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FORESTRY

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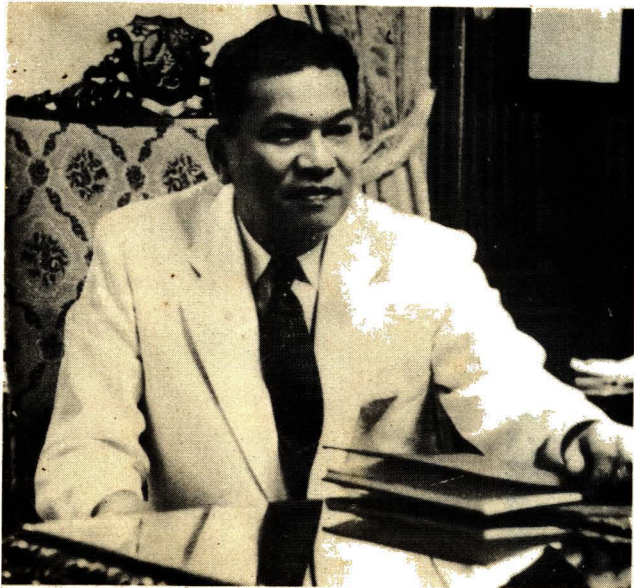




The Forester

By JNO. D. GUTHRIE

*I am a Forester;
A humble worker in the forests,
An inspired grower;
A maker of resource music for all Nations.
My symphonies are composed in young trees and in growing woods,
My lyrics are the winds through green tree-tops;
A scale stick is my baton,
My musicians are the rushing waters
Of constant streams fed from tree-protected mountain springs.
I plant and guard and grow
The raw resources which fills a Nation's need,
For industry, for comfort, and for beauty,
In wood, the universal need.
I labor that others, yet unborn,
May still have wood,
To build the home, the shop; may read, and live in comfort;
Mine is the vision which sees beyond today's small fir
To lumber for a Nation's use, and pleasure;
I plant the seedlings I shall never tell;
I am a forester.*

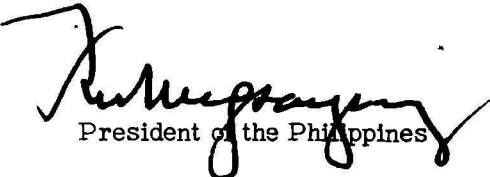


MALACANANG
MANILA

M E S S A G E

I am pleased to greet "Forestry Leaves" on the occasion of its 10th anniversary. While it serves as the official organ of the student body and alumni of the College of Forestry, I know it will also be an effective medium for the dissemination of valuable information to our people on our forest resources and their conservation. In this dual role, I have faith that "Forestry Leaves" will make a good account of itself.

I look forward to its continued success in the years ahead.


President of the Philippines

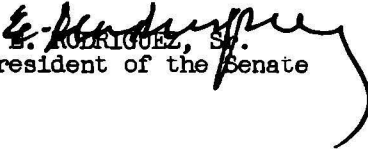


Republic of the Philippines
Office of the
President of the Senate

M E S S A G E

I extend cordial greetings to the alumni and student body of the College of Forestry through the pages of the Tenth Anniversary issue of their organ, the Forestry Leaves.

It does not need much technical knowledge to be able to realize that one of our country's main source of wealth are our forests. Even a layman like me knows that it is imperative that we should develop and exploit our forests with care and caution so that future generations may reap as much, if not more, wealth than we who live today do. It is in the achievement of this purpose that foresters and forestry students play an important role, and I wish to urge them all to continue their good work in the service of our country and people.


E. RODRIGUEZ, Sr.
President of the Senate

Manila, Philippines
November 15, 1956



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

M E S S A G E

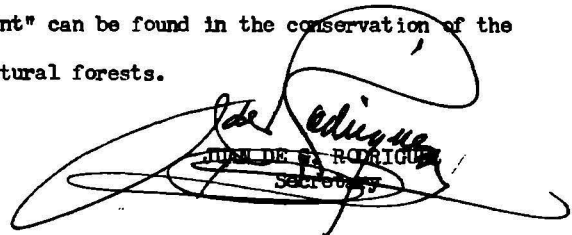
Anybody who has something to do with forestry work deserves the sincerest of commendations. For, in them lies the key to the conservation of our forests which have long been among the top dollar-earning resources of our country.

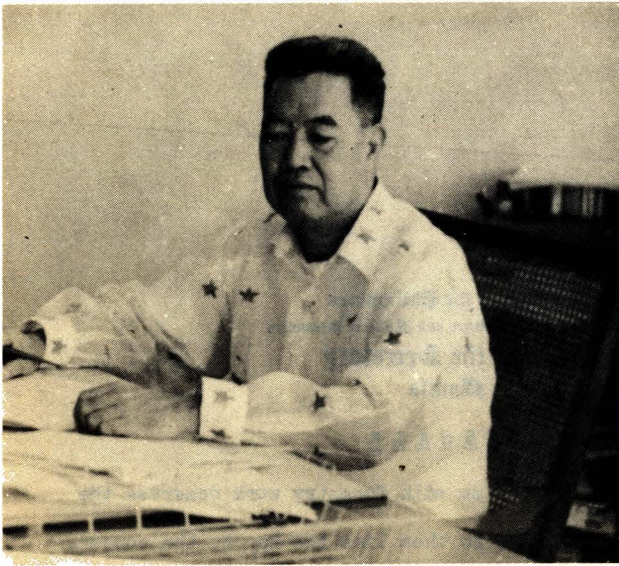
Apart from this, preserving our forest resources is one way of keeping the Philippines a beautiful verdant nation and preventing that scourge of farmers - soil erosion. All over the world, there are many areas to cite which have been transformed into unproductive deserts due to forest destructions.

It happens even in our country from time to time, because of illegal kaingin-making. Herein is the needed vigilance of you, foresters in particular.

To the UP college of forestry's organ, FORESTRY LEAVES, go my congratulations as it celebrates its 10th anniversary, because I understand that, in its ten years of existence, it has steadfastly dedicated itself to the conservation of our natural resources and of disseminating information to foresters and students abroad, especially in the United States, about the job being done by the Bureau of Forestry and the College of Forestry.

Probably, the hope of realizing Rizal's dreams of the Philippines being a "Pearl of the Orient" can be found in the conservation of the grandeur that is in our natural forests.


JUAN DE LA CRUZ RODRIGUEZ
Secretary

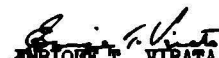


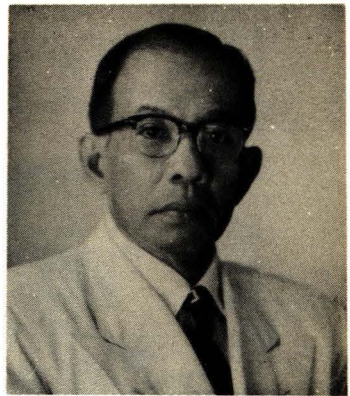
MESSAGE

It is fortunate, I think, that this anniversary issue of Forestry Leaves is dedicated to the conservation of our natural resources. No one need contradict the fact that one of the ever present dangers facing our country is the depletion of our forest resources by indiscriminate and unwise exploitation. This everybody knows, or should know. And the responsibility of maintaining and conserving our natural wealth, in order that those who come after us might not inherit a barren land, lies squarely on the shoulder of everybody.

But the urgent task of so conserving and replacing depleted resources cannot be simply entrusted to the public. There must be a group of dedicated workers, competently and professionally trained, who will undertake the important job.

That is why I welcome this opportunity to commend the outstanding work of the College of Forestry through its many alumni in safeguarding our mountains and forests. I salute these enterprising men.


ENRIQUE T. VIRATA
Acting President



IN REPLY, ADDRESS
DIRECTOR OF FORESTRY
MANILA, PHILIPPINES

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

Message
(1956 Forestry Day)
(Forestry Leaves)

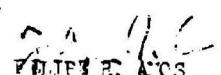
M E S S A G E

The stewardship of the vast forest resources of our country is reposed on the shoulders of the Bureau of Forestry. "Proper utilization and Wise Use" has been the Bureau's guiding action in looking after this forest wealth. Utilization and conservation should go hand in hand and complement each other. Unfortunately the past five decades have shown that the licensees in their desire to get the most of their investment have disregarded this principle. This attitude has greatly hampered our conservation efforts. Ruthless cutting aggravated by kaifigin making have consequently ushered in the unnecessary depletion of our forest resources. The tremendous demand of landless people for the release of more forest lands for agricultural purposes is also rapidly depleting our remaining timber stands. The present administration has realized the effect of forest depletion which indeed calls for an immediate remedy.

Certainly we are in sympathy with the landless people. We also understand the desire of ~~existing~~ licensees for more gainful amount of cut. But over and above the wish of the landless and business people is the welfare not only of the present but the future generations as well. We cannot help but hold high and inviolate the noble idealism of forestry which does not merely concern itself with the present but more with the future.

The policy of the Bureau of Forestry now is geared to forest conservation thru "sustained yield management" or "selective timber management", based on the unassailable belief that the forest when properly protected and utilized can easily replace and improve itself in quality and quantity with the least expense. Mr. Bendtzen of the US panel in the Philippine-American bases talk said that "sustained yield management" is the only solution for the tremendous and costly job of reforestation of denuded areas in the country. The recently adjourned First DANREA National Convention in Manila recognized the urgent need of sustained yield management thru selective logging.

The challenge for us Foresters is written clearly on the wall. Let us do real forestry work that will rebound perpetually to the benefit of all classes of people in the present and future generations. The eyes of the public are focused on us. You who are still students are the future hope of this country in the realization of that objective. You and I must take up the challenge.


DIRECTOR OF FORESTRY
Director of Forestry



*The INDEPENDENCE TREE—Narra (*pterocarpus vidalianus*) planted by Mrs. Manuel A. Roxas, July 4, 1946 in front of the City Hall.*

My Favorite Tree

By Hon. GREGORIO HERNANDEZ, JR.
Secretary of Education

I have been asked to write a short paragraph about my favorite tree. With my mind's eye filled with pictures of all the lovely and majestic Philippine trees I know, the choice is no easy one to make.

Beauty may arouse admiration and majesty may compel awe but, in essence, to be considered a favorite, a thing has to be regarded with peculiar favor or be unduly loved.

To see a fire tree's flaming splendor, to behold the quiet grace of the bamboo, and the silhouette of slender coconut palms against a tropic sunset—this is poetry in itself and cannot help but arouse the innate poetry that lies in every man's heart.

To gaze at a forest giant like the narra, our national tree—upright, stalwart and en-

during—cannot help but lift the beholder to a similar grandeur of spirit.

The more common trees that crowd our orchards: the guava, the chico, the macopa, the kamachile, the tamarind, the mango—all have a beauty and dignity of their own. In the eyes of most men the delicious fruits they give us each season enhance their values.

What then is the tree that I would name as my favorite? Is it the tree in my orchard that gives me a daily benison of nutritious fruit? Is it that tree that by its loveliness arouses the poetry in my heart, or is it the awe-inspiring forest giant that lifts my soul heavenward with its very grandeur? Which of them should I choose for my favorite tree? That is, indeed, something to ponder about.

The Birth of the Philippine Forest School

By ROY NASH, '08

In 1903 I graduated from high school in Wisconsin, went directly to the Yale Summer School at Milford, and there evidently took aim at a distant goal. For under date of September 16, 1903, George P. Ahern, Captain U.S. Infantry, Chief of Forestry Bureau, wrote: "I am very glad to learn of your desire to enter the Philippine forestry service, and hope we will have you with us before many years." Ahern was a Major by the time I sailed into Manila Bay on April 26, 1909. Next day he appointed me a forester in the Philippine service at 3,000 pesos per annum, the peso then being pegged at two to the dollar.

In June 1909, the College of Agriculture opened at Los Baños with Dr. Edwin B. Copeland as dean of the first college in what was to become the University of the Philippines. Dr. Copeland was a botanist who came out to the Bureau of Government Laboratories in 1903.

June being the end of the fiscal year the Bureau of Forestry was short of funds and the foresters called in from the field for a "Conference." Three other Yale men were there: William H. Kobbe, '04; Wm. Forsythe Sherfese, '05; and, if memory serves me, Robert Rosenbluth, '07. Dr. H. N. Whitford, an ecologist of Kansas Agricultural College and the University of Chicago, was then Chief of the Division of Investigations. From outside the bureau we received good counsel not only from Dr. Copeland but from Dr. E. D. Merrill, a systematic botanist in the Bureau of Government Laboratories—now the Institute of Science. And Dr. Fred W. Foxworthy whose

doctor's thesis at Cornell was on "The Secondary Wood of North American Conifers," likewise at that time with the Bureau of Science, destined shortly to become the outstanding wood technologist of the whole Malayan region, and long the Forest Research Officer of the Federated Malay States. But the one who dominated the conference was the man I consider the greatest tropical forester America has yet produced, a tall, lean North Carolinian trained at Cornell who at 80 is still roaming the jungle in Venezuela, Hugh Curran.

In preparation for the conference Curran assigned me the job of preparing a paper on "The Indian Forest Service and the Question of Personnel." I emphasized the fact that Dietrich Brandis and the other German foresters who organized the service in India, Schlich and Ribbentrop among them, very early found it necessary to give their native rangers some technical training, and organized the school at Dehra Dun as early as 1878, with a two years' course for deputy rangers in Hindustani. In urging that the Philippines could profit by the experience of India I was suggesting nothing new. As early as 1901 Captain Ahern, in his first report to the Secretary of War, recommended the establishment of a forest school. Gifford Pinchot, who visited the Philippines a year later, reiterated the need for a school. Dean Henry S. Graves urged it when he made a tour of inspection in 1905. And in 1907 Dr. Whitford had been sent to look into the forest training of people in neighboring parts of Asia.

As soon as money for fiscal 1910 became

available on July 1, I was sent off to a post in northern Negros. But scarcely had I hung up my hat and said good morning to my first tropical forest when an order came transferring me back to Manila. There Major Ahern informed me I was to organize a school for Philippine rangers at the new College of Agriculture in Los Baños. To assemble the first class of twenty-four I was authorized to visit principal provincial high schools throughout the Islands, talk forestry, and pick one student from each senior class. Their transportation to Los Baños would be paid, each would receive 20 pesos monthly toward board, and housing would be provided. Each student in turn agreed to work for the Bureau of Forestry for at least as long as his period of forestry schooling. One of that first class, Felix Franco, is still working for the Bureau—46 years later!

Curran and I went up to Los Baños and, after going over the ground with Dean Copeland, located the forester's cottage on a commanding elevation and chose the site for a row of student cottages at the foot of the hill; forested Mt. Makiling dominating the background, with two brooks furnishing a splendid supply of water. Construction shortly was started on the home for the resident forester and on a students' mess.

Among the twenty-four students who assembled when the forest school officially opened its doors on June 13, 1910, was one destined to become Director of Forestry and ex-officio dean of the forest school, Florencio Tamesis. In 1905, when he was sixteen or seventeen, Tamesis went to work for Kobbe as a houseboy. On field trips Kobbe correctly appraised the boy's native abilities, got him a job with the Bureau of Forestry, first as student assistant at a peso a day, then ranger. When the College of Agriculture opened in 1909 he entered with the first class and transferred to forestry the next year.

That first class on arrival found the one

large room of the mess hall to sleep in, and that was about all. Under my direction they set to and built their own cottages out of bamboo and nipa, soon had a tennis court in operation and vegetables coming up in their gardens. One creek afforded an excellent swimming pool and Mt. Makiling a field laboratory for foresters second to none. They went to the College of Agriculture for their English and mathematics; I and a series of visitors from Manila gave them their start in forestry subjects.

For family reasons I had to return to the States in the spring of 1911, so of my own knowledge I can speak only of the school's birth that first year. Donald M. Matthews of Michigan took over as resident forester when I left.

A few months later two Yale men arrived, one of whom was destined to leave his footprints all over the Philippines. Colonel Arthur F. Fischer writes from San Diego:

"L. R. Stadtmiller and I, both of the 11F class of the Yale Forester School, arrived in Manila on Occupation Day, August 13, 1911. Stadtmiller went to Mindanao and I shuttled between Manila and Los Baños getting things ready for a field trip with Curran to Northern Luzon; was stationed at Los Baños upon return early in 1912 and taught Forest Engineering. Curran and I left with the senior class for a reconnaissance of the Insular Lumber Company in 1912, when all came down with malaria.

"Don M. Matthews was in administrative charge of the school under Whitford and Dr. Copeland as dean of the College of Agriculture. In 1916 I was made Chief of Investigation and Professor of Tropical Forestry and upon separation of the School from the College in 1916 I was acting dean."

Thus modestly began an institution whose graduates have been a powerful influence on the side of conservation and sound forest management throughout the whole region from India to Japan.

Know Your Philippine Forest Heritage

By

FELIPE R. AMOS

Director of Forestry

and

TEOFILO A. SANTOS

Forester, Bureau of Forestry

INTRODUCTION

Our heritage, the forest resources, consist of the following:

(a) *Timber* which refers to the standing timber that produce wood for construction and for industries using wood as raw materials. It is the major product of the forest and it does not include firewood and charcoal.

(b) *Minor forest products* which include all other forest products of minor importance, such as firewood, charcoal, split and unsplit rattan, Manila copal, nipa, tanbarks and dyebarks, buri, bohos and bamboos, oleo resin, etc.

(c) *Wildlife* which includes game animals of the forest like deer, tamaraw, game birds like wild ducks, snipe, doves, pigeon, etc., and protected insect-eating birds and song birds.

(d) *Forest land use* which refers to forest land itself and its uses, such as for pasture, tree farms, sawmill site, log pond site, saltworks, timber depot, etc.

(e) *Indirect benefits* of the forest which include the influences of forest upon stream flow and erosion, the conservation and enrichment of the soil, shelter and habitats for wildlife and game animals, hunting grounds and fishing areas and healthful outdoor recreational opportunities for the people.

Exploration of Forest Resources.

The exploration of Philippine forests was started when the Philippines was under the sovereignty of Spain. Under a royal

order in 1863, constructive legislation and regulations were introduced and investigations were begun, laying the foundation for forestry work in this country. Handicapped though were the organizers, yet considerable information was gathered regarding our forest, particularly in the field of botany, natural history and utilization. The forest area was estimated in 1890 by Fernando Castro at about 48,112,920 acres (17,447,560 hectares). Unfortunately the Manila fire of 1897 destroyed the records and natural history collections.

When the Americans took the sovereignty over the Philippines in 1900, information regarding the forests had to be collected all over again. It was found that the Spanish laws embraced provisions of far reaching effect on the conservation and protection of the forests against destruction by men and against wasteful exploitation. The Forest Service organized under the American regime maintained in principle the Spanish laws. These Spanish laws were restated by an Act of 1902 of the United States Congress which defines the duties and jurisdiction of the Bureau of Forestry insofar as public timber lands are concerned. This Act of the United States Congress was adopted by the Commonwealth of the Philippines and, later, by the Republic. Under this law, the Bureau of Forestry is given priority of authority in determining what portion of the Philippine public domain shall be retained for forest usage, to be administered separately from lands declared for

agricultural or mining purposes. Under the Constitution of the Republic of the Philippines, ownership of natural resources, including forests, rests with the State. The protective laws of the Philippines accounts for the retention of a large part of public domain as forest lands under the administration of the National Government through the Bureau of Forestry.

From the time the Bureau of Forestry was organized in 1900 under the American regime, extensive explorations of forest areas were conducted to determine once again the extent of different types of forests, the species of trees found, the density of timber stands, logging possibilities, etc. Wood samples and botanical collections of trees were made and identified. Botanical specimens of minor forest products were also collected and identified and their distribution was recorded. From the results of explorations and studies, it was found that there are over 2,000 species of trees that attain a diameter

of one foot or more. Less than 60 species are, however, handled by wood users and lumbermen. It was further found that about 75 per cent of the standing timber is represented by Dipterocarp species. Minor forest products of economic value were found abundant in many forest areas.

TIMBER RESOURCES

Forests Top All Natural Resources.—

The forest resources of the Philippines is estimated to have an actual value of ₱27,860,611,000.00, or four times more than the combined value of the land, mineral, animal and fishery resources, according to a report on the evaluation of the country's five most important natural resources this year (1955) to President Magsaysay by Secretary Salvador Araneta of agriculture and natural resources.

The report which was prepared by the directors of five bureaus under the department of agriculture and natural resources shows the following:

EVALUATION OF NATURAL RESOURCES

(A)	Actual Values	Percentage
1. Forest Resources	₱27,860,611,000	— 80.02
2. Land Resources	4,387,733,000	— 12.60
3. Mineral Resources	1,409,990,000	— 4.05
4. Animal Resources	861,108,000	— 2.47
5. Fishery Resources	298,092,000	— .86
Total	₱34,817,574,000	— 100.00
(A)		
1. Timber	₱27,044,450,000	— 97.07
2. Minor forest products	758,769,000	— 2.72
3. Grazing land	49,523,000	— .18
4. Wildlife	7,869,000	— .03
Total	₱27,860,611,000	— 100.00
(B)	Potential Values	Percentage
1. Forest Resources	₱49,496,171,000	— 62.51
2. Mineral Resources	13,985,500,000	— 17.66
3. Land Resources	13,285,103,000	— 16.78
4. Animal Resources	2,220,651,000	— 2.80
5. Fishery Resources	798,451,000	— .25
Total	₱79,785,876,000	— 100.00
(B)		
1. Sawn lumber	₱48,680,010,000	— 98.35
2. Minor forest products	758,769,000	— 1.53
3. Grazing land	49,523,000	— .10
4. Wildlife	7,869,000	— .02
Total	₱49,496,171,000	— 100.00

Area of Forests.—The forests cover about 16,487,600 hectares or 55.4 per cent of the total land area of the Philippines, which is 29,740,972 hectares. The continuous conversion of forest areas into agricultural lands

Commercial forests	11,415,000 hectares — 38.38%
Non-commercial forests	4,459,900 ¹ hectares — 15.00%
Cultivated	8,180,072 hectares — 27.50%
Cogon and open lands	5,073,300 hectares — 17.06%
Swamps	612,700 ² hectares — 2.06%
Total	29,740,972 hectares — 100.00%

Forest Types:

The forests of the Philippines may be classified into six broad types based on the composition of the stands:

1. *Dipterocarp type.*—This is the principal forest type from the commercial standpoint. In this type the numbers of the Dipterocarp family form the predominating timber species and constituting about 75 per cent by volume. They thrive under varied conditions, from the moist valley bottoms to hilly or mountainous country in all parts of the Philippines except in areas of high altitude in Mountain Province. The composition of the forest is generally complex, consisting, as a rule, of several stories. They form the upper story in more or less pure stand. This forest type is the main source of lumber supply. About 70 per cent of the annual production of lumber is represented by the predominating seven species of the lauan family, namely, white lauan (*Pentacme contorta*), red lauan (*Shorea negrosensis*), tangile (*Shorea polysperma*), mayapis (*Shorea squamata*), apitong (*Dipterocarpus grandiflorus*), yakal (*Hopea sp.*) and guijo (*Shorea guiso*).

2. *Molave type.*—This type of forest is more open than the Dipterocarp type, and the volume of timber per unit area is much less. It occurs in regions where there are distinct wet and dry seasons. Local soil conditions intensify the effects of the dry season, thus, during this season there are places approaching desert conditions. Molave predominates on dry limestone ridges, hence such forests are designated as “Mo-

has considerably reduced the area of the forests. The table below shows the classification of the land surface of the Philippines, based on soil cover, as of June 30, 1953:

lave type.” Most of the species found in this type produce woods that are highly valuable for their natural beauty and durability. Among the most important ones are molave (*Vitex parviflora*), narra (*Pterocarpus indicus*), tindalo (*Pahudia rhomboidea*), ipil (*Intsia bijuga*), akle (*Albizzia acle*), banuyo (*Wallaceodendron celebicum*), etc.

3. *Pine type.*—This is the forest type found in the mountainous regions of high altitude of northern Luzon. As a rule, the stand is open and scattered, the principal species, the Benguet pine (*Pinus insularis*). Tapulao (*Pinus merkusii*) is found in the high mountains of Zambales and Mindoro. The pines practically grow in pure stands except in places of lower elevations where they are mixed with hardwoods. They are a potential source of turpentine.

4. *Mangrove Type.*—This type is found on tidal flats at the mouths of streams and on the shores of sheltered bays. Majority of the stand is composed of members of the family Rhizophoraceae, consisting of the following species: Bakauan, busain, pototan, langarai and tangal. Other species found in this type of forest are pagatpat, api-api, tabo, tabigi, piagau and dungonlate. The mangrove species are the principal sources of firewood, tanbark, catch, dyewood and charcoal. Nipa palms grow along streams in many parts of the tidal flats. In many places it grows in dense stand.

5. *Beach Type.*—Above the high tide line are found sandy beaches where the original form of vegetation has been kept.

This is a distinct type known as the "Beach type." The frontal zone usually has a tangle of vegetation, of which pandan is conspicuous. The principal trees in this type are talisai, dapdap, dungon-late, palomaria, ago-ho, bani and tawalis.

6. *Mid-mountain and Mossy Type*.—This type is found on high and very rough mountainous regions, and as such, they are essentially protection forests. The topography of the regions where this type is found is characterized by steep main ridges rising to peaks whose sides are cut into similar ridges by deep canyons. The soil is shallow or

nearly absent. The climatic conditions are very moist. The trees are mostly dwarf because they are greatly exposed to strong winds. Their trunks and branches are generally covered with mosses, liverworts, ferns and orchids. The principal species are *Dacrydium* spp., *Podocarpus* spp., *Eugenia* spp., *Myristica* spp., *Symplocos* spp. and *Tristania decorticata*.

The volume of standing timber which includes trees 40 centimeters and over in diameter is estimated, as of June 30, 1953, at about 1,081,778,000 cubic meters or 458,673,872,000* board feet, as shown below:

Commercial forests:		
Accessible forests	707,482,680 Cu. M. —	65.40%
Inaccessible (Protection) forests	272,220,600 Cu. M. —	25.17%
Non-commercial forests (accessible)	95,021,913 Cu. M. —	8.78%
Mangrove	7,052,770 Cu. M. —	.65%
Total	1,081,777,963 Cu. M. —	100.00%

Table I shows the approximate area and volume of standing timber in public forests as of June 30, 1953.

About 75 per cent of the stand of high-land forests is composed of Dipterocarp spe-

cies, namely, yakal, guiyo, red lauan, tangile, mayapis, apitong, palosapis, white lauan, bagtican and almon.

The following shows the stand of timber by groups:*

First group	73,020,013 Cu. M. —	6.75%
Second group	119,969,176 Cu. M. —	11.09%
Third group	518,279,822 Cu. M. —	47.91%
Fourth group	370,508,952 Cu. M. —	34.25%
Total	1,081,777,963 Cu. M. —	100.00%

Value of Standing Timber.—The Government is collecting forest charges and reforestation fund charges on timber cut from

public forests. At present, the rates of forest charges and reforestation fund charges are given below:

	<i>Forest Charges</i>	<i>Reforestation Fund</i>
For each cubic meter of first group timber ...	₱3.50	₱0.50
For each cubic meter of second group timber .	2.00	0.50
For each cubic meter of third group timber ...	1.25	0.40
For each cubic meter of fourth group timber .	0.60	0.40

Based on forest charges and reforestation fund charges alone, the estimated value of the standing timber is ₱1,834,022,000.00.

The standing timber has a commercial value estimated at ₱27,044,450,000.00 based on an average price of ₱25.00 per cubic

meter for logs. Sawn into lumber this timber will yield around 270,444,500,000 board feet which at the present average price of ₱180.00 per 1,000 board feet, F.O.B. Philippine ports, gives a commercial value of ₱48,680,010,000.00. This gives an insight of potential contributions that the timber resources can give to our national economy.

Distribution of Important Commercial Forests.—At the beginning of the American administration, the Philippines had extensive commercial forests of fine timber. In many places, the forest edges were along river banks and along coast lines. With the advent of American administration, development in agriculture, commerce and industry enhanced the cutting of timber. Following the law of least resistance, the lumbermen concentrated their operations in easily accessible areas. Illegal kaingin making accounted also for the opening of wide timbered areas in many accessible places. As a result, the large blocks of important commercial forests that remain today are located far in the interior of unsettled regions, in areas of rough topography or in areas bordering the Pacific coasts where transportation and loading are periodically difficult. Specifically, they are located in the interior of Agusan and Davao, Cotabato, Lanao, Camarines Sur, Samar and Negros Island, along the Pacific coasts of Surigao, Davao, Quezon and Cagayan, and in the rough sections of the provinces of Cotabato, Zamboanga del Sur, Zamboanga del Norte, Misamis Oriental, Camarines Norte, Mountain Province, Basilan Island and Leyte. Palawan Island has also wide area of commercial forests. Concentrations of operations employing modern sawmill equipment and heavy machinery for logging are at present found in these provinces except Palawan where timber stands are of the species other than Philippine mahogany and where the high cost of transportation detracts the interest of investors.

Development of Lumber Industry.—One of the first tasks of the Bureau of Forestry

when it was organized under the American regime was to develop the lumber industry. For this purpose, it conducted studies on the best ways the Philippine woods could be manufactured into articles of commerce. Another step taken was to popularize the Philippine woods by exhibiting samples in international expositions abroad and in local carnivals and town fairs. Our red lauan, tangile, mayapis, bagtican, almon and white lauan, which are known in foreign markets as Philippine mahogany, easily found acceptance abroad. Various species were tested in the laboratory for tensile and cross-bending strengths. Kiln drying and air-drying studies were also conducted to test the seasoning qualities of the various woods. Durability test was also conducted to determine their resistance when in contact with the ground.

Simultaneously the exploitation of commercial forests was started by American technicians with American capital. Modern logging and sawmill equipment capable of mass production following the American pattern of timber exploitation in the Pacific Northwest were introduced, replacing in a large extent the slow, primitive method of logging and milling. Techniques in logging and milling were also introduced by American technicians. Since then the lumber industry progressed rapidly as shown by the fact that timber production increased from 46,398,960 board feet in 1902 to the highest pre-war figure of 1,093,218,704 board feet in 1937. At the outbreak of the last world war, there were 163 sawmills having aggregate daily capacity of 1,693,000 board feet. Actual production of lumber amounted to 348 million board feet annually. Lumber and timber exports increased from 87,000 board feet in 1903 to 251,694,880 board feet in 1937. The principal foreign markets for Philippine woods were: United States, Canada, Japan, Australia, China, South Africa, England, Germany and other European countries.

The lumber industry was almost completely destroyed during the war. However, it rehabilitated itself very remarkably in spite of the difficulties that confronted it. Logging and sawmill plants were rapidly rehabilitated. During the fiscal year 1952-1953, there were 446 sawmills with aggregate daily capacity of 3,322,700 board feet. Actual lumber production during the year amounted to 429,139,547 board feet. During the same fiscal year, timber production of 1,206,114,589 board feet surpassed the highest annual production figure before the war. Lumber and timber exports, which amounted to 427,114,905 board feet, almost doubled the highest annual export figure before the war. Until at present, the lumber industry largely depends on the local market where about 85 per cent of the lumber and timber produced is disposed of annually. It may be said that in the field of lumber industry, the Philippines is the most advanced of all the Southeast Asian countries in point of production, mechanization and efficiency developed by the men employed.

Plywood Industry.

The plywood industry marked a new development in the lumber industry. Its expansion dates back from the close of the last world war, although this industry was introduced by the Americans over 30 years ago. At the outbreak of the war, there were only two plywood mills operating in the Islands but these were destroyed during the war. Today, there are seven modern plywood mills operating in the Philippines with investment of about ₱5,000,000.00. One of these mills has only recently started operation. In addition to these plywood mills, a veneer mill had been put up in Basilan Island. The expansion of plywood industry after the last world war may be gleaned from the following annual production of plywood:

<i>Fiscal year</i>	<i>Production (Sq. Ft.)</i>
1947 —	425,610
1948 —	2,405,340
1949 —	3,980,612
1950 —	10,936,994
1951 —	22,306,290
1952 —	38,233,044
1953 —	56,832,653

The importation of plywood dropped rapidly from 11,382,326 square feet in 1949 to 262,276 square feet in 1953 due to increased production of the local producers.

The use of plywood in many types of building construction has so rapidly gained popularity that almost all the plywood produced are consumed locally. The prospect of exporting plywood is faced with the problems of how to improve the quality of manufacture and to reduce the cost of production so as to enable the producers to place their products in highly competitive markets abroad.

Investment in the Lumber Industry.

At the outbreak of the last world war the lumber industry was already highly developed with estimated investment of ₱46,000,000.00. Most of the investment was represented by the cost of machinery and equipment used in logging and milling. The amount of capital invested in the lumber industry, as of June 30, 1953, is approximately ₱117,595,000.00. Of this amount, about ₱63,273,00.00 represents investment in sawmills alone. It is on account of the enormous investment it absorbs that the lumber industry is given considerable attention in our program of national economic development.

Revenue Derived from the Lumber Industry.

Forest charges and reforestation fund charges due on timber cut from public forests are the principal revenue that the lumber industry contributes to the government. Collection of reforestation fund by the Bureau of Forestry was started only on June 7, 1947, in accordance with Republic Act

No. 115. During the fiscal year 1952-1953, the Bureau of Internal Revenue actually collected ₱3,450,956.00 of forest charges on timber alone and the Bureau of Forestry collected ₱1,025,694.52 of reforestation fund. Including lumber inspection fees of ₱581,253.00, sawmill permit fees of ₱98,875.00 and license fees, license bond deposits forfeited by the government amounting to ₱240,440.00, the lumber industry contributed to the government a total revenue of ₱5,397,218.00 during the year. This excludes indirect taxes derived from the lumber industry, such as sales tax, income tax, foreign exchange tax, etc.

During the fiscal year 1952-1953, there were about 90,000 persons employed in the lumber industry. Due to the wide geographical distribution of lumbering operations, big number of workers find employment in logging or in sawmill in their respective provinces. It is noticeable that many workers in thickly populated provinces, like Ilocos Provinces, Cebu and Bohol, move to active lumbering districts for work. Labor is not a problem in the lumber industry, the supply being in excess of the need of the industry.

It is significant that, as in other major industries, the workers in the lumber industry have learned to assert their right to have due share of the fruits of their labor and to have a better standard of living. As a result, the lumbermen are now incurring greater expense for better wage payment and for the protection of health and security of their men. Progressive lumber companies provide free light and water, good hospitals, schools, playgrounds, theaters, churches and other conveniences for logging and sawmill camp communities. They also give their men vacation leave and other privileges. All these mean increased cost of production.

Problems of Lumber Industry.—There are now many Filipinos who are considered technicians in the production of logs and lumber. Technical "know how" is, therefore,

not a problem of big capitalists who can afford to employ high-salaried technicians. The small capitalists, on the other hand, generally suffer the consequences of lack of technical "know-how."

Lack of capital is another problem that confronts not only the small operators but also some of the big operators. Several big operators stopped their operation or withdrew from the lumber industry due to financial difficulties. But the worst hit are the small operators whose failure is caused more by lack of capital than by any other cause. They have to be extended financial assistance by some means.

Freight rates on logs and lumber are quite high. It is an item of cost that the lumbermen have always complained of. Freight on each 1,000 board feet of logs from the Philippines to Hawaii and the Pacific Coast ports of the United States and Canada is \$45.00, to Atlantic and Gulf ports, \$56.50, to Hongkong, ₱54.00, to Bangkok and Singapore, ₱54.00, to Djakarta, ₱59.00, to Rangoon, Colombo, Calcutta and Bombay, ₱74.00. For lumber shipment to Hawaii and the Pacific Coast ports of the United States and Canada, \$42.50, to the Atlantic and Gulf ports, \$54.00, to Hongkong, ₱24.50, to Japan, ₱54.00, to Saigon and Bangkok and Singapore, ₱39.50, to Djakarta, ₱43.00 and to Rangoon, Colombo, Calcutta and Bombay, ₱46.50. As the United States is the premier market for Philippine lumber, the high freight charges on shipment to that market should be reasonably reduced in order to induce the expansion of our lumber export trade.

The heavy tax burden borne by the lumber industry is strongly objected to by the lumbermen. The 17% exchange tax on imported machinery and equipment for logging and sawmilling should be eliminated if the lumber industry is to be given any relief at all. As the agricultural machinery imported to the Philippines is exempted from payment of 17% exchange tax, the imported machinery for logging and sawmilling which

also produce commodities of commerce should also be exempted from payment of 17% exchange tax.

The wharfage tax of ₱0.60 per cubic meter of export logs and flitches should also be eliminated for the reason that all logs that are exported do not pass any government wharf. Export flitches are almost invariably loaded at the private wharves of lumber companies.

Mismanagement is often the cause of failure of the small operators. This problem cannot be well remedied unless the small operators are extended financial assistance to enable them to employ experienced men to gather their business efficiently.

MINOR FOREST PRODUCTS

Aside from timber, Philippine forests have abundant minor products that are of economic value. In the upland forests there

are firewood, charcoal, rattan, palms, vines, bohos and bamboos, and orchids. Many trees yield nuts, resins, oils, gums and tanning or dye barks. Almaciga trees yield resin known as Manila copal and Benguet pine trees yield turpentine. The predominant trees in mangrove swamps produce firewood, charcoal, tannin and dye barks. Nipa palms growing in thick stands in most mangrove swamps areas produce leaves valuable for thatching houses and yield sap that is converted into fermented beverage or manufactured into alcohol. Minor forest products gathered from public forests are generally consumed locally. A few of them constitute commodities for export.

Estimated Quantities of Minor Forest Products in Public Forests.—The estimated quantities of different minor forest products in public forests are shown below as of June 30, 1954:

Firewood:		
Upland species	118,259,000	cubic meters
Mangrove species	2,831,000	cubic meters
Rattan:		
Unsplit rattan	777,111,000	linear meters
Split rattan	114,250,000	kilos
Nipa shingles	196,221,000	pieces
Nipa sap	39,246,000*	liters
Bohos and Bamboos	220,450,000	pieces
Manila copal	24,577,000	kilos
Manila elemi	322,000*	kilos
Dipterocarp resins	8,852,000	kilos
Oleo resin	50,001,000*	liters
Tanbark and dyebark	1,542,433,000	kilos
Diliman and other Vines	3,057,000	kilos
Buri leaves	2,463,000	kilos
Buri fibers	135,000	kilos
Charcoal	7,878,000	cubic meters
Lumbang nuts and Kernels	1,792,000	kilos

Estimated Value of Minor Forest Products.—The forest charges on the above minor forest products are estimated at ₱66,216,000.00. Their commercial value is estimated at ₱758,769,000.00.

Revenue from Minor Forest Products.—Considerable amount of forest charges is collected by the Bureau of Internal Revenue annually. During the fiscal year 1952-1953, there were collected by the Bureau

of Internal Revenue ₱183,606.34 representing forest charges on different minor forest products cut and collected from public forests.

WILDLIFE

The forests of the Philippines are havens of wildlife which includes game animals like deer, tamaraw, wild pigs, etc., game birds like wild ducks, snipe, doves, pigeons, etc., and protected insect and song birds. Unlike

the forests of Malaya, India and Africa, there are no fierce wild animals in Philippine forests. There is no inventory of the number of game animals and birds found in Philippine forests. It is estimated, however, that for every hectare of forest land there is ₱0.50 worth of game and wildlife. This will give us a total value of ₱7,869,000.00.

FOREST LANDS

The wise use of forest lands is a source of government revenue. Under Section 1838 of the Revised Administrative Code, the Director of Forestry may lease or grant permits for the best use of forest lands or vacant public lands not declared alienable disposable land.

INDIRECT BENEFITS

The indirect or intangible benefits derived from the forests are its influences on stream flow, soil and climate. Such benefits cannot be evaluated in terms of pesos but in general well-being of the country. Forests act as water reservoirs and as such, they regulate stream flow, prevent flood in a large degree and minimize the silting of streams. The supply of water for water power and for irrigation depends upon good forest cover. It is for this reason that the watersheds of streams supplying water for water power have to be kept under adequate forest cover and must be reforested when necessary. The importance of this matter must be well recognized in view of the fact that water powers are now being developed in various parts of the country. The Ambuklao Hydroelectric plant is a very typical example of the project.

Forest cover minimizes soil erosion and enriches the soil fertility content. Forests provide excellent hunting grounds, healthful recreational opportunities, food, and shelter and habitats for wildlife and game animals. They ameliorate climate and make it healthful for man. They also enhance the natural beauty of landscapes.

CONSERVATION OF FOREST RESOURCES

In forestry, the concept of conservation does not mean accumulation of forest wealth. Rather, it refers to systematic cutting of timber and other forest growths in such a manner that the forest capital is kept in its present condition, if not better, so that it can provide a sustained supply of raw materials for the need of the people. Unlike mining in which the ores removed from the bosom of the earth are not replaced at all, lumbering, if carried on scientifically, can be kept on indefinitely because the timber or other forest growths cut and removed are being replaced. Obviously the enemies of forest conservation are the destruction of forest growths by illegal kaingin making, the unregulated cutting by illegal forest users and the wasteful method of forest extraction. The responsibility of conserving the forests rests on the Bureau of Forestry. At present we have adequate laws for conserving the forests. These laws are well implemented by forest regulations of the Bureau of Forestry. In the granting of forestry license, the Bureau of Forestry is guided by the principle that the one who is most qualified to protect the forest is given the preference to get the license. The allowable annual cut granted in the license is calculated not to exceed the estimated annual growth of the forest and, at the same time, it is based on the volume of over-mature trees in the area which have to be cut to save them from deterioration. The method of cutting, gathering and removing the forest products is prescribed in the licenses to avoid wastes of raw materials and unnecessary damage to the forest. The cutting of trees below the prescribed limit is prohibited. The purpose is to avoid the cutting of trees that have not reached their economic age. Such are the regulations of the Bureau of Forestry designed to conserve the forest but, the perennial problem of lack of fund and personnel has made it impossible for the Bureau of Forestry to stop the illegal kaingin making, the un-

regulated extraction by illegal cutters and the wasteful cutting of timber and other forest products by forestry licenses.

It is significant to state that the Bureau of Forestry is now starting a more effective measure towards forest conservation. Steps are now being undertaken to reforest the logged-over areas so as to supplement by artificial planting the natural regeneration of such areas. This is a much cheaper method of restoring forest areas than by reforesting them after they have been reduced to grassland by illegal kaingin makers.

A movement is presently being started by the Bureau of Forestry for effective forest conservation. The step being taken is to require the timber licensees to practice selective logging. By this measure, destructive method of logging will be greatly minimized, if not entirely stopped, and the necessary stocking of timber in the area for succeeding cuts would be provided so as to maintain continuous supply of timber for the present and future needs of the people.

A REMINDER

The Philippines still has abundant forest resources. The standing timber is estimated at 1,081,777,963 cubic meters of which 707,482,680 cubic meters under the accessible commercial forests are suitable for commercial exploitation. Our annual cut of about 1 billion board feet can be increased considerably without depleting the forest provided that the illegal kaingin making or the shifting method of cultivation and the illegal and destructive cutting of timber are controlled. In almost all Dipterocarp forests, overmature trees constitute considerable volume of the stand. This overmature timber must be cut and utilized properly as fast as possible in order to save it from deterioration.

The lumbermen have machinery and equipment adequate to increase lumber and timber production. So as to make maximum use of these investments, they should have additional capital and good markets

for their products. A corollary to the expansion of lumber and timber production is the expansion of lumber markets. The foreign markets should be developed much further in order to stimulate increased production.

Forest conservation should be given proper attention in the planning of accelerated industrial development of the country in order that there could be a continuity of supply of timber and other forest products. In order to reach this objective, the Bureau of Forestry must be given adequate funds and personnel.

Every work creation is threefold . . . First, there is the creative idea, passionless, timeless, beholding the whole work complete at once . . . Second, there is the creative energy begotten of that idea, working in time from the beginning to the end, with sweet and passions . . . Third, there is the creative power, the meaning of the work and its response to the living soul . . . And these three are one, each equally in itself the whole mark.

—Dorothy L. Sayers

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Observations And Impressions On Some Aspects Of Forestry In Indonesia

By TIBURCIO S. SEREVO
Associate Delegate

STUDY TOURS:

In connection with the Third FAO Regional Conference for Asia and the Far East held in Bandung, Indonesia on 8-10 October 1956, study tours were made by the entire delegations attending the Conference on 14 October and 17-18 October 1956. Some members of the Philippine Delegation made study tours on 20 October 1956.

The study tour on 14 October 1956 was made in Lembang and Tjimindi. The projects visited were the Commercial Crops Research Station, Agricultural and Veterinary Projects, Forestry Projects, and Faber Vegetable Raising Project. In mid-afternoon a visit was made to Bodjonglao Fish Breeding Project at Tjimindi.

The study tour on 17-18 October 1956 was made in Tjiandur, Tjibodas and Bogor. In Tjiandur observation was made on the method of rice planting. In Tjibodas visits were made to Tjibodas Mountain Gardens, Gunung Mas Tea Factory and the Experiment Garden. In Bogor, visits were made to General Agricultural Research Station, Veterinary Institute, Central Animal Husbandry Experiment Station, Faculties of Agriculture and Veterinary Surgery, Soil Research Institute, Forest Research Institute and Bogor Botanical Gardens.

The study tour on 20 October 1956 was made by three Philippine Associate Delegates to Sumedang Extension Office and the farm cooperatives in two villages.

GENERAL INFORMATION ON FORESTRY IN INDONESIA:

All forests throughout Indonesia are managed and supervised by the Government. The Forest Service of the Republic of Indonesia is the largest service in the Ministry of Agriculture.

In Java all forests, teak and non-teak, are state-owned and managed by the Forest Service, except 2,625 sq. km. which are owned by the industrial corporations, cooperative societies, etc. Most of the teak forest are situated in Java and some other islands.

In the OUTER TERRITORIES, Forests of Self-governed Territories are partly not managed by the Forest Service and their administration is partly executed by this Service and is based on development and management plans in order to obtain a durable and progressive yield.

Communities also owned forests—communal forests—and they have full rights over their forests. These communities have, however, to ask the Forest Service for advice for a rational maintenance and utilization of these forests.

Forest Area:—Indonesia has a total land surface area of 1,483,293 sq. km. of which 797,946 sq. km. are covered with forest. Of the total forested lands, 633,846 sq.km. are accessible and 164,100 sq.km. are inaccessible. Of the accessible forests, 160,118 sq. km. are state forests, 471,103 sq.km. are communal forests, and 2,625 sq.km. are pri-

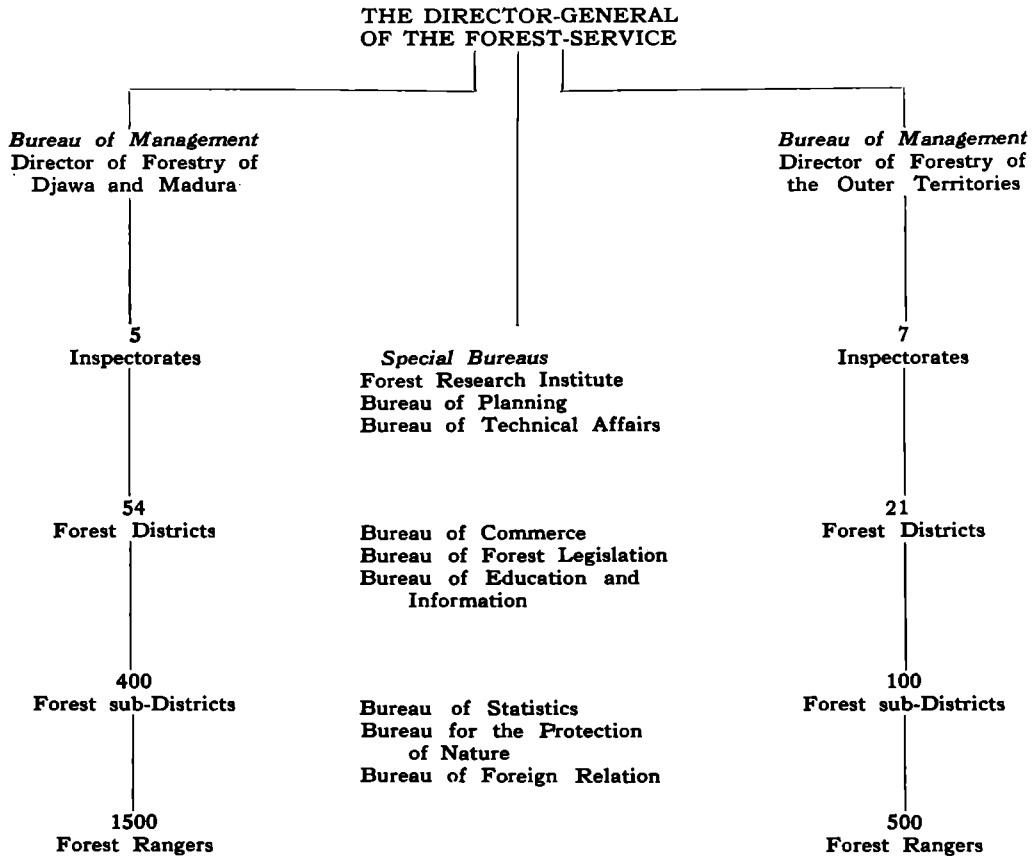
vately owned (located in Java as above-stated).

Organization of the Forest Service:—The organization of the Forest Service of Indonesia is centralized in Djakarta headed by

the Director-General who is fully responsible to the Minister of Agriculture.

The general organization is depicted in the attached chart.

SCHEME OF THE ORGANIZATION OF THE FOREST SERVICE OF THE REPUBLIC OF INDONESIA



Forest administration on Java has developed more than half a century. However, forest activities in the Outer Territories have taken place only in recent years. Due to increasing demand of timber both locally and abroad, more attention has been made on the economic utilization of non-teak species which were considered to be of inferior quality during pre-war time.

A greater part of the forests in the ter-

ritories outside of Java are still under way. Exploitation and management are still in development phase.

In order to perform its activities the Forest Service functions through institutes and bureaus as depicted in the chart. These institutes and bureaus cover the various aspects of the duty of the Service.

The Forest Research Institute carries out basic research and experiments concern-

ing silviculture as well as forest products technology. The Planning Bureau carries out surveys on a large scale to create development and management plans. Much progress has been made on survey by means of forest-photo-interpretation complemented by ground survey. The Bureau of Technical Affairs takes charge of exploitation—especially mechanized—in the forests of thinly populated regions. Two Indonesian trainees in Mechanical Logging Training Center held in the Philippines in 1952-1953 are assigned in this Bureau.

Silviculture:—In Indonesia, particularly on Java, after every clear-cutting new planting (cultivation) is carried out at the shortest possible time to prevent deterioration of the open land.

Taungya-system is the only best way, where the contractor-planters are allowed to plan their food crops between the rows for two years. Labor-planting (cultivation) is the other method especially on the cultivation of *Pinus merkusii* on lalang-grass (*Imperata sp.*) fields. Natural regeneration is ordinarily applied in the Outer Territories for Dipterocarp species.

Regular thinning of plantations is carried out to cut down suppressed and sick trees to obtain valuable stand and maintain fertility of the soil.

Reforestation and afforestation have been intensively and extensively carried out. For the five-year period from 1950 to 1954, 235.6 thousand hectares were planted or an average of 47.1 thousand hectares a year.

Forestry Education:—Forestry Education in Indonesia is of four categories, namely: (1) Primary Education, (2) Secondary Education, (3) Semi-University Education, and (4) University Education.

The *first category* is a Forest Police School of one year duration. Graduates of this school will become forest rangers whose principal job is police work. Besides, they also supervise planting work, exploitation and other technical forestry operations in their own forest police district.

Requirements for admission: Selected foremen who have shown ability and diligence in their daily work, having at least four years of active service and not more than 30 years of age.

Purpose: To raise the knowledge of non-forestry educated personnel on forestry and forest management.

The *second category* is of two types, namely: (a) Senior High School of Forestry, and (b) Advance course for lower educated middle ranking personnel. The first type is of three years duration while the second type is of two years duration.

First Type: Requirements of admission—Selected from graduates of Higher Grade Schools, physically and mentally healthy, able to do hard work, nature loving, and not more than 17 years of age. **Purpose**—To educate young men for middle ranking personnel, especially sub-district officers. All students are free of school fees, obliged to stay in dormitories free of charge, but they have to draw up a five-year contract with the Forest Service after having finished the study.

Second Type: Requirements for admission—Forestry officers having passed the Junior Forestry High School on pre-war and post-war conditions, which has been abolished to prevent difficulties in personnel policy. **Purpose**—To increase the knowledge of lower educated middle ranking personnel to enable them to occupy higher middle ranking functions and to give the opportunity to enroll in the Academy of Forestry after selection.

The *third category* is the Academy of Forestry of two years duration. **Requirements for admission**—Selected Forestry officers having passed the Senior High School of Forestry, pre-war and post-war conditions and having at least eight years of practical experience. **Purpose**—Temporarily established to fill the shortage of university graduated personnel as foreign foresters are no more in active service except for special forestry work such as research, planning and

training. Graduates are directly placed in leading positions.

One cannot but observe the industry of the farm population along the roads and highways. I gathered that the average family holding of farm land is about one-half hectare in a village of Sumedang about 90 kilometers from Bandung. Transmigration to Sumatra and Borneo has taken place and in that village alone no less than 150 persons have migrated. Migrants to Government settlement projects are given transportation and subsistence allowance for six months in order to tide them over to the first harvest.

The higher hills and mountains are well covered with forest vegetation and there are indications of extensive forest planting. The well maintained upper watersheds are responsible for the excellent irrigation system. I gathered that in West Java practically no encroachment has been made in forest lands and I am inclined to believe that the people must have realized and appreciated the value of upper watersheds to their farm and domestic water supply.

Observation in Lembang:—The forestry project visited in Lembang was a forest nursery where *Pinus merkusii* seedlings were raised. It appears to be comparatively new and located in a nearby grown-up plantation of the same species. Seedlings are raised in seedbeds. One special feature observed in nursery practice in this project is the method used in infecting the soil in the seed beds with mycorrhiza necessary for the growth of the seedlings. "Mother trees" are planted in a center row lengthwise the seedbed. These mother trees are enough to infect the seedbed.

The seedbeds are covered with a mulch of pine needles to prevent direct impact of raindrops on the seedbed so as not to disturb the soil.

Vast areas have been planted to *Pinus merkusii* which does not require fertile soils. This species is used for afforestation of poor devastated soil. Their results have been

very satisfactory. This species has a very great possibility for paper and pulp industry.

I gathered that the pine plantations are managed on a forty-year rotation for sawtimber and a twenty-year rotation for pulpwood. But for purposes of soil rehabilitation the pulpwood rotation is being lengthened to 30 years. The Government is proposing to install a pulpwood and paper plant in Kalimantan (Borneo).

Observation at Tjibodas and Bogor: Along the Highway from Bandung to Tjibodas, I observed teak plantations which indicated vigorous growth. Teak cultivation has been carried on by Taungya-system and for the five year period from 1950-54, there were planted 120.4 thousand hectares to teak.

We visited the Tjibodas Mountain Gardens, a branch of Bogor Botanic Gardens. This has an area of about 80 hectares and established to facilitate investigations of tropical mountain flora and fauna. I have seen our own benguet pine growing vigorously. The elevation is about 5,000 feet. I understand that studies on watershed and forest influences have been initiated here.

At Bogor my special interest was in the *Forest Research Institute*. This Institute was established in 1913 and is under the control of the Forest Service of Indonesia.

The research program of the Institute is drawn up with regard to the current and future problems in forestry, particularly on the establishment of "industrial forests." For this purpose two main scopes of research can be distinguished:

1. Basic research covering subjects of general importance which may make the solution of incidental problems in the future much easier.
2. To obtain a reasonably quick answer to the current practical problems mainly concerning the "industrial tree species."

The sudden increase in the number of research objectives requires the reorganization of the Institute. The following divi-

sions are to be established:

1. Silviculture
2. Physiology
3. Forest mensuration and Evaluation
4. Botany
5. Forest Influences
6. Wood Utilization
7. Chemistry
8. Wood Properties and Wood Identification
9. Forest Economics.

In addition there will be the library, the museum, the service branch and the publicity and liaison branch.

We were conducted through the Botany Division and were shown how herbarium materials are kept in tin containers. There are about 5,000 species of trees in Indonesia from 35 cm. in diameter and up. There are about 50 species described each year.

There are only seven species exported, three of which are Dipterocarp species. These are *Dryonalanops lanceolata* (Dipt.), *Shorea laevifolia* (Dipt.), *Dipterocarpus* spp., *Octomeles sumatrana* (Datis), *Callophyllum* spp. (Gatt.), *Agathis borneensis* (Arau.), and *Tectona grandis* (Verb.),

Exportation of timber are made to Japan, Hongkong, Holland, Australia and South Africa. About 6,000 cubic meters were exported last year to Japan and about the same amount for the current year. The price per cubic meter is from US \$11-13 F.O.B. of average fair quality logs, British North Borneo grading rule.

Mechanical logging operations are being carried out in Kalimantan (Borneo) but the

stand is only about 40 cu. m. per hectare of commercial species.

The Institute is conducting studies on veneer and plywood qualities of several species of wood like *Agathis borneensis* and *Albizzia falcata* as well as the Dipterocarp species.

One striking thing that I learned is the use of mangrove tannin-formaldehyde resins as hot-press plywood adhesives. A paper of the Forest Research Institute describes laboratory experiments on the preparation of hot-press plywood adhesive from the barks of six prominent mangrove species which have not been previously used for adhesives (1953).

Mangrove tannins react with formaldehyde to form resinous condensation products. The condensates of paraformaldehyde with mangrove tannins formed as a result of hydroxyl-ion catalysis, have been examined as plywood adhesives. Hot-press adhesive have been prepared by addition of woodflour and about 5% paraformaldehyde to aqueous

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bark extracts containing approximately 45% solids at PH's ranging from 4.3 to 5.7. The adhesives have an unlimited storage life, and a working life from one to about eight hours.

Mangrove tannin-formaldehyde adhesive may be prepared simply by mixing the stable, aqueous bark extracts, containing some alkali as catalyst, with woodflour and a small amount of paraformaldehyde.

Another interesting work being done at the Institute is aerial photo interpretation. I gathered that in 1954 the Indonesian Air Force took aerial photos covering 3 million hectares of forest lands. The photos are on the scale of 1:20,000. From these photos, type maps have been produced as well as topographic maps on the scale of 1:10,000 with 2½ meter contour intervals.

The Institute has also investigated the possibilities of many species for pulp and paper manufacture. The sulphate process is being used. Aside from *Pinus merkusii*, the following species have been tried: *Eucalyptus*, *Aleurites*, *Shorea*, *Hopea*, *Albizzia*, and *Agathis*. Fiber-length test show *Endospermum* to have the longest fiber, followed by *Cinnamomum*.

Within the compound of the Institute, I have noted one fast growing species, *Albizzia falcata*. This species is said to grow on poor soil and this has some possibility in this country as a reforestation crop. I have been informed that this species grow to a height of 20 meters in five years. It may be worthwhile trying it here in the Philippines.

Within the compound of the Head Office of the General Agricultural Research Station, I have noted two species of grasses similar to what I have noted in the Southern United States. These grasses are used in the Southern States to fix soil in gulleys and gully heads. These grasses are *Eragrostis amabilis* and *E. curvula* (Weeping Love Grass).

Bogor Botanic Gardens cover 110 hectares and was laid out in 1817. Here are grown thousands of tropical species in their

natural surroundings. Attached to the gardens are an herbarium, a zoological museum, a library of scientific works, and a laboratory. We visited the orchid house where our *Vanda sanderiana* is being raised and crossed with local and other *Vanda* species.

OBSERVATIONS IN BANGKOK:

While waiting for our flight connections at Bangkok, I took the opportunity to meet the present Director-General of the Department in the U.S.A. in 1951. He kindly showed to me the organization of the Department which is depicted in the attached chart. Graduates of our College of Forestry are now holding responsible positions in the Department.

I also passed the School of Forestry, Kasetsart University. This school was formerly located in Phrae, upper Thailand. The Assistant Dean is a graduate of our College of Forestry in 1937.

I visited Thai Sawmill owned and operated by the Forest Industry Organization, a government concern. This band sawmill has a capacity of 40 cubic meters of logs a day and the conversion per cent is 42. This sawmill cuts teak logs only. The manager of this sawmill is a 1941 graduate of our College of Forestry.

The other band sawmill owned by the Forest Industry Organization in Bangkok is Kasetra Sawmill sawing species other than teak, mostly Yang (*Dipterocarpus alatus*) similar to our red lauan.

I learned that the forests of Thailand are government owned. One third of the teak forests is assigned to the Forest Industry Organization, another third to the use of the population, and the last third to private operators.

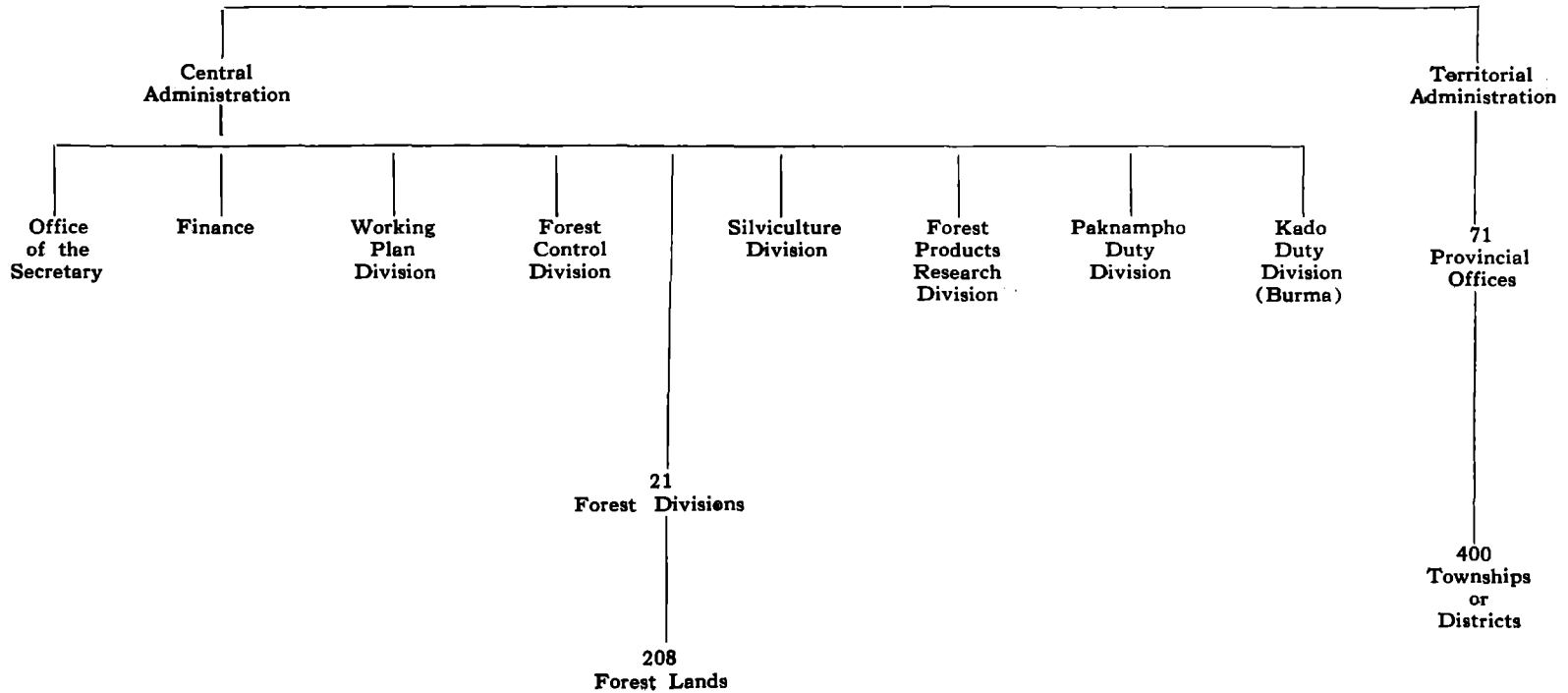
I gathered that the Royal Forest Department has just established at Phrae a Ranger School—a three-year ranger course. The courses offered are the same as those offered by the School of Forestry, Kasetsart University.

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Construction of An Experimental Rattan Dryer and Artificial Drying of Rattan

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INTRODUCTION

Importance of the study

Seasoning of rattan for commercial purposes has been a problem for many years. Air drying is extremely slow and is often accompanied by attack of fungi thus causing degrade of the canes and losses on the part of the rattan dealers.

Air seasoning of rattan is dependent upon weather conditions and this system is only feasible during dry weather. Demand for properly seasoned rattan is great, especially for furniture for domestic and foreign markets. Properly seasoned rattan is strong and possesses a bright color. Only high quality rattan free from fungal stain can be used for the manufacture of high class furniture and other products.

Review of literature

Cortes, R. T. (4) found that by air seasoning it took five weeks to dry scraped palasan (*Calamus maximums* Merr.) and limuran (*C. ornatus* Decc.) to their minimum moisture content of 13.1 and 12.5 per cent, respectively. Unscraped palasan and limuran required, at least 26 weeks to attain their minimum moisture content of 19.5 and 23.1 per cent, respectively. In the case of unscraped biri (*Calamus ziphonosphatus* Merr.) and ditaen (*Daemonrops mollis* [Blanco] Merr.) they required 18 and 19 weeks to attain their minimum moisture content of 17.0 and 17.4 per cent, respectively.

In the scraped pieces the active growth of fungi-producing stain was noted, when the moisture content of the pieces was approximately 100 per cent, the temperature 76°F and the relative humidity, 84 per cent. While in the unscraped pieces, the stain was observed when the moisture content was 143 per cent, temperature 76°F and relative humidity, 85 per cent.

The occurrence of stains as a result of fungi growth is highly objectionable in rattan used in the manufacture of furniture and other products.

Aguilar, L. (1) asserted that scraped rattan lends itself easily to varnishing or polishing, because the silicious coating of the stem is removed. This advantage, however, may be lost if the canes are not dried sufficiently fast, for they are liable to the attack of fungi which causes staining and rotting, hence the lowering of the grades of the canes.

Ticman (8) stated that "the earliest kilns for drying by the use of heat, consisted of little else than a room in which a wood fire was built in such a way that sacks and heated gases were made to pass through the materials to be dried".

Objects of the study

The study has the underlying objectives:

1. To ascertain the cost of the construction of an experimental dryer.
2. To determine the minimum length

of time to dry commercial rattan artificially.

3. To determine the suitable temperature for drying rattan artificially.

Time and place of the study

The experiment was conducted on the Forestry Campus, College, Laguna, from August 22, 1950 to February 4, 1951.

METHOD AND PROCEDURE

a. LOCATION:

The site selected was on a ground with good drainage. In commercial scale it should be located near a place where there is an abundant supply of rattan, and also where there is plenty of firewood, for fuel of the dryer.

A shed was constructed, roofed with nipa and had open side as well as front and rear. Its dimensions were as follows: 24 feet long and 14 feet wide and a height of 11 feet. It was first constructed in order to give protection to the dryer against heavy rain.

b. PREPARATION OF CLAY USED:

The materials needed for the construction of the dryer were collected. Cinders or burned clay of an old Japanese oven were used. In case burnt clay is not available, one must burn the clay following the procedure, as described by Ompad (7) in his paper.

"Lay billets or split wood on the ground. The amount of firewood depends upon the quantity* of burned clay needed. The clay is made into balls of 4-6 inches diameter. The billets of 3-5 inches in diameter are laid in a circular figure with a diameter depending upon the amount of clay to be burned, usually from 14-16 feet. An open space is left in the center with a diameter of 2 feet. Over the first layer, billets are laid crosswise; on the third layer, the billets are laid in the same manner as those of the first, and so on alternately. When the height of 1½ feet is attained, one layer of

balls of clay is laid side by side on top of the billets. Over the layers of the balls of clay, billets are laid again. This procedure is continued until the right amount of clay is balled and laid in the manner stated. On the last layer of clay, it is advisable to cover the balls, with 1-foot thick of billets laid as described. The pile is then ready to be burned. The burning should be started early in the morning, about five-thirty o'clock, and by six o'clock in the evening the burning is over. After a day or two the burnt clay is ready to be pounded. The pounded burnt clay should readily pass through an eight wire mesh before it should be mixed with unburned clay."

c. DESIGN OF THE DRYER:

The design of the dryer is based on the principle that hot air rises. The heated gas passes through the canes to be dried and goes out to the open air through the vents above. The smoke is kept out of the dryer but is allowed to pass through the stock.

Mabesa, C. (6) in his paper, found that kiln drying of rattan canes in a lumber dryer with a very low relative humidity had no deleterious effects on rattan canes. Based on this fact the dryer was designed.

d. CONSTRUCTION:

A plan of the dryer was prepared and served as the guide in the construction. Pegs were driven into the ground to mark the outline of its fireplace, and the path of smoke to the stack. This outline has the following measurements, 18 feet and 6 inches long and 5 feet wide from the front, up to 11 feet long and thence tapering to 2 feet wide towards the back and on the place where the chimney is located.

The ground was excavated 5 feet deep at the front and gradually sloping upward so that at the back, the depth was only one foot (See Fig. 6). This upward slope of the floor was to facilitate the flow of the smoke to the chimney.

* In this experiment (28-42) about 29 cubic feet of clay was used.

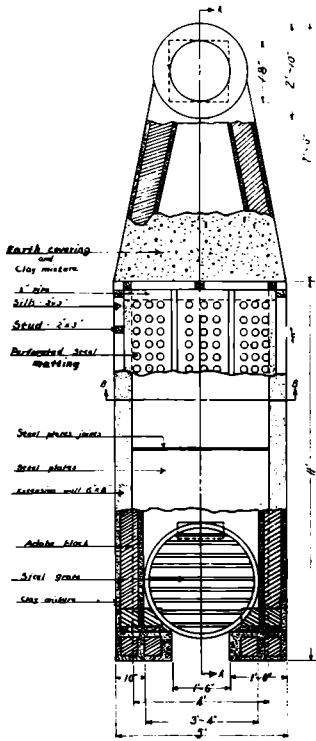


Fig 5 FLOOR PLAN

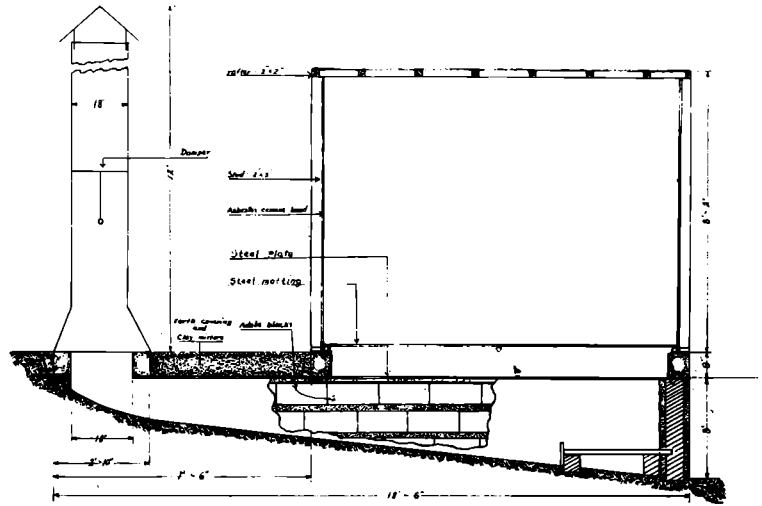


Fig 6 Section AA'

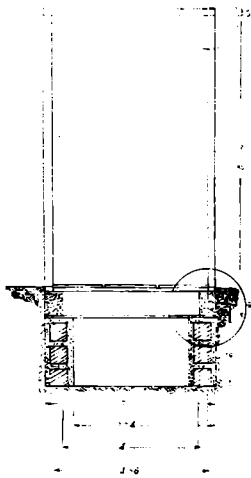


Fig 7 Section BB'

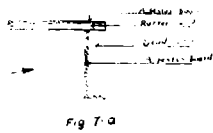


Fig 7-a

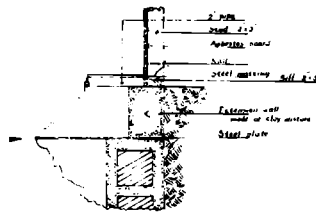


Fig 7-b

PLAN OF A RATTAN DRYER

SCALE: 1"=24"

COLLEGE FORESTRY
COLLEGE, LAGUNA

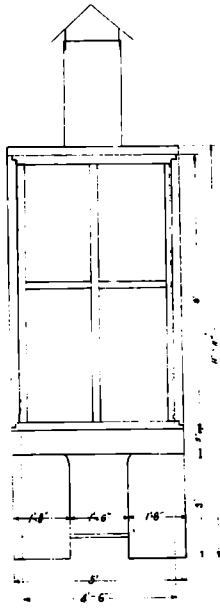


Fig. 8
Front elevation

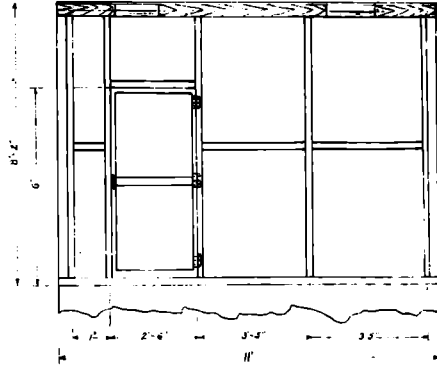


Fig. 9
Side elevation

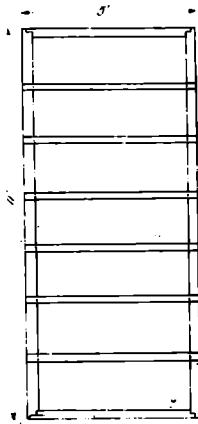


Fig. 10 Roof Plan

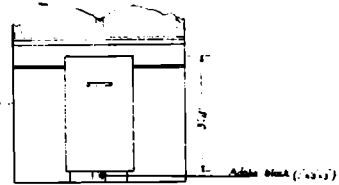


Fig. 11 Figure showing size and position
of the door of the fire place

When the excavation was completed, adobe blocks were placed in a manner shown in Fig. 6. These blocks were so held as to leave a two-inch space between the blocks and the earth wall. This space was then filled with a paste formed by thoroughly mixing two parts of powdered burnt clay and one part of raw clay with water. The same paste was used as mortar to join the adobe blocks together. Towards the outer side of this wall a plaster, two inches thick, of the same paste was coated over it, to protect the adobe wall from direct exposure to fire which may result in their rapid disintegration.

The walls of the fireplace were built flush with the ground. While waiting for the stone wall plaster to dry, they were tamped everyday to make the particles of the mixture as compact as possible so as to close the cracks resulting from the shrinkage of the paste materials. When the walls hardened, the cracks that did not close were filled with a paste mixture of fine ash and burnt clay. The cementing material was thoroughly mixed by adding sufficient water and then stumped on and then turned over with a spade several times until it became a uniform paste.

When the walls had dried, old steel plates (Fig. 5) were placed over the pit serving to cover the fireplace, absorb heat and prevent the smoke from entering into the dryer. The steel plates were placed edge to edge and their joints plastered with asbestos. Over these steel plates, extension walls 6 inches wide and 9 inches high and enclosing a rectangular space of 10 feet long and 4 feet 6 inches wide was built. They held the steel plates in place and served at the same time as the base on which the still of the walls of the dryer rested. Eleven inches above the steel plates was placed another floor of perforated steel matting serving as the floor for the canes to stand on thus preventing them from coming in contact with the steel plates which were exposed directly to the fire.

The steel matting were allowed to rest on three pieces of two-inch pipe placed across the width of the dryer (Fig. 5).

The walls of the dryer are of asbestos-cement boards, nailed to the inner side of 2 x 3 inches bagtikan studs, 8 feet high (Fig. 6). the idea being to prevent any wooden parts to be exposed directly to heat. At the top of the side-wall are three vents on one side and two on the other all running horizontally and each two inches wide by 15 inches long (Fig. 9). These vents were made adjustable, i.e. the length could be increased or decreased, as desired. The ceiling was made of the same materials (asbestos-cement) nailed to, and supported by 2" x 2" joist spaced at intervals of 1-1/2 feet on centers.

A door used for loading and unloading the rattan canes, as well as for inspection and for reading the temperature during the operations, was located on one side near the rear end. Its location was governed by the conveniences of operation and away from the prevailing wind. The materials used were the same as those of the walls and operated by swinging outwardly (Fig. 9).

f. CHIMNEY:

The laying of steel plates under the dryer was extended towards the chimney (Fig. 6) but on this section the plate was covered by a thin coating of the cementing mixture. When it became dry, the whole area was covered further by ordinary clay.

The opening for the chimney was 18" square as it was more convenient to have a square than a circular one. Both areas, however, are the same. The chimney was an old one, salvaged from an old boiler. Its height was 12 feet from the ground level. The height and diameter gave a good draft.

A damper was placed in the chimney so that the draft as well as the heat could be controlled to a certain extent (Fig. 6). The top of the chimney was provided with a hood to keep out the rain water. The bot-

tom of the chimney, being flared, rested on a wet cementing mixture and when dried, any opening on contact points was sealed.

g. DOOR OF THE FIREPLACE:

A door 3 feet 4 inches long and 2 feet wide was made out of a plain galvanized iron sheet and is provided with a handle. It is detachable so that it can be removed when firing, and placed back when needed. When the door is closed, it rests on an adobe blocks 3 x 3 x 3 inches (Fig. 11).

h. TEMPERATURE TESTS:

Preparatory to actual operation, tests on the distribution of heat were made. Thermometers were hung from the ceiling at point midway between the floor and the ceiling, one near the front, about two feet away from the front wall, the second, in the middle of the chamber, and the third two feet away from the rear wall. Readings were taken for five hours at half-four intervals. The tests showed that the readings 2 feet from the front wall were higher by 3-4 degrees than those near the rear. This was overcome by covering the steel plates with sand about one inch thick at the front and gradually thinning towards the middle. When the temperature was increased to 76.6°0 (180°F) — 87.3°C (190°F), the plates directly above the fire, buckled at the joints and some sand slid down as the buckling was towards the fire place below. By placing a narrow piece of galvanized iron, 2 feet wide and 4 feet long, over the joints near the front walls, the effect, after another series of temperature tests, was that the distribution of heat was practically equal, the difference being one degree centigrade between the rear and the front readings.

i. PREPARATION AND DRYING OF RATTAN:

Rattans used in these experiments were taken from the Makiling National Park and were cut into lengths of 3 meters for the first and third trials and 4 meters long

for the second. The length of rattan in the second run is the commercial length as sold in the market.

The canes were scraped to remove the silicious coating by means of a bolo and precautions taken not to damage them during the operation.

The scraped rattans were palasan and and limuran, while the unscraped rattans were ditaan and biri. The scraped canes had an average diameter of slightly over one inch, while the latter, were only about 1/2 inch in diameter.

Drying samples were selected as much as possible from the biggest and the wet-test canes for determining the moisture content from time to time during the progress of drying.

The test pieces were cut from the sample pieces two feet away from the ends and 1/2 inch long. After sawing, the slivers were removed, the samples weighed, numbered and dried in an oven at a temperature of 100°C (212°F) until the weight of each became constant.

After cutting the test pieces from those selected as drying samples, the later were not end-coated, unlike the drying of wood, the reason being, that they were as long as the rest of the canes being dried. The U.S. Forest Product Laboratory (9) formula for the determination of the moisture content was used.

Moisture content (Percent) of test pieces=

$$\frac{\text{Original weight} - \text{oven dry weight}}{\text{weight Oven dry weight}} \times 100 \quad (1)$$

The calculated oven dry weight of the drying samples was determined from the available moisture content of the test pieces and the green weight of the latter by the use of the formula of I. H. Boss (3) of the Division of Forest Products, C.S.I.R.O.:

$$\begin{aligned} \text{Calculated oven dry weight of samples} = \\ \frac{\text{Original weight} \times 100}{100 + \text{Moisture content of test pieces}} \quad (2) \end{aligned}$$

The scraped and unscraped canes were bundled separately, the bundles, being of convenient sizes, were placed in an standing position inside the dryer (Plate III). As soon as the canes were all placed in the dryer, the drying samples were distributed at different places inside the dryer.

J. OPERATION OF THE DRYER:

When the thermometer was hung midway the height of, and half way the length of the dryer, the oven was fired leaving the damper in the chimney fully open and the door of the fire place closed. A hand controlled draft is also provided for, below the fire door. When the fire was well started the damper was half-closed, the idea being to conserve heat and to economize fuel. If all the fuel had turned to embers, the damper was closed; and the draft below the door of the fire place was also closed, if a higher temperature was desired.

The firing was done during the day time. from seven o'clock in the morning till six o'clock in the evening, allowing the fire to die during the night. The operation required 52 — 70.6 cubic feet (1-1/2 — 2 cu. m.) of wood, stacked volume to dry an average load of 37 pieces of scraped canes and 26 unscraped to their minimum moisture content during the four days in the dryer or during forty-four hours of actual firing.

Every morning before firing, the drying samples were weighed until the desired moisture content of 10-13 per cent was reached.

In the determination of the current moisture of the load during the period of drying, formula 1 was used, but using the calculated oven dry weight for divisor.

The results of the drying are shown in Tables 3, 4a, 4b and 5.

DISCUSSION OF RESULTS

Table 1 shows the cost of materials used in the construction of the experimental dryer with a capacity of 150 pieces of

canes, which cost amounted to P447.29. The cost of labor to build it was P473.32, as shown in Table 2, totalling P880.61 for both labor and materials.

Table 2 further shows the length of time it took to construct the experimental dryer i.e. 42 days, with 2-5 men working or 132 one-man days.

The length of time to construct the dryer might have been shortened, if all the necessary materials for the construction had been available at the start. The cost of labor might be lowered if the work were done on a contract basis.

In table 3 and Figs. 1, 2 and 3, which represent the trials made in the experiment, it took forty-four actual drying hours or ninety-six hours' stay in the dryer to dry scraped rattan from 121.7, 156.4, 136.6 to 5.8, 8.7 and 7.9 per cent moisture content for the first, second and third trials, respectively. On the other hand the unscraped pieces, having smaller diameters than those of scraped (being mostly 1/2"), dried down to 6.5, 16.1 and 16.2 from 175.6, 170.5 and 184.2 per cent, respectively, during the same period of time, for the first, second and third trials. Actually the firing period was only 11 hours for every 24-hour period. It was probable that after six o'clock in the evening, when the tending of the fire was stopped, drying might logically have continued until the embers died out. The checking of this factor was not feasible on account of local conditions, especially after dark.

It was further found that in the first trial where 51 places of scraped rattan and 30 unscraped were dried, there were 9 collapsed pieces among the scraped or 17.7 per cent, of which 3 were total collapse, 6 partial or 5.9 and 11.8 per cent, respectively. While in the unscraped, 2 pieces were partially collapsed and 3 totally or 6.6 and 10.0 per cent, respectively, or a total of 16.6 per cent. The temperatures maintained for the first trial were from 60°C (140°F) to 80°C (176°F).

In the second trial 3 pieces of scraped rattan and 36 pieces of unscraped were dried at a temperature of 30°C (86°F) to 60°C (140°F) for the first 11 drying hours and 70°C (158°F) to 85°C (185°F) for the next 33 drying hours. At the end of the drying period, there were 7 total collapse and 3 partial collapse in the scraped rattan or 23.3 and 10.0 per cent, respectively, or a total of 33.3 per cent. Of the unscraped rattan, there were 7 collapse and 4 partial or 19.4 and 11.1 per cent respectively, or a total of 30.5 per cent.

In the third trial 31 pieces of unscraped were dried in a temperature of 60°C (140°F) to 65°C (169°F). The results at the end of the drying period were 1 totally collapsed and 2 pieces partially or 3.2 and 6.5 per cent, respectively, or a total of 9.7 per cent for scraped rattan. No collapse was observed in the unscraped rattan.

It will be noted that where the temperature was lower the collapsed pieces were fewer, so that there seems to be a relation between the percentage of pieces collapsed and the temperature used, i.e. the higher the temperature the greater the numbers of canes that collapsed (Fig. 4). So that a temperature of 60°C (140°F) at the start and gradually increased to 65°C (149°F) when nearing the end of the drying period would be the more suitable.

Another factor noted was the fact that canes which were white in color indicating that they were cut near the growing tops, were the ones that invariably collapsed. This characteristic may be a good way of segregating young canes from the mature ones, as they are undesirable and are supposed to be readily infested by insects.

On the other hand, in the case of palasan and limuran, the latter whether mature or not had a greater tendency to collapse than the former, as shown in Table 5. It will be noted that in the first trial, there were 51 scraped canes that were dried: 43 pieces were palasan and 8 limuran. Two of the former and 7 of the latter or 4.4 and 87.5

per cent, respectively, collapsed. In the second trial 7 out of the 25 pieces of palasan and 3 out of 5 of limuran, or 28 and 60 per cent, respectively, collapsed; and for the third trial, 1 out of 27 of the former and 2 out of 4 of the latter or 3.7 and 50 per cent, respectively, collapsed.

The color of the scraped rattan became white after coming out of the dryer, especially when the scraping was well done. It was noted that wherever portions of the silicious substance on the rind is not entirely removed there is a tendency for the canes to appear slightly dull or somewhat dirty white, while those well scraped became clean white. On the other hand, among the unscraped canes after coming out of the dryer, the light colored ones became a light straw to a light orange and the green ones became dull green or a dark dull green. (Table 4a and 4b).

S U M M A R Y

1. It was found that it cost P880.61 and 42 days or 132 one-man days to construct an experimental dryer with a capacity of 150 cases with average diameter of one inch and 3 meters long or 450 linear meters.

2. That the minimum length of time to dry scraped palasan and limuran of slightly over one inch in diameter to their minimum moisture content of 5.8, 8.7 and 7.9 from 121.7, 156.4 and 136.6 per cent moisture content in the first, second and third trials, respectively, was found to be at least 44 actual drying hours or 4 days (96 hours actually inside the dryer). Unscraped rattan of about 1/2 inch in diameter, required the same length of time to attain 6.4, 16.1 and 16.2 from 175.6, 170.5 and 164.2 per cent moisture content, respectively.

3. A desirable temperature for drying to minimize collapse was found to be around 60°C (140°F) at the start and gradually increased to 65°C (149°F) when nearing the end of the period of drying.

4. Pieces cut near the growing tips or young canes which are usually white in color are liable to collapse during the drying.

5. Scraped canes of limuran have a greater tendency to collapse whether matured or young than scraped palasan.

6. Well scraped green rattan after coming out from the dryer appeared clear white in color, while the unscraped ones turned dull green or dull dark green. Young canes usually in smaller diameter which are light colored became light straw or light orange in color after coming out of the dryer.

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TABLE 1. COST AND AMOUNT OF MATERIALS USED IN THE CONSTRUCTION.

<i>Materials</i>	<i>Quantity</i>	<i>Unit</i>	<i>Cost</i>
Asbestos board # (4' x 8')	12	pieces	₱ 96.00
Ash #	1	cu. ft.	
Blocks, adobe #	72	pieces	12.24
Cinders #	28.42	cu. ft.	1.00
Clay #	14.21	cu. ft.	
Galvanized iron #	3	shts.	
Lumber #	747.5	bd. ft.	224.25
Nails	6	kilos	4.80
Nipa shingles	550	pieces	28.90
Perforated steel matting #	3	pieces	13.50
Steel plates #			25.00
Thermometer # (100°C)	1	piece	4.50
TOTAL			₱ 407.29

Materials secured free of charge for the experiment. Cost are those prevailing in the market.

TABLE 2. SHOWING THE DIFFERENT PARTS AND THE LENGTH OF TIME TO FINISH.

<i>PARTS</i>	<i>No. of days For one man to do</i>	<i>No. of men working</i>	<i>No. of days to finish</i>	<i>Cost 13.08/day</i>
Shed	21	5	7	₱ 64.68
Bigging of the Ground	5	5	1	15.40
Walls	80	5	16	246.40
Dryer	18	3	6	92.40
Miscellaneous work	6	1	6	18.48
Testing and improvement	12	2	6	36.96
TOTAL	132		42	₱ 473.32

TABLE 4a. SHOWING RELATION OF COLLAPSE WITH THE TEMPERATURE OF THE DRYER (SCRAPED RATTAN).

TRIALS	No. of Pcs.	Total No. of Pieces	Collapse Per Cent	Partial No. of Pieces	Collapse Per Cent	T O T A L Total Per Pieces Cent		Range of Temperature	Color of Canes
1st . .	51	3	5.9	6	11.8	9	17.7	60°C (140°F) to 176.6°F)	White to yellowish White
2nd . .	30	7	23.3	3	10.0	10	23.3	80°C (86°F) to 30°C (140°F) / ¹	White to dull white
3rd . .	31	7	3.2	2	6.5	3	9.7	60°C (140°F) to 65°C (149°F)	Clear White

¹ 30°F (86°F) to 60°C (140°F) for the first 11 hours and 70°C (158°F) to 85°C (185°F) for the next 33 hours.

TABLE 4b. SHOWING RELATION OF COLLAPSE WITH THE TEMPERATURE OF THE DRYER (UNSCRAPED RATTAN).

TRIALS	No. of Pcs.	Total No. of Pieces	Collapse Per Cent	Partial No. of Pieces	Collapse Per Cent	T O T A L Total Per Pieces Cent		Range of Temperature	Color of Canes
1st . .	30	3	10.0	2	6.6	5	16.6	60°C (140°F) to 80°C (176.6°F)	Light straw to dull orange
2nd . .	36	7	19.4	4	11.1	11	30.55	30°C (86°F) to 60°C (140°F) / ¹	Dull orange
3rd . .	14	—	—	—	—	—	—	30°C (140°F) to 65°C (149°F)	Light straw

¹ 30°F (86°F) to 60°C (140°F) for the first 11 hours and 70°C (158°F) to 85°C (185°F) for the next 33 hours.

TABLE 5. SHOWING THE RELATION OF COLLAPSED CANES BY SPECIES.

RIALS	PALASAN				LIMURAN				GRAND TOTAL				
	No. of Collapse	Total No.	%	Partial No.	%	No. of Collapse	Total No.	%	Partial No.	%	Palasan Dried	Limuran Dried	Total Dried
1st	2	0	0	2	4.41	7	3	37.5	4	50	43	8	51
2nd	7	5	20	2	0	3	2	40	1	20	25	5	30
3rd	1	1	3.70	0	0	2	1	25	1	25	27	4	31

TABLE 3. AVERAGE TEMPERATURE AND MOISTURE CONTENT OF RATTAN
 CANES FOR THE DURATION OF DRYING.

FIRST TRIAL					SECOND TRIAL					THIRD TRIAL							
Date and Actual hours in the kiln	Actual hours of firing	Temp. °C	MOISTURE CONTENT		Date and Actual hours in the kiln	Actual hours of firing	Temp. °C	MOISTURE CONTENT		Date and Actual hours in the kiln	Actual hours of firing	Temp. °C	MOISTURE CONTENT				
			Scraped	Unscraped				Scraped	Unscraped				Scraped	Unscraped			
Jan 11—	0	0	23	121.7	175.7	Jan. 21—	(0	0	26	146.4	170.5	Jan. 30—	(0	0	23	136.6	184.2
	(3	3	39	—	—		(3	3	33	—	—		(3	3	37	—	—
Day	(6	6	74	—	—	Day	(6	6	59	—	—	Day	(6	6	59	—	—
	(9	9	77	—	—		(9	9	54	—	—		(9	9	63	—	—
	(11	11	88	—	—		(11	11	52	—	—		(11	11	62	—	—
Night	24#	11	—	62.1	83.5	Night	24#	11	—	99.1	150.0	Night	24#	11	—	68.7	94.1
Jan. 12—	(27	14	41	—	—	Jan. 22 —	(27	14	44	—	—	Jan. 31—	(27	14	37	—	—
	(30	17	59	—	—		(30	17	89	—	—		(30	17	58	—	—
Day	(33	20	73	—	—	Day	(33	20	89	—	—	Day	(33	26	63	—	—
	(35	22	68	—	—		(35	22	74	—	—		(35	22	62	—	—
Night	48#	22	—	31.9	36.4	Night	48#	22	—	53.8	78.7	Night	40#	22	—	37.1	61.4
Jan. 13—	(51	25	36	—	—	Jan. 23—	(51	25	48	—	—	Feb. 1—	(51	25	49	—	—
	(54	28	68	—	—		(54	28	77	—	—		(54	28	57	—	—
Day	(57	31	77	—	—	Day	(57	31	79	—	—	Day	(57	31	57	—	—
	(59	33	88	—	—		(59	33	73	—	—		(59	33	62	—	—
Night	72#	33	—	14.3	13.4	Night	72#	33	—	21.9	48.6	Night	72#	33	—	30.0	46.8
Jan. 24—	(75	36	49	—	—	Jan. 14—	(75	36	36	—	—	Feb. 2—	(75	36	43	—	—
	(76	39	78	—	—		(78	39	54	—	—		(78	39	64	—	—
Day	(81	42	84	—	—	Day	(81	42	77	—	—	Day	(81	42	66	—	—
	(83	44	76	—	—		(83	44	79	—	—		(83	44	51	—	—
Night	96#	44	—	8.7	16.1	Night	96#	44	—	5.6	6.4	Night	96#	44	—	7.9	16.2

6:00 P.M.—7:00 A.M.: No firing was made.

TABLE 3. AVERAGE TEMPERATURE AND MOISTURE CONTENT OF RATTAN
 CANES FOR THE DURATION OF DRYING.

FIRST TRIAL					SECOND TRIAL					THIRD TRIAL							
Date and Actual hours in the kiln	Actual hours of firing	Temp. °C	MOISTURE CONTENT		Date and Actual hours in the kiln	Actual hours of firing	Temp. °C	MOISTURE CONTENT		Date and Actual hours in the kiln	Actual hours of firing	Temp. °C	MOISTURE CONTENT				
			Scraped	Unscraped				Scraped	Unscraped				Scraped	Unscraped			
Jan 11—	0	0	23	121.7	175.7	Jan. 21—	(0	0	26	146.4	170.5	Jan. 30—	(0	0	23	136.6	184.2
	(3	3	39	—	—		(3	3	33	—	—		(3	3	37	—	—
Day	(6	6	74	—	—	Day	(6	6	59	—	—	Day . . .	(6	6	59	—	—
	(9	9	77	—	—		(9	9	54	—	—		(9	9	63	—	—
	(11	11	88	—	—		(11	11	52	—	—		(11	11	62	—	—
Night	24#	11	—	62.1	83.5	Night . . .	24#	11	—	99.1	150.0	Night	24#	11	—	68.7	94.1
Jan. 12—	(27	14	41	—	—	Jan. 22 —	(27	14	44	—	—	Jan. 31—	(27	14	37	—	—
	(30	17	59	—	—		(30	17	89	—	—		(30	17	58	—	—
Day	(33	20	73	—	—	Day	(33	20	89	—	—	Day . . .	(33	26	63	—	—
	(35	22	68	—	—		(35	22	74	—	—		(35	22	62	—	—
Night	48#	22	—	31.9	36.4	Night	48#	22	—	53.8	78.7	Night	40#	22	—	37.1	61.4
Jan. 13—	(51	25	36	—	—	Jan. 23—	(51	25	48	—	—	Feb. 1—	(51	25	49	—	—
	(54	28	68	—	—		(54	28	77	—	—		(54	28	57	—	—
Day	(57	31	77	—	—	Day	(57	31	79	—	—	Day	(57	31	57	—	—
	(59	33	88	—	—		(59	33	73	—	—		(59	33	62	—	—
Night	72#	33	—	14.3	13.4	Night	72#	33	—	21.9	48.6	Night	72#	33	—	30.0	46.8
Jan. 24—	(75	36	49	—	—	Jan. 14—	(75	36	36	—	—	Feb. 2—	(75	36	43	—	—
	(76	39	78	—	—		(78	39	54	—	—		(78	39	64	—	—
Day	(81	42	84	—	—	Day	(81	42	77	—	—	Day	(81	42	66	—	—
	(83	44	76	—	—		(83	44	79	—	—		(83	44	51	—	—
Night	96#	44	—	8.7	16.1	Night	96#	44	—	5.6	6.4	Night	96#	44	—	7.9	16.2

6:00 P.M.—7:00 A.M.: No firing was made.

LUMBER GRADING

DONATO U. ANTONIO
Asst. Forester & Check-Scaler

Definition

"Lumber grading is the classification of lumber so as to place them on the same market in uniform size, shape and qualities irrespective of the character and size of the trees that produce them. Thus the grade of a given species can compete on the same basis on the same markets, irrespective of the varying conditions of manufacture in the same nature and kind of forest where their mills are located.

"The fundamental basis of grades is free from defects. The location, position, form, number and size of visible defects and blemishes determine the grade of every species."

Brief History of Lumber Grading in the Philippines

Grading rules governing the inspection and measurement of Philippine lumber have been promulgated on February 7, 1919. Three years later, on November 7, 1922, a revised grading rules was issued by the Bureau of Forestry. This revised grading rules have since been in use up to the present time.

The Bureau of Forestry trained many of its personnel and a number of representatives from various lumber companies and exporters the phases of grading lumber. Many others, in the course of their work with the already trained lumber graders in the government or in the different lumber companies, have learned and became experts in this work.

The lumbermen have ever since been urged by the government to have their lumber graded before placing them into the local market. Thus the public may be able to buy lumber according to classifications.

However, lumber grading has only been confined to lumber for export.

Grading Rules Used

Presently, there are two rules being used in the classification of lumber for export. They are (1) the Grading Rules governing the Inspection and Measurement of Philippine Lumber (commonly known as the Philippine Bureau of Forestry [BF] rules) and (2) the National Hardwood Lumber Association (NHLA) Rules for the Measurement and inspection of Hardwood Lumber, Cypress Veneer and Thin Lumber, for Philippine Mahogany, of the National Hardwood Lumber Association, Chicago, Illinois, U.S.A. The latter rules for grading have become so popular and are often used, while the former are seldom and sometimes never used in the classification of export lumber from the Philippines.

(1) Grading Rules governing the Inspection and Measurement of Philippine Lumber

Although there are other specifications under the grading rules for Philippine lumber, this article shall only discuss the grade so often specified for grading export lumber, which is *merchantable*. Copies of the Grading Rules to include the said "other specifications" may be obtained from the Director of Forestry, Manila.

"Merchantable corresponds to lumber sold in local markets for ordinary house construction, temporary construction, etc. and exported for other than cabinet purposes.

The specifications of this grade are as follows:

"1. Variations in sawing same as in 'clears'. Sound stained sap not considered a defect in this grade.

2. Up to 4" in thickness, this grade will admit all sound lumber that does not contain defects seriously impairing the strength of the piece for ordinary or temporary structural purposes.

3. Timber from 6" x 6" upward, this grade will admit boxed heart, provided heart cracks do not extend to more than one face; also sunchecks, pitch pockets, slight shakes, heart cracks, sound sap, knots or other defects not seriously affecting the strength of the piece.

4. Pieces containing more sap than heartwood shall be excluded from this grade. In determining this, the solid contents and not surface measure should be taken into consideration."

(2) The National Hardwood Lumber Association Rules for Philippine Mahogany

Among other grades, the NHLA standard grades popularly used in the classification of Philippine lumber for export specified by buyers are as follows:

- (a) First and Seconds
- (b) No. 1 Common
- (c) No. 2 Common
- (d) No. 3 Common

Deviations from some of the above-mentioned standard grades are sometimes specified by the buyers in order to admit pinworm holes that are found in the lumber. The following grades may be specified:

- (a) Firsts and Seconds Pin Wormy
- (b) No. 1 Common Wormy

A typical example of specifications by which the grade of lumber is determined with the NHLA rules is exemplified by the specifications of Firsts and Seconds, as follows:

"53. Widths: 6" and wider.

54. Lengths: 8' to 16' admitting 30% of 8' to 11' of which one-half may be 8' and 9'.

55. Pith, boxed or showing on the surface, shall not be admitted when exceeding

in the aggregate in inches in length, the surface measure of the piece in feet.

56. Wane (bark or the lack of wood) exceeding in the aggregate one-twelfth the surface measure of the piece shall not be admitted; nor shall either edge of the piece have wane in the aggregate exceeding one-half of the length of the piece.

57. Splits exceeding in the aggregate in inches in length twice the surface measure of the piece in feet shall not be admitted, nor when diverging more than one inch to the foot in length, except when one foot or shorter and covered by Paragraph 59. In any series of special widths sold 10" or wider, splits exceeding in the aggregate in inches in length, the surface measure of the piece in feet, shall not be admitted, nor when diverging more than one inch to the foot in length, except when one foot or shorter and covered by paragraph 59.

58. The average diameter of any knot, or hole, shall not exceed in inches one-third the surface measure of the piece in feet.

59. Within one lineal foot from the ends of the boards not less than 50% clear face is required, not over 25% unsound wood or wane shall be admitted. The required 50% clear face shall be computed in not more than two pieces of any shape.

60. Warp and cup shall not be admitted if sufficient to prevent the board from dressing two sides of standard thickness in accordance with the rules for lumber dressed two sides, except that slightly cupped or warped pieces 12" and wider are admitted if they can be ripped to produce two pieces each of which would grade Firsts and Seconds and then not contain warp and cup which would prevent the ripped pieces from dressing two sides to standard thickness in accordance with the rules for lumber dressed two sides. The exception as to pieces 12" and wider shall not apply to contracts for lumber, in special widths 10" and wider.

61. Minimum cutting: 4" wide by 5' long, or 33" wide by 7' long."

Additional specification for grading Philippine Mahogany lumber:

"In Firsts and Seconds, bright sapwood not exceeding in the aggregate one-third the width of the piece will be admitted on one face. Any part of the sapwood may be included in the cutting."

For the purpose of brevity, the specifications of the other NHLA grades mentioned in this article shall not be described. Reference therefor may be made with any of the editions of the NHLA Rules for the Measurement and inspection of Hardwood Lumber, etc. published by the National Hardwood Lumber Association of Chicago, Illinois, U.S.A. A copy of this publication may be secured or borrowed from any lumber grader serving in the government or lumber companies and exporters. Copies may also be obtained from some book stores. However, some changes in the general instructions, specifications and other section of the rules are made by the Association from time to time. Thus one edition of the NHLA rules may differ from another. Such changes should be properly noted and placed them up to date.

NHLA and BF Rules Compared

For the purpose of comparison with the Bureau of Forestry grades, it will be necessary to group the NHLA standard grades, as follows:

GROUP I

1. Firsts and Seconds
2. No. 1 Common
3. No. 2 Common.

GROUP II

1. Firsts and Seconds Pin Wormy
2. No. 1 Common Wormy
3. No. 2 Common
4. No. 3 Common

It will be noted that No. 2 Common appears in both groups I and II. Lumber with pinworm holes is not admitted under

this grade, except when pinworm holes are treated as equivalent of other defects and appear only outside the clear face cuttings. This grade is sometimes so specified by the buyers of Philippine lumber, hence, it is placed in group I where the grades do not admit pin wormy lumber. Sometimes, however, grades lower than the NHLA No. 1 Common is not specified but instead the Bureau of Forestry grade, merchantable, is used. Such specification often places a NHLA No. 2 Common under the said BF grade. Thus No. 2 Common is likewise placed under group II.

Merchanable (BF) grade may not always be lower than the No. 1 Common (NHLA) grade but it admits most, if not all, of the defects not admitted in No. 1 Common and some lower grades. Likewise, the NHLA grades in group II admit limited defects mentioned in the specifications for the BF merchantable grade. Thus group II (NHLA grades) and merchantable (BF grade) have similarities. In most cases, perhaps for convenience between the buyer and the seller, the grades mentioned under group II are no longer specified. Instead, the merchantable grade is used. Hence most, if not all, of the lumber that may be classified as FAS Pin Wormy, No. 1 Common Wormy, No. 2 Common and No. 3 Common, if the NHLA rules were used, will only be classified as merchantable.

The NHLA Rules may be Adopted

In general, the NHLA standard grades are determined by the number, kind, size, form and location of defects, and by the number, size, and percentage of clear face (no defects) cutting or cuttings with respect to the surface measure (area in square feet of one face) of the lumber. These grade may have been evolved scientifically according to the strength and other properties of the lumber in each grade.

The fact that the NHLA rules are particularly accepted for grading lumber for the

purpose of having uniform grades with those in the export market, it is also adoptable for the grading of lumber for local use.

Schemes of Lumber Prices

Price differences of lumber in the local market, particularly for rough lumber, exist only according to the Bureau of Forestry grouping of timber under which the species fall. Prices are often based according to the strength and durability of each species, and not by the grades of the lumber produced from it. Under this price scheme, one buys lumber, whether it is the soundest or whether it contains the worst defects, at the same cost.

Should there be grading of lumber before they are placed in the local market, there should also be different prices for the different grades. Under this scheme, the lumber dealers may also give different price rates for graded lumber of different species. One can then buy graded lumber at rated prices and properly use each lumber to advantage. In the export market, the price of lumber is based according to classification.

Use of Graded Lumber for Ordinary Construction

The right use of graded lumber described in an article of the Popular Mechanics magazine, issue of October, 1954, entitled "The Right Grade of Lumber Saves Money", using FHA specifications, may be used as a guide for ordinary construction purposes.

Although the "FHA specifications" mentioned in the article was not defined, it may as well be compared with the NHLA standard grades so popularly used in classifying Philippine lumber for export.

The following are house construction parts and their corresponding grades as gathered from the said article in the PM magazine, which may be used or modified to suit the desire of the home builder:

<i>Construction parts</i>	<i>Grade</i>
1. Joists (long span)	No. 1 & No. 2
2. Rafters (long span)	No. 1 & No. 2
3. Floor	No. 2 & better
4. Sidings	No. 2 & better
5. Studs (1st floor)	No. 2
6. Plate or mud sills	No. 2
7. Box sill	No. 2
8. Joists (short span)	No. 3
9. Rafters (short span)	No. 3
10. Studs (2nd floor)	No. 3
11. Sub-floors	No. 3
12. Walls	No. 3
13. Roof sheath	No. 3
14. Posts	No. 3
15. Girders	No. 3
16. Bridging	No. 3
17. Firestops	No. 3

Posts, beams, girders, rafters, chords, purlins, flooring, sidings, doors, stairs, etc. are not graded before they are used in most building construction in the Philippines because of the presence of a variety of durable species for such special purposes, like: yakal, quijo, apitong, bakauan, narra, amugis, etc. Perhaps this is one reason why the local lumber users are not very particular about the use of any graded lumber for building constructions.

However, where different species for different use is not available, it would be wise to secure lumber even of the same species provided such have been properly classified. By the proper use of graded lumber, a building may not last as long as one built with the best ungraded lumber just used anywhere, but it will at least last until the strength of all the piece used give way evenly at a certain expected lifespan. In using graded or classified lumber, the builder will also spend much less.

"Your home's soundness is highly important, but if you demand the best lumber throughout, you do not necessarily get a better house—it just costs you more.", to quote from the PM magazine. It added

(Continued on page 34)

Revised Grading Rules for Philippine Logs

The following revised rules governing the grading and inspection of Philippine export logs by authorized lumber inspectors of the Bureau of Forestry as required under Executive Order No. 221, dated June 8, 1949, are hereby promulgated for the information and guidance of all concerned:

PEELER GRADES

Peeler No. 1.—

1. Diameter 30 inches or larger; length 8 feet or longer.
2. Logs shall be fresh cut, cylindrical, straight-grained with well-centered heart and properly bucked ends.
3. Shall be free from pinholes, discolored sapwood, splits, heart or center rot and other defects, except brash center and heart checks combined within 16-inch diameter heart circle of the log.

Peeler No. 2.—

2. Diameter 24 inches or larger; length 8 feet or longer.
2. Logs shall be fresh cut, cylindrical, straight-grained with well-centered heart and properly bucked ends.
3. Shall be free from pinholes, discolored sapwood, splits, heart shake, heart or center rot and other defects, except brass center and heart checks confined within 16-inch diameter heart circle of the log.
4. Will admit not more than two sound knots not exceeding in the aggregate three-fourth inch in diameter.

Peeler No. 3.—

1. Diameter 18 inches or larger; length 8 feet or longer.

2. Logs shall be fresh cut, fairly cylindrical, reasonably straight-grained with heart fairly well-centered and both ends properly bucked.
3. Shall be free from marine borer holes, shot or large worm holes, split more than 6 inches long, heart shake and heart or center rot more than 4 inches in diameter.
4. This grade will admit a few pinholes not more than two sound knots not exceeding in the aggregate 3/3 inch diameter and other defects not specified above under this grade but the log must scale at least 90% sound.

VENEER GRADES

Veneer No. 1.—

1. Diameter 30 inches or larger; length 8 feet or longer.
2. Logs shall be fresh cut, straight and cylindrical with well-bucked ends. Heart may not be well-centered, provided not in excess of 6 inches off-center.
3. Shall be free from pinholes, splits, heart shake, rot and other defects, except as specified below:
 - (1) Heart Checks and Brash Center will be admitted under this grade, provided that only one heart check or rift crack extend within 3 inches of the sapwood.
 - (2) Slightly stained or discolored sapwood will be accepted.

Veneer No. 2.—

1. Diameter 24 inches or larger; length 8 feet or longer.

2. Logs shall be fresh cut, straight and cylindrical with well-bucked ends. Heart may not be well-centered, provided not in excess of 6 inches off-center for logs 30 inches and over in diameter and not more than 4 inches off-center for logs below 30 inches in diameter.
3. The following defects will be admitted under this grade:
 - (1) Brash center and heart checks confined within 16-inch diameter heart circle of the log.
 - (2) Two radial or rift cracks extending within 3 inches of the sapwood, provided those cracks are not found in the same quarter-section of the log.
 - (3) Not more than two sound knots not exceeding in the aggregate $3/4$ inch in diameter and discolored but sound sapwood.

Veneer No. 3.—

1. Diameter 18 inches or larger; length 8 feet or longer.
2. Logs shall be fresh cut, fairly cylindrical and reasonably straight; heart may be off-center.
3. Shall be free from marine borer holes, shot or large worm holes; split, length in inches exceeding the length of the log in feet, and heart shake.
4. A few pinholes, not more than three sound knots not exceeding one inch in diameter in the aggregate, discolored but sound sapwood, heart or center rots and other defects not specified above under this grade will be admitted but the log must scale at least 85% sound.

SAW LOG

Any log not coming up to the grade of at least Veneer No. 3 shall fall under this

grade, provided it scales, at least, 75% sound.

NOTE: "Fresh cut" logs as used in these rules shall mean logs with sound sapwood, free of teredo holes, shot or large worm holes, marine shell and fruiting bodies of fungi.

GENERAL INSTRUCTION

Volume Measurement.—Logs shall be debarked and shall be measured under the Bureau of Forestry Rule unless otherwise specified by mutual agreement between buyer and seller.

Trimming Allowance.—A trimming allowance of at least 6 inches for every log shall be made, which will not be included in the volume measurement.

Deduction for Defects.—No allowance for defects shall be made for the Peeler or Veneer Grades Nos. 1 and 2, unless specified by the buyer. For the lower grades, however, deduction for defects will in every case be made, according to Bureau of Forestry method of scaling.

Special Specification.—Lumber Inspectors shall apply special specifications or requirements not covered by or not in accordance with these rules only when such specifications are agreed to by the buyer and seller and approved by the Director of Forestry. It is presumed of course that the inspector is duly furnished with a copy of the special specifications by the party requesting for inspection.

LUMBER GRADING . . .

(Continued from page 32)

further, "By utilizing inexpensive grades wherever suitable, you can save up to \$1000 on the cost of a three-bedroom home."

The importance of grading lumber before they are used can not be overemphasized. When we build our home, let us use the right grade of lumber in its proper place for in so doing we are building a more lasting but a less costly home.

Timber Concession

Manual of Procedure*

CHAPTER 21

TIMBER CONCESSION

SEC. 186. LICENSE AGREEMENT.—A timber agreement or “concession,” as commonly referred to, is a long term license granted by the Director of Forestry with the approval of the Department Head which provides for the exclusive privilege of cutting, collecting, and removing timber from a designated area of the public forests for a period not to exceed twenty years.

SEC. 187. REPORT ON APPLICATION FOR TIMBER LICENSE AGREEMENT.—Upon receipt of an application for a timber license agreement, the Director may, if necessary, cause the investigation of the area applied for and a comprehensive report shall be submitted which includes, among others, the following points:

- (a) Name and character of applicant
 - (1) Nationality.
 - (2) Brief history.
- (b) Capital and resources.
 - (1) Sawmill machinery, logging equipment, etc.
 - (2) Contemplated investment and plan of work for the development of the concession if granted.
 - (3) Other kind of machinery, if any.
- (c) Area.
 - 1. Permanent timberland.
 - a. Exploitable forest.
 - b. Unexploitable forest.
 - 2. Temporary timberland.
 - a. Exploitable forest.
 - b. Unexploitable forest.

- (d) Topography.
- (e) Stand.
 - 1. Per hectare.
 - 2. For the whole area (by blocks).
 - 3. Per cent by species (by blocks).
- (f) Estimated number of years to exploit.
- (g) Necessity of exploiting the forest.
 - 1. Demand for agricultural lands.
 - 2. Amount of mature and over-mature timber in stand.
- (h) Estimated income of the Government from forest charges.
- (i) Logging possibilities.
 - 1. Logging methods or method of exploitation adaptable for each block or chance.
- (j) Silvicultural methods to be adopted.
 - 1. Cutting rules.
 - 2. Plan of reforesting vacant or logged over areas.
- (k) Reasons for granting the area under a long term license agreement.

SEC. 188. ADMINISTRATION OF CONCESSIONS.—In the administration of a timber concession, the officer in charge thereof shall carefully read each and every provision of the license agreement and see to it that the same is properly carried out and observed. He shall also be guided by the following general instructions which shall be supplemented from time to time as circumstances warrant.

- (a) *All timber must be scaled.*—All tim-

* Reprinted from the *Manual of Procedure*, Bureau of Forestry.

ber cut by the licensee shall be scaled strictly in accordance with the scaling instructions laid down in this Manual for the collection of the forest charges due the Government.

(b) *Place for scaling.*—Whenever practicable, scaling should be done in the woods following felling and bucking crews to prevent loss of logs by deterioration, fire, transportation, abandonment, etc. If the scaling place is not satisfactory, the Director, thru channels, should be immediately advised, giving reasons and recommendations therefor. It is ordinarily provided in license agreements that scaling in the concessions where regular scalers are stationed shall be conducted in such places as shall be designated by the Bureau of Forestry. The aim of this Bureau is to have all scaling work done in the woods provided actual conditions so warrant. However, when methods of logging, shortage of personnel, or any other condition do not justify scaling in the woods, the work may be performed at the most advantageous place from the standpoint of efficiency and facility in the careful examination of defects of individual logs.

(c) *Submission of reports.*—All scaling and concession reports must be submitted as provided in Part I, Chapter II and section 212 of this Manual.

(d) *Plan of work in advance.*—The officer in charge shall see to it that the scalers are informed in advance of the proposed location of the new set-ups and also of the place where a yarding line in a set-up is to be transferred. This will avoid scaling in the "loop" and will prevent the scaler concerned to be "caught up" in the logs that should be scaled before yarding.

(e) *Keeping records of payment.*—Payments made by the licenses of monthly scale reports and invoices shall be recorded. Any monthly scale or invoice not reported as paid after sixty (60) days from the end of the month covered by that particular scale should be reported immediately to the Director, thru channels.

(f) *Security and accuracy of records.*—The scaler must guard his records well against loss or theft. It is his duty to see that both the licensee and the Government receive full justice always. Unless he is careful, he is apt to do either one an injustice; so it is essential that he exercises great care in his decision. In case it is impossible to decide one way or the other with certainty, give the licensee the benefit of the doubt and request instructions from the Central Office for future guidance. This refers both to field and office work. Great care should be exercised both in field and office work in obtaining the figures, in setting them down in computing, and in drawing up the totals.

(g) *Boundaries for concession.*—The officer in charge, scalers, concession guards and all other forest officers who are engaged in the administration of the concession shall be fully acquainted with the corners and the boundaries of the area under the license agreement or concession. Concession guards should be shown the exact location of the boundaries and corners of the concession, the extent of the communal forests, reservations or private claims within or adjoining concessions.

(h) *Operations within concession.*—The officer in charge shall see to it that the operations of the concessionaire shall not go beyond the boundaries of the concession. When the operations approach any boundary of the concession, such boundary should be clearly established on the ground, if found advisable. The licensee should be requested to furnish the necessary laborers for the establishment of the boundary. The officer in charge shall be particularly careful that the boundaries of any adjoining communal forests are not encroached upon by the licensee.

(i) *Knowledge of logging plans.*—The officer in charge should be fully acquainted with the logging plans and methods of the operator. He should render a report from time to time thru channels to the Director

of such plans and methods and submit his comment and recommendations as to their suitability in the proper management of the forest.

(j) *List of authorized agents, loggers, etc.*—A list of the names of all the authorized agents, loggers or contractors of the licensee or operator should be secured.

(k) *Enforcement of diameter limit.*—The diameter limit set by the Director shall be enforced and all undersized trees that are cut contrary to existing regulations should be invoiced with 300 per cent surcharge and with no deduction for natural defects. Any violation of the diameter limit rule should be reported thru channels to the Director with a statement as to whether it has been done deliberately or whether the undersized trees cut were those that were unavoidably uprooted or seriously injured in the process of felling and yarding or those cut within the rights-of-way. On areas classified as alienable and disposable, the trees may be cut irrespective of size. In timberlands, however, the diameter limit should be enforced, except on the rights-of-way, including the cableways used in yarding or skidding logs. For the purpose of scaling, a railroad right-of-way is a strip 20 meters wide—measured 10 meters on each side from the middle of the track. Right-of-way for cableways, however, should cover only the actual track followed by the logs when being yarded or skidded.

(l) *Prevention of unnecessary damage.*—Unnecessary damage to young growth, trees marked for seed purposes and prohibited species, shall be prevented. Violations committed by the operator in this case should be reported thru channels to the Director giving practical recommendations to remedy them.

(m) *Patches of uncut timber.*—Patches of commercial timber that may be left uncut by the operator before operations are transferred to other cutting areas should be reported thru channels to the Director with

full comments and recommendations on the matter.

(n) *Survey and classification of timberland.*—A survey and classification should be made as soon as possible of such areas within the timberland or unclassified public forest that may be designated for clear cutting because of their being potentially agricultural in character. The area may be divided into blocks and each block shall be reported on B.F. Form No. 1-T. In preparing this report, the instructions on "Land Classification" should be followed. District foresters should see to it that the areas under their jurisdiction which are under license agreements or under licenses with sawmills are classified as soon as practicable.

(o) *Logging and milling reports.*—As soon as the milling and logging operations have begun, complete sawmill and logging report should be submitted in accordance with the outline on the "Report on Logging and Milling Operations," Appendix VII.

(p) *Forest fire.*—Forest fires should be kept out of the concession. Any fire which may occur within the concession should be immediately reported thru channels to the Director giving complete details thereof and a recommendation as to the action to be taken on the matter. (Refer to Part IV, Chapter 36 for outline of fire report.)

(q) *Cooperation with operators.*—With the view of forestalling any violation of any of the provisions of the license agreement, thru ignorance or otherwise, on the part of the operator's men, the attention of the operator should be called to such provisions whenever circumstances demand. The officer in charge of the concession should endeavor to cooperate with and be of service to the operator in so far as the rules and regulations of the Bureau will permit.

(r) *Inspection of abandoned logs.*—In the inspection of abandoned logs, forest officers should always secure an authorized representative of the operator in order to avoid possible complaint based on such pretext as lack of knowledge of the where-

abouts of the abandoned timber. This representative should have a written authorization from the manager or superintendent, copy of which should also be furnished the inspecting officer. After the inspection the agent should be required to sign a certified statement preferably in local dialect of the number of logs scaled and marked with B.F. marking hatchet in his presence.

(s) *Application of public lands within concession.*—In taking final action on public land applications in unclassified logged-over areas inside a concession, forest officers should confer with the operator whenever necessary, with the view to ascertaining whether such areas have already been definitely abandoned or not, or whether such areas are or will be needed by them for camp site, timber depot, etc., and act accordingly.

(t) *Reporting of violators.*—In addition to violations of the provisions of the agreement, any violation by the operator of the provisions of the Forest Laws, Forest Regulations, Internal Revenue Regulations, and all other rules and instructions should be reported to the Director thru channels.

(u) *Instruction of forest guard.*—Concession guards should be given proper instruction by the officer in charge concerning the investigation or seizure of illegally-cut timber as well as the preparation of the necessary invoices in connection therewith. Officer in charge of scaling stations should refrain from employing concession guards in the work that has no relation to or bearing in the patrol of the concession.

(v) *Checking the work of concession guards.*—Officers in charge, either personally or through subordinate rangers, should go over the patrol beat of concession guards and check their work. Illegal timber cutting and *kaingin* making in the concession are two big activities which concession guards should look after. It is much better to prevent the occurrence of these activities than to detect them and mete punishment to the wrongdoers after the destruction has been done.

SEC. 189. SCALING PROCEDURE.—The basis of the present systems of scaling used by the Bureau is the provision of section 263 of the National Internal Revenue Code, as amended by section 1, of Republic Act No. 151, which read as follows:

“SEC. 263. Mode of measuring timber.—Except as hereinbelow provided, all timber shall be measured and manifested in the round or squared, before being sawn or manufactured. The volume of all round timber shall be ascertained by multiplying the area of the small end by the length of the log, the diameter of the log to be measured exclusive of the bark; but if the end of a log is irregular the average diameter shall be used; and in order to ascertain the volume of a log more than eight meters long, the diameter of the middle of said log, or the average of the diameters at both ends thereof, shall be used as basis. If a log in the round, cut under license, is measured and manifested by forest officers, the Director of Forestry shall make due allowance for rot, cavities, or other natural defects; but from any decision of the Director of Forestry in this respect, an appeal shall lie to his Department Head, whose decision shall be final. The manifest of timber cut by licensees operating sawmills in or near the forest shall be attested by forest officers whenever practicable.

“The volume of squared timber shall be ascertained by multiplying the average of the cross section measured by the length, to which forty per centum shall be added for loss in squaring: *Provided, however,* That if squared timber cut under license is measured and manifested by forest officers, the Director of Forestry shall make due allowance for rot, cavities or other natural defects; but from any decision of the Director of Forestry in this respect, an appeal shall lie to his Department

Head, whose decision shall be final. The privilege of manifesting timber after squaring shall, however, be granted only to licensees who have squared their logs in the forests with the ax and intend to take it to the market in this form.

"If sawn or otherwise manufactured timber is found which has not been manifested in accordance with the provisions hereof, the corresponding forest charges shall be assessed on twice the volume of the actual contents of such sawn or manufactured timber."

SEC. 190. DETERMINING FACTORS OF THE NET SCALE IN THE LOG.—In determining the net scale of a log the principle involved is that all natural defects, including cavities, are to be excluded. The use to which a log is to be put or the estimated amount of any particular grade of lumber it can yield should not in any way influence the net scale of that log. Whether, therefore, a log is to be sawn or not, or to be employed in its natural state, allowance should be made for natural defects if they exist. In other words, deductions will be made for natural defects even if they are found in pilings, construction timber, ties and the like.

SEC. 191. MERCHANTABLE LOG.—A sound basis for culling a log or excluding it from the scale is its merchantability. A merchantable log has been defined as one that contains sufficient lumber to make it profitable to take it to a mill and have it sawed. In other words, even if a log is quite defective or is small, it is merchantable provided it brings enough value to pay the costs of logging or those of both logging and milling if it is sawn into lumber. There is undoubtedly a wide variation in the limits of merchantability, at least for different species, but subject to revision when adequate data on costs are available, the following shall be considered as merchantable timber and shall be scaled:

(1) Any log utilized or removed from the forest, regardless of diameter or length.

(2) Abandoned logs which are not less than 3 meters long and 30 centimeters in diameter at the small end. Provided that if a log comes up within this minimum diameter of 30 centimeters but is shorter than 3 meters because of improper bucking, the same should be scaled regardless of length.

(3) Abandoned top, regardless of length, having a diameter at the small end of at least 30 centimeters.

It may be noted that no mention is made as to how long an abandoned top should be in order to consider such top as merchantable timber. The reason for making no such mention is that proper utilization of timber will not permit the leaving of sound tops and if it is done it is due mainly to careless bucking. If, however, the leaving of a top is done with the object of avoiding a pronounced crook on the log next to it, and if the top left is less than 6 feet or 1.83 meters long, then such top should not be scaled. Tops that could have been properly included in the top log should be scaled.

(4) All abandoned timber having a diameter of less than 30 centimeters at the small end, provided such timber is intended for use that requires a diameter of less than 30 centimeters at the small end, such as railroad ties, telephone poles, etc.

(5) All stumps cut above the proper height. In the case of trees without buttresses, the height of stumps should not exceed the (stump) diameter. In the case of trees with buttresses the forest officer should use his own judgment as to what should be the proper height, but under no circumstances will it be higher than the top of the main buttress.

(6) The timber, under paragraphs 1 to 5, above, must at least contain 33-1/3 per cent of its gross volume sound if it is first group and at least 50 per cent sound if it belongs to any of the lower groups; otherwise, they shall not be scaled.

SEC. 192. VOLUME CONSIDERED IN SCALING.—The volume considered in Scaling will be the cylinder represented by the small diameter, inside bark, for logs, eight meters or less in length or by the middle diameter, inside bark in the case of logs more than eight meters long. No deduction will be made for defects occurring outside of the cylinders; nor will any allowance be made for trimming.

SEC. 193. SCALING SUPERVISION.—(a) *Frequent check of scalers.*—Officers in charge of stations and check-scalers should check up the work of their scalers as frequently as practicable. In this check, careful attention should be given to the individual scaler's accuracy in measuring the necessary dimensions of the logs as well as to his judgment for defects. This work should be done in the presence of the scaler whose work is being checked so that any irregularity discovered may be straightened out right on the ground.

(b) *Judging a scaler.*—Not infrequently officers in charge and check-scalers either on their own initiative or by instruction from superior officers, make reports on the fitness or standing of scalers. The officer making such report should bear in mind the fact that the efficiency and desirability of a scaler is in large measure dependent upon his (1) good judgment for defects; (2) accuracy in measuring logs; (3) tactfulness in dealing with the lumber companies' men; (4) systematic and intelligent planning of his own work; (5) alertness to notice conditions occurring in logging operation or in the mill which might directly or indirectly affect his work and (6) interest in the work.

(c) *Program of scalers.*—When the place of scaling is in the woods, the officer in charge should arrange the program of work for his scalers in such a way as to reduce to the minimum the time of travel from the forest station to the cutting areas and return.

SEC. 194. SCALING DISCUSSION WITH OUTSIDERS.—Scalers are not allowed to dis-

cuss scaling with any of the men of the lumber operators or anyone not connected with the Bureau of Forestry. All questions concerning scaling that may be asked of them should be referred to their officer in charge. Scalers, including officers in charge should avoid discussing on the ground with private persons, questions of deduction and identification of individual logs that are being or have been scaled, or anything in scaling that would only result into an endless arguments. Methods of scaling by this Bureau may be explained but without any actual reference to any individual log. Scale books or records shall not be shown to any person outside the Bureau, nor shall the deduction on an individual log be given, except when expressly authorized by the Director in each case.

SEC. 195. CLASSIFICATION OF LOG DEFECTS.—(a) *Interior defects.*—(1) center rot (C.R.)—This will include all defects except butt rot in the center of the log whether in the form of rot or hole, regular or irregular.

(2) Heart Shake (H.S.)—Is a crack appearing at the end of a log in the form of a complete or partial circle. Fig. 1—Plate I.

(3) Heart checks (H. Ch.)—Are more or less radial cracks emanating from the central core of the log. Fig. 2—Plate I.

(4) Brash center (B.C.)—Is a defect occurring also in the center of the log. This has a circular form and is distinguishable at the ends of a log of some species because it has a distinctly coarser surface than the merchantable portion.

(5) Butt rot (B.R.)—As its name implies is a defect found in butt logs and for the purpose of this Manual will be described as such only if the rot does not extend through the entire length of the log or in case the defect is center rot but allowed for as butt rot; otherwise it will be known merely as center rot. Fig. 6—Plate I.

(b) *Side defects.*—(1) Cat face (C.F.) This is characterized by an exposed surface of the woody portion of the log due to the

PLATE I SHOWING LOG DEFECTS AND METHODS
OF MEASURING LOG LENGTHS



Fig. 1



Fig. 9

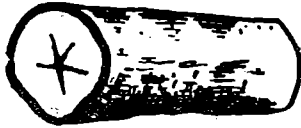


Fig. 2

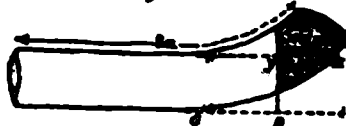


Fig. 10

measure the curve here



Fig. 3

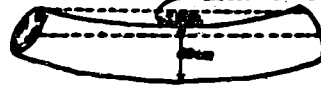


Fig. 11

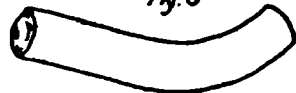


Fig. 4



Fig. 12



Fig. 5

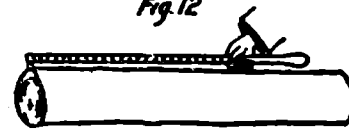


Fig. 13

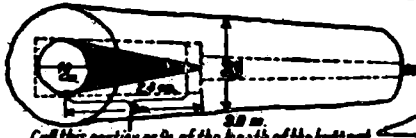


Fig. 6

Call this portion $\frac{1}{2}$ of the length of the butt end.

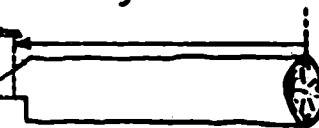


Fig. 14

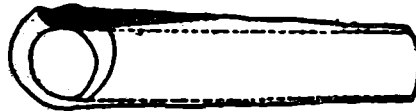


Fig. 7

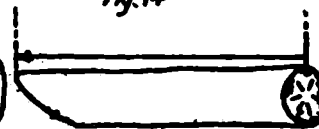


Fig. 15



Fig. 8

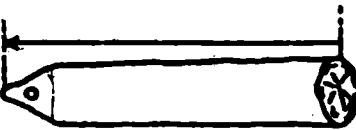


Fig. 16

PLATE II SHOWING LOG DEFECTS AND METHODS OF MEASURING
SQUARED LOGS AND MANUFACTURED TIMBER



Fig. 1:
Deduction = H.ch. $\frac{1}{4}$ or $\frac{1}{3}$ or 11%

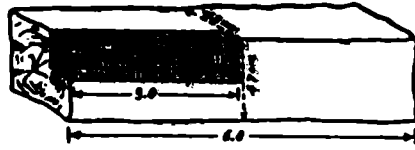


Fig. 2 Sq. log .43 x .47 x 6 = 1.21 Cu.M.
R.R. .15 x .25 x 3 = .11 Cu.M.; $\frac{1}{4}$ or 9%



Fig. 3
Sweep log; Gull portions (x)
Sm. $\frac{1}{4}$ or 17%



Fig. 4
Split log; Measure dimensions
at dotted lines.

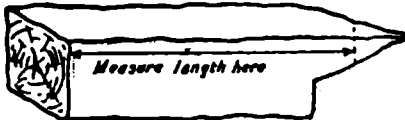


Fig. 5. Butt log, long undercut; measure
midway between saw-cut line and extreme point.

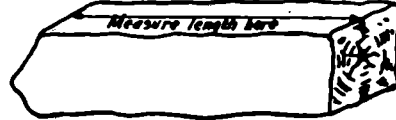


Fig. 6
Butt log, short undercut.
Measure length as indicated.

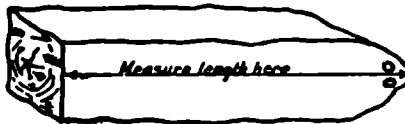


Fig. 7
Necked and Sniped log.



Fig. 8
Irregular log. Take average thickness
at both ends as indicated



Fig. 9
Octagonal log. Measured as round.

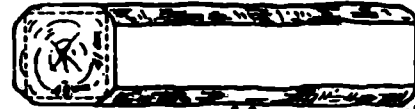


Fig. 10
Octagonal log. Measured as square
at dotted lines.

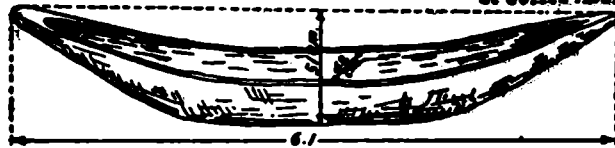


Fig. 11
Diam. 51 cm., length 6.1 m. Vol. = $(51)^2 \times (.7854) \times 6.1 = 1.25$ Cu.M.
Plus 100% for manufacturing; total volume = 2.50 Cu.M.

destruction of the bark and wood by fire or some mechanical agent. Figs 7, 8, and 9—Plate I.

(2) Sun or season checks (S.Ch)—Are cracks due to effects of drying. These extend from the surface towards the center of the log.

(3) Rotten knot (R.K.)—Is a decayed knot. A rot entering through a knot may extend towards the center of the log and works its way upward and downward then causing center rot to appear on both ends of a log.

(4) Wormy (W.)—This refers only to attacks on the log made by grubhole borers and other large borers. It does not include pinholes.

(5) Unsound Sap (Un. S.)—Applies to rot or decay on the sapwood.

(6) Split (Sp.)—It may be split on the side of a log or may run through the heartwood.

(c) *Crooks*.—Crook (Cr.), Sweep (Sw.), or Double Crook (Db. Cr.)—As used in this case, a crook is an abrupt bend confined only to a certain portion of the log, while sweep is a gradual curve extending over the entire length of the log. Double crook is simply a double curve in the log. Figs. 3, 4, and 5—Plate I.

SEC. 196. METHOD OF DEDUCTION FOR DEFECTS.—(a) *Needs of proper manufacturing to eliminate defects*.—It may be stated from the outset that there is a wasteful as well as an efficient way of cutting out defects of various kinds. The intelligent and experienced sawyer cuts out the defects of the log that he saws in such a way as to get the maximum yield of merchantable lumber. Any sound and equitable basis for making deductions in scaling work, however, can not entirely disregard the limitations of the lumber manufacturing machineries with which the modern mills in the Islands are at present equipped. In determining the amount to be deducted for a particular defect, a scaler should not

blindly make conclusion from the tally that he actually got but should also take into consideration as to whether or not the defect was cut properly. It must be remembered that the scaler's deduction for defects does not include wastes in manufacture. The various methods of deduction for defects are discussed below:

(b) *Interior defects*—Center Rot; Heart Shake; Brash Center.—This class of defects shall be deducted by inclosing the defect in an average square of a size sufficient to exclude all of it out from the sound or merchantable portion of the log. These defects do not run through to the other end of the log in a uniform way and the manner by which the rot affects the adjoining sound wood varies. Therefore, the side of the square to circumscribe the circular defect should not merely correspond to the actual diameter of the circular defect but an allowance should be given to cover the above irregularities. What this allowance should be, varies with different species and even for the same species in different regions. The scaler's best guide in this matter is his knowledge of the characteristics of these defects in his region. To determine the dimensions of the proper square that will inclose the center defect requires experience and skill. But after these have been acquired, the work becomes a mere mechanical operation; the per cent to be deducted which is found by dividing the volume of the defective portion by the gross volume of the log could then be simply looked up in the table of deduction for center or circular defects for both round and square logs, copies of which are supplied each scaling station. But the per cent of deduction corresponding to the common ratios given below, should be in the minds of every scaler as they serve as a general check in individual deductions of logs and also are valuable in giving offhand information to lumbermen and others deserving to know the method of scaling of this Bureau.

DEDUCTIONS FOR CENTER OR CIRCULAR ROT

of diameter of log Circular rot in terms	Per cent to be deducted	
	For round logs	For squared logs
2/3	57	44
5/8	50	39
3/5	46	36
1/2	32	25
2/5	20	16
3/8	18	14
1/3	14	11
3/10	11	9
1/4	8	6
1/5	5	4
1/6	4	3
1/7	3	2
1/8	2	2
1/9	2	1
1/10	1	1

(1) *Hints, in making allowances for center rot, heart shake, and brash center.*—Some practical observations may be mentioned with regard to making allowances for these kinds of center defects as follows:

a. It has been observed that in some species the boards cut from the portion immediately adjoining the center rot are absolutely sound, and, in such case, it is often possible to reduce the size of the square inclosing the center rot as it is seen at the end of the log so as to be nearly the same as the diameter of the defect.

b. If the rotten wood in the log is not separated from the sound wood by a distinct line, care must be taken in determining the square that will inclose it so that the full defective portion is taken out from the scale of the log.

c. If the rot is irregular, the allowance to be given is generally relatively much bigger than its actual size as it appears at the end of the log.

d. Brash center may only slightly affect the surrounding wood. Lumber cut from such portion of the log would ordinarily come up to the grade of merchantable.

Therefore, in inclosing this defect in a square, the slightly affected part around the edges may be excluded.

e. In judging center rots that do not go through the whole length of the log, the scaler, will of course have to estimate the portion of the length affected. The end of a rot inside a log is often indicated by a swelling and scalers should look for this, or similar signs, in scaling defective logs so that they may have as definite a basis as possible for their estimate. In this connection, the fact must not be overlooked that the central core of most of the Philippine timber from end to end is brashy, contains heart checks, or is otherwise unmerchantable. In other words, although only one end of the log is defective because of the presence of center rot, it does not necessarily mean that the other end of the central core is sound. With few exceptions, it is invariably affected by other defects as stated above.

(2) *Heart checks.*—This defect extends through the entire length of the log although it usually appears at the end of a log only as short radial cracks around the pith. This defect appears on a board as longitudinal short cracks or seams, sometimes filled with resin, and the whole face of the board is affected. This characteristic may be clearly seen in Apitong. Under such condition, the defect may properly be inclosed in a square similar to the case of other center defect. The square, however, should include only such portion of the log as is seriously affected by the cracks. A check or crack as seen at the end of a log usually extends almost from the center to the surface of the log. Only a portion of it, however, will have any effect on the merchantability of the boards cut through it. Heart checks should not be confused with sun checks appearing at the end of the logs when such are exposed to rapid drying.

(3) *Butt rot.*—This kind of defect usually tapers off abruptly. It should be deducted by inclosing the rot in a square,

which should include its actual size as it appears at the butt end of the log and the necessary allowance for irregularities, as shown in Fig. 6, Plate I. The method of determining the per cent to be deducted is the same as that for center rot, except that only four-fifths of the full estimated length of the butt rot should be culled. Other defects in the log, if any, should of course be allowed for in addition to the above. Example: a 9-meter log with a diameter of 80 centimeters, containing a butt rot and 20-centimeter brash center at the other end. Suppose the butt rot in this log could be properly inclosed in a square, the side of which is 40 centimeters and its estimated full length is 3 meters. From the table of deduction for center or circular defects, the per cent to be deducted when the rot is one-half of the diameter (40/80) is 32 per cent. Inasmuch as only four-fifths of 3 meters or 2.4 meters is to be culled, the deduction for the butt rot alone is $2.4/9$ of 32 per cent or 8.5 per cent. The length of the brash center that is not affected by the butt rot is 9 minus 3 or 6 meters. Looking up again at the table of deduction for center defects, it will be seen that if the defect is one-fourth of the diameter of the log (20/80) the deduction is 8 per cent. But since the length of the brash center is only 6 meters or two-thirds of the long, the per cent to be deducted for this defect is two-thirds of 8 per cent or 5.3 per cent. The total per cent, therefore, to be deducted from this log is $8.5 + 5.3 = 13.8$ per cent or 14 per cent. Center rot which does not extend through the entire length of the log and which has much bigger diameter than the center defect appearing on the opposite end of the log will be allowed for in the same manner as butt rot.

(c) *Side defect.*—(1) *Cat face.*—With the percentage method of deducting defects, ability to visualize quickly the log into sections and throw its defective portion into one of these sections is particularly important in actual estimation for cat face

and similar side defects. It is assumed that the scaler has thorough knowledge of how defects in his own particular region "open up." If the rot due to cat face is outside the cylindrical volume based on the scaling diameter of the log, no deduction will be made. If, however, the inner circle is affected, the defect may be deducted either as part of a ring or as a sector, depending upon whether the rot is shallow or extends deeply into the heart (Figs. 7, 8, 9, Plate I). It is obvious that the scaler's first step to take in judging the above defect is to determine its extent, width, depth, and length. Then the volume of the section, expressed as a per cent of the total volume of the log, into which the defect is thrown, is computed. Thus in Fig. 8 in order to find (a), the volume of the ring must be known. Example: Suppose the diameter of the big circle in Fig. 8 is 50 centimeters and that of the small circle is 40 centimeters. Then the volume represented by the small circle is $(4/5)^2$ or 64 per cent of that of the big circle. Therefore, the volume of the ring is 100 per cent minus 64 per cent or 36 per cent. And (a), being about one-fourth of the ring, is therefore 9 per cent of the total volume of the log. In Fig. 9, the per cent of deduction for the sector inclosing the defect is found by dividing the circle into as many equal sections as it could contain. Thus in the figure it is about one-fifth of the circle or 20 per cent. The length of the defect will of course affect proportionally the total amount to be deducted.

(2) *Sun or season checks.*—If the cracks are so deep and numerous as to make the portion affected unmerchantable, the defect will be described and deducted in the same manner as explained under Fig. 8, with the exception that the whole volume of the affected ring of the circle will be culled, instead of a part of the same as in cat face. No deduction will be made for this defect if the log has been left unnecessarily long

either in the woods or on the log landing at the mill.

(3) *Rotten knot*.—The effect of rotten knot is so variable that it is hard to make a fixed rule for making allowance for it. It is often the case that a dot or rot in a big knot is an indication of an enlarged defective area inside the log. The extent of this defect is sometimes shown by a flare or swelling on the affected portion of the log. Rotten knot and center rot make a combination of defects in a log that frequently calls for a big per cent of deduction, if not totally cull the whole log. Practical ability of a scaler in deducting for this defect depends upon his accurate estimate of its extent and his skill in determining what section of the cylindrical volume of the log would properly enclose it. The minimum merchantable length of lumber used in scaling must not be overlooked in this connection. If, as is sometimes the case, the log is defective at one end, due to rotten knots, leaving a sound portion at the other end, which is less than six feet long (1.83 m.), this sound end will be considered as if also culled due to the rotten knot and the per cent to be deducted in the log will be decided accordingly, provided the mill concerned does not utilize short pieces.

(4) *Wormy*.—Usually only the outside shell of the log attacked by grub worms is seriously affected. Under such a condition, this defect will be deducted for in exactly the same way as in sun or season checks. If a few holes penetrate deeply into the heartwood, the effect on the merchantability of the interior wood should be judged and deductions will be made accordingly. No deduction will be made if the attack on the log by borers was due to the fact that the party concerned allowed it to stay too long in the water, log landing at the mill, or in the woods.

(5) *Unsound sap*.—The method of making allowance for this defect will be the same as for wormy or sun or season checks.

(6) *Split*.—If the split is clearly due to

careless handling of the log, no deduction will be made for it. It is essential that the scaler have a good knowledge of efficient handling of the log under different conditions from the stump to the mill so that he may be able to use intelligent and fair judgment in this matter. It must be remembered that this defect is in some cases unavoidable, even if special care is exerted in handling the log. In deducting for this defect, the dimensions of the rectangle that would fully inclose it should be determined and then the volume of the same is reduced into a per cent of the gross volume of the log.

(d) *Crooks*.—(1) *Crook*.—If the curve in a log is confined only to one end, it is relatively simple to make allowance for it. The scaler should sight along the straight sides of the log, noting where they pass thru the crook if prolonged. Then throw all the waste due to this defect into one section and determine the per cent of deduction by dividing the length of the wasted section by the total length of the log and multiplying by 100. Thus in Fig. 10, Plate I, section (A) will be the equivalent net waste due to the crook. It is about one-eighth of the total length of the log and the per cent of deduction would therefore be one-eighth of 100 per cent or about 12 per cent. The portion, $x y z$, from which merchantable wood may be obtained, will practically offset the air space, represented by $z o p$. No deduction should be made if the crook could have been avoided by proper bucking. The scaler in the woods has good opportunity to make fair judgment with regard to this particular point.

(2) *Sweep*.—If the log has a sweep, the per cent of loss due to it can not be so easily determined as that of a crook which is confined only to one end, without some experience. The following table of deductions applicable to sweep may serve as a guide to scalers. It is the result of actual studies made in one particular mill and

may be subject to change in other mills where crooked logs are sawn differently.

DEDUCTION FOR SWEEP IN ROUND LOGS

Amount of sweep in terms of log diameter	Per cent of loss based on gross volume of log
1/12	5
1/10	7
1/8	8
1/6	12
1/5	14
1/4	17
1/3	23
1/2	34

In the above table the amount of sweep is expressed in terms of the small diameter of the log because the loss due to it is not dependent on the number of centimeters of the curve alone but also by the size of the log. The way to determine the degree of sweep is given in Fig. 11, Plate I. Line No. 1 must be drawn parallel to line No. 2, which runs from pith to pith. It will be necessary for the inexperienced scaler to actually stretch a string from one end of the log to the other in determining the amount of sweep. To the experienced scaler, however, this may be determined by mere ocular estimate. Thus, in the above illustration, if the sweep is 5 centimeters and the diameter of the log is 60 centimeters the sweep in terms of log diameter shall be five-sixtieths or one-twelfth and the per cent of deduction would therefore be 5 per cent.

(3) *Double crook*.—The defect must be allowed for much more heavily than a single curve or crook. Roughly, the amount to deduct is found to be 50 per cent more than that for sweep of any given amount. It may be stated that the loss due to crook, sweep and double crook is influenced directly by the minimum merchantable length of lumber considered in scaling.

SEC. 197. RECORDING AND DESCRIBING DEFECTS IN SCALE BOOK.—Under the col-

umn "Kinds of defects" in the scale sheet, the name of the defect in abbreviated form shall be described as follows:

(a) Center rot, heart shake, heart checks, and brash center shall be described by giving the abbreviated name of the defect followed by its size in centimeters. Example: C.R. — 20; H.S. —25; H.Ch.—18; B.C. — 10. The size of the defect should include its actual diameter plus allowance for irregularities. If, however, a center rot not allowed for as butt rot or heart shake does not show at both ends of the log, the estimated length of the defect besides the size of the square that would properly inclose it should be recorded. Thus a center rot or heart shake that could be inclosed in a square, the side of which is 20 centimeters and the length is estimated to be three meters, shall be written as C.R. — 20/3 or H.S.—20/3.

(b) *Butt rot*.—The full estimated length of the rot shall be given. Example: B.R.— 40/3, in which 40 is the diameter in centimeters including allowance for irregularities and 3 the length in meters of the defect. Butt rot should only be described as such when it occurs in a butt log or when the center rot is allowed for as butt rot (sec. 196-b-3), otherwise it shall be classified as center rot.

(c) *Cat face*.—When the cat face is to be deducted as a part of a ring, this defect shall be described as C.F.—2, which means that it is two meters long. When the cat face is considered as a sector, its ratio to the area of the circle where the diameter is taken should be recorded in addition to the length of the cat face. Thus, C.F. — (1/4)/2 means that the defect covers one-fourth of the area of the circle and is estimated to be two meters long.

(d) *Sun or season checks*.—When this defect is to be deducted the thickness of the ring to be culled shall be given. Example: S.Ch.—2, which means that the checks extend two centimeters deep from the surface of the log.

(e) *Rotten knots*.—This defect shall be described in the same manner as cat face, as R.K.—2 or R.K.—(1/4)/2, as the case may be.

(f) *Wormy and unsound sap*. — These defects, if to be deducted, shall be noted simply as W. or Un.S., as the case may be, followed by the thickness of the ring affected, in the same manner as in Sun or Season Checks.

(g) *Split*.—In this defect, the dimensions of the rectangle inclosing it shall be given. Thus, Sp.—4 x 10 x 2, which means that the split is included in a rectangle 4 centimeters thick, 10 centimeters wide, and 2 meters long.

(h) *Side defects of squared logs*.—In describing side defects for squared logs under the column "Kinds of defect" in the scale book, the name and dimensions of defects should be given, thus: C.F. 10 x 25 x 3, which means that the cat face is 10 centimeters thick, 25 centimeters wide, and 3 meters long. This is necessary because the per cent of deduction is determined by the ratio of the volume of the defect to the gross volume of the squared log.

(i) *Crook*.—This defect shall be expressed in fraction of the portion of the crook thrown off by the length of the log. Example: If one meter of an 8-meter log is thrown off as a net waste of crook it will be described as Cr.—1/8.

(j) *Sweep*.—This defect in round logs is expressed by the amount of sweep in terms of log diameter as Sw.—1/12, which means that a log having a diameter of 60 centimeters, has a sweep of 5 centimeters. In squared logs, the length of the portion of the log which is estimated to cover the waste caused by the sweep should be mentioned under column "kinds of defect" in the same manner as in crook, thus Sw.—2 means that the culled length of the squared log is 2 meters and if the log is 10 meters long, the deduction is 20 per cent. As a basis of estimating waste in sweep, determine the length thrown off at both ends

of the log in the same manner as in crook, then the length to be culled is the sum of the lengths thrown off at both ends. This amount is ordinarily twice the waste of crook.

(k) *Double crook*.—This defect will simply be noted as Db. Cr.

SEC. 198. *MILL STUDIES*.—Ordinarily mill studies consist chiefly in observing how logs "open up" and how defects are cut out, as well as in checking one's judgment for defects. Special mill studies include the preparation of waste table and the determination of the per cent of deductions for particular kinds of defects with the view of establishing a general rule, or of making a practical table of deductions, as well as similar studies of a special character. They are ordinarily made on special occasions when time permits and competent men to conduct the work are available. For the sake of uniformity and in order to avoid getting results which might be misleading, detailed description of the methods of gathering data in any special study should first be approved by the Central Office before it is carried out. Data collected in these studies will be kept for permanent record.

SEC. 199. *WASTE TABLE*.—A table giving the average per cent wasted in converting into lumber logs of different diameters is known as Waste Table. Such a table is an essential equipment of every scaler because, as will be seen later, it is used in the computation of loss due to defects in connection with mill studies. It should be prepared for every sawmill. As a brief guide for its construction the following instructions are given:

(a) *Selection of material*.—Select "straight and sound" logs of different diameters. To avoid much delay in the collection of data, logs with little defects may be used provided they are tallied as if all sound.

(b) *Number of logs necessary*.—The number of logs that should be measured in any particular mill depends largely on its

size and the number of diameter classes being sawn. Ordinarily, however, 200 to 500 logs should be adequate for the purpose of this table.

(c) *Measurement of length and diameter.*—Measure the length and diameter of the log and determine its corresponding gross volume in cubic meters and board feet. The equivalent of one cubic meter in solid contents is 424 board feet. Tally the lumber that is produced from this log as it is tallied by the lumber operator. Thus, if 1-1/4" board is recorded by the operator's tallymen as 1", the forest officer conducting this study should also tally the

same as 1" board. Tally all short lengths which are tallied and utilized or sold by the operator. Dividing the tally for any log by its gross volume in board feet times 100 will give the per cent of merchantable lumber. This subtracted from 100 per cent will give the per cent of waste for that particular log. Measure logs of different species, lengths and diameters. Remember that what is wanted is a table of waste based on actual practice and not on how the lumber should have been cut. Discard the tally of logs that have been cut into special irregular order and dimension timber. The sample table below is used in the preparation of waste table.

SAMPLE TABLE FOR PREPARATION OF WASTE TABLE

Name of licensee or company
 Date of study
 By

Number of logs	Species	Length in meters	Diameter in centimeters	Gross Cubic meters	volume Board feet	Mill tally in Bd. feet	Per cent Merchantable	Per cent waste	Remarks
1	Tangile	6.1	50	1.20	509	298	59	41	.....
2	Red Lauan	6.1	64	1.96	831	508	61	39	.....
3	Apitong	6.1	78	2.92	1,238	808	65	35	.....

Approved:

.....
 (Officer in charge)

(d) *Plotting of values obtained.*—(1) When enough data have been collected, classify the logs studied into diameter groups,

such as 32-40 cms., 42-50 cms., 52-60 cms., etc. and prepare Table I as shown below:

TABLE I—Weighted averages of diameters and percentage of waste by diameter groups.

Group (1) Diameter	No. of Logs (2)	Totals by Dia. Groups		Weighted Averages	
		Actual Diameter (3)	Percentages of waste (4)	Diameter (5)	Percentages of waste (6)
32-40	13	482	741	37.1	57.0
42-50	29	1,336	1,551	46.1	53.5
52-60	20	3,114	2,748	56.6	50.0
62-70	52	3,456	2,475	66.5	47.6
72-80	53	4,020	2,451	75.8	46.2
82-90	29	2,476	1,295	85.4	44.7
92-100	7	670	301	95.7	43.0
100-110	10	1,058	419	105.8	41.9
TOTAL	248	16,612	11,981	67.0	48.3

In the above table, the number of logs indicated in column 2 represents the number of logs taken in the mill studies under each diameter group. Column 3 is the sum of the actual diameters of the logs taken in the mill studies under each group. Column 4 is the sum of the percentages of waste of the logs in column 2. Column 5 is obtained by dividing column 3 by column 2 and column 6, by column 4 by column 2.

(2) Plot the values indicated in columns 5 and 6, using the average weighted average diameters in column 5 as abscissas and the average weighted percentages of wastes in column 6 as ordinates. Write down the corresponding number of logs (column 2) representing each point plotted. Connect the points plotted by straight lines in order that the trend of the curve may be better observed. Following this trend, smoothen the curve with the aid of a flex-

ible ruler, preferably steel ruler, giving weight to points represented by bigger number of logs. The curve so drawn may not, however, yet be the correct curve as its drawing is subject to personal bias. It is, therefore, necessary to check whether or not the fitting in of this curve is correct. This can be done with the use of the statistical method by which the position of the curve can be corrected or adjusted, if necessary, such that more or less the same result will be obtained even in the hands of other investigators.

(3) Divide the data into two parts. The first part consists of the data for the upper half of the curve from which the deviations or residuals are computed. The second part consists of the data for the lower half of the curve. Calculate the net deviations of the curve separately for each half, as indicated in Tables II-A and II-B.

TABLE II-A.—*Deviation Table for upper half of the curve.*

Diameter Groups (1)	Number of logs (2)	Deviation % (3)	Total deviation %	
			+	—
			(4)	(5)
32-40	13	— .2	—	2.6
42-50	20	+ .1	2.9	—
52-60	55	—	—	—
62-70	52	—	—	—
TOTAL	149		2.9	2.6

Difference = +0.3%

Average net deviation per log = +0.002%

TABLE II-B.—*Deviation Table for lower half of the curve.*

Diameter Groups (1)	Number of logs (2)	Deviation % (3)	Total deviation %	
			+	—
			(4)	(5)
72-80	53	+0.3	15.9	—
82-90	29	+0.1	0.1	—
92-100	7	—0.7	—	4.9
102-110	10	—1.2	—	12.0
TOTAL	99		16.0	16.9

Difference = —0.9%

Average net deviation per log = —0.1%

In the above Table II-A, column 3 is the deviation or difference between the percentage of waste as read from the curve and the one plotted. In reading from the curve, in this particular example, the percentage of waste of the diameter class 32-40 or 37.1 cms. (column 5, Table I) is 57.2% and the percentage of waste plotted is 57.0%. (See Plate III). The deviation therefore is -0.2%. If the point plotted is below the curve, the deviation is minus, and if above, as in the case of diameter class 42-50 or 46.1 cms., (column 5, Table I), the deviation is plus. Columns 4 and 5 are the products of column 2 (No. of logs) and column 3 (deviation %), with the corresponding plus or minus signs. Add all the plus deviations in column 4 and the minus deviations in column 5 and get the difference between their totals. The difference divided by the total number of logs in column

2 gives the net deviation per log. If the net deviation per log does not exceed + or -0.02%, the upper half of the curve may be considered satisfactory for the purpose desired. But, if it exceeds + or -0.02%, it is necessary that the upper half of the curve be adjusted by moving it up, if the net deviation is plus or by moving it down if the net deviation is minus. After such adjustment, the net deviation per log should be computed again as before until the net deviation obtained per log does not exceed + or -0.02%.

The lower half of the curve (Table II-B) is also checked and adjusted, if necessary, in the same way as explained in the case of the upper half of the curve.

(4) With the curve already corrected and adjusted by statistical method, the final waste table is prepared, as shown below:

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<p><i>Compliments of</i></p> <p>VIVENCIO RONQUILLO Timber Licensee</p> <p>Minor Forest Products Licensee Fishpond Owner Businessman</p> <p>Address: San Jose, Occidental Mindoro</p>	<p><i>Compliments of</i></p> <p>VIZCAYA LUMBER & TRADING COMPANY</p> <p>Solano, Nueva Vizcaya</p> <p>PEDRO TIONGSON <i>Manager</i></p>

TABLE III.—Final Waste Table

Diameter Classes	% of waste read from the curve	Number of logs	Total Waste % from	
			Table Waste	Plotted Ave.
32	60.2	2	60.2	
34	59.0	2	118.0	
36	57.9	3	173.7	
38	56.8	3	170.4	
40	55.9	4	223.6	741.0
42	55.0	7	385.0	
44	54.2	4	216.8	
46	53.4	5	267.0	
48	52.7	7	368.9	
50	52.1	6	312.6	1551.0
52	51.1	6	308.4	
54	50.8	10	508.0	
56	50.2	12	602.4	
58	49.6	15	744.0	
60	49.1	12	589.2	2748.0
62	48.6	9	437.4	
64	48.1	8	384.8	
66	47.7	12	752.4	
68	47.3	8	378.4	
70	46.9	15	703.5	2475.0
72	46.5	14	651.0	
74	46.2	7	232.4	
76	45.9	12	550.8	
78	45.6	9	410.4	
80	45.2	11	497.2	2451.0
82	45.0	7	315.0	
84	44.8	8	358.4	
86	44.6	5	223.0	
88	44.4	5	222.0	
90	44.2	4	176.8	1295.0
92	44.0	1	44.0	
94	43.8	2	87.6	
96	43.6	2	87.2	
98	43.5	1	43.5	
100	43.4	1	43.4	301.0
102	43.3	2	86.6	
104	43.2	3	129.6	
106	43.2	1	43.2	
108	43.1	2	86.2	
110	43.1	2	86.2	419.0
TOTAL		248	11990.2	11981.0

$$\begin{aligned}
 & 11880.2 \\
 & + 9.2 \quad 11981.0 \\
 \hline
 & - 11981.0 \quad + 9.9 = +0.0008 \times 100 = + 0.08\% \\
 & \text{The curve checks within } +0.08\%.
 \end{aligned}$$

Column 1 in the above table, gives the diameters of logs studied from the smallest to the biggest diameters. The corresponding percentage of waste in each diameter as read from the curve is indicated in column

2 which is the final waste table. Column 3 shows the corresponding number of logs studied under each diameter. Column 4 shows the percentages of wastes given in column 2 multiplied by the number of logs

in column 3. Column 5 shows the actual percentages of wastes obtained in mill studies totalled by diameter classes as shown in Table I. Compare the totals of columns 4 and 5. The difference, divided by the total plotted wastes (column 5) and multiplied by 100 will give the percentage within which the curve checks. This percentage indicates how well the waste table read from the curve compares with the actual waste. This means to say that, for instance, in the example given in Table III, the percentages of wastes in the final waste table are accurate within plus 0.08%.

(e) *Submission of records*.—Submit the plotting and all the tally records to the Central Office.

(f) *Revision of waste table*.—The waste table should be revised whenever there is a radical change in lumber manufacture and change in the efficiency of machineries and men.

(1) To properly determine the utilization of a mill, simply find the average diameter of the logs being sawn in the mill and look up in the waste table, the waste corresponding to this average diameter. Subtract this from 100 and the result is the per cent of utilization of the mill if all the logs sawn were "straight and sound." But since this condition cannot be obtained in practice because all logs invariably contain defects of various proportion, the expected utilization of the mill in actual operation should never equal or exceed the utilization determined from waste table study but it will always be smaller and the variation will depend on the character and amount of defect.

(2) To determine this actual utilization, it is necessary as a matter of check that after the waste table is made for any mill, a scale of all logs being sawn every day for about a week's time be conducted. The total tally of the mill for the period divided by the total net scale of all logs actually sawn times 100 will give the approximate average actual utilization of the mill. The

above procedure of obtaining utilization is applicable only to mills where scaling is done by forest officers. In the case, however, of sawmills without government scalers, to obtain the average actual utilization of the mill for the purpose of determining whether or not some logs had not been scaled or properly invoiced, the mill tally should be divided by the gross scale times 100. The sawmill operator in this case is not supposed to make deductions for defects in his logs and therefore the scale on which he pays forest charges, represents the gross scale. (Important Provisions of the Present Scaling Law, Sec. 263 of Act 466.)

1. All timber shall be measured and manifested in the round or square form before being sawn or manufactured.
2. Volume of round timber = area of small end \times length, average diameter exclusive of bark for logs 8 meters or less in length. For logs more than 8 meters long the middle diameter or average of two end diameters shall be used.
3. If log in round, legally cut, is measured and manifested by a Forest Officer the Director of Forestry shall make a deduction for natural defects; if Director's decision is appealed, the Department Secretary's decision shall be final.
4. Volume of square timber = average cross section \times length to which 40% shall be added to the volume for loss in squaring.
5. If square timber is cut under license is measured and manifested by forest officer, the Director of Forestry shall make allowance for natural defects; if his decision is appealed, the Department Secretary's decision shall be final.
6. If sawn or manufactured timber is found not manifested in accordance with the provisions of law, the corresponding forest charges shall be

assessed on twice the volume of actual contents of such sawn or manufactured timber.

SEC. 200. METHOD OF MILL STUDIES FOR DETERMINING LOSS DUE TO DEFECTS.—

There are two methods which may be used in determining the amount of loss due to defects in logs under observation in the mill. These are: (1) by tallying the merchantable lumber cut out from the log and (2) by tallying the defect itself. They are in practice supplementary—one is applica-

ble to very defective logs and the other to relatively sound timber.

(1) The tallying of merchantable lumber is used when the defect cannot be easily isolated or tallied as is often the case when a log has several defects. Care should be taken in using this method so that the merchantable lumber is tallied in accordance with the method being used by the sawmill operator. The following forms for recording observations and measurements should be used in case the merchantable lumber is tallied.

Mill study record by

Name of mill Date

No. of logs	Species	Diameter in cms.	Length in meters	Description of defects	Gross M/3	volume Board feet	Mill tally in Bd. ft.	Per cent merchantable	Per cent		Scaler's estimate of defects	Remarks
									due to waste (from waste table)	loss due to defects		
1	Tangile	46	3.8	Swp 1/3 Bc. 11	.63	267	95	36	30	34	31	.....
2	White lauan	50	4.5	C.R. 30	.88	373	114	31	25	44	46	.....
3	Apitong	60	8.0	H.Ch.10	2.26	958	780	81	15	4	5	.....

In describing a defect, the size given should include the allowance necessary to properly inclose all the irregularities of the defect. The value of the data secured as a permanent record depends upon the accuracy in which the tally and measurements were taken.

(2) The second method consists simply in tallying the defective pieces to actual dimensions such as, 1-1/8" x 6-1/2" x 20 ft., etc., as they are cut out from the log. If it happens for some reason or other that a defective portion is included in a merchant-

able piece, estimate or measure, if possible, the dimensions of this portion and add its volume to the tally of defects. This method has the following merits: (a) it does away with the use of the waste table, which is not free from inaccuracies; (b) it reduces the number of pieces to be tallied in one log, thus minimizing the error in tallying; and (c) it gives the inexperienced scaler a direct and better impression of the effect of defects on the volume of logs. For this method, the following table is used in recording the data obtained:

Mill study record by

Name of mill Date

No. of logs	Species	Diameter in cms.	Length in meters	Description of defects	Gross M/3	volume Board feet	Tally of defects in Bd. feet	Per cent of defect	Per cent of estimated defect	Remarks
2	Apitong	56	5.6	H.Ch.16	1.38	585	60	10	10	.....
3	Tañige	86	4.4	B.C. 20	2.56	1,085	86	8	7	.....

SEC. 201. OBSERVANCE OF MILL STUDIES.—Mill studies should be conducted frequently by scalers in accordance with the following instructions:

(1) Scalers working in the woods should make mill checks at least once a month. Officers in charge of scaling stations should, however, see to it that his scalers undertake mill checks as often as, in his opinion, there is need for them.

(2) Officers in charge should personally take charge of all mill studies undertaken by his scalers.

(3) Officers in charge should see to it that in their actual scaling work scalers under them make deductions for natural defects exactly according to the results obtained from their mill studies.

(4) The minimum length of any merchantable piece tallied must be the same as the shortest length utilized by the operator. For example: If the operator utilizes two-foot pieces, this length should be considered merchantable in scaling and included in the tally in connection with mill studies.

(5) Tally according to the location of the defects and the method used by the scaler in allowing for them, which method is influenced by the minimum merchantable length used by the operator, but in all cases where a mill does not utilize short length, six feet (1.83 meters) will be considered the minimum merchantable length, that is, if a sound log is to be cut into a length less than 1.83 meters (six feet) on account of defects, the whole log should be culled.

(6) All scalers permanently assigned in scaling stations should endeavor to make waste table for their respective mills, conduct studies to determine the actual mill utilization as well as studies for the determination of waste due to each of the following: sawkerf, slabs, trimming, edging and allowance for shrinkage.

SEC. 202. MEASURING, NUMBERING OF LOGS AND BOOKS AND STAMPING LOGS.—

(a) *Necessity of accurate measurement.*—

Care must be taken in getting the length and diameter of every log scaled as well as in judging defects. This is important for the reason that the good work of a scaler in judging defects can easily be offset by inaccuracies in log dimensions due to his carelessness or indifference. Conscientiousness in the work has considerable influence in the accuracy of these measurements. The scale of a log is influenced by the scaler's judgment of defect as well as his measurements of length and diameter. It is necessary, therefore, that he should have not only a good judgment of defects but also that he be accurate in taking the length and diameter of every log that he scales.

(b) *Measuring log length and diameter.*—(1) *Log length.*—Log lengths for either round or squared timber will be measured to the nearest decimeter. Example: If the exact length of the log is 4.14 meters, record it as 4.1, but if it is 4.15 meters, record it as 4.2 meters. In taking the length, the scale stick should not be slanted away from the log, otherwise, an overmeasurement would result. Also the end of every meter length on the log should be fixed in sight until the 100-centimeter mark of the scale stick is on it for the measurement of the succeeding length. But logs with deep undercuts will be measured for length from a point midway between the extreme end of the undercut and the sawcut line (Fig. 14—Plate I). In the case of noosed or snipped logs, full length will be taken (Figs. 15 and 16—Plate I).

(2) *Log diameter.*—Diameters of round logs will be measured to the nearest even centimeters. Example: If the exact diameter is 36.9 centimeters, write it down as 36 centimeters, but if it is between 37 and 38.9 centimeters, consider it as 38 centimeters. If the length of the log is more than 8 meters, diameter measurement will either be taken at the middle point, which must be determined as accurately as practicable, or the average diameter of the two

ends of the log. Care must be taken by the scaler when taking the middle diameter to extend the end of the scale stick far enough out towards one side of the log so that the inside line of the scale hook coincides with the line of sight perpendicular to the central axis of the log and tangent to its surface. A check should be taken occasionally on the above measurement by measuring the diameter at the small end and allowing for a reasonable taper, or by using the "Tamesis folding caliper," if available. If there is an unreasonable discrepancy between the two figures obtained the measurement at the middle point should be repeated. Allowance will, of course, be made for the thickness of the bark. If the cross section of the log is not round, take the average of the long and short diameters, which should be at right angles to each other. In the case of a crotch or any abnormal swelling at the scaling end of the log, the diameter should then be taken below the swelling.

For square timber the mode of taking the side dimensions is as follows: Measure the average width and average thickness regardless of the length of the timber. If a side of the square timber is narrower on one end than on the other, take the average width of the two ends or measure at the middle point. However, whether the timber is a perfect square or not two opposite sides must invariably be averaged and the result taken as the basis of computing the volume. Similar procedure must be followed in the case of the other two opposite sides. The average width and thickness will be recorded to the nearest centimeter, odd or even. Manufactured timber, such as banca, ties, etc., will also be measured to the nearest centimeter, odd or even. Example: If the average width is 37 centimeters, write it down as 37 and not 38, as is the rule when measuring the diameter of a round timber.

(c) *Common errors in measuring.*—

(1) *Log length.*—The common errors in

measuring log lengths which should be avoided are given below:

a. Scale stick not laid flat on the surface of the log. Figure 12, Plate I shows the wrong way of measuring the length of a log; while Fig. 13, the correct way.

b. Scaler following a zigzag line instead of a straight line on the surface of the log.

c. Scaler not fixing his eye on the point where his scale stick ends and from which his next measurement begins. Thus if this point is missed, there may be either undermeasurement or overmeasurement of length.

d. Not holding the scale stick constantly at the 100-centimeter mark. To avoid this a notch should be made on the 100-centimeter mark of the scale stick.

(2) *Log diameter.*—The most common errors in measuring diameters which should also be avoided, are the following:

a. In case the diameter is taken at the middle point of the log, not placing the scale stick in such a way that its hook end meets exactly the imaginary line tangent to the log and perpendicular to its central axis; or not making the reading on the scale stick at the exact point where similar tangent line on the other side of the log meets the scale stick.

b. Misplacing the scale stick on the log, that is, when the middle diameter is to be taken so that it is not perpendicular to the central axis of the log.

c. Not getting the diameter exactly at the middle point of the log.

d. Not giving proper allowance for thickness of bark.

e. Not taking two measurements perpendicular to each other in case the cross-section of the log is not round.

(d) *Numbering of logs with crayon.*—

(1) *All scaled logs must be numbered.*—Every log shall be numbered with a marking crayon as soon as scaled, even though it is to be sawn immediately. The number must be written at least at one end of the log. In the case of bucked logs from one single tree with the ends laying pretty

close together, one number at the butt end, which is usually open, would suffice but the other logs must invariably be numbered consecutively on the scale sheet. The same method of numbering should be adopted on unbucked trees, using consecutive numbers for each log beginning from the butt. (Unbucked trees are usually marked into two or more log lengths. Logs scaled in the log pond or log deck should also be numbered as they are scaled. Cull log will, in addition to its number, have the word "cull" written at its end. The mark "cull" at the end of every cull log is made simply for the information of the licensee or lumber operator concerned. Cull logs will, however, not be marked with marking hatchet.

(2) *Separate numbering by species.*—Each species will be numbered independently beginning from one. Every regular scaler using a separate scale book will have his own numbering independent of the other scalers. A scaler scaling in two or more set-ups, should number the logs in each set-up independently. The number of the logs in the scale book should invariably correspond to the number of the logs in the field. The numbering should change with the change of set-ups, that is, at the beginning of the set-up the logs scaled will again start from number one for each species.

(e) *Numbering of scale books.*—The numbering of scale books shall be consecutive, beginning from number 1 each year.

(f) *Stamping of logs with B.F. marking hatchets.*—(1) Every scaler is provided with official marking hatchet with registered number and he shall see to it that every merchantable log scaled by him is stamped either at one end or the sides. Scalers must be sure that the hatchet marks are visible and the number legible.

(2) Logs under investigation by district foresters, inspectors from the Manila Office, administrative officers and check-scalers shall be stamped with a lumber Inspector's hatchet, with which they will be provided.

Also, logs, squared or manufactured timber, and lumber invoiced by licensees or non-licensees and shipped to Manila, and which are checked by forest officers in cooperation with the Bureau of Internal Revenue shall be marked with a lumber inspector's hatchet by the forest officer concerned.

SEC. 203. LOG RULES.—Every scaler must be thoroughly familiar with the different log rules commonly used by operators in the Islands. A comparison table of the most common log rules used is supplied every scaling station for reference. Scalers are expected to know the different principles upon which those rules are based. It will be noted that the different rules attempt to give the lumber volume in board feet for logs of different diameters and lengths, whereas the Bureau of Forestry Rule gives the total solid cubic contents of the log. The Log Rules most commonly used in the Islands are Doyle, Scribner, Doyle-Scribner, Scribner Decimal C, Spaulding and International.

(a) *Doyle rule.* $(D-4)^2/(4)^2 \times L$. D is diameter in inches. L is length in feet. Four inches is the allowance for slabs. One-fourth of the square timber is deducted for sawkerf. It is easy to see that whereas the allowance for slabs would be too big for small logs, it would be insufficient for large size logs, hence the large over-run for small logs. It may be noted that the method of allowing for slabs seems to have been premised on the assumption that this waste could be taken off from four sides. As a matter of fact, this waste is ordinarily distributed as a collar all over the surface of the log. Any error in the estimate for loss in slabs would directly affect the allowance given to sawkerf. If the allowance for slabs is too small the intended deduction for sawkerf would likewise be small and the reverse is true.

(b) *Scribner rule.*—Scribner rule is a diagram rule constructed for 1-inch lumber and one-fourth inch sawkerf. There is bigger allowance given to large logs than to

small logs. This results in a large over-run for big size logs over 28 inches in diameter. It gives values for logs from 12 to 44 inches in diameter only.

(c) *Doyle-Scribner rule*.—The Doyle-Scribner rule, which gives Doyle values up to 28 inches and above that the Scribner values, is intended to avoid the inconsistency of the two rules.

(d) *Scribner Decimal C.*—The Scribner Decimal C. rule is the log rule used by the U.S. Forest Service. It is a modification of the Scribner log rule since it adds values for logs below 12 inches and above 44 inches and the values throughout the rule are given in tens.

(e) *Spaulding log rule*.—The Spaulding log rule or California rule is a diagram rule constructed for 1" board allowing 11/32" for sawkerf. It gives values from 10 to 96 inches in diameter and 12'-24' long. A formula (McKenzie formula) for this rule has been worked out as follows:

$$\text{B.M.} = [(1-.266) \frac{\pi D^2}{4 \times 12} - 2] L.$$

(f) *International log rule*.—It is a formula rule constructed with an allowance of 1/16" for shrinkage per 1" board and 1/4" sawkerf for seasoned lumber, or 5/16" sawkerf for green lumber. The formula is $\text{B.M.} = (.22D^2 - .71D) .904762$ for 4' sections.

SEC. 204. LOG INVENTORY.—(a) *Woods inventory*.—Where scaling is done in the cutting areas, monthly woods inventory is determined by subtracting from the total volume of the logs scaled during the month the volume of the logs delivered to the mill. However, with this method error accumulates from month to month for some logs scaled as saw logs may be abandoned or are used as firewood or construction timber. An actual count of abandoned logs should therefore be made in areas that are definitely abandoned to correct the woods inventory. The volume involved in this woods inventory is obtained by multiplying

the average individual log volume of all the logs scaled during the month by the number of logs. In an area or set-up where no log has as yet been removed, the total scale of the logs in the area is, of course, taken as the inventory.

(b) *Log pond inventory*.—Where scaling is done at the mill, the log pond inventory should be taken by actual count every end of the month. The average volume of the log to be used in computing the total approximate volume of the logs in the pond or the inventory, may be determined by scaling actually in the pond several representative logs; the care in selection influences greatly the accuracy of the inventory.

SEC. 205. SCALING OF ABANDONED TIMBER.—(a) *Abandoned logs*.—If the place of scaling is at the mill or at any other place outside of the logging operations, the cut-over areas should be gone over by the local scaler for abandoned timber as frequently as possible or as soon as the logging operations are terminated. Only merchantable logs, as defined under the caption "Merchantable Log" in this Manual, will be scaled. Inspection should be made each month, if practicable. The performance of this work should not be delayed until jungles of brush or climbing bamboos have already started in the areas to be covered. It is necessary that a forest officer when scaling abandoned timber should be accompanied by an authorized representative of the licensee. It should be emphasized to the operators, in this connection, that the purpose of this representative is primarily to let them know where the abandoned logs are and to give them a chance to present on the ground their objection, if any, to any log scaled against them. It is obviously to the advantage of the party concerned to send a responsible representative in every case. If regular scaling work is done in the woods, the amount of scaled abandoned timber will be shown in the monthly scale report under "Remarks." These data are usually required by lumber companies for

their own information: Example: During the month 121 abandoned logs with 266.42 cubic meters, which were scaled in previous months, were counted.

(b) *Abandoned tops.*—All tops left in the woods will be scaled, regardless of length, provided they are at least 30 centimeters in diameter at the small end and are not more than 66-2/3 per cent defective, if they are first group pieces; or not more than 50 per cent defective, if they belong to any of the lower groups.

(c) *Invoicing abandoned timber.*—All abandoned timber including wasted tops and stumps will be manifested in an ordinary auxiliary invoice (B. I. R. Form 14.04) and should not be included in the monthly scale report (B.F. Form No 1-S). Likewise, all timber cut in violation of the timber license or license agreement, such as, below diameter limit or timber cut without license, should be reported on auxiliary invoice. The corresponding scale sheets with the summary thereof, for timber invoiced, should be attached to the copy of auxiliary invoice for the Director. As much as possible the column "Part of Tree" in the auxiliary invoice should be properly filled as required in this form for the information of the licensee and this Office. In addition, explanation of the cause why the logs were abandoned, or cut below the diameter limit as the case may be if known, should be mentioned under "Remarks" to be inserted at the bottom of the invoice.

SEC. 206. STANDING TIMBER SEVERELY DAMAGED IN LOGGING.—Trees damaged seriously in logging will be scaled only when they satisfy the following conditions:

(1) Each tree must contain at least two 5-meter logs, the second log of which must have a top diameter of not less than 30 centimeters.

(2) The tree must be fairly straight and sound and that it will not likely split or break when cut down.

(3) If the damage was due to carelessness on the part of the logger, broken tim-

ber, still standing, should be scaled regardless of the above conditions, provided it is not more than 66-2/3 per cent defective if it belongs to the first group and not more than 50 per cent defective if it belongs to the lower groups. It should, however, be remembered that inasmuch as many trees are unavoidably destroyed or injured in the process of felling and bucking and yarding, care should be exercised in the enforcement of this regulation so that no injustice may be done to the operator.

SEC. 207. STANDING TIMBER IN AREA LEFT UNLOGGED.—Patches of standing timber which are sometimes left unlogged or only partially cut over should be surveyed and a sketch submitted showing their definite location with respect to known points in the concession map. A 100 per cent estimate of the volume of the timber above 40 centimeters in diameter, breast height, should be made. A flat percent of deduction determined from the quality of timber in the surrounding areas, which have already been logged over, will be applied in deducting for natural defects. A report should accompany the sketch and should contain information on the following points: (1) Area; (2) Total net volume; (3) Reasons why it was abandoned or only partially logged over as the case may be; (4) Will the abandonment of the area be beneficial to the interest of the Government? Is it good for watershed or soil protection, or needed as seed trees? Is it contiguous to another body of timber?; (5) Any other information that may help the Central Office make decision in the matter; (6) Recommendations.

SEC. 208. SPECIAL TIMBER PRODUCTS SUCH AS TIES, FIREWOOD, PILING, CONSTRUCTION TIMBER, ETC.—(a) *Method of scaling ties.*—For the purpose of collecting forest charges, ties used in lumbering operations will simply be counted by the scaler and the volume of an average tie determined in order to obtain the total volume. They should, of course, be listed by species

and groups. The mode of measuring and manifesting ties scaled by a forest officer and cut by ordinary licensees or concessionaires, the timber felled by whom is scaled regularly by a government scaler, will be as follows: If a tie is hewn or sawn on one or more sides but it could be measured in the round, it shall be so scaled and invoiced; otherwise, it will be manifested as "Manufactured timber" with the necessary surcharge of 100 per cent. In the latter case, of course, no allowance for defects shall be given. Average per cent of deduction for natural defects on ties scaled in the round may be applied for each group under one invoice.

(b) *Firewood, construction timber, piling, etc.*—Firewood used for donkey engines and locomotives obtained from merchantable logs should be scaled before they are split, giving due allowances for all natural defects. Construction timber, piling, etc., should likewise be given deduction for heart checks and all other natural defects whether scaled in round or squared form.

(c) *Timber without deduction for natural defects*—Manufactured timber shall not be given deduction for natural defects. All timber cut in violation of the timber license or license agreement such as cutting below the diameter limit or timber cut without license shall, likewise, not be given allowance for defects.

SEC. 209. INSTRUCTION FOR CHECK SCALING.—(a) *Check-scalers.*—Only authorized check-scalers should perform check scaling work. Officers in charge of scaling stations, who are not authorized check-scalers, shall, however, continue to supervise and check as usual the work of the scalers under their immediate charge. It is the policy of the Bureau to assign, as soon as men are available, one properly trained check-scaler in each district to supervise the scaling work. If practicable the gathering of important and valuable data, such as special mill studies, inspection of sawmills and log-

ging operations, lumber trade investigation, cruising of the concession, etc., will be conducted under the check-scaler's supervision. The following should serve as a guide to authorized check-scaler's in their work:

(1) The work of all regular scalers in the mill inspected should be checked.

(2) B.F. Form No. 10-S should be used in check scaling.

(3) Each scaler should be checked on not less than 25 logs selected at random.

(4) The check-scale shall be made in the presence of the scaler and his errors pointed out right on the ground after the check-scale is made.

(5) The "Tamesis Folding Caliper," if available, will be used by the check-scaler in checking the middle diameter of long logs.

(b) *Allowable error in check scaling.*—To judge the efficiency of scalers, standard allowable errors in the measurement of length and diameter, and deduction for defects have been adopted. Thus, if a scaler makes an error on five measurements in lengths out of 25 logs, outside of the allowable error, his rating in length measurement shall be 80 per cent. The same procedure shall be applied in checking the diameter measurement and deduction of defects. To determine the final grade of the scaler, take the average of his ratings for length, diameter and deduction. It is not enough to judge the correctness of a scaler's work solely on the basis of the above grades. The total merchantable volume obtained must also be taken into consideration for after all, it is what the licensee or concessionaire pays for. A scale that varies more than 5 per cent, plus or minus, from the check-scale can hardly be called a satisfactory scale, even if the measurements of length and diameter were made accurately and the judgment for defects was within allowable errors. A scaler should be as careful and accurate as possible regardless of allowable errors. The standard set for allowable errors are the following:

- (1) For length measurement—
- | | |
|--|--------------|
| a. Up to 4.9 meters long, allowable error | None |
| b. 5.0 meters long, allowable error | + .1 m. |
| c. 5.1 to 8.0 meters long, allowable error | + or - .1 m. |
| d. 8.1 to 12.4 meters long, allowable error | + or - .2 m. |
| e. 12.5 meters long, allowable error | { - .2 m. |
| | { + .3 m. |
| f. 12.6 to 17.4 meters long, allowable error | + or - .3 m. |
| g. 17.5 meters long, allowable error | { - .3 m. |
| | { + .4 m. |
| h. 17.6 to 20.0 meters long, allowable error | + or - .4 m. |

The above is based on the allowable error of 1 per cent for logs 8-meter long and below, and 2 per cent for logs over 8 meters long.

- (2) For diameter measurement—
- a. For logs not over 2 meters long:
- | | |
|--|---------------|
| Up to 48 centimeters diameter, allowable error . | None |
| 50 centimeters diameter, allowable error | + 2 cms. |
| 52 to 148 centimeters diameter, allowable error | + or - 2 cms. |
| 150 centimeters diameter, allowable error | { - 2 cms. |
| | { + 4 cms. |
- b. For logs more than 8 meters long:
- | | |
|--|---------------|
| Up to 32 centimeters diameter, allowable error ... | None |
| 34 to 98 centimeters diameter, allowable error . | + or - 2 cms. |
| 100 centimeters diameter, allowable error | { - 2 cms. |
| | { + 4 cms. |
| 102 to 150 centimeters diameter, allowable error . | + or - 4 cms. |

The above is based on the allowable error of 2 per cent for logs not more than 8-meter long and 3 per cent for logs over 8 meters long.

- (3) For deduction of defects—
- Two per cent (+ or - 2%) for center defects only except butt rot.
 - Five per cent (+ or - 5%) for butt rot and other defects combined.
 - Five per cent (+ or - 5%) for center and side defects combined.
- (4) For total merchantable volume—
- Five per cent (+ or - 5%).

SEC. 210. CHECK ON SAWMILL UTILIZATION.—(a) *Utilization of previous and current year.*—If a mill is inspected for the first time, the utilization for the years previous to that during which the inspection was made should be checked besides the utilization from the beginning of the current year to the time of inspection. If any irregularity is found in the per cent of utilization of the mill, a detailed study of the probable cause or causes of such irregularity should be made and if found to be due to improper deduction of defects the scaler should be given instructions accordingly. In case the low per cent of utilization was due

to a high percentage of waste in the mill, it would not suffice to merely state that the mill was wasting a great deal. Mill studies should be made to determine the actual amount and sources of wastes. If possible, make separate studies on waste due to sawkerf, trimming, shrinkage, slabbing and edging.

(b) *Class A and B sawmills.*—If a class A or B sawmill is visited for the first time where no mill studies have been made, the scaler should conduct mill studies to determine the per cent of utilization of the mill. If the utilization of the mill based on logs scaled, mill tally, lumber in the yard, etc.,

is much higher than the result of the utilization by the study of the scaler, it means that considerable number of logs have been sawn without being scaled and manifested. A complete and detailed report of why a low or high utilization was obtained and

causes which brought about the result should be submitted. A sample report for a Class B sawmill the operation of which was checked from February 1 to December 31, 1930, is given as follows:

LOG CHECK

Items	M/3	Board feet
Unsawn logs at the beginning of the period (February 1, 1930)	None	None
Logs invoiced by the company February to October, 1930	1,386.88	588,037
Logs scaled by Ranger De la Cruz November to December 31, 1930	1,294.49	548,864
Logs from other licensees	None	None
Total logs handled during the period	2,681.37	1,136,901
Logs shipped to other Provinces or countries	None	None
Unsawn logs at the end of the period December 31, 1930	137.63	58,355
Total logs actually sawn	2,543.74	1,078,546

LUMBER CHECK

Items	M/3	Board feet
Lumber sold and used in the mill February to December, 1930, as shown by record of sales	2,250.35	954,148
Lumber left at the end of the period December 31, 1930	232.56	98,605
Total lumber available during the period	2,482.91	1,052,753
Lumber at the beginning of the period (February, 1930)	None	None
Mill tally as per record of sales and inventories	2,482.91	1,052,753
Utilization, per cent (1,052,753 ÷ 1,078,546)		97.6%

(c) *Determination of log sawn but not invoiced.*—If the actual mill utilization from the mill studies conducted by the scaler for several days was found to be 52 per cent,

it is evident that there had been considerable number of logs sawn without being scaled and manifested. This excess may be determined as follows:

Items	Groups in cubic meters				Total cubic meters
	First	Second	Third	Fourth	
Log pond inventory February 1, 1930					None
Log pond inventory Comp. by gr. . . .	None	None	None	None	None
Record of logs invoiced by the Co. February to October, 1930	63.08	262.91	941.58	119.31	1,386.88
Logs scaled by Ranger De la Cruz November to December, 1930 . . .	8.37	347.90	790.76	147.46	1,294.49
Total logs manifested	71.45	610.81	1,732.34	266.77	2,681.37
Log pond inventory December 31, 1930					137.63
Log pond inventory computed by groups	3.72	31.38	88.91	13.62	137.63
Manifested logs actually sawn	67.73	579.43	1,643.43	253.15	2,543.74
Mill cut during the period (1,052,753) board feet					2,482.91
Mill cut computed by group	67.04	566.10	1,603.96	245.81	2,482.91
52 per cent of logs sawn	35.22	301.30	854.58	131.64	1,322.74
Lumber sawn not manifested	31.82	264.80	749.38	114.17	1,160.17
Equivalent in logs of the above					
"Lumber sawn not manifested" based on 52 per cent utilization	61.19	509.23	1,441.12	219.56	2,231.10
Regular forest charges to be collected	152.98	763.85	1,441.12	109.78	2,467.73

If the log pond inventory and the mill cut during the period as shown in the example above were not segregated in the licensee's or company's record, the amount for each group may be calculated by using as a basis the ratio in percentage of the different groups to the total volume of the total logs manifested and logs actually sawn.

(d) *Non-license sawmills.*—Forest officers should endeavor to check also the operation of non-license sawmills to see that all logs sawn were duly invoiced and the forest charges due thereon have been paid. The procedure to be followed is the same as that provided in the checking of class A and B sawmills.

(e) *Formula in determining utilization.* The following formula may be used in determining the utilization of a mill when

other data or figures are lacking or are unknown: ..

Mill tally Cu. M. + (^aPer cent of Waste × Gross Vol.) = approximate net scale (Cu. M.).^b

(f) *Frequent check of sawing necessary.*—Mill not provided with permanent scalers should be visited as often as practicable and as much of the data required in the above reports as can be obtained should be secured. During these visits, it is especially important to check the logs manifested with the mill tally and lumber sales. The outline given above should serve as a guide for making the required check and the submission of the necessary report. The logs manifested by the operator as they appear in their books should be checked with

^a This is the per cent of waste that corresponds to the average diameter of the logs sawn during the period of checks in the Waste Table for the mill.

$$\frac{\text{Mill tally}}{\text{Calculated net scale}} \times 100 = \text{Correct per cent of utilization for the period covered.}$$

the record of payments in the local treasurer's office.

(g) *Period to cover check.*—When no definite data can be secured for the log or the lumber inventory at the beginning of the period checked, the check should be made for not less than six months to a year's time in order to reduce the error in computed percentage of production.

(h) *Prescribed sawmill record.*—Forest officers shall also see to it that sawmill operators properly record their scaled logs on B.I.R. Form No. 499 and keep a mill tally of the lumber produced giving species, dimensions and board feet content; (B.I.R. Form No. 403) a record of lumber or log sales (B.I.R. Form No. 405) as well as monthly abstract of sawmill invoices, (B.I.R. Form No. 405-1/2) in accordance with Bureau of Internal Revenue Regulations. These are necessary to facilitate the checking of irregularities committed by sawmill operators and the detecting of timber sawn without being manifested. Many new sawmill operators do not know of these forms and they should be helped as much as possible to secure samples of them from the treasurer's office or from the Collector of Internal Revenue for printing and use in their mill.

SEC. 211. LUMBER GRADING AND INSPECTION.—(a) *General instructions.*—The following general instructions governing the inspection of lumber, flitches, ties and logs for private parties are given for the guidance of forest officers:

(1) Any request for inspection may be made direct to the local forest station without passing thru the Central Office. It must always be in written form and should contain (a) place where inspection is to be made; (b) species, amount and kind of product to be inspected; (c) name of party requesting the inspection; (d) name and address of the consignee; (e) name of ship; (f) date of shipment; (g) kind of inspection desired; (h) complete and explicit statement of the specifications and special grades

required, if any. Verbal requests shall not be considered.

(2) A certified check or postal money order payable to the Director of Forestry, Manila, covering the fees for the amount of lumber or timber to be inspected, must accompany each request and same should be remitted at once to the Central Office, where the necessary official receipt will be issued. The following schedule of fees is in effect at the present time:

CHARGES

Railroad ties, lot not exceeding 1,000 pieces	each	₱ .03
Railroad Ties, over 1,000 pieces	do	.02
For grading or identification of each 1,000 board feet	do	1.50
For the identification and scaling of logs, either squared or round, for each 1,000 cubic feet of fraction thereof	do	6.00
For tallying lumber not exceeding 10,000 board feet	do	10.00
For each additional 1,000 board feet or fraction thereof	do	.75

Charges are computed on the total amount of lumber handled, including rejects. Transportation and subsistence of the inspector when away from his official station shall be paid in addition to the above charges. "Fraction thereof" simply means that for any amount less than 1,000 cubic feet or 1,000 board feet, a charge of ₱6 and ₱.75, respectively, will be made.

(3) It should be emphasized to the lumber men that all requests for inspection should be made well in advance so as to be in the hands of the nearest government inspector at least two weeks before the date of shipment. This is absolutely necessary for proper arrangement of the work by this Bureau. Failure to make such advance application may subject the shipper to the risk of this request being turned down.

(4) As soon as possible after the inspection

(5) The party making the request must:

tion is made, the bill of expenses must be submitted by the inspector to the Manila office. A model for this bill is given as follows:

EXPLANATION

Date 1926	(Give name of party to be charged, actual dates spent in inspection, etc.)	Amount
July 17	Insular Lumber Co. for cost of inspection fees on 88,822 board feet of lumber from July 7, to 9, 1926, at ₱1.50 per 1,000 board feet	₱133.23
	Insular Lumber Co. for transportation and per diems in connection with the above inspection, itemized as follows:	
	Expt. Date	
	Ranger A. Castillo . 8.25 for July 6-11	
	Ranger M. Eugenio . 5.00 for July 7-10	13.25
	Total	₱146.48

(5) The party making the request must:

a. Provide suitable space and means for segregating the inspected product if it is not to be loaded immediately.

b. Provide adequate labor for taking care of the same as it is inspected.

(6) All certificates of inspection issued must be prepared on B.F. Form No. 4-S. This applies to the inspection of lumber, fitches, ties, and logs. Except as otherwise herein specifically provided, only official names of species and official grades are allowed on these certificates. The statement therein of the amounts of lumber or timber handled must not include rejects. Only authorized Bureau of Forestry grading rules shall be used.

(7) Except in cases where the inspection work involved does not require the services of an authorized lumber inspector and, being of such a nature, the work can be performed by ordinary forest officer, inspectors will sign the certificates of inspection with their title as Authorized Lumber Inspectors.

(8) Certificates of inspection shall be prepared in sextuplicate. The duplicate may be delivered immediately to the party requesting the inspection, and forwarded with the shipment. The original, triplicate and quadruplicate must be forwarded to Manila for the signature of the Director. The sextuplicate will remain at the local station for his files while the quintuplicate

will be forwarded to the district office.

(9) It should be understood that the inspector certifies only to the amount and grade of lumber at the time of inspection. He is not responsible for lumber as shipped unless tallied on board.

(10) This Bureau has neither the authority nor the desire to impose its inspection on seller or buyer. Its inspection work is done only as a matter of cooperation and its decision is not final except in the case of inspection for live-borers of lumber to be shipped to Australia.

(11) All work in tallying must be recorded on B.F. Form No. 3-S. In the absence of any special instruction from the party requesting the inspection, a summarized statement of the tally by grade and species similar to the following must be prepared to accompany each copy of the certificate issued:

**STATEMENT OF LUMBER INSPECTED
FIRST AND SECONDS**

Dimensions	Number of pieces	Board feet
1" × 6" × 10'	10	50
12'	36	216
Total .	46	266
1" × 7" × 14'	1	8
20'	3	36
22'	3	39
etc. . . . .	.....	.....
Total .	7	82

(12) In the inspection for "live-borer" or for grade, the party requesting the inspection must furnish the Inspector with a tallyman for the work.

(13) Inspection at night time is not permitted.

(b) *Inspection of lumber for Australia.*

(1) *Seasoning of.*—Lumber shipped to Australia must be air-dried on stickers for at least 90 days, or must be subjected to steaming process in a dry kiln for one to two hours followed by drying from 10 to 15 days at a constant temperature of 150 degrees Fahrenheit. This rule does not apply to "FAS" lumber without sapwood.

(2) *Sapwood lumber and stacking of.*—No sapwood lumber shall be passed for shipment to Australia unless same is kiln-dried immediately before shipment in the manner indicated above. In case immediate shipment cannot be made due to the limited capacity of the dry kilns, lumber so treated may be stacked at the end of a wharf, at a distance of at least 1,500 feet from land.

(3) *Date on lumber piles.*—Local lumber operators should be advised to adopt a system of recording on the lumber piles themselves, the date when piling began and when finished, in order to facilitate, for mutual advantage of both parties concerned, the verification by the inspector of the 90-day period of air-seasoning requirement. The local inspector as a responsible official, should check up these piling dates as frequently as is necessary. He should, in the case of kiln-dried lumber, check up particularly on the required temperature and number of days that the lumber must be dried in the kilns. When the Inspector comes from a distant place or town other than that in which inspection is to be made, he may be able to verify in a general way from its appearance, the length of time during which the lumber had seasoned, at time of inspection, but under such circumstance he should invariably obtain an affidavit from the shipper certifying to the effect that the lumber to be shipped has been seasoned in

accordance with the requirements of the Australian Government.

(4) *Issuance of seasoning certificate.*—If the lumber to be shipped has been seasoned in accordance with sections 1 and 2 under the heading "Inspection of Lumber for Shipment to Australia," and if such treatment has been properly verified by an authorized inspector or, in his absence, by the local officer in charge, a mere "drying" certificate, similar to the following, would suffice in order to meet the requirements of the Australian Government. This fact must be fully explained to the lumbermen so that unnecessary inspection by the limited lumber inspection personnel of this Bureau may be avoided for mutual advantage of both parties concerned. Said certificate as shown below may bear the signature and corresponding official designation of either an authorized inspector or the local officer in charge, depending on who issued it.

TO WHOM IT MAY CONCERN:

I hereby certify that the amount of twelve thousand five hundred seventy-eight (12,578) board feet (896 pieces) of Lumbayau, as per Company's tally, to be shipped to Australia by the Kolambugan Lumber and Development Co., on steamship "Tanda," October 28, 1926, has been kiln-dried for ten days at a constant temperature of 150° F. and otherwise treated in accordance with the requirements of the Australian Government, (or has been air-dried on stickers for over 90 days, and contains no sapwood, as the case may be).

(Sgd.)
*Authorized Lumber Inspector
(or Authorized Assistant Lumber Inspector or Officer in Charge)*

Approved:
Date

.....
Director of Forestry

In this case no inspection of the lumber is necessary and, therefore, no fees will be collected for the above certificate. It must be emphasized in this connection that in a "drying" certificate for air-dried lumber, these are two essential requirements, viz: (a) At least 90 days' seasoning and (b) lumber must not contain sapwood. As regards the second requirement the question naturally arises as to the verification by the inspector of the second requirement. Under present ordinary methods of handling lumber in lumber yards, there can hardly be any guarantee that a shipment is free from sapwood unless actual inspection of the lumber, piece by piece is made. This simply means that for air-dried lumber actual inspection of the lumber, piece by piece, is necessary. The certificate issued in this case will be treated under another section. Actual inspection for air-dried lumber, may be dispensed with and mere "drying" certificate issued only when the shipment is of such a grade that sapwood is strictly excluded by the lumber company. The inspector, however, must have a personal knowledge of such fact.

(5) *Issuance of live-borers certificate.*—The so-called "live-borer" certificate issued only when actual inspection is made of the shipment. Similar inspection is also necessary in the case of air-dried lumber containing sapwood. Only authorized lumber inspectors and assistant lumber inspectors can sign this certificate.

(6) *Firsts and seconds grades lumber free of sap need no certificate.*—Lumber of the first and seconds grades without sapwood may be shipped to Australia without either a "live-borer" certificate or a "drying" certificate.

(7) *Shipper's invoice must accompany certificate.*—In case where no inspection is necessary and only a "drying" certificate is issued each copy of said certificate for the files in the local station, the district and Central Office, should be accompanied by

the company's invoice of the shipment, which invoice must be secured from the shipper.

(c) *Inspection of lumber for grades.*—In making inspection of lumber for grade, inspectors must be guided by the following instructions:

(1) *Authorized full-pledged lumber inspectors.*—Only authorized full-pledged lumber inspectors are allowed to inspect lumber for grade and sign the necessary inspection certificate. The work must be performed either by the inspector himself or by other forest officers under close supervision by the former; in either case responsibility for the work accomplished lies wholly on the inspector whose signature will appear on the certificate.

(2) *Grading rules other than official.*—In case the lumber is graded in accordance with rules other than the official Bureau of Forestry rules, the party requesting the inspection must furnish the inspector a copy of the grading rules for such grades, the names of which will appear on the certificate issued instead of the official grades.

(3) *Extract of non-official rules to accompany certificate.*—The necessary extract from such grading rules must accompany each copy of the certificate in the above case. A statement to the effect that the shipment was inspected in accordance with such grading rules must be inserted in the certificate.

(4) *Special specification and grades.*—Special specifications or special grades called for by the party requesting inspection must also appear on the certificate. In the absence of any special specifications, all inspection work for grade must be done strictly in accordance with the grading rules of this Bureau.

(5) *Green lumber.*—No inspection shall be allowed for green lumber, as such lumber is liable to suffer considerable degrade after the inspection.

(d) *Request for tally work only.*—This work may be done by any competent for-

est officer, regardless of whether he is an authorized Lumber Inspector or not. The following instructions shall be observed:

(1) *Standard dimensions.*—In the absence of any special instructions, standard dimensions set forth in the grading rules of this Bureau will be the dimensions recorded in the tally sheet.

(2) *Use of B.F. Form No. 4-S.*—The lumber certificate form, B.F. Form No. 4-S, may be used for certifying tallied lumber, making such minor changes as are necessary in the wordings of the form. The necessary number of copies to be prepared for this tally certificate will be the same as that for the certificate of lumber inspection.

(3) *Filing of tally sheets.*—The original tally sheet will be filed in the local station but each tally certificate must be accompanied by a copy of the tally summary.

(e) *Inspection of ties and logs.*—The following instructions shall govern the inspection of ties and logs:

(1) *Inspector must be provided with specifications.*—No official rules have as yet been issued governing the inspection of ties. The party requesting the inspection must therefore invariably furnish the inspector with specifications desired, and such specifications should accompany the certificate.

(2) *Forest officers may inspect.*—Any competent forest officer may inspect ties or logs and issue the necessary certificate therefor provided the work involved is only a matter of identification and measurement and does not include grading.

(3) *What certificate should contain.*—The certificate issued in connection with the above inspection must contain, in the case of ties, species, number of ties and dimensions; and for logs, species, number of logs, net volume in cubic meters with its equivalent in cubic feet in parenthesis. All unaccepted pieces shall be segregated under the heading "Rejects." A statement to the effect that deductions for natural defects

were made, or not made, should also appear on the certificate.

(4) *Scale of individual logs.*—The scale of each individual log, giving length, diameter and net volume, should not accompany each copy of the certificate issued unless such information is desired by the party requesting the inspection.

(5) *Certificate for pinholes on logs not allowed.*—No inspector will be allowed to certify as to the absence or presence of pinholes in logs.

(6) *Inspection fee.*—Inspection fees shall be collected on the basis of the net volume of the ties or logs handled including rejects, if deductions for natural defects were made; otherwise, gross volume will be taken as the basis.

(7) *Shipment for export.*—The general form of certificate of inspection, B.F. Form No. 4-S with the necessary changes shall be used for this work. If the logs or ties are to be shipped abroad, a statement must appear on the certificate to the effect that the forest charges have already been paid. This statement is necessary in order to meet the requirements of the Bureau of Customs with regard to the exportation of forest products.

(f) *Requests for scaling or rescaling logs.*—No request for scaling or rescaling logs for any purpose whatever shall be complied with unless the party requesting the scale agrees that, (a) scaling or rescaling will be done only in case there is an available ranger or scaler to perform the work; (b) the logs to be scaled or rescaled are so located either on dry land, on shallow water, on the beach, or rafted that the scaler can without difficulty determine the species and study the defects of each log; (c) no scaling or rescaling will be permitted of logs which are being hoisted on board ship or barges, nor (d) will scaling or rescaling before 7 o'clock in the morning and after 4 o'clock in the afternoon be allowed. Any deviation from these four conditions will be made only upon the express written order

of the Director. The scaling and rescaling of logs shall be governed by the following instructions:

(1) *General instruction*—

a. If the work involved is identical with the regular scaling work of this Bureau, that is, it does not include grading or any form of selection of logs in accordance with specifications furnished by the interested party, or special method of scaling desired by the party making the request, the rules governing the issuance of proper certificates thereof are given herein below.

b. No scaling fee shall be collected if scaling is done with the object of collecting the corresponding forest charges. But if the work is to be performed in a locality where no scaler is assigned, either permanently or periodically, the interested party shall pay all the necessary expenses from the time the scaler leaves his station until his return. Such expenses will include transportation expenses from station and return and per diems incurred during scaling and in preparing the necessary reports .

c. A certificate showing the net volume by species of the whole shipment may be issued free of charge when the officer issuing the certificate knows positively the exact measurements and species of every log in the shipment. The certificate should contain the number of logs and the corresponding net volume of each species and the number of the invoice, if any, under which the forest charges of the shipment were paid, or the date reported on B.F. Form No. 1-S, if the forest charges are pending payment. The name of the party paying the forest charges should be given. (See sample certificate No. 1).

d. A certificate giving the number of logs shipped but not the species nor volume may be given gratis when the shipment consists of logs scaled previously or already reported on B.F. Form No. 1-S and the officer issuing the certificate cannot definitely identify every log in the shipment. The certificate shall show only the number of logs in the shipment, but it must contain a statement that the logs have been scaled and that the forest charges have been paid already, or reported on B.F. Form No. 1-S for the collection of the corresponding forest charges, if not as yet paid, giving date when the form was submitted. (See sample certificate No. 2.)

e. Forest officers at the point of origin shall on no account rescale logs which they have scaled previously nor officers at the point of destination rescale or check the scale of the shipment, unless agreed upon that the interested party will pay the corresponding charges required in the regulations for scaling, which is at the rate of ₱6.00 per thousand cubic feet or fraction thereof, plus expenses.

f. When rescaling work is done, the result of such work should be embodied in a certificate or statement giving the following information: the number of logs by species, and the gross and net volumes by species. (See sample certificate No. 3.

g. If the interested party requests that the shipment be accompanied by a copy of our scale of the timber involved, showing the diameter and the length of the logs, the request shall be complied with in accordance with the following conditions: (1) If the shipment comes under paragraph (c) or (d) or both,

and if the officer issuing the certificate can give the required information without the necessity of having to rescale the logs, an Auxiliary Invoice (New B.I.R. Form No. 14.04) covering the logs should be filled out attached to the certificate and delivered to the interested party. The invoice should be made in the usual manner, but right under the total gross volume the total amount to be deducted and total net volume should be indicated together with notations as follows:

"This invoice is prepared by the undersigned at the request of Mr. W. R. Gibberson to accompany the shipment and to supplement the certificate to which it is attached.

This invoice is of no value if detached from the certificate.

Zamboanga, Zamboanga, January 1, 1927.

JUAN DE LA CRUZ

Ranger, Bureau of Forestry"

(2) If the required scale copy cannot be given without remeasuring the logs, the case should be treated as coming under section 211 paragraph (e) hereon, and a charge of P6 per thousand cubic feet, or fractions

(Certificate No. 1)

To Whom It May Concern:

This is to certify that the forest charges of the timber listed below have been paid by under invoice No., assessment No., in the municipality of Province of on, or will be paid by the shipper on, at the municipality of Province of These logs will be shipped to on the S.S. on under bond.

Species	Number of logs	Net volume in cubic meters
Red Lauan	200	400
Tañgile	150	200
Yacal	15	15
Total	365	615

Remarks:

Officer in charge

Forest Station

NOTE: Cross out any unnecessary words from the above certificate.

thereof, for scaling should be required. Shipment falling under section 211 paragraphs (e and g-1) should be accompanied by an Auxiliary Invoice (New B.I.R. Form No. 14.04).

h. No charge should be made for an auxiliary invoice prepared as indicated above. Copies of such invoice, however, should be furnished the Director and the Collector of Internal Revenue, through the Central Office. This invoice is to be attached to the certificate accompanying the shipment.

i. No certificate shall be issued to cover a shipment of logs the forest charges of which have not been paid unless such shipment is made by a licensee operating either a class B or C sawmill or under a forestry bond as required by the Bureau of Internal Revenue.

(2) *Sample certificates for scaling and rescaling.*—The following sample certificates are given below to be used accordingly. The certificate shall be made out in six copies, using the regular letter head paper for the original copy, to be disposed of as indicated in section 211, paragraph (a-8).

(Certificate No. 2)

To Whom It May Concern:

This is to certify that of is shipping on the S.S. on for, 200 logs of undetermined species and volume. These logs have been scaled at various times in the past by the personnel of the Forest Station at and the forest charges had been paid or requests for collection of the same had been made of the proper authorities.

Remarks:

.....
Officer in charge

.....
Forest Station

NOTE: Cross out any unnecessary words from the above certificate.

(Certificate No. 3)

To Whom It May Concern:

This is to certify that through the request of the undersigned scaled the timber listed below. Said timber was called at on

Number of logs	Species	Gross volume in cu. m.	Netvolume in cu. m.
300	Red Lauan	600	540
50	White Lauan	40	34
100	Apitong	120	110

Remarks:

.....
Title

SEC. 212. CONCESSION AND SCALING REPORTS.—(a) *Weekly Scale Report* (B.F. Form No. 2a-S and B.F. Form No. 2-S).

(1) *Scale book* —

a. All logs must be recorded as they are scaled on B.F. Form No. 2-S which is furnished in a book of pocket size, with duplicate sheets. Record the data directly on the scale sheets, making a duplicate by putting a sheet of carbon paper between the original and duplicate sheets and fasten them with gem clips to keep from slipping. Use a hard pencil and keep it sharp. A 3-H pencil is best. This makes a dent in the paper and produces a neat indestructible record. Make

no erasures. In case a record must be changed, draw a line through the incorrect entry and write the correct one above. Record principal and common species on separate pages. Species that are cut only in small quantities may be entered in the same scale sheet, seeing to it, however, that those belonging to the same group are recorded together. Only unknown species should be listed under miscellaneous. The columns "Volume Cu. M.," "Merchantable Volume" and "Amount Deducted" shall be totaled. Fill up the column "Kinds of Defect" in accordance with instructions given under Section 197,

"Recording and Describing Defects in Scale Book" in this Manual.

b. In entering data of squared logs in the scale book, the same procedure should be followed as in recording round logs, unless otherwise specified in this paragraph. One scale sheet should be used for one species but no round logs although of the same species should be mixed with squared logs in one sheet. Under the column "Diameter" the average thickness and width of the squared timber should be recorded, thus: 37 x 38. The volume should be computed by multiplying the average thickness by the average width and the product by the length, and the result should be entered under the column "Volume Cu. M." in the scale book. The amount de-

ducted should be computed by multiplying the estimated per cent of the defect by the gross volume of the squared log. Before the scale sheet is filled or the scale in one scale sheet is closed, the columns "Volume Cu. M.," "Amount Deducted" and "Merchantable Volume" should be totaled. On the next line below this total the phrase "30 per cent for loss in squaring" should be inserted and the corresponding amount should be computed by taking 30 per cent of the total gross volume of the squared logs, which is added to the merchantable volume to obtain the total volume of the logs to be assessed. Below is a sample of a scale sheet partially filled to serve as a model in entering data of squared logs in the scale book.

Book No. 1 Sheet No. 4 Licensee INSULAR LUMBER COMPANY.
Place of Scaling WOODS. Species: IPIL (SQUARED) Date
DECEMBER 5, 1932.

Log Number	Length in meters	Diameter in centi- meters	Volume in cu. meters	Deductions		Mer. vol- ume	Kinds of defect
				Amount deduct ed	Per cent		
1	5.6	31 x 30	.52	4	.02	.50	H.Ch.—6
2	7.2	40 x 42	1.21	3	.04	1.17	H.Ch.—7
3	6.3	37 x 40	.93	4	.04	.89	(H.Ch.—5 (R.K. 10 x 25 x 1
4	4.2	42 x 42	.74	6	.04	.70	H.Ch.—10
5	5.4	50 x 50	1.35	3	.04	1.31	H.Ch.—9
Totals			4.75	...	.18	4.57	
30% for loss in squaring						1.43	
Total						6.00	

Scaled by RANGER ALFREDO ALFREDO LAGAYA.

Computed by PANTALEON DE LA PEÑA. Checked by PABLO ROQUE.

(2) *Weekly Scale Report* (B.F. Form No. 2a-S) and scale sheet.

a. *Class C sawmills.*—At the end of the week scalers working at Class C sawmills shall total up all the scale sheets filled out during the week, and enter the totals in B.F. Form No. 2a-S. After having been

checked properly, forward the original and duplicate of the form with the scale sheets to the Directors by the first mail after the end of the week, retaining the duplicate of the scale sheets in the scale book and triplicate of Form No. 2a-S for the station files. This report should be

submitted as a matter of information regardless of whether there were logs scaled during the week or not.

b. *Class A and B sawmills.*—Officers scaling at Class A and Class B sawmills, where only a part of the logs are measured by forest officers, should submit their report on B.F. Form No. 2a-S at the end of each period of scaling, heading the statement with "Periodical Scale Report" instead of "Weekly Scale Report." The number of days of operation should be for the period covered by the report. In the preparation of this report, saw-logs should be segregated as usual by species from other logs such as ties, pilings, firewood, etc.

(b) *Monthly Scale Report* (B.F. Form No. 1-5.—(1) *Required of all Class C sawmills.*—Unless otherwise authorized, forest officers should use this form only in reporting logs cut by Class C mills, that is, mills, at which all logs are scaled by forest officers. On the first day of each month weekly scale report totaled by species and groups be added together and entered in proper order on B.F. Form No. 1-S. Scale of abandoned logs, ties, bridge timber, skids, etc., should not be reported on for collection on this form but in an ordinary auxiliary invoice (B.I.R. Form No. 14.04). (See paragraph (c) under section 183.)

(2) *Insertion of "estimated" abandoned timber.*—When the place of regular scaling is in the woods, it is desirable to insert in the report the "estimated" amount of abandoned timber in the cutting areas for the information of all concerned. A convenient way of obtaining this data is for the scaler to simply count the number of logs left in a yarding strip as soon as it is abandoned. To get the corresponding volume in cubic meters, multiply the number of such logs by the volume of the average log. While in any particular case the above volume will

only be approximate inasmuch as every individual log is not actually rescaled, it will nevertheless give sufficiently definite explanation to the lumberman concerned.

(3) *Submission for collection.*—Immediately after the end of the month, or as soon as possible, but not later than the fifth day of the following month, the monthly scale report (B.F. Form No. 1-S) accompanied with a letter of transmittal shall be submitted for collection. The letter of transmittal must state the last day on which the forest charges due thereon may be paid without surcharge and also the date when the local office of the company was furnished with a copy of the report. In Class C sawmills, the last day must be the thirtieth day from the fifteenth of the month following that to which the scale report pertains, taking into account the actual number of days of the month from which the period of 30 days will be begun or 45 days from the beginning of the month. For example the monthly scale report for December, 1931, the last day of payment without 50 per cent penalty is February 14, 1932, for January, 1932 report, the last day is March 16, 1932, etc.

(4) *Distribution of copies of report.*—Eight or more copies of B.F. Form No. 1-S as individual cases may require, shall be prepared with the corresponding copies of the letter of transmittal to be disposed of in the following manner:

Original and duplicate copies to the Manila City treasurer or municipal treasurer, as the case may be, to whom the licensee is authorized to pay the forest charges.

Triplicate copy to the local office of the licensee.

Quadruplicate copy to the Manila office of the licensee; if any, through the Director of Forestry.

Quintuplicate copy to the Collector of Internal Revenue through the Director of Forestry.

Two copies to the Director of Forestry.

One copy to the district forester.

one copy for the station file.

Monthly scale report or invoices shall be submitted by the officer in charge of the station or district forester, as the case may be, to the municipal treasurer, and those for collection in the City Treasurer's Office shall be submitted through the Director.

This report (B.F. Form No. 1-S) shall be submitted every month, regardless of whether there were logs scaled during the month or not. Proper notation should of course be made in the scale report if no logs were scaled during the month.

(c) *Invoices for Class B sawmills submitted by forest officers.*—In Class B sawmills where some of the logs have been scaled by forest officer visiting the sawmills periodically, the scale of such logs should be entered in the log scale record (B.I.R. Form 499), showing the total number of logs by species, with the corresponding gross and net volume and certifying that these logs were scaled by him and the corresponding invoices will be submitted to the treasurer concerned for the collection of forest charges. This is necessary for the information of inspecting forest officers.

(d) *Invoices for Class A sawmills submitted by forest officers.*—In Class A sawmill where some of the logs were scaled by a forest officer, a copy of the auxiliary invoice submitted for the collection of forest charges of the logs scaled should be furnished the sawmill operator who will keep same in his file together with the other invoices submitted by him as permanent records to be shown to inspecting forest officers.

(e) *Monthly concession report*—(periodic concession report).—At the end of each month, officers in charge of scaling stations, or scalers taking charge of scaling work in sawmills, shall submit monthly concession report covering the activities of the mill and logging operations. This report will be prepared for all (A, B, and C) classes of saw-

mill. Where scaling is done wholly or in part by sawmill operators and the mill is visited periodically by a Bureau scaler, the report which shall be called "Periodic Concession Report," should cover the period on which no report was submitted stating the period covered by the report. In this case, such items as are not needed in the outline of a standard report appearing below may be omitted. All scalers and officers in charge of scaling station should endeavor to compile reliable cost of logging, milling, transportation, etc. which shall be included in the monthly concession report. An outline in Appendix VI may be used as a guide in preparing this report.

(f) *Monthly report of lumber shipped and remaining in stock* (B.F. Form No. 6-S).—This form is self-explanatory. It should be submitted at the end of each month with the monthly concession report, and should show the volume in board feet of lumber shipped during the month from the mill yard and the volume remaining in yard at the end of the month. The report must show as accurately as records can be secured from the licensee the amount shipped to the different markets both local and foreign, by species and by money value, if possible. When present, the following species should always be separated in this report: Red Lauan and Tañgile, White Lauan, Apitong, Guijo, Manggachapui, Lumbayao, Yakal, and Palosapis. It is also desirable, when shipments are made regularly in any quantities, to report the following species separately: Ipil, Narra, Molave, Makaasim, Malakadios, and Pagatpat. Separate report for each month will be submitted and the segregation of shipments for several months in one report is not permissible. Miscellaneous species of little importance and shipped in small irregular quantities should be separated by groups.

(g) *Periodic report for Class A and B sawmills.* (B.F. Form No. 7-S)—For all mills at which regular scalers are not permanently stationed, inspecting forest officers

should use (B.F. Form No. 7-S), which may be secured in mimeographed form from the Central Office. This form includes in one sheet all the information of a licensee's activity. Whenever possible, however, the data should be secured and reported on separate forms for each month. The report should show, by principal species specified under B.F. Form No. 6-S and by groups, the volume of logs manifested from the licensee's area; total forest charges; mill tally and the corresponding number of days of the milling operation; lumber sold by destination and construction; lumber use; and inventory of lumber and logs at the mill.

(h) *Logging and milling operation report.*—For each new logging and sawmill operations established in the district or for such old ones as have not as yet been reported upon, a report based on an outline given in Appendix VII shall be submitted as soon as the logging and milling operations have begun. Supplementary reports from time to time are required when material changes had taken place in the operation after the first report has been submitted.

(i) *Report for special manufacturing plants occasionally.*—Special manufacturing plants such as veneer mills, stave mills, dry kilns, etc., should be reported on periodically or whenever data valuable to the Bureau can be acquired. This report should include the type and make of machines, as well as the output, its relation to decreasing or increasing output and its costs, and cost of building, if any.

(j) *Report on lumber yards and lumber dealers.*—In order that this Office may have as complete data as it is possible to obtain regarding the lumber markets in the islands, field men should inspect and submit report every year of each of the lumber yards or lumber dealers doing business within their district. Such report, among other things, should include location, ownership, organization, capital invested, equipments, quantity of lumber handled and sold monthly, lum-

ber inventory, price, sources, marketing facilities, etc. Appendix IX may be used as a guide in preparing this report. This report should be prepared as of November 30 of each year and submitted to the Manila Office not later than the 15th of the following month so as to enable the Director of Forestry to use the data contained therein in the preparation of his annual report.

(k) *Forest fire report.*—All forest fires must be reported to the Director immediately following the outline in Appendix XI.

SEC. 213. SKETCH OF LOGGED-OVER AREAS TO BE SUBMITTED QUARTERLY AND SEMI-ANNUALLY.—A sketch on a convenient scale preferably 1:10,000, located with reference to a known point on the map, showing the area scaled and logged over by an operator or licensee in which permanent scalers are stationed, shall be submitted at the end of each quarter. It should indicate by donkey setting, or cutting area, the number of hectares logged over during the period, the gross and net scale and the per cent of stand by species, as well as the location and work of donkey engines if any. The sketch shall be forwarded through channels to the Director with a letter of transmittal and a tabulation showing the area logged over in hectares in each section or donkey setting with the corresponding net scale and average stand per hectare, as well as a tabulation of stand by volume and per cent of each species. The data shown in this sketch shall be compiled on the progress map of the concession to a scale of 1:20,000 which progress map shall be submitted to the Director at the end of each semester.

ADDITIONAL RULES FOR O. T. No. . . .
OF LOCATED AT
.

1. Failure of the licensee to file with the Director of Forestry, Manila, an application for the renewal of this license before its expiration may result in his losing "Priority Privilege" to the area described in the license.

2. When so required by the Director of Forestry, the licensee at his own expense, shall have the boundary lines established and marked on the ground satisfactory to the said Director.

3. No seed or other trees marked by forest officer shall be cut under this license.

4. No entry, occupation or cutting of trees shall be made within thirty (30) meters on each side of national and provincial roads passing through the public domain; *Provided*, that, in areas of aesthetic or scientific value, no entry, occupation or cutting shall be made within a strip of at least sixty (60) meters on each side of such roads.

5. The Director of Forestry reserves the right to permit, if public interests so demand, the opening of such portion or portions of the area as may reasonably be required for logging railroads, cable ways, aerial tramways, roads, trails, log standing, timber chutes or slides, telephone lines, pumping stations and similar rights-of-way for the use of forest licensees, concessionaires, permittees or lessees in carrying on their business.

6. The licensee shall submit to the Director of Forestry, Manila, a monthly re-

port showing by groups, the amount of timber manifested under this license as well as the corresponding forest charges and reforestation charges.

7. The licensee shall pay the following charges for Reforestation Funds, in addition to the regular forest charges provided for under Section 264 of the National Internal Revenue Code (Commonwealth Act No. 446), for each cubic meter of timber cut from the public forest under this license:

(a) On timber of the first and second groups, fifty centavos;

(b) On timber of the third and fourth groups, forty centavos.

For failure to pay said charges within a period of sixty (60) days commencing from the date of demand by the collecting officers, the licensee shall be liable to pay a surcharge of twenty-five per centum (25%) of the amount due. For failure to pay the amount due including surcharge within sixty (60) days after the same has become due and payable, the same shall be considered as sufficient cause for the cancellation of the license and the forfeiture of the corresponding bond deposit of the licensee. (Republic Act No. 115, as amended by Republic Act No. 737).

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HARDWARE CO.**

*Lumber and Hardware Dealer
Bangued, Abra*

ANDRES LIM
Manager

SY LIM
Treasurer

Compliments of

ANTONIO V. CERVANTES

*Concessionaire and Dealer
on*

Hardwood and Philippine Mahogany

Linugos, Misamis Oriental

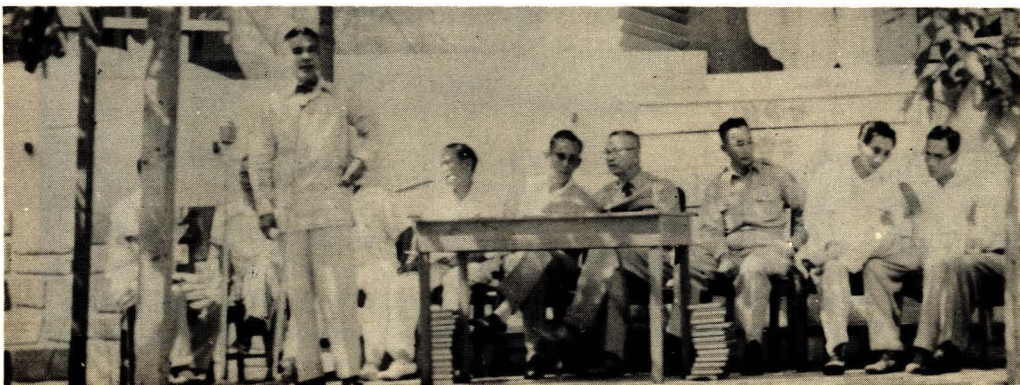
Arbor Day Scenes



Hon. Sergio Osmeña, Jr. Cebu City Mayor, planting Narra Tree at Plaza Rizal, Basilan City, in the presence of City Auditor, (2) F. de Vera, (3) P. Pastorfide, Actg. School Supt., (4) Hon. C. Valdez, City Councilor, (5) Hon. J. Abdulaop, City Councilor, (6) L. Sirilan, City Engineer, (7) Atty. Cañares, Sec. to Mayor Osmeña, and (8) Forester J. R. Claveria.



Batac Arbor Week 1956 with Board Member Jose Evangelista, Mayor F. Asuncion and Forester A. T. Tremor.



District Forester Alejandro Tremor, speaker at the Arbor Week Rally Day at Ablan's Memorial Hall.



Mass Planting of trees during the Birds and Arbor Week Celebration at Dupax Reforestation Project.



*Ranger Joe B. Hernando distributing seedlings on
Arbor Week Rally Day.*



*Roadside Planting Day in Burgos, Ilocos Norte.
Arbor Week.*



Mayor F. Asuncion of Batac, Ilocos Norte delivering his speech on Arbor Week.



Dramatic Club, I.N.H.S. Students under Miss Ligot. Arbor Week Rally Day, July 28, 1956.



I.N.H.S. Teachers and Students with Ranger A. V. Sanchez planting Avocado (Persiana americana)

The Municipal Forestry Council of Odiongan, Romblon planting a Golden Shower tree during the Arbor Week. In the picture are Mr. Benito R. Maie, principal of Odiongan Elem. School, Mayor Conrado Meñez, planting the tree, Mr. Tomas Madaya, Miss Consolacion Chanco, Messrs. B. Talom-ian, Jose Fano, & Pedro Forsulleza.



Ranger Cachero distributing seeds of Baguilingbang in Dingras during Arbor Week.



Back view of C.F. float, 38th Loyalty Day.

Here & There



College of Forestry, First Prize Winning Float, 38th Loyalty Day Parade.



Senior Class '56-'57, with Asst. Dean Calixto Mabe sa, Secretary Gregorio Zamuco and Prof. Jose Blando, Class Adviser.

Personnel of Forest District No. 10 (Tarlac, Tarlac)

Standing (from l. to r.) Rgr. J. Romero, Dep. For. Grds: R. Recomeo, O. de Leon, M. Castro, B. Austria & L. Zacarias.

Sitting (same order) For. Guard G. A. Ferrer, Forester M. Agayan, Dist. Forester T. V. Manzano, Rgr. D. Ganapin and For. Guard S.B. Ba...

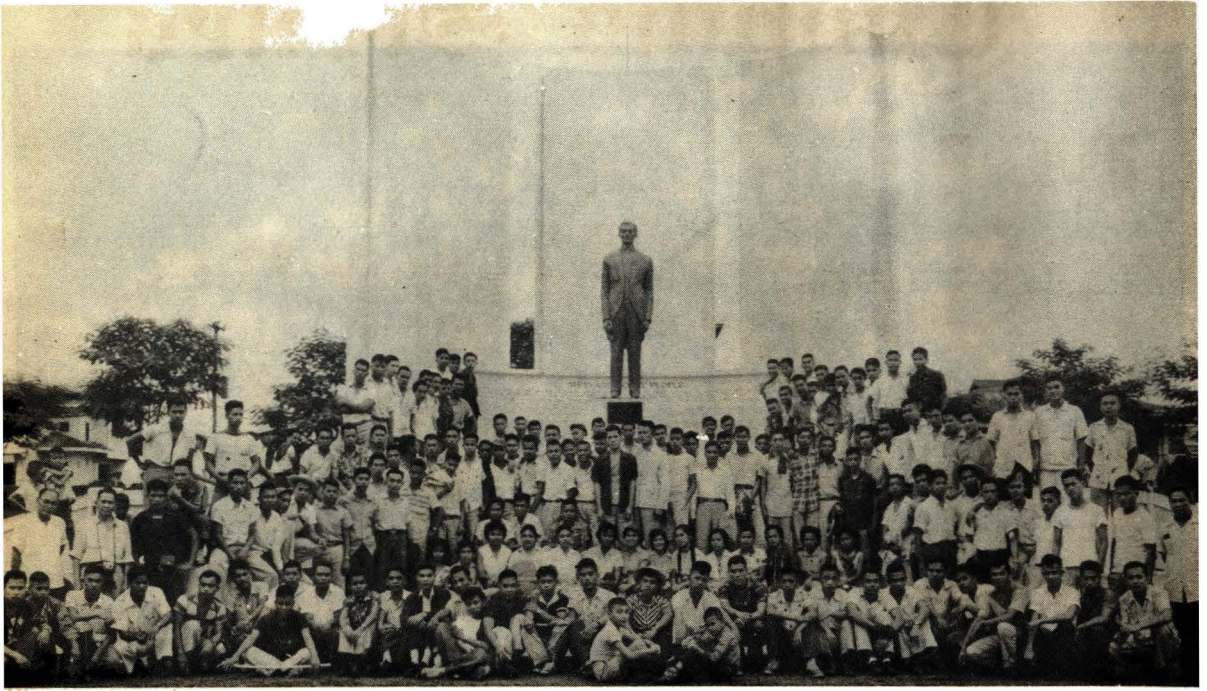




Physiography Class Field Trip to Quezon Memorial Park, September 16, 1956.



Physiography Class at Dalahican Beach, Quezon.

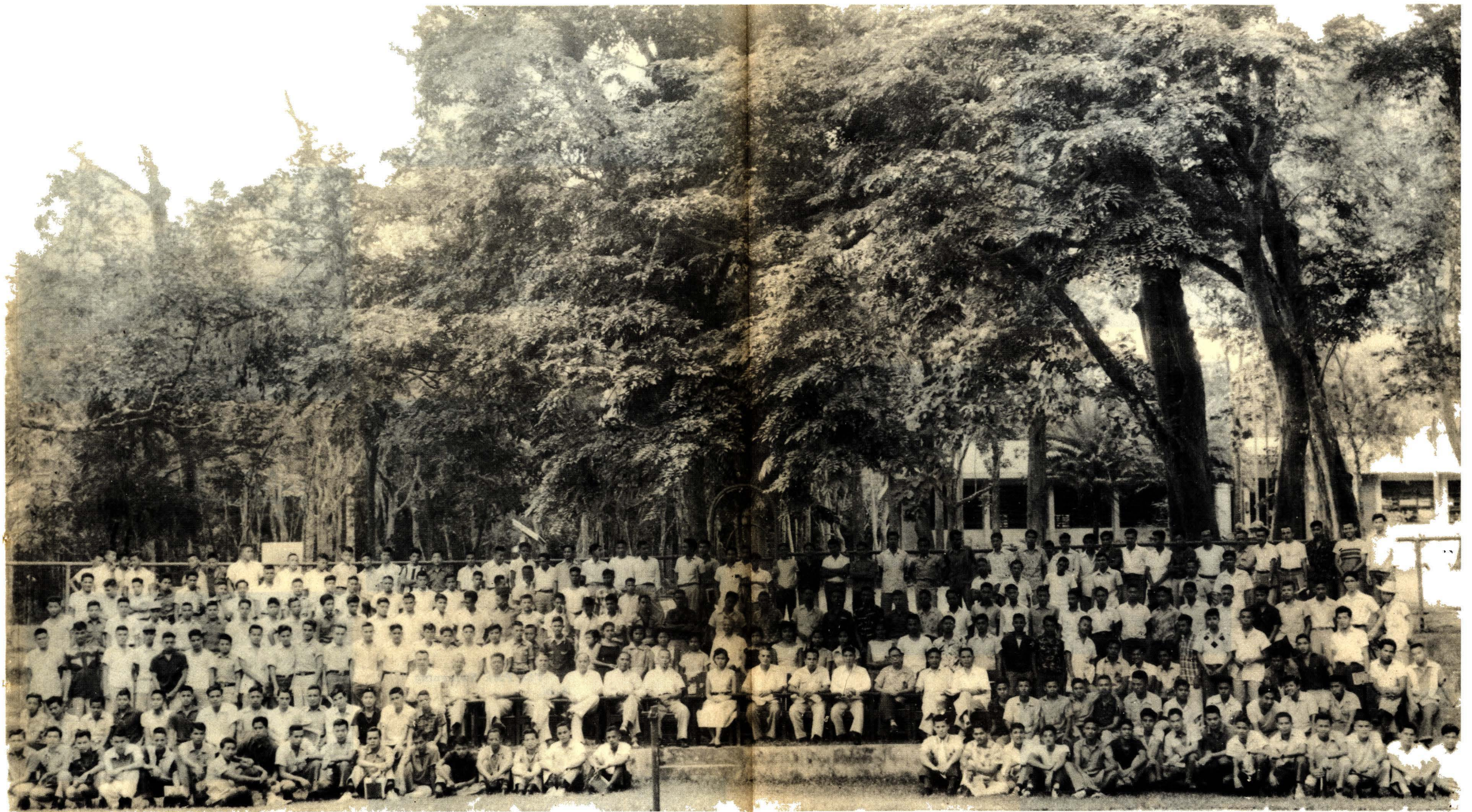


Physiography Class at the Perez Park, Lucena, Quezon.



The Class at the Quezon Memorial Park.

(Courtesy of OLIVE STUDIO)

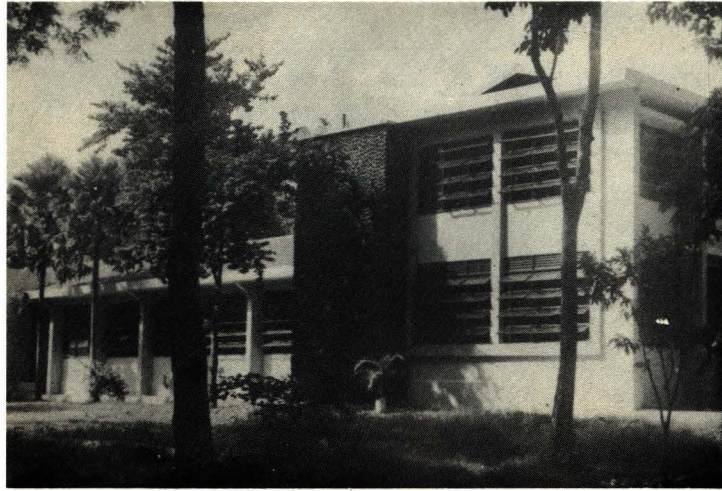


THE U.P. COLLEGE OF FORESTRY STUDENT BODY WITH THE FACULTY, 1956-'57

Sitting, from left to right: Lucio Quimbo, Pres, F.S.B.O., For. Caesar Recto, Mr. M. Morales, CD pres., Prof. Froilan Rosqueta, Prof. Eugenio de la Cruz, Asst. Dean Calixto Mabesa, Miss Teresita M. Blando, Prof. Jose B. Blando, F.S.B.O. Adviser, For. Mario Eusebio, For. Domingo Lantican, Dr.

Felipe Salvoza, For. Domingo Jacalne and Prof. Francisco Tamolang. Not in picture: Prof. Gregorio Zamuco, Secretary, C.F., Dr. Artemio Manza, Miss J. Taleon, For. Felipe Lopez, For. Osiris Valderrama and For. Napoleon Vergara.
Courtesy Olive Studio

Campus Scenes



College of Forestry Building.



*Forest Products
Laboratory Building.*



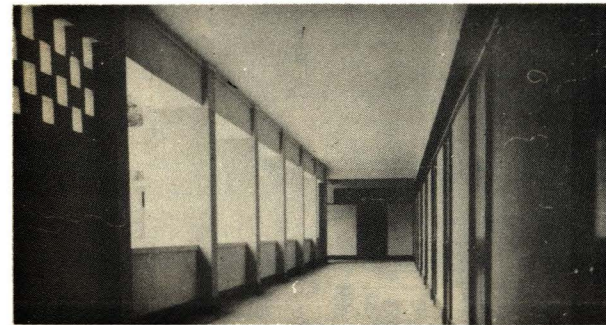
*Forest Experiment
Station Building.*



*The Makiling Mt., the
Forestry students' out-
door Laboratory.*



*Faculty road from the
College of Agriculture to
the Forestry campus,
Makiling National Park.*



*A corridor of the
College of Forestry
Building overlooking the
inner court.*



*The Park Swimming
Pool.*



The Forestry Pavilion.

The Work of FAO*

Seminar For Forest Research Specialists

In accordance with desires expressed by the Asia-Pacific Forestry Commission, arrangements were made by FAO with the Government of India as host, to hold a seminar for Forest Research Workers of the region. Dr. K. R. Nair, statistician for the Forest Research Institute, Indian Forest Service, as representative of the Government of India, and Mr. J. G. Osborne, statistician for the United States Forest Service as FAO Representative, were appointed as Co-directors for the seminar. Mr. L. K. Strand, Professor of Forestry and Statistical Consultant from Norway was appointed as Monitor. The seminar was held at the Forest Research Institute at Dehra Dun, from 12 October to 10 December 1955. It was planned to deal primarily with the application of statistical methods in forest research, particularly in the field of silviculture.

The objective of the seminar was to make a thorough and systematic coverage of the design of experiments and the statistical theories basic to the analysis, interpretation, and presentation of results of experiments and sampling investigations. Treatment of the subject matter was from the point of view of the practicing forest research worker and the methods investigated were chosen specifically to meet the day-to-day needs of his work.

Forest research workers in this region have long been acutely aware of the place of statistical methods in sound experimentation. They have followed the work of their colleagues in agricultural research in the application of modern experimental designs but, at the same time, have recognized the intrinsic differences between agricultural and forest experimentation that make indis-

criminate adoption of the experimental designs used in agriculture unwise.

The forest research worker recognized that in order to go forward confidently in his application of statistical methods to his work he must, himself, become proficient in the fundamental principles upon which efficient and sound experimental designs are based. He could not depend upon either the agricultural statistician or the mathematical statistician to hand him designs tailored to meet his needs. The experimental material with which the forester works normally is much more variable than that with which the agricultural statistician works and therefore presents problems of experimental control not met by the latter. The forester must have a sound foundation in both statistical theory and forestry in order to develop his own experimental designs or to avail himself of the assistance of the mathematical statistician. It was for these reasons that the course of study adopted by the Co-directors was a fundamental one. Due to the remote locations of many of the participants, it was felt that they must be made largely self-reliant. At the minimum they should be able to resolve the bulk of their statistical problems from their own knowledge, and design experiments that can be analyzed directly and unambiguously. They must be able to recognize situations in which these requirements cannot be met and to avail themselves of the purely mathematical assistance of professional statisticians.

In all, nine countries were represented by participants in the seminar: Burma, Ceylon, Indonesia, Japan and Malaya each nominated two students; Pakistan, New Guinea (Australia) and New Guinea (Netherlands) one each; and India supplied five.

* Reprinted from "Unasylva" Vol. 10, No. 1, 1956.

In the invitation, it was pointed out that maximum benefit would be obtained from the seminar if the participants had had experience in forest research and some grounding in mathematics. It was emphasized also that it was clearly desirable that only those participants should be considered who, on their return from the seminar, would be engaged in forest research.

Evidence of the sincerity of interest of the participating countries is apparent in the high caliber and rank of the participants selected. Almost without exception the men are directing research or performing research at a responsible level.

This was important to the success of the seminar since, with representation at a high level the participants upon returning to their home countries will be in a position to influence the research programs and to foster immediate adoption of sounder and more efficient techniques.

Forest Working Technique and Training of Forest Workers

The technical work of FAO has two main aims: first, the quantitative increase in output of food and agricultural products—the growing and harvesting of two blades of grass where only one has grown before; secondly, the raising of the standard of living of the world's population. These aims are complementary and interdependent. An improvement in living standards can be achieved only through increased production accompanied by increased wages. Increased production with increased wages is only possible on the basis of a rise in productivity.

Productivity has two aspects—human and material. It is generally agreed that performance in any sphere can be improved by training, in other words there are “best methods” whereby maximum results may be attained for a given energy expenditure. Within the limits imposed by physiological factors, therefore, improved techniques and vocational training can raise production

standards. The question of working techniques is, however, closely bound up with the second aspect of productivity—that of tools and machinery. The utilization of suitably designed tools which facilitate the work and to contribute to the rationalization of working methods, and of machinery to take the place of human muscle power can multiply output many times over.

The rationalization and mechanization of industry is already a familiar story, dating from the nineteenth century. But that of agriculture and forestry has, in general, been lagging in both “developed” and “underdeveloped” countries. Thus, even in Europe, the mechanization of forest work has got underway in some countries only during the last ten years or so, and there exist many regions where powered equipment for such heavy and arduous work as felling and logging is the exception rather than the rule.

In view of the difficulties faced by the European forest industry, where irrational and old-fashioned methods of exploitation have kept production costs high and output low, and where existing wages and conditions have provided but little incentive for a largely unskilled and constantly diminishing labor force, FAO set up in 1952, as a subsidiary body of the European Forestry Commission, a Pilot Committee of Logging Techniques and Training of Forest Workers. Its terms of reference were to foster international collaboration in the field of felling, logging and timber transport, in order to support national efforts aimed at increasing productivity, including output of labor, reduction of waste, prevention of accidents, and the improvement in the standard of living of forest workers. The program of work of the Pilot Committee, which comprised experts from eight European countries, covered working techniques and performance, mechanization and vocational training (in co-operation with the International Labor Organization).

This work is now being continued on an all-European basis by the Joint Committee

on Forest Working Techniques and Training of Forest Workers, set up in 1954 by the European Forestry Commission and the Timber Committee of the Economic Commission of Europe. The first session of this committee, held in December 1955, on the invitation of the French Government, at Nogentsur-Marne, near Paris, was attended by sixty-five delegates from nineteen European countries, the United States and Soviet Russia, and by representatives of various international and non-governmental organizations.

The Committee's program of work covers: working techniques, mechanization, mountain logging, forest workers' training and safety, and terminology. This program is being implemented through specialized study groups, and individual experts and research stations are entrusted with the carrying out of various technical studies.

Working Methods and Techniques

With a view to increasing productivity in forest work, the Joint Committee is studying the question of working techniques and has set up a study group to deal with this problem. The considerable variations in performance which exist between different regions in the same country, call for research in this field. The comparison of working techniques, the scientific study of working processes and the assessment of "best methods" in such operations as felling and barking are occupying the attention of various experts.

An important contribution towards the popularization of rationalized working methods in Europe has been the holding of international training courses for forestry timekeepers. These courses, organized by the Federal Institute for Forest Research, Zurich, for the Pilot Committee and for the Joint Committee in 1953 and 1954, have been attended by about forty students from nine European countries. A further course is planned for 1956 in the same center.

The program of the Joint Committee in the field of mechanization is being implemented through two study groups on the Testing of Forest Machinery and on the Application of Machinery to Forest Work. Arising out of the work of these study groups, a recently published report on tractor requirements in European forestry gives a detailed specification of the characteristics of tractors and tractor equipment to be used in the forest, with a view to providing a guide for tractor users and manufacturers; a system for the costing of powered vehicles and machines has been worked out and will shortly be published; a system of standard tests for forest tractors, which has been proposed by the Study Group on the Testing of Forest Machinery, is to be finalized by a special *ad hoc* working party of experts from participating countries, which will subsequently sponsor trials at national tractor testing stations.

These two study groups are likewise concerned with, for instance, investigations on power saws, mechanical and chemical barking, loading, bundling of small timber and skidding. Studies on these questions are in preparation.

Since in many European countries the degree of mechanization in forest work is still small, the Joint Committee is an important forum for the exchange of information, in particular with regard to new techniques such as full-tree logging and chemical barking which are first adopted in the more advanced countries.

Mountain Logging

Logging under specifically mountain conditions has, in the past, been developed to any significant extent in only a few mountainous countries such as Austria and Switzerland, which have perfected for this work a completely specialized set of techniques such as the use of aerial cableways, slideways and chutes. In other countries, rich

in forests, this type of exploitation has so far been of marginal importance. But these countries are now interested in studying the economics of mountain logging with a view to expansion in this sector. Therefore, through its Study Group on the Handling and Transport of Timber in Mountainous Regions, the Joint Committee is conducting investigations on aerial cableways, ground line haulage, construction of forest roads, slides and slipways and the use of power saws under mountain conditions.

Forest Workers' Training and Safety

The Joint Committee has cooperated with the International Labor Organization (ILO) in these fields. A report on training facilities in Europe, drawn up by the ILO, brings out the relationship between measures taken to improve the professional quality of forest workers and the social and economic conditions prevailing in this occupation. The report also emphasizes the close dependence of vocational training schemes on the work of research institutes, which aim to improve the workers' productivity and raise safety standards. A survey on accidents and preventive measures in forest work is likewise being carried out by the ILO for the Joint Committee.

Much attention has been devoted to the training of teaching personnel, since this is regarded as one of the key problems in the raising of vocational training standards. Thus, the Joint Committee is organizing the exchange, between participating countries, of information on training courses, and the exchange and coordination of teaching materials, such as textbooks, pamphlets, slides and films. The ILO has co-operated in sponsoring scholarships for study tours for forestry instructors in various European countries. In 1955, 21 such scholarships were allocated and the scheme is expected to continue in 1956.

Terminology

The standardization of terminology constitutes a serious problem in all branches

of forestry. This is particularly acute in regard to forest work science, due to its comparatively recent and rapid development. New concepts and terms are constantly appearing in all languages and the problem of standardization has so far only been tackled in a piecemeal or *ad hoc* manner. The Joint Committee has therefore set up a special study group on this question which is charged with the compilation of a multilingual glossary of forest work science, the languages being English, French, Russian, German and Swedish.

Field study

Delegates to the First Session of the Joint Committee took part in a study trip organized by the French Government from 19 to 22 December, 1955. Visits were made along the route Paris-Nancy-Abreschwiller-Saverne, where manual and mechanized felling and haulage in coppice and high forest, under lowland and mountainous conditions, were inspected, and demonstrations of hauling and cutting machinery attended. An inspection was also made of the forest and workshops of the *Ecole de Bucherons* at Saverne.

FAO/ECE Joint Working Party on Forestry and Forest Products Statistics

This working party held a first session at Geneva in January 1956 when discussions were concentrated mainly on a minimum long-term program for forestry and forest products statistics and on the world forest inventory to be undertaken in 1958.

Minimum Long-term Program

The minimum long-term program is intended to provide an indication of the range of statistics which all countries should seek to develop progressively in the course of the coming years, with the object of furnishing themselves with all the basic data essential to the prosecution of sound forest and forest industry policies, whether in the public or private sector. Obviously there are

many advantages of having national statistics internationally comparable.

Agreement was reached on a skeleton of a minimum program comprising 14 chapters (and the principal categories of information with each chapter) under the following four main sections: forest statistics; statistics of forest industries; labor statistics; and forest products statistics. Details remain to be worked out at a subsequent session, but it was agreed that forest industry statistics should relate only to primary forest industries, e.g., industries using unprocessed wood as raw material and turning out commodities largely used as raw materials for secondary manufacture.

On the question of priorities, the inclusion of any chapter within the minimum program implied that, in that particular category, statistics were considered important to national needs. In singling out certain chapters for the immediate attention of all countries, the Working Party simply wished to draw attention to particular chapters that were either of first importance from the standpoint of an international program, lent themselves more readily to immediate implementation, or both. In this sense it was agreed that those statistics should receive first priority which deal with forest area, growing stock, growth, domestic roundwood supply, output of processed wood, external trade of all forest products and prices.

It was desirable that concepts and definitions in the field of forestry and timber statistics should not conflict with general statistical standards. Close co-operation between forestry and timber statisticians and central statistical offices or other general statistical services was required to ensure that, in drafting statistical programs, conceptual problems of duplication and overlapping could be satisfactorily resolved.

World Forest Inventory of 1958

The statistical forms relating to the 1958 world forest inventory, in so far as they concerned Europe and North America, were

thoroughly discussed. The questionnaire adopted for the 1953 inventory had on the whole proved satisfactory, admitting the fact that it is difficult to arrive at definitions that are universally acceptable. The information to be sought in the new inquiry should consist of a limited range of salient facts deemed essential to the formulation of national forest policies.

Other Statistical Requirements

The Working Party discussed the desirability and practicability of formulating medium-term forward estimates of fellings. It would be mutually advantageous if country felling forecasts were to be available internationally. All countries that were members of the European Forestry Commission or Economic Committee for Europe (ECE) Timber Committee should be requested to furnish forward estimates of annual fellings around the years 1960 and 1965, on the basis or bases appropriate to or practicable for the individual countries.

It was decided to abandon the current FAO questionnaire form dealing with fellings, removals and utilization of roundwood, but the possibility of obtaining utilization data through special periodic inquiries should be further explored. A new annual form should deal with removals, broken down into removals coming from the forest proper and from outside the forest area.

The Working Party also considered the question of statistics on investments in forestry which, although of considerable interest, present special difficulties and are liable to misinterpretation. It was claimed that, in the first instance, attention should be limited to investments in afforestation and plantations outside the forest.

As regards pulpwood statistics, existing statistics failed to reveal the rise in the utilization of materials other than coniferous woods. Data on this point were necessary for a proper appraisal of the pulpwood market, and specific proposals regarding defini-

(Continued on page 86)

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Solano, Nueva Vizcaya

The Measurement And Inspection Of Philippine Lumber

1. First and seconds. These two grades are combined and correspond to the highest grade of "Export."

2. Export Common.

3. Export Shorts, Chairstock, etc.

4. Sound Wormy Export.

5. Veneer Flitches.

6. Clears. This corresponds to the highest grade of lumber and dimension timbers as sold in local markets and are exported for other than cabinet purposes.

7. Merchantable. This grade corresponds to lumber sold in local markets for ordinary house construction, temporary construction, etc., and exported for other than cabinet purposes.

8. Culls. This grade is to include all lumber that will not come up to the grade of Merchantable.

GENERAL INSTRUCTIONS

Lumber less than one inch in thickness will be graded and measured the same as one inch. All lumber shall be graded on the poorer side of the piece.

Tapering boards should be measured $\frac{1}{3}$ the distance from the narrow end.

Bright sap to the extent of one standard defect admitted on boards 10" and wider in the grades of Firsts and Seconds. On boards under 10" wide, bright sap admitted in proportion.

These rules define the poorest piece admissible in any grade, and each grade shall contain all lumber up to the next higher grade.

STANDARD DIMENSIONS

Standard thickness are $\frac{1}{2}$ ", $\frac{5}{8}$ ", $\frac{3}{4}$ ", 1", $1\frac{1}{4}$ ", $1\frac{1}{2}$ ", 2", $2\frac{1}{2}$ ", 3", 4", and timbers, etc.

Standard widths are 3", 4", 6", 8", 10", 12", 14", 16", 18", 20", 22", 24", etc.

Standard lengths are 2', 4', 6', 8', 10', 12', 14', 16', 18', 20', 22', 24', 26', etc.

Thicknesses for surfaced lumber, when not otherwise specified, should be as follows:

Rough $\frac{1}{2}$ " Surfaced two sides should be $\frac{5}{16}$ " surfaced

Rough $\frac{5}{8}$ " Surfaced two sides should be $\frac{7}{16}$ " surfaced

Rough $\frac{3}{4}$ " Surfaced two sides should be $\frac{9}{16}$ " surfaced

Rough 1" Surfaced two sides should be $\frac{13}{16}$ " surfaced

Rough $1\frac{1}{4}$ " Surfaced two sides should be $1\frac{3}{32}$ " surfaced

Rough $1\frac{1}{2}$ " Surfaced two sides should be $1\frac{11}{32}$ " surfaced

Rough 2" Surfaced two sides should be $1\frac{3}{4}$ " surfaced.

For any thickness over 2" an allowance of $\frac{1}{4}$ " should be made for surfacing.

Pieces more than $\frac{1}{4}$ " less than the standard widths must be tallied down to the next standard width. These dimensions apply to all grades, excepting Firsts and Seconds and Export Common in which all odd widths and lengths will be admitted.

Pieces with a greater variation in thickness than these rules allow shall be graded and tallied as missawn.

DEFECTS

Each of the following shall be known as a standard defect:

One sound $1\frac{1}{36}$ " knot.

Two or more smaller knots not exceeding in extent of damage and $1\frac{1}{2}$ " knot.

One straight split over 6" long, but not to exceed 12" long.

A "straight split" is defined as one that does not diverse by more than two inches per foot from a line parallel to the edge.

Splits over 12" long may be trimmed off.

Grub-holes, knot-holes, pitch-pockets, shake, and any other defects not exceeding in extent of damage one 1-1/2" knot.

One inch of bright sap on one edge or its equivalent on both edges or on one or both ends.

THE EXTENT OF THE DAMAGE CAUSED BY ROT, DRY-ROT, DOTY-HEART, SUN-CHECK, WEATHER STAIN, SPIKE KNOTS, WANE AND HEART-CRACKS IS DIFFICULT TO DEFINE EXACTLY AND INSPECTORS MUST BE VERY CAREFUL IN ESTIMATING THE DAMAGE AS COMPARED WITH STANDARD DEFECTS.

Sound superficial burls having the appearance of knot are not to be considered as defects.

1. FIRSTS

Firsts shall be 8" and over wide, 10' and over long and shall be free of all defects, excepting pinholes not visible in the rough, and excepting the pieces containing 10 feet surface measure and over may have one standard defect or its equivalent. One quarter inch variation allowed in thickness, provided no single piece is more than one-eighth inch under standard rough thickness. This grade will admit not more than 5% with this variation.

2. SECONDS

Seconds shall be 6" and over wide, 8' and over long admitting pinholes not visible in the rough and other defects according to surface measure as follows: 6 feet, one standard defect; 9 feet, two defects; 13 feet, three defects; 18 feet and over, four defects. Variation in sawing as in "Firsts."

3. EXPORT COMMON

Shall be 4 inches and over wide, 6 feet and over long. Variations in sawing as in "Firsts." Pinholes visible in the rough not admitted.

Pieces 4 inches wide up to 10 feet long must work 66-2/3% clear in not over two pieces; 11 feet and over long must work 66-2/3% clear in not over three pieces, in both cases the full width of the piece. Boards 6 inches and over wide must work 66-2/3% clear. No cutting considered that contains less than one board foot.

4. EXPORT-SHORTS, CHAIR-STOCKS, ETC.

Shall be 2 inches and wider, one foot to six feet long. Shall be free from pinholes visible in the rough.

Pieces containing up to two board feet must be clear. Pieces containing over two board feet will admit one standard defect. Variation in sawing as in Firsts.

5. SOUND WORM EXPORT

Shall grade strictly as Firsts and Seconds, but admitting pinholes, excepting boards having black streaks, stained pinholes or pinholes running parallel with the face. One quarter inch variation allowed in the thickness, provided no single piece is more than one-eighth inch under standard rough thickness. Admitting not more than 10% with this variation.

6. VENEER FLITCHES

Flitches to be from 10 feet to 24 feet long, to be sawn as large as is consistent with good quality, and to show figure on two faces, figure showing on not less than 75% of the face.

Shall be free from pinholes visible in the rough, shake, heart and rot, but will allow defects according to sizes as follows:

Pieces up to 9" x 9" must be clear.

Pieces larger than 12" x 12" will admit two inches of sap on one corner, or one standard defect and one straight split in one end not exceeding in length the width of the piece, or the equivalent at both ends.

Split diverging from a line parallel to edge by more than two inches to the lineal foot must be cut off. White Lauan flitches must be free of sap, otherwise should grade as other veneer flitches.

7. CLEARS

Clears shall be sound lumber, well manufactured and free of rot, unsound knots, shake, splits dry-rot or other defects impairing the strength of the piece. Pinholes not considered a defect unless so numerous as seriously to affect the strength of the piece.

Variations in sawing in "Clears" will be admitted as follows:

Up to 4" in thickness, one quarter inch allowed, provided no piece is more than one quarter inch under standard rough thickness. This grade will admit not more than 10% with this variation.

Stained sap that will be removed when surfaced to the standard surfaced thickness of the respective dimensions shall not be considered a defect in clears but inspectors must be very careful in estimating the damage caused by same.

Defects admitted as follows:

a. Pieces 1" thick up to 6" wide and up to 12" long shall be clear; over 12" long will admit one standard defect, or bright sap not to exceed one-fifth the surface measure of the piece.

b. Pieces 1" thick from 8" to 12" wide, 6' and 8' long will admit bright sap not to exceed 1/5 the surface measure of the piece; pieces 10' and 12' long will admit one standard defect or defects or bright sap not to exceed one-fifth the surface measure of the piece; pieces 14' and 16' long will admit two standard defects, or bright sap not to exceed one-fifth the surface measure of the piece; pieces over 16' long, three standard defects, or bright sap not to exceed one-fifth the surface measure of the piece.

c. Pieces 1" thick and over 12" wide, and 6' and 8' long will admit one standard defect or bright sap not to exceed one-fifth the surface measure of the piece; pieces 10' and 12' long will admit two standard defects or bright sap not to exceed one-fifth the surface measure of the piece; pieces 15'

and 16' long will admit three standard defects or bright sap not to exceed 1/5 the surface measure of the piece; pieces over 16' long will admit four standard defects or bright sap not to exceed 1/5 the surface measure of the piece.

d. Pieces 1-1/2" to 2-1/2" thick up to 6" wide and up to 12' long must be clear; over 12' long will admit one standard defect or bright sap not to exceed one-fifth the surface measure of the piece.

e. Pieces 1-1/2" to 2-1/2" thick, 8" to 12" wide up to 12' long will admit one standard defect or bright sap not to exceed one-fifth the surface measure of the piece; pieces 14' and 16' long will admit two standard defects, or bright sap not to exceed one-fifth the surface measure of the piece; pieces over 16' long, three standard defects.

f. Pieces 3" to 4" thick up to 6" wide and up to 12' long will admit bright sap not to exceed 1/5 the surface measure of the piece; pieces 15' and 16' long will admit one standard defect or bright sap not to exceed one-fifth the surface measure of the piece; pieces over 16' long, two standard defects or bright sap not to exceed one-fifth the surface measure of the piece.

g. Pieces 3" to 4" thick, 8" to 12" wide and up to 12' long will admit one standard defect or bright sap not to exceed 1/5 of the surface measure of the piece; pieces 14' and 16' long will admit two standard defects or bright sap not to exceed 1/5 of the surface measure of the piece; pieces over 16' long three standard defects, or bright sap not to exceed 1/5 of the surface measure of the piece.

h. Pieces 6" x 6" not over 9" x 9", up to 16' long will admit two standard defects; pieces over 16' long three standard defects. Boxed heart not admitted.

i. Pieces upward of 9" x 9", up to 16' long will admit three standard defects; pieces over 16' long, four standard defects.

(Continued on page 88)

Fernando Tabucao

Timber Licensee

Basey, Samar

*Sells timber and lumber of
good quality at reasonable prices*

Roberto Tabungar

Anahao Licensee

Basey, Samar

*Sells Anahao (Palma brava)
at reasonable prices.*

Sta. Clara Sawmill

Sta. Clara, Aritao, Nueva Vizcaya

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**Oriental Lumber
& Hardware**

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Ordinary Timber Licensee

Botolan, Zambales

Planting Trees, A Lasting Investment

By FRANCISCO N. TAMOLANG
Senior Forester
Bureau of Forestry

A year ago, Arbor Day in the Philippines became a more significant celebration by virtue of the Presidential Proclamation extending it to a one-week nation-wide affair. Arbor Week does not only mean the extolling of the importance of trees but, to a great extent, the practical implementation of the so-called "lip service" to forest conservation into actual planting and conservation of trees. Its noble purpose is to make the country green with trees throughout the length and breadth of the land. Unlike other civic organizations, the Bureau of Forestry does not solicit monetary contributions nor beg for material things but merely enjoins every able-bodied citizen to plant a tree, two or more, every year, as a contribution to the country's bank of trees. It is this spirit which I believe should be inculcated into every Filipino, whether a school child, a farmer, a professional or a soldier, during every Arbor Week celebration. Because while trees are sure lucrative investments, with assured interests in form of wood increment or growth, it takes them time to mature. Because of this fact, we are dismayed at times in realizing that we cannot reap the fruits of our labor within a short time. When we plant trees, therefore, let us fully understand that we do it in the spirit of depositing a new capital investment to the country's tree resources.

It was Washington Irving who said long ago: "He who plants an oak cannot expect to sit in its shade nor enjoy its shelter; but exults in the idea that the acorn shall grow to benefit mankind long after."

Although trees are slow of growth, no

one can deny after seeing the boulevards and parks of the cities of the country, particularly Manila and Quezon City, where trees were planted just after liberation that the former eyesores are now beautiful with trees, whose shade serve the pedestrians as protection from the drenching rain and the oppressive summer heat. In other places like Forbes Park, Clark Field, Fort McKinley, U.S. Battle Monument, the University of the Philippines, Sto. Tomas University, and in many school grounds of Laguna and several provinces as well, the once barren hills now abound with evergreen lovely trees. You very well know that besides rendering to the community and its environs their shade and their loveliness, they give other benefits to man such as fresh air, invigorating climate, erosion control, wind-breaks or protection against typhoons, sanctuaries for birds and other wild life, recreational grounds, sanatoria and ever-ready cathedrals for those who wish to commune more closely with nature.

When we plant trees during Arbor Week, we do it with several objectives in mind, depending upon the particular purpose of our project. Our objectives in planting trees may be one of the following or a combination of two or more of them: (1) for shade, (2) for enhancing the landscape, (3) for fruits, (4) for beautiful or aromatic flowers, (5) for timber, (6) for honey-bee culture, (7) for medicinal sources, and last but not the least, (8) for historical, anniversary or memorial landmarks. If half of the population of the country would only celebrate their birthdays by planting trees,

it would mean a yearly increase of planted trees. It would mean also that had we followed this practice years ago we should now be having over ten million trees. This can be further increased by the thousands more, if at every high school and college graduation, graduates are made to plant their respective trees to mark the "red letter" event. Of course, this is not all that there is to it. But to my mind, what counts more is the care of the trees after they are planted. As a growing child they should be tended at least for the first three years until they are able to take care of themselves. In this way we can rest assured that whatever effort we exert in tree-planting will not be wasted.

May I conclude by enjoining every citizen of the country during Arbor Week to zen of the country during Arbor Week celebrations to invest at least a part of their precious time and effort to planting trees and nursing them until they can take care of themselves. It would not be asking too much each civic-minded citizen to spend a part of his leisure throughout the year in tree planting. Whatever planting he does, whether in a big or a small scale, would surely contribute to the nation's wealth of trees. *Invest now by planting trees and the future reward for all your efforts will be enjoyed not only by you but also by your children and the other generations yet to come.* President Roosevelt in 1907 wrote in an Arbor Day letter to the American school children the following:

"A people without children would face a hopeless future; a country without trees is almost as hopeless; forests which are so used that they cannot renew themselves will soon vanish, and with them all their benefits. A true forest is not merely a storehouse of wood but, as it were, a factory of wood and a reservoir of water.

"When you help to preserve our forests or plant new ones you are

acting the part of good citizens. The value of forestry deserves, therefore, to be taught in the schools which aim to make good citizens of you. If your Arbor Day exercises help you to realize what benefits each one of you receives from the forests and how by your assistance these benefits may continue, they will serve a good end."

THE WORK OF . . .

(Continued from page 79)

tions in both the Standard International Trade Classification and national trade accounts would be made at the next session of the Working Party.

Participation

This first session was held under the Chairmanship of Mr. J. Keller (Switzerland). The following countries nominated representatives: Austria, Belgium, Germany, Finland, France, Italy, Netherlands, Norway, Sweden, Switzerland, United Kingdom, United States and the U.S.S.R. A representative of the Organization for European Economic Co-operation (OEEC) also participated. The Working Party decided to hold a second session in Geneva from 12-17 November 1956 when it would discuss statistics relating to manpower, forest fires, prices, end-use and investments.

All the strength and force of man comes from his faith in things unseen. He who believes is strong; he who doubts weak. Strong convictions precede great actions. The man strongly possessed of an idea is the master . . . Clear, deep, living convictions rule the world.

—James Freeman Clarke

* * *

Apathy can only be overcome by enthusiasm, and enthusiasm can only be aroused by two things: first, an ideal which takes the imagination by storm, and, second, a definite intelligible plan for carrying that ideal into practice.

—Arnold Toynbee

Floods and Drought

MONICO PASTOR (B.S.F.) '48

It is an undeniable fact that in many regions, particularly the Northern and Central Luzon, the people suffer destructive floods during rainy days, and face shortage of water for farm use during the dry season. These prevailing conditions which are apparently more serious every year are partly attributed to lack of forestry consciousness among the people.

A great majority of our people still holds the idea that the forest is a hindrance to the expansion of agriculture. They contend that the social and economic problems of this country could be eased by clearing the forests in order to give way to the increasing population. This attitude has led to the present problem of squatting on public forests by no less than 25,600 heads of families and the establishment of 2,381 kaignins during the last fiscal year. These intruders never thought that the yearly loss of lives and property wrought by floods, which should have been minimized or prevented if the forests were not destroyed, are worth several hundred times more than the value of agricultural crops grown from forest lands.

We are, therefore, duty bound to correct wrong public opinion on forests. Let us find a means of letting them understand that to minimize the flow of water during the rainy days and to preserve water for our farm needs during dry season is vital for the existence of our forests and watersheds. This calls for a concerted effort and cooperation in educating our neighbors, our townmates and our children about public forests for the welfare of the country.

In view of its absorbing capacity, forest surface run-off is slowed down and water

is retained. The excessive surface run-off is checked and water is absorbed because of the living and non-living vegetation peculiar to forests; the great depth of soil resulting from the effects of forest retarding wind and water erosion; the effect of vegetation in decomposing rock; and the more broken condition of underlying rocks through action of deep-rooted plants, particularly the forest trees, all add up to the increased rate of absorbing capacity of the forests.

Forests do not entirely prevent the occurrence of destructive floods, but aid materially by rendering low stages of stream flow higher and the high stages lower.

In the regulation of stream flow, it is estimated that the amount of water that forest vegetation saves for German soil in mountainous regions, by converting surface run-off to seepage, is approximately 50 per cent of the precipitation. When regions having rough topography are denuded, the percentage of precipitation that escapes from a drainage area in streams is ordinarily high, sometimes as much as 80 per cent.

It should also be known that numerous cases have been cited where springs dried up or noticeably decreased their flow after deforestation. In some instances, springs reappeared after reforestation. Potable water derived from springs in well-forested watershed has the maximum clearness, and reservoirs remain free from silt.

Another way by which forests influence the conservation of water is by increasing evaporation and transpiration at the expense of surface run-off, thus enriching the passing air currents and in this way help to carry additional moisture into the interior of the country. Observations in various parts of

the world show that precipitation at the station surrounded by forests was considerably more than at the stations in the open. The condensation of vapor on the leaves, branches and other parts of trees and its later dripping to the ground add to the annual precipitation. The more abundantly developed the vegetal cover, the faster the moisture is returned to the air through evaporation and transpiration combined, and there is larger amount for reprecipitation available. In the late afternoons and evenings, although there is no rain, the ground under the trees are wet the next morning. Small shallow pools of water 1 to 2 feet in diameter are frequent on trails under trees.

If our people would only understand and appreciate the influence of forests as discussed above, they will not mercilessly cut forest trees and illegally occupy forest lands. There would not have been huge expenditures appropriated yearly for irrigation and river control projects as are found in Pangasinan, Iloilo and other provinces.

Compliments
of
**Johnny Motoomul
Logging Interprises**

Concessions:

**Binuangan - Odiong
Gingoog, Misamis Oriental**

The installations of deep artesian wells have become now a necessity in the rural areas and still a must program of the government, because the springs common in previous years are no longer in existence.

The Bureau of Forestry should not be left alone working single handed to provide the required protection of our forests. This Bureau, because of limited funds, could only allow one instead of three personnel to guard 15,000 hectares of forest land. So, it is very necessary that every one should do his part in this gigantic task for our happiness and survival.

THE MEASUREMENT . . .

(Continued from page 83)

8. MERCHANTABLE

Variations in sawing same as in "clears." Sound stained sap not considered a defect in this grade.

Up to 4" in thickness, this grade will admit all sound lumber that does not contain defects seriously impairing the strength of the piece for ordinary temporary structural purposes.

Timbers from 6" x 6" upward, this grade will admit boxed heart, provided heart cracks do not extend to more than one face; also sun checks, pitch pockets, slight shakes or heart cracks, sound sap, knots, or other defects not seriously affecting the strength of the piece.

Pieces containing more sap than heartwood shall be excluded from this grade. In determining this, the solid contents and not surface measure should be taken into consideration.

Arts and sciences are not cast in a mould, but are found and perfected by degrees, by often handling and polishing.

—Michel de Montaign

* * *

Logic is the art of thinking well: the mind, like the body, requires to be trained before it can use its powers in the most advantageous ways.

—Lord Kames

Birth of Forestry Leaves Recalled

TOMAS F. BERMILLO, B.S.F. '47

The *Forestry Leaves* is ten years old this year. It first made its debut to the public in June, 1946.

Like any natural leaf, the *Forestry Leaves* had its humble beginnings as a bud. It used to be merely sheets of bond paper stapled together at one upper corner, carrying news items about activities in the then war-torn and unrehabilitated Forestry campus. In mimeographed form, the publication consisted of no more than ten pages. With two columns on both sides of each sheet it sufficed as an effective mouthpiece and official organ of the student body of the then School of Forestry, composed of no more than thirty male students.

The articles published dealt mostly with such activities as school programs, rallies, enrollment, results of intramural games, etc.,—devoid of write-ups on scientific findings and/or observations.

An account of how the *Forestry Leaves* first came into being cannot be complete without mention of Prof. Jose B. Blando, and Mr. Manuel de Guzman, B.S.F. '48, the first editor-in-chief and typist of the very first issues. The idea emanated when the first *Aggie News* was published. Inspired by the publication of the *Aggie News*, a group of literary-minded postwar forestry students, including Mr. de Guzman, broached the proposal for the publication of the *Forestry Leaves* during a peripatetic conference done on their way from the College of Agriculture after taking some subjects there. The idea "clicked" with each member of the group and right then and there the details were discussed and presented to Professor Blando, for his comment and approval.

It was next brought up before the meeting of the student body which lost no time in endorsing the plan after some deliberations. In less than a week the editorial staff was formed and in record time the first issue of the *Forestry Leaves* was "off" the mimeograph machine.

It may be mentioned that at the outset the first proponents of the *Forestry Leaves*, perhaps, never dreamed that some day their "brainchild" would grow into what it is now—a magazine with not only news bits about Forestry campus activities, but also pictures depicting the undertakings of both field men of the Bureau of Forestry and students of the College of Forestry; it now includes articles written by the big forestry literary "timbers," often no less than the chiefs of divisions and sometimes, by the Director of Forestry himself. The interesting features of the present *Forestry Leaves* have proved invaluable to the Forestry alumni in particular, and the field personnel of the Bureau in general. Its constant improvement, though, can not but be attributed to its line of hardworking editors, the succeeding "staffers" and, of course, the forestry alumni and students themselves, who never "leave a stone unturned" in making the publication a success by their cooperation with and loyalty to their Alma Mater, and its advertisers and readers.

Education is a venture in faith—faith that the word can be made flesh and dwell among us. It is faith also that the teacher can so share his experience of the work that the miracle of its growth in others becomes a vitalizing reality.

—Ordway Tead

• Sunshine Corner •

"Joe", a friend asked a young businessman, "how do you expect to accomplish anything at your office with three good-looking stenographers around?"

"Easy," was the confident answer. "I'll give two of them the same day off."

—o0o—

Two friends—one 50, the other 60—were arguing about the forthcoming marriage of the latter to a young lady in her 20's. "I don't believe in these May-December marriages," disapproved the 50-year-old. "After all, December is going to find in May the freshness and beauty of springtime, but whatever is May going to find in December?"

The bridegroom-to-be replied: "Christmas!"

—o0o—

The most popular number on the juke box in one bar and grill is a record which is nothing but the sound of a lot of typewriters going. It's played everytime one of the regulars calls home to report he's working late at the office.

—o0o—

Professor (irritated)—"If there are any morons in the room, please stand up."

A long pause, and a lone freshman rose.

Professor—"What, do you consider yourself a moron?"

Freshman—"Well, not exactly that, sir; but I do hate to see you standing alone by yourself."

—o0o—

Tessie—"What is your brother in college?"

Jessie—"A half-back."

Tessie—"I mean in his studies."

Jessie—"Oh, in his studies he's away back."

—o0o—

Professor of Greek—"Miss de Mure, what is meant by the LXX?"

Miss De Mure—"Love and kisses."

—o0o—

First Father—"Has your son's college education proved helpful since you took him into the firm?"

Second Father—"Oh, yes, whenever we have a conference we let him mix the cocktails."

—o0o—

Prof—"What is the most outstanding product that chemistry has given to the world?"

Soph—"Blondes."

—o0o—

Mother (over phone)—"Come quick, Doctor, the baby has swallowed a bottle of ink!"

Doctor—"Incredible!"

Mother—"No, Doctor, indelible!"

A very dejected man walked into a restaurant one morning and sat down at a table.

"I want two eggs fried very hard, two slices of toast burnt black and a cup of weak, lukewarm coffee," he told the waitress.

"Are you sure that's what you want?" she asked, amazed.

"To the letter."

The waitress explained to the chief and managed to get the man exactly what he had asked for.

"Anything else, sir?" she asked as she put the order on the table.

"Yes, now sit down and nag me. I'm homesick!"

—o0o—

The young lover, eloping with the only girl, climbed the ladder and rapped on her windowpane. She opened the window softly.

"Are you ready?" he asked.

"Ssh! Not so loud" she whispered. "I'm so afraid Father will catch us."

"That's all right", said the youth rather dubiously. "He's down below holding the ladder."

—o0o—

"Yes, I had an ideal once," the young matron confided.

"What happened to it?" asked her friend.

"I married him."

—o0o—

"Can you imagine, my dear!" chortled the gossip. "Just as the bride was coming down the aisle to the altar, he turned and ran out and left town."

"Lost his nerve?"

"No—found it."

—o0o—

She—"But, darling, if I marry you I'll lose my job."

He—"But can't we keep the marriage a secret?"

She—"But suppose we have a baby?"

He—"Oh, we'll tell the baby, of course."

—o0o—

Lawyer—"Well, if you want my honest opinion—"

Client—"No, no. I want your professional advice."

—o0o—

"But, doctor," said the worried patient, "are you sure I'll pull through? I've heard of cases where the doctor has made a wrong diagnosis, and treated someone for 'Influenza' who has afterward died of pneumonia."

"Nonsense," spluttered the affronted physician. "When I treat a patient for 'influenza', he dies of 'influenza'."

There's Always Tomorrow

By ALFREDO V. SANCHEZ

District I

In Spanish we call it "mañana," in Tagalog we call it "bukas" and in Ilocano "inton bigat." The word "tomorrow" has as many equivalents as there are languages and dialects. However, to enumerate them all is unnecessary for they all mean "the day after today."

The word "tomorrow" is used abundantly and/or unsparingly. It is used for convenience, just to say something, just as an excuse for something left undone, just to stave off the ever pounding question "When?" It is used as a promissory note, something good and special in store for us the next day. It makes us feel the possibility of turning over a new leaf, of transformation into a new man, a rebirth of special abilities and special capabilities at the break of dawn in the morrow.

I will not touch on the things that makes tomorrow another day, a day of promise. I will bring to you instead the unpleasant things that follow in the wake of the so-called "mañana habit." The setting is Dormitory No. III, College of Forestry campus, Makiling National Park.

I was there in one corner of the dormitory holding a notebook. I was serious and determined and with full concentration in learning by heart the proverbial Latin names. "*Amorphopalus campanulatus*" Pongapong, "*Oriza sativa*" Rice, "*Zea maiz*" corn, "*Pterocarpus indicus*," Narra, etc. I repeated all these ought-to-be-memorized scientific names as if I were repeating the *Kyrie eleyson*. I was in the throes of the rigorous training of a would-be dendrologist when my friend, Leo, came. He was so

jolly, so cheerful and carefree at that time. He pulled my ears and said, "C'mon, throw that stuff away. You can do that tomorrow." I obeyed like a good boy. I opened my locker and the notebook was thrown into the limbo of forgotten things. The glare of a bright day met us as we went down the steps. I made one step forward. "There! there! . . . the ladies," pointed Leo. I saw the ladies walking here and there. I saw them laughing, singing and teasing one another. The sight of these ladies made me forget my scholastic duties. After all, why mope like an owl in my room while the world was made for laughter, reveries and romance. I looked for the piece of mirror. I said piece because it was our practice to contribute for the mirror. We used to pass the hat, a nickel each. In that way everyone would take care of it as if it were his own personal property. In case it got broken, we promised to divide it among ourselves. One piece each to be called his very own. I combed my hair left, right — left, right — left, until my untamed hair with the help of grease finally gave in. "And now," I said to myself, "I look more civilized." And off I went to my gallivanting.

* * *

On my bed I lay weary and frayed at the edges. Soon twilight ushered in the loneliness of night. Lying on my bed with my eyes open, I began to dream. Alice was her name. I produced my diary from my pocket to be sure of her lovely name. Alice written in Engineering 1a stroke. I was not mistaken. I remembered our first handshake; the first word uttered; the shy look in her face; the blushing when I said she was beautiful. The past began to unroll itself. Things came back to me one by one as if I had been looking into a crystal ball. Fascinated by these happy recollections,

tions, I made a resolution. I would write her tomorrow. Rain or shine. Test or no test. Yes, sir! I then began weaving in my mind the things I was going to write. I would remind her of our first meeting; of our wending our way up the long flight of steps of the old swimming pool; of the song "Across the Blue Lagoon," we sang together beneath that Semi-Kissing Rock; of the picture she promised me; of the picnic I planned for her and I would tell her more about my life. And in the midst of my reveries, sleep gently zippered my eyes.

The gong woke me up with a sudden start to the harsh reality of another day. As I opened my drawer I felt the impact of the things left undone. The unaccomplished assignments. There was the table of array and I was supposed to find the median and the mean deviation; the survey without a tying point; the graph where I was supposed to locate the dormitories, the Mess Hall and the cottages of the professors; the arrangements of leaves I ought to know by now. I read the word below the title, LEAVES. Ovate. "Well," I mused to myself, "I know this one. This looks like the grade I got last test." I read further, Subulate, Cordate, Oblong and Reniform—all the shapes of which were beyond my nearest guesses. I was already getting confused by the time I came across the famous Hamlet soliloquy, "To be or not to be!" beneath which someone had jokingly written "memorize me." Then I came across "100" written on a tablet paper. My heart stood still. I recalled my having to write "Adios Patria Adorada" 100 times. My head was in a swirl . . .

I put on my low-waisted Makiling palm beach trousers. I paired it with my checkered shirt. I now looked like a Texas Ranger, sans pistol and pinto. Off to the class I went. I sat behind a classmate of elephantine proportions. I felt safe behind the human bulwark. The professor called the roll. So far, so good for I was able to master "Presente, Señor." Then came

the ABC recitation. R was already called. There were still thirty minutes to go. My surname begins with S. The first S was already called. I knew that after one more S, it would be my turn. How I wished my name were Tsanchez for then I would at least be saved by the bell. I felt nervous. My hands were cold, my lips dry, my adam's apple stuck in my throat. I had to do something. I raised my hand. Without a word from the professor I went to the comfort room. I stayed there for three minutes. I checked my watch. Twenty more minutes before time. One hour seemed too long. So, I rechecked it by placing it to my ear. It was functioning. I kept blaming the bell-boy. Why does he not adjust his timepiece? Why does he not ring the bell for fun! He wants to go home early. I knew that. He told me once. I hated him. Could he not bear the little "saponizing" from the Dean. I could proclaim him a hero for that. Hoping against hope I rallied my message through the air. He might have a radar to see my helpless condition. Sound it, boy Just say the bell rang by accident. Say a branch of Bagtican fell on it or a foolish boy threw a stone at it. But he went away. He did not hear my S.O.S. So I stepped out. I felt my legs trembling. "Take it easy buddy," I encouraged myself. I walked to my seat. I sat and just then my name was called. I repented. I blamed myself. Why did I not stay a little longer? I could have done so for nobody had seen me there anyway. I could have made an excuse, say, stomach trouble. But such an excuse would have done me no good. I tried it once in the Infirmary for an alleged stomach ache, and I was made to take a physic. The nausea caused me to throw up. It was a very bad experience. I did not like history to repeat itself. What was I to do now? I had to think of another strategy. I pretended not to have heard the question. The professor called again. Everybody was looking at me. Some looked at me with pity;

others with suspicious eyes; and still others made facetious remarks.

The class before I returned must have been having fun because I could hear their laughter from the corridor. I saw the drawing of Felix the Cat on the board with his anatomical parts labeled. But I was in such a consternation that I really could not think. I felt as if paralyzed . . . I could not even hear the question, but I had to stand up. "I beg your pardon, Sir," I ventured to ask. The professor said something but because of the laughter I heard only the word "cola." Without thinking I blurted out, "Si Señor, quiero coca-cola." You ought to have heard the pandemonium that broke loose. Even the professor had to hold on to his sides to keep from breaking apart with laughter.

Everybody was tapping me on the back as we went out of the classroom and I could not for the life of me figure out what it was all about.

Back in the dormitory everybody referred to my "cola."

"Why," I asked, "What did the professor ask?"

Leo, my pal, drew a cat on a piece of paper and said, pointing to the tail, "Esta es la cola" (This is the tail). And the professor asked you, "Tiene Vd. cola, Sr. Sanchez?"

"The joke's on me," I said, smiling. "But there's always tomorrow. And that means tomorrow I shall turn over a new leaf. No more 'mañana habit' for me."

What The College Of Forestry Means To Me

By JOSE MAKIL

To me, the College of Forestry is a symbol of human growth. In fact, the outstanding revelation of growth in itself, both physical and its social relationship to the needs of our fast growing society, has been progressive and phenomenal. What does

the word growth really mean? Generally speaking, it means the process of growing, the gradual increase of living organism by natural processes, or the development to maturity or full size. Basically, it is portrayed through growth of knowledge, growth in human relationship, and growth in physical as well as in spiritual well-being. Ultimately, it is the growth of self as a whole for any human service or endeavor, which in my case, is for the service of forestry to my people and country.

Growth, we know, is the basic law of mother nature. It is the law that governs all living matters on earth including man. Man as the chief accomplishment of creation, like trees, owes it to himself to grow in order to accomplish his mission on earth. The trees must also grow or face the spectre of decay. When a tree fails to grow in height, in its breadth and strength, it begins to decay. Likewise when a man stops improving his potentialities in mind, health and spirit that very moment he begins to decay mentally, physically, and socially. Eventually he becomes a liability to society instead of an asset. In short, he is fitted at the moment to rot. To overcome such tragedy, he must have a vigorous growth in mind, body and spirit. He must have an overwhelming faith in himself, in his fellowmen, and above all, in his Creator.. Yes, such are the virtues that the College of Forestry taught me to remember and follow in the field of service in forestry and in my private life.

I am a part and parcel of our Alma Mater. It is my honest and sincerest belief that such is the case with each and everyone of you. With the word "our" I have in mind you and I as a part and parcel of this growing institution of learning. By using the word "our" it satisfies my feeling and sense of pride of being a part of such a great school of learning, a member of a fast growing alumni of foresters, and particularly for the "esprit de corps

and camaraderie" that binds us all, the potential products of this college.

The College of Forestry taught me what I know of forestry. It also awakened the knowledge of self-help—the knowledge to develop incentives which produce constructive initiative and abilities to be used as tools in working out problems that may arise in the service of forestry in particular, and in the service of the public in general. It helped me to adapt myself to the discipline of singleness of purpose, courage, and determination to carry on to the glorious end. It trained me also in the best forms of growth, namely the growth in habit of thought and action; habit of observation and application; and habit of appreciation of what is beautiful and worthy. These habits of growth have helped me think visually and clearly in solving not only my own problems as a forester and as a private citizen, but also problems of other people I have met in the performance of my duties as well as in private life.

Parenthetically, this brings us to the problem of forestry. It is not the concern of neither the forester nor forestry itself; it is everybody's concern. Man and nature are the two greatest forces in our world. Man's first concern is to come to terms with nature. His second concern is to come to terms with his fellowmen. In our first concern, the world being our home, must be protected. Its natural resources like the rivers, forest, soils and wildlife must be preserved if man must survive. The fact that once virgin lands are now burning deserts in many countries must be a point for serious thinking and consideration. Our next and most important concern is the art of learning how to live together happily as human beings. Experience tells us that this is possible through the divine admonition to "love one another." His teachings in brotherly love must be followed or this generation will all end up under the monstrous wrath of the hydrogen bomb.

This training of the power of observa-

tion, study and reflection is necessarily slow. The forest is abundant with hidden truths which are only found through the slow process of experimentation, analysis, and conclusion. It is also full of things beyond our power to understand, as well as things that allow no chance for slow reflection. Take for instance our experience with wild bees when the mere knowledge of their coming makes our legs move faster than our thoughts.. Yes, the learning I derived from the College of Forestry has taught me to make both deliberate and quick decisions. The later type of making decisions leads to unwarranted and disastrous panic. This reminds me of a story about a group of students in a jungle chaperoned by a well-known professor, when of a sudden, an alarming buzzing sound from nowhere disturbed their peace. Previous experience with bees sent the party including the outstanding professor helter-skelter into "seeking cover." All, properly camouflaged under the bushes or under the stones nearby, waited eagerly for the "all clear" signal.

Then came a shout of "No bees! no bees!" Cautiously, each student, including the professor, emerged from their hideouts only to find to their embarrassment that the sound that scared them to death was only the uninterrupted melody of a bunch of cicadas nearby!

Knowledge in forestry is, by all means, an asset in human relationship. We find this part of knowledge in the study of Silvics which tells us of the association and life of trees. The association of plant life has many things in common with the association of men. One of these is tolerance, a quality to reckon with in the success or failure of the life of man or of trees within the association. An intolerant species can not stand shade. In the long run, it is eliminated by virtue of suppression from towering trees around it. On the contrary, if it is given an equal chance with sunlight, it will shoot itself up to become a dominant figure among its constituents.

This fact is also true in the association of the human race. Like the intolerant tree, an intolerant man is a "square peg in a round hole." His intolerance will make him self-conceited, selfishly proud, and above all, unsociable. Eventually, he finds himself alone and avoided, as well as eliminated from society. If given a chance, however, to have his way because of conformity, subservience, and servility of the people around him, this same intolerant man, true to theory and type, rises continuously until he becomes a dictator.

Fortunately the forest is inhabited mostly by species of the tolerant type. No wonder the forest is a veritable place for human blessings, and a fountain of happiness to the forlorn as well. Likewise, men of the tolerant type are also blessings and source of endless happiness for their fellowmen. They are the salt of the earth, mainstay of good life, and strength of democracy. Tolerance, as taught to me in the College of Forestry, has guided my 35 years of fruitful and memorable service to my people and country through the Bureau of Forestry. Tolerance is an inseparable human quality from humility, patience, and human understanding. It is a vital trait akin to the sublime yet unhurried processes of nature. It is an indispensable virtue to a forester who manages the forests for the use of both present and future generations.

Other inherent qualities in the process of training students in the College of Forestry are the development of his health, and the strengthening of his spiritual life. I feel that with these educational developments in a student, his future rests mainly on them. Personally the only reason I can think of for my present vitality in spite of my long years of service, is the fact that until today I still feel the buoyancy of college life at the same rate of intensity as when I was fresh from college. That is because of the location of the College of Forestry, its clean campus, the disciplined life of the students then and field work up

and down Mount Makiling, and the mild climate of the region was able to acquire lasting health habits.

Last but not least is the growth in spiritual life. The students of forestry as well as the forester are always in close association with nature. W. Humboldt, the philologist and statesman, says: "Natural objects themselves, even when they make no claim to beauty, excite the feelings and occupy the imagination. Nature pleases, attracts, delights, merely because it is nature. We recognize in it an Infinite Power." That is my experience. I recognize an Infinite Power whenever I am inside a forest. I feel my smallness and nothingness—the insignificance of "a drop of water in the ocean." Subconsciously I feel a Presence persistent and irresistible. I experience a concentrated thinking about wonderful nature and of self-introspection. When I come to myself I feel serene and spiritually rejuvenated.

How it Feels to Be A Freshman

By EDILBERTO CAJUCOM

Perhaps no one would disagree with me that the most lonesome creature in the whole U.P. is the Forestry freshman. You ask me why! Well, I'll tell you. First of all, for the first time the intellectual balloon that he thought he was, has been deflated by the pin of harsh reality. He has been bitten by the inferiority complex bug. He considers himself a stranger among oldtimers. He is at a loss as to whether to mingle with the privileged group or to stay in the corners of corridors. The latter he resorts to because he is afraid that he will be snubbed. He feels scared, absolutely scared fearing that the upperclassmen or the professors would bark at him or pounce upon him at the slightest mistake or misdemeanor. Now he awakens to the cold reality that as a FRESHMAN, he is stripped of his high school glamor. To cap it off, he with his confreres is preemptorily told to wear the

so-called "skull cap" and a skull cap as everyone knows is a badge of lowliness. What is worse is that the poor worm of a freshman has to wear this "crown" throughout the year. Surely the Bard of Avon was right when he said, "Uneasy lies the head that wears the crown."

Deprived of the love and care of his parents he is like a lost child, eagerly looking and longing for affection and parental solicitude. The close watch and supervision are gone. All alone now he has to confront his problems, and bear all college tribulations. He now realizes the real meaning of the oft-repeated expression "Paddle your own canoe."

In spite of these impediments or hindrances, the freshman, after a time, learns to feel to get along with the upperclassmen who, after all, are not so tough as they are pictured to be. It is a question of adjustment. It all depends on the freshman student's attitude. He should feel proud of being a FRESHMAN. He should realize that his is a stage in preparation for a higher rung in the ladder of learning. He should be inspired to study harder, and dream of the day when he, too, will be an upperclassman enjoying their prerogatives and privileges, of which, at present, he is deprived. He can, of course, console himself with the thought that college life is a ferris wheel, with the thrill that one gets as he rises up higher and higher in the air.

A forestry freshman has no time to fuss and fret as soon as classes have begun in full swing. Lectures, exercises, field trips, quizzes—an honest-to-goodness whirligig that keeps spinning his mind like a top . . . and when Sunday comes, the supposed respite becomes a day of review, and preparation for the second round. And it would be a great hectic life if he would not weaken. But a freshman's life is full of fun . . . there are many funny things—and he can laugh at his prof's antics, at his funny answers, at his classmates' embarrassing moments,

and all those things that make the sunshine corner of college life.

He, too, is proud to be a FRESHMAN because he knows that some day he will join the previous classes in serving the nation. Because of this he tries his best from day to day in preparation for the huge and exacting task demanded of all foresters engaged in conserving the nation's vast natural resources.

He learns, also, that he has to be good in school because on his behavior during his formative years in college will depend his future, his outlook in life, his character, and his success as a custodian of our forests.

The Forest Ranger

By TEODORO C. DELIZO

The Forest Ranger is a small employee of the Bureau of Forestry with a big heart. He is a woodsman of no mean ability, hunter, fisherman and a planter. There are forest rangers who came from the ranks but most have two years of college work in the College of Forestry, University of the Philippines. Some forge ahead and keep up with the broad dynamic movement of the day while others merely go on doing the routine of office, like station administration, log scaling, nursery-reforestation work, etc. Some have offices in cities and towns but a greater number spend a greater part of their lives in God's great outdoors. During the early nineteen hundred, the forest ranger commonly called "Montero" was the symbol of power and authority in the woods. He was usually seen with shiny pigskin leggings, broad-brimmed stetson army hat, khaki shirt, a revolver dangling on his waist and riding a handsome saddled horse.

Now, the "Montero" wears neither legging nor broad-brimmed stetson army hat. We rarely see nowadays one displaying a revolver or pistol and, strange to say, many of them do not care to handle one. Many

(Continued on page 120)



FORMER DIRECTOR FISCHER RETIRES

Colonel Arthur F. Fischer, former Director of the Bureau of Forestry, will retire from the service of the Natural History Museum, Balboa Park, San Diego, California, this month due to ill health. According to his brilliant records in the museum, Col. Fischer had worked for the rehabilitation of the Museum Building, "which had been taken over by the U. S. Navy during the war for hospital purposes", and with his "vision and administrative ability resulted in finer and more attractive exhibits, at the same time keeping within a very meagre financial budget."

It has been noted that Col. Fischer donated many books and other items of value to the society. The Board of Directors of the Society of Natural History accepted the termination of services of Col. Fischer as Director of the Society with deep regret.

* * *

FISCHER DONATES FORESTRY BOOKS

Former Director Arthur Fischer of the Bureau of Forestry donated six volumes of L. H. Barleys, Encyclopedia of Horticulture and other books weighing not less than 500 pounds. The books were shipped to the U.S. Navy terminal in Oakland, California and the items were received by Director Amos.

* * *

TRAVELING EXPENSES ALLOTMENT RELEASED BY BUDGET COMMISSION

Director Felipe R. Amos sent Forestry Memorandum Order No. 166 to all district foresters regarding allotment of fund for traveling expenses of personnel under the General Fund (Project OI) only for all forest districts for the first quarter of this current fiscal year 1956-57. Forest districts 29 and 40 were given top allotments while 19, 20, 22, and 25 have the lowest allotment; this is due to the category and exigency of the forest district.

Director Amos instructed the district foresters to observe and follow all previous instructions of the Bureau of Forestry on (1) utmost economy in expenditures to avoid deficit, (2) submission of monthly district report on status of allotment, (3) furnishing immediately the Manila Office with copy of distribution of district allotment, (4) sub-

mission of quarterly report on expenditures and accomplishments by project, and (5) others.

MADRID COMMENDED BY DANR HEAD

Baguio—Forester Edilberto Madrid, district forester of Baguio was commended by Secretary Juan de G. Rodriguez in his letter dated May 15, 1956 "for the splendid work that you have rendered and also for your untiring efforts in putting up the agricultural exhibits during the last convention of the Philippine Veterans Legion."

The letter of the Secretary was conveyed to other heads of offices and personnel under the said district for the unstinted cooperation they have extended in this respect.

* * *

CIRCLE ELECTS NEW BOARD MEMBERS

The Forestry Circle composed of personnel of the Bureau of Forestry, elected new members of the Board of Director for the year 1956-57 last July 7. The election was conducted in the forestry offices throughout the country by virtue of the resolution sponsored by board member Estanislao B. Samonte over bitter opposition from some members of the Board of Director. "The fieldmen are members of this association", Samonte said, "and in accordance with the provisions of the Corporation Law, and the By-Laws of the association, we cannot deprive them of their right to vote. They have all the same rights and privileges accorded to the Manila members, and besides, we owe to them most of the fund raised for the Medical and Dental Clinic of the Circle." After the verbal clash, the resolution was approved.

Among those elected are Anacleto Hernandez, Ireneo Espiritu, Andres C. Garalza, Jr., Ramona Mañalac, Amador J. Evangelista, Reynaldo Marquez, Juan Utleg, and Irene Florenda. The adviser is Sr. Forester Tiburcio S. Serevo, Chief, Division of Forest Management.

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BRITISH COLUMBIA U THANKS BF

The University of British Columbia, Vancouver, Canada, acknowledged with appreciation the forestry book entitled "Popular Bulletin No. 44: "Philippine 'Mahogany' and Other Dipterocarp Woods", which Miss M. Logan, the librarian, requested from the Bureau of Forestry. The said book will be used by the students of the Depart-

ment of Forestry as a reference for Philippine woods.

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**DISTRICT FORESTER JUSTINO A. YBAÑEZ
OF CATBALOGAN, SAMAR ELECTED AS
CHAIRMAN OF THE FIRST EAST
VISAYAS REGIONAL DANREA**

During the last first Regional Conference of all DANREA organizations comprising the East Visayas Region, Mr. Justino A. Ybañez, District Forester, Catbalogan, Samar and concurrently Chairman of the Samar Danrea was elected Chairman of the East Visayas Danrea. Together with him the following officers were also elected, namely Atty. Pedro P. Panajon, District Land Officer, Tacloban City, Vice-Chairman, Dr. Rosalio Mandin, District Veterinarian, Cebu City, Treasurer, Mr. Buenaventura C. Briones, Soil Technologist, BAE, Cebu City, Auditor and Mr. Jesus C. Alix, Statistician, Division of Agricultural Economics, DANR, Cebu City, PRO. The Chairman was authorized to designate a Secretary and Miss Flora C. Berino, Provincial Home Demonstrator, BAE, Tacloban City, was designated. The conference was attended by fifty-seven (57) delegates from the five provinces of Oriental Negros, Bohol, Cebu, Leyte and Samar. Among the honored guests were Honorable Secretary Juan de G. Rodriguez and Honorable Undersecretary Jaime N. Ferrer, of the Department of Agriculture and Natural Resources, Hon. Francisco Remotigue, Actg. Governor of Cebu, Hon. Ramon Duterte, Actg. City Mayor of Cebu City, Mario Ortiz Secretary of the City Mayor of Cebu City. The conference was a success and climaxed by a banquet tendered in honor of Hon. Secretary Rodriguez and party at the Times Restaurant, Cebu City in the evening of September 10, 1956. The conference was held in Cebu City from September 7 to 10, 1956.

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MEIMBAN TOPS FORESTER EXAMINATION

Julian R. Meimban, Jr., of the Bureau of Forestry topped the assistant forester's examination given by the Bureau of Civil Service last year in Manila and provinces with an all-time record rating of 93% (veteran preference included).

A native of Rosales, Pangasinan, Meimban is an alumnus of the UP College of Forestry having been chosen as a government pensionado in 1952 to obtain his bachelor of science in forestry degree. A two-time gold medalist for oratorical excellence, he had been president of the Forestry, Student Body organizations, vice president of UP Student Council, Baguio confab delegate, associate editor and business manager of "Forestry Leaves", College of Forestry alumni and student body official organ.

Meimban started as a temporary ranger in

1951, served in various divisions and public relations section until he recently rose to assistant forester and acting in charge of Magat Forest Experiment Station at Bagabag, Nueva Vizcaya.

* * *

1956 ARBOR WEEK IN QUEZÓN PROVINCE

During the Arbor week a total of 5,762 seedlings were distributed and planted by the QUE-DANREA and the Red Cross chapter of Quezon. Almost all municipalities were given plants during the week. Masses in different churches were held in the first day of the Arbor Week and seedlings planted in Highways, churches, schools, national and provincial vacant parks, farm woodlots, denuded mountains and playgrounds. Head of the QUE-DANREA committee was Assistant Forester Orlando C. Ordoñez and head of Forest tree seedlings distribution was Ranger Tomas M. Binua.

Movie was shown in the last day of the week with attendance estimated to 3,000-3,500 and during every end of films, the significance of the week was explained by announcer Tam Macbim.

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ASST. FORESTER EXAMINATION RESULTS

Names of those who qualified in the assistant forester examination given by the Bureau of Civil Service in Manila, City of Bacolod, City of Baguio, City of Butuan, City of Cagayan de Oro, City of Cebu, City of Davao, City of Iloilo, City of Naga, City of Tacloban, City of Zamboanga, Tuguegarao, Cagayan, and Vigan, Ilocos Sur on September 17, 1955

<i>Names</i>	<i>General Rating</i>
1. Abuan, Maximino E.	74.16% v.p.
2. Acedo, Pedro L.	77.79
3. Agaloos, Bernardo	81.74
4. Aganad, Pedro R.	72.59
5. Aguda, Toribio P.	75.14
6. Alcantara, Urbano M.	74.72
7. Alconcel, Melanio S.	70.01
8. Alifabon, Apolonio	70.96
9. Adler, Arsenio	73.06
10. Ampeso, Albert	70.01
11. Ancheta, Severino T.	71.32
12. Ardieta, Rodrigo R.	75.41
13. Arizabal, Gregorio J.	70.01
14. Astudillo, Resurreccion	75.56
15. Avellano, Julian L.	83.74 v.p.
16. Balbuena, Delfin	71.94
17. Ballesteros, Juan S.	73.86
18. Baroña, Felipe	76.54
19. Batoon, Benjamin	76.72
20. Batoon, George	70
21. Bautista, Pelagio D.	77.96
22. Bermillo, Tomas F.	74.9
23. Boncato, Angel C.	77.78
24. Borja, Bernardo T.	78.74

25. Burgos, Jr., Bernardo	74.64	
26. Cabanday, Artemio C.	70.66	
27. Cabiles, Justiniano G.	70	
28. Cabotaje, Luis C.	72.27	
29. Cabote, Elpidio C.	75.36	v.p.
30. Cac, Mariano B.	76.09	
31. Calabas, Arcadio V.	79.84	
32. Capili, Eleno	77.14	
33. Castro, Marcelino R.	79.97	
34. Chica, Pedro Y.	70.01	
35. Clemente, Genaro M.	70.01	
36. Costales, Ildefonso U.	70	v.p.
37. Dacanay, Luis G.	78.06	1.p.
38. Daof, Cresencio A.	77.51	
39. Dayao, Leonardo	73.98	
40. Doroin, Regino	72.74	
41. Ergino, Valerio O.	83.6	
42. Española, Delfin P.	70.78	
43. Esperanza, Vicente	72.99	
44. Esteves, Honorato D.	74.23	
45. Ferrer, Florentino	74.4	
46. Furigay, Ealvador	70.01	
47. Galera, Emilio A.	72.31	
48. Galinato, Primitivo F.	82.72	v.p.
49. Galo, Juan B.	78.24	v.p.
50. Gojar, Jose	75.99	
51. Gomez, George	73.37	
52. Gray, Rosendo M.	70.25	
53. Guzman, Emiliano	70.88	
54. Ibarra, Pastor O.	70.45	
55. Jasmin, Bernardo B.	70.01	
56. Lansigan, Bienvenido	75.42	
57. Llapitan, Eduardo	75.07	
58. Lomeda, Jose F.	75.58	v.p.
59. Lopez, Felipe R.	76.14	
60. Marin, Enrique T.	73.78	
61. Mariñas, Felipe V.	75.94	
62. Mauricio, Florencio P.	79.59	
63. Meimban, Jr., Julian R.	93.46	v.p.
64. Micu, Federico O.	80.21	v.p.
65. Morao, Santiago R.	70	
66. Narciso, Policarpio	70	
67. Olay, Rufino P.	70	
68. Orbigo, Norberto	78.83	
69. Ordinario, Buenaventura M.	76.46	v.p.
70. Paa, Ramon	71.45	
71. Palos, Bonifacio	88.93	v.p.
72. Pura, Amado	70.01	
73. Rodrigo, Buenaventura B.	82.12	v.p.
74. Rodriguez, Leonidas B.	77.52	v.p.
75. Rombaoa, Pablo	79.22	
76. Rosales, Justo	70.19	
77. Salazar, Pedro C.	70.01	
78. Santos, Rosauro R.	78.04	
79. Selga, Nicanor O.	70.01	
80. Serna, Cirilo B.	74.86	
81. Sevilla, Teotimo S.	77.63	v.p.
82. Sibuma, Bernardo V.	80.49	v.p.

83. Siruno, Francisco	70.01
84. Tandoc, Nazario Z.	70.01
85. Tomeldan, Perfecto	70
86. Tordesillas, Benjamin O.	72.87
87. Urquiola, Juliano	70.15
88. Valdez, Adriano	71.83
89. Vega, Cipriano de la	70.55
90. Vergara, Napoleon T.	78.19
91. Verzosa, Manuel	76.77

ADDITIONAL LIST

Abraham, Felipe B	76.69	
Bacena Macario	71.94	
Balcita, Brigido B.	74.38	
Bersamusi, Roman T.	70	
Cabrera, Cenon	70	
Columbres, Epifanio	73.5	
Eugenio, Alfredo	72.17	
Galardo, Primitivo L.	81.87	
Ilagan, Jose	75	
Labasay, Laureano	70	v.p.
Lomibao, Benigno	71.7	
Rigondola, Segundino	71.49	
Serrano, Wenceslao	77.67	
Tadle, Josue	73.46	
Versosa, Lorenzo	70.05	
Zalun, E. P.	70.85	

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BURMESE FORESTERS VISITS BASILAN CITY

Mr. Maung Maung Soe, head of the Burmese forest service at Moulmein Province, Burma, visited Basilan City on July 17-27, 1956. A recipient of a FAO-UN grant to study forestry techniques especially along power logging in other countries, his 6-month observation tour program includes the United States, the Philippines and Borneo. He spent 4 months in the U.S. and will stay a month each in the Philippines and in Borneo. The results of his studies-observations will be a basis of the power logging to be introduced in their presently elephant-logged forest in Burma, he said.

From his arrival here on July 17 until July 22, he was at the cutting areas of Basilan Lumber Co. at Mahayahay and Bañas, Maluso, observing logging procedures by high-lead; swinging of logs by high-lead and sky-line methods; loading of logs on trucks and truck-trailers; transportation; unloading from trucks to log dump; construction of bridges and roads; operation of rock crusher and other activities in a logging camp. On July 23 and 24, he visited the Western Mindanao Lumber Co. at Kapatagan. He got interested in management-labor relations, sawmilling and items of cost in logging, transportation and milling in a small operation like the WEMILCO. On July 25, he observed operations at the Sta. Clara Lumber Co.

He was impressed with the guy-line method of loading logs, his reason being that this system could be adopted in Burma since this system is favorable to their method of logging which is done in no hurry, with least damages and most profit.

On July 26, with District Forester Jose R. Claveria, he called at the City Hall and met Mayor L. S. Brown and other City officials; was shown the City; and attended in the afternoon the Arbor Week Program of the Basilan City High School. In the evening, the local Bureau of Forestry tendered a despedida party in his honor which was attended by prominent City residents as guests.

He proceeded to Zamboanga City on July 27. According to him, he will spend two days in Zamboanga, then go to Negros mainly at Fabrica with the Insular Lumber Co. and thence to Manila for his visa, tickets and other business preparatory to going to Borneo.

He was much impressed by the beautiful landscapes of this Island City as well as the forest of Basilan and the logging and milling operations here. He admired Basiland hospitality extended to him throughout his stay here. "I know now why foreigners who visited the Philippines always want to come again to your country", were his parting words.—FPM

* * *

WEMILCO LOGGERS CELEBRATES ARBOR WEEK

By

ALFREDO A. EUGENIO
Ranger, B.F.

The loggers of the Western Mindanao Lumber Company of Kapatagan, Isabela, Basilan City, celebrated Arbor Week last July 28, 1956.

Tree planting ceremonies were held under the able guidance of Mr. Wenceslao Agbayani, Logging Superintendent of the company and an alumnus of the College of Forestry, Cl '50. Three hundred mahogany (*Sweitennia macrophylla*) seedlings were planted on the logged area of Set-up No. 51 which is located within the company's concession.

After the planting, an impromptu program was held. Speeches were delivered by the ever cooperating forestry-conscious loggers. The importance of forest trees, their conservation and wise utilization was imparted to the loggers. The sustained-yield management policy of the Bureau of Forestry was very much lauded by them because it meant continuous employment for the loggers and a sure employment for their children who shall soon follow the footsteps of their elders.

Ranger Quirico D. Tan, Officer In-charge of the B.F. Kapatagan Sub-station, expressed his sincere gratitude and appreciation for a well organized cooperation extended to the Bureau of For-

estry personnel and further praised the loggers for the splendid celebration of Arbor Week in this logging community.

* * *

ROMBLON FOREST NURSERY OPENED

The first provincial forest nursery in Romblon province was opened recently. (May 3, 1956). The nursery is located in sitio Ondoc, barrio Marigondon Sur, Despujols, Romblon.

The nursery was opened by virtue of the Department of Agriculture and Natural Resources' policy to increase the number of forest nurseries in country. The nursery will provide the necessary seedlings of timber trees, fruit trees, ornamental trees, trees of economic value, shade trees, etc. for the future Arbor Week celebration.

Several improvements have already been made since it was opened among them a building of light materials for the office, toilets and nursery sheds which are temporary in character. Seedlings and seeds had been collected by the laborers-deputy forest guards of this district to augment the seedlings stocked in the nursery among which are narra, agohe, malig-ang, alupag, toog, etc.

Behind the establishment of the Romblon provincial forest nursery is Hon. Florencio Moreno, Secretary of Public Works and Communications who requested the Director of Forestry, Manila, to reforest Tablas Island and before this reforestation project is realized a forest nursery should first be established. As soon as District Forester Maximino R. Reyes assumed his office as District Forester of Romblon he instructed his men to locate a suitable site for the nursery. The decision to have the nursery at Ondoc, Marigondon Sur, Despujols, Romblon was only made possible after careful comparative study of the different sites suggested, visited and inspected. Seedlings for the beautification of parks, national highways, roadsides, municipal and provincial parks and plazas, capitol sites, private lots, etc. are obtainable in this nursery free of charge.

Teodorico M. Montojo

* * *

ARBOR WEEK CELEBRATION IN ROMBLON PROVINCE

Realizing that trees are of paramount importance to the welfare and economic well-being of our country, President Ramon Magsaysay, in his Proclamation No. 129, changed Arbor Day into Arbor Week which is observed until the last Saturday of July each year.

The second Arbor Week was celebrated last July 22-28, 1956. Arbor Week was celebrated in this province in order to dedicate the week to planting of trees so as to awaken our national consciousness by the protection, conservation and wise utilization of our trees and forests.

This year's Arbor Week was celebrated under the auspices of the Provincial Forestry Council and the Municipal Forestry Councils of the province. The office of the District Forester furnished the seedlings requisitioned from the nursery of the Bureau of Forestry at Los Baños, Laguna. The laborers-deputy forest guards of this district assigned in their respective sectors furnished the seedlings found locally. This year's Arbor Week celebration laid emphasis on the planting and fencing of trees in Romblon Water Reservoir No. 2 located at sitio Casalugan, barrio Bagacay, Romblon town. Narra (*Pterocarpus indicus*); Tindalo (*Pahudia rhomboidia*); Teak (*Tectona grandis*); Banaba (*Lagerstroemia speciosa*); Ipil (*Intsia bijuga*); Balikbican and Golden Shower seedlings were planted by the personnel of Forest District No. 25, headed by District Forester Maximo R. Reyes assisted by Water Reservoir Guard Pedro M. Mortel of Romblon. The planting was done during Mountain Day Tree Planting.

Planting of trees in the different municipalities and barrio schools was supervised by the following Laborers-Deputy Forest Guards: Pershing J. Meñez, Sector No. 5 comprising Magdiwang and Cajidiocan (Sibuyan Island); Sector No. 4-B, San Fernando (Sibuyan Island); under Deputy Forest Guard Erofilo F. Dianco; Sector No. 4-A, San Fernando (Sibuyan Island); under Deputy Forest Guard Quirino Alifio; Sector No. 3 comprising Looc and Santa Fe, Romblon (Tablas Island) under Recaredo Gabat; Sector No. 2 comprising Odiofgan and Despujols under Deputy Forest Guard Jose R. Ferranco; and Sector No. comprising the municipality of Badajoz under Deputy Forest Guard Lazaro Romero. Officer in Charge Herminio A. Llana of España, San Fernando, Romblon is in charge of the whole Sibuyan Island. Seedlings planted 2,073 including narra, alupag, ago, talisay, kapoc, star apple, ates, santol, oranges, avocado, jackfruit citrus, calamansi, duhat etc. furnished by the deputy forest guards and from the Provincial Agricultural Nursery at Odioñgan, Romblon.

Actually the week was not only set for tree planting but also for caring cultivating of the previous plants and replacing the missing ones planted during previous Arbor Week.

Mass planting of trees was carried on simultaneously by the different municipal forestry councils under the leadership of the chairman of each council. Trees as well as ornamental plants were planted.

Teodorico M. Montojo

* * *

BISLIG COMPANY POLICY ON FOREST CONSERVATION

In order to implement the forest conservation policy of the company, the following rules and

regulations are promulgated for the guidance and compliance of everyone concerned. The main objective of this policy is to save as many trees as possible. Everyone is authorized to report to the management any violation of these rules and regulations.

* * *

Slogan: "WOODSMAN SAVE THAT TREE". FELLING AND BUCKING

1. Only marked trees will be felled. It is the responsibility of the timber marker to see to it that all trees 24 inches and over in diameter are marked for felling. Timber markers will be dealt with accordingly for leaving merchantable trees unmarked. Likewise, fellers and buckers will be punished for felling unmarked trees.

2. Trees shall be cut one foot below the highest buttress.

3. Whenever conditions warrant trees shall be felled toward the spar tree to minimize damage to small trees in yarding, otherwise perpendicular to the direction of the slope but away from rocks. In order to put this policy into effect each pair of fellers and buckers will be provided with at least two felling wedges.

4. No tree shall be left lodged on another.

5. Forced felling by lodging a tree on another is strictly prohibited. Fellers and buckers will not be paid for felling on all knocked down trees even with under cut. Any pair of fellers and buckers found practicing DOLLAR FELLING will be discharged.

6. Extreme care must be taken to avoid trees falling across other felled trees or on rocks.

7. Under cut shall be at least 1/4 the diameter of the tree to minimize splitting.

8. Decision as to the point of bucking is the responsibility of the felling and bucking foreman and not of the fellers and buckers. Minimum top diameter of logs is 18 inches.

* * *

CLEARING AREAS FOR LANDINGS AND ROADS

1. Areas cleared for landing shall not be more than 150 feet in radius around the spar tree. Width of skyline road and logging road shall not be more than 40 feet 60 feet, respectively. In the case of landing and skyline road, trees 4 inches and less in diameter will not be cut except in areas for piling logs.

2. Cutting of small trees when called for in connection with the logging operation or road construction shall be limited to trees other than those belonging to lauan family (*Dipterocarpaceae*) and those bearing edible fruits.

3. No cutting of standing trees for firewood of laborers shall be allowed.

YARDING

1. With favorable topography and other conditions yarding lines shall be as straight as possible from the tail block to the spar tree.

2. Choker line shall be tied to end of the log nearest to the spar tree and never at the center.

3. There shall be less yarding line with the use of extended choker.

4. All guy lines for spar trees and gin poles and cable riggings shall be slung from stumps and never from standing trees.

5. Never force to yard a log that hits an obstacle. Change the position of the choker so that the log is pulled around the obstacle.

6. Yarder operator shall not release the yarding cable abruptly when piling the log at landing and hitting another log to minimize splitting.

7. Cooking or building fire in the woods is strictly prohibited.

—F. O. CHINTE

* * *

"BURMESE FORESTER IMPRESSED IN BASILAN CITY

Mr. Maung Maung Soe, forestry boss at Moulmein Province, Burma, and No. 3 man in the Burmese forest service, was a student-observer on logging practices in Basilan City on July 17-27, 1956. He was conducted for 8 days to all the logging operations of the three big lumber companies operating in the Basilan Working Circle by Ranger Florencio P. Mauricio. All questions and observations by the Burmese forester were discussed in all the settings under operation at the time. Ranger Mauricio briefly explained to the Burmese visitor the management plan now being practised in Basilan for ultimate sustained yield and showed the different procedures thus employed, i.e., location of spar tree and survey of set-up boundary, timber marking, residual inventory and scaling. Mr. Soe informed the District Office that they concentrate their cutting in Burma to Teak trees. They girdle Teak and cut them 3-5 years later so that these will float in the rivers which are their principal means of transporting their logs from the forest to the seashores for export. He further said that they "plunge" or cut their Teak trees just above the level of the ground and utilize big limbs and tree tops rather than leave them in the forest to waste. He also said they cut one Teak tree per 2 acres and only those trees with girth well over their export measurements and leave the young trees intact in the forest; the logs are hauled to the rivers by elephants.

He spent his first day resting and orientation at the District Office, and his last two days in meeting City officials and seeing the sights of this Island City before proceeding to Zamboanga City.

His parting words: "I fervently hope I can come again to Basilan City."

F.P.M.

* * *

ARBOR WEEK FRUITFUL

Basilan City celebrated en masse this year's Arbor Week. The celebration was spear-headed by Cebu City Mayor Sergio Osmeña, Jr. who planted his memorial (Narra) tree at Plaza Rizal on July 17, 1956. He also emphasized to City residents the money saved if the forests are conserved properly (like in Basilan) instead of cutting all and then reforest the denuded areas (like in Cebu).

On July 18-20, the Moslem population planted trees during their religious festivities. On July 22, sermons about benefits from trees were heard in the churches. On July 23, the Boy Scouts planted 200 mahogany trees, the Girl Scouts 100, in their camp site. On July 24, the City Officials planted ornamental and shade trees around the City Hall; the lumber companies and plantations also planted in their respective compounds and plantations. On July 26, the schools planted trees in their schoolyards. On July 27, lot owners planted trees in their homelots. On July 28, WEMILCO planted 300 mahogany trees in their cleared areas around spar trees. And on July 29, the Lions, Jaycees and Jaycerettes planted trees along the City roads outside Isabela townsite. Planting materials were supplied by our Nursery, Cebu and some private nurseries. This spirit shown by the City residents to planting trees is a complement of their cooperation in the implementation of sustained yield management in the Basilan Working Circle.

F.P.M.

* * *

DF WARNS LIONS AGAINST KAIÑGINERO-SQUATTERS

"Unless the Lions Club as well as other civic organizations help the Bureau of Forestry, the time is not far distant when the forest of Basilan will be destroyed..." thus (guest speaker District Forester Jose Claveria told the Lions in their regular meeting on August 5 at the New Life Hotel. Claveria traced the history, importance and achievements of the Basilan Working Circle as the pilot project on selective logging and forest management for sustained yield in the Philippines. He asked for the cooperation of the Club in furthering the campaign of Forest District No. 44 to conserve the permanent timberland which is now only 27% of the total land area of this District.

F.P.M.

* * *

BASILAN'S NEW FORESTERS

Out of the successful examinees who passed the civil service exams for Assistant Foresters given

on September 17, 1956, the following are now stationed in Basilan City: (1) Florencio P. Mauricio (Cl. '55)—79.59%; (2) Josue F. Tadle (Cl. '56)—73.46%; (3) Alfredo A. Eugenio (Cl. '56)—72.17% and (4) Melanio S. Alconcel (Cl. '56)—70.01%. Being in the division that now plays an important role in the future status of our forests, it is hoped that they be given justifiable positions by the Bureau so that they will have enough personality to cope with difficulties that will surely face them when they be reassigned to the other lumbering districts as timber management officers after being trained satisfactorily in Basilan City.

* * *

"OUR HERITAGE" LAUDED IN BASILAN

"Our Heritage", a forestry propaganda film, was lauded by all the crowds who saw it on September and October in this City. Thru Mobile Unit 22 of the Bureau of Agricultural Extension at Zamboanga City, the film was shown to the public at different towns, barrios and sitios accessible by road. Before every showing of the film, the District Forester talked on forestry matters to the crowds gathered. The crowds always expressed their desire to see more like it after each showing.

* * *

FORESTRY (BASILAN) BASKETBALLERS WINNERS

To show the Basilan public that the Bureau of Forestry is also for the promotion of sports as a means of recreation, District No. 44 organized a team to compete in the Basketball League sponsored by the City Lions Club. In fact, ours is the only government office in this city (either nation or City) which put up a team. Purely of forestry employees, the team is composed of Rangers A. Eugenio (Captain), F. Mauricio, J. Malvas, Jr., R. Baggayan, B. Paragas and M. Valera; Forest Guards B. Gutierrez, L. Fernandez, J. Pioquinto and L. Cuevas; and Nurseryman P. Gregorio. Foresters D. Antonio and J. Claveria are Coach and Manager of the team, respective. Up to date, the team has won second in the bracket (there are two brackets with 6 competing teams to each bracket). The forestry team is now vying for third place in the over-all championship games.

* * *

RANGER ORALLO MARRIED

Ty. Ranger Juan Orallo, presently O.C. of Mangal Scalling Station, this City, married the former Miss Betty de la Merced of Zamboanga City on September 15, 1956. An impressive ceremony and party was held to commemorate their nuptials on the eve of the fiesta of Maluso at Camp Mahayahay of the Basilan Lumber Company where his father-in-law is presently employed. We wish them "happy landing"!

IPL ICA-NEC GRANTEES

Three technical personnel of the bureau of forestry left recently for the United States under ICA-NEC grant to undergo one-year training at the forest products laboratory in Madison, Wisconsin, Director Felipe R. Amos announced yesterday.

The three are assigned in the forest products laboratory in Los Baños, Laguna. Esther Z. Vergara, a research chemist and UP chemistry degree holder, will study forest products chemistry.

Research assistant Jose B. Orozco, Mapua chemical engineering graduate, will observe veneer and plywood research. Junior chemical engineer Jaime O. Escolano, UST alumnus, will study the manufacture of a wide variety of papers and visit commercial pulp and paper mills in the States.

Amos said the local forest products laboratory is making research on the feasibility of improving the quality of Philippine woods. It is also seeking to discover means by which waste products of the forest may be utilized profitably.

TEOFILO A. SANTOS
P.R.O.

* * *

BIGGEST TREE FOUND IN BISLIG

A red lauan tree that must have taken centuries to grow to a stump diameter of 135 inches by 77 inches or an average of 106 inches was found in the Bislig Bay Lumber Company, Inc. concession last month. The tree which is the biggest found in Bislig, so far, has a total height of about 200 feet with a merchantable bole of 94 feet, containing 40,676 board feet. Except for the butt rot of 30 inches by 24 inches which extends to about 10 feet, the whole bole is very sound. The apparent health of this tree may account for its survival through the centuries.

The huge size of the tree must have daunted the courage of a pair of fellers and buckers. The men refused to cut the tree which was a reason for their suspension for a week by the logging superintendent.

It took about a week for two men to fall and buck this tree into six logs.—F. O. Chinte

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BISLIG BAY LUMBER COMPANY CONCESSION ASSURED OF NATURAL REFORESTATION

Studies and observations at Bislig Bay Lumber Company, Inc. concession showed successful natural reforestation of logged-over areas. Reproduction count in the 1951-1954 residual forest averaged to 1,627 (20%) red Philippine mahogany, 1,034 light red Philippine mahogany, 122 (1%) apitong, 133 (2%) yakal, 1,987 gubas and 3,249 (40%) other species or a total of 8,152 seedlings

with average annual mortality of 4.2% for Dipterocarp species and 7.0% for other species.

For the second time Dipterocarp trees in Bislig Bay Lumber Company, Inc. concession were observed in seed year. Heavy blooming of tañgile started last May followed by mayapis, almon, hagakhak and red and white lauan. Similar manifestation was observed in 1954 with heavy fruiting of mayapis, apitong, almon, hagakhak and guisok-guisok, the first species having the most number of trees with fruits. Occurrence of seeding were more prominent in the logged-over areas than in the virgin forest, perhaps due to the liberation of trees from keen competition for light with the bigger trees which were removed during the process of logging, or to nature's call to perpetuate itself.

* * *

LOCAL FORESTRY OFFICE CHIEF HONORED

Forester Martin P. Lopez, Officer In-Charge of Mañgagoy Forest Station was given a Stag Party at the Senior Mess Hall on August 10 by the Senior and Junior staff members of Bislig Bay Lumber Company, Inc. Forester Lopez left the following day for Manila on his way to the United States to take up studies on Silviculture with special reference to selective method of logging. He will enroll at Yale University under FAO scholarship and will travel in the United States after a year study.

* * *

DELEGATES TO THE FIRST NATIONAL DANREA CONFERENCE

The following were selected by the Director of forestry as official delegates to the first national DANREA conference held in Manila on Nov. 5-10, 1956.

1. Cornelio Abergas
2. Francisco Abijay
3. Emilio Abundio
4. Vicente Agaloos
5. Daniel B. Allas
6. Primo A. Andres
7. Fernando Atmosfera
8. Pedro Cagalwan
9. Teodorico B. Cepeda
10. Jose R. Claveria
11. Juan Corales
12. Catalino Q. Ferreria
13. Jose Flores
14. Feliciano B. Gautane
15. Vicente G. Gobuyan
16. Anacleto A. Hernandez
17. Felix Jucaban
18. Ambrocio Juinio
19. Deogracia A. Juni
20. Rosales A. Juni
21. Cornelio Luczon
22. Julio de Luna

23. Marcelino Macabeo
24. Edilberto Madrid
25. Jose Makil
26. Toribio V. Manzano
27. Angel F. Miguel
28. Jorge Miranda
29. Rafael Navallasca
30. Tranquilino Orden, Jr.
31. Miguel Pato
32. Amado Pura
33. Timoteo Quimpo
34. Higinio Rebosura
35. Alfredo de los Reyes
36. Felipe R. Reyes
37. Maximo R. Reyes
38. Quirino Ruiz
39. Mario F. San Luis
40. Enrique K. Santos
41. Francisco Siriban
42. Emilio A. Soriano
43. Alejandro T. Tremor
44. Eustacio S. Velasco
45. Conrado P. Verandia
46. Florentino C. Versoza
47. Mamerto M. Villanueva
48. Justino A. Ybañez
49. Bernabe S. Zumel

II. MANILA PERSONNEL

1. Ceferino Abella
 2. Isabelo Achacos
 3. Juan Acogido
 4. Ramon Acuña
 5. Roman Aquino
 6. Florencio Asiddao
 7. Marciano Basconcillo
 8. Vicente Caguioa
 9. Braulio Cristobal
 10. Florentino Fontanilla
 11. Domingo Jacalne
 12. Leonor Lizardo
 13. Melecio Lopez
 14. Cayetano Macaraeg
 15. Angel Mallonga
 16. Vicente Marababol
 17. Severino Nab'o
 18. Vicente Parras
 19. Gregorio Poblacion
 20. Rafael Quidilla
 21. Juan Ravelo
 22. Martin Reyes
 23. Paciano Rimando
 24. Rufino A. Sabado
 25. Celestino Sabalo
 26. Valentine Sajor
 27. Porfirio San Buenaventura
 28. Teofilo A. Santos
 29. Tiburcio S. Serevo
- (Continued on page 120)

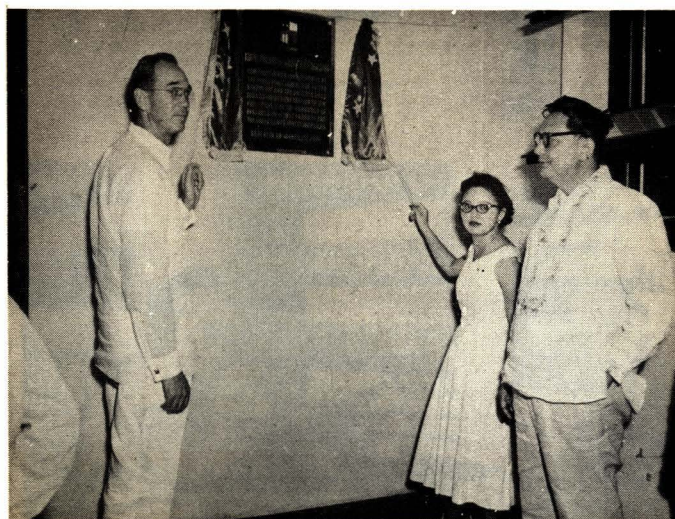
FPL Highlights – *Four Years Ago, Today*



President Quirino reading the scroll with Director Tamesis at the laying of the FPL cornerstone on October 25, 1953.

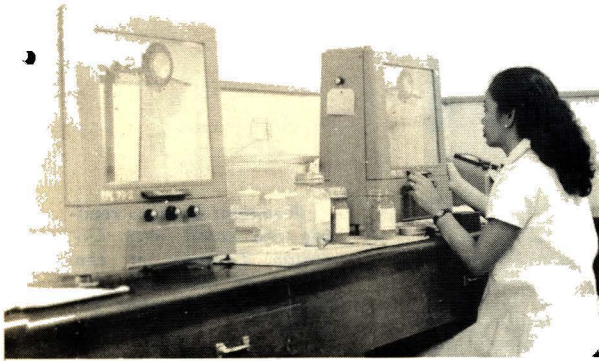


President Quirino placing the scroll in the cornerstone.



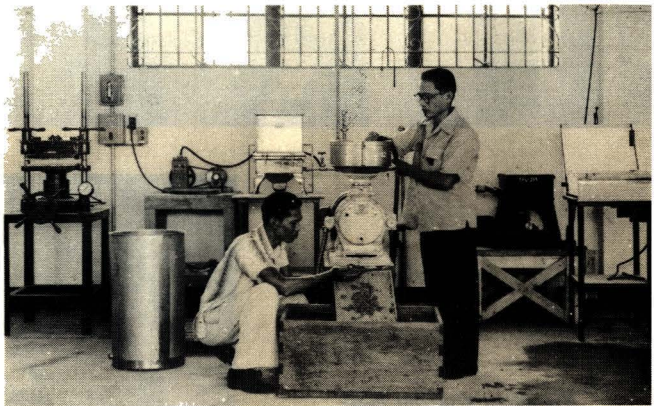
Unveiling of the plaque at the dedication and inauguration ceremonies of the F.P.L. in April, 1954. L to r: Mr. Ray Johnson of the ICA, Miss Marie Araneta, and Secretary of Agriculture, Salvador Araneta.

FPL Personnel At Work



Weighing on the analytical balance powdered wood sample, preliminary to the alcohol extraction test.

Operating the laboratory sized Bauer attrition mill for producing pulp from wood chips softened by a preliminary treatment with caustic soda.

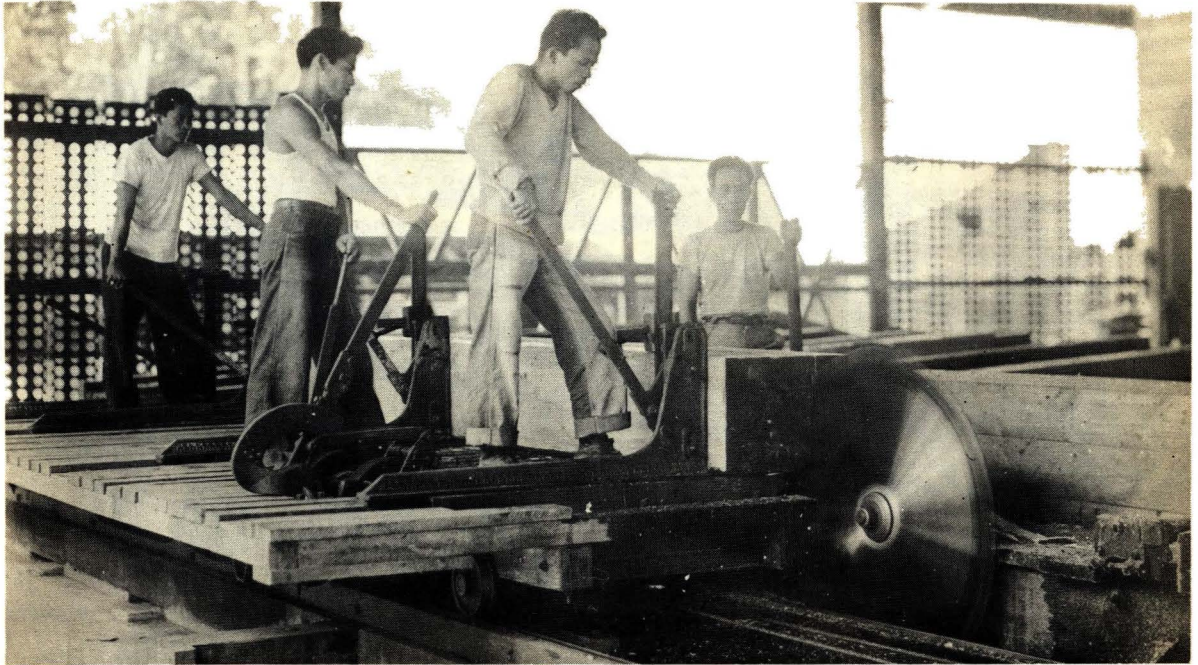


Temperature of a Connecticut charcoal kiln being taken with a thermocouple pyrometer just after cooling.

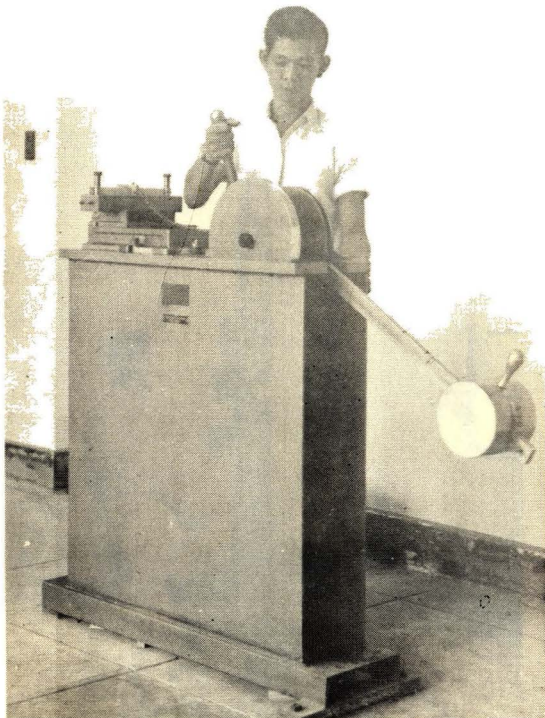
Wood structure and fiber research with the latest model of Leitz Dialux microscope.



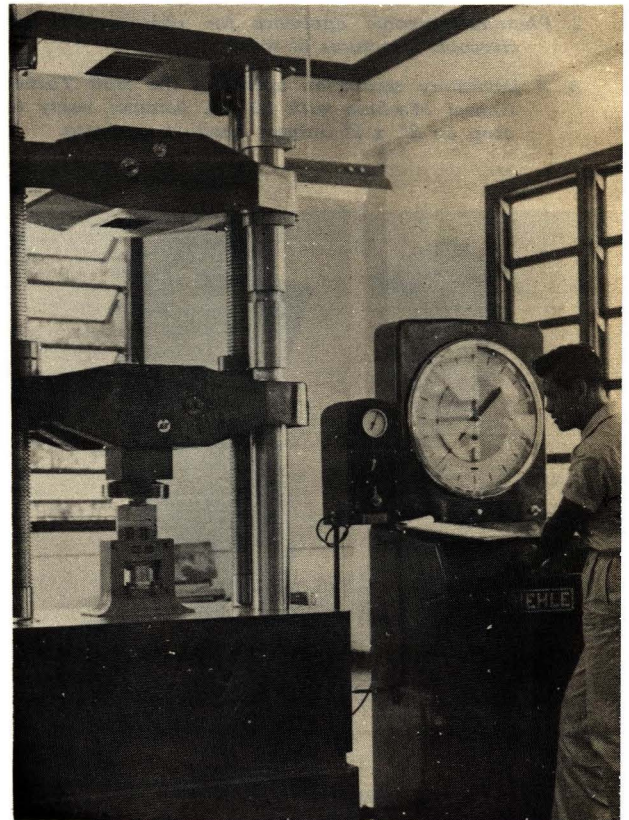
ICA (FOA) EQUIPMENT AT FPL.



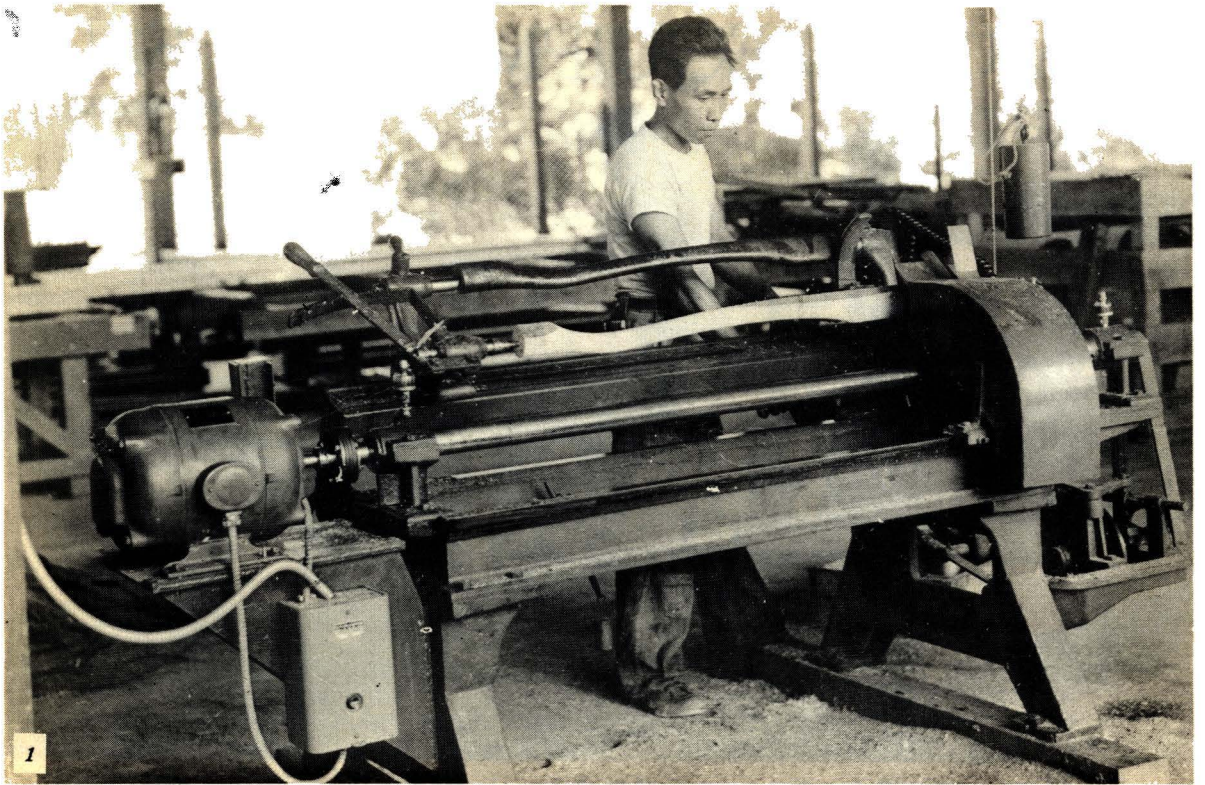
The laboratory sawmill in action, using a 48-in ch saw. It has since been equipped with a 60-inch saw and will be eventually provided with a top saw. It will then be possible to saw large logs.



The toughness testing machine with pendulum weight at its lowest position and positioned at 45° from



Making a shear test on the Riehle 200,000 lbs. universal testing machine, one of the four

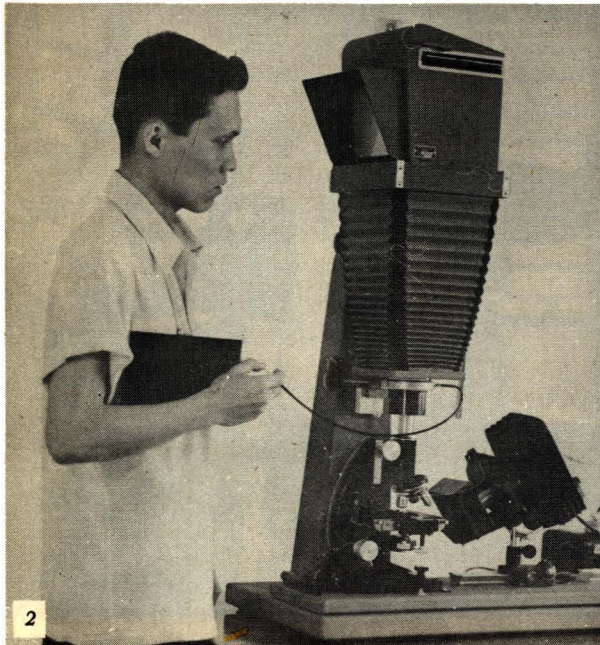


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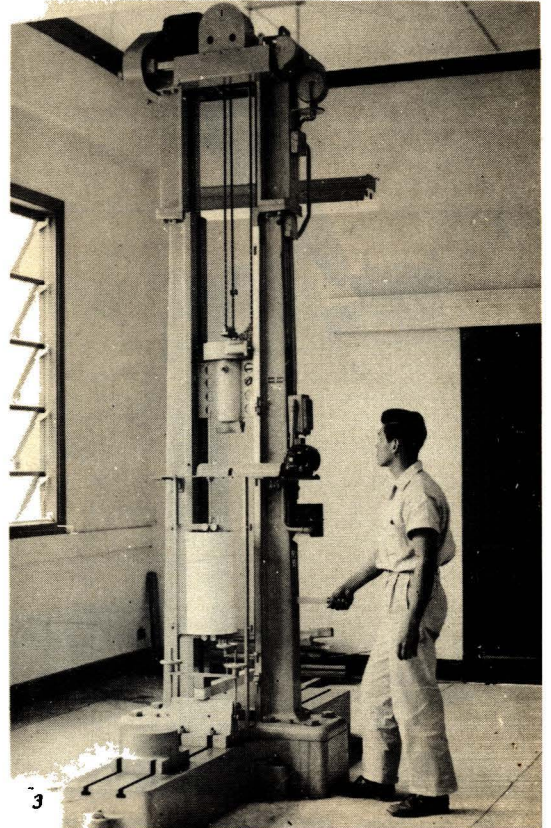
1. Copying lathe with an axe handle almost finished.

2. Photomicrographic appliance for photographic microscopic structures of wood.

3. A laboratory technician operating the Hall Turner Impact Machine with 50 lbs. hammer ready to drop on 2" x 2" impact bending specimen.



2



3

Forest Products Laboratory High-Lights

(EDITED BY — A.N.A.)

Coming and Goings:

An informal despedida-bienvenida party was tendered by the personnel of the Forest Products Research Institute on September 12, 1956 in honor of their trainees who left for abroad and their newly arrived members.

Mr. Simplicio B. Bellosillo and Mr. Manuel R. Monsalud, chiefs of the Division of Industrial Investigations and Division of Chemical Investigations, respectively, arrived on August 30, from a year of training along their respective lines at the Forest Products Laboratory in Madison, Wisconsin. Bellosillo studied in the field of timber testing and Monsalud in the manufacture of pulp, paper, and wallboard. Both men are now heading the work in their respective fields at the Philippine Laboratory and putting their training to immediate use. Both of them said they are glad to be home again.

Mr. Forrest A. Simmonds, a pulp and paper expert under the FAO, arrived on September 8 to join the staff of the pulp and paper researchers of the Institute. Mr. Simmonds is expected to stay with us for at least six months.

Three more Laboratory trainees departed on September 30 for a year of training at Madison, as follows:

Esther Z. Vergara—to train in forest products chemistry and extractives

Jaime O. Escolano—for training in paper making and paper machine operation

Jose B. Orozco—for training in veneer and plywood manufacture and in the gluing of wood.

The latest news from the members abroad: "It's getting cold out here."

Mr. Francisco S. Manuel who was granted 1-1/2 year's leave to accept a teaching fellowship left on August 27 for Northwestern University at Evanston, Illinois. He is taking post-graduate courses in Civil Engineering.

Doings:

Pulping studies have begun at the Forest Products Laboratory, under the direction of Manuel Monsalud, chief of the Chemical Investigations Section and with the advice of Mr. Forrest A. Simmonds from the Pulp and paper Division of the U.S. Forest Products Laboratory, Madison, Wisconsin. Pulp has been made from bamboo (*Bambusa vulgaris*) and from Katurai (*Sesbania*

grandiflora) by the cold soda process and one cook of sulfite chemical pulp has been made from the bamboo. All of these pulps will require considerable refining, cleaning, bleaching and testing before their quality can be announced.

The Laboratory still lacks several important items of equipment for pulping, pulp refining, and for making test sheets of paper; and progress will be retarded until these facilities become available.

The Laboratory air compressor and piping have been installed so that a continuous supply of air is now available to the pulping laboratory, the wood preservation laboratory, the dry kilns and other places needing compressed air. The air compressor automatically turns on when pressure in the central air receiver gets down to 140 psi and turns off when the pressure rises to 170 psi. It will operate continuously, night and day, as may be required.

Then steam boiler of the Laboratory has been put into operation and has supplied steam for test runs in the veneer dryer and the pulp digester. The boiler is heated by an oil burner which makes it much easier to operate wood fuel. Wood fuel has the advantage of cheapness when there is an adequate supply needed but not where wood fuel would have to be purchased. The Laboratory does not expect to have sufficient waste wood for boiler operation.

Feel At Home:

We extend our welcome wishes to Mr. Amadeo F. Agcaoili, Plant Management Engineer, who joined our staff on August 15, 1956.

Mr. Agcaoili graduated from the University of California in 1932 with a Bachelor of Science Degree in Engineering, majoring in the electrical field. He was formerly connected with the Manila Railroad Company before he joined our staff.

All we can say to our new member is: "Feel at home."

* * *

FOREST PRODUCTS FOR PHILIPPINES THAT'S EX-GUERILLA FIGHTER'S JOB DICK GOLDEN

An ex-college boxer who joined the Philippine guerrilla army to fight for freedom during the Japanese occupation is training in Madison for a job to help guide the future of his homeland's economy.

Manuel R. Monsalud, 48, of College, Laguna, Philippines, a chemist, is at the Forest Products Laboratory here to study advanced methods of developing the infant wood pulp industry in his home islands. In August he will return to the Philippines where he will become the chief chemist in the new Forest Products Research lab there.

Monsalud, who was an amateur boxing champion at the University of the Philippines from 1928 to 1930, was an instructor in chemistry at the university when war struck in 1941. He was a lieutenant in the university ROTC unit, was called to duty on Dec. 8 and was on the firing line in two weeks. He says he was to be assigned to the chemical corps but he adds, with a shrug: *"What chemical corps? There was only infantry and that was retreating."*

He became second in command of a sacrifice troop unit assigned to fight a delaying action in the hills to cover the retreat of MacArthur's army to Bataan and Corregidor. When his rear guard unit was cut off from the other troops they decided to go underground rather than give up. Monsalud recalls, "We just could not swallow our pride and surrender to the Japanese."

Then a three-year, animal-like existence began for the Philippine patriots.

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Monsalud says the underground was loosely organized and isolated groups had little contact with other units. The constant moving to avoid Japanese searchers added to the confusion, he says. Rifles and ammunition were hidden by his band in the ceiling of a friend's house but later had to be buried in grease and wrappings to avoid detection.

The group lived in the hills at the beginning of the campaign but later was forced to run the risk of staying near towns so they could get food and clothing from friends. Monsalud says they lived "practically like beggars" during the three years. They gave reports on Japanese troop movements which were relayed to Australia, spread the word of the turning tide of war and on the islands. Monsalud says the Philippine patriots would smuggle bits of their own inadequate food supply to the POW's even growing so bold as to throw the food into compounds where the Americans were caged.

One of the things which fanned the flame of hope during the three years of Japanese occupation, he says, was the San Francisco news broadcasts secretly heard on illegal short wave radios. He tells of copying the American messages on onion skin paper and smuggling them to Philippine patriots.

Monsalud was among the guerrillas to meet the U.S. troops under MacArthur when they fulfilled their promise to return and liberate the

islands. He became attached to a mortar detachment and helped drive out the Japanese invaders. He helped the U.S. counter intelligence corps and then became an agronomist with the U.S. quartermaster corps. He later left government service and became the general foreman of a 27,000-acre sugar plantation from 1946 to last year when he was chosen for the Forest Products position.

Monsalud has a B.S. in sugar technology from the University of the Philippines, Laguna. The Laguna branch of the school conducts agriculture classes in the hills away from the main university. He was one of the first two Bailon de la Roma scholars, students chosen under a difficult competitive examination system and was studying for his master's degree before World War II. He served as an associate instructor in agronomy and then in chemistry.

He says that much of the 35,000,000 acres of Philippine forest coverage is being wasted through neglect, lack of planning and poor logging methods. His job will be to discover and utilize new processes of wood pulp use. At present George M. Madison Forest Products lab and one-time Madison resident, is in charge of building and equipping the Philippine lab under the United Nations.

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Various types of wood will be investigated and screened under Monsalud's direction and effort will be devoted to finding pulp uses for types which look promising. Two other Filipinos to be assigned to the project are training here and three of Monsalud's assistants will arrive here next fall. Monsalud's study at Forest Products has been under the direction of Sam Ellickson, 4225 Scheffield Rd.

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Monsalud, in talking about his native land, says that the Filipinos are very grateful to the United States for all that the country has received. As an example he cites the funds given the islands to rebuild after World War II.

"We are attacked as being puppets of the United States," he says, "but we are not puppets. We are grateful for the good treatment shown to us. When we ask the United States for something and don't get it we do not turn to the Russians. We remain loyal and friendly even if we do not get what we wanted."

Monsalud says he has received a "very high impression" of this country and has been given much help. He notes that Americans seem friendly and also "highly religious" since they spend much time in church.

While he is sad to leave the U. S., Monsalud says, he will be glad to his own family and his own country where he will be able to put his training and ability to good use in paving the way for a better Philippine republic.

• Forestry in the News •

*Specially prepared for the Manila Times by
"The Economist" Intelligence Unit of London*

T I M B E R

The American economy is becoming increasingly difficult to analyze. On one side inflation still seems to be the guiding force. The general level of prices continues upwards and consumer spending shows no signs of decline. And investment in capital goods is proving a powerful buttress for the economy, which is reflected in the steady rise in bank loans this year.

But there are weak spots which could easily turn into a recession. For example, the last has not been heard of the downturn in the American motor industry. As the year goes by, it must surely have some effect both on consumer outlays and on other major industries.

Also, sales of furniture and home furnishings have started to fall. While in the first four months of this year deliveries of wood furniture were 18 per cent higher than twelve months ago, deliveries in May this year were 14 per cent lower than in May, 1955. Leading manufacturers are watching the situation closely for any incipient recession. The source of the trouble is at the retailers' level. Furniture production is certainly increasing but retailers are taking advantage of this situation by buying only for immediate needs and reducing their possible levels. Sooner or later manufacturers will be forced to cut their output.

Meanwhile, there is good news from the building and construction industries. It has been estimated that a new record will be reached this year in construction activity for the eleventh year in succession, in spite of an expected decline in residential building of about 7 per cent. In fact, non-residential building is scheduled to rise 10 per cent during 1956. Even with housebuilding, the decline will not be as great as had been thought earlier; the industry has suggested that work will be started on 1.1 million to 1.2 million new houses this year, compared with just over 1.3 million last year.

What can be deduced from all these divergent factors? Clearly, the prospects for timber consumption for the rest of this year depend on movements which are outside the control of the timber using industries and at this point in time the dividing line between inflation and recession has become very narrow and the economy could move either way in the coming months. Thus, while the present demand for timber in the United States remains high, the outlook is still uncertain.

And in Europe little change

In Europe, and especially in the United Kingdom, gloom prevails. Imports of hardwood into the United Kingdom in May were slightly over 2.2 million cubic feet compared with nearly 2.5 million cubic feet in May 1955. Furthermore, the general opinion among British hardwood importers is that the overall level of hardwood trading will be depressed for most of this year. The recession in the furniture industry, added to the decline in other timber consuming industries, does not inspire timber traders with much hope, for this year at least.

In recent weeks importers have also been influenced by the government's decision to release 1.8 million cubic feet of hardwood from the strategic reserve of stocks. The trade's response has been surprisingly good and it is understood that acceptances are much higher than was the case in the sale of government stocks of softwood. There is little reason to suppose that business conditions will alter much in the next few months. July and August are traditionally quiet months in the timber markets, but in former years some improvement was always looked for by the beginning of the autumn. This year it would perhaps be too optimistic to expect any substantial recovery until almost the end of the year, if then.

However, the trade is already looking to 1957 for a revival of its fortunes. By then, it is argued, there should be an improvement in the flow of goods from the factories and existing stocks in manufacturers' hands will have been run down, leading to increasing demands on timber suppliers.

Elsewhere in Europe the situation remains much as before. Producers and shippers are keeping their prices firm in the hope that a time will come, sooner or later, when British importers need supplies urgently. Also, British buyers are suffering from a feeling of frustration because other continental buying countries seem able to offer higher prices than the United Kingdom importers. Hence the general firmness of prices.

Freight rates increased

The news that the Far Eastern Freight Conference intends to increase the general level of freight rates by 15 per cent from September can only be a further source of anxiety for the European importer. This move will affect the shipment of timber from Japan, Malaya, Sarawak and Siam, and many importers regard this increase as excessive. In fact, British importers, looking ahead, and realizing that future purchases will have to include

these additional freight costs revising their ideas about the prices at which they can dispose of their existing stocks.

Atlantic freight rates are also moving upwards again, earlier than expected this year. The severe winter in Europe has resulted in the import of larger quantities of grain into European countries to offset losses of crop incurred during the winter and the demand for American coal continues to be strong. Thus, shipping generally has returned to a more normal level after the setbacks of the earlier months.

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DAGUPAN LUMBER WORKERS STRIKE

Workers at the Carried Lumber Company at Dagupan City affiliated with the Dagupan City Lumber Employes Union-PLUM struck yesterday afternoon, PLUM headquarters announced last night.

Atty. Vicente A. Rafael, PLUM national coordinator, said that 300 workers of the lumber company walked out in protest against alleged violation by the management of a working agreement.

Lorenzo O. Jaravata, president of the striking union, said that since May the union has been protesting against the management's alleged disregard of the union shop and closed shop provisions in the working agreement and the carrying on unfair labor practices by some Chinese supervisors against the union men.

The PLUM affiliate charged that 29 union members were dismissed last June despite their long service of the company. These workers, according to the strike leader, have been replaced by non-unionists.

Rafael claimed that Ben L. Chuy, manager of the strikebound lumber firm, ignored the union's protests and refused to grant wage adjustments.

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BAGUIO FORESTRY INCOME REPORTED

Local forestry income from timber charges and other sources during the 1955-56 fiscal year registered an increase, according to the annual report of district forest officer here to the Director of Forestry.

The report, which was prepared by District Forester Edilberto Madrid indicated a total collection during the preceding fiscal year in the amount of ₱228,706.38, as against ₱195,906.58 last year, or an increase of ₱32,799.80.

The hike in the forestry income was due to the accelerated activities of sawmills and timber operators in Mt. Province to meet the mining and construction requirements both in the public and private construction fields.

There was registered during the fiscal year under review a total timber cut of 105,949.95 cubic meters, compared to 97,456.16 cubic meters

during the preceding fiscal year. A marked increase in firewood and other ordinary minor forest products cut in Mt. Province was also noted in the report.

Madrid cited in his report disturbance in certain areas in the province such as hold-ups, which were frequent in the municipal districts of Sabangan, Kayan, Bauko, all within the subprovince of Bontoc. Illegal cutting of timber in and around Baguio is being checked to maintain the natural beauty of the city as a tourist center.—*Manila Times*, July 31, 1956.

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FOREST RESEARCH BODY DISCUSSED

Implementing details for the creation of a forest products research institute under the University of the Philippines as provided in Reorganization Plan No. 77 were approved at last Tuesday's meeting of the Government Survey and Reorganization Commission. Rep. Isidro C. Kintanar, task force chairman on agriculture and natural resources, explained the implementation report to the commission.

The forest products laboratory and the forest products research section of the Bureau of Forestry shall be abolished and their functions transferred together with appropriate personnel, appropriations, property, equipment, and records to the new institute.

This institute will answer the need for an objective organization to study and recommend the effective utilization of all forest products and their by-products and to give encouragement for the development of wood and lumber industries.

Its organizational structure includes the following sections: on mechanical properties; quality evaluation, machining and selection; physical properties and seasoning; preservative treatment; wood structure museum and herbarium; veneer, plywood and gluing; minor forest products; and pulping and wall-board studies.

* * *

FORESTRY CIRCLE MAGAZINE OUT SOON

The "Forestry Panorama," a magazine published as a public service by the Forestry Circle, Inc. will come out in August 2 with articles regarding logging and lumbering.

It will also include logging methods under sustained yield, revised grading rules for Philippine logs, grading rules and regulations on the measurement and inspection of Philippine lumber; comparison of the three scales such as the Brereton, the Doyle-Scribner and the Bureau of Forestry scales; weight of some Philippine woods; stresses of Philippine commercial timbers; allowable unit working stresses, and durability classification of Philippine woods, and other matters which are use-

ful to the timber and lumber businessmen, and students.

The publication is edited by Estanislao B. Samonte, c/o Bureau of Forestry, 354 Juan Luna, Manila.—July 28, 1956.

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POSSIBILITIES OF PI LUMBER EXPORT CITED

(Mr. Mañalac president of the Davao Lions Club and treasurer of the Producers and Exporters Association of the Philippines, is now in the United States as official delegate of the Philippine Lumber Producers Association at the annual convention of the Philippine Mahogany Association at White Sulphur Springs, West Virginia. He also carries a mission on export promotion from the PEAP.)

* * *

By GAUDENCIO S. MAÑALAC

There is not even the slightest push needed to catapult the export of Philippine mahogany products into the United States to over the \$100 million level if Philippine lumber producers would start setting the industry in such a manner as to meet the demand, both as to quantity and quality.

Any protracted delay in meeting this demand may prove fatal to the Philippine lumber industry, as American importers, in their anxiety to meet market requirements, are slowly looking towards South Africa, Honduras, Nicaragua, and even Borneo for their wood products requirements. Everywhere the clamor is for more supply of Philippine mahogany logs, lumber and plywood, and what are we going to do about it?

At current level of consumption vis-avis production, the United States imports about 3.5 billion board feet of lumber yearly, of which only about two per cent is supplied out of Philippine mahogany. Of this supply, ironically enough, about 65 per cent is supplied by Japan out of lumber and plywood manufactured from the logs shipped to that country from the Philippines.

Several reasons point to the certain fact that this demand may even soar in the year ahead:

1. Hampered by unfavorable weather, production of lumber in the United States may even be less than the record 39.1 billion board feet produced in 1955 this year, as against the consumption of about 43.5 billion board feet for the same year;

2. Construction industry report foresees a total 1955 spending of about \$44.5 billion or \$1.5 billion more than 1955;

3. Boat building for sports may reach up to \$22 billion and the use of Philippine mahogany in this line is greatly desired;

4. Furniture manufacturing may consume about

three billion board feet of lumber and may be doubled in the years ahead if this industry could make homemakers conscious of the need for more attractively designed furniture to replace their obsolete pieces;

5. The phenomenal growth of the TV industry calls for the production of more TV sets, and Philippine mahogany is highly adaptable in the construction of TV cabinets.

I was even told that an architect in Houston, Texas, always names Philippine mahogany in his specifications of construction materials.

Japan in 1955 exported a total of \$30 million worth of Philippine mahogany products to the United States manufactured out of the logs shipped to that country from the Philippine export to the United States on the other hand, including plywood, is even slightly less than 35 per cent of that figure. Based on potential demand, the volume and value of this export item to the United States may be increased to about three to four fold as to bring it to the \$100 to \$150 million level.

The door to making the Philippine lumber industry a potent factor in improving the country's economy is thus wide open and it is now up for us to lay the grounds to meet the challenge.

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WOOD CARVERS IN NORTH FEAR END OF INDUSTRY

According to the observations of Commerce Undersecretary Perfecto E. Laguio in his recent survey of the wood-carving industry in the mountain fastnesses of Benguet, Bontoc, and Ifugao, the industry might soon die out because the hardwoods they use in making their carvings were being fast depleted from indiscriminate cuttings.

The natives of these places pointed out that there were only particular kinds of wood which can be used for carving, but these are cut down without being replaced. These woods are "dao", *sangilo*, *culasi*, *batikuling*, and *tabangouen*.

The Philippine exports of local wood carvings during the year 1955 amounted more or less to P20,000 of which the greater bulk of these exports were sent to United States, Hawaii, Guam and other American insular possessions, while an inconsiderable portion went to Hongkong, Burma, France and Japan.

Wood carvings are mostly produced locally in Mt. Province and Laguna. Although the industry could not be subject to mechanization and standardization because it is a work of art and each carver has its own peculiar technique and style, the cutting of trees and sawing of trunks through the use of machines, however, would save much time and increase the output.—*Manila Times*, July 12, 1956

P.I. LUMBER PRODUCERS URGE FREIGHT RATES CUT

Antonio de las Alas, president of the Philippine Lumber Producers' Association declared that the American market for Philippine mahogany should be expanded further to increase the lumber trade between the Philippines and the United States.

He said that he had instructed Gaudencio S. Mañalac, representative of the association to the annual convention of the Philippine Mahogany association in Green brier, White Sulphur Springs, West Virginia to submit on the convention floor important matters that would affect the Philippine lumber trade with America.

According to de las Alas, the attention of the convention should be called to the need for a reasonable reduction of freight rates from the Philippines to the United States.

The lowering of freight rates, he said, would afford greater incentives to producers and exporters to ship mahogany to the United States.

The lumber association president disclosed that one of the main reasons for diverting logs to Japan was the readiness of Japanese importers to accommodate and absorb all kinds of Philippine grades. The technical experience and resources in America could be availed of to increase the use of lower grades should the convention take up the question of developing the market for lower grades of Philippine logs and lumber so that lower grade will not be left to be disposed locally or through other channels. This discourages exportation of P.I. lumber to the United States.

He suggested that other terms to designate Philippine woods other than "Philippine mahogany" should not be tolerated as it name for Philippine wood products and in order to assure to the consuming public the quality of "Philippine Mahogany" shipments should be secured directly from Philippine sources.—*Manila Times*, July 12, 1956.

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MAÑALAC GUEST OF LUMBERMEN

Gaudencio S. Mañalac, prominent lumberman was the guest of honor at a dinner of the Philippine Lumber Producers' Association held at the Philippine Columbian Club last October 8, 1956. Mr. Mañalac is the first and only Filipino individual member of the National Hardwood Lumber Association in the United States which promulgated rules and regulations on the classification and distribution of Hardwoods in the United States and Canada. He is also the treasurer of the Producers' and Exporters' Association of the Philippines.

He spoke on the danger signs of the Philippine lumber industry and elaborated on the con-

troversial portions of his report to the Philippine Lumber Producers' Association.—*Manila Times*.

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ALAS INSTRUCTS DELEGATE TO PI MAHOGANY MEET

Don Antonio de las Alas, president of the Philippine Lumber Producers' Association, in implementing the decision of the board of directors of said association formally instructed Gaudencio S. Mañalac, representative of the lumber association, to submit for discussion at the floor of the convention the following matters, that are of vital interest to the U.S.-P.I. lumber trade.

(a) *Reasonable reduction of freight rates from the Philippines to the United States.* The lowering of freight rates from our country to the United States will afford producers and exporters greater incentives to export Philippine mahogany to the United States. The unreasonableness of the freight charges can be compared with the relatively lower rates from Japan to the United States.

(b) *Marketing of lower grade lumber in the United States.* The Association have always advocated the development and expansion of the United States market for lower grades of Philippine logs and lumber. The limited preference by the American importers to high grade species, leaving the lower grades to be disposed locally or through other channels, has actually discouraged exportation of our lumber to the United States. It must be observed that one of the main reasons for diverting logs to Japan is the readiness of Japanese importers to accommodate and absorb all kinds of Philippine grades. The technical experience and resources in America could be availed of, to augment further use and utilization of our lower grades.

(c) The attention of the convention should be called to the necessity of undertaking a more aggressive and progressive campaign for the preferential acceptance by the American market of Philippine mahogany, this notwithstanding our inability to supply steadily the demands of the American market.

(d) There should be a continuous insistence on the use of "Philippine mahogany" as a nomenclature of all Philippine woods that are presently entering the United States. The use by certain elements of terms to designate Philippine woods other than "Philippine mahogany" should not be tolerated as it will put to naught all previous efforts to protect this time-honored name for our wood products. It may be suggested in this connection that shipments as much as possible should be secured directly from Philippine sources, so that the quality of "Philippine mahogany" may be assuredly given to the consuming public.

The lumber association believes that the American market should not only be preserved for Phil-

ippine mahogany but should be expanded further to augment the lumber trade between the Philippines and the United States.

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PLYWOOD ACCOUNT BOOKLET RELEASED

A new accounting pamphlet outlining a simplified cost system designed specifically for use of the domestic plywood industry has been prepared by the accounting department of the Industrial Development Center.

Plywood manufacturers and prospective investors in the industry are invited to call on the Center to get copies of the accounting outline.

The brochure presents two alternative cost schemes easily adaptable to the needs of plywood manufacturing firms in the Philippines. They are: (1) A "primary cost system" which is a very simplified procedure of keeping check on the cost factors once a year or whenever a company closes its books; and (2) A "conventional process cost" system—a more detailed and effective method—which allows for intermittent check on all elements of cost as frequently as thirty-day periods.

This second system permits departmental analysis operational costing, and control over all aspects of the business to a degree that the manufacturer can anticipate his costs and conditions that control costs. This system is deemed to be far more suited to the needs of the plywood manufacturing community.

The cost system for plywood is the first of a new series of IDC accounting pamphlets tailored to a particular sector of industry.

IDC's accounting services to the manufacturing community is an important component of the industrial promotion activities of the Center, which is a joint project of the National Economic Council and the International Cooperation Administration. The objective is to foster "cost consciousness" in the thinking of manufacturers and businessmen and to develop modern and effective techniques of controlling manufacturing costs.

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BENDETSSEN ON P.I. FORESTS

Bases negotiator Karl Bendetsen, who is connected with the forest industry in Minnesota, Michigan, New York and Maine, told the "business forum of the air" Friday evening that the greatest misconception in the industry was the view that the answer to conservation of forests is reforestation.

"Conservation is not based on reforestation," he added. He expressed the view that reforestation can only be properly used as a means to replace that which has been wasted.

Bendetsen deplored that timber was being regarded as something different from other crops.

He said timber should be husbanded, conserved and treated as a crop.

He said clear cutting was a wasteful practice. Each tree, he added, must be regarded from the viewpoint of whether or not it is mature.

In advocating selective cutting, Bendetsen said this practice requires no great deal of training and would be less expensive in the long run.

Manila Daily Bulletin.—October 22, 1956.

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OLDTIME FORESTRY EXPERT RETURNS TO FINISH JOB STARTED IN 1905

By LAURENCIO ZABALA

Given a little more time and a helping push, an American oldtimer may yet finish a job he began half a century ago to make Philippine forestry one of the biggest dollar-producing enterprises.

All Prof. Hugh Curran is waiting for now is President Magsaysay to say, "Go ahead!" and possibly substantial financial and material help from a big foundation from the United States.

Prof. Curran's as yet unfinished job deals with the forestry service which he had set up with the help of two American forestry experts—Dr. H. N. Whitford and Dr. Ford W. Foxworthy—way back in 1905.

As one of the founders of the forestry service, now known as the bureau of forestry, Prof. Curran surveyed large tracts of forest lands all over the country and then set about finding ways of preserving them.

His job was interrupted in 1912 when he was called to Argentina to establish a similar forestry service there. It was not until 1929 that he was able to come back, but most of his work then had to do with teaching Filipinos about tropical forestry in the School of Forestry in Los Baños.

Now back again after a forestry job in Venezuela, Prof. Curran has been gathering together old associates, mostly American oldtimers, in a bold attempt to set up the largest university in Mindanao for the study of forestry.

To start the program, Prof. Curran is seeking an "endowment of forest lands" in Mindanao from President Magsaysay where the educational institution could be established.

Not only will the forestry university deal with instruction of students, but it will also be a center of forestry research to find ways of preserving forest lands, particularly in the Philippines where forests are being depleted slowly.

According to Prof. Curran, forest lands that could have been the stabilizing factor in balancing the country's economy were being cleared right and left to give way to agriculture.

"Great areas once green with trees, in Luzon, Negros, Cebu and down to the Mindanao, are now ghosts of their former selves, the 80-year-old pro-

fessor and pioneer in Philippine forestry service said.

"Had these areas been kept permanently as forestry areas, the Philippine government could have brought in millions of American dollars, he said.

Instead, according to Prof. Curran, the Philippine government had allowed the deforestation of these lands to give way to agriculture which is hardly the answer to the economic problem of the country.

"People say the lands are better for agriculture and not for forestry but that is hardly true," the professor said further. "Those lands can be more profitably used as forest lands."

What Prof. Curran proposes to do is this:

After establishing the university of forestry, faculty members will instruct students on various aspects of cultivating forests by a process called tree farming.

All qualified forestry experts will be assembled in the university to make an extensive study of problems of forestry, including making researches.

The university will be a center of forestry research in all Asia and the Far East, and a big botanical garden will be set up to be planted with forest products from different countries in this region.

"Of course, the first big problem is to develop ways to stop fires," he said.

With the establishment of the school, Prof. Curran expects that forest lands in the Philippines already depleted by *kaiingins* can be reconverted to forestry with modern methods.

One method he expects to introduce is the way of planting trees from the air. The system involves the use of a light plane which will scatter seeds of trees as it flies over forest lands.

"You don't need to go about planting trees," he said. "All you must do is get an airplane and scatter seeds as you go over forest lands."

The aged forestry expert has been in the country for the past two months, visiting associates and making a survey of forest lands.

"From what I saw," he said, "a great deal of waste had been made by trying to convert forest lands to agriculture."

Among rich forest lands already laid to waste, Curran mentioned highlands in Luzon, particularly Mindoro, the once lush forest of Negros and those in Mindanao.

A graduate of forest engineering, Curran was first employed with the United States forestry service before he came here in 1905. The Philippine forestry service he helped to set up is the forerunner of the now bureau of forestry under the department of agriculture.

While most of his work in forestry was in the Philippines, he had also set up forestry service

in Argentina, helped private lumber firms in Brazil and lately performed a survey of forest resources in Venezuela.

But he considers his most important achievement to be that of setting up the forestry university and botanical garden for the tropics in Mindanao.

For this job, probably the last he will do, Curran has enlisted the help of his associates and is seeking the endowment from President Magsaysay. "The site of the school might be in the vicinity of lake Lanao," he said.

Curran plans to seek the help of a big foundation in the United States that will provide the operating funds for the school.—*Manila Bulletin*, September 19, 1956.

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PI NO LONGER IMPORTING PLYWOOD BUT EXPORTS STILL TINY COMPARED TO JAPAN'S

Newly compiled statistics disclosed that the Philippines, long a plywood importing country, had ceased to import the commodity since 1954-55 but showed exports of the item to the United States still puny to exportation of Japanese origin.

These facts were brought out in a comprehensive statistical brochure on the Philippine plywood industry which is being distributed free by the industrial development center.

Prepared by the survey and research department of I.D.C., the 50-page pamphlet tells the story of the forward march of the domestic industry to a commanding position as one of the fastest growing dollar earners for the country.

Unprecedented rise in production is indicated in a five-year review of comparative production figures reported by seven out of eight existing plywood plants, indicating an increase in combined production from 31,894,552 square feet in 1951 to 97,497,965 square feet last year.

The brochure shows by statistical count how the Philippines, long a plywood importing country, had ceased to import the commodity beginning the 1954-55 period. Thus, while the country imported 6,800,318 square feet of plywood during 1949-50, the import figures showed consistent declines during the next six years until it was down to nothing in 1954-55.

On the other hand, Philippine exports, which totaled only 207,946 square feet in 1949-50, soared to 7,289,261 square feet in 1954-55.

One disheartening factor, however, was echoed in the export figures. It was the puny size of Philippine exports to the United States market compared with exports of Japanese origin. Thus, in 1954, out of total U.S. imports of plywood amounting to \$33,022,381, the Philippine share of the

market was only \$118,908, against Japan's \$16,666,239.

The pamphlet said six more plywood plants are being installed. This will bring to 14 the total number of existing plants in the Philippines.

The I. D. C. report carries valuable market data and information and other economic statistics regarding the plywood industry which are expected to be of considerable interest to domestic manufacturers and prospective investors.

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Manila Bulletin, August 10, 1956.

TAIWAN TO IMPORT P.I. LOGS, FIBER

The foreign exchange and trade control commission of Formosa has included in its import budget the purchase of Philippine logs, ramie and abaca for September and October of this year, according to advices received by the department of commerce from Domingo T. Reyes, commercial attache to the Philippine embassy in Taipei.

He reported that \$10,000 was allotted for the purchase of ramie and abaca, and \$200,000 for lauan logs.

The department said Philippine export of logs and lumber to Taiwan last year amounted to \$1,106,288 and manufactured abaca together with abaca rope totaled ₱64,675.—*Manila Bulletin*, Sept. 25, 1956.

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LOGGERS HIT NEW C.B. REGULATION

Local loggers have expressed fears that the new Central Bank regulation providing for a general scale of the price of logs exported to Japan will prove disastrous to them.

In a conference the other day, the loggers said this regulation will make the Japanese log buyers shy away from buying logs from this area, which are of inferior quality than the logs in northern Mindanao, particularly in Agusan.

They claimed that the Central Bank based this price scale on the price of Agusan logs. During the conference, they decided to form an association to protect their interests.

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EMPLOYEES AWARDED SHARES OF STOCK

Vicente Araneta, president of G. A. Machineries, Inc., awarded stock certificates recently to 31 employees of the firm for their "exemplary record high efficiency rating and loyalty."

Araneta said this was the second time this year that employees of his firm were awarded certificates of stock in appreciation of their services to the company.

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ALAS P.I. DELEGATE TO TIMBER MEETING

The Philippine Lumber Producers association announces that Antonio de las Alas, president of the organization, has been officially designated to

represent the Philippines at the fourth All Australia timber congress to be held in Sydney, Nov. 12-18.

De las Alas was invited by the Australians to act as "guest chairman" of the timber congress next Nov. 14. As "guest chairman," he will be one of the principal speakers during the convention. He will also submit a paper on "The international aspect of the Philippine wood industry."—*Manila Bulletin*, October 16, 1956.

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MAÑALAC WARNS ON JAPANESE PLAN TO CONTROL LUMBER MARKETS, INCLUDING P.I.

A ranking Filipino lumberman warned last night that the Japanese were conducting a systematic program aimed at controlling lumber markets, including the Philippines.

Gaudencio S. Mañalac, president of the lumber firm bearing his name, told a dinner meeting given in his honor that the Japanese map out their trading activities with the keenness and precision of a military strategist.

Addressing officers and members of the Philippine Lumber Producers association which he represented in a mahogany convention in the U.S. recently, Mañalac disclosed that Japanese lumbermen have divided the world lumber market into zones, each zone assigned to a lumber trader or group of traders to cover so that through the artificial interplay of supply and demand prices may be stabilized for the benefit of Japanese lumber exporters.

Along this line of strategy, he continued, the Japanese lumber traders have divided the Philippines into zones for log sources, each zone assigned to a particular buyer to avoid competition among themselves and control the cost of procurement.

Mañalac, who returned recently from a survey trip to the United States and Japan, reported that Japanese lumbermen were mulling over these questions:

1. If the Philippines can develop the production of lumber and plywood to such a level that it can meet the demands of the American market directly, will it not result in the drastic diminution of Japanese exports of these products to the North American continent?

2. If the Filipinos succeed in establishing band sawmills, veneer and plywood plants to process logs locally, will the Philippines still continue to supply the Japanese mills with the much-needed round logs?

Japanese lumbermen, he said, have these two questions uppermost in their minds and are now taking the necessary steps to maintain their security in the world lumber market.

Mañalac said Japanese foreign officials and

businessmen are now conducting an extensive and intensive research and investigation of the Philippine forest resources and lumber industry. "For all we know," he added, "the Japanese may know more about these matters than Filipinos do."—*Manila Bulletin*, October 9, 1956.

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PROFESSOR CURRAN STRESSES REFORESTATION NEED

Prof. Hugh Curran, technical adviser on forest investigation of the Ministerio de Agriculture de Venezuela, underscored the necessity of bringing back forest crops to the vast cogen and barren areas which he observed during his tour in Mindanao and Luzon where forest destructions, particularly in the Mountain Province, have started to have their adverse effects felt on the country's climate and agriculture.

The American forestry expert made his observation in the get-together party given in his honor by the Society of Filipino Foresters last Monday at the bureau of forestry. He said that a Tropical College of Forestry could be established in a site along Dapao Lake, Lanao, a spot that could be made one of the best tourist attractions in the world if fully improved because of its wonderful scenery and climate.

The proposed site has an elevation of 2,500 feet above sea level surrounded with virgin tropical forest and a vast area for practicing diversified agriculture. The 82-year old forestry veteran who is accompanied by his son Curran, Jr. first came to the Philippines in 1904. He worked on survey, inventory and forest map of the forest resources of the islands and made the most collections on botanical and wood specimens. In 1910 he located Mt. Makiling in Los Baños as the site of the present College of Forestry, UP where he became a faculty member for several years. He left the country in 1945 to serve the Venezuela government and came back last month for a visit. Among his hosts was forestry director Felipe R. Amos, president of the society.

* * *

N.E.C. RECOMMENDS PRIORITIES FORMULA, CALLS CONFERENCE ON FOREST PROBLEMS

The National Economic Council has recommended to President Magsaysay the approval by the cabinet of its industrial priorities formula which was transmitted to Malacañang earlier this month.

The N.E.C. recommendation was made after study of a recent cabinet policy, limiting allocation of foreign exchange to new industries using 60 per cent of their raw materials from local origin.

Senator Gil J. Puyat, N.E.C. presiding officer, said the industrial priorities formula adopted by the council takes into consideration the dollar ex-

penditures for imports as one of its factors. He indicated that all other considerations being equal, a project that requires more dollars for imports of raw materials and other supplies, under the N.E.C. method employed, would be in the lower priority rating of industries.

Puyat, in his letter of transmittal to Malacañang, pointed out that in effect, the priority formula will show which projects will generate for the country the highest measure of social benefits, and for this reason, will deserve priority consideration in the allocation of scarce resources and, in appropriate cases, may be extended government assistance or protection.

During its meeting Tuesday, the N.E.C. also discussed the advisability of adopting safeguards against the drain of forest resources of the country. The council heard N.E.C. member Daniel Aguinaldo's recommendations on the matter, as follows:

1. That existing regulations of selective logging be strictly enforced.
2. That more liberal dollar allocations be made for all kinds of wood-working machinery.
3. That liberal credit policies of the R.F.C. and the P.N.B. be allowed for wood processing industries.
4. That the bureau of forestry be requested to define what are the permanent forest areas in the country, and to require concessioners of such areas to reforest the area within a given period after cutting the logs.
5. That there should be gradual imposition of export tax on logs, or as an alternative, that the present export inspection fee on certain types of "peeler No. 1" and "veneer No. 1" be increased.

Aguinaldo told the N.E.C. members that in order to implement a requirement for concessioners to shoulder the responsibility of reforesting their areas, timber licenses should be granted on a long-term basis, preferably for a period of 50 years, renewable for a similar period provided the concessioners comply with the requirement of reforestation. He explained that under the present system of allowing licenses for only one year, the concessioners have no incentive for reforestation, of the area, since they face the uncertainty of having their concessions extended.

Aguinaldo also counselled the N.E.C. members to study additional safeguards for the conservation of forest resources for nonconstruction purpose, such as timber used for pulp and paper making.

Puyat directed N.E.C. executive director Andres O. Hizon to hold conferences with representatives of the bureau of forestry, the Industrial Development center, lumber and plywood manufacturers and exporters, and the department of public works and communications.

Hizon indicated he would look into the basis of some reports that because of the fast deforestation in many areas in the Pihlippines, the annual seasonal floods have increased in volume, necessitating the building of higher and better-reinforced bridges.

Hizon was also asked by Senator Puyat to direct the N.E.C. office of statistical coordination and standards to look into the accuracy and reliability of statistics on the forestry reserves, and statistical data on logging and lumber activities coming from different sources.—*Manila Bulletin*, September 15, 1956.

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LUMBERMAN LEAVES ON WORLD SURVEY

Brigido R. Valencia, third vice president of the Producers and Exporters Association of the Philippines, left last Monday for Tokyo on the first leg of a worldwide business trip.

He is carrying a mission from the P.E.A.P. to study markets abroad for Philippine export products.

His itinerary includes Hongkong, Bangkok, Rangoon, Karachi, Beirut, Rome, Geneva, Madrid, Frankfurt, London, Amsterdam, New York, Chicago, San Francisco, Seattle, Honolulu and back to Tokyo before Christmas.

Valencia is one of the biggest producers and exporters of logs in the Philippines, exporting principally to Japan. He is the head of Mindanao Lumber Co. and B. R. Valencia and Co.—*Manila Bulletin*, October 11, 1956.

* * *

CATTLEMEN DENY ROW WITH SETTLERS

The Philippine cattle raisers association has denied reports there's a conflict between the stockmen and the settlers", according to Rep. Mateo Pecson, association president. Cattle raisers are not interested in agricultural land where they know cattle will not thrive well, he added.

Former agriculture secretary Mariano Garchitorena said there should be no such a conflict when "there is no urgency to occupy everything."—*Manila Bulletin*, October 11, 1956.

* * *

MAÑALAC TO SPEAK AT LUMBER MEETING

Gaudencio S. Mañalac, ranking lumberman, will be the guest of honor at a dinner of the officers and members of the Philippine Lumber Producers' Association at the Philippine Columbian club on Taft avenue at 7:30 next Monday, it was learned from Antonio de las Alas, association president. He will talk on the problems of the lumber industry.

Mañalac was the lone delegate of the association at the recent annual convention of the Philippine Mahogany association of the United States

held at the Greenbrier, White Sulphur Springs, West Virginia.

He is the first and only Filipino individual member of the National Hardwood Lumber Association of the United States, which promulgates rules and regulations on the classification and distribution of hardwoods in the United States and Canada.

Mañalac is also the treasurer of the Producers and Exporters Association of the Philippines, president of the Davao Lions club, and president of the lumber producing and exporting firm bearing his name.—*Manila Bulletin*, October 6, 1956.

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EXECUTIVE REPORTS ON JAPAN SURVEY, WARNS ON P.I. LOSING LUMBER MARKET

Because of restrictions being imposed by government authorities on log exportation to Japan, Japanese importers are now turning to other sources of supply and the Philippines may eventually lose the Japanese lumber market, according to Brigido R. Valencia, ranking Filipino lumberman who recently surveyed the lumber market in Japan.

Valencia is the third vice president of the Producers and Exporters Association of the Philippines and president of the Mindanao Lumber Co., one of the biggest log importation to Japan.

He reported that Japanese log importers have reacted adversely to the various restrictions and changing regulations being imposed by Philippine government authorities supervising lumber exportation to Japan.

He mentioned particularly the present "check price" system of the Central Bank export department whereby log exportations are stalled, causing much inconvenience and losses to both importers, if the sales reports do not tally with the Central Bank check prices.

Generally, Valencia said, log prices in the Japanese lumber market are lower than in other markets of the world.

The Japanese also resented, according to Valencia, a previous Central Bank regulation requiring c.i.f. quotations on Philippine exports to Japan only.

The Japanese have become aware of the Philippine government's negative attitude toward Philippine log exportation to Japan, which, according to Valencia, has been the most hospitable and absorbent market for Philippine wood products.

Valencia revealed that he learned from reliable sources that Japan will cut its importation of logs from the Philippines by no less than 30 per cent in the next three months.

Japan has been preparing for the eventuality, he said, when it can do away with the Philippines as a principal supplier of logs.

He disclosed that in the Tokyo log ponds

alone, the Japanese have a stock of 42 million board feet of lumber, while all over Japan there are no less than 120 million board feet of logs stockpiled for future use.

In the meantime, Valencia said Japan is developing other sources of lumber, such as North Borneo, Indonesia, Canada, and even Soviet Russia.

A total of 69,960,000 board feet of Soviet lumber was scheduled to be shipped to three Japanese trading firms in October of this year, he said.

Valencia declared that although Russia and Canada do not pose a serious and direct threat to the Philippine mahogany trade because their production is mostly softwood, Borneo and Indonesia are likely to offer a stiff competition to Philippine lumber in quality and price.

He said that these countries have vast untapped forest resources which Japan can and will help in developing, through technical know-how and financial aid, to transform them into rich sources of wood products.

Valencia expressed the belief that if and when the Philippines loses the Japanese lumber market the country will find it difficult, if not impossible to compete in the world lumber trade because of high cost of production, lack of modern logging and processing equipment, lack of technical skill, distance from principal lumber markets of the world such as the United States and Europe, shortages of Philippine bottoms, high freight rates, and absence of financial and credit facilities for the Philippine lumber industry.

"Unless the Philippine government takes a more positive and constructive attitude toward Philippine lumber industry and trade, instead of actually discouraging it," Valencia said, "this growing industry, which has become one of the top dollar earners of the country, may soon find itself facing degradation and disintegration." — *Manila Bulletin*, September 20, 1956.

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HAWAII OFFERS BRIGHT PROSPECTS AS A MARKET FOR PI MAHOGANY, HANDICRAFTS

By GAUDENCIO MAÑALAC

(Philippine delegate to the annual convention of Lions International and the Philippine Mahogany Association in the United States)

Hawaii offers a bright prospect as a market for Philippine mahogany lumber. The military housing construction program alone calls for \$111 million worth of lumber, not to mention the booming private housing development program consisting of around 600 houses costing \$15,000 to \$17,000 per unit.

Out of the 74 million board feet of sawn lum-

ber imported by Hawaii last year, the Philippines supplied only \$364,744 worth. The Hawaiian market is hardly touched by Philippine lumber exports, most of them going to Japan and the United States.

Philippine native fabrics and handicrafts can develop a sizable market here also, what with the ever growing tourist trade in this territory. American tourists will just buy anything at fabulous prices, either for private use or for souvenir, especially handicrafts that can best be produced in the Philippines.

The gross national product of Hawaii is reported at \$1.15 billion. Personal income is rated at \$950 million, or a per capita income of \$1,900 for each of the 500,000 population. Oriental in atmosphere but American in its way of life, this territory is indeed a dream vacation spot.

There is a plan to put up a Filipino village in the international market under the leadership of Mrs. May Villarama. The Producers and Exporters Association of the Philippines has been asked to help in this project.

Of the total dollar receipts of this territory totalling \$270 million \$141 million comes from sugar, \$110 million from pineapple, \$19 million from minor exports.

Receipts from invisible trade is \$383 million, of which \$55 million comes from the tourist industry. If the Philippines can develop the tourist trade to the extent that Hawaii has done it, tourism may well be one of the leading dollar earners for the country.

About 12,000 Filipinos are employed in the sugar plantations, receiving salaries and wages said to be the highest in this industry. With the fast mechanization of the sugar industry, a good number of these Filipino workers may have to be laid off in the future. However, they have multi-million dollar savings which they can well invest in agriculture lands in Mindanao when the eventuality comes. This is what the writer suggested to the Filipino laborers here when interviewed by Mrs. Ligaya Victorio Fruto of the Honolulu Star-Bulletin.

The Hawaii Sugar Planters association is even willing to help along this line. They are only waiting for action of the Philippine government in helping these Filipino laborers.

This is something for the sugar bloc: The Lihue plantations on Kauai, the oldest and one of the most modern in the world, gave out these statistics: area cultivated, 14,000 acres; fertilizer consumption, 5,000 tons; chemicals to control weeds, 570 tons; irrigation water used annually, 32 billion gallons; employes and laborers, 1,350; harvesting 840,000 tons of sugar cane from 7,300 acres; 207 operating days required to produce 65,000 tons of sugar from 640,000 tons of cane.

These figures may well be compared to our

own sugar plantations to see how they are doing to compete with other sugar producers of the world. Sugar is shipped in bulk to the United States, doing away with jute bag containers.

The Philippine consulate in this territory is doing a fine job in public relations for the Philippines. At the dinner held at the Ohau Country club, to which I was invited, Consul Emilio Bejasa lorded it over as the dean of all the consulate officials here.

It is regrettable to find out that former consulate official Petronilo G. Dulay is no longer connected with the Philippine consulate here and has been won over by the Phil-Am Life agency here. Dulay could have been easily one of the best commercial attaches of the Philippines.

The writer was met at the Honolulu airport by a delegation of the Waikiki Lions club with the usual aloha and leis. Consul Bejasa was there, too. The Waikiki Lions club asked the writer to speak at the meeting and inducted him as "Calabash Cousin" with appropriate ceremony, wearing an ancient ceremonial robe of Hawaiian royalty. Hawaii is hospitality spelled aloha.—*Manila Bulletin*, August 15 1956.

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EXECUTIVE URGES EXPANSION OF LUMBER INDUSTRY TO SUPPLY WORLD NEEDS

By GAUDENCIO MAÑALAC

(Delegate of the Philippine Lumber Producers Association to the Convention of the Philippine Mahogany Association of the United States)

It is high time that Philippine lumber producers and the government start planning the course toward developing the lumber industry into such a level that timber can be processed in the Philippines into finished and semi-finished products needed in the American market, instead of Philippine logs taking a roundabout course of going first to other countries like Japan and entering this market in processed form.

Total Philippine mahogany lumber exports to the United States for the 12-month period ending April 30, 1956 reached a total of 114 million board feet, 58 per cent over that of the same period last year. Direct Philippine exports totalled 59 million board feet, an increase of 22 per cent; Japan's share reached 55 million board feet, an increase of 119 per cent.

On the overall lauan lumber shipment, Japan's share went up to 49 per cent from about 34 per cent in 1954. Recent monthly figures indicate further gains for Japanese exports of this product.

Of the total Philippine mahogany plywood shipments to the United States valued at \$32 million in 1955, the Philippines' direct share is only about three percent with the bulk coming from Japan.

While that may look alarming to Philippine lumber producers, to the majority of the Philippine Mahogany association here, it is considered a stabilizing factor for the Philippine mahogany position in the American market. Without that much believed, American importers may have to look somewhere else to fill their needs for mahogany products in view of the unstable supply from the Philippines.

The recent announcement that MITI (Japanese ministry of international trade and industry) has given the go-signal to Japanese exporters of lauan lumber and plywood to establish distributing centers for these products here has alarmed many of the American importers of lumber products.

To jibe with this Japanese plan, the writer told the delegates at the mahogany convention here that Japan's allocation for the procurement of Philippine mahogany logs has been increased 40 per cent for the period from April 1 to September 30 this year, and that he believes that by October 1, Japanese imports of Philippine mahogany logs will be under the Class AA basis, which means that Japanese importers may be given any amount of dollars they may need for this purpose.

The ratification of the peace treaty between the Philippines and Japan, the writer further explained, may place in the hands of the Philippine producer dollar loans from Japanese reparations payments that may reach up to \$250 million. A sizeable portion of loans may find its way into the lumber industry. When that happens, it is the writer's conjecture that a sort of control will be afforded the Japanese both from the production and distribution ends of Philippine lumber products.

Whichever way the wind blows, the writer believes that the development of the Philippine lumber industry should be undertaken exclusively by the Filipinos themselves. This problem should be solved at home immediately. Philippine lumber producers, with the aid of the government, had better start planning a course of action to insure the control of the lumber industry by Filipinos and to adjust it to the current need of the world market.—*Manila Bulletin*, August 8, 1956.

* * *

LOGGING INDUSTRY GETS TAX RELIEF

Special import levy exempts wire ropes

Upon representation made by the Philippine Lumber Producers' Association, through its president, Don Antonio de las Alas, the secretary of finance recently ruled that the special import tax of 17% imposed by Republic Act No. 1394, cannot be imposed on imported wire, ropes or steel cables established or identified to be accessories or parts of machineries used in the logging industry.

These parts are considered "accessories" or "spare parts" and come within the exemption provided in the statute. This rule reverses the former determination made by the Department of Finance that wire ropes and steel cables used in the logging industry are not exempted from the payment of 17% special import tax.

The reconsidered ruling of the Department of Finance reads as follows:—

"Please be advised that imported wire ropes or steel cables established or identified to be accessories or parts of machineries used in the logging industry for yarding and loading and unloading logs may be considered as falling under the terms 'accessories' or 'spare parts' used in section 6 of Republic Act No. 1394 and they may be released from the Bureau of Customs without the prepayment of the special import tax upon compliance by the importers concerned with the requisites provided in Paragraph VIII (c) of our Department Order No. 224, as amended."

This is considered an indication that the government is realizing the importance of encouraging the lumber industry and of the necessity of promoting the further development and expansion of this dollar producing enterprise.—*Manila Times*, October 29, 1956.

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CB SCORED FOR NOT GRANTING DOLLARS TO LUMBER MEN

The Central Bank was hit anew for refusing to grant dollar allocations to lumber producers to import their much-needed logging machinery and spare parts.

Gaudencio S. Mañalac, president of the Davao Lions Club and treasurer of the Producers Association of the Philippines, declared that the refusal to grant dollars shares an inconsistency in the implementation of the administration's economic policies.

Mañalac made the statement in a radio interview Tuesday evening, October 16, over station DZAQ during the "Youth Wants To Know" weekly program of the College Editors Guild.

The Davao lumberman said that this action of the Central Bank was presumably based the wrong premise of the Philippine lumber industry is now over-developed and that there is no need to further expand the industry through the importation of logging machinery.

"As a matter of fact, the present production of timber is not even one-third of the allowable cut of the country's forest resources authorized by the bureau of forestry.

Mañalac said that Philippine loggers are now

facing serious difficulties because of lack of machinery, equipment and spare parts. Most of the local logging equipment, he said, are army surplus junk which is too costly to maintain.

He said that the lumber industry has contributed a great deal to the alleviation of the country's foreign exchange shortage. From an inconspicuous position before the war, log and lumber exports, Mañalac stated, have gone up in recent years to become the fourth biggest dollar earner in 1955.

"Given more encouragement and properly developed, logs and lumber may yet surpass copra and sugar and become the country's leading export product," Mañalac said.

Mañalac said that Filipino lumbermen are forced to export round logs instead of processed lumber by force of necessity due to lack of machinery, equipment and facilities.

"Given these machinery and equipment," Mañalac said, "no Filipino lumberman will hesitate to process logs and export lumber, plywood and other finished wood products."—*The Manila Times*, October 20, 1956.

* * *

LARA, QUIMFO STRESS ARBOR DAY MESSAGE

In the wake of President Magsaysay's proclamation declaring the period from July 22 to 28, 1956, as Arbor Week, Governor Vicente B. de Lara and Provincial Forester Timoteo Quimpo, today urged all civic minded citizens of Misamis Oriental and this city to take active part in the occasion.

The objective of Arbor Week is of public concern, the governor said, and for this reason, we should not expect the government to do tree planting employees and private individuals—must plant trees in our backyards and in any available space in our farms and see them grow in grandeur", he said.

He stressed the importance of trees, citing the utilitarian and economic values that the country derives from trees. He urged everyone, in the name of the generations still unborn to plant trees not only during Arbor Week but during the days when necessity demands.

Forester Quimpo also appealed to the people to cooperate with the government in the preservation and conservation of our forests. The forest is something more than a mere group of trees, he pointed out. It builds and conserves the soil; it retains and conserves water, attracts rain and it serves as wind breaks and a place which controls biological pest and diseases which play havoc to our agricultural crops, he said.—*Ang Katarungan*, July 21, 1956.

ARBOR WEEK THOUGHTS

The week ending with the last Saturday of July each year is our Arbor Week as proclaimed by the President of the Philippines. But, to us men of the Forest Service, every week of the month, year in and year out, is a week of continuous endeavor for the preservation and conservation of one of our precious heritage—the forest.

Forestry is a subject which is one of many splendors. To the weary in search of peace, recreation or sport, such as fishing and hunting, it is a source of delight; to the poet and to the lover of nature, it is material for his thoughts. As a yielder of diversified products, the lifeblood of many industries, and a supplier of employment, it has no peer.

While all forests are God-given, not all countries have good forests. In that respect, the Philippines is fortunate. What God has given us, therefore as a heritage we should not neglect. We should give it back to God, as forests, not as an act of gratitude but because it would serve us well to do so. Forests are important to humanity. They play an important role in checking the destructive forces of nature.

Forest is a soil former. Vast areas of fertile lands consist almost exclusively of the detritus of the forest. How does this take place? Vegetable matter, in the form of humus, resulting from the decomposition of the litter on the forest floor, causes the formation of the soil.

Forest is a soil improver. The richness and fertility of virgin forest soil is too well known to be discussed. This is due to the abundance of plant food and humus in the soil.

Another important function of forest is that of being a fixer of the soil. The roots of the forest clasp and hold the soil in place and the canopy of the forest protects the soil to such an extent that wind and water erosion are prevented. Not only erosion, forest deforestation have caused landslides which have buried villages.

Forest is a flood preventer. How? A considerable portion of the rain that falls is intercepted by the branches of the forest. Or, the flow of the water is retarded by the roots and the litter on the forest floor, the rapidity of the flow is retarded, thus the destructive influence of floods is lessened.

The keynote of forestry, therefore, should be perpetuity. Be gentle with that ax, young man. Be gentle especially with the young promising growths which shall become the forest of the future. You should not cut simply with the purpose of reaping the wood, but cut with the thought of the future crop.

The forest—that precious matrimony of ours—we should conserve not for ourselves but those who would come after us. They will need the

forest just as we need them today. I think it is meet to quote the words of Baron Ferdinand Von Mueller who said, "I regard the forest as a heritage given to us by nature, not for spoil or to devastate, but to be wisely used, reverently honored, and carefully maintained."—*Ang Katarungan*, July 21, 1956.

* * *

POPE PIUS XII ON:

FOREST AND SOIL CONSERVATION

The agriculture department has just received a copy of the allocution of His Holiness Pope XII on food and agriculture. Pertinent portions of it are the following:

The allocution was delivered on November 10, 1955, during the Eighth Session of the Conference of the FAO (Food and Agriculture Organization).

"The aims that you set before you were, and still are, of paramount importance: to raise the levels of nutrition and standards of living of the peoples, to improve efficiency of production and distribution of all food and agricultural products, and to contribute towards an expanding world economy—

"—Among the special studies, to which your experts have devoted themselves, we would mention a few that are particularly suggestive, and first of all those that relate to the very basis of agriculture, the soil—. In particular, it was impossible to neglect the control of erosion, which is essentially caused by the natural elements, but in many cases, is facilitated and accelerated by the intervention of man, who, to make sloping land tillable, strips it of all protective vegetation—.

"In this sense because of the essential role they play in regulating the flow of surface and round water serious attention should be paid to forests, they check the run-off water, facilitate its seepage in depth and the feeding of springs; they retain the snow and, even though they cannot prevent exceptional floods, they regulate the flow of rivers. It is therefore to the interest of public authorities, who are for the development of agriculture to keep a watch on the way in which forests are logged (or denuded)."

THE MINDANAO CROSS

August 18, 1956

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DE LAS ALAS EXPLAINS PHILIPPINE BARTER LAW TO AUSSIE LOGS PRODUCERS

Nation's timber resources estimated at

1 (B) cubic meters or over D (B) board feet

Currency difficulty was pointed out by Antonio de las Alas, president of the Philippines Lumber Producers' Association, in a speech delivered yesterday before the All Australia Timber Congress at Sidney, as the insuperable stumbling block of

the expansion of trade between the Philippines and Australia.

"The Philippines," according to him, "has logs, lumber, hemp and cordage, coconut products, tobacco and manufacturers and other products that can be exported to Australia such commodities as meat and meat preparations, dairy products, cereal and cereal preparations, cattle and other live animals, leather and other products. The free exchange of these products through exportation and importation between the two countries has not been possible on account of the payment problem."

"Two possible remedies have been advanced," he explained, "namely, formation in this part of the world of a regional payment union as in Europe and barter. The first was believed impractical as there is conspicuous disparity in the value of exports and imports and necessarily the countries that have favorable balance of trade sooner or later will find themselves extending credits to countries with unfavorable balance of trade. The creditor nations feel that they cannot afford to extend credits for even insubstantial amounts and for any length of

time. As regards the second, for some time there has been a very strong pressure to resort to barter to help producers and to increase a saving in our dollar reserve as otherwise foreign goods bartered would have to be acquired and paid for in dollars."

De las Alas said that through persistent efforts of influential elements in the Philippine business community, a modified barter law was approved by the Congress of the Philippines.

"However," he asserted, "there developed a very strong opposition within the government, specially among ranking officials of the Central Bank who believe that it would affect the stability of the value of the Philippine peso, and, as a result, the regulations adopted in the implementation of the law, have been such that barter transactions have encountered difficulties and, so far, the value and volume of good bartered have not been appreciable."

Don Antonio de las Alas has the signal honor of being the only Filipino invited to act as one of the chairmen during the All Australia Timber Congress.—*Manila Times*, November 15, 1956.

LITERARY ATTEMPTS . . .

(Continued from page 96)

of them do not know how to saddle a horse, not even to ride one. A few of them, however, can drive a jeep, an ability unheard-of during the early nineteen hundred. One important trait which the "Montero" of old and the present possess in common is the patience to travel in the woods no matter what the topography might be. He is a courteous public servant, ever ready to extend a helping hand to forest users. With his limited supply of quinine, aspirin, and paregoric, he oftentimes takes the place of the country doctor. He is a dentist with his supply of tincture of iodine. He has done favors for scientists, businessmen and even politicians but the reverse does not seem to hold true.

His former pay was small, pegged to ₱75.00 for many years, and until only recently was his pay hiked to ₱120. But compared with the salary of the street sweeper and the janitor of the college, it is a shame. But he is happy and contented in spite of this low pay because his work is steady, and he deals with a lot of people and his trees. He is the master of

B.F. NOTES . . .

(Continued from page 103)

30. Carlos Sulit

31. Juan Utleg

The purpose of the conference was to discuss common problems such as rural improvements work of the Department, its program of activities, the reorganization, position classification, salary standardization, local problems and corresponding solutions, etc.

himself and is independent in his official conduct; very much attached to his family, church and civic clubs. In many places he is considered a big man, often rubbing elbows with the big shots of the province or town where he works.

When he graduates from the college of forestry he has no debts—then gets himself a wife and then begin his debts. After ten years holding the same job, the same pay, and raising about half a dozen children he becomes more buried in debt. That is the "Montero." "A steady worker but a forgotten honest public servant," he is often called. Cannot the government improve his lot by at least placing him in the same category as those who are employed in other branches of the government with equal academic training?

Compliments

of

LEONARDO A. TIRO

Timber Concessionaire

Dealer of

Philippine Mahogany

Medina, Misamis Oriental

Compliments

of

AMADO BALBUTIN

Concessionaire and Log

Dealer of Hardwood and

Philippine Mahogany

Linugos, Misamis Oriental

Compliments of

ANAKAN LUMBER COMPANY

Gingoog, Misamis Oriental

Dealer of:

1. LUMBER — RED LAUAN
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• Campus Notes •

FORMER PROFESSOR DIES

Professor Harold Cuzner, often fondly called by the students as the "Old Man" and who retired three years ago, died last September 25 at the age of 78 after a week confinement at the UST hospital.

The late Professor Cuzner joined the Bureau of Forestry as assistant inspector in 1905. In 1909 he was farm superintendent of the U.P. College of Agriculture. He was an assistant professor of Agronomy in 1912. In 1915, he was an associate professor in Agricultural Engineering. He was named acting chief of the Division of inspection in 1923 and finally to full professorship of Silviculture and forester-in-charge, a position which he held until his retirement in 1953.

Professor Cuzner, is survived by his wife, Mrs. Maria Henry Cuzner and a daughter Mary Cuzner.

* * *

PROFESSOR CURRAN LAUDS FORESTRY STRIDES

Professor U. Curran, former professor of the College of Forestry came all the way from Venezuela, South America, to see the College of Forestry and the Forest Products Laboratory two months ago. Speaking before the student body organization at a convocation held in his honor, he praised the College for the vast improvements of the College of Forestry since liberation and its increased enrolment. He expressed the desire to visit the College more frequently, if he had the opportunity to do so.

The visiting professor was introduced to the student body by Professor Calixto Mabesa, assistant dean of the U.P. College of Forestry. After the program, a luncheon was given in his honor at the Makiling restaurant by the college staff, most of whom were his former colleagues.

E. de Guzman

* * *

DEATH OF MRS. SAJOR

The faculty members and the student body of the U.P. College of Forestry expressed their condolence to the family of Mrs. Valentin Sajor who died last August 1, 1956 at the St. Luke's Hospital after nine months' suffering from cerebral thrombosis. Because the family had to wait for Juliana, one of the daughters, enrolled at the Columbia University, New York for her master's degree in nursing, the burial was delayed until August 15, 1956.

A wreath was donated in the name of the Faculty and Student Body of the College of Forestry.

V. Flores

C. D. CLASSES IN THE COLLEGE OF FORESTRY

The Luzon Community Development Trainees held their classes in the College of Forestry from July 27, 1956. Series of lectures about the roles of the different divisions of the Bureau of Forestry were given by the different members of the College Faculty. Prof. G. Zamuco spoke on the role of the College of Forestry in Community Development; Prof. E. de la Cruz, Chief of the Phil. Forest Products Laboratory, on the part played by the Forest Products Laboratory in Community Development and Prof. Valentin Sajor, on the community work of the Division of Forest Investigation. The College of faculty members selected to lecture to the different C. D. classes in the College of Forestry auditorium were Prof. T. Delizo, Mssrs. D. V. Jacalne and L. Quimbo.

V. Flores

* * *

LOYALTY CELEBRATION

The U.P. College of Forestry took part with the College of Agriculture in the observance of the 38th Loyalty Day celebration on October 10, with Senator Jose P. Laurel as the guest speaker. The morning affair was highlighted with a parade led by the Los Baños ROTC cadets followed by different colorful floats depicting community development through agricultural research and education. The College of Forestry for the third consecutive time won first prize for the most beautiful and symbolical float.

In the afternoon, eager spectators filled the Baker Hall to witness the basketball games between the U.P. Los Baños Rural High School and the Ateneo de San Pablo on the one hand and U.P. Los Baños varsity against the U.S.T. seniors on the other hand. The Ruralites bested the San Pablo Ateneans, but the U.S.T. after an uphill fight managed to eke out a four-point lead over the Agies, the score ending at 58-54.

V. Veracion

* * *

FORESTRY IN THE INTRAMURALS

VOLLEYBALL:

The Forestry volleyball team successfully defended their title when they rooted down the Sophies in a three set game and retained the crown as this year's champion in the volleyball intramurals. The team has earned a name for copping the intramural championship for a number of consecutive years.

Despite the fact that the team was only a

collection of freshmen and some old reliables, they proved to be masters at the net over the other teams by defeating them easily.

BASKETBALL:

Meanwhile, the Forestry quintet caught the Aggie teams unawares during the basketball intramurals when they came out very much stronger and more aggressive than in the past years.

With both height and speed the Foresters easily shaded the Freshmen, Sophomore and the Juniors. They even put up a good fight against the more experienced and star-studded senior team. Edilberto Unite, a 5'11" newcomer, was a great help to the team. On account of their impressive showing two of the team's members, Apolinario Marquez, Jr. and Isidro Zamuco, were selected to play with the U.P. Los Baños varsity team.

The Forestry team finished third in the final standings after losing by technicality to the Juniors. This year's coach is Mr. Cesar Recto.

SOCCER-FOOTBALL:

Marred by frequent late afternoon rains and a number of postponements of the game, the soccer-football league resulted in a triple tie among the Juniors, Freshmen and Forestry teams. The Forestry team having recovered at the middle part of the league was able to take its stand among the tied teams after defeating the Freshman team.

Composed mostly of Thailand students the team defeated the Juniors and Freshman after losing to the seniors and sophomores. The Thailand students, who are proud to claim football as their national sport, made possible the team's present standing. The league is expected to resume in the second semester.

J. Amihan

* * *

FORMER COLLEGE OF FORESTRY INSTRUCTOR STUDYING IN STATES

Miss Heminia Jundos, a former instructor of English in the college of Forestry, who was sent for advance studies in the United States, through a Smith-Mundt Fulbright scholarship is presently enrolled in the state university of Michigan, where she is taking a post graduate course—working on her thesis on anguish as a Second Language. On account of her load in post graduate courses in English, she was registered a regular student.

On her way she passed by Tokyo, Hongkong and Hawaii. Miss Jundos stayed in Honolulu to get oriented on university life. The orientation was mostly conducted in the university of Hawaii.

In her letter to Miss Jesusa Taleon, an instructor in mathematics in the college of Forestry, she made mention the nature and way the course is taught which is largely reading and library reference work. In addition to her school work, she

wrote, that she and other Filipino students who are staying with her have to do their own washing and cooking of their own food.

Miss Jundos finished her B.S.E. in the University of the Philippines in 1951 as a "magna cum laude". Before she left for the states, she already had credits in her Masters of Arts degree. Miss Jundos, who left the college temporarily expects to stay in the United States for a period of one year.

Her place is temporarily filled by Miss Teresita M. Blando, A.B. '56, U.P.

J. Amihan

* * *

SILVICULTURE TRIP TO MT. PROVINCE AND ILOCOS PROVINCES

About a hundred students will leave for Baguio and the Ilocos provinces on December 22, 1956, on a Silvicultural field trip under Professor T. Delizo and Forester Domingo Jacalne. The group plans to visit the Ambuklao hydroelectric plant and the reforestation project at Baguio and from the pines city they will proceed to Bantay, Ilocos Sur to see the site of the Caniaw Reforestation Project. From there they will leave for Laoag, Ilocos Norte to visit the Tungaw reforestation project at Piddig. At Laoag the group will be entertained by Miss Julita Gerardo a student of the college and who is from the place. This will be on the 24th of December. It is all christmas on their way. From Laoag, they will leave for home college but will stop at La Union to spend the night there at wherein they will be honored with a reception and a dance. The silviculturists expect to be back on the 26th.

Vicente Veracion

* * *

THAILAND STUDENTS DONATE ₱100

In response to an appeal of the Student Body Adviser at the FSBO meeting, the Thai students under the leadership of Theaw Sindiphongsa presented their contribution of One Hundred Pesos to Assistant Dean Mabesa for the purchase of curtains for the College auditorium stage.

* * *

FSBO PLAQUE FOR CLEANEST DORMITORY

Reviving an old tradition, the FSBO will award this year a beautiful plaque to the cleanest college dormitory on the campus.

According to Assistant Dean Mabesa a committee will be formed to make weekly inspection of the dormitories, and the one averaging the highest for the month will receive the award.

The periodic inspection will be made throughout the year. The winner has to maintain the highest monthly rating otherwise the plaque will be transferred to the next winning dormitory.

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ALUMNI, TAKE NOTE

We regret to inform the alumni that so far we have received about a hundred of the sheets sent to the different forest district offices. We cannot start working on that directory until we have received from practically every alumnus. If you have not as yet sent in yours, please send it at your earliest convenience to the Assistant Dean of the College or to the Business Manager of the FORESTRY LEAVES. So far we have been receiving very interesting suggestions from the alumni.

We wish to express our thanks to the District Foresters who helped by soliciting ads and by getting subscribers for us. Needless to say, it is the ads from the field that have helped us all along.

We get letters of complaint from subscribers who have not received their copies. We have tried our best to see to it that no subscriber is missed when we mail the subscribers' copies. If you happen to be one of those who missed your copies, please write direct to the Adviser. All complaints will be promptly attended to.

—The Management



September 25, 1956

The Editor, Official Gazette
Executive Building
Malacañang, Manila

(Thru the Honorable, the Secretary of Agriculture
and Natural Resources, Manila)

S i r :

I have the honor to enclose herewith Forestry Administrative Order Nos. 23-1 and 4-11, dated May 14, 1956, and July 1, 1956, respectively, with the request that same be published in the Official Gazette in conformity with Section 79(b) of the Revised Administrative Code, as amended and Section 11, C.A. No. 638.

Very respectfully,
FELIPE R. AMOS
Director of Forestry

* * *

Republic of the Philippines
Department of Agriculture and Natural Resources
OFFICE OF THE SECRETARY
M a n i l a

FORESTRY ADMINISTRATIVE ORDER
NO. 23-1 (Amendment)

May 14, 1956

SUBJECT: *Sustained yield and Selective Logging and Submittal of Policy Statements and Plans therefor.*

1. Forestry Administrative Order No. 23, dated October 24, 1954, is hereby amended by adding Section 2-A, 2-B, 2-C, 2-D, and 2-E between Sections 2 and 3, to read as follows:

2-A. For the purpose of implementing the present policy of *Selective logging and sustained yield management*, as provided in this Order, timber licenses for any area of not more than ten thousand (10,000) hectares, in one or more blocks, shall submit to the Secretary of Agriculture and Natural Resources, through the Director of Forestry, within four months from the date the license is issued, for approval, a concise *policy statement* of improvement and operations of the area or areas granted; and within one year a *complete management plan*, also for approval.

2-B. The period within which the *policy statement* and the *management plan* shall be submitted will be indicated as an additional rule in the license agreement and in the license or in the

renewal thereof, or not included in a separate letter. If such condition or rule was not included in the original license, and/or if the *policy statement* or *management plan* is not submitted as required in this order, the Director of Forestry shall call the attention of the licensee; copies of such letters shall be furnished to the Office of the Secretary of Agriculture and Natural Resources.

2-C. The Director of Forestry shall provide the outlines both for *policy statement* and for *management plan*.

2-D. The licensee shall submit annually to the Director of Forestry a concise report, two months before the expiration of the license or end of the fiscal year, giving the quantity of timber, cut, invoiced, and removed, supported by certificate of the municipal treasurer concerned, with a sketch showing the approximate location of the area where the cutting was made and any proposed amendment of his plan of operations originally submitted and approved. He shall likewise submit a list of new equipment acquired and/or old ones replaced; together with his application and fees necessary for the renewal of the license, if so desired.

2-E. All existing rules, regulations, circulars, and instructions regarding this matter inconsistent with the provisions of this Order are hereby repealed.

3. This Order shall take effect immediately.
(SGD.) **JUAN DE G. RODRIGUEZ**
Secretary of Agriculture
and Natural Resources

* * *

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

M a n i l a
FORESTRY ADMINISTRATIVE
ORDER NO. 4-11

July 1, 1956

SUBJECT: *Fees, Rentals and Bonds*

1. Section 3 of Forestry Administrative Order No. 8-3, known as the Revised Regulations Governing Special Uses of Forest Lands, as amended by Forestry Administrative Orders Nos. 4, 4-1, 4-2, 4-3, and 4-5, dated September 26, 1946, September 28, 1948, July 5, 1951, July 17, 1953 and June 28, 1954, respectively, is hereby further amended to read as follows:

“3. *Schedule of fees, rentals and area.*—

Except as hereinafter provided, the forestry fees, rentals and maximum area for each kind of special uses of forest lands shall be as follows:

after issuance of the permit or lease agreement; thereafter these rentals shall be increased to ₱1.00, ₱0.50 and ₱0.30, respectively. For unclassified areas, rental shall be ₱0.30 per hectare, or fraction thereof.

- (e) ₱0.60 per hectare or fraction thereof during the first five (5) years; thereafter rentals shall be ₱2.00 per hectare or fraction thereof for areas not exceeding five hectares and ₱10.00 per hectare

for areas more than five hectares; provided that those who keep permanent record books of consignees and income transactions may be allowed to pay rentals based on percentage of gross income but not exceeding 5% pursuant to Forestry Administrative Order No. 4-7 dated July 1, 1955.

- (f) ₱15.00 per hectare or fraction thereof of more than half a hectare: Provided, That the minimum annual rental for an area of half a hectare or less shall be ₱7.50.
- (g) Area actually occupied and cultivated but not exceeding 6 hectares.

Bathing Establishment	₱5.00	₱5.00	24
Communication Station Site (Radio, telephone, etc.)	5.00	5.00	24
Hotel Site	5.00	5.00	24
Kaiñg'n	1.00	1.00	1
Lime and Charcoal Kiln	5.00	5.00	24
Log Pond	5.00	5.00	24
Logging Camp Site	5.00	5.00	24
Lumber Yard	5.00	5.00	24
Nipa and/or other palms and Bacauan Plantation Pasture	5.00	3.00	200 (x)
Private Camp or Residence	(c)	(d)	2,000 (x)
Right-of-Way	2.00	2.00	24
Saltworks	5.00	5.00	200 (x)
Sanatorium	5.00	5.00	24
Sawmill Site	5.00	5.00	24
Timber Depot	5.00	5.00	24
Tree farm (for planting medicinal plants or trees of economic value)	(y)	(e)	1,000
Vegetable Garden (Mt. Province)	5.00	(f)	(g)
Woodland Lease (for planting forest trees of commercial value)	(c)	(h)	2,000
Other lawful purposes (Use to be specified)	5.00	5.00	24

n.b.—(a) payable only to the Director of Forestry, Manila.

- (b) May be paid to the Municipal Treasurer where land is located.
- (c) Five Pesos (₱5.00) for every 500 hectares or fraction thereof.
- (d) Pending appraisal of value of land and improvements, rentals shall be ₱0.60, ₱0.30 and ₱0.25 per hectare, or fraction thereof, of first class, second class and third class pasture lands, respectively, during the first three (3) years
- (h) No rental.
- (x) Per Republic Act No. 121, June 14, 1947.
- (y) One Peso (₱1.00) per application covering five hectares or less and Five Pesos (₱5.00) for every 500 hectares or fraction thereof if application covers more than five hectares.

2. Section 21 of Forestry Administrative Order No. 8-3 as amended, is hereby amended to read as follows:

“21. *Schedule of bond.*—The bond re-

quired for special use permits or lease agreement shall be fixed by the Director of Forestry. However, and until otherwise charged, the following schedule of bond is hereby promulgated and shall be required accordingly:

(a) For bathing establishment, hotel site, nipa and/or other palms and bacauan plantation, vegetable garden (Mt. Province), saltworks and communication station site, the bond shall be equivalent to twice their respective annual rental, but in no case shall it be less than Ten Pesos (₱10.00);

(b) For tree farm permit or lease agreement covering five hectares or over, the bond shall be Sixty Centavos (₱0.60) per hectare or fraction thereof during the first five (5) years from the issuance and/or execution of the permit or lease; thereafter, the bond shall be equivalent to the annual rental;

(c) The bond for woodland lease shall be required only when the lease thereof begins to harvest his area and the amount of such bond shall be determined based on the

estimated amount of forest charges collectible from the lease annually;

(d) For pasture permit or lease agreement the bond shall be:

₱10.00 per hectare or fraction thereof for first class pasture;

₱ 8.00 per hectare or fraction thereof for second class and unclassified pasture lands; and

₱ 6.00 per hectare or fraction thereof for third class pasture;

PROVIDED, That if the applicant, permittee or lessee submits a certificate of the local municipal treasurer or forest officer and/or authentic proofs of ownership of a certain number of large cattle (one year old and over) placed or ready to be placed in the pasture under consideration, the required bond shall be reduced proportionately according to the following formula:

$$B_n = B_o - \frac{(B_o \times C_a)}{C_r}$$

where, B_n is the bond required;

B_o is the original bond per above schedule of ₱10, ₱8 and ₱6 per hectare depending upon the class of pasture;

C_a is the number of head of large cattle actually on the land or already owned and in the possession of the applicant, permittee or lessee; and

C_r is the number of head of large cattle required to be on the pasture always (one head for every five hectares):

PROVIDED FURTHER, That in no case shall the bond be less than Five Pesos (₱5.00) for areas less than ten (10) hectares and over the bond shall not be less than Two Pesos (₱2.00), One Peso (₱1.00) and Sixty Centavos (₱0.60) per hectare or fraction thereof for first class, second class and unclassified, and third class pasture lands, respectively."

3. Section 22 of Forestry Administrative Order No. 8-3, as amended, is hereby amended to read as follows:

"22. *Form of bond.*—Before any permit or lease is issued or entered into between the applicant and the government, the applicant may, as guaranty of good faith in filing his application and for satisfactory compliance with the Forest Law and Regulations and the terms and conditions of the permit or lease and the payment of rental charges due thereof, be re-

quired to deposit with the Director of Forestry in the amount fixed in the preceding section, a cash bond, a Philippine National Bank Bond, or a bond of the Government of the Philippines or any political sub-division thereof; PROVIDED, HOWEVER, That in case the bond required exceeds two hundred pesos (₱200), a bond duly executed by a reputed surety company may be accepted, but in such case it shall be increased by not less than twenty-five (25) *per centum* nor more than seventy-five (75) *per centum* in the discretion of the Director of Forestry; and PROVIDED FURTHER, That should the bond delivered in accordance herewith be unsatisfactory to the Director of Forestry, or the Secretary of Agriculture and Natural Resources, the applicant, permittee or lessee may be required within thirty (30) days upon demand to furnish a new bond with sureties solvent and satisfactory."

4. *Repealing Clause.*—All existing rules, regulations, circulars and instructions regarding special uses of forest lands, inconsistent with the provisions of this Order, are hereby repealed.

5. *Date of Effectively.*—This Order shall take effect immediately.

(SGD.) JUAN DE G. RODRIGUEZ
*Secretary of Agriculture
and Natural Resources*

RECOMMENDED BY:

(SGD.) FELIPE R. AMOS
Director of Forestry
* * *

Republic of the Philippines
Department of Agriculture and Natural Resources
BUREAU OF FORESTRY
Office of the District Forester
Basilan City

July 21, 1956

The Director of Forestry
M a n i l a
S i r :

I have the honor to inform you that during the recent visit of Hon. Sergio Osmeña, Jr., City Mayor of Cebu City, in Basilan City on July 17, 1956, this Office, had made him plant a commemorative tree at Plaza Rizal in Basilan City in the presence of all City officials, both local and national, headed by Mayor Leroy S. Brown, to spearhead the coming ARBOR WEEK activities mapped out by the Basilan City Forestry Council.

The tree he planted is a Narra Tree, one among those seedlings taken from the Magsaysay Tree at Zambales.

Together with the picture taken during the actual tree planting are the "program of activities" and literature on the narra tree, which are

all herewith enclosed for information and record purposes.

Very respectfully,
JOSE R. CLAVERIA
Actg. District Forester

* * *

SERGIO OSMEÑA, JR. TREE
(Narra—*Pterocarpus indicus*, Willd.)

Planted on July 17, 1956 at Basilan City

Descripticns Narra, *Pterocarpus indicus*, Willd., Leguminosae, is our national tree. A medium to large tree with prominent buttress and wide, shady crown, its leaves are alternate compound, green on both sides. Its flowers are bright yellow and the fruits are in orbicular, almost flat, pods.

Range: This species is found throughout the Islands, generally in flat coastal plains, often at the back of swampy lands and along the streams on low hills near the coast. It is very well distributed in fairly open forests, but never in pure stand.

Owing to its strong, durable and beautiful wood structure, this popular, first group hard wood is used for all sorts of high-grade furniture and cabinet work; for veneers, radio cabinets and piano cases; for interior finish of ships and vehicles; for show cases and similar articles requiring the best qualities in wood.

From the Magsaysay Tree at Castillejos, Zambales, this narra seedling will be planted by Mayor Sergio Osmeña, Jr. of Cebu City on his visit to Basilan City on July 17, 1956.

* * *

Forest Station
SALINAS REFORESTATION PROJECT
Bambang, Nueva Ecija

August 1, 1956

The Director of Forestry
M a n i l a

S i r :

I have the honor to submit herewith attached a copy of the picture of Arbor Week planting made at the Dupax Watershed Reforestation Project which was made under the supervision of the undersigned, Nurseryman Cesario A. Ypear of this Project and the Principal Teacher of the Dupax Elementary School.

Planters comprise the teachers and pupils of the Dupax Elementary School.

The following seedlings were planted, as follows:

Narra	1,000
Banaba	300
Total seedlings planted	1,300

Of those seedlings that were planted in the same place during Arbor week of last year with

the same planters, there are 815 teak trees living out of the 900 teak seedlings planted.

The negative film of this picture shall be submitted as soon as the same shall be taken from the studio.

In this connection, I wish also to inform you that laborers from the Municipal Mayor's Office of Bambang, Nueva Vizcaya together with students and pupils of the Bayombong High School and the Bambang Elementary School, again made plantings during this year's Arbor week at the Communal Forest Parcel 1 of this municipality.

The following seedlings were planted:

Banaba	400
Narra	300
Agojo	200
Teak	100
Total seedlings planted	1,000

Very respectfully,

DOMINGO D. RAMEL
Officer in charge

* * *

OFFICE OF THE DISTRICT FORESTER

Tarlac, Tarlac

September 11, 1956

The Director of Forestry
M a n i l a

S i r :

As Chairman of the Provincial Forestry Council of Tarlac, I have the honor to submit herewith a copy of my report to the Chairman of the National Forestry Council, Manila, on accomplishments during Arbor Week celebration in this province.

Very respectfully,

TORIBIO V. MANZANO
District Forester

* * *

Republic of the Philippines
PROVINCIAL FORESTRY COUNCIL
T a r l a c

OFFICE OF THE CHAIRMAN

September 11, 1956

THE CHAIRMAN
National Forestry Council
M a n i l a

S i r :

Pursuant to Proclamation No. 129, dated March 5, 1955, of the President of the Philippines:

I have the honor to inform you that Arbor Week, which falls from July 22-28, 1956, inclusive was celebrated in this Province quite successfully.

A few days before Arbor Week, planting materials from the Tarlac Forest Nursery were prepared and balled ready for distribution. To supplement our nursery stocks, which was calculated to run short of this demand for planting materials during the Week, wild Agocho seedlings were col-

lected by the five (5) Deputy Forest Guards assigned in this province. One hundred twenty (120) seedlings in pots (80 Benguet Pine, 20 Eucalyptus and 20 Agoho) were also furnished by the District Forester Edilberto Madrid of Baguio City.

Distribution of seedlings to the general public began on July 19, 1956 thru August 17, 1956. Total number of seedlings distributed to public and private schools, municipal mayors, churches and private individuals and to the Bureau of Public Highways for roadside planting is 4,956 broken down by species as follows: Narra—1,331, Mahogany—1144, Fire tree—1014, Golden Shower—93, Bauhinia purpurea—457, Acacia—140, Teak—20, Kumpang—62, Agoho—544, Banaba—6, Agrican tulip—45, Benguet pine—80, Eucalyptus robusta—20. As we do not have any vehicle of our own to distribute the seedlings, interested parties went to get their seedlings from the Tarlac Forest Nursery themselves. On some occasions, the local Bureau of Agricultural Extension Office cooperated by distributing seedlings for us in the different municipalities in the province.

Almost all public and private schools in the province had their Arbor Week programs wherein tree planting formed the most important part. In one of these program—at the Camiling Rural High Schools on July 28, 1956—the undersigned as guest speaker, spoke on "The Farmer and the Forest" and other subjects bearing on the importance of trees to man.

The local Bureau of Agricultural Extension Office also did its part in the successful observance of Arbor Week in this province by distributing different kinds of fruit tree seedlings. Personnel of this Office also spoke on Arbor Week programs in public schools in the province.

Culmination of the Arbor Week observance was the showing of the film "Our Heritage" and other educational films by the Audio-Visual Mobile Unit of the Bureau of Agricultural Extension at the Tarlac Public Plaza in which hundreds of people attended.

It may be mentioned that, in spite of the fact that Arbor Week is already over a month passed, the interest of the people to "green" their yards or lots has not waned, as shown by the number of people who came to get seedlings from our Nursery. To meet the demand of the general public for Agoho seedlings, the species most sought, the undersigned has instructed the five "Deputies" under him to collect some more seedlings of this species.

Very respectfully,

TORIBIO V. MANZANO
Chairman

Republic of the Philippines
Department of Agriculture and Natural Resources
BUREAU OF FORESTRY
Office of the District Forester
Basilan City

July 16, 1956

The Director of Forestry
M a n i l a
S i r :

I have the honor to inform you that, in the participation of this District in this year's July 4th celebrations in Basilan City, our float entered in the parade held in the morning of said day was awarded second prize for the most symbolic and artistic among ten (10) others.

Our district float was a miniature mountain with seedlings as trees, on top of which was built a big "tree of freedom" topped by a small Filipino flag. In the leaves of this tree were painted the dates and corresponding significance in the gradual evaluation of Philippine independence from 1521 to 1946 and its 10th Anniversary. This miniature mountain was mounted on our jeepney. Both sides of the jeep were covered with big boards consisting of veneers on which were inscribed in red, because history of a nation's fight for freedom is written with the blood of heroes. The following about the "tree of freedom:"

"The tree of freedom tells the immortal story of the Filipinos' fight for freedom, undisputably one of the most stirring episodes in the history of man's struggle against oppression and foreign domination so that the Philippine flag may fly alone in majesty-and-in peace."

The back of the jeepney was covered by a big board, also of veneers, on which was painted the seal of the Bureau in a combination of colors. Enclose herewith are three (3) pictures of our float.

The prize won was ₱25.00 in cash and will be utilized for the improvement of our Office building.

Very respectfully,
JOSE R. CLAVERIA
Actg. District Forester

* * *

Republic of the Philippines
Department of Agriculture and Natural Resources
BUREAU OF FORESTRY
Forest Station
Fabrica, Negros Occidental

July 19, 1956

The Director of Forestry
M a n i l a
S i r :

I have the honor to inform you that during the Independence Day Celebration held in Fabrica, Negros Occidental on July 4, 1956, in which the

personnel of this office attended, our placard with the slogan, "Our Forest Is A Source of Strength For Democracy" won first place.

Very respectfully,

ADOLFO B. ALLADO

Officer in charge

* * *

CONFERENCE OF ALL PERSONNEL, FOREST DISTRICT NO. 29, NEGROS OCCIDENTAL, AT DISTRICT HEADQUARTERS, BACOLOD CITY, SEPTEMBER 7-8, 1956

PROGRAM OF ACTIVITIES

SEPTEMBER 7:

(Morning Session)

Time: 8:00 A.M.—12:00 Noon

1. *Song, Philippine National Hymn*—
by ALL
2. *Moment of Meditation and Prayer*—
by the District Forester
3. *Opening Remarks*—
by Mr. Vicente G. Gobuyan, Dist. Forester
4. *Chorus*
by Laborers-Deputy Forest Guards
5. *Talk on Problems affecting General Administrative of the District*—
by Mr. Gerardo B. Tamayo, Asst. Forester
6. *Solo*—
by Mr. Amador N. Angeles, Dist. Clerk
7. *Talk on Problems affecting Forest Management and Protection*—
by Mr. Adolfo E. Allado, Jr. Forester
(O.C., Fabrica)
8. *Quartet*—
by Messrs. P. Gimay, P. Lucasan, Jr., R. Acaton and S. Lotayco.
9. *Talk on Problems affecting Reforestation*—
by Mr. Delfin Española, Asst. Forester
(O.C., Canlaon Ref. Project)
10. *Open Forum*

(Afternoon Session)

Time: 1:00 P.M.—4:00 P.M.

Moderator—Jr. Forester A. E. ALLADO

1. *Talk on Problems affecting Land Classification*—
by Asst. Forester Carlos Cunanan, Chief of L. C. Party, Negros Occidental
2. *Solo*—
by Mr. Melencio D. Rupac, Driver-Mechanic
3. *Talk on Problems affecting Forest Land Uses and Unification*—
by Ranger Silvestre D. Buenafior
(O.C., Cauayan)
4. *Talk on Problems affecting Forest Protection and Patrol Work*—
by Ranger Ernesto S. Ayuban
(O.C., Sipalay)

5. *Dialogue*—

Messrs. Revecencio and Binibile, Deputy Forest Guards

6. *Talk on Nursery Work*—

by Mr. Bartolome Temana (O.C., Northern Negros Reforestation Project)

7. *Open Forum*

SEPTEMBER 8:

(Morning Session)

Time: 8:00 A.M.—9:30 A.M.

RESUME of discussions on subject previously brought out with emphasis on forest protection work.—Moderator: Asst. Forester

GERARDO B. TAMAYO.

Time: 9:30 A.M.—12:00 A.M.

1. *Introductory Remarks*—
by the District Forester
2. *Message*—
by Mr. Felipe R. Amos, Director of Forestry
3. *Address*—
by Hon. Valeriano M. Gatuslao, Prov. Governor
4. *Open Forum*—
5. *Recess and Picture Taken*—
6. *Tree Planting*—

(Afternoon Session)

Time: 12:00 Noon—2:00 P.M.

Luncheon and Dedication Programme in the New Forestry Building, Capitol Site, Bacolod City.

NOTE:—All those attending the conference, including invited guests, will be treated with a luncheon given by the personnel of Forest District No. 29, at the New Forestry Quarter.

* * *

August 28, 1956

The Director of Forestry

Manila

Sir:

I have the honor to submit hereunder a report on the Arbor Week celebration held on July 22-28, 1956.

Arbor Week was successfully celebrated in this Province. In order that all municipalities could be well attended to, one forest officer was assigned to each municipality. This forest officer in turn contacted the municipal mayor and school authorities and drafted plans for the Arbor Week. As a result, celebration of Arbor Week was a success in every municipality.

There were 25,007 seedlings distributed and planted all over Ilocos Norte and there were 594 liters of seeds broadcast and/or dibbled in the mountains and hills. They are broken down as follows:

SEEDLINGS

1. Narra	9,378
2. Bunga de China	3,536
3. Benguet Pine	3,022
4. Fire Tree	1,784
5. Agoho	1,574
6. Mahogany	1,280
7. Molave	1,000
8. San Francisco	1,000
9. Supa	565
10. African Tulip	517
11. Banaba	480
12. Ipil	480
13. Fringon	195
14. Pugahan	180
15. Kayamito	14
16. Palosanto	2
<hr/>	
TOTAL	25,007

SEEDS

1. Narra	325 liters
2. Ipil-IPil	133 liters
3. Mahogany	75 liters
4. Bagilumbang	60 liters
5. Fire Tree	1 liters
<hr/>	
TOTAL	594 liters

The quantity of ipil-ipil seeds planted by private individuals and entities is not included in this report.

There were 20 informal talks delivered during the Arbor Week celebration with 3,726 number of hearers. The topics included in these talks were, "Forest Conservation", "The Importance of Trees and the Significance of Arbor Week", "Forest Protection", and "Forestry in Relation to Agriculture."

A new-look drive had been launched in this Province. To remedy the possible shortage of firewood for the flue-curing barns, the Provincial and Municipal Governments, the Bureau of Public Schools and this office work hand in hand in the propagation of ipil-ipil called "OPERATION IPIL-IPIL DISPERSAL". This operation started at the latter part of April this year with the cooperation of public school teachers by requiring each pupil to give at least one chupa of ipil-ipil seeds before they leave the school for the long vacation. This was followed by the municipal mayors requesting barrio lieutenants to ask the barrio people to gather ipil-ipil seeds. Because of this drive, at the middle of June we had already considerable amount of ipil-ipil seeds. These seeds were broadcast and/or dibbled in mountains and hills all over Ilocos Norte even before the Arbor Week celebration. It is interesting and gratifying to note that in all programs of schools, towns, and barrios, talk on ipil-ipil dispersal is always included. The Prov-

incial Governor and his staff everytime they attend programs in the barrios, always bring with them ipil-ipil seeds for demonstration to the people in its propagation and lecturing them on the importance of reforesting our denuded areas.

A Rally Day Program was held in Ablan Memorial Hall under the auspices of the Provincial Forestry Council last July 28 marking the end of the Arbor Week celebration. High ranking government officials attended the program. They were Mayor Jose P. Santos of Laoag, Board Member Constante Fariñas, Atty. Toribio Peralta, (Provincial Secretary), Col. Artemio Bahia, (Provincial Commander), Mr. Agustin Pañares, (Division Superintendent of Schools), and Mr. Francisco Saguiguit, (Provincial Agriculturist-Chairman DAN-REAIN), and all principals of public schools.

Distribution of Forestry Books to all principals of public schools added color to the program.

Very respectfully,

ALEJANDRO T. TREMOR
District Forester

* * *

October 4, 1956

D-1, Z—Community Assembly
The Director of Forestry
M a n i l a
S i r :

I have the honor to furnish herewith a true copy of the letter, dated September 7, 1956, of the Honorable Undersecretary of Agriculture and Natural Resources for your information and record. This is in connection with our report regarding the Community Assembly held at Nueva Era, Ilocos Norte, on July 12, 1956 which was sponsored by this Bureau.

Very respectfully,

ALEJANDRO T. TREMOR
District Forester

* * *

Republic of the Philippines
Department of Agriculture and Natural Resources
OFFICE OF THE SECRETARY
M a n i l a

September 7, 1956

Mr. Francisco Saguiguit
Chairman, DANREAIN
Laoag, Ilocos Norte

S i r :

This is to acknowledge the receipt of a copy of a report, together with the pictures sent by Mr. Alejandro T. Tremor, District Forester of Ilocos Norte, informing that a community assembly was held in Nueva Era, the farthest and remotest town of said province.

We note with satisfaction the resourcefulness of the Bureau of Forestry personnel in selecting

Nueva Era because of its remoteness and of the poor socio-economic conditions of the people in that town. With this first community assembly, we expect that it would only be the beginning of a series of conferences and demonstrations to be undertaken by your association for the benefit of the people in the remote places of that province. The solution of our economic problems must start from the bottom or from the grass-root level.

In this connection, I wish you to submit a plan or program of developing agriculture and improving the economic conditions of the people of Nueva Era taking into consideration the conditions prevailing in the place.

Please continue the good work of your association.

Very respectfully,
(SGD.) JAIME N. FERRER
Undersecretary of Agriculture and Natural Resources

* * *

FOREST STATION

Salinas Ref. Project, Bambang, Nueva Vizcaya
October 1, 1956

D-7, Cooperation
Anti-Rat Campaign
The President

DANREAVIZ, Bayombong, Nueva Ecija
(Thru the District Forester, Bayombong, N. V.)

Sir :

With reference to the letter of the District Forester, Bayombong, Nueva Vizcaya to this Office dated September 15, 1956 with similar designation as above:

I have the honor to inform you that the Anti-Rat Victory Parade and Program for Bambang, Nueva Vizcaya was fittingly held in this Municipality on September 30, 1956 from 2:30 to 5:00 o'clock P.M.

Attached hereto is the copy of the Program for the affair which was attended by approximately 2,000 people. Please request Mr. Gregorio de Guzman, Provincial Land Officer to furnish you copies of the pictures taken during the occasion in view of the fact that he volunteered to defray the expenses for these pictures.

With regards to the expenses incurred for the loud speaker which we have used in the amount of P20.00, I wish to inform you that this was collected from personal funds of the Consuelo and Salinas Reforestation Projects and some other friends.

Very respectfully,
DOMINGO P. RAMEL
*Officer in Charge and Chairman,
Bambang Anti-Rat Victory
Parade and Program*

Republic of the Philippines
Department of Agriculture and Natural Resources
BUREAU OF FORESTRY
Philcusa Land Classification Party No. 14
P.O. Box 114, Bacolod City
September 28, 1956

D-29, Supervision
Administrative
The Director of Forestry
M a n i l a

Sir :

I have the honor to inform you for purposes of record that during the afternoon session of September 8, 1956 (copy of program of activities attached) at the District Headquarters, Bacolod City, Honorable Valeriano M. Gatuslao, Provincial Governor of Negros Occidental, remarked that he like the forestry personnel, because they were not so crooked.

Alert Forester Tiburcio Serevo countered with, "Why emphasized also on the word so, Governor?" "I mean they are not crooks", the governor corrected himself.

The Governor should know. He has been connected with the lumber business in the past.

Very respectfully,
CARLOS CUNANAN
Chief, L.C. Party No. 14
(PHILCUSA)

PROGRAMME

I. LUNCHEON 12:00 A.M.—12:30 P.M.
FORESTRY BUILDING (Dist. Office)

BACOLOD CITY

September 8, 1956 (Noontime)

- II. PROGRAMME 12:30. P.M.—2:00 P.M.
1. *Song by ALL—*
"Philippines My Philippines"
 2. *Opening Remarks—*
by Mr. Vicente G. Gobuyan, Dist. Forester
 3. *Vocal Solo—*
by Mrs. Monserat Balinas, Asst. Home Demonstrator, Bu. of Agr. Extension, Bacolod City
 4. *Reading of Citations of Donors of Materials and Labor for the Building—*
by Mr. Gerardo B. Tamayo, Asst. Forester
 5. *B-A-O Dance—*
by Miss Atenaida Custodio, Bu. of Extension Service
 6. *Response—*
by Mr. T. H. Valderrama, Pres. & Gen. Manager, Valderrama Lbr. Mfrs. Co., Inc., representing the donors.
 7. *Surprise number—*
Contributed by the Bureau of Extension Service

(Continued on page 136)

• Abstracts & Excerpts •

LET'S FIGHT THE ANAY

Termites or Anay are one of the housewife's worst enemies. If their activity is allowed to go on unchecked, they can slowly but surely destroy anything they get their teeth on.

Most of the time, the housewife discovers the damage too late because the termites usually work beneath the surface. She can only throw up her hands in helpless anger at the sight of a favorite chair or table already destroyed by an enemy who works in silence and secrecy.

But termites can be destroyed. You must only start fighting it early.

In the provinces where termite control is not practiced or is relatively unknown, you usually come across house posts which resound with a hollow tick-tock when you knock on them.

That will tell you that the posts have been eaten away by termites and that the damage done is beyond repair.

One will be surprised to find out that even metal is not safe from termites. Metal locks have been known to be eaten hollow by termites. Unbelievable, but it's a fact.

If metal is not safe from termites, wood is definitely a soft job for this dangerous enemy.

If you see any of these small, beetleshaped, white-colored insects which are known as *anay* in the vernacular, you will know that somewhere around there are armies of them eating their way through.

And you may consider that as a danger signal—which means that it is time for you to start your good fight.

It is well to remember that termites multiply very fast under moist conditions.

They are attracted by ground moisture. They thrive on it.

A more or less permanent contact with moisture helps them to multiply rapidly.

So the first thing you should do if you must control the rapid colonization of termites is to cut off their source of moisture.

How does one do this? Simple. Here are three basic rules which you can easily remember:

- (1) Keep your floors especially those in contact with the ground dry;
- (2) Replace wood in contact with ground moisture with cement; and
- (3) Replace untreated wood close to the ground with treated or timber.

Then you can be assured of a termite-free home. —*The Philippines Today*, Vol. II No. 5, 1955)

TIMBER — THE TRADITIONAL BUILDING MATERIAL

by J. H. STUBBS

"The Malayan Foresters" (pp. 73, Vol. XIX No. 2)
(ABSTRACT)

Timber has been used as a building down through the ages and is still today the most widely used structural material. In the past, the timber trade has relied on tradition to sell their products, but with the immense scientific advance between the two Great Wars and the impetus given to the development of substitute materials during the last war, the timber merchant now finds that he has to fight for his "traditional" markets in the face of fierce and bitter competition from the manufacturer of concrete, steel and plastic substitutes. These manufacturers can be relied upon to produce masses of scientific data with which to back their product and bombard the public.

The timber trade (at any event, in Western Countries) is now alive to the threat to its existence and is meeting the challenge by treating wood as an object of scientific study. One of the leading bodies in this field is the Timber Development Association, of the United Kingdom. This Association is supported by funds from the U.K. timber trade and is doing invaluable work to counteract propaganda about the "substitutes". It is because of timber that thought was given to the establishment of a local organization, similar to the Timber Development Association, which could be supported by the Timber trade and all those interested in promoting the use of timber.

No one substitute is as versatile as timber. Timber is cheap, available in various sizes and species, has great strength in relation to its weight, has low heat and sound conductivity, and can be shaped and fixed easily.

An advertisement for a timber substitute stating that "so-and-so's" plastic "will not decay" or "does not rot" forget to point to the fact that steel corrodes and that plastics are often fixed to a timber base. Some have picked on the weakest point of timber—that it is sometime liable to attack by fungi and insects. This article tries to show that by good wood preservation technique this weakness can be overcome and, under many circumstances, nature's wood may be made comparable to the best material that the scientists can produce in their laboratories.

V. Veracion

(Continued from page 134)

- 8. *Speech*—
by Hon. Valeriano M. Gatuslao, Prov. Governor
- 9. *Vocal Solo*—
by Mr. Roberto Piansay, Deputy Forest Guard
- 10. *Closing Remarks*—
by Mr. Felipe R. Amos, Director of Forestry.

(MASTER OF CEREMONIES—
Mr. Sixto Villanueva, Lbr. Inspector)

* * *

PROGRAM SPONSORED BY THE DANREAVIZ
FOR

THE ANTI-RAT VICTORY PARADE

Bambang, Nueva Vizcaya
September 30, 1956

I. PARADE AROUND THE TOWN:

- a. Municipal Police Force.
- b. Government Employees.
- c. Bambang Elementary School
- d. Bambang High School.
- e. St. Catharine School.
- f. Farmers and people.

II. PROGRAM AT THE TOWN PLAZA:

- 1. Opening remarks by Mr. Alejo Parucha.

- 2. Participation to be given by the Bambang Elementary School.
- 3. Talk by Mr. Gregorio De Guzman, Provincial Land Officer.
- 4. Participation to be given by the Bambang High School.
- 5. Talk by Mr. Eliseo Trinidad, Bureau of Plant Industry.
- 6. Participation to be given by the St. Catharine School.
- 7. Talk by a Representative of Agricultural Extension.
- 8. Vocal Solo by Mr. Vicente Delizo, ACCFA.
- 9. Talk by Mrs. Lilia Gochingco, Home Demonstrator.
- 10. Closing remarks by the Municipal Mayor.

MASTER OF CEREMONIES—

Mr. Domingo P. Ramel, Bureau of Forestry.

* * *

BISLIG BAY LUMBER COMPANY, INC.

MANUFACTURERS OF FOREST PRODUCTS

August 16, 1956

Prof. JOSE B. BLANDO
Head, Dept. of English and Spanish
College of Forestry
College, Laguna

Dear Prof. Blando:

I remember you told me that the Forestry Leaves will print questionnaire to ascertain individual status of graduates of the College of Forestry together with their dependents. May I request for twenty-five copies of this form to be distributed to members of class 1930. I will send them back properly filled-in by my classmates.

I am sending herewith two items for publication in the Forestry Leaves. I hope they are up to the standard set by the publication.

With my personal regards to your family and to our co-workers in the College of Forestry and Forest Products Laboratory.

Sincerely yours,

F. O. CHINTE

If minds are truly alive they will seek out books, for the human race recounting its memorable experiences, confronting its problems, searching for solutions, drawing the blueprints of its futures. To read books is one way of growing along with one's fellow-in-growth.

—Harry A. Overstreet

—o0o—

There is a greatness in being generous . . . Generosity is the part of the souls raised above the vulgar.

—Oliver Goldsmith

Compliments

of

**C. D. Salcedo Lumber
Company**

CALIXTO D. SALCEDO
Concessionaire

Gingog, Misamis Orinetal

MISSING

PAGE/PAGES

EDITORIALS

TO SAVE OUR FORESTS

Our problem of reforestation is much more serious than it is being made to appear, and the government must take more definite steps towards solving it. The bureau of forestry has issued directive after directive, but as long as the bureau has only a handful of underpaid men to protect and look after our forests, the proper measures necessary to fight the indiscriminate cutting of our trees will never be fully implemented.

In the words of Juan Arellano, one of this country's foremost architects, "Nature is wise, and nothing happens or comes into this earth that has no use or purpose. When rain falls from the skies, the water resulting therefrom is intended for three purposes approximately. A third is intended for penetration, that is the water that must seep down into the earth to replenish the underground water deposits. A third is intended for evaporation, that is the water that must evaporate while held stagnant by the trees in the mountains as natural obstructions. The last third is intended for runaway, and that is the water that runs down the mountains, through our plains into the rivers and the lakes to ultimately find its own level in the sea.

"As a result of the depletion of our forests, water is not held in our mountains for as long as it should; as a result of which the water has no time to either penetrate or evaporate on the spot. On the other hand, most of it goes for runaway, and this great volume of water washes into the sea our best top soil in the country."

Now just think, according to experts on soil, it takes 170 years to produce 7 inches of good top soil. Yet by allowing the rain water to rush down our mountains, without our forests there to hold the water down, we are losing out to the sea what is probably our richest heritage.

And then there is the problem of rain. With less and less water found in our mountains for evaporation, some provinces that formerly had an almost scientific formula of rainfall necessary for agriculture already suffer from shortage of rain. This will eventually affect our agriculture.

The Staff of the FORESTRY LEAVES

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College, Laguna

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Our rich top soil is part of our precious heritage. But it is not ours alone to do with as we please and to waste. It is ours to pass on to our children—and to our grandchildren, for it must be their heritage, too.

(— JOAQUIN ROCES, "This Is My Own,"
Manila Times.)

OUR TENTH YEAR

Ten years is short in the life span of a person, an organization, an institution or a nation. But within this length of time, one can judge more or less whether something worthwhile has been accomplished.

While we do not believe in patting ourselves on the back, this, at least, we can say: that we have tried our level best to spread the Gospel of Forest Conservation.

We might not live long enough to see the seeds that we have sown grow into beautiful trees, but the thought that something good will come out of our work has been and will continue to be our inspiration.

We have been able to keep our leaves green because of the cooperation and support of the alumni and the student body, and above all our advertisers, without whose help, it would not have been possible for us to keep forging on all these years.

A JUNIOR FORESTERS' LEAGUE

We now realize more than ever the necessity for a Junior Foresters' League. Despite the efforts taken by the Society of Filipino Foresters and the District Foresters' League it cannot be denied that there still remains much to be done. For what has not been done or has been done but not in the right way by other forestry organizations, this league should and would endeavor to perform.

In some quarters, in the ranks of the budding foresters, the need for such a league has been keenly felt. It is their belief that the Society of Filipino Foresters and the District Foresters' League, composed as they are mostly of old guards of the old order, have not effectively carried out their objectives as they should have. At the outset, their efforts, it cannot be denied, were very promising, but as the years wore on their enthusiasm has somewhat cooled off.

The profession advances with the march of time. New ideas are evolved; new policies and principles enunciated. But a good many doubting Thomases wonder if the policies could be effectively carried out.

There are those who think otherwise. These are the young blood in the forest service, foresters with youth's vitality and impulsiveness. Guided by reason and conscious of their responsibilities to the country and to the people, they can set the ball rolling. They can form the nucleus of a strong organization that will not be afraid to speak out their mind and say, "Be vigilant for our forests are fast disappearing." And to those who are ever submissive and refuse to lift a finger to stop forest destruction for fear their speaking out their mind would be looked upon with disfavor by the Powers that Be, they should give them this stern warning, "Be not like the bamboo that allows itself to be swayed by the wind this way and that way. When that wind stops, a brewing typhoon might follow and pull you by the roots."

— j. m. ilagan

THE PRESSING NEED FOR TRAINED MEN

The need for more trained men in forestry by the Bureau of Forestry and the lumber industry is increasingly felt.

The Bureau of Forestry is pressed on all sides to accomplish its immediate objectives as fast as possible: by the Bureau of Lands, for more lands certified as alienable and disposable so that it can subdivide more lands for the landless; by the lumber industry, for the hastening of the establishment of permanent forests. Some of the big lumber companies need forestry trained men to handle the forestry phase of their operation which they realize as necessary for the stability of their business. The nation, as owner of the forest lands, requires that they practise forestry in the public forests where they operate. The Bureau of Forestry, in the discharge of its responsibility as administrator of the forests, need more men for its work in forest management, research, protection, reforestation and land uses.

The National Economic Council plans to make money available for the Bureau of Forestry to supplement its ordinary appropriation so that it can hasten the accomplishment of its immediate objectives. The problem now is the availability of COMPETENT men to handle the work. Our only source for such men at present is the College of Forestry. The authorities of this College should find ways and means of meeting this demand for trained men. A survey should be made of the men needed, what is the College output capacity, and whether or not expansion of the College or the establishment of a private institution, such as that proposed by Forester Curran—a forestry university in Mindanao, is warranted. — m. reyes

<p>Compliments of</p> <p>National Lumber</p> <p>Vinzons Ave., Daet, Camarines Norte</p> <p>AN TAN Manager</p>	<p>Compliments of</p> <p>Leonardo P. Mendoza</p> <p>Importer, Exporter, Manufacturer, General Merchant, Wholesaler & Lumber Dealer</p> <p>Dart Branch Office</p> <p>Daet Camarines Norte</p>
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INCIDENTALLY

NOTE OF THANKS

This happens to be the tenth year of our existence. We are not qualifying the word existence because we hate to blow our horn. We leave that to our readers, our friends and our confreres. However, we wish to give credit for work well done during their respective terms the following editors-in-chief: Foresters Manuel de Guzman, Cesar Recto, Carlos Cunanan, Eddie Mabesa, Martin Reyes, Benjamin Almonte, Bernardo Agallos, and Feliberto Polisco, and Business Managers Lorenzo Diaz, Cornelio Luczon, Alfonso Tiam and Modesto Tobias. We wish to reiterate our thanks to our advertisers and subscribers, most of whom are now members of our student body. This note of thanks will not be complete unless we include two of our deans: the former Dean Tamesis, our present Dean, Director Amos, the late Professor Cuzner, Forester-in-charge of the College, and Assistant Director Mabesa. To them we owe encouragement, guidance and inspiration.

FORESTRY DAY AND TYPHOON

Every forestry day on the campus brings with it inclement weather. If it is not raining cats and dogs, it is blowing wild. But the typhoons have never dampened our spirits. We managed somehow to enjoy with our guests. This year the boys are praying for fair weather. Reason: The boys are anticipating one grand time with their sisters from Diliman, who have kindly accepted the student body invitation to this



The Forestry Swimming Pool

their fifteenth forestry dance. Our boys are shy but girls, give them a chance . . . they have been learning the newest steps . . . and oh! *sweet music, please.*

THE FORESTRY POOL AND WE

Not long ago, when Director Tamesis was still our Dean, he made swimming a prerequisite to both the would-be rangers and future foresters. To encourage them to learn the art and science of swimming, they were free to make use of their off-hours at the swimming pool, trying to perfect their technique. Every day from Monday to Sunday one could hear their merry shouts at the pool. Now the pool is no longer theirs. They have to pay if they want to swim. That's what we heard. And we also heard that they presented a petition to the Commissioner of Parks and Wildlife that they be given the old privilege of using the pool at their leisure hours. Until now, unfortunately, they haven't heard a word from the CPWL.

ERRATA

<i>Page</i>	<i>Column</i>	<i>Line</i>	<i>Error</i>	<i>Correction</i>
21	1	22	(<i>C. ornatus</i> Decc.)—	(<i>C. ornatus</i> Becc.)
21	1	28	(<i>Calamus ziphonosphatus</i> —	(<i>Calamus siphonospathus</i>)
21	1	29	ditaen (<i>Daemonrops</i>—	ditaan (<i>Daemonorops</i>)
21	2	23	Ticman —	Tiemann
21	2	24	drying by the—	insert "lumber" after <i>drying</i>
21	2	26	that sacks —	that the smoke
21	2	28	materials —	material
22	2	23	through the <i>stock</i> —	stack
24	1	22	half-four —	half-hour
24	1	30	76.6° O —	76.6°C
24	2	42	I. H. Boss —	I. H. Boas
25	2	38	places —	pieces
26	1	28	(Fig. 4) —	(Tables 4a & 4b)
27	2	15	over —	oven
28	Table 4a	— 1st Trial	—(176./F) White—	80°C (176.8 F) White
		2nd "	80°C (86°F to —	30°C (86°F) to
28	Table 4b	— 1st Trial	80°C (176.6°F)—	80°C (176.0°F)
		2nd "	60°C (140°F)/1—	60°C (140°F) <u>/1</u>

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