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FPL UNBARES FIRST STRENGTH TEST

The first strength tests have been started at the Timber Physics Section of the Forest Products Laboratory using test specimens from a Mahogany (*Swietenia macrophylla*) log that was removed to make way for the laboratory.

Meanwhile, it was gathered that Mr. Kenneth Boller of the Forest Products Laboratory at Madison, Wisconsin is scheduled to come to the laboratory soon to assist in getting the timber testing off to a good start and to give an in-service training to the timber testing staff.

T. Bañaga

———oOo———

PROPOSED COLLEGE PUBLICATION:

The edition of a monthly college paper was brought out by FORESTRY LEAVES Adviser, Prof. J. Blando during the meeting of the Makiling Literary Club. The purpose of this suplementary publication is primarily to encourage students to write short stories, poems, news and other literary attempts.

We therefore commend such a move, and we hope for its early realization.

ADMINISTRATION CLASS VISITS FPL

The Forest Administration students of the College of Forestry, headed by Prof. Valentin Sajor, Chief of the Division of Forest Investigation visited the Forest Products Laboratory.

Forester Rosario Cortes entertained questions from the students and explained to them the mechanics and functions of the new installed machineries. On the other hand, Miss Vergara of the Chemistry section disclosed the different projects and activities being undertaken by their section.

In this occasion the students were permitted to enter all the rooms of the Laboratory.

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WHERE ARE THEY??

Two years ago, twenty-seven honor students and boy scouts with good scholastic standing were appointed by ex-director Tamesis as temporary rangers with the privilege of studying in the College of Forestry. This was done in an effort to instill forestry-conciousness in the minds of the general public especially the younger blood and also to solve partially the problem of personnel shortage in the Bureau of Forestry.

After having completed succesfully the requirements prescribed for the two-year course (except for a few), the student rangers were sent to the field where public service and devotion to duty await them.

The following were the original student rangers and have been assigned to the following different forest districts:

1. Arcangel, Fortunato S., Davao City; 2. Binua, Tomas M., Lucena, Quezon; 3. Boncato, Benjamin A., Baguio City; 4. Caronan Avelino, Sorsogon, Sorsogon; 5. Chavez, Ruben R., Los Baños, Laguna; 6. Cortes, Edmundo V., Cabanatuan City; 7. Espino, Wilfredo C., Forest Station, Fabrica, Negros Occidental; 8. Gumayagay, Julian T., Dagupan City; 9. Lalog Wilfredo I., Manila; 10. Licayan, Miguel S., Tacloban City; 11. Lizardo, Antonio M., Forest Station, Malabang, Lanao; 12. Loyola, Florentino A., Manila; 13. Mariano, Angel A., Dipolog, Zambo. del Norte; 14. Meimban, Benjamin R., Dagupan City; 15. Monsanto, Ricaredo G., Bebek Scaling Station, Benguet, Mt. Province; 16. Paragas, Bienvenido G., Dipolog, Zambo. del Norte; 17. Padrones, Conrado P., Dipolog Zambo del Norte; 18 Pintor Alfredo V., Dumaguete City; 19. Principe, Gregorio P., Pto. Princesa, Palawan; 20. Salañga, Apolonio C., Baguio City; 21. Sanchez, Alfredo V., Laoag, Ilocos Norte; 22. Soriano, Victoriano, Roxas City 23. Sison, Anastacio, Butuan City; 24. Tarroza, Victoriano, Cagayan de Oro City; 25. Valera, Mariano Z., Basilan City; 26. Yadao, Filamor M., Ilagan, Isabela; 27. Zayas, Santiago G., Sindangan, Zambo. del Norte.

F. S. Pollisco

MORE RANGERS RETURNED

After working with the Bureau of Forestry for three consecutive years, two more rangers from the field returned to finish the B.S.F. degree.

Ranger Brigido Balcita who was designated as Officer-in-Chrage of Sibuko Scaling Station, Sibuco, Zamboanga del Norte, is back because he believes that he can be of greater service to the Bureau of Forestry and to the country as well after finishing the course. He is at present a Junior representative to the U.P. Junior Student Council. With a few more units to tackle, we expect him to be a forester by June, 1956.

Ranger Francisco Milan, Ranger class 1952, resigned from his job in the Bureau of Forestry to continue his studies in this college. Aside from being an assistant instructor in Physical Education, he is also the College Junior representative to the U.P. Student Council. Keep 'em flying.

F.S.P.

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ACUTE WATER SHORTAGE HITS AGGIE, FORESTRY

The U.P. College of Agriculture, boomtown of the year, became a place of booming problems. Acute water supply shortage hit the community with epidemic.

The forestry swimming pool mecca of city weekend excursionists, will soon be closed to the public as the water shortage turned from bad to worse.

Dr. Antonio Tan, College physician, declared that students should consult him right away in case of ailment to allay fear of an epidemic. At pres time no epidemic has been reported yet by the infirmary authorities.

The waterless community is carrying out for water . . . even as the college scientists attempted in vain to pump out water from the newly constructed pump house in the experiment station.

from the Phil. Collegian
Sept. 15, 1955

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FRATERNITY NEWS

After successfully passing the scholastic requirements, seven new members and eight associate members were admitted to the Zeta Beta Rho Fraternity, an exclusive fraternity of this college. New Officers of the fraternity for this school year are: Pres.—Filiberto S. Pollisco, Vice Pres.—Jose M. Ilagan, Sec.—Felipe Abraham, Jr., Treas.—Simplicio Alegre, Jr., Exec. Sec.—Lucio Quimbo, Aud.—I. Serrantes, PRO—Primitivo Galinato, Sgt.-at-Arms—Francisco Rendorio and Gregorio Francia. Miss Remedios Felix was reelected as fraternity sweetheart and Dr. Artemio V. Manza as adviser. The new members are: Leonardo Angeles, Simplicio Castillo, Manolo Fontanoza, Manuel Galang, Lucio Quimbo, Melchor Tolentino and Armando Villaflor. New Associate members are: Pedro Cebuano, Nicomedes Collado, Gayred Esber, Carlos Ismael, Severino Molina, Rodolfo Quitoles, Jose Tagorda and Francisco Milan.

A plan to affiliate the fraternity to a certain US fraternity was revealed by the Adviser as envisioned by some of the most prominent honorary members like the former Director of Forestry Florencio Tamesis, the Assistant Dean of the College Prof. Calixto Mabesa and the Chief of the Forest Products Laboratory—Prof. Eugenio de la Cruz. A more rigid screening of prospective memebrs will be followed.

A dinner was tendered after in the messhall.

Nine forestry students were admitted into the UPSILON Sigma Phi Frat this year (Los Baños Chapter). They are: Leonardo Angeles, Pedro Cebuano, Nicomedes Collado, Manuel Galang, Severino Molina, Rodolfo Quitoles, Armando Villaflor, Isidro Zamuco and Aquiles Esber.

After the rate, a dinner was served at the Molawin Mess Hall in honor of the incoming agriculture and forestry upsilonians.

Not to be outdone, the U.P. Beta Sigma Fraternity, Los Baños (Forestry) Chapter admitted five new regular members and sixteen associate members this school year. Being a separate unit from that of the College of Agriculture the members elected Prof. Valentin Sajor and Miss Fe Bañaga as Adviser and sweetheart respectively. The following are the officers and members of the fraternity: Pres.—Rogelio Baggayan, Vice Pres.—George Batoon, Sec.—Benigno Lomibao, Treas.—Pelagio Sumabat, Asst. Treas.—Aniceto Udañga, Aud.—Ruben Cubero, P.R.O.—Adolfo Galam, Sgt.-at-Arms—Agerico Gonzales and Sabado Batcagan. The regular members are: Melancio Alconcel, Meliton Battad, Brigido Balcita, Manuel Barlicos, Inocencio Bautista, Roberto Espiritu, Alfredo Eugenio, Damian Lagura, Lucio Quimbo, Cleto Sapiena, Modesto Tobias, Carlos Wandisan, Eddie Abugan, Benjamin Mabesa, Policarpio Narciso, Jr., and Vicente Veracion. Associate members are: Melecio Agra, Andres Blando, Juanito Domingo, Rufino Estioco, Nicasio Mulato, Marceliano Pobre, Saturnino Ponce, Benedicto Reprado, Tomas Reyes, Benjamin Sanchez, Cesar Tolentino, Arsenio Toñgacan, Aquiles Udarbe, Juanito Ugailno and Leon Zapanta.

L. D. Angeles

• Forestry in the News •

PLANT MILLION TREES ARBOR WEEK

More than one million trees will be planted throughout the country before July 30, according to officials of the forestry bureau at a conference yesterday.

Education Undersecretary Martin S. Aguliar, Jr., chairman of the arbor week committee, stated yesterday that he is confident of full cooperation of municipal and provincial officials in the week-long nationwide tree planting campaign|

President Magsaysay, in his message declaring the period from July 24-30 as "Arbor Week," urged every citizen, agency and organization to join the national tree planting drive .

Of the week, the President said: "It will awaken tree consciousness among our people, to undertake a vigorous campaign for the planting of trees to beautify our yards, plazas, highways, parks, and to reforest our bare and denuded lands through a sustained tree planting work participated in by all elements of the community."

Nicolas P. Lansigan of the forestry bureau said that there are at present some 3.9 millions hectares still to be reforested. He said that the bureau by itself can only do some 1000 hectares of reforestation work annually.

The week's celebration will reel off tomorrow afternoon at the Luneta, President Magsaysay will lead a group of ranking government officials in a tree planting ceremony.

Living ex-presidents led by former President Emilio Aguinaldo will also participate in the ceremony. Only former President Sergio Osmeña was reported not able to attend.

Church services throughout the country will be held tomorrow with the local forestry councils making the necessary arrangements with the local parish priests. The church services will be followed by literary-musical programs after which local leaders and ranking government officials will plant trees in public squares or parks previously selected for the purpose.

The affair at the Luneta is jointly sponsored by the National Forestry Council and the Manila Jaycee.

GSP Sets Program

An Arbor Week Festival will be observed by the 56 councils of the Girl Scouts of the Philippines with the three councils of Greater Manila leading with a program starting 9 a.m. Saturday, July 30 at the GSP national camp in Quezon City.

Guest speaker will be Juan A. Torres, acting director of the Bureau of Plant and Animal Industry.

A special feature of the festival is the contest among the girl scouts on the "best planted home." This event will be made a continuing contest with the first announcement of winners to be made on September 20, Homemaking Day of *Girl Scout Week*. Prizes for the "best planted home" will include such practical items as a lawn mower, barbecue pit, ornamental plants and other useful things for beautifying the home with each sponsors and board of judges.

Lands Bureau Observers Day

Director of Lands Zoilo Castrillo, in a recent circular, enjoined lands bureau personnel to observe arbor week starting July 24 and to cooperate with forestry councils in their respective localities for the success of the arbor week celebration.

This is a chance for lands bureau personnel to share in the nationwide movement, the director said, and help in the campaign "for the planting, care and maintenance of trees in every community as well as for fostering tree-mindedness and forest consciousness among the people." (*The Saturday Mirror, July* 23, 1955).

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AN EMPTY RITUAL

The tree-planting ritual usually associated with the observance of Arbor Week—an immaculately dressed government official dumping the first spadeful of earth in a tree-planting ceremony—has to be completely abandoned in favor of tree-planting on a wide scale and year-round enforcement of our reforestation laws if the annual celebration of Arbor Day is to serve any useful purpose.

Philippine forests are fast thinning out in Mindanao as a result of indiscriminate logging and our failure to carry out a long-range reforestation policy. Selective logging has been urged by the department of agriculture and natural resources as the quickest way to replenish our forest preserves, but little actually has been achieved to guard against complete destruction, a generation from now, of our valuable forest resources.

Arbor Week should focus attention on the need of carrying out selective logging and reforestation policies. It should call the attention of officials to the necessity of preserving sites for parks, of converting existing bare metropolitan parks into wooded areas, and of conserving our forest resources everywhere not only because they are valuable but

also because they provide the best safeguards against erosion, floods, and droughts.

The observance of Arbor Day with the ritual of tree planting highlighting everything has accomplished exactly nothing. The trees that are planted are seldom cared for; they die after a few weeks so that others may be planted come next Arbor Day.

The practice should be abandoned in favor of a more serious application of our policy on our forest resources. (*Editorial, The Manila Times, July* 25, 1955).

———oOo———

LUMBERMEN HIT DUMPING

The Philippine Lumber Producers' Association, through its president, Antonio de las Alas, vigorously objected to a move by a shipping firm to unload "dunnage" lumber in Manila as it would offer competition to the local market for low grade lumber.

The lumber men's association, according to De las Alas, was informed that the application of the United Steamship Lines to the Central Bank for permission to unload in Manila "dunnage" lumber has been referred for comment to the commissioner of customs.

In a memorandum to the customs commissioner, De las Alas pointed out that his association is seriously concerned with this application because it would weaken the local market for low grade lumber. The association, De las Alas continued, has made a careful study of the possible consequences of allowing "dunnage" lumber to be unloaded in Manila and it concluded that, while it is true that the lumber used as dunnage by the applicant may be small in quantity, yet the approval to unload said lumber would inevitably affect the local market, because such approval would establish a precedent which would enable other shipping lines to demand similar privileges.

Dunnage lumber, if unloaded in Manila, De las Alas averred, would eventually find its way to local manufacturers who heretofore have utilized lower grade lumber in the manufacture of boxes, crates, tool handles and other similar articles.

Lumber producers, he added, are doing well in selling lower grade lumber to these local manufacturers who find it suitable for the making of boxes and crates.

Considering the already unstable condition of the lumber industry in the country, De las Alas said the association is submitting a vigorous protest against the unloading here of said lumber or elsewhere in the Philippines. (*Sat. Mirror, July* 16, 1955).

LUMBERMAN STRESSES PROJECTS WITH DECIDED ADVANTAGE IN WORLD MARTS

Warning in effect local farmers into plunging deeply in the large scale production of ramie and other fibers, G. S. Mañalac, lumberman, who just returned from a world tour, told Davao people in an interview over radio station DZMC during the Namfrel hour this week, to make further studies of all phases of the ramie industry before making additional investments in this particular line.

Mañalac said that in Japan where studies have been made for the past 40 years, the concerns dedicated to this line are now reportedly in difficult condition, and, even the ministry of agriculture which encouraged Japanese farmers to plant ramie this year is now in a dilemma as there is no outlet for the fibers produced by the farmers.

In Florida, USA, where the fiber is dubbed as the wonder fiber, only about 1,400 hectares are actually planted and the fiber is used only for special purposes, and, at times only mixed with other fibers, natural and synthetic.

There seems no possibility for the fiber to replace cotton for wearing apparel at this stage of its technical growth. And with the development of technology in the production of synthetics which has already made an inroad into almost 25% of textile world consumption, and is certainly increasing, there seems to be no chance for the fiber to be popular. Cost of processing is very high and this is the greatest barrier for the fiber's appeal to the masses.

Coffee is another product that should not be encouraged but instead only limited to local consumption, Mañalac said, pointing to Brazil's condition as regards this product.

Mañalac said that Philippine financial resources, meager and limited in scope, should be channelled towards projects where there is a decided advantage as to minimize competition from abroad on our export products.

He suggested the establishment of dairy farms to provide the people with the milk and cream needed. He said that we are the only people on earth who drink imported canned milk. The livestock and fishing industries offer opportunities for investment to save dollars by stopping importation of canned meat and fish for consumption.

Of great demand in the world's market and with almost without competition are our lumber and other forest products and our minerals. Priority should be placed in the development of these industries. The integration of our coconut industry calls for immediate implementation as this is one industry where we have an edge over all other countries.

One of the greatest paradoxes in our economic life, Mañalac pointed out, is the fact that, being

mainly an agricultural country, we are still importing rice to meet normal requirements. In 1945 alone, we sent out 12.5 million dollars for the procurement of rice from overseas to stave starvation. The rice and corn industry still offers investment opportunities before self-sufficiency can be attained and to save much needed dollars for our industrialization.

Mañalac also suggested a more dynamic program of developing our hydroelectric power for the production of electricity and to electrify our railways, to put up in all cities electric railway cars to reduce the big volume of gasoline and oil products being imported annually by the country.

———oOo———

PLYWOOD

Standardization Rules Set

The department of commerce and industry forwarded to Malacañan yesterday a proposed commerce administration order providing rules on the standardization and inspection of Philippine plywood both for export and for local consumption. The proposed order was prepared by the bureau of commerce in compliance with an executive directive on the matter of standardization of Philippine products and after consultation with local manufacturers and exporters of plywood.

Citing figures on plywood exports, the increasing demand for it abroad have prompted this product had considerably increased from 225,966 sq. ft. valued at ₱118,478 in 1950 to 1,649,196 sq. ft. worth ₱400,759 last year.

The yearly average export of plywood amounting to 535,836 sq. ft. worth ₱154,627 and the increasing demand for it abroad hva eprompted the proposed standardization of this commodity in order to: 1) improve its quality, and remedy its defects; 2) promote development of new market for it; 3) protect the consumers and afford greater confidence and goodwill to the manufacturer or distributor; 4) forestall unfair competition; and 5) minimize litigations and other acts tending to disorganize industry.

Copies of the draft had been sent to all plywood manufacturers and exporters as well as the Plywood Manufacturers' Association of the Philippines, for their comments and suggestions before the proposed order was finalized.

W. B. Murphy of the International Hardwood and Veneer Company of the Philippines said: "The draft of the commerce administrative order for the inspection and standardization of plywood is exhaustive and complete and shows foresight in the ultimate successful development of the plywood industry in the Philippines." (*Saturday Mirror, July* 3, 1955).

FURNITURE MAKERS FACE GRIM FUTURE

Philippine rattan furniture export faces a grim future unless its grave problems are solved, according to a report received yesterday by the department of commerce and industry from a local rattan manufacturer.

The problems cited are:

1. High freight rate from here to the United States.
2. Stiff competition from Hongkong.
3. Cheaper *palasan* poles from Borneo, Malaya, and Indonesia, and
4. Primitive production methods used in some local factories.

The exportation of Philippine rattan poles to the United States, however, has propped up the furniture export to that country, the report said.

The commerce department reiterated its stand against the banning of the exportation of rattan poles.

Undersecretary Perfecto E. Laguio advised Candido Pangilinan of the Republic Rattan Art that it has been the policy of the commerce department to encourage the development of any dollar-earning industry for the benefit of the people engaged therein and of the country as well—*Manila Times.*

———oOo———

SEEDING BY AIR TRIED IN SUBIC

Reforestation by aircraft, the first venture of its kind in the Philippines, was initiated recently along a barren 30-hectare strip of Cawag forests in Subic, Zambales, the department of agriculture and natural resources announced.

The undertaking, which took five hours to negotiate under adverse weather was assisted by an H-19A Philippine Air Force Sikorsky helicopter piloted by Lt. Petronio Lapeña and Lt. Cesar Cañete and supervised by key officials of the bureau of forestry.

Cruising at a clip of 30 to 40 miles at an elevation varying from 50 to 80 feet, the helicopter sowed ipil-ipil seeds, reported adapted to rolling terrain. The seeds were sown in rows 10 meters apart covering the entire area.

The aircraft, in sowing the seeds, battered a headwind of about 50 miles per hour. It was explained that to hasten germination, the seeds were steamed and dipped in hot water.

Bureau of forestry officials expect the seeds to break up and sprout in 10 days after sowing. At this rate of growth, it was gathered the seedlings were expected to reach up to a height of 10 feet in three years. (*Sunday Times, Aug.* 28, 1955).

———oOo———

PREPARE READING ITEMS ON SOIL AND FORESTS

To arouse public interest and build up wholesome appreciation especially among the youth of

the importance of soil and forests and their wise conservation, Agriculture Secretary Salvador Araneta created recently a committee to prepare suitable reading materials for use in elementary and high school classes.

Appointed chairman was Agricultural Information Director Eduardo R. Alvarado with Soil Conservation Director Marcos M. Alicante, Public Schools Assistant Director Pedro Guiang, and Nicolas P. Lansigan, executive secretary of the national forestry council, as members Teofilo A. Santos, bureau of forestry public relations officer, was named member-secretary of the committee.

The committee will gather, prepare and edit information materials about soil and forests conservation and the role they play in the country's economic development. The reading matters will be in a style and vocabulary adapted to the particular grade or grades they are intended for and will be accompanied with simple illustrations, Araneta said.

Expected to meet shortly, the committee will submit manuscripts from time to time to the secretary of agriculture for consideration and approval. The committee is free to call upon any unit or personnel of the agriculture department for such assistance necessary in its work, according to Araneta. (*Sunday Herald, Aug.* 21, 55).

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TO REFOREST CEBU BY PLANE

Forestation by air throughout the country will be launched this week in denuded Cebu mountains.

Agriculture Secretary Jaime N. Ferrer is going to take a helicopter for Cebu this week to witness and supervise the dropping of seeds clothed in manure or fertilizer. The manure-clothed seeds will be attached to a weight, so that upon reaching the ground they will penetrate.

This is the initial try at forestation by air, It is being done in connection with Arbor Week celebration.

The agriculture undersecretary said should the Cebu experiment succeed, the same method will be applied in all denuded forest areas in all parts of the country.

In this connection, Ferrer claimed that what ultimately counts is not so much the number of trees planted but the continuous care and protection which will bring them full maturity and productiveness.

Ferrer deplored the fact that in many European and Near East countries, once beauty spots were reduced to barren, pitiful sights by war. He stated that this situation could be duplicated in the Philippines "unless we take appropriate and vigorous measures now for the reforestation of denuded areas and for the preservation of our forests."

Ferrer stated forests play a vital role in the national life in varying forms. He said they provide the people with building materials not only for their homes and public edifices but for many other essential facilities for added comfort and convenience including various constructions for national security. They bring, he said, dollars to our country through lumber exports; they serve as windshield to protect our farms from erosion and landslides; they help maintain a climate that is favorable to our flora and fauna as well as to human life; and they offer a sanctuary to wildlife that is an indispensable ally of farmers in their constant battle against plant pests and diseases. (*Daily Mirror, July* 26, 1955).

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DEFORESTATION DANGERS CITED

The Philippines will become a barren land of many deserts, unless we do something concrete on our fast rate of deforestation, Atty. Roberto Villanueva, executive chairman, national forestry council, recently said in a special arbor week message.

Underscoring the fact that we can equally be successful in conserving these nature's precious gifts" as we have done with Redism, Villanueva urged the awakening of all to the importance of trees.

"Arbor Week," he said, "must be commemorated in relation to our national salvation." He added that "it must reach not only the schoolyards and town plazas where the ceremonial tree-planting is done year after year, but also in the rural areas where deforestation is critical." . .

———oOo———

WOOD RESEARCH PROJECT AT U.P.

Philippine wood is the main subject of the research project launched by the University of the Philippines department of civil engineering, it was learned.

1. To compile a new set of values on the strength and similar properties of the Philippine timber used as structural materials.

2. To gather useful information not presently available on tensile strength, strength of bolted connections and strength of split ring connections.

It is believed that timber design specifications may be improved to enable civil engineers to design structures that are safe and economical. (PNS)

———oOo———

MITSUBISHI OFFICIAL ALLAYS FEARS OF LOCAL LUMBERMEN

A Japanese business executive denied Monday claims that his country's lumber exports to the United States was adversely affecting the position of Philippine mahogany in the American market.

Japanese lumber exports can not hurt or compete effectively with Philippine lumber shipments because the demand in America was greater than

both countries could supply, according to Fumio Nakajima, chief of the lumber section of the Mitsubishi Shoji Company.

Nakajima, an official of one of the biggest buyers of Philippine logs, said while it was true Japan was shipping to the US lumber sawn from PI logs, the quantity was not enough to constitute a threat to local exports.

"Filipino producers have nothing to worry about because they have a stable market in America. Japan will not edge them out," Nakajima said.

Nakajima arrived early this morning by air from Tokyo. He said he came to make an extensive survey of lumber concession in Luzon and Mindanao and to confer with management of some 10 firms from whom his company has been buying logs.

In an interview, the Mitsubishi official reported that there was a "very big" demand for Philippine logs in Japan, the outcome of a boom in the plywood their son, Arthur Henry. (*The Evening News, Aug.* 15, 1955).

Observing that the Philippines exported 85 per cent of its logs production to Japan last year, Nakajima predicted that a similar quantity of PI logs would be absorbed by the Japanese market this year.

Nakajima said Mitsubishi was one of the biggest buyers of Philippine logs, having been importing them at the rate of six million board feet a month.

Robert J. Rohling, Far East representative of the Johnson Wax Company' returned last night by PAL from Hongkong after a six-month business trip to the US. He visited with the company's office in different American capitals and the head office in Rasine, Wisconsin.

Rohling, former flight control superintendent of PAL, was accompanied by his wife, Frances, and their son, Arthur Henry.

———oOo———

GREENER PASTURES

By Salvador Araneta

Better forage and improved pastures

In the Research Conference that we had this week in the Department of Agriculture and Natural Resources, the technical men of the Bureau of Animal Industry reported on measures taken to improve our pastures. They reported that in the Stock Farms of the Government, we have today 1,362 hectares of improved pasture area, and that a field day was organized in Ubay, Bohol, where the Governor and prominent stockmen attended and they were all very much impressed at the high quality of the pasture grasses in the said Stock Farm. As a result of this, Governor Juan Pajo of Bohol has started a campaign of introducing the better grasses in private pasture lands.

In this Research conference directives were given to the Bureau of Agricultural Extension, and Bureau of Forestry to start a campaign of introducing in the private and forest pastures the grasses that have proven successful in the government farms.

Use of better forage and improved pastures is an indispensable tool in farming high quality of animals for more efficient production and for bigger profits. Grass is the cheapest feed. A stockman who can raise one head of mature cattle on one hectare of natural grassland can raise from four to six head on the same land if better forages are grown or the area converted into improved pastures. What is more important is that it is not possible to improve the quality of animals if they are not given proper nutrition. In our postwar experience in raising animals imported from both India and the United States, it was amply demonstrated that before pastures at stock farms were improved, the condition of the cattle was poor, mortality was rather high, and calf crops were low. With better kinds of forages and improved pastures, the condition of the animals improved, mortality was reduced, calf-drop percentage was raised from below 40% to above 90%, and the carrying capacity of the land increased to as high as six times.

The Philippine Government since 1904 has imported or introduced more than 300 species and/or varieties of forage plants from various countries and is now maintaining about 100 of such species at the nurseries of the Bureau of Animal Industry, Pandacan, Manila. The species now used in large-scale pasture improvement are:

1) Para grass (*Panicum purpurascens*).—Prewar importation; very growthly; capable of yielding 50 tons per hectare in three months after planting; very palatable; highly nutritious; versatile; can grow well on marshy lands as well as on hill tops; perennial and has high trampling resistance; and grows well at sea-level up to 5,000 feet altitude.

2) Alabang X (*Andropogon nodosus*).—Native species; discovered at the Alabang Serum Laboratory grounds in 1938; high yielding; perennial; very resistant to trampling and drought; and yet grows well in plot sometimes marshy ground; does not thrive well at altitudes over 1,000 feet.

3) Guinea grass (*Panicum maximum*).—Prewar importation; adapted to elevations from sea-level to over 5,000 feet; good as cut grass, silage and pasture; perennial; propagated by seeds and root-stocks.

4) Pangola (*Digitaria decumbens var stolonifera*).—A perennial, growthy, drought resistant, palatable and nutritious grass imported from South

Africa in 1938. Adaptable to low and high altitudes, and all soil types including sandy ones; resistant to trampling.

5) Delhi (*Andropogon annulatum*). — Imported from New Delhi in 1950; a bunchy, perennial very palatable high yielding and nutritious grass adaptable at low and high altitudes; resistant to trampling. (*Sunday Times, July* 17, 1955).

———oOo———

SAWMILL OPERATION STARTS OFF P.I. FOREST PRODUCTS LABORATORY PROJECT

A phase of the Philippine forest products laboratory project in Los Baños, Laguna, started last week of its sawmill. Costing ₱30,000 according to an early estimate, the sawmill will be used in the preparation of wood specimens for the research center.

The primary purpose of the forest products laboratory of the bureau of forestry is to study properties and uses of wood and to develop new or improved processes, materials and products. The laboratory was established by the joint efforts and financing of the U.S. Foreign Operations administration (now the International Cooperation administration) and the Philippine government.

First of its kind in the Far East, the project is designed to serve the needs of all factors of the buildings industry, like engineers and architects, and ultimately all persons who use wood and related products.

The building was constructed mainly with Philippine government funds. The research equipment was purchased principally with I.C.A. funds. The Food and Agriculture Organization of the United Nations is also providing technical assistance in the selection of equipment, and in staffing and program problems. Dr. George Hunt, formerly head of the forest products laboratory at Wisconsin and currently technical adviser of the F.O.A, advised the establishment of the local forest laboratory.

Installation work is underway for the seven units of the research center: timber mechanics, e.g. for testing strengths of materials; timber physics, e.g. for studies on shrinkage; pulp and paper and fiber board manufacture, e.g. wall boards; a pilot plant, for experiments on veneer and plywood; wood preservation plant; dry kiln or artificial seasoning; and industrial investigation, e.g. nail holding capacity of different types of wood.

A laboratory for Philippine forest products has been urged for many years but it was only in 1954 that real work on it was made. It began its work then with a new building, a very small staff, a limited amount of research equipment, and an unlimited number of problems needing to be studied.

Ray Johnson, chief of the agricultural division of the I.C.A., visited the establishment last week. (*Manila Daily Bulletin, July* 27, 1955).

ARBOR WEEK FOOD FOR THOUGHT

By NICOLAS P. LANSIGAN
Bureau of Forestry

1. Over 5,000,000 hectares or 17 per cent of the total land area of the Philippines are now bare cogon lands. Most of these are idle, unproductive waste lands. Yet these were once rich virgin forests which were cleared or "kaingined," planted to crops but the land had to be abandoned because the soil was not good or the slope was so steep as not to be suited for permanent crop growing.

2. Illegal "kaingin" making and forest destruction still go on, adding more hectares to these wastelands.

3. If this vast cogon area were left in forest its timber at a conservative estimate of only 50 cubic meters a hectare would run to 250 million cubic meters, would easily yield 60 billion board feet of lumber, enough to build one good-sized house for each inhabitant of the Philippines. At ₱250 per cubic meter for logs, the timber would be worth 6.25 billion pesos. If this timber were cut, and at only ₱1.50 per cubic meter in government tax, revenue amounting to 375 million pesos would be realized.

4. Around 1,390,000 hectares of the 5,000,000 hectares of cogon lands need reforestation badly as these are on the critical hills and mountain sides. These should be replanted if costly soil erosion is to be checked or the hazards of destructive floods reduced.

5. The bureau of forestry is reforesting some of these areas at a rate of 1,000 hectares a year. At this rate it will take 1,390 years to replant even these critical areas only. This reforestation will even take longer period to finish if what little we can reforest is not adequately protected from trespass and destruction.

.6 The bureau of forestry can plant around 5,000,000 seedlings a year. If every inhabitant of the Philippines, from ages 7 to 60 years, numbering 16,940,000 would each plant a tree (as in an occasion like this Arbor Week) it would more than treble the rate of the bureau of forestry.

7. It is evident that the efforts of the bureau alone cannot cope with the urgent need of reforesting our grasslands. Public and private enterprises must have to help. National celebrations like Arbor Week help bring home this need.

8. A policy of attracting people to plant these cogon areas has been laid. The following generous leases are available from the bureau.:

(a) Tree farm lease: Rentals are very liberal the lease runs for 25 years, renewable for another 25 years; the lessee may plant economic tree crops like citrus, mangoes, coffee, lanzones, etc;

(*Continued on page* 87)

• Sunshine Corner •

Edited by ROGELIO B. BAGGAYAN

IN FLAGRANTI

While the exam was being conducted in the forest, the brighter students taking advantage of the Professor's deafness tried to whisper the names to their less fortunate friends. Noticing that something smelly was going on, the Professor caught one student in the act.

"You!" he growled, "what are you trying to tell him".

"I haven't said a word, Sir," answered the culprit, "I . . . I . . . I was just chewing gum."

"Pardon me," said the professor, "my mistake . . . ."

* * *

PENTAGON MYSTERIES

Convocation Speaker (showing slide of the pentagon): And this is the pentagon. You see it's so big. Just to give you an idea of its size. It is said that a young man entered it as a buck private...he was told to go through so many rooms that when he finally got out, he was already a six-starred general.

* * *

A lady student was absent from a Silviculture field work.

The following day she reported to the Instructor and told him: "Sir, I was absent yesterday so that I may just as well make up with you.

Instructor (Bachelor): Okay, report to me this afternoon at 4:00.

* * *

In a Dendrology Class:

Professor: In order to ease the identification of trees you should make a key.

A Freshmen murmured: We are very much hard-up also to identify the members of the faculty, a key should be made to the professors and instructors; as....

Deforested heads 1
Forested heads 7

* * *

District Forester to a new ranger:

D.F.—Who is the richest general in Philippine Forestry?

New Ranger:—(Who knows only majors in the Philippine army and U.S. Army, who are foresters or had worked in B.F.) Er. sir. is it not Major Buhay?

D.F.—No.

New Ranger—Major or general Fisher sir.

D.F.—wrong.

New Ranger—(Already perspiring, looked at what the D.F. is signing and its the monthly vouchers) Sir, I know it now. He is General Funds.

LECTURE DISTURBANCE

The professor was waxing enthusiastic over his topic when all of a sudden the silence was broken by an "unholy" snore.

Stopping suddenly, the professor looked around for the guilty party. Spying him, he shouted at someone at the rear: "Hey there, wake him up." When the "rip-saw" artist awakened, the professor looked at him and half smiling said, "Young man, I don't mind your sleeping in my class, but PLEASE don't *disturb* my lecture."

* * *

A Ranger in his inspection of a communal forest in Quezon:

Ranger to a Kainginero:—Why did you burn this part of the forest near the creek?

Kainginero:—You know Mr. Montero I am a poor man and I don't have even a piece of land to cultivate.

Ranger:—But don't you know that the trees you burn here protect and conserve the water supply in this area?

Kainginero:—But Sir, I will plant coconuts here and by doing so,I will also conserve water thru the tree tops.

* * *

During the Civil Service examination:

Ty Ranger:—Ma'am! (he calls the watcher) this boy (pointing to a 50-year-old examinee with a bald head) is copying my answers.

Lady watcher:—Who is this man? (She looks at the old forest guard) ah, so this boy again.

* * *

In a Lumbering Class:

Professor:—What do you call the man who places the skidding tongs or choker on logs to be skidded?

Student (who seems very wise, stood up and answered); Sir, he is called the Tonger.

* * *

A student was busy sketching in a laboratory room:

Second Student:—What are you doing?

First Student:—I am drawing the face of God.

Second Student:—But nobody yet saw the face of God.

First Student:—Well, they will when I get this done.

* * *

A forester who just came from abroad was invited to a convocation in the College of Forestry as guest speaker. He had slides to show to the students and faculty members. Before the showing a Professor inquired, "Are those slides already censored?"

• Excerpts & Abstracts •

PRELIMINARY STUDIES ON THE GROWTH AND SURVIVAL OF SEMI-BALLED TAÑGILE WILDLINGS PLANTED AROUND THE SPAR TREE OF A HIGH-LEAD SET-UP IN BASILAN CITY

This experiment was prompted by the problem of restocking as quickly as possible the cleared areas around spar trees in high-lead yarding in the Basilan Working Circle. It is best, whenever possible, to grow the commercial species native to the area. Tañgile (*Shorea polysperma Merr.*) of the Dipterocarpaceae family ,the finest-textured of the dark red Philippine Mahogany group, is one of the principal timber-producing species commonly found in the Basilan Forest. It is, therefore, desirable that this species should be maintained in succeeding stands.

Bare-root planting of dipterocarps had been tried wthout success. The logical alternative would be to use planting stock with the least disturbance to the rootlets, suggesting a semi-balled method. Bringing the wildling with the soil around it practically intact to the scrapped area and planting it properly may produce better result.

This study was conducted to determine whether or not semi-balled tañgile wildlings will grow successfully in logged-over areas. The planting site was around the spar tree of a set-up, logged by a 90 horse power D-7 Hyster winch Caterpillar Tractor, on November 17, 1952, inside the concession of the Western Mindanao Lumber Company, Basilan, about 300 meters above sea level. The terrain is rolling and much of the surface soil was scrapped off during the process of logging. The soil is clay loam.

It has been observed in Basilan that reproduction of tañgile is abundant under mother trees in the forest mostly on top of ridges and hills. The planting materials in this study were selected as thinnings from healthy wildlings in places where they were thickest. With the use of spade, they were dug out with a ball of earth 15 x 20 centimeters sufficient to hold the roots together. The wildlings ranged from a height of 15 to 175 centimeters and about 0.9 to 1.5 cm. diameter at the root collar. Balling and trimming about 1/2 of the leaf area were done in the morning. To minimize excessive transpiration, the wildlings were placed under the shade. Then they were laid on tree barks lengthwise 30 x 50 centimeters, the ball of earth arranged side by side such that 20 wildlings were accommodated in a bark while being transported to the planting area. Bark was found to be very practical and easy way of transporting seedlings in the forest.

Planting holes 5 to 10 centimeters deep were dug 3 meters apart with the use of spades. A stake 1 meter long with a numbered tag was stuck in each hole. The wildlings were planted in the afternoon of April 20, 1954 as nearly as their natural positions in the forest. After planting, the height of each wildling was measured and recorded. The relative positions of the indivdual plants were also charted to facilitate location and subsequent measurements of their growth. No further care and nursing of the plants after planting was made.

On April 20, 1955, a year after planting, the seedlings were again measured and mortality and/or survival as well as other conditions were noted. The results of the sutdy are as follows:

1. Thirty-two (32) per cent of the planted wildlings died.

2. Growth of wildlings planted where there were grasses were more vigorous than on the cleared sites. This may be due to the protection from the intense heat by the grasses during summer and their ability to check the washing of the rich surface soil from the sloping areas during the rainy season. However, wildling overtopped by excessive growth of grasses were deformed and died later on.

3. Survival and rate of height growth after a year are shown in the following table:

Height Class Centimeters	Number Planted	Number of death	Number of Survival	Percent of Survival	Annual Height Growth Cms.
15— 25	8	1	7	87%	40
25— 35	33	13	20	61%	40
35— 45	87	33	54	62%	40
45— 55	144	44	70	61%	50
55— 65	110	31	79	72%	40
65— 75	72	20	52	72%	40
75— 85	45	12	33	73%	50
85— 95	18	5	13	72%	50
95—105	15	4	11	73%	40
105—115	5	1	4	80%	20
125—135	3	0	3	0	80
135—145	1	0	1	100%	80
	511	164	347		

HIPOLITO B. MARCELO
District Forester

PRELIMINARY STUDY ON THE BEHAVIOR OF WILD DIPTEROCARP SEEDLINGS WHEN TRANSPLANTED IN THE FOREST *

By FLORENCIO P. MAURICIO

The study was conducted to determine the height class of Dipterocarp wildlings that may be suitable for reforesting logged over areas. White lauan and Bagtikan wildlings with a height class of 0—20, 20—40, 40—60, 60—80, and 80—100 centimeters were used in the experiment which was conducted from August, 1954 to February, 1955.

The wildlings were lifted carefully so as to avoid as much as possible the least injury to the root system. The leaves were trimmed to one-half the leaf area and then the seedlings were mud-puddled and packed in banana leaf sheaths prior to planting. An area in the Makiling National Park approaching conditions in logged over areas was selected for the purpose. A week after storage, the wildlings were planted in the area, one meter apart and each height class in a row. There were fifty seedlings for each height class. Wilting, die back and the period of recovery of the seedlings were observed and recorded.

It was found that White Lauan had a survival of 66.4% and Bagtikan had 28.8%. The period of wilting and the average number of days of recovery of the wildlings increased directly with the height. The number of wildlings that died back but were able to recover increased with the size of the wildings in the case of White La uan; however, the reverse was discovered in the case of Bagtikan . . . a significant thing that tends to show further that Bagtikan wildlings do not respond easily to the method of handling and transplanting employed in the study. The mean increment rose with the increase in height until a maximum in height class 40—60 centimeters. From height class 60—80 centimeters, the mean increment decreased with the increase of the height class as shown by both species.

It was also found that the least proportionate mortality of .12 occurred in the smallest seedlings and .60 appeared in the biggest. Based on the percentage of survival, these species may be used for reforesting logged over areas, provided nurse trees are available, however, White Lauan may be preferred over Bagtikan. The size of planting material that may be suitable for field planting is 20 centimeters and below based on mortality while the appropriate size based on the mean increment or rate of growth is from 40 centimeters to 60 centimeters in height.

F.S.P.

A PRELIMINARY STUDY ON THE STANDARD DOUBLE PACES OF DIFFERENT INDIVIDUALS IN THE COLLEGE OF FORESTRY, UNIVERSITY OF THE PHILIPPINES *

By PELAGIO D. BAUTISTA

To minimize future mistakes and embarrassments, as had happened in the past, double paces of forest officers and forestry students should be standardized in accordance with the accepted procedures and level of standards. Since there had not been as yet any study in the Philippines that has been conducted for the formulation of the level of standards needed, a preliminary study along this line was attempted. One hundred thirty-five students were used in this investigation.

This study was conducted to determine whether height, leg length, length of knee to foot, weight, chest circumference and vital capacity were correlated with double pace; to prepare a pacing table for different individuals based from correlated variables; to determine its possible application and usefulness and to formulate a set of standard procedures for adoption in the standardization of double paces.

The results of the investigation however showed that the height, leg length, weight and vital capacity were correlated with double pace both on level land and uneven grounds, so that it is possible to prepare pacing tables for both the level and uneven grounds by the graphical method with height and leg length as independent variables giving practically equal accuracy as the original and actual data.

This study is only a preliminary one so that intensive follow-ups should be made in order to have a more rigid gathering of more reliable data for the preparation of final pacing tables.

This may be useful to forest officers, rangers and foresters who did not go to college or who may have forgotten their double paces and to instructors in forest engineering for checking double paces of forestry students.

R. B. Baggayan

———oOo———

PROPAGATION OF PAPER MULBERRY BY ROOT SPROUT STUMP AND CUTTINGS *

By BENJAMIN M. BATOON

This investigation was undertaken to determine whether or not Paper Mulberry (*Broussonetia papyrifera Vent*) can be reproduced by stump planting and cuttings and to determine the size of the planting material most suited for planting based on the rate of growth and percentage of survival. The experiments on stump planting and

(*Continued on page* 87)

* An investigation paper presented to the faculty of the College of Forestry in partial fulfillment for the degree of Bachelor of Science in Forestry.

Office of the District Forester
Tarlac, Tarlac

August 8, 1955

The Director of Forestry
Manila

Sir:

I have the honor to inform you that, under the auspices of the undersigned with the cooperation of the local provincial officials of Tarlac led by the Provincial Governor, General Manuel F. Cabal planted a Narra (Pterocarpus vidalianus) sapling about 2 years old and 4 meters high secured from the Tarlac Forest Nursery, in the Maria Cristina Park, this capital, on August 6, 1955.

The trees were planted in conjunction with the banquet and literary-musical program given at the Tarlac Provincial Capitol in which General Cabal was formally adopted as a son of Tarlac, in recognition of his meritorious and exemplary services as commanding general of the First Military Area in making the province of Tarlac as one of the most, if not the most peaceful provinces in Central Luzon.

A graphic account of the planting sequence is herewith attached for record and information purposes.

(SGD.) TORIBIO F. MANZANO
District Forester

———oOo———

Republic of the Philippines
Department of Agriculture and Natural Resources
BUREAU OF FORESTRY
Office of the District Forester
Malaybalay, Bukidnon

D-39, *Z*
Public Relation

August 8, 1955

The Director of Forestry
Manila

Sir:

I have the honor to enclose herewith a picture taken of the members of the BUDANREA in front of its float, during the celebration of the 9th Anniversary of the Philippine Republic on July 4, 1955 in Malaybalay, Bukidnon, for record purposes.

The Bureau of Forestry personnel with the other officials and members of the BUDANREA and other municipal, national employees and school children participated in the parade. Each office had its own float but the Department of Agriculture and Natural Resources had only one float which was a "HORN OF PLENTY" where agricultural crops were exhibited. The background of the float is a rising sun with seven rays and each ray is lettered with the name of the offices of the department that is represented in the province. Above these rays is the word "BUDANREA" meaning Bukidnon Department of Agriculture and Natural Resources Employees Association and Juan dela Cruz with his beautiful wife with plenty of harvest stood by it.

Very respectfully,
(SGD.) CONRADO VERENDIA
District Forester

———oOo———

Republic of the Philippines
Department of Agriculture and Natural Resources
BUREAU OF FORESTRY
OFFICE OF THE DISTRICT FORESTER
Tacloban City

D-33, Educational Campaign
(1955 Arbor Week)

August 25, 1955

The Director of Forestry
Manila

Sir:

In connection with the last Arbor Week Celebration, July 24-30, 1955:

I have the honor to inform you that the undersigned and most of the members of personnel of this district had participated in progress rendered in different schools in Tacloban City, namely: Leyte Trade School, Leyte High School, and St. Paul's College. Most of the programs were held on July 29, 1955. There were tree planting in the High School, Leyte Trade School, San Fernando Elementary School and San Jose Elementary. Seedlings were furnished by our Forest Nursery at Tacloban City. The Leyte Trade School planted some narra trees taken from the seedlings received from the Manila Office.

Our Officer in charge of Lagoma and Baybay Forest stations participated in the celebration and their activities are embodied in the copies of their memoranda herewith enclosed.

The Provincial Forestry Council did not sponsor any contest during the observance of the Arbor Week.

The total seedlings planted amounted to 1,054 trees distributed as per list attached.

Very respectfully,
(SGD.) FRANCISCO ABIJAY
District Forester

TOTAL NUMBER OF SEEDLINGS PLANTED AMOUNTED TO 1,054

1. Leyte Trade Sch. (Narra, Bitaog, Banaba, Agoho & Magsaysay Narra Trees)	300
2. Municipal Mayor of Dulag (Narra, Banaba, Golden Shower & Bitaog)	83
3. San Fernando Elem. Sch. (Banaba, Golden Shower & Agoho)	30
4. Tacloban City Red Cross Chapter Golden Shower, Banaba, & Magsaysay Narra Tree)	20
5. San Jose Elem. Sch. (Banaba, Agoho, Golden Shower)	30
6. Given to Mr. P. Tomeldan for planting in Tacloban City (Agoho, Magsaysay Narra Tree)	20
7. Mr. Inocencio Ramirez, Tacloban City (Agoho)	5
8. Given to Mr. Gallego for planting in Abuyog, Leyte (Agoho & Magsaysay Narra Tree)	30
9. Leyte Normal College (Golden Shower, Banaba & Agoho)	100
10. Tacloban City — planted at the airport (Narra, Bitaog & Banaba)	200
11. Leyte High School (Narra, Bitaog, Golden Shower)	200
12. Miss G. Berino (Banaba, Golden Shower and Mahogany)	6
13. Otama Elem. School, Hinunangan, Leyte Magsaysay Narra Tree, and Golden Shower)	30
Total	1,054

———oOo———

University of the Philippines
COLLEGE OF FORESTRY
College, Laguna

September 26, 1955

TO STUDENTS WHO SIGNED THE MOVIE PLEDGE:

Allow me to thank you in the name of the College of Forestry for your cooperation and interest in our plans for the beautification of the college building. Your pledges to attend the movies so that we may be able to raise funds for the construction of the additional flight of stairs is a patent proof of your loyalty to your alma mater.

We have, however, for the present altered our plans by having the construction of flagstone walks for the interior court of our college building instead, as we believe that the court should be given priority over other plans of improvement in and around our building. We shall appreciate, therefore, your paying your pledges on the date you promised to pay them so that we shall be able to start work on the flagstone walks soon.

There will also be a draw on that date as I understand from the management. Only those who have settled their accounts with the movies on or before that date will be entitled to participate in the draw. Beautiful prizes will be given away by the management.

I wish to reiterate my thanks for your whole hearted support to the project which has for its purpose the beautification of your Alma Mater.

Very sincerely,
(SGD.) CALIXTO MABESA
Assistant Dean

———oOo———

University of the Philippines
COLLEGE OF FORESTRY
College, Laguna

September, 1955

TO ALL STUDENTS:

Perhaps you are aware of the condition of the flight of stairs in front of the College building. You will agree with us that it needs an addition on both sides. It has been our plan to make possible the improvement and widening of this flight of stairs so as to enhance the beauty of the approach and ascent to our college building. Rather than ask you to contribute, we rather would ask you through this appeal to attend our weekly movies and whatever proceeds we expect, shall be for the construction of the addition flight of steps on both sides of the stairway.

We have for our project the presentation of 7 movie shows beginning September 9 until the end of the month, consisting of 2 shows every week, of what are considered as Superproductions of the RKO, MGM and the 20th Century Fox Companies.

Inasmuch as this is voluntary, we would request, if you are in sympathy with our plan, to sign the pledge below. A card bearing your name and the dates shown will be given to you. You are to present this at the gate and the space opposite the date of showing will be correspondingly punched.

THE MANAGEMENT
By:
(SGD.) MODESTO T. TOBIAS

APPROVED:
(SGD.) CALIXTO MABESA
Assistant Dean
College of Forestry

There is no personal charm so great as the charm of a cheerful temperament. It is a great error to suppose this comes entirely by nature—it comes quite as much by culture.

—*Henry van Dyke*

EXCERPTS . . .

(*Continued from page* 84)

cuttings were conducted in Boot Valley and a site within the forestry campus respectively.

In this study, 400 cuttings and 350 root sprout stumps were used. The cuttings used were obtained from stems of root sprouts used as stumps. Cuttings and stumps were classified into five diameter classes. Lateral roots and top roots of stumps were pruned to only 1 and 1.5 inches with a sharp knife. Stems were cut 2 inches above the root collar. The first three cuttings near the stumps were used. The ends of the cuttings were coated with ordinary black wood paint before they were planted to prevent insect or fungus attack. The stumps were planted one meter apart along one meter wide strips cleared of grasses two days before planting. The cuttings were planted in seedbeds. Close observations were made weekly for three months and monthly thereafter.

It was found that sprouts began to appear one week after planting and lasted after four weeks had already elapsed. Out of the 400 cuttings planted, 310 sprouted but only 49 or 14.6% survived at the end of the experiment. Of the 350 stumps planted, 315 sprouted but only 47 or 14.8% survived at the end of the study.

Other important results obtained in this study were (1) Based on the observation made, sprouting in cuttings took place before rooting (2) The larger the cuttings and the nearer they are to the base of the stumps the higher the percentage of survival (3) The mean height increment of the cuttings increased as the diameter class increased while in the stumps, the mean height increment decreased as diameter classes increased (4) Diameter class 2.0—2.5 centimeters of the cuttings gave the highest percentage of survival and rate of growth (5) Diameter class 1.0—1.5 centimeters of the stump gave the highest percentage of survival and rate of growth (6) The percentage of survival attained by diameter classes 2.0 — 2.5 centimeters and 1.0—1.5 centimeters (26% and 27% respectively) indicated that paper mulberry may be propagated by root sprout stumps and cuttings.

F. B. Abraham, Jr.

———oOo———

AID FOR THE FOREST OFFICER

By Teodoro Delizo

For the benefit of forest officers and others engaged in work where the feet are exposed to adverse weather condition, this simple remedy which was found to be effective for curing itching feet, is recommended. The fungus causing disease of the feet is a common ailment of men working in the forests and location where the feet get wet. Forest officers engaged in land classification, timber inventory, and reforestation are mostly hit by this disease. When I was engaged in reforestation work in the Ilocos regions, I had suffered a great deal from the "itching feet" disease. As a consequence, I had tried crushed leaves, oils from fruits, sap from the bark of trees and those advertised in the newspapers but to no avail. As necessity leads to new findings, this simple remedy is, therefore, suggested. Although not guaranteed to give relief for all case of itching feet, it may be worth trying for a period of five days to find out the effect.

The preparation is simple and involves but a few essential ingredients. Boric acid powder, petrolatum or ordinary hair pomade, and coconut oil. Mix about equal amount of boric acid powder and petrolatum. Mix the two until a paste with a consistency of face cream is produced. Then a very small amount of coconut oil is added.

Clean the affected portion of the feet with soap and water and then let it dry. The medicine is spread out in thin film over the affected portion of the foot. After application, the foot is covered with stocking, preferably two layers. At times the foot becomes very itchy. It may be good to "rub in" the medicine provided the skin do not get blistered. To some people, the curing properties is high that after two applications the "itching" sensation stops. For others, it may require four or even five applications.

It must be understood that itching feet disease called locally *"Aliponga"* is a recurrent; so always keep a reserve of this medicine. If you are annoyed by the disease, the medicine is worth trying. It has benefited others and it may do the same to you.

FORESTRY IN THE . . .

(*Continued from page* 80)

(b) Woodland lease: Available in big tracts for planting timber crops. Leasee pays no rental during all the time the trees are growing. Only when timber is cut or harvested would forest charges be collected, and these are equivalent to only half the regular charges.

9. The bureau encourages and promotes private wood-lots or farm forests.

10. Forest destruction must stop if we are to save what remains of our forests. To help accommodate the landless, the bureau releases hundreds of thousands of hectares every year for agriculture. (*Manila Daily Bulletin, July* 27, 1955).

EDITORIALS

FORESTRY DAY, ITS SIGNIFICANCE

Every year since 1937, except during the years of Japanese Occupation, the College has observed on every November 30, Forestry Day. First conceived by class 1937, it has kept the "home fires burning", bringing together the alumni to the campus, remembering the foresters and rangers who had gone to the Great Beyond, renewing old ties and forming new ones, rekindling the love for the Alma Mater and making felt by the younger members of the profession and the foresters-to-be the proverbial "esprit de corps" that has cemented the forestry personnel into a well-knit, efficient and exemplary organization.

Today, November 30th, marks another Forestry Day. Let us then endeavor to set the spirit which was conceived by Class '37 which ushered in this college tradition by always bearing in mind that "forestry" and "service" are synonymous; that though ours is a thankless profession, it is one of the noblest, because it is dedicating itself to the service of mankind down through the ages.

F.S.P.

THE PROVERBIAL SCHOLASTIC ORDEAL

One of the most crucial moments in a student's life is the time after the final examinations. Students who have burned their midnight candles or not preparatory to the said exams could not help but rush to the secretary's office to determine their academic status thus putting an end to lingering doubts that have found refuge in their cranium.

The first semester is already over. Yes, it is over, but the shocking result still remains. Out of the 498 students duly registered at the beginning of the semester, 18 were found to have left the college voluntarily for one reason or another; 30 were permanently disqualified; 28 were dismissed; 97 under probation; 101 were given warning and 224 only or 45% of the total student populace remained in good standing. So far, the freshman class has suffered greatly the heaviest toll of delinquency.

The Staff of the FORESTRY LEAVES

Organ of the Student Body and Alumni of the College of Forestry, College, Laguna

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Indeed, it can be considered that the forestry course is one of the hardest or "toughest" courses in the university. This fact can be borne out by the number of graduates being turned out by the college at the end of each school year.

One of the primary causes of failure, it has been pointed out, is the fact that students who are very poorly prepared from high school often come with the idea that forestry is merely a "snap" course. Another is that most of the students have an indifferent attitude towards their own studies resulting in poor study habits and methods. Last, but not least, there are students whose unusual extra-curricular activities outside the campus have turned them into nocturnal loafers.

There are egocentric professors, too, who believe that the world revolves around their course.

To counteract these shortcomings and to save time, money and efforts, the following are recommended: (1) A more rigid screening of the students in this college should be made before they are allowed to register; (2) more rigid rules for students staying in the campus relative to their going out and coming in late in the evenings; and (3) counsellors who are members of the faculty should take a more active interest not only in giving advice to the students concerned but also in helping them solve some other personal problems. "Tough" professors should review their grading system.

On the other hand, students should not feel reluctant to share their personal troubles if any, with their respective advisers, thereby promoting a closer relationship and a better understanding between both parties.

If the above recommendations were given a chance to materialize, it is believed that the number of students in the casualty list would be greatly minimized.

F.S.P.

THE UNFULFILLED PROMISE

A disgusted and disgruntled Student Body last year passed a resolution asking the President of the University of the Philippines through the Dean to allow the body to utilize the services of a local photographer in the making of ID's, as the College of Agriculture had done and was doing. Reason for this was the unsatisfactory work performed by the U.P. Diliman photographer.

When the Student Body passed the resolution the Assistant Dean and the Secretary as well as the Adviser of the Student Body were present. This was done to insure that the step taken by the students would not go counter to any policy of the College or of the University regarding the making of ID's.

Came this school year and the problem of the ID cropped up. At first, it was the opinion of the Student Body that the local photographer's services would be availed of. But the newly elected Adviser conferring with the U.P. Registrar decided to give another chance to the U.P. Diliman photographer. When the former adviser of the Student Body was informed, he suggested that the resolution of the student body should be repealed first by the present student body, to which the new Adviser agreed. Unfortunately, this was not done, instead the students were told to present themselves for "picture-taking" by the Diliman photographer. Even the copy of the resolution asked by the College Secretary was not presented to him by the responsible parties of the student body.

The former adviser piqued by curiosity paid a call to the U.P. Registrar at Diliman and asked him whether it was compulsory for the College students to have themselves photographed by the Diliman photographer or whether it was possible to have their photos taken by the local photographer employed by the College of Agriculture Student Body Organization. When asked why, he explained that the Student Body of the College of

Forestry had passed a resolution asking permission to have their ID's made by the local photographer. Asked further why the resolution had to be passed, he explained that the work produced by the U.P. photographer had been unsatisfactory, that the pictures according to the students gave anyone looking at them the impression that the subjects were inmates of either Mandaluyon or Muntinglupa. The U.P. Registrar stated that he had not been told of the students' dissatisfaction and that the management next schoolyear would be placed directly under the office of the Registrar. Incidentally, the U.P. I.D. photographer is under the College of Pharmacy and funds earned by the said section goes to the College of Pharmacy.

The ticklish questions now are: Why was the U.P. Registrar not informed of the dissatisfaction of the Student Body over the U.P. Diliman photographer-produced ID's? Why was not the copy of the resolution turned over to the College Secretary when he called for it? Why was the promise that better ID's would be produced not fulfilled? The Student Body has the right to know.

THE NEED FOR A GYMNASIUM

Never in the life of an athlete or a student in this college have had his gymnastic exercises in a gymnasium. But it is a shining truth that they perform their gymnastics in a gymnasium — a gymnasium whose flooor is an undulating layer of asphalt and whose roof is the vast Makiling sky. This is the place where basketball, volleyball and badminton are played and where calisthenics are performed.

Being an open gymnasium, it is therefore subject to two extreme forces of nature . . . rain and sunshine. So that, when it rains, toads and tadpoles would find it a comfortable place to hide in or when it shines, an elephant would not even dare to step on the almost melting asphalt floor. Hence, it goes without saying that the students and athletes do their games only when the weather is favorable or in the late afternoon.

It is therefore a necessity in this college to have a real gymnasium where students can play regardless of weather conditions. With this as picture and reminder, it is hoped that the authorities concerned would descend from their seats and do something about it.

F. B. ABRAHAM, JR.

PROFESSIONAL FORESTRY

Like any other profession as medicine, law, commerce, engineering, etc., forestry as a science is advancing. Forestry professionals are increasing by leaps and bounds, as evidenced by the expansion and rehabilitation of the college of forestry, U.P., to meet the demands of the forest-conscious individual who chooses forestry for his field of learning.

While most of the foresters in the country today are in the government service, still there are plenty who are in the lumber business and its allied industries. Foresters in the government, might be within limits in the exercise of the profession. How about those in private practice? Will they always live up to the level of the profession as they are now? And yet still, there might be some, who do or may practice forestry as pseudo-foresters. In the latter case, the government cannot run after this type of practitioners, legally or otherwise.

What then, should the Society of Filipino Foresters do about these? The alumni of this college? Shall we take these with arms akimbo and just hope for the best? It is about time, therefore, that forestry should have a BOARD*—one to regulate, exercise, administer, supervise and maintain the standards of the profession. It is imperative to have this body to look after the legal practice of forestry, be it in government or private entity.*

JOSE M. ILIGAN

Incidentally.....

The *Forestry Leaves* wishes to express its heartfelt thanks to its advertisers and subscribers. We wish to make it of record that Foresters Timoteo Quimpo and Felix Jucaban have consistently helped the *Forestry Leaves*. We wish to thank also For. Edilberto Madrid and Ranger Mina, of Baguio and Laoag, respectively, for the ads that they sent us. We are hoping that the other district foresters also will not forget us.

We wish to quote here the appeal made by Director and Dean Amos to the alumni and the friends of forest conservation.

"Since 1946, *the FORESTRY LEAVES, organ of the student body and alumni of the College of Forestry has been serving the forestry cause and the lumber industry by printing articles of interest dealing with forest conservation, selective logging, and the forestry profession. Thanks to the support, moral as well as financial, given it by the alumni, concessionaires, the student body and their friends, it has been able to maintain a continuous publication of highly informative and interesting articles. It maintains an exchange service with different university publications abroad and other foreign countries. It has kept the public informed of the workings of the Bureau of Forestry on the conservation of our natural resources by sending copies of each issue to the different high schools and colleges, both private and public, and provincial libraries all over the country and to subscribers most of whom belong to the forestry profession or are engaged in the lumber industry.*

"It is our wish to keep this publication forging ahead. But we need your unstinted support. The rate of subscription is within your means, it being only five pesos a year and which will entitle you to 4 issues. The lumber companies in the Philippines have also helped by inserting their advertisements, our rates being much lower than those of any other college publication of even less circulation.

"Please help this noteworthy organ because it has helped and will help in the conservation of our forest resources."

* * *

By January 1, under the ICA-Cornell contract three American Professors who will join the College Faculty will handle forest economics, silviculture and forest management and forest products.

Of course, the credit for this arrangement goes to Dean Amos and Mr. Bedard, who jointly worked to make possible the sending of these three professors to Los Baños.

Some people are shocked to hear the news that the delinquency list of our student population has hit a new high. They should not. In U.P. Diliman, in the College of Liberal Arts, where students are supposed to have an average of 85% upon entrance, or must have passed the entrance examination before registration, the casualty list is alleged to be 25 (twenty-five) %. We are not so bad after all.»

* * *

By the way, two of our former co-eds are now married. One got spliced with a Junior Aggie boy, (now Mrs. Martin) and the other (now Mrs. Udañga) with her classmate. They have been conferred their MRS degrees.

Not to be outdone, Mr. Meliton Battad, one of the dashing Romeos in the forestry campus got hitched to the former Veronica Tica of Sto. Domingo, Ilocos Sur last September 20, 1955. Mr. Battad now holds two degrees, M.A. (married already) and BSF (Battad spliced finally).

* * *

We hear that a freshie, the only one in the whole college, has qualified for the College scholarship. Congratulations Mr. Andrew Bacdayan.

* * *

To relieve the teaching load of the Forestry Faculty, the U.P.-powers-that-be, through the request of Assistant Dean Mabesa, made possible the "lending" to us of Miss Jesusa Taleon and Mr. Amador Jimenez to handle the Mathematics classes here. They teach, too, at the College of Agriculture. We wonder which college they like better.

* * *

The Student Body gave Modesto Tobias, Business Manager of the FORESTRY LEAVES an overwhelming victory over Simplicio Alegre, Jr. in the F.S.B.O. second semester poll. The vice presidency went to Francisco Milan; Benigno Lomibao and Policarpo Narciso, Jr. were elected secretary and treasurer, respectively. Apolinario Marquez, Jr. is this semester's athletice manager. Segundino Quiray and Antonio Villarino are Sgts.-at-arms. For. C. Recto is this year's adviser.

* * *

The College Faculty and the Student Body every Friday remember the Abarros when the movie shows are on. Reason for this is the donation of One Thousand Pesos given by Mr. Abarro to the movie projector funds which made possible the purchase of the Victor Projector which has been rendering a yeoman's service every week-end. Without it, campus week-ends would have been drab and dreary as in the old days when there were no movies on the campus. Many, many thanks to Mr. Abarro.