VOLUME 9 — NUMBER 3 & 4 GRADUATION ISSUE

FORESTRY leaves

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

the honorable Ramon Magsaysay

president of the philippines

MALACAÑANG
MANILA

M E S S A G E

Moving-Up Day has always been a much-awaited annual event in the College of Forestry, University of the Philippines.

On this occasion, another year of educational endeavor ends and the graduates leave their school to engage in activities in which their training can be used to the greatest advantage. How they will fare out will depend on the adequacy of the years of preparation they had undergone and I am therefore pleased to take this opportunity to convey to each and everyone of them my best wishes for their success in their chosen lifework.

May the wise use of our forest resources under the guidance of these men insure the greater prosperity and well-being of our people in the years ahead.

Again my best wishes and sincerest congratulations to the graduating class.

President of the Philippines

March 14, 1957.

Republic of the Philippines
Office of the
President of the Senate

MESSAGE

I extend cordial felicitations to the graduates of the College of Forestry of our state university, and I join their families and friends in manifesting satisfaction and pride as they leave the portals of this college to enter the field of endeavor they have chosen as their career and calling.

Forests constitute one of the richest source of wealth for our country and people. They provide not only the material with which we build for progress and prosperity, but also a constant flow of money from other countries into ours to bolster and enhance our Republic's financial position in the world. A good portion of our people live on the wealth of our forests, and still another portion makes a livelihood by trading on forest products. It is, therefore, our unending concern to preserve and properly utilize our forests.

I cannot over-estimate, nor could I over-emphasize, the importance of the work which those who are graduating as Rangers and Bachelors of Science in Forestry from this college. I enjoin them to work hard in the service of our country and people. And wherever they may be -- laboring in the field or in an office making studies and undertaking research -- I wish them all success. May God's blessings descend upon them in generous measures!

Ferdinand E. Marcos
President of the Senate

Manila, Philippines

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

M E S S A G E

The Members of the Graduating Class of the
U.P. College of Forestry, 1957:

Those of you who are to be honored on the occasion of your memorable graduation day will no doubt consider the event a milestone in your life. Yes, my fellow students, you are very deserving of your achievement, and the whole country looks upon you as additional diadems in the pages of our checkered history.

You are, henceforth, be travelling through an unknown and unchartered future, and while you may have succeeded in your struggles thus far, on the other hand, it would do well for you to remember that there are still many obstacles to overcome; barriers to conquer; enemies to subdue; and more laurels to gather!

It has been said of old that knowledge is power; but I should say that the mere possession of knowledge acquired in the halls of schools, colleges, and universities, however great the institution may be, are not enough; for what is really paramount is one's useful utilization of knowledge imbibed.

On this momentous occasion, may I take this opportunity of conveying brief observations on the relation of your profession to our agricultural potentials and natural resources.

Our forests and timber lands are the paradise and sanctuaries of our wildlife, which are oftimes our unhonored and unsung friends, especially in the control of diseases of men, of animals and of crops. They are, to a large measure, related to, and helpful in, water and soil conservation. Besides all these things, the trees and other forest products of our country are great sources of wealth for our people now and in the future, if we would only take pains and be solicitous in the proper development and protection of the same.

Let us ponder at the Near and Middle East! This part of the earth used to be with rich forests thousands of years ago: now, they are bare plains and plateaus and dominantly desert lands. This could not have happened had proper conservation measures been uncompromisingly and steadfastly implemented before the total depletion of the area of its forest wealths.

With this as an example, the nation expects from such young men as you, who are leaving the portals of our great alma mater today, active leadership in the better utilization of the knowledge which you have acquired for the prosperity, happiness, and tranquility of the people in these 7,000 emerald-isles of our young Republic.

May God bless you all.

JUAN M. G. RODRIGUEZ
Secretary of Agriculture and
Natural Resources

March 14, 1957

Forestry Day Address *

by Mr. PAUL BEDARD
ICA Adviser to B.F. on Forest Management

Mr. Dickson asked me to convey to you his great regret that he is unable to be with you on this occasion to speak to you personally. He had been looking forward to this occasion with a great deal of pleasure. Unfortunately, as Dean Mabesa has probably told you, Mr. Dickson was obliged to attend an important meeting in another country. You can be sure that nothing less than that would have prevented him from being here today. He has, nevertheless, prepared some thoughts for this occasion, and has delegated me to express them to you.

Today is Forestry Day, and it is also National Heroes Day. This coincidence is both significant and most appropriate. It is significant because it invites the mind to reflect on those ideals which motivated the heroes of this country and guided their lives, the welfare of the Philippine Nation and of Filipino people, and at the same time we are invited also to think of forestry and its ideals and objectives. It is singularly appropriate because the essence of forestry is the national interest, the public good, the welfare of the Philippines and her people, and thus coincides with the aims and objects to which the great Filipino patriots dedicated their lives.

That this is no more unwarranted assumption, I feel requires no proof. Nevertheless I would like to quote a few excerpts from a speech delivered in 1936 by that great Filipino patriot and leader, former late President Quezon.

"I want to call the attention of everyone present that the public forests do not belong to any province but to the nation.

"The Philippines is a rich country because of her natural resources. I, therefore, want to remind the people that they should not merely cut down and burn our trees wastefully but they should use them properly. The people should understand that forests are instrumental in giving or attracting rain. Where forest exists, the soil of the farm is rich, but in its absence the country is arid. Without forest, when it rains the river overflows its banks and destroys lives and property.

"Many, especially political candidates, are loud in their public utterance about their love for their country. But I wonder, if the word patriotism is rightly interpreted. To me it is the magnitude of veneration we paid our ancestors, to our fathers, grandfathers and, that source of responsibility to provide for those who will come after us. There are two kinds of people, one is selfish and the other thinks in terms of his people and his country. The difference between the two lies in the fact that the former only thinks of his own welfare without any thought of doing something for others. If he is rich, he is the most unhappy man because what is permanent to him is to acquire more wealth at the expense of his fellow men, and he is never at peace thinking how best to preserve his richness. Whereas, one whose life is dedicated to the services of his fellowmen and his country is not even afraid to die any time, knowing that he has done something for others to

* Speech delivered at the U.P. College of Forestry, Friday, November 30, 1956.

remember him by. The rich and the selfish are afraid to die because they prize their wealth more than anything else.

"My fellow countrymen, there can be no real patriotism without displaying the traits of veneration for those who have gone before us in the same manner as for our descendants. You can show true patriotism and love of country by conserving and utilizing wisely our forest resources. I repeat do not simply delight to cut down and burn trees, otherwise, you deprive our country of income which means school for your children, roads, and public improvements. We should not think in terms of ourselves, but of our children, and their children's children. We have no right to deprive them of their inherent share of the patrimony of our country — our forest."

It is this aspect of forestry, the relation of forestry and true unselfish patriotism, so firmly and so eloquently emphasized by President Quezon 20 years ago that I would like to discuss on this occasion when both forestry and the ideals of Philippine national heroes are being given prominence.

President Quezon was addressing his remarks to all of the people of the Philippines, and if they apply to all Filipinos in all walks of life, think how much more they apply to the foresters, on whose shoulders lies the direct responsibility for the conservation and wise utilization of the Philippine forest resources.

There is no need for me to remind you that a major area of the Philippines is now and will continue to find its highest economic use in the dual functions of forestry, production and protection. There is no need for me to review the details of the role of forestry in the Philippine economy. This knowledge you now have acquired or are in the process of acquiring here in the College of Forestry at Los Baños, along with all the technical and scientific details which you need to operate in the field of forestry. All of this is essential, but unless you use this knowledge, unless you apply these techniques in the true spirit of public service and in the national interest, you will have fallen short of the real goal of forestry. The distinction here is one between a mere technician working in the forestry field and in true professional forester. In the field of forestry, this distinction has a most important practical application. It is not one of more academic interest. Why?, because as President Quezon pointed out the public interest factor in the forest resources is a major one and a permanent one. In the Philippines, this is immediately obvious because more than 95 percent of the Philippine forests remain in direct public ownership. But even in those countries where legal title to forest lands has passed into private hands, the public still retains an important stake, the public interest factor still remains at a high level, and the necessity for foresters to function within the guidelines of this philosophy does not diminish. This concept of the public interest in all of a nation's forests regardless of existing title has been upheld by the courts many times in countries where title to important areas of forest land reside in private hands. In reading court decisions on this matter one cannot help but be impressed by the remarkable unanimity of the judges in agreeing that the public retains a stake in private forest lands, that the rights conveyed by the title cannot infringe on the rights of succeeding generations. In a recent case in the state of Oregon, the judge mentioned in his decision, "The great unbreakable even though unwritten compact which exists between the living, the dead, and the unborn". The very same philosophy which President Quezon expressed many years earlier when he spoke of the real patriotism "displaying traits of veneration for those who have gone before us in the same manner as our descendants." Indeed, there are few other fields where the necessity of keeping the public interest in mind is so essential and so permanent as in the field of Forestry.

Now, let us consider for a moment what implication this has for the immediate future. What is the specific application of these precepts to present day forestry in the Philippines? Nearly three years ago at the dedication of the new College of Forestry Building, one of the speakers pointed out that forestry in the Philippines was at a critical cross-road, that the next few years would determine whether it would take the hoped-for road leading to orderly beneficial development of the forest resources with the resultant national gain or whether it would take the road leading to progressive deterioration and serious national loss. While the intervening years have not brought forth a completely assured answer, there have appeared strong and hopeful indications that forestry is headed on the right road. If we could say three years ago that forestry is "at the crossroads", I believe we can charaterize the situation now by saying that forestry is "coming of age" in the Philippines. The pioneer Filipino foresters, your predecessors have established it and succeeded in winning for its national recognition and respect. It becomes your task to develop it, to intensify and expand it and to guide its nation-wide application. The conversion of Philippine forest from a wild to a managed status, just now beginning, will be the responsibility of the generation of Filipino foresters represented by the present day students at Los Baños. This alone is a task fraught with most serious responsibility, because on it depend so many things basic to the national economy and well being. On it depend for example the development of forest based industrialization, the kinds of industries, the size and location of plants, the coordination with complementary and supplementary industries, the development and longevity of dependent communities and above all the welfare of many people will depend on just how this job is handled. That is what I mean when I say that forestry is "coming of age". It is no longer *only* a matter of silviculture, or plant physiology, of wood technology or engineering but rather the application of all of these sciences and arts for specific purpose of developing and managing the Philippine forests in the national interest. Without an objective and unselfish consideration of the national interest to serve as a guide and framework, to provide focus and direction, the optimum benefits of the Philippine forests will not be realized by this nation. The decisions to be made, the problems to be solved involve both technique and policy. You cannot stop with merely handling the purely technical aspects and pay no attention to those which form the basis for policy decisions. If you do, then those policy decisions which involve the forest resource will be made without benefit of the best qualified sources to the detriment of the nation.

It is apparent then, as foresters, two things are expected of you: technical competence and a strong and continuing awareness of and continuing unselfish devotion to the national welfare. In stressing the latter so strongly during this discussion, I have no intention of disparaging the former. The two are equal and complementary, and both are essential characteristics of a real forester. You cannot be a good forester and at the same time be a bad citizen. If I have subordinated the matter of technical competence today it is only because technical competence is more readily understood and appreciated, more readily recognized and measurable. Lacking technical competence, a forester will soon be discovered as such and, consequently, rejected. Likewise, there are specific and familiar ways of acquiring technical competence, the famous twins: education and experience. Unfortunatly, the same is not true of the other requisite. There is no certain way of acquiring devotion to the public welfare, no guaranteed way of maintaining it at a high level, and the lack of this quality is not always readily apparent. It rests basically as President Quezon has pointed

out on personal unselfishness. However, given this quality, there are ways in which it can be strengthened and made more effective. To a forester faced with recommending a course of action which involves not only trees but also people, some knowledge of the social sciences would be most helpful. Do not, therefore neglect your courses in economics, in history, or in forest policy. Many young foresters with a strong sense of the practical are inclined to look on these courses as frills, to their later regret. Also it is highly important to keep alive your professional contacts wtih other foresters through strong and progressive professional societies. Time and again it has been shown that one of the strongest bulwarks of integrity and the spirit of public service is loyalty to the ethics of one's chosen profession. Our profession is represented here in the Philippines by the Society of Filipino Foresters, dedicated to this very ideal of public service.

In thus sketching briefly some of the aspects involved in forestry's coming of age, I have deliberately, for reasons of time, avoided mention of many problems which forestry is facing right now. I am sure that you are aware of these or are being made aware of them by your professors in a far more competent manner than I can possibly do. Serious problems of forest protection, management, research, and policy exist. While I feel that forestry has left the crossroads and is moving in the right direction, progress is still not easy or assured. I can only say here that we of ICA are also aware of these problems and we are proud to be actively associated with you in solving them. Some of our contributions to this joint effort are visible to you everyday here at Los Baños. The College classrooom and some of its equipment, the Forest Products Research Institute with its equipment, and the Forest Experiment Station are tangible witnesses to our interest in assisting Philippine forestry in its important work. This cooperation is continuing. Our efforts to obtain further important assistance for the College of Forestry will shortly bear fruit, and this year also we are obtaining additional commodities for the Bureau of Forestry to intensify its work in forest management and silvicultural research.

I repeat that we of ICA are proud to be associated with you in your essential and important work, but we can travel with you only so far. We can perhaps be helpful in the practical and technical phases, but the essential spirit, specifically the devotion to the public good, the unselfish zeal for the welfare of your fellow Filipinos and for your country, without which even the most perfect technique is meaningless, is and must be entirely your own. It is, therefore, most appropriate that National Heroes Day should coincide with Forestry Day. The principle of devotion to the national interest as exemplified by these great patriots should be a continual inspiration to foresters. Continued adherence to this principle will be the Philippines best guarantee that its forest resources will be truly "conserved and wisely used".

CONSTRUCTION AND OPERATION OF A CHARCOAL OVEN*

By CALIXTO MABESA
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University of the Philippines

INTRODUCTION

Wood charcoal is a carbonized organic material in demand for ironing clothes, especially in localities where electricity is not available or where its price is high, and for cooking. It has the advantage over firewood in that the former emits no smoke. Industrially it is used as a filtering material, and certain grades are used for smelting iron ores, others are used by blacksmith and in the manufacture of steel. This paper, however, explains the construction and operation of an earthen oven for the manufacture of charcoal on commercial scale. This construction is a modification of a Japanese oven, with the advantage of shorter time in the drying of the dome. Ordinarily, the time required to dry a Japanese oven from the time it is finished to the time of firing, is about three months. But this modified oven may take from four to five weeks only. The writer had actually constructed one which dried in twenty-five days.

LOCATION OF CHARCOAL OVEN

It is easier to transport charcoal than green wood; hence, the choice of the location of the oven should be given first consideration. The oven should be accessible to raw materials, that is, the raw materials should be as near the oven as possible. Likewise, the oven should be readily accessible to the means of transportation to facilitate the marketing of the charcoal. Another factor which should govern the location is the availability of water supply. It is preferable to locate an oven where water is always available.

In case of highland species, the topography of the country from which the billets will be removed should be taken into account. It should be so located that the transportation of the billets would always be downhill. It is less difficult to transport charcoal than green billets uphill.

If the oven is to be built in a mangrove swamp, it is advisable to locate it along the bank of a navigable river, where the ground is high, and there is abundance of raw materials. Thus, the easy transportation of the raw materials as well as the finished products will be assured. The billets are stacked near some tributaries when the tide is low and are loaded in dugout or bancas and transported to the oven when the tide is high.

MATERIALS FOR CONSTRUCTION AND THEIR PREPARATION

Stones and clay are used to build the walls of the oven. Ordinary clay with low shrinkage upon drying is commonly used. The clay is prepared into balls of five to six inches in diameter. The number of these balls may vary with the size of the oven. An oven (egg-shape), 10 feet at its widest point 16 feet from the back of the

* This work was conducted when the writer was Wood Technologist, Bureau of Forestry.

entrance (inside measurements), and 6-1/2 feet at highest part of the dome will need from 1,500 to 2,000 balls (3 to 4 cubic meters) of clay.

Preparation of earthen materials. — These balls are placed in a circular stacked pile of firewood, with open center (figs. 1 and 2). The first layer of earth ball is placed when the firewood has been piled about two feet above the ground (fig. 3). Over the first layer of earth balls, firewood billets tier of earth balls is placed. The last tier of earth balls is topped with firewood billets of about the same thickness as the preceding ones. Fire is then started at different places around the circular stacked pile. If fire is started early in the morning the earth balls will be baked the following morning. Two or three days after, the burnt earth is ready for pounding. After pounding it is screened through an 8-mesh wire. The screening should be used for building up the wall. A part of the pounded burnt clay should be screened through a 16-mesh wire. This one will be used for the dome of the oven. About two-thirds of the burnt clay will be needed for the dome.

LAYOUT

The oven should be located on a rising ground. A slope of 15 to 20 degrees is preferable. The opening should be toward the prevailing wind. In case the location is along the river banks, the oven should be constructed on high ground where it could not be flooded.

As soon as the location is decided and the size determined, the stakes are placed. The first step in staking, of a size, say sixteen feet long and ten feet at the widest distance, is to locate the center of a semicircle which forms the rear portion of the oven. With a radius of six feet (one foot extra for thickness of the wall if the ground is not adobe) describe a semicircle and drive stakes at convenient distances along it. The line of the length should pass at the center of the semicircle dividing it into two equal parts. From each end of the arc, stakes are driven in a straight line converging towards the end so that the distance between the lines of stakes at the end of the oval is slightly over five feet (fig. 4).

CONSTRUCTION

Shed. — As soon as the stakes are driven, indicating the ground plan, a shed should be built over it. The width should extend two feet beyond each side of the proposed oven and the same distance from the rear. In front, the eaves should extend five or six feet from the entrance in order to give enough space for workers and protection for the unloaded charcoals in case it rains. The height of the roof from the highest part of the oven may be from 5 to 6 feet. In case a battery of ovens is to be set up, the width of the shed should be increased accordingly. The spacing between individual ovens may be three feet apart at its widest point depending upon the kind of soil and the topography of the ground. A battery of ovens is usually used in the mangrove swamps. In the highland species, the common practice, because of the topography of the ground, is to build one oven where all the billets can be carried down without much expense in transportation.

Excavation. — When the roof is up, digging and removing of the earth should be done until the floor is on level with the proposed entrance. If there is seepage of water, it is a good practice to have the floor inclined, say, with 8 inches drop towards the rear of the oven so that the entire floor inclines inward from the entrance. The idea is to let all the seepage water collect and drain in the small canal at the base of the wall, to the rear and where the drainage pipe terminates. This drainage pipe is usually made of anahaw from which the pith has been removed. It should be buried at least a foot and a half

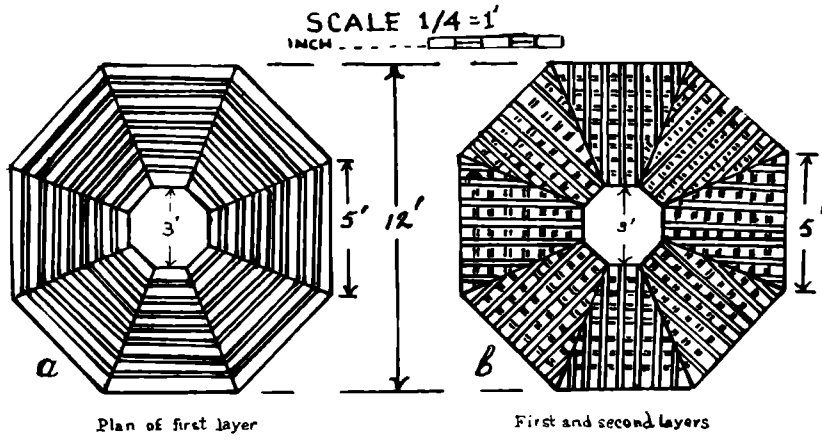


FIG. 1

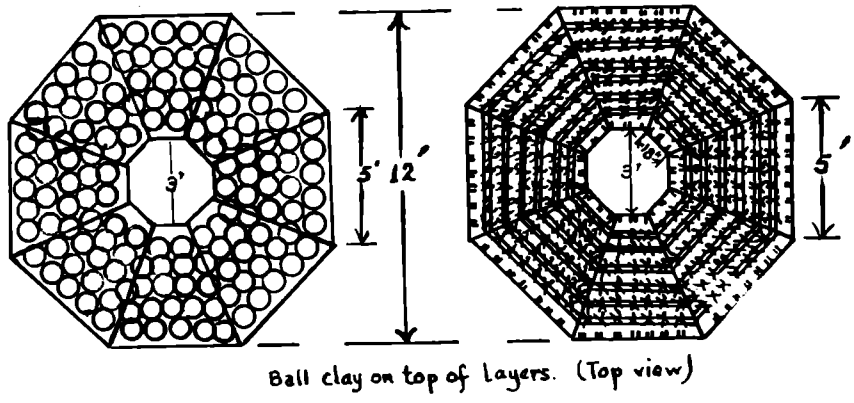


FIG. 2

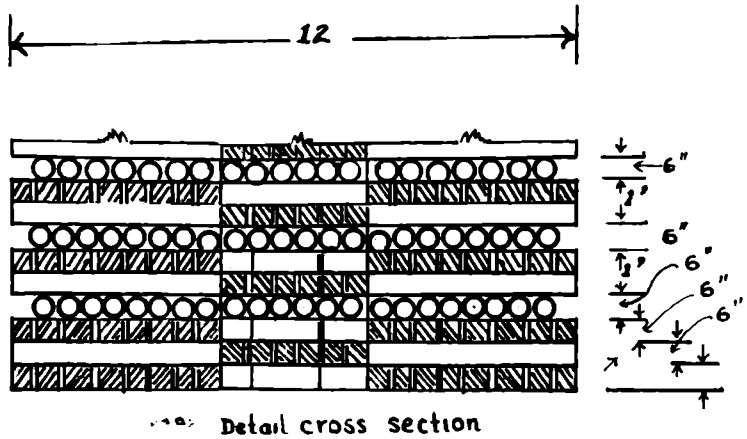


FIG. 3

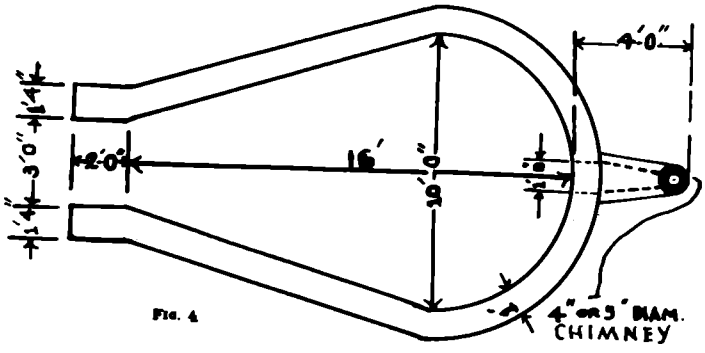
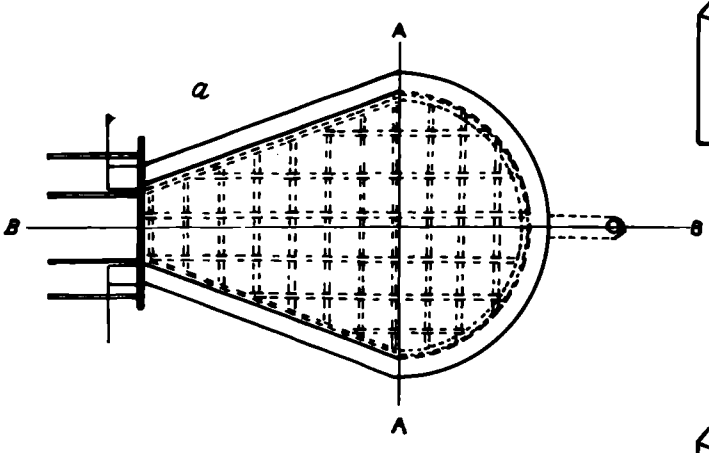
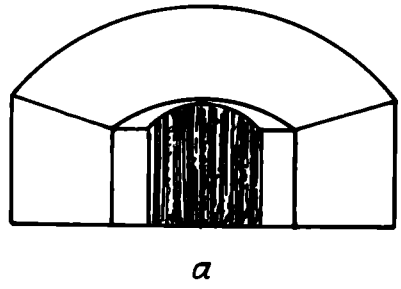


Fig. 4

GROUND PLAN





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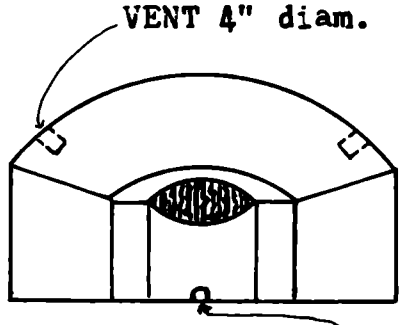

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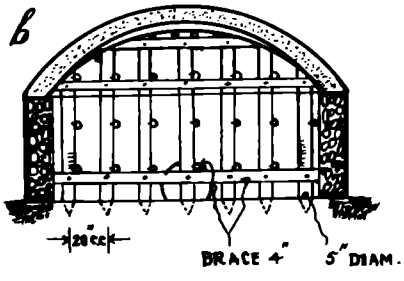
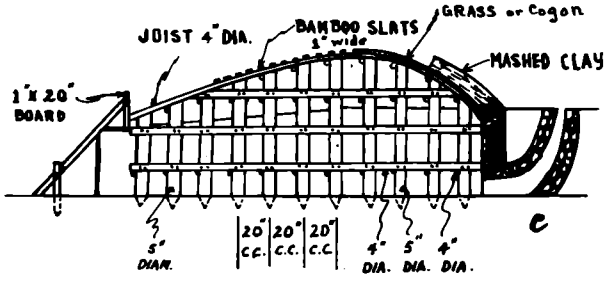


SECTION A-A



SECTION B-B

FIG. 5

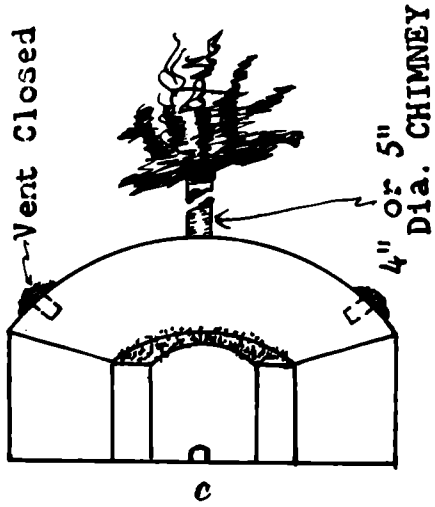


Fig. 6. Different steps in firing an oven

from the surface of the floor with inclination towards the outside usually passing beneath the entrance and extending out beyond where it would not interfere with the loading and unloading of the oven. The footing of the wall is one foot deep and one foot wide.

The chimney is located about 3 to 4 feet from the outer edge of the wall and should lie within the middle of the oven along the line of its length (fig. 4). It should have about a foot in diameter and gradually become smaller towards the top so that at the level of the wall, its inside diameter should be between 4 and 5 inches.

WALL

For building the wall, a 50-50 mixture of 8-mesh screening and raw clay added with water is prepared by stepping and shoveling until a thorough mixture is obtained. The water used should just be enough to wet the mixture. A good indication that enough water has been used is shown by the fact that when the mixture is heaped, its base has no tendency to spread. When the mixture is ready, stones are placed along the footing, say, at a foot interval. The prepared mixture is then placed until this first layer of stones is totally covered. Another layer of stones is again placed over, then covered with mixture. This process is continued until the right height of the wall is obtained. It should be borne in mind that none of these should be exposed along the inner side. A layer of a least 2-3 inches thick of the mixture should cover the stones. In order to have the wall at the rear almost in perfect semi-circle, it is a good practice to drive a cylindrical stick, say 1/2 inch in diameter, at the center of the arc. With this as center, get another stick, 5 feet long and describe a semi-circle at the different heights of the wall. This will help indicate protrusions or depressions along the height of the wall which should be filled or smoothed out.

The wall should be 4 feet high from the ground floor all along the arc of the oval while from each end of the arc to the entrance, the height should gradually decrease from four to three feet. The best way to determine the various heights of the wall to be constructed on the legs of the oval is to have a string tied, 3 feet high from the end of the leg at the entrance, and four feet high at the end of the arc. The wall is then built up to the string. When the wall is finished, the entrance would be three feet wide, the wall on each side being a foot thick. Wall extensions, 2 feet long from the entrance should be built having the same height as that of the entrance and 3 feet apart from its inner sides.

If the soil where the oven is constructed is either sticky clay or adobe, the building of the walls may be dispensed with. In the former case, the clay should be tamped daily for several days or until it dries up to make it more compact and to reduce the danger of cracking. The disadvantage of this, however, is that the wall may crack and crumble little by little subsequently after several operations which necessitate "repairing" every time the oven is unloaded. In the latter case, the adobe will not crack and crumble if it is a type that has not started disintegration.

The Dome.—The highest point of the dome is usually 62-1/2 per cent more than the height of the wall. For example, if the wall is 4 feet, the highest point of the dome from the ground floor will be 4 x 1.625 or 6.5 feet. This is usually about 6 feet from the back of the oven. With this point determined, the posts are placed in rows, one at the center and two rows on each side of the middle. The interval between posts on center, which are 4 to 5 inches in diameter of wood that are also to be used for charcoal, is usually twenty inches to two feet when using 3-4 inches crossers or beams. The beams should be nailed flushed with tops of the posts and cut so that the required curvature of the dome is followed.

This curvature may be determined by using bamboo splints bearing in mind that the shape of the dome resembles that of an egg on a larger scale. The height of the dome at the entrance is 4 feet from the ground. As soon as the beams are nailed to the posts, thick bamboo splints about one and one-half inches wide are nailed or tied across the beams, the spacing between splints being approximately one inch. When the splints are all placed over the dome a layer of cogon grass is spread over the dome (fig. 5). The purpose of this is to smooth the upper surface of the form. Then a thoroughly wet mixture of 95 per cent parts powdered burnt earth of 16-mesh screening and 5 parts unburnt clay are placed on the dome. When wood ash is available, the following proportion may also be used: 80 parts burnt powdered clay, 10 parts shifted wood ash, and 10 parts unburnt clay. The thickness of the dome varies at the different portions, being eight inches near the base and decreasing gradually to four inches at the top of the dome. At the entrance is placed 1-inch board about 20 inches wide and long enough so that when the mixture is placed on the dome at this portion it would prevent it (mixture) from falling. While the mixture is being placed it should be tamped to prevent any honeycombing. After the placing of the mixture, shifted wood ashes should be sprinkled uniformly. When the dome begins to harden, tamping should be stopped. In the meantime, fire should be built underneath the dome to hasten the drying of both wall and dome, care being taken that the form does not catch fire. It has been found that the charcoal instead of ordinary wood is much safer to use especially when the drying is under the care of inexperienced laborer. Every morning until it is dry the wall should be tamped before placing the fire. Any crack should be mended only after the wall is dry. Tamping of the mended portions is necessary immediately after mending. The ember should be evenly distributed underneath the dome and along the wall. In this way the wall as well as the dome becomes dry after four weeks' to a month's time.

Operation. — When the dome is dry, vents, one on each side and one at the rear (fig. 6), are made down to the form. The diameter of each orifice is about 4 inches. Then the billets are placed vertically inside until the whole oven is filled. The entrance then is covered with the same mixture as that of the wall, together with some stones until it is on the level with the height of the wall, but leaving an opening of 4" x 6" below, i.e., 4 inches wide and 6 inches high, the upper position of the opening being an arc. This is the entrance of the air during the burning (fig. 6, b). The fire is built at the upper opening. When it has worked its way inside and to the bottom of the opening as seen from the lower aperture, then the upper opening is ready to be closed, i.e., it is closed with the same mixture as that used at the lower part of the entrance, but without stone until the whole opening is entirely closed, so that the air enters only at the bottom aperture (fig. 6, c). In the meantime, the form at the bottom of the side openings as well as at those of the rear should be punctured with red hot iron so that the smoke can come out as soon as the fire has started. A tube about four feet high, 4 to 5 inches inside diameter, usually of iron, is placed over the opening for the chimney. When the dome becomes warm, the side openings should be closed. Like-wise, the rear one is to be closed when the fire has extended towards the rear end of the dome (fig. 6, c).

The burning may extend to the seventh day after the fire has started, if there is no trouble, at which time the smoke coming out from the chimney becomes bluish white and thin. When this stage of burning is reached, it is about time to plug all the openings. Remove the chimney and plug the opening, too, with the same mixture as

that used at the entrance, and also the aperture beneath the entrance.

All places where air is likely to leak through should be covered with a coating of a thick mixture of ash and water. After six or seven days, the dome is ready to be opened when it is slightly warm to the touch. If after this period, the dome is distinctly warm, it is likely that there are air-leaks and should be located and covered thickly with the ash and water mixture.

When the charcoal content of the oven is ready to be discharged, it is safe to have ready water, say, two five-gallon cans. The plug of the entrance is torn open beginning at the top downward, till the entire entrance is cleared. If the fire is out the discharging can proceed; usually it takes a day. But if burning embers are present it should be put out before discharging by pouring water. The fire develops fast when the entrance is clear open and may get out of control, in which case the charcoal may all turn into ashes.

After discharging the charcoal the floor of the oven is cleared of ashes and small pieces of charcoal. Any mending should be done after cleaning so that the following day the oven is ready to be loaded. Loading may be done by 5 men, 3 inside arranging the billets vertically and 2 men handling the billets inside. If the loading is started early in the morning, by evening it may be over, if the men are experienced; otherwise, it may take two days. It is a common practice to detail two of the men to prepare the mixture for plugging the entrance when the oven is nearly full, while the other three continue to load till it is full. Before the day is over the entrance is plugged to the height of the wall, ready to be fired the following day.

Cost. — The cost of building an oven of the size mentioned will vary with different localities, the proximity of the materials needed being an important determining factor.

Firewood:

1. Twenty-five cubic meters of firewood for burning the clay at ₱6 per cubic meter ..... ₱150.00
2. Ten men at ₱3 a day for 1 day to build up firewood pile for burning clay ..... ₱ 30.00

Clay:

1. Gathering of earth 8 cubic meters at ₱6 per cubic meter .....₱ 48.00
2. Balling 4 cubic meters and setting them in a pile of wood by 14 men at ₱3 a day .... ₱ 42.00

Other operation:

1. Setting fire by 4 men at ₱3 .. ₱ 12.00
2. Excavating the ground for the men by 5 men, 2 days at ₱3 a day ..... ₱ 30.00
3. Pounding and screening the burned earth at ₱10 a drum, for 18 drums of 53 gallons .. ₱180.00
4. Collection of stones for the sides, diameter not more than 12", 3 cubic meters at ₱15 ..₱ 45.00
5. Cost of construction of the wall, 10 men at ₱3 per day for 3 days .....₱ 90.00
6. Cost of collection of materials for the form of the dome and construction of same (Bamboo, wooden posts, girts and nails) .....₱120.00
7. Cost of placing the dome, 8 men at ₱3 .....₱ 24.00
8. Cost of tamping the dome, 1 man at ₱3 per day for 6 days ₱ 18.00
9. Cost of tamping the inside wall and firing underneath, 2 men at ₱3 a day for 28 days .....₱168.00
10. Loading, 5 men for 2 days at ₱3 per day .....₱ 30.00
11. Firing, 2 men for 1 day at ₱3 per day .....₱ 6.00
12. One man to watch firing at ₱3 a day for 6 days .....₱ 18.00

Total expenses .....₱1,011.00

Summary of Some Germination Studies in the Division of Forest Investigation, Bureau of Forestry College, Laguna*

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INTRODUCTION

One of the most difficult problems that constantly confront nurserymen in our reforestation projects is successful seed germination. Very often, these men complain of their repeated failures and of the poor germination results obtained in their nurseries. This may be due to the lack of definite knowledge regarding the proper care and methods of germinating seed, particularly the behavior of seeds, the proper treatment to be used and other factors.

Despite the meager knowledge of the behavior and requirements for successful germination of the seeds of our various and important tree species, only a few investigations along this line have been conducted. Besides, the few enlightening and useful results of published completed studies are scattered, thus they are overlooked by nurserymen, officers-in-charge of reforestation projects and by others interested in such data.

Hence, for the interest and benefit of these men, the writer compiled the results of previous and present studies in the form of a summary wherein the methods or techniques employed by the individual researchers are incorporated.

* Read before the Eighth Pacific Science Congress, University of the Philippines, Diliman, Quezon City, on November 24, 1953.

DISCUSSION OF RESULTS OBTAINED BY VARIOUS WORKERS

Seed storage.—All seeds that are not sown immediately after collecting and cleaning are stored carefully in order to keep or prolong their viability until such time as they are needed to be sown in the nursery or directly in the field. How long the seeds will stay viable, however, depends on a large degree upon the manner of storage used and on keeping to the minimum the adverse factors affecting viability.

The methods used and the results of experiments conducted by Lopez (9) on mahogany (*Swietenia macrophylla* King) and Acuña (1) on West Indian Cedar (*Cedrela odorata* Linn.), are presented in the following tables:

Length of viability of the seeds of Mahogany (*Swietenia macrophylla* King) stored under various media.

Method of storage	Length of storage No. of days	Germination per cent
Fruits stored in closed cans with powdered charcoal and buried 40 cm. deep in the ground under shade	132	72
Seeds stored in closed cans with powdered charcoal and buried 40 cm. deep in the ground under shade	132	70
Control seeds stored in cans without charcoal	132	4
Storing the seeds in closed cans with powdered charcoal	132	30
Seeds stored with powdered charcoal in glass jars sealed with paraffin	101	30
Seeds stored with powdered charcoal in closed paper envelopes	101	6

Effect of storage in paraffin sealed bottles on the germination of West Indian Cedar (*Cedrela odorata* Linn.) seeds.*

Length of storage (in days)	Germination per cent
35	90
63	80
91	60
112	2-40
147	No germination

* Germination media: Fine sand in seed flats.

Considering the ease, practicability and economy in labor and material, the former researcher recommended that seeds of mahogany be stored in closed cans with powdered charcoal and buried 40 centimeters deep in the ground in the shade after the fruits are gathered. To obtain satisfactory results, the seeds of this species should not be kept under such kind of storage more than 120 days. The second table shows that the seeds of West Indian Cedar could be kept in paraffin sealed bottles up to 91 days without very much loss of viability, during which time, it is still possible to get over 60 per cent germination. The author also found that the germinative energy of the species is greatest within 21 days from the date of sowing.

Germination media.—The choice of the most suitable medium for germination and for raising planting stocks of any species of seeds is often difficult. For most species, however, the soil is the most satisfactory because it is the natural medium. Also it gives the most uniform results especially in extensive scale.

Caguioa (3) made a study on white lauan (*Pentacme contorta* (Vid) Merr. & Rolfe) seeds. The various media used in his experiment consisted of clayloam (control), sawdust-clayloam mixture, 1:1 by volume; charcoal-clayloam mixture, 1:1 by volume; ash-clayloam admixture of 1:2 by volume; pure fine sand, sawdust and charcoal.

On the basis of germination per cent, the results obtained were as follows: sawdust, 95.01% in a period of 14 days; ash-clayloam, 94% in 10 days; sawdust-clayloam, 92% in 12 days; clayloam, 89.75% in 16 days; charcoal-clayloam, 86.8% in 14 days; charcoal, 86.4% in 14 days and sand, 76% in 8 days period.

From the standpoint of mortality and of producing the greatest number of vigorous and healthy seedlings, the order of suitability of the said media are as follows: clayloam, sawdust-clayloam, sand, charcoal-clayloam, ash-clayloam, sawdust, and charcoal.

This study reveals that the above materials and mixtures as germination media

give satisfactory results and that the seeds of white lauan germinate very rapidly, the period of germination being from 2 to 16 days. While sawdust gave the highest percentage of germination, it did not prove to be a good type of surface soil for growing planting stocks and the mortality is high. Such is also the case with the ash-clayloam mixture. Sawdust-clayloam mixture is a good type of surface soil medium next to clayloam, as judged from the bases mentioned above. Sand was found to be a very poor germinating medium and a poor surface soil for such species. Charcoal is absolutely unfit for germinating and growing white lauan seedlings.

Density of sowing.—What is important to consider in the density of sowing is the amount of light and space requirements of the species and whether the stock will be transplanted when 1 year, 2 or 3 years old, and whether it will undergo one or more transplantings in the nursery before they are permanently set in the field. In sowing seed, therefore, the amount needed per square unit of seed bed should be carefully determined. This will depend on the characteristics of the species, the size and vigor of the seed and the number of seedlings desired per unit of area.

In computing the amount of seed to sow in a seedbed, Hawley (8) gives the following formula:

$$P = \frac{A \times D}{G \times S \times Z}$$

where:

P = pounds of seeds
A = area in square feet
D = number of seedlings desired per square foot
G = germination per cent
S = number of seeds per pound
Z = a variable factor expressing the difference between the germination secured in the tests and that secured in the seedbed (Olson, 1930).

Studying the effects of density of sowing on the germination of seeds of Benguet Pine (*Pinus insularis* Endl.), Defensor (5) found that density of sowing has no direct effect on the percentage of germination; that density, however, has some direct relationship to mortality partly due to damping-off and to the fact that the seed that is not protected is eaten by ants.

Depth of sowing.—Most seeds need soil covering to induce germination and to keep them from drying up through insulation. It also protects the seeds from birds, ants, rodents and other agencies.

Although the seed is usually covered to a depth equal to its greatest diameter, some seeds germinate best when sown just a centimeter or so under the surface of the soil while others require deeper sowing. The depth of the soil cover, as found by various studies in the Division of Forest Investigation, varies with the species.

A study of Quimpo (12) on the effects of depth of cover on the germination of seeds of large leaf mahogany (*Swietenia macrophylla* King) showed that depths of 4, 6, 8, and 10 centimeters are favorable; 8 centimeters gave the highest percentage.

The following table shows his findings on the effects of soil cover on the germination per cent of mahogany studied:

Sowing depth	Average germination per cent	
	Experiment I	Experiment II
2 centimeters	27.25	5.75
4 "	58.27	13.00
6 "	68.26	28.39
8 "	69.75	35.38
10 "	63.38	35.50
surface	0.10	0.90

The comparative results of the experiment of Caguioa (3) on Alupag (*Euphoria didyma* Blanco) is shown in the following table:

Sowing depth	Germination per cent	Period (days)
2 centimeters	46.5	75
4 "	57.5	80
6 "	60.0	80
8 "	56.0	90
10 "	33.0	80
15 "	27.0	85
surface	7.0	65

As shown in the above table, the suitable depth of sowing alupag seeds is from 2 to 8 centimeters. The author also found that at these depths, the quality and size of planting stock produced is better than that when the seeds are sown at the surface or at 10 to 15 centimeters depths.

Denoga (7) in connection with his studies on hastening the germination of untreated teak (*Tectona grandis*, L.f.) seeds, sown in untreated soil, obtained percentage of germination of 40% by surface sowing, 32% for 1 centimeter depth and 29% for 2 centimeters depth. He got very poor results with 3, 4, and 6 cms. depths. Seeds failed to germinate altogether beyond 6 centimeters deep. The only drawback in surface sowing is undue exposure of the seeds to ants, rodents and other pests. With regard to the seeds stored 60 days in a shaded pit and later sowed 2 centimeters deep in untreated soil, 69% germination was obtained.

Seed treatments.—Delayed germination in many forest tree seeds is due mainly to the impermeability of the seed coat which inhibits water absorption, or to a state of dormancy inherent in the embryo itself. Inherent dormancy generally disappears during a rest period or an after-ripening period in which certain physical and chemical changes necessary for germination occur within the embryo. In seeds which require a rest period, these changes must occur either during storage or while the seeds are in the germination bed before satisfactory germination can be obtained.

Toumey and Korstian (14) suggested the following methods of seed treatments to hasten germination:

1. Removing the pericarp or testa in whole or in part when it is more or less impervious to moisture because of its hardness or leathery characters.
2. Softening and rendering an impervious pericarp or making testa more absorptive by the use of chemicals as sulphuric acid or potash lye.
3. Soaking in hot water, especially when the endosperm or kernel of the seed is cartilaginous in character.
4. Storing at low temperature during the rest period to stimulate after-ripening so as to overcome inherent dormancy.

A number of experiments on seed treatments have been conducted in the Division of Forest Investigation ranging from soaking the seeds in tap water, scalding at certain temperatures, burning the seed with cogon grass, immersing in 36 normal sulphuric acid, cutting the ends of the seeds (nicking), mixing the seeds with wet wood ash, mulching, removing the shell, slightly cracking the shell, and using peat moss, or horse dung. Some satisfactory results were obtained and were recommended by those who made the studies.

Conducting an experiment in 1936 to find the relative efficacy of some of the most common methods locally used to hasten, and to get a better percentage of germination of akle (*Albizzia* acle (Blanco) Merr.), Delizo (6), used the following methods:

1. Soaking the seeds in 36 normal H_2SO_4 at varying length of time, i.e., 15 minutes, 25 minutes, and 60 minutes, respectively.
2. Soaking the seeds in tap water for two hours.
3. Cutting the ends (nicking) of the individual seeds.

The results of this study showed that mechanical wounding of the seeds (nicking) induced rapid germination but the advantage was offset by the low percentage of germination because of fungus infection. The most effective of the treatment used is immersion in concentrated sulphuric acid for one hour. The acid partly dissolved the cutin and thus allowed a more rapid imbibition of water by the seed.

The normal germination period of akle seeds without treatment is 120 days.

The comparative results of the various treatments are shown in the following table:

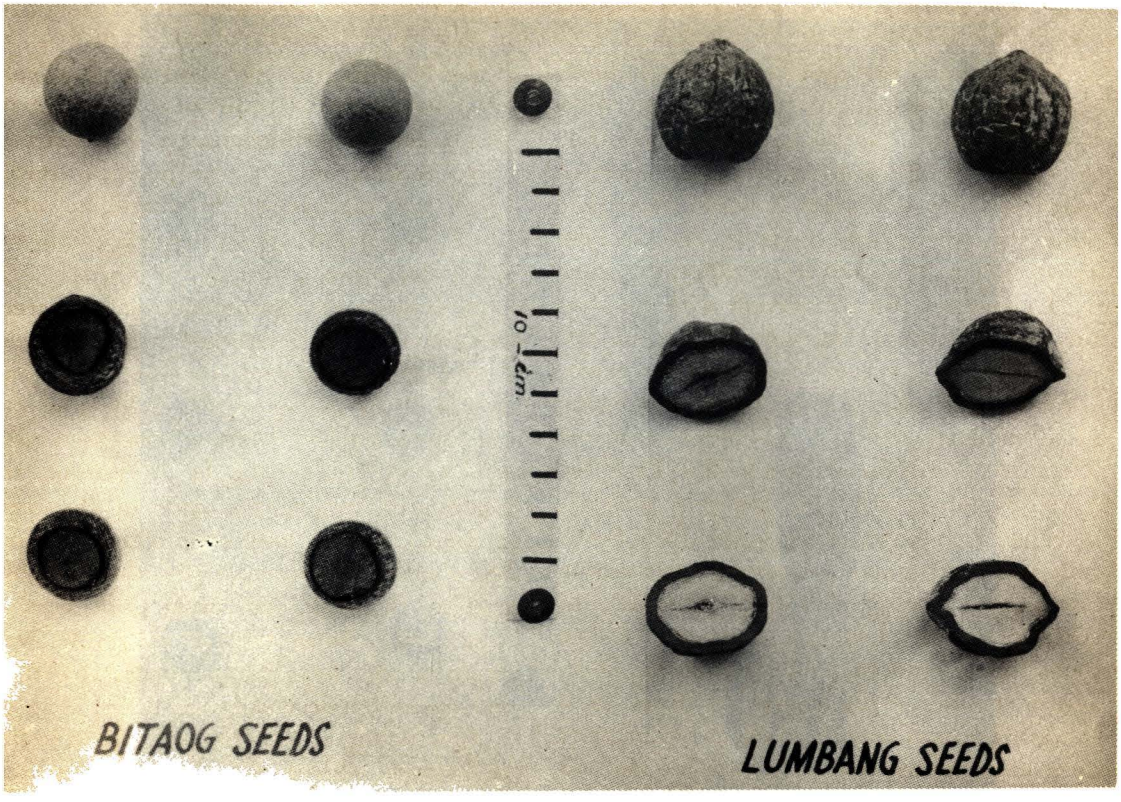

Plate 1.—Seeds and Cross Section of Bitaog and Lumbang Seeds.

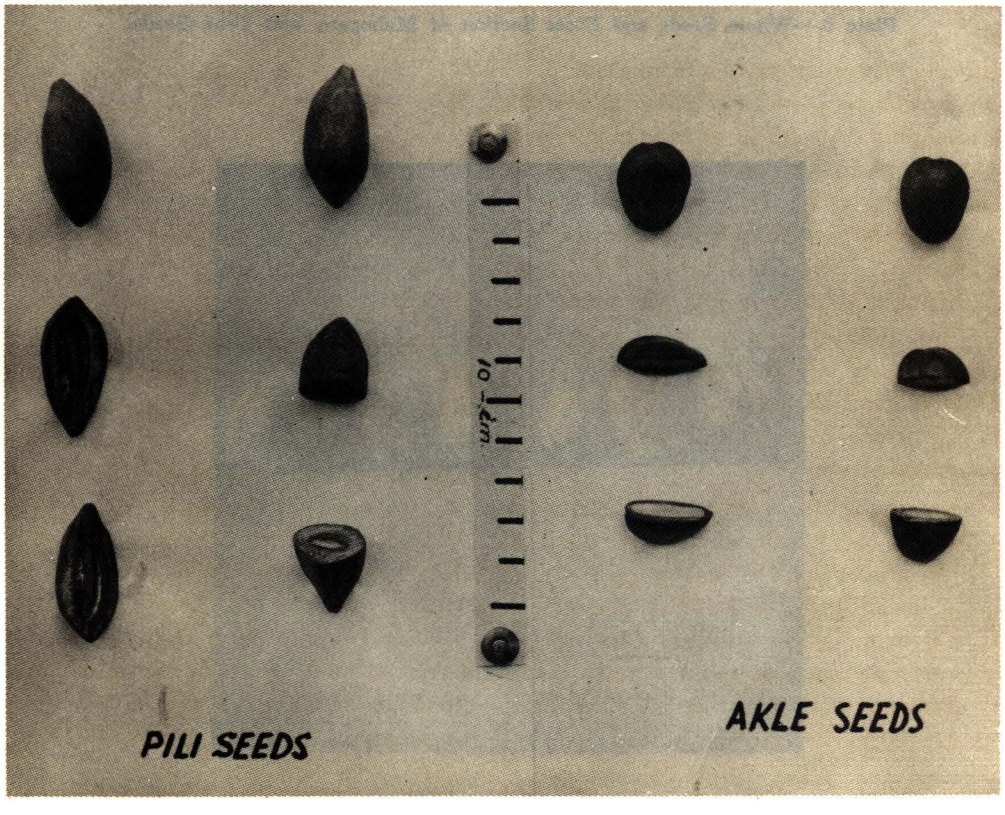

Plate 2.—Whole Seeds and Cross Section of Pili and Akle Seeds.

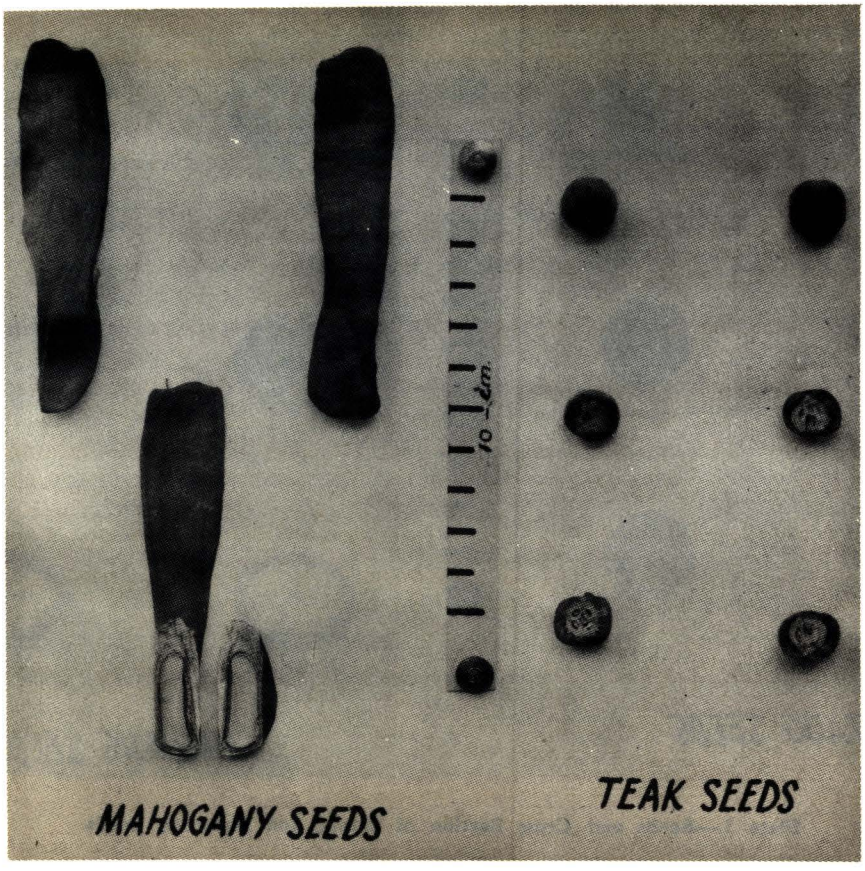

Plate 3.—Whole Seeds and Cross Section of Mahogany and Teak Seeds.

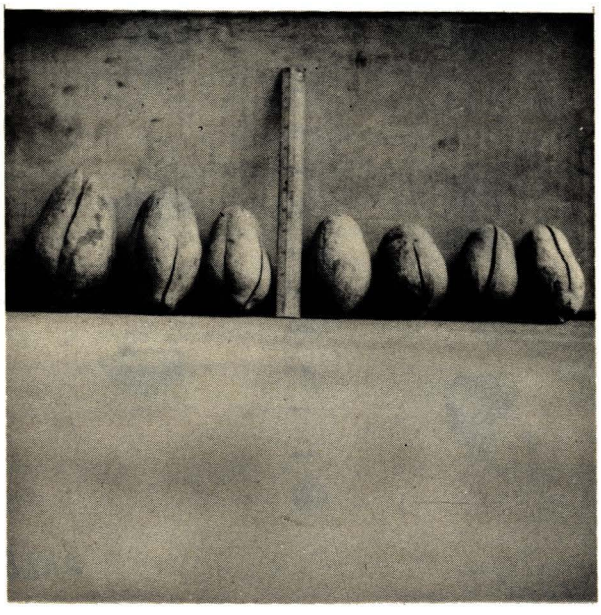

Plate 4.—Mahogany Fruits.

Number of days required to start and complete germination

TREATMENT	No. of days to start germination	No. of days to complete germination
1. Soaking the seeds in H_2SO_4, 1 hr.	9	27
2. Ends of seeds cut	9	23-½
3. Soaking in H_2SO_4, 25 min.	10-½	35
4. Soaking in H_2SO_4, 15 min.	10-½	48-½
5. Two hours in tap water	20-½	120
6. Untreated seeds (control)	22	119

Paras (11) who made a study also on hastening the germination of bitaog (*Calophyllum inophyllum* Linn.) seeds which without any treatment normally takes about two months to complete germination is shown in the following table; the results of three trials of different treatments:

Number of days required by the seeds to start and complete germination

Treatment	FIRST TEST		SECOND TEST		THIRD TEST		AVERAGE	
	Beginning *	Finish *	Beginning	Finish	Beginning	Finish	Days	
Control	48	100	67	33	57	25	57.33	52.66
Cracked	48	112	32	60	34	39	38.00	70.33
With cogon mulch	62	86	45	47	—	—	53.50	66.50
Shell removed	23	25	18	49	25	42	22.00	38.66

* Beginning: Number of days to start germination.
* Finish : Germination completed after 1st germination.

The complete shelling of bitaog seeds hastens the start of germination to only 22 days from 57 days in the case of those planted unshelled. The duration is shortened from 52.66 in the case of untreated to 38.66 and the percentage of germination increased from 63.00 to 93.10 per cent. Apparently this shows that the chief cause of delay in starting germination was the hardness of the shell or seed coat. Partial or complete removal of the coat, therefore, hastened germination.

A study of the nut of pili (*Canarium ovatum* Engl.) by the removal of the shell, cutting the end of the seeds, cracking it slightly with a blacksmith vise, mulching, soaking in water, and scalding, Miras (10) obtained favorable results.

Removal of the shell caused the seeds to start germination in 13 days but the germination was only 34 per cent. Soaking the seeds in tap water for 10 days started germination within 31 days and the germination per cent is the highest per cent of all methods employed for the species. It was observed that seeds of pili without any treatment starts germinating very much longer than one month.

Investigating on lumbang (*Aleurites moluccana* (L.) Will.) seeds to hasten its germination, Tabat (13) found that of the three methods used, dibbling the seeds in nursery bed to a depth of about 2 centimeters and mulching the same with 3 to 4 inches of cogon grass (*Imperata exaltata* Brongn.) and watering the bed everyday to make it very wet (about two gallons for every square meter) caused the seeds to start germination within one month and four months to complete germination. The percentage of germination by this method was 86.5 per cent.

Lumbang seeds with one side ground down (similar to nicking) caused the seeds to start the germination one month after sowing and to complete germination required eight or nine months. The germination per cent, by this method, was 21.05.

Another method employed by Tabat (13) was covering the seeds with cogon grass and setting it on fire after they were spread evenly on the ground. The seeds were immediately immersed in cold water to crack them. By this method, germination began 18 days after sowing and another month to complete germination; and the percentage of germination was only 24.1.

Experimenting also on teak (*Tectona grandis* L.f.) seeds Denoga (7) approached the problem of hastening the germination by treating the germinating beds and the seeds separately. Various amounts of sawdust, ash, leafmold, peat moss, and horse manure were added and mixed in separate beds. As to the treatment of the seeds, such methods as burning the seeds at various length of time with cogon (*Imperata exaltata* Brongn.), weathering the seeds in open and shaded pits at various length of time also, and cracking the shell of the seeds were used.

The result of the experiment showed that treating the seeds gave better results in inducing early germination than treating the germinating media. The best treatment of the soil to hasten germination is: 1/3 horse dung to 2/3 clayloam mixture. By this method, the germination started in 17 days. The best treatment of the seeds is storage for 20 days to 60 days in a shaded pit. Germination started within 33 days after sowing with a germination of 69.7 per cent, being the highest.

Viability test.—A knowledge of the number of seedlings to be expected on a given area from a lot of seeds is important, because it will obviate the waste of seed and of space in the nursery. For this reason, the viability of seeds should be tested as soons as collected and immediately before sowing or shipping. The percentage of viability should be recorded and kept, and should accompany the seed when shipped.

In his experiments on ipil-ipil (*Leucaena glauca* (L.) Benth.), Banaba (*Lagerstroemia speciosa* (L.) Pers.), and ipil (*Instia bijuga* (Colebr.) O. Ktze.) Viado (15), found that test by cutting gave a fairly accurate and reliable results and are close to the results of germination tests.

In this experiment, he compared the results of each of the three methods of testing viability, i.e., cutting test, physical test and germination. He is of the opinion that "cutting test" gave comparatively good results, considering the simplicity and rapidity of use. His results were as follows:

Species	Cutting Test Per cent	Germination Test Per cent
Ipil-ipil	29.0	27.0
Banaba	30.5	34.5
Ipil	77.0	70.0

CONCLUSIONS AND RECOMMENDATIONS

The results of these studies reveal several interesting facts, the merits and demerits of which are discussed here for evaluation.

1. The results of the studies of Acuña (1) and Lopez (9) reveal that seeds need proper storage to prolong their viability; and that a storage method good for one species may not be good for another. Although only a few studies have been conducted on this subject, the results may be useful in the proper method of storing seeds to maintain their viability for a longer period.

2. The experiment of Viado (15) on "cutting" for testing viability is considered a reliable, practicable, easy and rapid method with big seeds. However, this may not be practicable with hard-shelled seeds like pili and lumbang, because the seed coat is too hard for the knife to cut. Neither is it possible with small or tiny seeds.

3. Defensor (5) found that the density of sowing has some direct relationship to mortality caused partly by damping-off but that this does not have any direct effect on

the percentage of germination. While this is true, there are other effects of the density of sowing because as the seedlings grow bigger, they compete not only for crown space but also for soil moisture and soil nutrients, as their roots spread in the ground. The growth will show some of the effects of density of sowing. This, however, needs further study.

4. The experiments of Quimpo (12), Caguioa (3) and Denoga (7) on the effects of depths of sowing on the germination and quality of seedlings indicate that seeds require well aerated soil for germination, and as a general rule sowing at from 2 to 10 centimeters in depth favor germination. Deeper than these depths were found to be injurious to the seed and this may be another cause of mortality of seedlings and decrease of the percentage of germination.

5. In the studies on seed treatments, the results showed that one treatment is good for one species of seeds but not for another.

The variations in the findings in the different studies may be attributed to the difference in the types of seeds, the character of treatment, the time of the year, and other factors. It has been proved, however, that certain types of seeds as cartilaginous and hard coated seeds need some pre-treatment to hasten their germination.

6. Caguioa's experiment on the use of germinating media showed that not all types of soil are fit for the germination of seeds and the development of seedlings.

The studies presented in this paper show the extent of research conducted in the Division of Forest Investigation on forest tree seed germination. Considering the number of important tree species used in our reforestation projects, the necessity of an immediate and more concerted effort toward more researches along this line is in order. It is an accepted fact that in the studies of natural reproduction of forests, the start should be made with the seed and seed production of stands. A better knowledge of the behavior of tree seeds is required not only for successful propagation of trees in nurseries for reforestation and ornamental purposes, but also for the intelligent control of forestry operations to assure natural and artificial regeneration.

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A TIE AS AN ESSENTIAL COMMODITY TO M. R. R.

By:
VALENTIN SEMILLA
Asst. to the Purchasing Agent, M.R.R.

A tie is a part and parcel of a railroad Rails whereon the trains run are useless without ties. The value of a tie in the operation of railroads is appreciated these days more than ever because of the keen competition offered by other transportation facilities on land, sea and air, thus speed, safety, comfort, and dependability become more and more the prime factors in getting the patronage and support of the traveling public. A good tie, therefore, is very necessary for a good railroad to insure speed, safety, comfort and dependability in traveling.

In the case of the Manila Railroad Company, in order to insure the safety and comfort of its passengers and to allow for maximum speed of its trains pulled by its newly acquired fast diesel electric locomotives, it has to provide for every rail length of 10 meters, 16 good ordinary or cross ties, 5" x 8" x 750", or 1,600 ordinary ties per kilometer. Hence, for the total opened trackage of 844 kilometers, the MRR must place in service no less than 1,510,400 good ordinary ties on its road beds. At the present lowest open market price of ₱4.00 per tie, these would have cost the Company about ₱6,041,600.00, which is some investment to be reckoned with. Since the return of the railroad by the U. S. Army to the Philippine Government on February 1, 1946 and up to June 30, 1956, the Company had purchased 621,978 ordinary ties, valued at ₱2,919,207.45, or an average of 59,700 ordinary ties, costing ₱280,243.80 per year. This is broken down into 576,741 molave ordinary ties, costing ₱2,735,536.96, or 93%; and 45,237 yacal ordinary ties, costing ₱183,670.49, or 7%. The average unit price is ₱4.74 per tie of molave and ₱4.06 per tie of yacal.

Molave ties are preferred by the Engineering Department because of their comparatively longer service performance than those of yacal or ipil ties. The durability of molave is 169 points as against 108 points of yacal and 100 points of ipil. In other words, if a tie of yacal or ipil cut from a mature tree has a life expectancy of 12 years, then a tie of molave cut from a mature tree should have a life span of 20 years. Thru the painstaking and wonderful manipulations of the Engineering Maintenance Crews the life span of a tie is extended to a few more years. This is made possible by reboring new holes and using both faces of the tie one after the other whenever possible. However, such operation is only usually done on molave ties and seldom if not at all, on yacal or ipil ties, or on any other substitute ties for that matter.

The work performed by a tie is mostly on two portions of its face about 18 inches from its ends, where the rails are carried over it and where boring takes place and spikes driven in the holes made. There are three distinct processes of prolonging the life of a tie. In the beginning, four holes are bored on one selected face of a tie, two placed diagonally across each rail. On level ground these holes are observed to last the full life of a tie, but on high grade track they are widened up by vibrations of spikes

caused by speeding trains. The first process of prolonging the life of a tie is, therefore, to plug these widened holes with suitable chips of yacal, and then these are bored and spikes driven in. Such yacal plugs or chips last for *2 to 3* years. The second process is to change the positions of the holes by boring another four holes, two placed diagonally across each rail and spikes driven in as in the first process, placed above and below the former holes as to form a square. These new holes last from 3 to 5 years. The third process is to turn over the tie and on the unused face four holes are bored, two placed diagonally across each rail as in the beginning and second process of prolonging its life above metioned. The holes thus bored are so placed in such a way as not to be exactly over the former holes on the other face of the tie. These holes may last from 3 to 5 *years.* Thru the application of the above processes, the life of the tie is *prolonged by at least five years.* The application of the above proceses, however, is discretionary on the part of the Engineering Maintenance Crews. Some processes may be eliminated or interchanged at their discretion.

Molave ties cut from mature trees have been known to withstand the three processes of prolonging the life of a tie. Proof of this contention is the fact that many of the molave ties placed on some portions of the Aloneros-Ragay connection in 1936 thru 1938, or about twenty years ago, are still going strong. A good molave tie, therefore, may last 25 years in actual service. On the other hand, yacal and other substitute ties, supposed to have been cut from mature trees, have been known to withstand only one process. Proof are the yacal and other substitute ties placed on the lines during the early rehabilitation period, most of which have been replaced and those remaining are rotting and requiring immediate replacements. Yacal and other substitute ties, therefore, may last at most only 10 years in actual service performance. Thus, at the lowest open market price of ₱4.00 per tie of molave and ₱3.80 per tie of yacal or ipil, the average service cost of molave tie would be about ₱0.38 per year, or a difference of about ₱0.22 per tie per year in favor of molave tie, which in fact represents the deficiency per tie of yacal or ipil per year. Since the possible life of molave ties is 25 years, the actual deficiency incurred for each yacal tie is ₱5.50. Hence, for the 45,237 yacal and other substitute ties purchased in the period above mentioned, the Company had incurred a loss of ₱248,803.50 for the deficiences of those ties.

Economics is greatly influencing the supply of ties to the MRR, especially regarding the factors influencing the grade and price thereof. The law of comparative advantage has greatly influenced the grade and price of ties, and, therefore, should not be ignored in considering purchases thereof. Molave flitches and posts are sold in the open market at about ₱0.50 per board foot, while ties of molave are sold at ₱4.00 per tie, or ₱0.17 per board foot, or ₱0.23 less than the price of the former. In spite of the big disparity between the prices of the two commodities, still the Company was able to procure good molave ties which have lasted the full expected life time of 25 years. On the other hand, yacal or ipil flitches and posts are sold in the open market at a minimum price of ₱0.44 per board foot, while ties of yacal or ipil are sold at ₱3.80 per tie, or ₱0.16 per board foot, or ₱0.28 less than the price of the former. Since the durability of yacal is 108 points, ipil 100 points, and molave 168 points, and since molave ties last 25 years, it follows therefore that yacal and ipil ties should last about 15 years instead of about 10 years life as in the case above cited. Why is it that molave ties have lasted 25 years and yacal ties, 10 years only? The reason for this is obvious.

Molave is a tree common in secondary and open primary forest, of crooked, short, and fluted bole, three to five meters (10

to 16 feet) long and up to 200 centimeters in diameter. Yacal is a medium size tree found in mid-mountain forest, reaching a diameter of about 80 centimeters or more, of straight, regular bole, 10 to 15 meters long. Ipil is a large tree scattered along seashores, back of swamps and some in inland forest, slightly crooked to straight cylindrical bole, reaching 120 centimeters in diameter and 35 meters in height.

From the above simple descriptions of their respective boles, it can be readily seen why in spite of the known durability of molave as compared with those of yacal and ipil, still the last two are more popularly demanded in the open market for posts and lumber. This is because molave posts and lumber are sold in non-commercial lengths, whereas, yacal and ipil posts and lumber are sold within and above the commercial lengths. Hence, molave posts and lumber are very slow moving commodities in the open market, while yacal and ipil are fast moving one. In the absence of a special market, therefore, enterprisers are shy in producing molave posts and lumber for sale in the open market. Thus, despite the big disparity in price between a molave tie and a molave post, the former commodity does not and cannot compete in the open market against the latter or any other lumber commodity for that matter. This fact is attributed to the possibility of utilizing sound and mature molave trees into railroad ties, which enable them to give the full service performance of 25 years.

On the other hand, yacal and ipil ties compete with yacal and ipil posts and/or lumber in the open market. Having in mind the law of comparative advantage, no same enterpriser would attempt to produce ties cut from a sound and mature yacal or ipil tree to be sold at ₱0.16 per board foot when he can readily cut therefrom, at comparatively less expenses in view of lesser pieces to be produced, posts which he can easily sell at a minimum price of ₱0.44 per board foot. The only way possible for him to offset the law of comparative advantage is to produce ties cut from branches and/or young yacal or ipil trees and sell them at a surprisingly low price of ₱0.16 per board foot. Posts are not readily produced from branches and those produced from young trees cannot compete with those produced from sound and mature trees. Evidently, the yacal and ipil ties purchased by the Company in the past at a low price of ₱0.16 per board foot were cut from branches and young yacal and/or ipil trees. Consequently, they last only for about ten years as mentioned above.

The price of ties is also influenced by the standard of inspection. It is in direct sympathy with the standard thereof, that is, the lower the standard of inspection, the lower is the price quoted by the suppliers; and the higher the standard, the higher is the price quoted by the suppliers. For the good of the Company, the writer believes that a fixed standard or rules and regulations governing the inspection of ties, and other wooden materials for that matter, should be adopted to insure equity in the price and quality of ties purchased, thereby avoiding misunderstanding between the suppliers thereof and the Company on one hand, and between officials and employees concerned therein on the other hand.

It has been left that the supply of molave ties from Luzon and nearby islands is getting scarser and scarser. This is one reason why the Company had been compelled to buy yacal and ipil ties in the past in spite of the insistence of the Engineeriag Department to procure molave ties only. At the present rate ties are being consumed there is fear that the present sources of supply of cheap molave ties will be exhausted in the near future. There are said to be good stands of molave trees in Mindanao and Palawan, but the cost of bringing the ties from those regions to Manila is very high. There are also said to be good stands of molave trees in the Cagayan region, which may become the source

of supply of ties for the proposed railroad extension thereto and also for replacement of wornout ties. However, there is no attempt at present to produce ties thereat in view of the high cost of transporting them over to the nearest railroad station at San Jose, Nueva Ecija.

The problem that the Company has to face in the future, in the event that the present cheap supply of molave ties is exhausted, is to whether to purchase present poor class of yacal and ipil ties or to purchase high priced molave ties from Mindanao and Palawan. Or shall the Company resort to using high priced creosoted apitong, concrete, or steel ties?

Creosoted apitong ties, because of its weak nail holding capacity, would require guard plates, which is very costly. The impracticabilty of using steel and concrete ties is seen from the actual shortage of cement and reinforcing steel required in the manufacture thereof, attributed to various systems of government controls to conserve the country's dollar reserve. Furthermore, to benefit foreign suppliers in the face of abundant supply of local commodity would not be in keeping with the National Economic Policy. Cement produced within the country is far from sufficient to cover up local needs therefor. Hence, the writer believes that the final choice would be between using present class of yacal or ipil ties aganst high priced molave ties brought from Mindanao and Palawan. However, until the Company is faced with such a problem of what to use and where to get ties, there is no need for discussing the matter further.

Nevertheless, in the meantime that this problem has not yet confronted the Company, it is the humble opinion of the writer that studies be made in this essential railroad commodity, considering the big amount of money involved in the purchase thereof. In the postwar period ending June 30, 1956, the Company purchased 621,978 ties, valued at ₱2,919,207.45, of which 576,741 were of molave, valued at ₱2,735,536.96, or ₱4.74 per tie, and 45,237 were of yacal and other substitute ties, valued at ₱183,670.49, or ₱4.06 per tie. If molave ties last 25 years and yacal and ipil ties last 10 years. the average performance cost per tie of molave per year is ₱0.19 and that of yacal and ipil is ₱0.41.

Therefore, to compare with molave in service performance, the performance cost of yacal and other substitute ties would amount to ₱10.25 per tie. Hence, the 45.237 ties of yacal so purchased would incur a total service performance cost of ₱463,679.25. Taken together, the 621,978 ties of molave and yacal so purchased would incur a total service performance cost of ₱3,199,216.21. If all of the 621,978 ties so purchased were of yacal and other substiute ties, it would have cost the Company ₱6,325.274.50 in service performance, or a loss in deficiency of ₱3,176,058.29. This is no doubt an amount too big for the Company to lose sight of in the future consideration of procuring ties. On the other hand, if all of the 621,978 ties so purchased were of molave, it would have cost the Company only ₱2,948,175.72 in service performance, or a gain of ₱251.040.49. From the above may be seen the big disparity in the service performance between molave and yacal ties.

Considering the foregoing, there appears a need for imperative study and/or experimentation on how to lengthen the present cheap supply of molave ties, with the end in view of avoiding incurring high performance cost on substitute ties. It may be possible that many of the molave ties now being rejected may be used to some advantage by the Company, thus utilizing fully and conserving the future supply of molave ties. It may be worthwhile studying to what extent of crookedness a tie may be used without impairing its strength, so that such crooked ties may be utilized to help conserve the supply of molave ties. Behavior in actual service performance of

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THE IMPORTANCE OF INTRODUCTION OF KUDZU (PUERARIA JAVANICA) IN OUR REFORESTATION[1] PROJECTS

By
TOMAS F. BERMILLO, B.S.F.—'48

The importance of the introduction of kudzu *(Pueraria javanica)*, as a "cover crop" in our reforestation projects, certainly needs evaluation or serious consideration. While it might have been verily a wise step to have had introduced it at the time when the first reforestation project in the Philippines was opened, it can not be too late to adopt it just now.

Quite recently, there has been a nationwide alarm and there still persists a grave concern over the considerable losses to lives and property brought about by floods, allegedly as a result of the tremendous destruction and exploitation of our forests. To remedy the situation, it is thought and planned that a gigantic 10-year program of reforestation be launched with 50 millions of pesos from the national coffer to be involved. Whether the proposed program will be pushed through or the present rate of reforestation activities will merely be maintained, it is but fitting that ways and means be devised to minimize, as much as possible, or entirely check the great losses in our reforestation projects, as a result of grassfires, especially during the hot season of the year. Reforestation work can not be expected to succeed unless plants set out in the plantations are free from the constant threat of grassfires, drought and/or excessive soil erosion.

A part of the 1954-1955 annual report of the Director of Forestry is worth quoting, as follows:

"In spite of the vigilance to reduce destruction of the plantations, several grassfires occurred this fiscal year. Incomplete reports showed that there were about 626.72 hectares burned, containing 444,905 trees valued at ₱122,465.03.

"In some projects the unusually long drought during the fiscal year resulted in a great mortality of young seedlings in the nurseries as well as in the plantations. However, seedlings that died this year amounted to 1,228,601 as against 3,131,478 of the previous year."

It may be mentioned further that, accordingly, the total expenses under Reforestation Fund (Rep. Act No. 115 during the year amounted to ₱157,367.77 as against the aforecited losses amounting to ₱122,465.03 incurred as a result of grassfires during the same period. It thus appears that about 78% of the total amount spent that fiscal year was merely gutted by fire! The 78% is yet based on the "incomplete reports" of the fire destruction during the period. That is not to mention the value of the 1,228,601 seedlings that died during the same period as a result of drought.

The foregoing figures disclose how much "setback" is made as a result of fires

[1] Reforestation mey be divided into two categories, namely: *natural* and *artificial*. The natural method is one where the logged-over areas, i.e., areas where matured trees have been cut or removed, leaving the immature ones in good condition to grow and seed the openings or logged-over places. This is the cheapest and surest way of reforestation. On the other hand, artificial reforestation is the planting of open areas, at present mostly covered with grasses consisting of cogon, talahib and others. These grassland areas are the result of the shifting method of agriculture, known as *kaiñgin*. In this paper the discussion refers to the latter.

and droughts every year, against every forward "stride" we try to make in reforestation work. That is due to the fact that in most cases, a great portion of the areas for reforestation is covered with cogon (*Imperata exaltata* Brongn.) which easily gets burned due to its naturally combustible leaves, especially during the summer months. With seedlings and even saplings set out in those cogonal areas, without benefit of an effective deterrent to burning, their destruction by fire can not be helped each time the cogon area will be burned. Evidently, under the present set-up there seems to be so little progress being made in our reforestation activities. While accordingly, the employment of 540 forest guards has been a great help in "minimizing" forest destruction caused "especially by fires", there is just the same no sure and effective guaranty for the protection of our reforestation plantations from fires as long as cogon is found thereon.

In view of the seemingly precarious state of our reforestation program and activities, there arises an urgent need for adopting a "Kill-Cogon-First Policy", to avoid setbacks. In other words, if possible, plantation areas should first be cleared of cogon before any plant or seedling should ever be set out thereto; or, in order not to delay the reforestation program and schedule, the "killing" of cogon should, at least, be simultaneously done with the setting out of plants and seedlings in the plantations whenever and wherever practicable.

Realizing the dire need of first eliminating cogon in our plantations, there comes, next, a necessity for a sort of an "antidote" to our reforestation "detractor" — cogon. That antidote, or we might call, "cogon killer" must posses at least the following qualities or characteristics: (1) Effective cogon killer in as short a time as possible; (2) should occupy area permanently as long as it is needed, but easy to eliminate when its presence will have been already a detriment to plants and seedlings in the plantation; (3) will not top the plants and seedlings, thereby depriving the latter of sunshine which is necessary for their luxuriant growth; (4) evergreen; hence, not combustible and instead, prevents soil from drying up during summer; and (5) seeds available in large quantities, and cheap.

This writer has had the chance to actually plant kudzu in cogonal area in between coconuts and bananas and has observed its behaviour from the time the seeds were sown until the vine ultimately eliminated the cogon and took over the area. In thus having made the observation, this writer became convinced that kudzu will certainly prove to be a big "asset" in our reforestation projects. It may even create "miracles" by way of perhaps, entirely checking tremendous losses in reforestation activities due to grassfires and droughts, in view of the following characteristics which it possesses, and which, incidentally, meet practically all the above mentioned necessary qualities of a good cogon killer:

1. *Fast and effective cogon killer*— As a cover crop, kudzu has proved to be very effective killer of not only cogon, but even talahib (*Saccharum spontaneum* L.) which is, in most cases, likewise found wherever cogon grows. As a vine, kudzu thickens itself and widens its coverage considerably from year to year and forms into a sort of a "blanket" over the cogon area and then and there, the cogon is eventually covered and dies out. Talahib is twined around, forced to bend downwards and covered. Ultimately, it is wiped out and kudzu takes over the area.

2. *Occupies area permanently, but easy to eliminate* — As a vine, kudzu sends out roots at every node that touches the ground. Its vine grows by elongating, branching and enlarging, at the same time, anchoring itself securely to the ground thru its roots for as long as a time it is desired to be there. When

its presence in the plantation will have been detrimental to the plants thereon, it could be easily eliminated by "skining" the ground surface and piling the debris for sometime to rot or to be burned when dried.

3. *Will not top plants and seedlings* —Unlike ipil-ipil (*Leucaena glauca* (L.) Benth) and other shrubs that are used as cover crops, kudzu can be made to stay just on the ground surface (after killing the cogon) by preventing it from twining around trees or seedlings or by not allowing it to gain access to the bases of taller plants, thereby ensuring that it will not cover or shade the seedlings, eventually depriving them of sunshine which is very essential for the growth of any plant.

4. *Evergreen* — An evergreen vine, kudzu can not easily be burned during the summer months; on the contrary, the "blanket" it spreads over the area where it grows renders the soil underneath consistently moist, or at least not dry even during dry weather. In addtion, its dry leaves which fall off by *force majeure* decay easily and are transformed into humus in a comparatively short time due to the favorable, humid condition under the "blanket". The presence of humus, in turn, makes the soil soft and a good absorbent of water, thereby regulating waterflow to a certain extent. Thence, its crisscrossing vines securely attached to the ground by its roots, contribute heavily in preventing soil erosion.

5. *Seeds available in large quantities, cheap* — Kudzu seeds are now available in large quantities during the months of March and April when atmospheric conditions are favorable during the flowering period. As a cover crop, it is now extensively used in Batangas, Laguna, Quezon and in the Bicol provinces under citrus and coconut plantations. When finally introduced in our reforestation projects, the procurement of the seeds will subsequently become not a problem. The initial supply of seeds could be had thru the personnel of the Bureau of Agricultural Extension who know where kudzu is found in abundance. By sowing the first seeds say, in May or June, they will bear fruits immediately in the following year during the months of March and April; so that, it will be a question of purchasing the seeds but once at the outset. The seeds that will be borne by the first ones that will be sown will serve as the sowing material for the following year, and so on, until all our *cogonales* will have been transformed into kudzu-covered areas, ready for planting, if not duly planted with trees.

While at this juncture kudzu has been pictured to be an "asset" when introduced in our reforestation projects, it has, too, its shortcomings. The vine has that tendency to twine around taller plants in its effort to get sunshine. When allowed to twine around plants and seedlings it may greatly retard their growth, if not entirely kill them. The retardation or the ultimate killing of the seedlings or plants, however, may be completely prevented by maintaining a clean portion of at least, a radius of one-half to one meter from the base of the plants until they grow tall and big enough not to be adversely affected by the presence of kudzu vines around their trunks. That shortcoming or defect, however, can not be an effective argument against the introduction of kudzu in our reforestation projects since, maintaining a half-to-one-meter radius free from vine such as kudzu, will cost much less than maintaining same area free from cogon, as the latter takes more time and effort to cut close to the ground, only to "show up" again two or three days thenceforth.

The present sad plight and status of our

(Continued on page 30)

A Visitor:

Looking through the FPL

A. N. ALDA
Lebrarian, Forest Products Laboratory

A Visitor: Looking through the FPL

The imposing front steps of a huge building standing amidst a sea of green lawn greeted the eyes of a group of visitors, and prompted the question: "What building is this? What is this office?"

To this, a guide answers: "This is the Forest Products Laboratory. If you care to come in and look around, come this way please," and he leads the group down a long corridor from the lobby to the Chemistry Section.

—At the Chemistry Section—

Here, Mr. Manuel Monsalud, the head of the section explains the various experiments and projects that are being conducted on the analysis of wood, the processing and testing of pulp, the manufacture of paper and wallboard, and the production of charcoal and charcoal briquettes. A greater part of this work is being performed in the basement where most of the equipment for this purpose is installed.

Mr. Monsalud showed the group a number of machines, including the Wiley mill used for grinding wood to fine powder for chemical analysis, a defibrator used for making coarse pulp from wood chips, and a Bauer mill used for grinding softened chips to pulp.

"We have two digesters here for making pulp by chemical means," Mr. Monsalud explained further. One has a capacity of 0.8 cu. ft. and one about 6.0 cu. ft. Pulps made by cooking wood with chemicals are usually of higher quality but of lower yield than pulps made mechanically from the same species.

"The bleaching of pulp is conducted in the main laboratory room but the test sheets of paper are made here with the use of this

equipment," the chief said pointing to several pieces of apparatus in front of the group. There were a disintegrator used for breaking lumps of pulp, a sheet machine used to form handsheets, and a pump and press used to press the water out of the handsheets being formed. There were also several freeness testers, a pulp beater, a pulp screen and a hot plate press capable of making wallboards and hardboards at high temperature and pressure. The tests on the paper sheets are conducted in an air-conditioned room on the main floor which is maintained at a temperature of 73° F and a relative humidity of 50 percent. The sheets are tested for

various properties such as strength, including tensile and stretch, bursting, tearing and folding strength; thickness and weight, brightness or opacity, porosity or air permeability, and sometimes other properties.

Going out of the refreshingly cool paper-testing room, the visitors find the customary flasks, graduated cylinders, glass tubes, jars and bottles containing different chemicals used in the analysis of bamboo and wood, spent cooking liquor, and bleaching and spent bleaching liquor

"Well, that summarizes very briefly what we have in this section," the chief ended his explanations and the group of visitors proceeded to the next section.

—The Administrative Section—

Rows of desks and chairs and typewriting tables fill the long room known as the administrative section. A number of clerks and personnel were busy at their jobs of carrying on the business affairs of the Laboratory which are necessary to facilitate the research work, and the main purpose of this institution.

To the right of the Administrative section and further down the hall is,

—The Timber Physics Section—

"The main object of this section is to study the shrinkage and density properties of Philippine woods in order to be able to give lumbermen and wood users reliable information regarding these important properties of the woods they are using," Mr. Ricardo Casin of the section began. In other words, they are seeking answer to the innumerable questions on these properties that they know will be asked of them by inquirers.

"Samples for the experiments are taken from 6-in. discs from trees felled in different localities. They are cut into test specimens and weighed and measured in the green condition and then placed on racks to dry at room temperature," he continued, "after which the weight and dimensions are measured again."

Mr. Casin explained that measurements of weight and length are taken again after the specimens are dried to 12 percent moisture content and after they have been dried to zero moisture content in an electrically heated drying oven. The data derived from these measurements are computed to obtain the shrinkage, moisture content and specific gravity and density of the specimens.

It was revealed that studies on the air seasoning of several species of wood are underway, to learn the drying rates of the different species and of different thicknesses.

Research on kin drying has not yet started but there is now a 2,000 bd. ft. kiln installed in the wood preservation building. "This is rather large for preliminary experimental purposes, so an experimental kiln of 200 bd. ft. capacity will son be constructed which will be more appropriate for our purpose, "Mr. Casin explained.

The group then proceeded to

—The Timber Mechanics Section—

where Mr. Simplicio Bellosillo, the section chief, explained the work of the section.

There are four universal testing machines in the section with maximum capacities of 8800, 12000, 60,000 and 200,000 pounds respectively, all used for testing wood in bending, hardness, compression-parallel and perpendicular to the grain, and shear. "They are called universal testing machines because of their ability to perform many different types of tests in one machine," Mr. Bellosillo explained.

A toughness testing machine and an impact testing machine in another room are used in the study of the toughness and the resistance to impact of Philippine woods, the results of which will give reliable information regarding the adaptability of species for uses in which resiliency and toughness are important, as in handles for striking tools.

Since different species of wood do not have the same strength properties, and the strength may vary considerably among different trees of the same species, it is necessary to conduct thousands of tests using specimens from many carefully selected trees before a true average value of the strength properties for a species may be obtained. These properties of wood are affect-

ed by the direction of the applied force with respect to the grain and are determined for both the green or unseasoned and the air-dry condition of the wood. The strength of wood after seasoning is greater than that of the same wood in the green or unseasoned condition.

Because internationally accepted standards have set 12 percent moisture content as the basic requirement for testing air-dry wood, and since a greater percentage of the world timbers have been tested using this standard, both the Timber Mechanics and the Timber Physics sections make tests at the same percent of moisture content, for purposes of standardization and comparison.

"Our natural temperature and relative humidity conditions, however, can only bring wood down to a moisture content of 14 to 16 percent in the air-dry condition," the section chief explained, but added that they have a room with controlled temperature and relative humidity in which a relative humidity of 65% is maintained to bring the moisture content of the wood to the accepted standard for the tests.

Mr. Bellosillo remarked that "one of the main functions of this section is to help industry in the solution of all problems relating to the strength of wood in both its natural and modified forms."

—The-Wood Anatomy Section—

Moving to the next section, a striking model meets the visitors. Mr. Francisco Tamolang, the section chief, explains that it is a model of a block of wood magnified about 550 times showing, in enlarged form, the details of the different elements of the structure of wood.

The Wood Anatomy section can boast of modern microscopes of the latest models. It is said that there are only six of this kind in the Philippines and two may be found in this section.

A "library of woods" also attracts the attention of the visitors as one of them picks a sample from the shelf. The label on the specimen gives the common name of the wood, its scientific name, its source, and some identifying numbers for purposes of classification. The collection serves as a ready reference in wood dientification and, according to the chief of the section, a card-sorting key to the different species of timber is currently being developed.

Mr. Tamolang listed the functions of the section as follows, among others:

1. The collection of authentic specimens of Philippine woods for the use of all sections of the Laboratory.

2. The identification of wood materials for the laboratory and for other institutions that need such information.

3. The standardization of official common names of Philippine woods.

4. The study of fiber length and fiber characteristics of Philippine woods and bamboos which may be useful for pulp and paper making.

5. The study of Philippine palms and other plants which may yield suitable fibers for brush making.

He then leads the group to another room where various species of plant fibers are under study. Some of them have already been made into brushes of various sizes and shapes depending upon the use for which the brushes are intended. Mr. Mario Eusebio, who is at present in-charge of the fiber section, explained the properties and characteristics of the different fibers he had on his working table.

—The Library—

Rows of empty and almost empty shelves greet the visitors in the library. The librarian explains that the books and back numbers of technical journals now on hand were donated by various individuals and organizations in the United States. Some $8000 worth of books purchased by the International Cooperation Administration and the Rockefeller Foundation are on the way to the Laboratory and will go far to provide the Laboratory staff with the technical books and journals needed for research work in forest products. Years may be required,

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THE IMPORTANCE...

(Continued from page 25)

reforestation projects have been told. The tremendous losses from grassfires as well as from drought are now known. A suitable solution to the problem is hereby being broached. There can possibly be no deterrent to the adoption and introduction of kudzu in our reforestation projects. Most, if not all, of our reforestation projects have been and still remain under the constant threat of fires and drought. Tens of thousands of pesos of the national income are annually alloted to reforestation projects without guaranty as yet of their sure protection from the annual hazards. Finally, our government just can not afford to waste considerable amounts in reforestation projects when such amounts are badly needed in more productive ventures of the Administration with prospects of more positive results that would redound to the economic upliftment of the country and the betterment of living conditions of the masses.

Will not the proper authorities act accordingly?

A TIE AS AN...

(Continued from page 22)

smaller molave ties, like molave second class ties and/or other substitute ties, is also believed worthwhile to be observed, determined and recorded. With such statistics readily on hand when the time comes that the Company is faced with the problem of what to use and where to get ties, those concerned will have easy time to solve it.

* End *

A small trouble is like a pebble. Hold it too close to your eye and it fills the whole world and puts everything out of focus. Hold it at proper viewing distance and it can be examined and properly classified. Throw it at your feet and it can be seen in its true setting, just one more tiny bump on the pathway to eternity.

—Celia Luce

Some Useful Derivation and Application of Diameter Growth of Commercial Dipterocarps in the Basilan Working Circle

By MARTIN R. REYES
Forestry Supervisor

(Continuation)

This table does not give as yet conclusive information on growth, the data from which it was based having been only the result of two measurements for the first four-year periodic growth. It gives only indicative results. It may, therefore, be used only for tentative evaluation for sustained yield under selective timber management for the forest tract in which the samples are located and other areas where conditions are similar to or approach that of the said forest tract. Without such evaluation, our attempts at management will be haphazard; we will not have an idea as to whether or not a continuity of operation will be more or less assured.

We will modify and improve regulation of the cut as more refined statistical analysis can be made on the data and as more reliable data from future measurements become available.

Sample Evaluation for Sustained Yield

For simple illustration, let us consider a management unit of 10,000 hectares in the Basilan Working Circle having the following data from average samplings per hectare:

1. Structure — diameter or size distribution of commercial dipterocarps (excluding hardwoods)

In Virgin Forest

Table 2

Diameter Class Cms. (1)	No. of Trees (2)	Volume Cu.M. (3)
20	11.9	1.60
30	14.4	5.70
40	15.1	19.34
50	11.1	28.70
60	9.4	39.49
70	7.7	41.63
80	4.0	32.52
90	2.5	29.75
100	1.2	14.33
110	.4	6.61
120	.4	7.80
130	.3	4.84
TOTAL	78.4	232.31
Total, 50 Cms. & up	37.0	205.67
Total, 60 Cms. & up	25.9	176.97
Total, 70 Cms. & up	16.5	137.48
Total, 70% of 70 Cms. & 80 Cms. & up	13.20	124.99

In Logged-over
(Healthy Residuals)

Tale 3

Diameter Class Cms. (1)	No. of Trees (2)	Volume per Tree (3)	Total Volume Cu.M. (4)
(Seedlings)	(7,500)		
(Small Saplings)	(800)		
10 cm.	(26)		
20	5.4	.27	1.46
30	8.3	.81	6.72
40	5.8	1.37	7.95
50	4.8	2.08	9.98
60	3.1	3.91	12.12
70	.9	6.15	5.54
Total	28.3		43.77

2. *Determination of the period of adjustment.*—Our problem is to apportion the annual cut in the virgin timber and the residual stands in such a way that there will be no abrupt reduction of cut until the next lower size group (small poles saplings or seedlings), as are estimated to be sufficient in number, will reach the exploitable diameter and fairly profitable volume. A new crop of seeds after primary logging should be the safest basis, but this takes long to reach harvestable size. It will be to advantage to remove as fast as possible the mature and overmature timber, hence, we have to look for the size classes bigger than seedlings for the connecting link to the next rotation, and the possibilities of smaller diameter that will be profitable to utilize in future years.

Trends in utilization show trees of smaller diameters cut profitably either for lumber or plywood. With improved techniques and equipments in utilization and cost of road construction that will be already written off some years after primary logging, 50-cm. trees will likely be no longer marginal to log. We, therefore, take *50 centimeters* as the exploitable diameter of trees that can be exploited profitably in the future.

At present, the number of trees cut per hectare ranges from 15 to 30. We see in our stand structure and distribution the following smaller size classes left per hectare: seedlings, 7,500; saplings, (5 cm.), 800; 10 cm. diameter class, 26; and 20 cm. diameter class, 5.4. The 20 cm. diameter class should be a good link as it will take only about 40 years to reach 50 cm. diameter, (See Growth Table1), but the number is insufficient. We go now to the next class, 10 cm.: Allowing for 50% mortality, a survival of 13 is estimated. This could be augmented from the 5 cm. class and the 20 cm. class, so that more than 30 trees may safely be expected as the final crop per hectare in the third cycle.

We, therefore, choose 10 cm. diameter as our connecting link which takes about 56 years to reach 50 cm. diameter (Col. 6, Growth Table). But since we will augment the number of trees from the 5 cm. class which takes about 66 years to reach 50 cms., we take the average of these years, or 61 years, rounded to *60 years*, as our *period of adjustment.*

3. *The cutting cycles.*—The size class groups of residuals for the second cut will be 30 cms. and over in diameter since we will use the 20 cm. class trees to augment the 10 cm. class trees. The 30 cm. class trees will reach 50 cm. class in 25 years. For facility and allowance for further augmentation of exploitable residual volume to approximate that of the exploitable virgin volume, we take *30 years as the first cutting cycle* for cutting the virgin forest. *The remaining period* (60-30) or *30 years will be for cutting the residual stands.*

4. *Prediction of diameter and volume of residuals 30 years hence.*—We now predict the volume of the healthy residuals using roughly 25% as further loss by mortality (as also indicated by data from the sample plots):

Table 4

Diameter Class Cms. (1)	No. of Trees (2)	Average No. of survival at 25% mortality (3)	Diameter reached 30 years hence (4)	Average No. of Logs per tree (5)	Average Volume per tree (6)	Total Volume Cu.M. (7)
30	8.3	6.2	55	3.0	2.87	17.79
40	5.8	4.4	70	3.5	5.49	24.16
50	4.8	3.6	90	3.5	9.52	34.27
60	3.1	2.3	105	4.0	15.00	34.50
70	.9	.7	115	4.0	18.22	12.75
Total	22.9	17.2				123.47

NOTE: Data under Column (2) are from Table 3; Column (3), roughly determined from data on mortality in sample plots; Column (4), derived from Growth Table; rounded to facilitate volume computations.

5. *Effect of cutting trees at certain diameters on the residual cut.—*

Table 5

Diameter Class Cms. (1)	LEFT AFTER LOGGING AND EXPECTED SURVIVAL 30 YEARS HENCE											
	If 50 cms. & up are removed			If 60 cms. & up are removed			If 70 cms. & up are removed			If 70% of 70 cms. & up are removed		
	No. of Trees (2)	Dia. reached (3)	Vol. Cu.M. (4)	No. of Trees (5)	Dia. reached (6)	Vol. Cu.M. (7)	No. of Trees (8)	Dia. reached (9)	Vol. Cu.M. (10)	No. of Trees (11)	Dia. reached (12)	Vol. Cu.M. (13)
30	6.2	55	17.79	6.2	55	17.79	6.2	55	17.79	6.2	55	17.79
40	4.4	70	24.16	4.4	70	24.16	4.4	70	24.16	4.4	70	24.16
50				3.6	90	34.27	3.6	90	34.27	3.6	90	34.27
60							3.1	105	34.50	3.1	105	34.50
70										.7	115	12.75
Total	10.6		41.95	14.2		76.22	17.3		110.72	18.0		123.47

NOTE: Data under Column (4), (7), (10) and (13) are taken from Column (7) of

2. Trial Annual Cuts in Virgin and Logged-over

Table 6

Diameter Class Groups (1)	Virgin cut 1st 30 yrs. Per Hectare (2)	Virgin cut 1st 30 yrs. In annual cutting area 333 Has. (3)	Logged-over cut 2nd 30 yrs. Per Hectare (4)	Logged-over cut 2nd 30 yrs. In annual cutting area 333 Has. (5)	Total cut in 60 years (6)
50 cms. & up	205.67	68,488.11	41.95	13,969.35	82,457.46
60 cms. & up	176.97	58,931.01	76.22	25,381.26	84,312.27
70 cms. & up	137.48	45,780.84	110.72	36,869.76	82,650.60
70% of the 70 cms. trees; 80 cms. & up	124.99	41,621.67	123.47	41,115.51	82,737.18

NOTE: Data under Colmun (2) are from Colmun (3), Table 2;
Data under Column (4) are from Volume totals under Column (4), (7), (10) and (13), Table 5.

6. *Analysis and choice of size groups to be cut and to be left.*—It will be seen from the above table that a drastic reduction of cut in the second cycle will result if in the virgin logging all the exploitable trees 50 cms. and up in diameter are cut. It is necessary to leave higher diameter class trees so that a gradual adjustment can be effected. The lower the diameter class group cut in the virgin forest, the less will be the volume of residuals available in the second cycle. Cutting the 70% of the 70 cm. trees and 80 cms. and up group will give a residual cut of 41,115.51 cubic meters which is nearer to the annual cut of 41,621.67 cubic meters in the virgin forest. *Therefore, we allow to be cut this size group and require by marking the leaving undamaged a minimum of 60% of the trees in the lower class groups (30-70 cm. diameter classes).* The allowable annual cut should be the average of 41,300 cubic meters roughly. To cushion the transition, if the virgin annual cut found for the last size class group is considerably higher than that for the residual or logged over cut, the allowable annual cut in the first cycle may be gradually decreased until it will be equal to the annual cut in the logged over. Deduction should be made for natural defects, say 20%, thus reducing our first calculation to (41,300 — 8,260) or 33,040 cubic meters. If the present annual cut is substantially more or less than the foregoing determined annual cut, the same should be gradually adjusted annually or periodically to the determined cut, depending on market conditions.

The annual cutting areas in the second 30 years cutting cycle should be worked in the same sequence as in the first 30 years cutting cycle, so that the expected volumes, more or less, will be cut. (In actual operation, the annual cutting areas are not uniform as in our example; they will vary depending on volume per hectare and site quality).

Check of the Annual Cut with Those Determined by other Methods

1. Annual cut by this method — 41,300 cu. m. (gross)
2. Annual cut by growth per cent: — 2.9% (based on basal area 20-70 cm. dia.)
   Annual cut = 136.46 cu.m. (from Table 2) × .029 × 10,000
   = 39,573 cu.m. (gross)
3. By Brasnett's method:

$$\text{First Felling Cycle (F.C.)} = \frac{\text{60 years, the period of adjustment}}{1 + \frac{\text{Volume of residual stand per Ha.}}{\text{Volume of permissible cut per Ha. Now (in virgin forest)}}}$$

$$= \frac{60}{1 + \frac{123.47}{124.99}} \quad \text{(from Col. 7 Table 4)}$$

$$= 60/1.99 = 30 \text{ years}$$

$$\text{Second Felling Cycle (F.C.)} = 60 - (30) = 30 \text{ years}$$

$$\text{Annual Cut, Virgin forest} = \frac{124.99 \times 10{,}000 \text{ Has.}}{\text{First F.C.}}$$

$$= \frac{124.99 \times 10{,}000}{30} = 41{,}663$$

$$\text{Annual Cut, Residual forest} = \frac{123.47 \times 10{,}000 \text{ Has.}}{\text{Second F.C., 30}}$$

$$= 41{,}157 \text{ cu.m.}$$

$$\text{Average} = \frac{41{,}663 + 41{,}157}{2} = 41{,}410 \text{ cu.m. (gross)}$$

NOTE: Above is an adaptation of the formula.

(*Continued on page* 44)

Important Accomplishments During FY 1955-56

FELIPE R. AMOS
Director of Forestry

GENERAL STATEMENT

Every possible effort has been exerted to implement the policies and program of the Bureau, especially those on land classification, forest protection, & reforestation, not withstanding inadequate appropriation and personnel. To facilitate land classification work, 40 field teams have been sent out to various parts of the country. In protection work, the Bureau has been preoccupied with a vigorous campaign against fire, kaingin and other destructive agents. A campaign to eliminate destructive logging has been started with the adoption of more scientific cutting practices by "selective logging." Reforestation work is being done in critical watersheds, denuded areas, open grass lands, sand dunes, and logged-over areas, in order to regulate surface run-off, minimize floods, prevent soil erosions, replenish timber supplies and eliminate breeding places of locusts. The concept of tree farm lease has been adopted with a view to hastening the reforestation of denuded and barren areas and to accommodate people clamoring for lands to till and to increase production of essential crops. Research and studies have been intensively began on silviculture, forest influences, forest management, forest protection and forest grazing. Studies have also started to find ways and means of improving the quality of woods and to discover useful uses to which forest by-products may be put into.

SAWMILLS $ LICENSES

Activities	FY 1955-56 (Accomplishments)	FY 1956-57 (Goal)	Expectation
Timber licenses issued	1,408	1,870	More
Area covered in Hectares	3,606,000	4,571,000	More
Annual allowable cut	6,245,000	6,678,000	More
Minor Forest Products licenses	1,543	1,750	More
Area in Hectares	1,085,082	1,200,000	More
Forest charges	₱313,566.00	₱330,000.00	More
Gratuitous licenses	8,942	10,000	More
Permits to transport Protected Wild Plants	622	700	More
Sawmill Permits issued	438	440	More
Fees collected	₱104,150.00	₱105,000.00	More
Lumber Production	378,935,000	400,000,000	More
Scaling:			
Amount of timber manifested	4,301,353 cu.m.	4,600,000 cu.m.	More
Amount of Forest Charges	₱4,524,660.00	₱4,700,000.00	More
Amount of Reforestation Fund	₱1,690,423.00	₱1,780,000.00	More
Lumber Inspected (board feet)	714,220,391	765,000,000	More
Fees collected	₱818,705.00	₱1,500,000.00	More

REMARKS

There has been an increase in the number of licenses and permits issued. The year 1955-56 may be called "logging boom" because of the apparent influx of applicants for

timber concessions. The big demand for logs and lumber has sparked interest in the development of our forest resources. More scalers and lumbe inspectors will be trained to cope with the increasing volume of work. In the exploitation of forest resources, the Bureau has and will always see to it that protection and conservation measures are strictly observed.

REFORESTATION

Activities	FY 1955-56 (Accomplishments)	FY 1956-57	Expectation
Area of reforestation surveys (Has.)	11,280	12,000	More
Area needing reforestation (Has.)	8,112		
Seedlings raised in forest nurseries	7,354,000$	6,000,000	Less
Seedlings set out	3,160,000	4,000,000	More
Seedlings distributed	751,000	1,000,000	More
Area reforested (Has.)	4,289	5,000	More
Total area of forest plantaions (Has.)	18,384	Progressive	
Cinchona bark collected (kilogram)	5,000	1,500 (Kilos)	Less
Cinchona bark in stock (kilogram)	104,721		
Areat planted to Cinchona (Has.)	2.9		
Area planted to Cinshona Trees (Has.)	381.12	4	Less

REMARKS

The number of seedlings raised has decreased due to the expansion of direct seeding system. In order to encourage planting through private initiative, more and more seedlings have been distributed. There are now 39 reforestation projects in the country including the cinchona plantation, 15 provincial nurseries and one city forest nursery.

SELECTIVE LOGGING & TIMBER INVENTORY

Activities	FY 1955-56 (Accomplishments)	FY 1956-57	FY 1956-57 Program & Objectives
Continued Administering Management of two mnagement plans	59,000 Has.		1. Intensify selective logging in 36 license areas — 469,000 Has.
Inspection of license operations	514,000 "		2. Prescription of initial regulation — 959,000 Hrs.
Improvement in selective logging	218,300 "		3. Organization & traning of forestry crews of licenses under selective logging — 469,000 has.
Selective Logging Seminar	20 Dist. For.		4. Goal (Inventory) 200,000 Has.
Inventoried	164,480		

REMARKS

Selective logging is a new practice in our our country. Seminars were held to acquaint field personnel with the practice. This is essentially a field job on the ground. Lack of experienced men necessitates training.

$—Including the 5,632,453 seedlings on
—hand at the beginning of the fiscal year
—The total would be 12, 986,453 seedlings.

Concessionaires can cooperate thru training of forestry crews, Timber inventory is neccessary in preparation of management plans and to update our forest statistics. Ground survey timber inventory is slow and tedious but with the use of aerial photogrametry, accomplishments can easily be increased with less time consumption.

LAND CLASSIFICATION

Activities	FY 1955-56 (Accomplishments)	FY 1956-57 (Goal)	Expectation
Classified alienable & disposable	372,292 Has.	539,738 Has.	More
Classified timberland	428,772 "	693,304 "	More
Total	801,064 "	1,233,042 "	More
Area Certified alienable & disposable	434,178 Has.	509,104 Has.	More
Area Certified timberland	385,467 "	458,060 '	More
Total	819,645 "	967,164 "	More

REMARKS

Priority is given to regions within the road development projects and to those which are requested for immediate settlement. The forty field parties of three men each are distributed as follows: 25 in Mindanao, 9 in Luzon, 4 in Visayas, and one in Mindoro & Palawan. Decrease in field work has been registered due to reduction in authorized expenditures especially for wages and traveling expenses and late release of funds every quarter. The purpose of land classification is to release all areas profitable for agricultural purposes and to delimit and set aside permanent forest lands.

FOREST LAND USES

Activities	FY 1955-56 (Accomplishments)	Program & Objectives
Special uses applications	7,807	1. Disposal of pending applications for multiple uses of forest lands pending final action.
Hectares	586,045	
Special uses permits	2,359	2. Issuance, renewal and/or cancellations of special use permits and lease.
Hectares	106,907	
Collection	₱145,704.71	
Land registration cases	1,347	4. Disposal of land registration cases.
Hectares	116,544	
Private Woodland registration	135	5. Campaign to minimize illegal kaingin.
Hectares	13,500	
Forest Claims (challenged)	21	
Illegal kaingin detected	2,381	
Hectares	3,547	
Forest fires 60	690 Has.	
Area Projected	1,070,000 "	
Forest blocks established 49	44,544 "	
Look-out stations established	72	

REMARKS

The concept of three farm lease has been adopted to encourage the reforestation of denuded & barren areas, thru private initiative, and to accommodate landless people and to increase production of important crops. Still in the upward trend is the receipt of applications for tree farm permits. As of December 1956, there were over 4,000 applications received and presumably this might double up in the next six months.

FOREST RESEARCH

Activities	FY 1955-56 (Accomplishments)
No. of studies started	29
No. of studies started in previous years & still in progress at the beginning of the period	14
No. of studies conducted	43
No. of studies completed	6
No. of studies in progress at the end of the period	37
Sample plots established	110
Sample plots established in previous years	88
Sample plots in existence at the end of the period	198
No. of sample plots remeasured	48
No. of sample plot to be established	75
No. of old sample plots to be remeasured	100
No. of new research projects or studies to be undertaken	20
No. of studies expected to be completed	8
Continue observation in 37 old projects in progress	

REMARKS

Priority is given to the establishment of sample plots for gathering data on growth of trees and yields of stands, which are basically essential in the preparation of management plans aimed at building up forest values and attaining a high degree of continuous forest productivity or sustained yield. Many of the studies must of necessity be conducted in the forest. The solutions to many of the problems in f orest management call for long-range experimentations. There are five Forest Expermeint Stations.

LOOKING THROUGH...

(Continued from page 29)

however, before the library may be considered adequately furnished.

—The Photography Section—

Mr. Regino Gonzales, the scientific photographer, showed the group lenses, films, cameras of different sizes, and other photographing apparatus that are used to take pictures of wood samples before they are cut into different specimens; copies of bulletins and graphs; and to make photographs through the microscope of wood fibers and wood sections, thus making available to the unaided eye what the microscope shows to the investigator.

—The Forest Pathology Section—

The last section the group sees in the main building is the Forest Pathology section where Prof. Emiliano Roldan, the section chief, bids them welcome. He points out the apparatus which he said constitutes the minimum basic requirement of a wood pathology laboratory.

According to Prof. Roldan, the primary objectives of this section are to tackle and solve various problems caused by wood destroying and wood staining fungi in timbers, lumber, finished wood products. Wood users suffer heavy losses from such deterioration each year. The purpose of these studies is to gain knowledge and information on how to preserve the brightness or prolong the life span of these materials so that they may be of longer service to their users.

(To be continued in the next issue.)

I do not know what I may appear to the world, but to myself I seem to have been only like a boy playing on the seashore, and diverting myself in now and then finding of a smoother pebble or a prettier shell than ordinary whilst the great oceans of truth lay all undiscovered before me.

—Isaac Newton

The Story of the Felipe R. Amos Tree

By

DR. CARMEN L. PARRAS
(Former Forestry Muse)

There was a telephone call from Malacañang for Forester Felipe R. Amos, at the time Division Forest Inspector of the Bureau of Forestry. This happened in the morning of January 16, 1954, during the early administration of President Magsaysay.

The call was for Forester Amos to take his oath of Office before the President as newly appointed director of the Bureau of Forestry. The ceremony was simple with the presence of prominent people, friends and Bureau employees except Mrs. Amos who failed to attend the rite in the exaltation of the husband.

The "Felipe R. Amos Tree" is a gift from heaven. It has grown out of a santol seed thrown in the premises of the Forestry Building by a lady employee at noon at recess time after dinner in November, 1953. It was nursed then by nature for a month or two until accidentally noticed for recognition.

After Forester Amos left his Office in response to the Malacañang call, Forester Vicente Parras hurriedly went around to catch a jeep for the occasion of oath-taking. As Forester Parras passed the premises, he stumbled and stepped on the SANTOL seedling eight inches high, with three tiny leaves. After fixing the young plant straight with two stones at the base, Forester Parras left with request to watchmen to take good care of the potentially significant young tree, the only plant life in the premises of the Bureau of Forestry Building, Manila, and the only living memento to an achievement.

This is the story of the "Director F. R. Amos Tree", baptized with permission, which tree developed from a tiny seed and has grown up to a height of 57 inches on January 16, 1957, the third Anniversary of Director Amos as Head of the Bureau of Forestry, a complete three years' time, reflecting struggle and survival for life itself.

View of the Entrance of the Reforestation Nursery of the NALCO. Note that this group of men that posed with Forester Macabeo and Ranger Antonio are regularly assigned to plant seedlings on cleared areas around abandoned spar trees.

Typical stand of virgin timber on the NALCO concession areas where selective logging is applied.

The Implementation of Selective Logging

By
TIBURCIO S. SEREVO
Chief, Forest Management Division
and
MARTIN R. REYES
Forestry Supervisor II
Bureau of Forestry

Last fiscal year, we had in force 1,408 timber licenses covering 3.5 million hectares of forest areas. A large part of these areas are public forests. The licensees removed about 4.1 million cubic meters of timber and had correspondingly logged about 30,-000 hectares. At this rate of area logged with the general practice of leaving understocked or bare logged-over areas in the process of removing the marketable timber, we face the prospect of short supply of timber after the virgin forest will have been logged off. We will face as a consequence a drastic diminution of the lumber industry and other wood industries, because such areas will not contain enough growing stock for the succeeding cuts. We will face also the prospect of losing our wood market abroad for not having in the future sufficient stands of the Philippine Mahogany which has already a well-established foreign demand.

Such areas will lose their effectiveness to control and store water and protect the soil. The 3-1/2 million hectares will become an added problem of artificial planting in matters of success and cost.

To avert these prospective consequences. the government will see to it that within its limited means, henceforth, adequate residuals trees are left after logging. Control of logging through tree marking and use of proper methods and equipments; application of appropriate cutting rules; organization and training of forest officers and licensees' crews; fixing of definite areas of responsibility; inspection and supervision; and application of appropriate regulatory measures, are being undertaken for pursuing this determination. These, in a nutshell, are the ways and means of the selective logging program.

As a duty of the timber licensees and as a responsibility of the Bureau of Forestry, selective logging is a "must". To timber licensees who are geared to permanency of their business, this practice is a necessity. It is the surest and cheapest means of re-stocking our forests. Fortunately, the major portion our forests is suited to this system.

By "selective logging", we mean the removal of mature, over-mature and defective trees in such a manner as to leave uninjured an adequate number and volume of healthy residual trees of the commercial species and other tree species necessary to assure a future crop of timber and forest cover for the protection and conservation of soil and water. Adequate stands that we have in mind is a stand composed of uninjured young trees left as a result of exercising care by using the suitable techniques and equipments, commensurate with a fair margin of profit. At the outset, we do not require drastically that all immature trees shall not be destroyed. In fact, a part of the residual stand has to be sacrificed. As a start, we require, in general,

to be left in the logged-over areas a minimum stand of 60% of the number of trees in the 30 centimeter to 70 centimeter diameter group in the proportion that the stand structure will allow in the dipterocarp forests which constitute the major portion of our forests. Where the trees are predominantly in the merchantable diameter classes, at least some of the trees, the most vigorous (thrifty) ones, shall be left undamaged, the number to be not less than 40% of the entire stand (all trees 30 centimeters and over in diameter.)

This starting minimum requirement in dipterocarp forests is based on our experience in Basilan where we have been managing the forest there under an initial working plan for the last three years. Supervised logging studies and some growth figures there indicate that such a stand can be saved and may be capable of giving sufficient volume for a profitable second cut after 30 years. This period is tentatively adopted as the cutting cycle or the time elapsing between successive cuts in the same cutting area.

These young trees consist of poles and standards. We have not included young reproduction (saplings and seedlings) in the minimum percentage to be left undamaged, because they are in greater number and many of them can be saved along with the saving of bigger-sized trees.

For the pine and other types of forests and for objects of management other than sawtimber, some modifications will be made as to the diameter bases and percentage of minimum requirements.

Let us, at the outset, disabuse our minds of the short-sighted notion that there is no worry about replenishing the forest because plenty of reproduction comes out after uncontrolled logging. We should consider the objective of continuity of operation which could not be possible in most license areas where the virgin forest will be finished before seedlings now in the area will have matured eighty to a hundred years hence. Such license areas direly need bigger-sized trees but below exploitable diameter for residual growing stock.

Hence, the object of our program is to assure that adequate residual stands are left standing after logging.

Tree Marking and Improved Logging Techniques. — If there were no considerable damages in the process of felling and removal of mature trees, the trees uncut would be sufficient for a residual growing stock. However, the big and wide-spreading crowns of dipterocarps, the rough terrain encountered and carelessness of loggers concerned only with log production result in destruction or injury to the uncut trees. Therefore, it is necessary to control logging operations.

(1) Tree marking. — The method of controlling cutting is tree marking. As fast as possible, we will staff lumbering districts with especially trained men to initiate, guide and direct tree marking in logging areas. The loggers' attention should not be only on the logs to be removed but also on the trees desired and marked to be saved. These trees should be the object of "reverence" by the loggers. The advantage of marking trees to be left during this initial period are threefold: (1) to familiarize loggers on the kind, condition and quality of trees needed for residual growing stock; (2) by numbering the trees that are marked and recording species and estimated diameter and number of logs of each tree, the taking of inventory of residual growing stock for the purposes of forecasting future crop yields is facilitated; (3) the inventory of damaged marked trees for the basis of regulatory fines is also facilitated.

Tree marking is done by trained forest officers with the help of licensee's or company's crew. It is guided by the minimum requirements of residual stand. After determining the proper location of spar trees in consultation with the logging foreman and knowing the number of trees that will be marked as residual trees by the sampling method, actual tree marking in the setting commences, keeping in mind the following:

a. Staking of proposed cableways shall

be done before marking in high-lead settings so that trees desired to be left in these cableways shall not be marked.

b. In high-lead set-ups, top and side of ridges, especially if the ridges originate from the spar tree, marking of residual trees is heavily made.

c. On creek and gully bottoms to be used as main haul cable roads, marking of trees is minimized or nil.

d. In planned cableways other than creek or gully bottoms, residual trees need not be marked. The width of these cableways shall be kept to the minimum necessary for the passage of end-choked logs.

e. In tractor settings, trees to be left should be confined between proposed skidding trails.

f. The number of trees marked in the setting is given to the felling and yarding capatazes so that they will know the goal of trees to be saved by their crews in each cutting area.

A competent forest officer judges and and tallies the trees and is helped by one or two of the licensee or company men experienced in felling and skidding.

(2) Felling techniques and equipments found so far effective in minimizing damages are as follows:

a. Because of the tendency of fallers to follow the line of least resistance, felling is done following the lean of trees. However, in order to avoid injuries to the residual stand, leaning trees can be felled in three (3) directions other than the lean by leaving an angle-shaped uncut wood section which "pulls" away the trees from their leans when they fall. This uncut section serves as a hinge that throws the tree in the direction desired to avoid hitting trees for residual growing stock.

b. An erect and evenly-crowned tree can be felled, in a windless day, in any desired direction, hence the direction of fall can be in places where damage to the residual will be least.

c. Trees heavily branched or with forked branches on one side can be felled, like leaning trees, in any direction within a quarter-circle on either side of the tree to avoid injuries to marked trees.

d. Felling wedges shall be used for effective control of direction of fall of big trees to save residual trees. Licensees must equip each pair of fallers with at least two (2) felling wedges.

e. In high-lead set-ups, trees to be cut shall be felled diagonally to the contours (preferably towards the spar tree) and be accessible to yarding cables in creek and gully bottoms to prevent too much sweep of logs. Creek and gully bottoms, if they originate from the spar trees, shall serve as cableways. As much as possible in other cable roads, should the position of standing trees warrant, trees should be felled parallel or diagonal to said cableways.

f. Trees shall be felled away from residual trees and clumps of young forest growth and not into or across such clumps.

g. In tractor set-up, as much as possible, felling of trees to be cut shall be done perpendicular to the main tractor roads. This facilitates the pulling out of logs to the tractor roads and avoid si-washing around or sweeping down marked trees or groups of young trees.

At present in most felling operations, the felling damage is great, as much as 15% of the entire stand. This could be reduced to 10% and even lower.

(3) Yarding and skidding techniques. — Yarding techniques tried and found so far to be effective in minimizing damages are the following:

a. To prevent destruction on promontory ridges and slopes, bullblock placed at the middle of the half-moon's loop should be used. This will save young trees on the slope from being wiped out during yarding due to the downward sweeping force of the uncontrolled logs being yarded.

b. To reduce the number of cableways in a set-up, extended chokers should be used to reach isolated logs felled between major cableways. Rub trees of non-commercial species must, however, be used as

shield of residual crop trees from being swept down or severely injured.

c. To minimize the maximum rolling of logs in side-hill yarding, logs shall be strategically placed along cableway on slope and infront on the cable side of marked trees to guide logs and shield marked trees along the cableways.

d. In tractor set-ups, skidding shall be confined to skidding trails and backtrip trails previously laid as straight as possible yet avoiding clumps or groups of residual trees and forest growths in going to and from the landing instead of letting tractor operators penetrate the set-ups in any direction they desire which results to more trees damaged in the many paths.

e. Areas of level to moderate topography comprising not less than 5 hectares shall not be logged by high-lead.

f. Compensation shall be made for designated trees to be left that maybe found later to be unavoidably damaged by equivalent undesignated trees.

Equipments. The kind and power of yarding and skidding equipments have much to do in the extent of damage to the residual stand. The use of steam engines is not favored because of the sudden impact of power at the instant of the throttle. They use the power of the engine to overcome obstructions most of which are the standing trees we want to save. Diesel engines which develop power steadily are preferred in high-lead yarding as it is easier to control the speed of yarding cables when trees on the way are to be avoided. These engines should of course have as low a power as possible. One hundred fifty (150) effective horsepower is set as the maximum allowed in yarding, to begin with. Observations have shown that more than this power will cause greater destruction. In swinging, more than this power can be used, provided the system lifts the log entirely off the ground while in transit to the head spar tree.

Possible other Techniques and Equipments that may be developed. With their ingenuity, loggers could adopt or develop other techniques that are just as or more effective than those described. For example, we may return to the old system of ground-lead yarding with the use of more bull-blocks as a good means of controlling the logs in transit. A hybrid of the WYSSEN and TYLER systems may be developed whereby the carriage can be used at intermediary points along the skyline for yarding on both sides of the skyline. By this prospective method, side-sweeping of trees towards the head spar trees can be minimized.

Right-of-Way Clearings. — Clearings along right-of-way for logging roads can be a source of much unnecessary loss of young trees, especially on rough country where long winding roads and big cuts are necessary to reduce the grade. Aside from the roadbed, logging operators want to totally clear wide strips on both sides of the road for sun-drying the road. This is resorted to by loggers who do not or cannot construct their roads well in advance of yarding operation and are thus forced to use prematurely ill-surfaced roads. This practice should be discouraged. The Bislig Bay Lumber Company in Surigao where there are heavy rains have narrow or no clearings along main roads, because they construct ahead, surface and drain well their roads. We limit such clearings within the roadway and require selected thrifty trees to be left uninjured on the remaining width of the right-of-way. The right-of-way shall not be more than 15 meters on each side from the center line of the road.

Authority and orders from licensee or official of company to logging crews. — One of the important requisites for the success of selective logging is for the licensee or head of the company to give written orders to logging keymen and workers to adopt the logging techniques and equipments necessary for saving trees for residual growing stock and other measures which the timber management officers will from time to time suggest. For the licensees' forestry crew, this should include a set of instructions em-

bodying marking rules prescribed by the Bureau of Forestry. The licensee or head of the company should accordingly give written authority to the manager, thence to logging superintendent down to the head of the forestry crew (working side by side with forest officers) to require logging crews to apply such techniques, equipments and other measures to save residual trees from destruction and injuries. There must also be an order from the licensee or proper official of the company to all logging men to follow suggestion of timber management officers and head of forestry crew.

A great incentive of saving more residual trees is the awarding of bonuses to loggers for leaving certain excess of the desired number of residual trees for each setting and imposition of penalties for shortage of or carelessly damaged residual trees in the course of felling and yarding.

Forest Officer's Responsibility. — District foresters are forest managers of their districts and they are held responsible for the observance of selective logging in their districts. We are gradually re-enforcing them in the order of activity and extent of license areas covered with specially trained forest officers who shall be responsible among others, for (1) training forest officers in tree marking and residual inventories, (2) organization and training of licensees' forestry crew, and (3) supervision and checking of logged-over areas as to adequacy of residual stands. Officers in Charge of stations properly trained shall be assigned definite areas of responsibility for selective logging.

Training. — A training program for timber management assistants is being conducted in Basilan City where we have the first dipterocarp forest working circle managed under a working plan. The District Foresters of Zamboanga del Sur, Agusan, Cotabato and Surigao are already provided with specially trained men for timber management. Closer supervision of licensees' operations are conducted in these districts. The other lumbering districts will be provided with timber management assistants as quickly as possible. We will soon conduct a workshop-seminar for forestry crews of important timber licensees in Agusan and for officers in charge who are timber management officers of their respective jurisdiction. We will have a siminar workshop-seminar in other lumbering regions as soon as we will have staffed these districts with timber management assistants.

Inspections. — In order to insure that adequate stands are left, a system of inspection and checking is conducted. The timber management assistant has the duty of inspecting all logged-over areas as to whether or not the desired residual stand have been left. He will be responsible to the district forester. He shall have authority to stop on the spot a phase of logging operation which, if continued, will cause serious and extensive destruction of residual stands. The Officers in Charge of stations who are also timber management officers are responsible for adequate stands left in the license area under him. Five forestry supervisors stationed at strategic places shall have overall supervision over timber management assistants through the district forester in their respective regions. The forestry supervisor for timber management plans and selective logging in the Manila Office shall coordinate and check the work of supervisors; he shall also see to the coordination of selective logging and management plan operations to achieve sustained yield for specific forest tracts.

Penalties. — We rely on the licensees to do their part, because after all, their operation ultimately is responsible for the kind and condition of the forest left after logging. Until the logging crews will have been accustomed to doing good practices, they are likely to continue on their careless practices. Hence, certain regulatory penalties will have to be applied. Among these are the following:

a. A fine of four times the regular forest charges on trees designated to be left as

(*Continued on page* 82)

(*Continued from page* 34)

Our estimate of annual cut is approximate those by the other two methods shown above. The growth per cent method is less favored for the present due to the variations of the number of healthy residuals. The growth per cent should be applicable where there is not much change caused by damages to immature trees in the course of logging.

The advantage of this crude method (adjusting virgin cut to residual cut) is that the annual cut is correlated directly to diameter class groups. This fits the selective logging practice in the dipterocarp forests where injury to thrifty trees is a primary factor in the volume of the second cut.

Application and Limitation

The table and demonstration can be used as a rough guide in checking up sustained yield capabilities of license areas in Basilan, so that proper adjustments could be made to assure a continuity of operation. When more refined statistical analysis will have been worked out and more reliable data will be available by subsequent measurements, this table will have to be changed and re-evaluation shall be made.

It may be used for doing the same in other regions having similar or approaching the forest conditions of Basilan. For other regions, the growth data presented here may be applied meantime that growth data is not yet available in those regions. However, they should be used only as an index by the use of a factor, such as the ratio of the stand or volume per hectare of a region to that of Basilan. Such ratio should be applied to the predicted volume of healthy residuals using the Basilan Growth Table to get the predicted volume of another region. This table used with the stand structure and distribution in virgin and logged over areas is very essential in the formulation of marking guide.

Possibilities

It may be possible that the period of adjustment may be shortened by more trees saved from injuries in the course of logging and by more intensive silvicultural treatment of the residual stands. A few isolated trees observed and proved by records reach certain diameters in shorter time than as shown in the table.

In the third cycle, by indications, a greater volume per hectare will be realized. It is in this and second cycles where the forest manager will have easier manipulation of the stands to suit the proper arrangements as dictated by silviculture and utilization.

Giving yourself, learning to be tolerant giving recognition and approval to others, remaining flexible enough to mature and learn—yields happiness, harmony, contentment and productivity. These are the qualities of rich life, the bounteous harvest of getting along with people.

—Jack C. Yewell

Faculty

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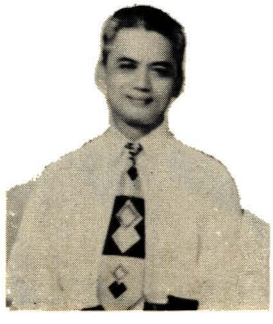

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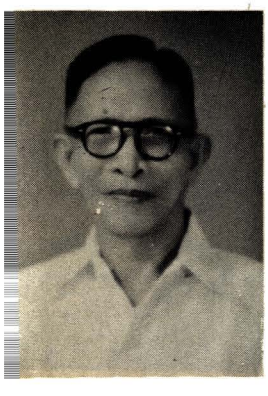

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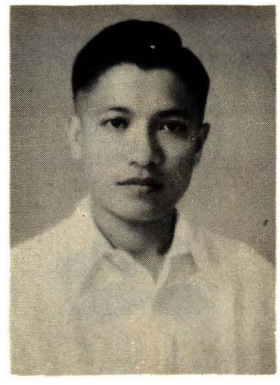

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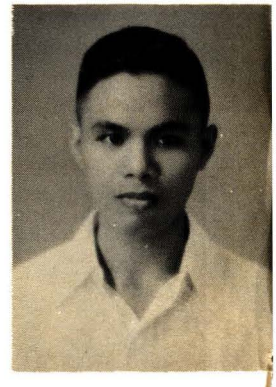

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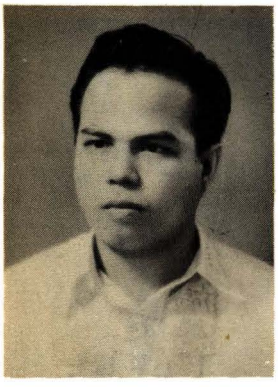

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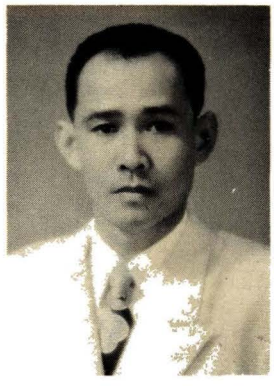

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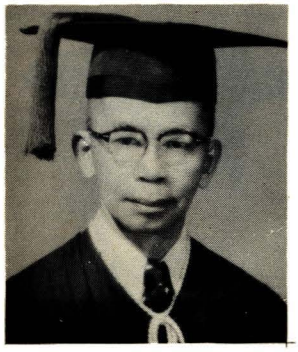
Asst. Inst. in Dendrology
Asst. Inst. in Dendrology & Wood Technology

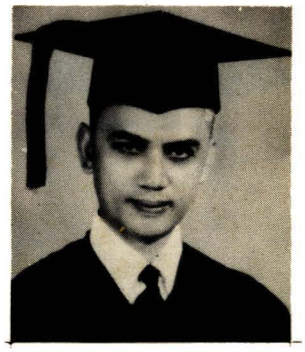
JESUSA TALEON,
BSE, U.P.
Instructor in Mathematics

SENIORS



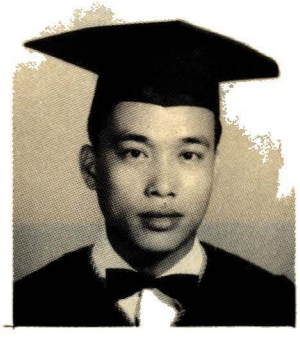
Prof. C. MABESA
Assistant Dean

Dir. FELIPE R. AMOS
Dean

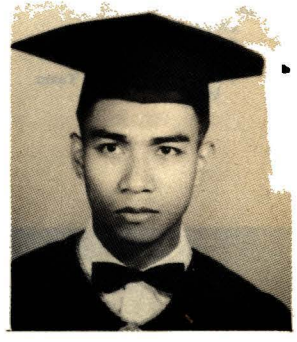


JOSE B. BLANDO
Adviser

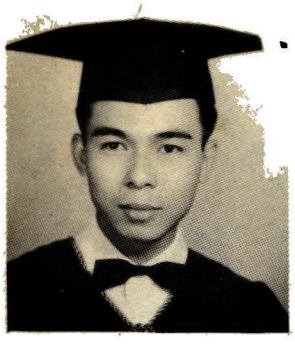
AQUILES G. ESBER
Bulan, Sorsogon



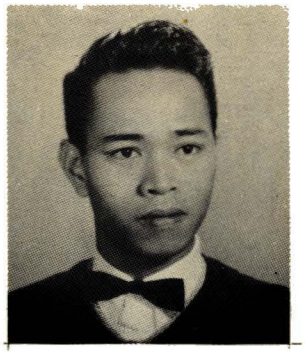
JOSE A. MENIADO
Balungao, Pangasinan
Vice Pres., SBO
2nd Semester, 1952
Executive Sec., ZETA BETA RHO, 1956-57
Editor, *Forestry Leaves*



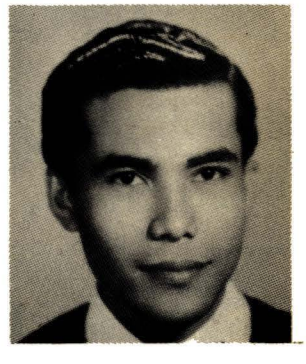
FRANCISCO D. MILAN
Aritao, Nueva Viscaya
Pres., Junior Class, 1955-56
Vice Pres., SBO,
2nd Semester, 1955-56
Junior Representative to the U.P. Student Council Organization, 1955-56



CHONGRAK PEICHINANDA
Subarnburi, Thailand
Treasurer, Senior Class
Member:
Penalonado Club
International Club
ZETA BETA RHO
U.P. Soccer Football Team



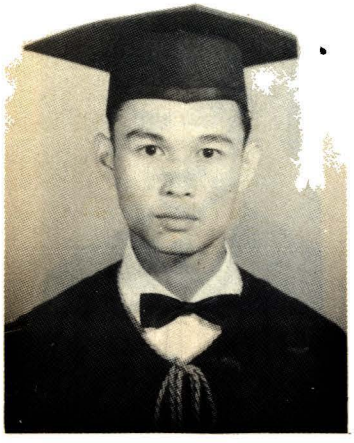
BERNARDO LONTOC PAREJA
Anos, Los Baños, Laguna
UPSCAN



SOMPHONG PACHOTIKARN
Bangkok, Thailand
Member:
ZETA BETA RHO
Pensionado Club
Football Team

Not pictured Lucio Quimbo
Zumarraga, Samar

SENIORS



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640 Rachawongso Road
Chiengmai, Thailand
Member:
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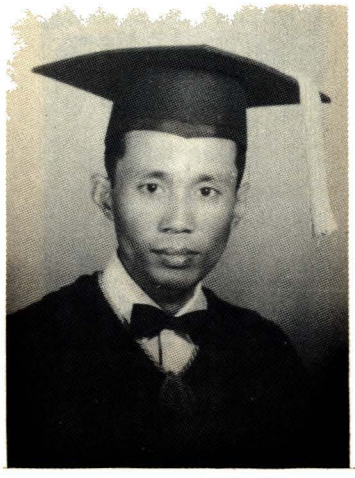
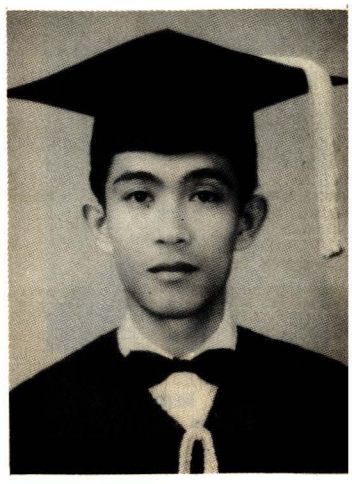
Students International Club
U.P. Varsity Soccer Team
UAAP

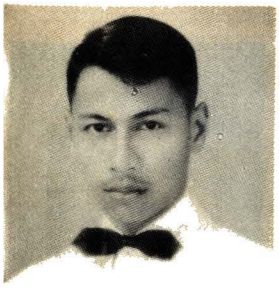


THAEW SINDHIPONGSA
Kasetsart University
Bangkok, Thailand
Auditor, Senior Class
2nd Semester, 1957
Member:
Forestry Soccer Team
International Club
Pensionado Club

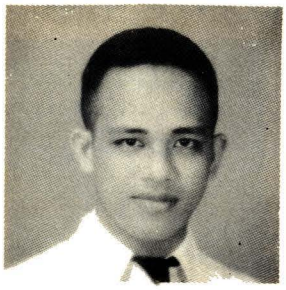


MODESTO TOBIAS
Sto. Domingo, Ilocos Sur
President, Forestry Student Body, 1955-56
President, Makiling Literary Club
President, Beta Sigma Frat (Forestry)
Business Manager, *Forestry Leaves*

Juniors



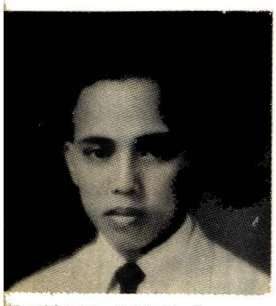
ANGELES, LEONARDO D.
Makati, Rizal
Activities:
UPSILON Sigma Phi
Zeta Beta Rho



CASTILLO, ROMULO A. DEL
Pañgil, Laguna

FLORES, VICENTA
Cabaruan, San Fernando,
La Union
Makiling Literary Club
FORESTRY LEAVES

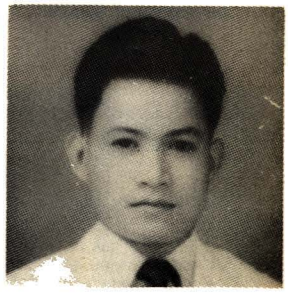
GERARDO, JULITA
Laoag, Ilocos Norte
UPSCA



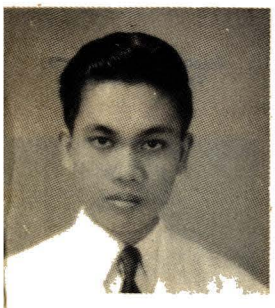
LAMANILAO, JUANITO *B.*
Butuan City
Forestry Leaves
U.P. Student Council
Rep. to Philippine Collegian

QUITOTES, RODOLFO M.
Bayombong, Nueva Vizcaya

REPRADO, BENEDICTO T.
Cordon, Isabela

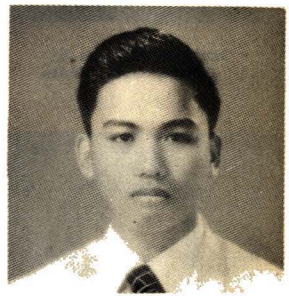


VEDAD, AZUERO T.
Gingoog, Misamis Or.
Zeta Beta Rho
UPSCA



VERACION, VICENTE P.
Ballesteros, Cagayan
President, Sophomore Class
Makiling Literary Club
Beta Sigma
Forestry Leaves

NOTE: There are three hundred and eighty students in the second semester in the College of Forestry, but only those with available pictures are included. Other pictures arrived late. Some graduating Rangers are classified juniors.

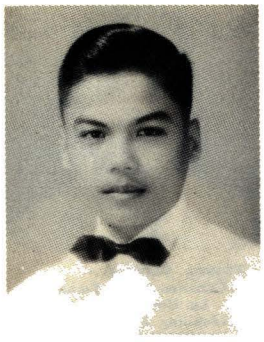


VILLAFLOR, ARMANDO
Infanta, Quezon

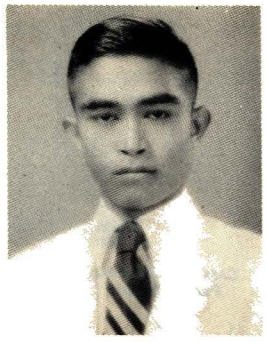
Silviculture Class excursionists at the Dining Hall of the Quirino Mansion at Vigan.

Sophomores

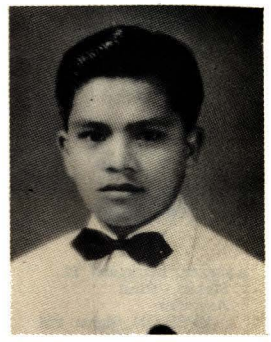
Dr. ARTEMIO MANZA
Adviser



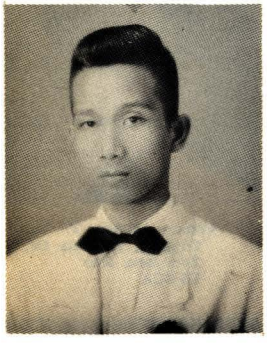
APOSTOL, OSCAR F.
Dagupan City



ACOSTA, RESTITUTO V.
18 Iba, Tarlac, Tarlac



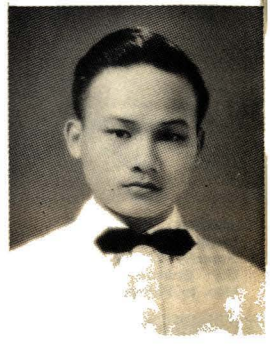
ALARCIO, RUFINO
Cabilaoan, Manaoag,
Pangasinan



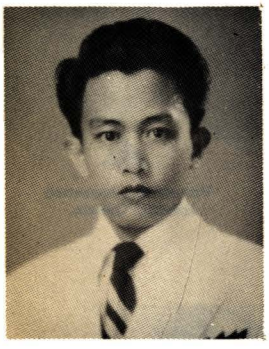
AGUSTIN, ADRIANO C.
Banna, Ilocos Norte

BERNARDINO, ERNESTO F.
Sto. Domingo, Bambang
Nueva Vizcaya

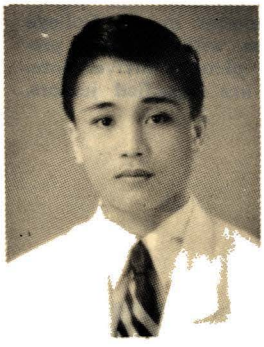
DORADO, RUFINO
Borongan, Samar
Cdt. Lieut. ROTC
Los Baños Unit



GABOT, VICTORINO G.
Tayug, Pangasinan

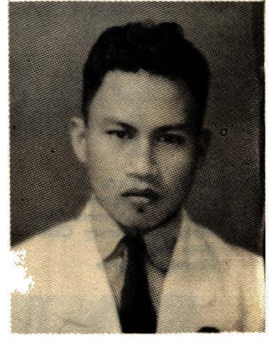


GALANG, MANUEL
Kiambing, Kiamba
Cotabato

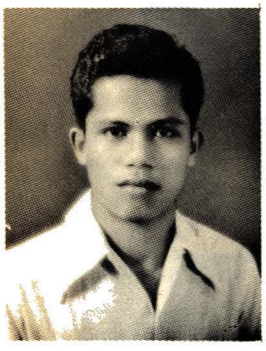


MARTIN, RICARTE A.
Bayombong, Nueva Vizcaya
UPSCA

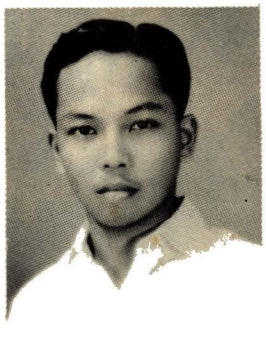
MOLINA, SEVERINO JR.
Alcala, Cagayan



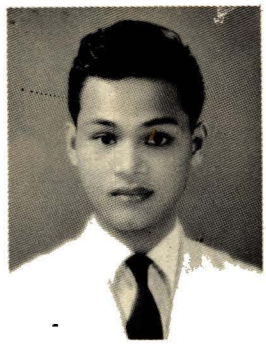
MOLINA, MARCELO M.
Santa Fe, Romblon



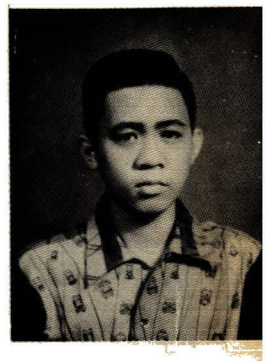
OBIDOS, CARLOS
Fabrica, Negros Occidental



OLEGARIO, DOMINADOR LL.
25 Arellano, Dagupan City



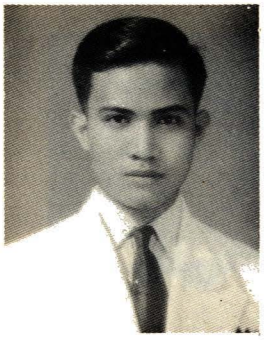
POQUIZ, ANDRES
San Carlos, Pangasinan



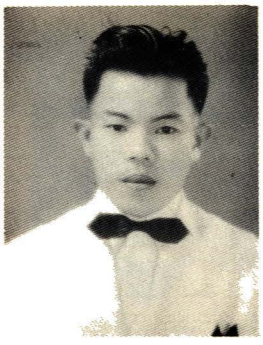
RAYALA, RUBEN
Sta. Ana, Manila

Sophomores

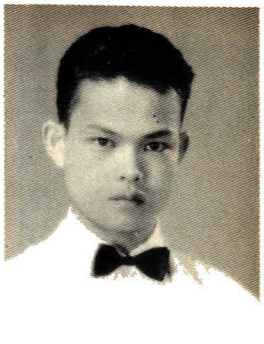
STA. ANA, JUAN B.
Pañgil, Laguna



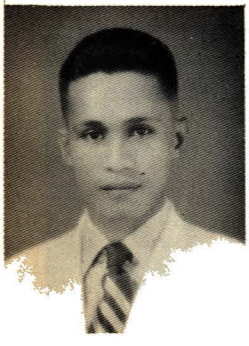
RODRIGO, WILFREDO
San Nicolas, Pangasinan



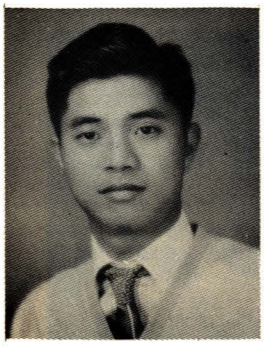
REYES, EMILIANO
Burgos, Ilocos Sur



TOLENTINO, MELCHOR C.
Tapulao, Orani, Bataan

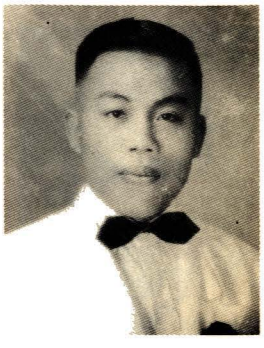


UDAÑGA, ANICETO G.
City of Cabanatuan
Member:
Softball Team
Volleyball Team
UPSCA

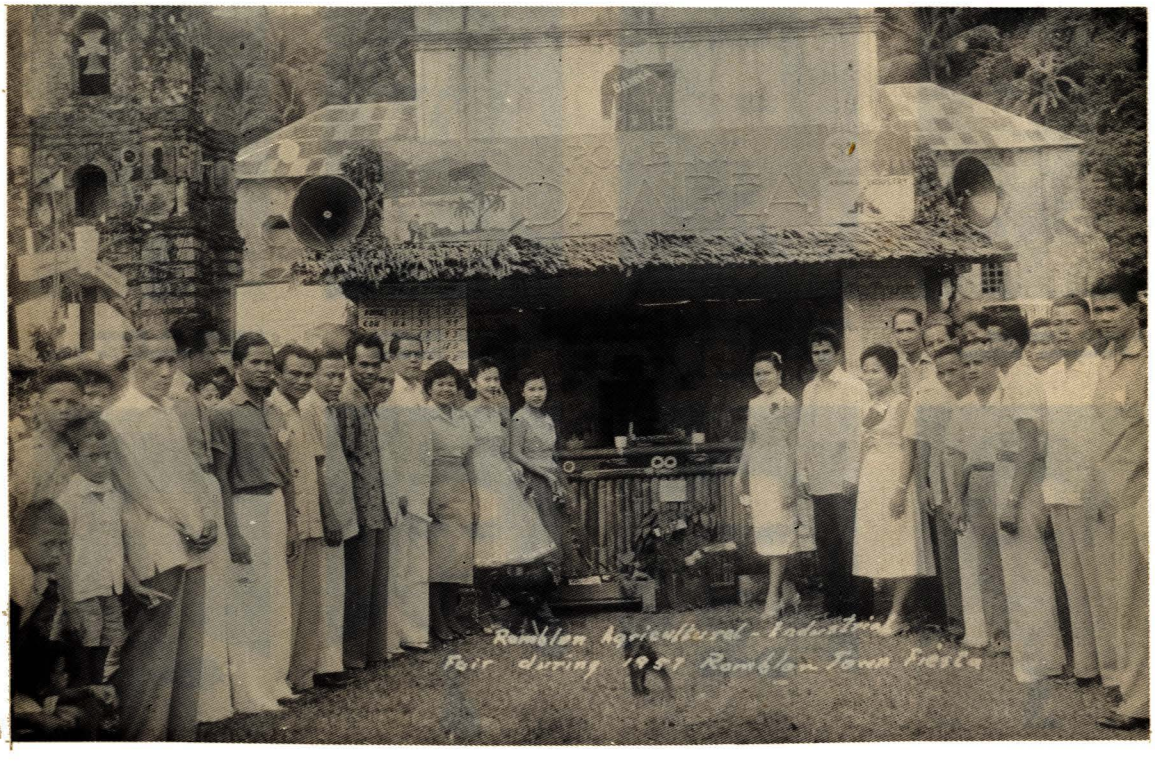


VILLALUNA, APELES
Cadiz, Negros Occidental
Treasurer, UPSCAn
Member:
U.P. Beta Sigma Frat.

VALDEZ, FEDERICO J.
Murong, Bagabag,
Nueva Vizcaya

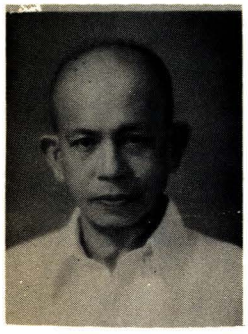


RAMOS, FEDERICO
Dingras, Ilocos Norte
UPSCAn

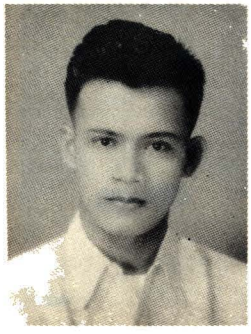


Romblon Agricultural — Industrial Fair during 1957 Romblon Town Fiesta.

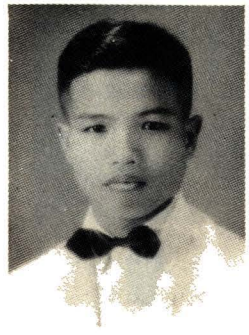
Ranger Class



Dr. ARTEMIO V. MANZA
Adviser



EMERSON B. ABRAHAM
Paniqui, Tarlac



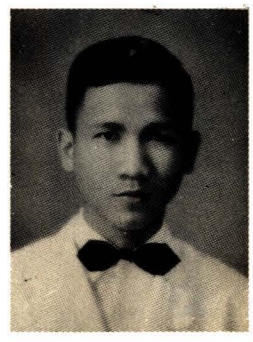
ANDREW BACDAYAN
Sagada, Mt. Province
Member:
Beta Sigma Fraternity

MANUEL G. BARLICOS
San Jose, Nueva Ecija
Member:
Beta Sigma Fraternity

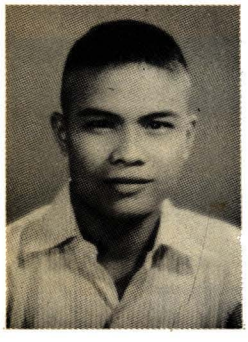
ANDRES BAYSA
Ilagan, Isabela

ANDRES C. BLANDO
Sta. Maria, Pangasinan
Sgt.-at-Arms, FSBO, 1956-57

TEODORA P. BOTE
Papaya, Nueva Ecija

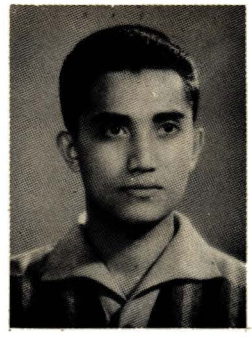


ESTEBAN CADAY
Laoag, Ilocos Norte

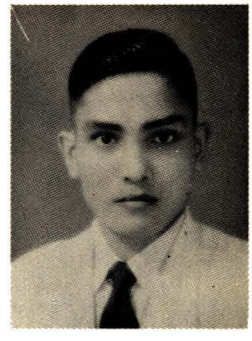


ALDRICO CASTILLON
Valderrama, Antique

IRENEO L. DOMINGO
Piddig, Ilocos Norte
Member:
Beta Sigma Fraternity



MANUEL G. FEDERICO
Odioñgan, Romblon

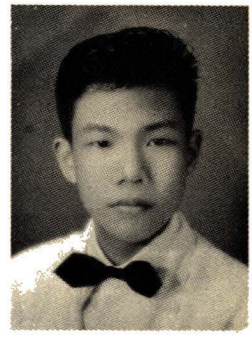


ALFREDO MA. FLORES
San Fernando, La Union

MANUEL B. GALANG
Kiamba, Cotabato

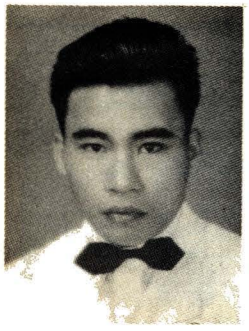
DAVID GONZALES
Iriga, Camarines Sur

NICOLAS R. GUADALUPE
Balete, Aklan

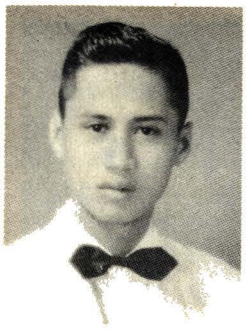


ENRIQUITO DE GUZMAN
Caridad, Cavite City

Ranger Class



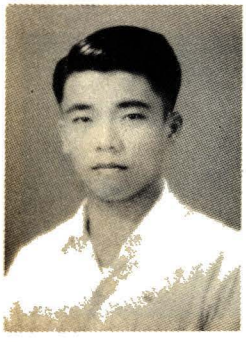
RICARDO T. LIGANOR
Bayombong, Nueva Vizcaya
Member:
Beta Sigma Fraternity



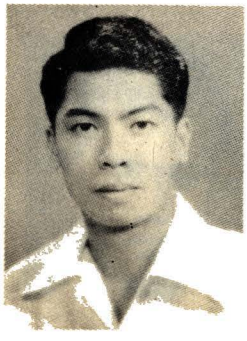
ZOILO G. LORENZO
Alcala, Pangasinan

RICARTE A. MARTIN
Bayombong, Nueva Vizcaya
UPCAn

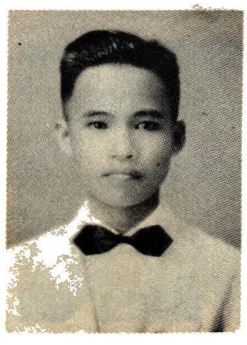
ROGER G. PAUIG
Piat, Cagayan



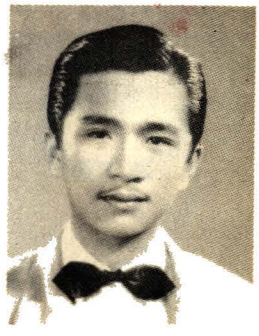
MARCELINO A. POBRE
San Jose, Nueva Ecija
Member:
Beta Sigma Fraternity



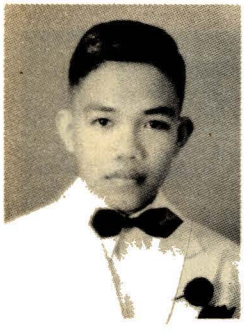
SATURNINO PONCE
Magsingal, Ilocos Sur
Member:
Beta Sigma Fraternity



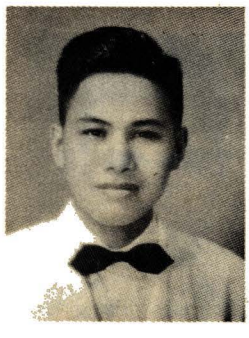
ROBINSON A. RAIZ
Villa-fuerte, San Mateo
Isabela



ARTEMIO J. RIVERA
Agoo, La Union

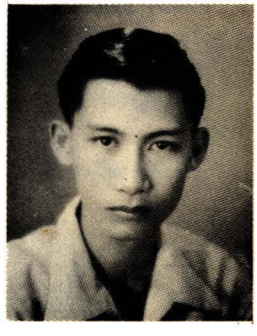


FLAVIANO G. SARDIÑA
Binalonan, Pangasinan
UPSILON; Sigma Phi



ELIAS R. SERASPI, JR.
Banga, Aklan

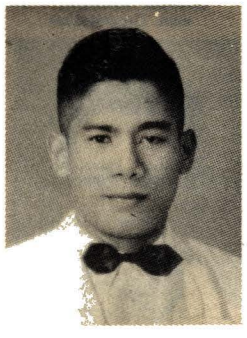
JOSE R. TAGOMDA, JR.
Echague, Isabela
UPSCAn



SAMUEL TORRE
Sto. Domingo, Ilocos Sur
Member:
Beta Sigma Fraternity

ANGELO G. MORDENO
Jabonga, Agusan
Staff Member —
FORESTRY LEAVES

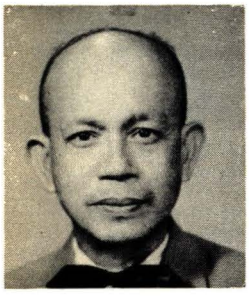
ANGELINO VALDEZ
Casat, Bayombong
Nueva Vizcaya



ANTONIO- VILLARINO
Tanauan, Batangas
Member
Beta Sigma Fraternity

ISIDRO T. ZAMUCO
College, Laguna
Vice-Illustrious Fellow
(Upsilon Sigma Phi,
1956-57)

Freshmen



Dr. ARTEMIO MANZA
Adviser

ACAIN, JOSE A
Binalonan, Pangasinan

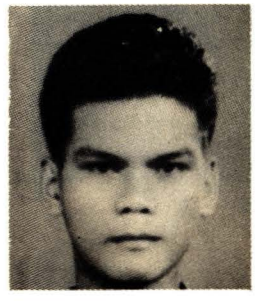
ANDRES, DEOGRACIAS E.
Sta. Fe. San Marcelino, Zambales

AQUINO, ROLANDO C.
Forestry Campus, College, Laguna

ARROYO, CESAR
Sta. Clara Lumber Co., Basilan City
Member:
YMCA
Forestry Softball Team

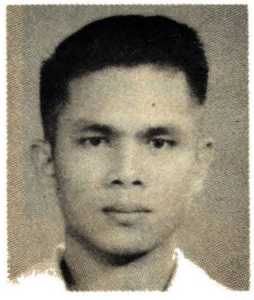
ASPIRAS, INDALECIO L.
Raymundo, College, Laguna
Member:
Forestry Softball Team
U.P. Los Baños Track & Field Team

ASUNCION, ANTONIO
Aparri, Cagayan



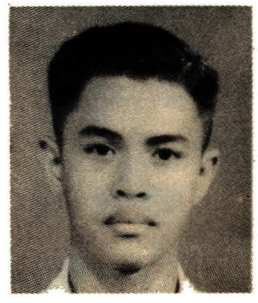
ASUNCION, ERNESTO
Bayambang, Pangasinan

BONGBOÑGA, PRISCILLANO
Binalonan, Pangasinan

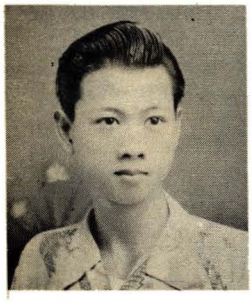


BULACAN, ISIDRO
Forestry Campus, College, Laguna
Activities:
Business Manager, Freshman Organization

CALIMLIM, GENEROSO P.
Bonuan, Longos, Dagupan City

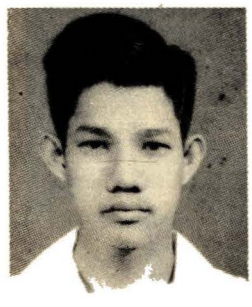


CAMACHO, ROGELIO V.
Gumaca, Quezon



CAJUCOM, EDILBERTO Z
Sta. Clara Lumber Co., Isabela, Basilan City

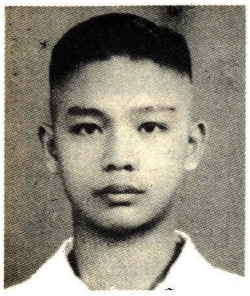
CAPITON, AMANDO T.
Janiuay, Iloilo
Activities:
Member, Softball Team



CARPIO, JOSE H.
Los Baños, Laguna

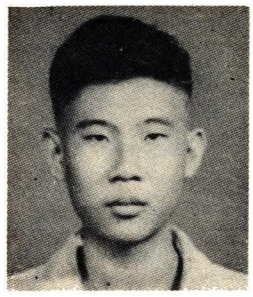
CORTES, MANUEL S.
Forestry Campus, College, Laguna

Freshmen

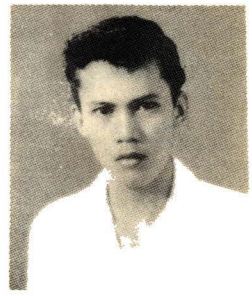


CRUZ, JESUS M. DE LA
Bayombong, Nueva Viscaya
Member, UPSCA

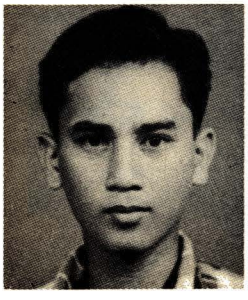
CRUZ, PRUDENCIO
265 Fraternidad, Pandacan, Manila



CUI, ERNESTO C.
Catbalogan, Samar

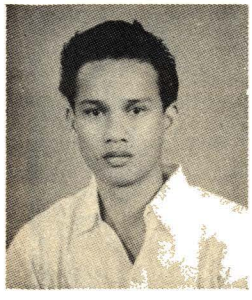


CULILI, LARRY B.
Fabrica, Negros Occidental

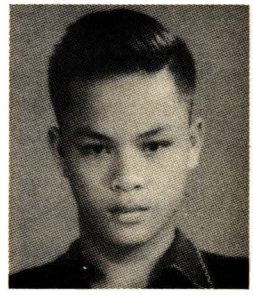


DELGADO, ROGELIO L.
Sta. Cruz, Laguna

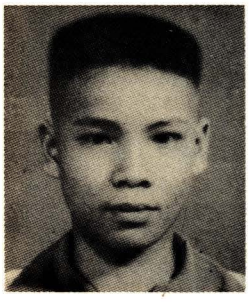
DIZON, EDDIE G.
San Fernando, Pampanga
Forestry Leaves



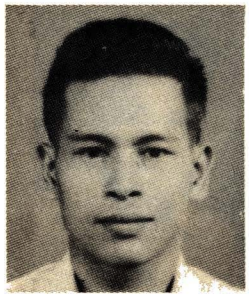
DUMLAO, ROSENDO
Urdaneta, Pangasinan
Activities:
Sgt.-at-Arms, Freshman Class, 1st Semester



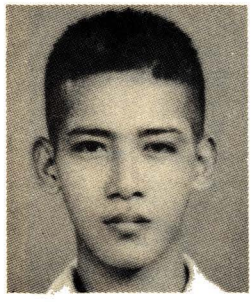
DUMO, ROBERTO N.
Bonfal, Bayombong, Nueva Viscaya



DUMPIT, SERGIO, JR.
Tayug, Pangasinan

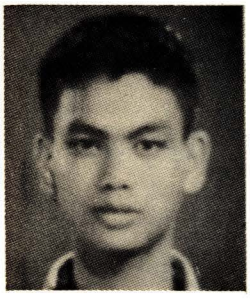


EDJAN, MIGUEL JR.
Igbaras, Iloilo
Member:
Volleyball & Baseball teams

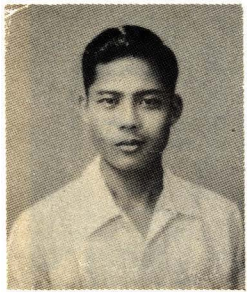


ELLAZAR, COSME B.
Santiago, Ilocos Sur

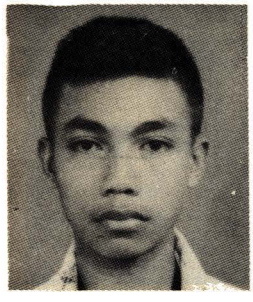
ENDAGAN, DOTERTY B.
San Enrique, Negros Occidental
Member:
UPSCA



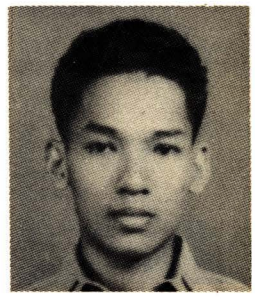
ENRIQUEZ, YOLANDO P.
La Paz, Tarlac



ESTEBAN, ISIDRO
Laoag, Ilocos Norte

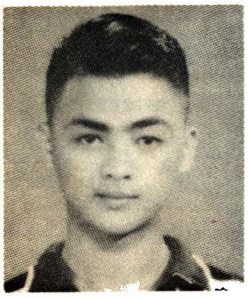


FELIX, SALVADOR
Solana, Cagayan



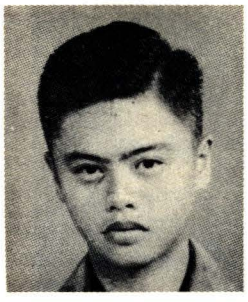
FORTUNADO, PANTALEON
Infanta, Quezon

Freshmen



GALUPO, PRECIOSO A.
Kalasungay, Malaybalay, Bukidnon

GARCIA, LORENZO B.
Tagbilaran, Bohol
Member:
UPSCA
Visminda Varsitarian



JARAMILLO, TORIBIO
Sto. Domingo, Ilocos Sur
Member:
UPSCA

LAGASCA, DOMIE C.
Vigan, Ilocos Sur
Member:
SBO
UPSCA, Forestry Chapter

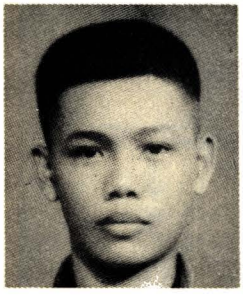
LICKIAYO, MARTIN
Kiangan, Ifugao, Mountain Province
Member:
BAMPROSA Organization

LLACUNA, VIDAL
Laoag, Ilocos Norte

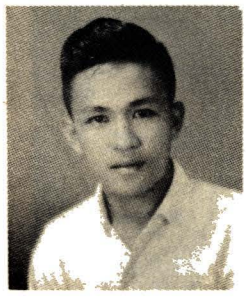
LUNA, ESMERALDO C.
Pasuquin, Ilocos Norte

MACABATA, BENJAMIN
Romblon, Romblon
Member:
UPSCA

MAHINAY, GLICERIO A.
Allen, Samar
Explorer Scout, High School

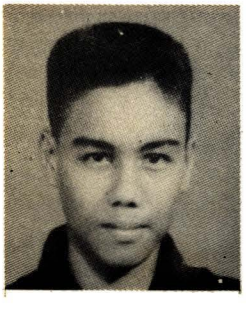


MALONG. ORLANDO M.
Binalonan, Pangasinan

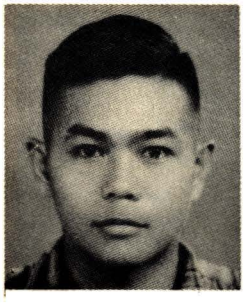


MAMAOAG, HERMINIO P.
Dupax, Nueva Viscaya

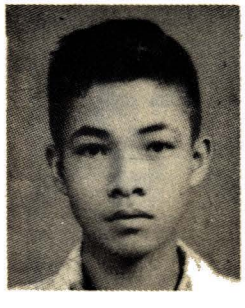
MARTINEZ, DOMINADOR L.
San Fernando, La Union



MASIGON, JANUARIO O.
Bañga, Aklan



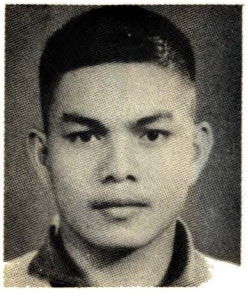
MUÑEZ, PETRONIO S.
Butuan City
Soccer Football Team
Softball Team



NAJERA, FELIZARDO A.
Tabuk, Mt. Province

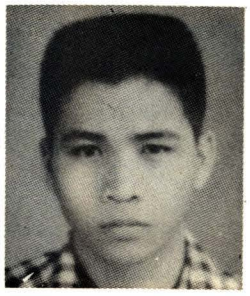
ORGANO, HONORATO R.
Vigan, Ilocos Sur

Freshmen

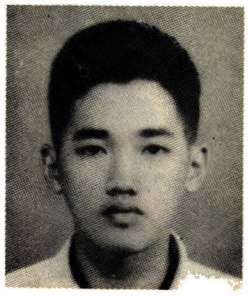


ORTIZ, TEODORO A.
632 San Francisco St.,
Butuan City
Member:
Football & Volleyball
Teams

PADERES, JOSE A.
Poblacion Peñaranda,
Nueva Ecija



PAED, CORNELIO
San Carlos, Pangasinan



PALAD, ROMEO R.
Evangelist St., Lucena
Quezon

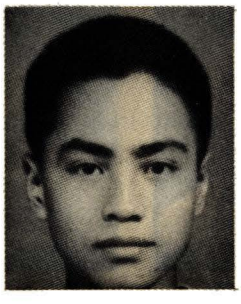
PEREZ, JUAN M.
Tuguegarao, Cagayan

POLLISCO, WILFREDO S.
San Jose St., Zamboanga
City
Activities:
Vice Pres., Freshman Class
UPSCA
Forestry Leaves

RAMOS, ROMUALDO A.
#7 Apo, Sta. Mesa Hts.,
Quezon City
Member:
Football Team
Dramatic Club

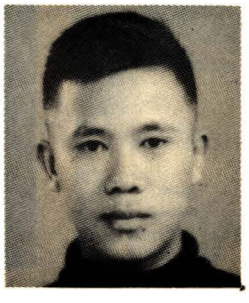
RAQUEDAN, DOMINGO R.
Luna, Apayao, Mt. Province

RISANO, SALVADOR
1182 Camachili, Singalong,
Manila



ROLA, BIENVENIDO R.
College, Laguna
Activities:
Secretary, Freshman Class
Member, Basketball Team

SALES, EMILIO I.
Bacarra, Ilocos Norte
Member:
UPSCA

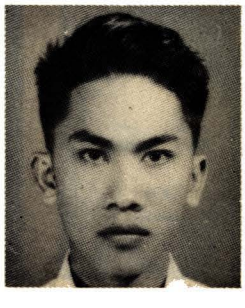


SALUD, BENJAMIN C.
Malasin, Dupax, Nueva
Viscaya
Activities:
Representative to SBO
Freshman Organization

SALVADOR, ROMEO S.
San Jose St., Zamboanga
City
Member:
UPSCA

SARENAS, RUFINO C.
784 General Tinio,
Cabanatuan City

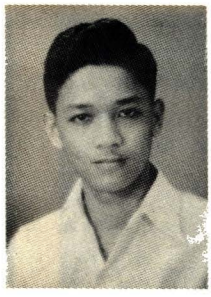
SEQUERRA, SAMUEL V.
Calaba, Bangued, Abra
Member:
YMCA



SERNA, CONSTANTE B.
Cabugao, Ilocos Sur

Freshmen

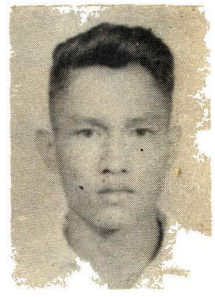
SERRANO, PABLO A.
MacArthur, Leyte
Member:
FSBO



SINUES, BERNARDO C.
San Juan, San Manuel, Pangasinan

SITCHON, RENATO D.
La Carlota, Negros Occidental
Member:
Visminda Organization
UPSCA

SUAN, MARCELINA T.
San Jose, Antique



ABUNDO, SAMUEL VARGAS
Virac, Catanduanes
Member:
Virac Labor Union
League of Christian Workers

TALARO, TRINIDAD A.
Pasuquin, Ilocos Norte

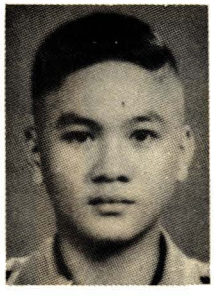
TANDOC, MAXIMO V.
Dagupan City
Member:
Forestry Basketball Team

TINGSON, BIENVENIDO
Kiwalan, Iligan City, Lanao

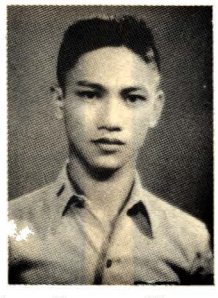
TRINIDAD, FLORENTINO B.
Bangued, Abra

ROSARIO, RENATO L.
Sampaloc, Manila

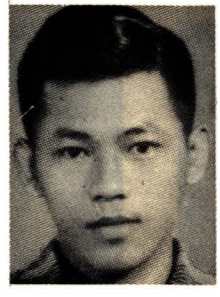
TUAZON, FLORENCIO, JR.
Urayong, Caba, La Union



ULITA, MELCHOR
Guiddam, Abulog, Cagayan
Member:
YMCA



UNITE, EDILBERTO M.
Ballesteros, Cagayan
Athletic Manager, Freshman, 1956-57
Member, Basketball Team
Volleyball Team



VERSOZA, LAMBERTO N.
Aguilar, Pangasinan
UPSCAN

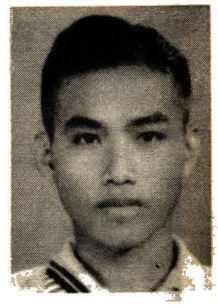
MONTERO, VICENTE S.
Jabonga, Agusan

VALERIO, ROMULO R.
Binalonan, Pangasinan

VERACION, AVELINO
Ballesteros, Cagayan

VIRTUCIO, FELIZARDO D.
San Jose, Batangas

PERALTA, FELICIDAD, A.
College, Los Baños, Laguna
Member:
CF UPSCA
Girl Softball Team



ZAPATERO, RICARDO D.
Boac, Marinduque

Silviculture and Grazing Classes Excursion to the North.

The Silviculture and Grazing Class at the Paraiso Reforestation Project.

A group of Students at the Gerardo Residence.

The class in front of the B. F. District Office, at Laoag, Ilocos Norte.

Silviculture and Grazing Classes Excursion to the North.

The Class in front of the Baguio City Cathedral.

A group of the Silviculture Class Students at the Quirino Mansion at Vigan, Ilocos Sur.

The Class at Barrio Sumabnit, Binalonan, Pangasinan.

Courtesy OLIVE STUDIO

Lumbering and Milling Class at Calapan, Or. Mindoro.

The Class in Logging and Milling at Calapan, Or. Mindoro.

Secretary Adevoso with the class at Calapan, Or. Mindoro pier.

The Class taking notes on lumbering outdoors.

A group of B.F. Personnel headed by District Forester Villanueva, host to the Logging Class.

Preparation of rigging for the Gravity Slack line system of hauling logs.

The lumbering class listen to Secretary Adevoso.

Log being hauled and transported from "Cold deck' to landing by means of Gravity Slack line system.

A group of students with Forester Vergara, Instructor in Logging, Logging Supt. Balaton & Ranger Peralta.

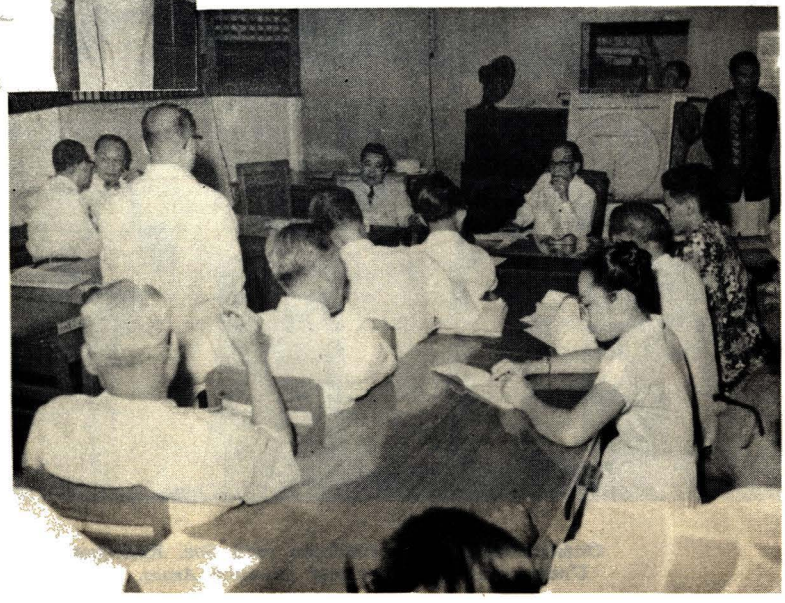
Rollway of Calapan Lumber Co. at Wawa, Calapan, Or. Mindoro where logs for Japan and other foreign countries are shipped.

Outstanding forestry fieldmen with Sec. Rodriguez, Undersecretary Ferrer and Director Amos.

Sec. Rodriguez bidding Director Amos goodbye after the conference held in connection with the implementation of the revamp plans of the DANR

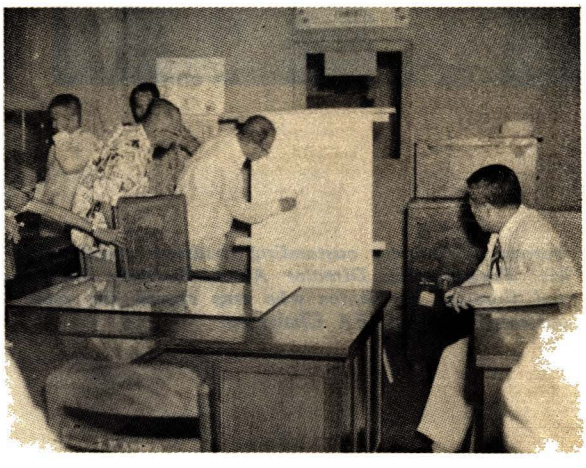
Bureau of Forestry oustanding fieldmen posed with Mr. Purkayastha, Director Amos, Forester Serevo and Forester E. Santos who was chosen the most outstanding DANREA Chairman

Governor A. U. Raquiza of Ilocos Norte visits Director Amos



Sr. Forester T. Serevo, Forest Management expert explaining to Sec. Rodriguez the need of natural reforestation thru selective logging

Sr. Forester P. San Buenaventura explaining to Sec. Rodriguez the accomplishments of the Bureau in Reforestation work.



Director Amos showing to Sec. Rodriguez the graphical representation of the accomplishments of the Bureau in Land Classification

MODERN LOGGING

by F. A. GUERRERO
Logging Engineer, The Edward J. Nell Co.

It is our opinion that "LOGGING" is and always has been a matter of transportation from stump to the sawmill.

Many systems have been used to accomplish this purpose with the thought in mind of getting the log to the sawmill or to the log pond the fastest and cheapest way possible.

The yarding phase of the "LOGGING" operation has followed a definite pattern in keeping with the times. When bull teams were used for yarding, practically everyone used bull teams. When the ground yarders came in, another pattern was established. Then the highlead, the skyline and finally the tractor.

This, however, is not true where loading is concerned, as loggers loaded with jack screws, cant hooks, cross haul gin poles: A frames, and duplex loaders. Yet the logger has never been satisfied with the type of loaders that he has.

Our principals, The Washington Iron Works, recognized this hodge-podge of ideas and built the "TRAKLOADER". The first Trakloader was delivered to Weyerhoueser Timber Company in Washington in 1945. The first Trakloader shipped to the Philippines was the Model TL-15 for Nasipit Lumber Company, which is put to yard and load logs at their Tuñgao operation since March 1956. Since that time, the company found it a very satisfactory logging equipment, logging cost was reduced more than ₱0.50 per cubic meter, reducing their man-

(*Continued on page 72*)

Forest Products Laboratory High Lights

by a. n. alda

NEWS BITS

Dr. Frank Co Tui,

"What this country needs is a better understanding of science and what it can do for its people." Dr. Frank Co Tui visiting scientist of the Philippine Mental Hospital, said in his address at a convocation held in his honor on February 18, at the auditorium of the College of Forestry.

Dr. Co Tui has been invited by President Ramon Magsaysay to advise him on matters pertinent to science and research.

Dr. Co Tui gave his impression on the Philippines after an absence of five years from the country. He said that he finds a great expression of beauty among the people now as evidenced by their art, like painting and architecture. He added that there is the same expression in science but not as noticeable because during the past years, the politicians' and the people's interests were largely centered on independence.

"The politicians did not know that independence means nothing without a sound economic and scientific basis," he explained. Dr. Co Tui spent the forenoon inspecting the facilities and the research program of the Forest Products Laboratory.

* * *

Dr. E. L. Demmon,

Dr. E. L. Demmon, retired director of the Southeastern Forest Experiment Station, U.S. Forest Service, visited the Forest Products Laboratory and spoke at a convocation held at the College of Forestry Auditorium on February 8.

Dr. Demmon stressed the importance of brotherhood among those in the forestry profession so that "Wherever you go, you will find a friend."

The Rockefeller Book Grant

Assistant Secretary Janet Paine of the Rockefeller Foundation, in a letter to Prof. Eugenio de la Cruz, informed the FPL of a $6,000 grant of the Foundation for the purpose of technical books and periodicals for the FPL library. The fund is to be used within a period of two years.

* * *

News about the new

Additions to the staff of the FPL were made recently when Teodoro Alcantara, Teodorico Quiogue and Jose Semana joined the Chemistry Division, Angel Mangahas became a member of the Timber Mechanics clan, Benigno Lomibao fused with the Wood Anatomy Section, and Primitivo Galinato with the Administrative Division.

All six of them seem to fit quite well and rapidly into the FPL family. To you, we say "Welcome home."

* * *

"Silent night, holy night"

The yuletide season was responsible for the bubbling enthusiasm evident among FPL members during the month of December, and it was also the main reason for the organization of an FPL Choir.

Under the guidance and with the extreme patience of the choir master, Val Elchico, the so-called choir was able to do bit of vocal gymnastics for about two or three nights meriting them an amount worth their exertions.

The amount of ₱30.00 was sent to the Manila-Times sponsored fund campaign as the share of the group in helping the war-stricken people of Hungary.

BRIEF HISTORY AND WHEREABOUTS OF THE MEMBERS OF RANGER CLASS — 1922

Forester F. JUCABAN

As far as I can recall, students numbering over 24 from different provinces of the Islands arrived on the Campus of the Forest School in April of 1920, then a solitary and very lonely place. In the evenings after the Botany Class, one would hear nothing but the grim hooting of the owl and the chirping of insects around the quarters, and in the early mornings. the melodious calls of orioles and red-breasted doves.

Four or five students, perhaps because of the loneliness of the place could no longer resist the call of the gay city and, resigning, left for Manila to pursue other studies.

After the first semester of the Freshmen year, several members had to quit schooling because of poor scholastic work and this was due not to poor mental ability but due to the loneliness of the campus, which aggravated their homesickness. To this the strict regulations on gardening which obliged everyone to get up before dawn to do vegetable planting behind their quarters obliged some to go home.

The arrival of the Senior students (Class of 1921) from their summer camping at the beginning of the regular course helped dispel the loneliness on the campus. The Senior students were assigned to room with the Freshmen, and the stories of hardships told by them to the lower classmen somewhat relieved these of their worries and fears.

The attractions offered after graduation, such as being appointed as regular civil service employees and the vacation to their respective homes and after which their reporting to duty at government expense as well as their assignment to other provinces perhaps have done much to keep the Freshmen from quiting their studies.

As far as I can remember, the class of 1922 was graduated with 24 members who were later mostly distributed to different provinces by the Bureau except those selected to work in the Central Office.

After two years of service as required by contract, the first to resign, as far as I can remember, was the late Primo Icarangal, who, spurred by his ambition, went to the United States to pursue higher education in Forestry. But fate was unkind to him and he died there. The next one was Ranger Lemos, the wood technologist of the class and first honorable mention, who, as far as I know, got his degree in the United States and up to the present is still there and from what I hear has no desire to come home.

In the course of time from 1922 to the present, many incidents took place. Two members of the class, Apostol Mendoza and Marcelo Udarbe, during the Senior course were appointed North Bornean pensionados for the British North Borneo Forest Service. Pedro Gimeno was also a member of class '22. Up to the present their whereabouts are unknown. Before the war Ranger Perfecto Adamos transferred to the Bureau of Internal Revenue, and has not been heard from ever since. Ranger Constantino Rabaya, the "giant" and medalist of the class, is now with the M.R.R. His resignation from the Bureau turned to be a "blessing in disguise". At present he is still with the Company, holding an enviable and lucrative position. Prudencio Florido was with a private lumber company in the Bicol region. Nothing was heard from him after the war, but according to information he is now in the Naval Researvation in Cavite. Ranger Balbino Viado, second honor student, was assigned to Negros Occidental after graduation where he married and now is a happy and proud father of a big family. Ranger Luis Batica, the class Samson had been an Assistant Logging Superintendent of the Sta. Cecilia Sawmills at Tagkawayan, Quezon, but the Creator called him a year ago. Ranger Joaquin Estrada, "Cervantes" of the class, died due to a foot infection.

Ranger Norberto Denoga, quiet and reserved, was the first member of the Ranger Class of 1922 who was favored with an appointment as Belo Boy. He graduated (B.S.F.) in 1935 and is at present holding a respectable and paying position in the University of the Philippines Land Grant in Basilan.

The second man to get the same distinction

** ED. NOTE: This article was sent in by Alumnus Jucaban '22. May this serve as a starter and it is hoped that the other classes will follow suit.*

was Ranger Rafael Quidilla, the class "Caruso". He graduated with the Bachelor of Science in Forestry degree in 1940 and was assigned District Forester at Calapan, Mindoro. He now works in the Central Office.

The third one is the humble writer, nicknamed "Jap", Graduated B.S.F. in 1942, and is at present District Forester at Sta. Cruz, Laguna.

The fourth one was Lorenzo Diaz, graduated B.S.F. in 1949. He was appointed as Assistant Forester and Administratve Officer at Basilan City. Atty. Pio Salomon had been the Disbursing and Collecting Officer of the Bureau before the war and during the Japanese regime. During the liberation, he resigned to try his luck with a private firm. At present he is back with the Bureau as Senior Ranger. Other members of Class 1922 who are still with the Bureau are Supervising Ranger Scaler Tomas Roboy, Surigao Headquarters; Senior Ranger Eulogio Dres is Acting Jr. Forester and the Administrative Officer, District No. 13, Manila; Senior Ranger Pablo Umadhay, the quietest and shortest in the class, is now with the L.C. Party; Acting Jr. Forester Cornelio Miguel, Administrative Officer, Puerto Princesa, Palawan, and authorized Asst. Lumber Inspector; and Ranger Aquilino Porcincula, the class grand old man, is at Iloilo Headquarters.

I still cannot forget Juan Pacheco, Victor Lara and Andres Matias. Pacheco's present whereabouts and position are unknown; the last have passed into the great beyond. Nine out of the 24 members of the Class of 1922 are at present still with the Bureau. Only espirit de corps has kept these men in the Bureau, inspite of the slow promotion and low pay. These nine will perhaps spend the rest of their still remaining strength with the Bureau until they reach the retirement age.

Because of lack of records (destroyed during the chaos of World War II), many of the members of class 1922 were left out in this write-up. Those who are still living and who may happen to read this short history and may know the whereabouts of the members of class 1922, are requested to communicate with the writer so as to complete this class record.

We have nothing but deep appreciation and heartfelt thanks for our professors and instructors. In those old days the absence of the fair sex and social activities have made our stay on the campus full of nostalgia.

And what made us occasionally forget our homesickness was when we "sweated" it out from head to feet during Saturdays with our inseparable mattocks, bolos and self-laundered *Makiling Palm Beach* brushing the campus, making trails, digging up stumps and measuring tree growths, etc. etc. etc.

(*Continued on page* 86)

B. F. Notes

REORGANIZATION PLAN

The Bureau of Forestry has started the first step in its revamp shortly after the approval of Reorganization Plan 30-A for the Department of Agriculture and Natural Resources by President Magsaysay under Executive Order No. 216, dated November 17, 1956.

According to the Government Survey and Reorganization Commission, the wise management of our forest hinges on (1) full legislative responsibility to provide additional fund; (2) executive resistance to the demands for opening public lands essential for forest purposes; (3) awakening of public consciousness on the value of forests; and (4) development of governmental organization competent and capable of carrying out a national program of public domain conservation. The proposed reorganization has been designed to move the Bureau closer to a realization of its basic objectives.

Under the plan, there are seven functional divisions, namely: (1) Domain Use, (2) Forest Land Uses, (3) Forest Management, (4) Administrative Services, (5) Forest Research, (6) Reclamation and Reforestation, and (7) Sawmills and Licenses. The positions of assistant director and forestry project coordinator have been created. The Forest Products Laboratory and the Forest Products Research Section of the Forest Investigation Division have been abolished and the Forest Products Research Institute has been created in their stead.

The transfer of property worth ₱397,206.09 from the Bureau to the UP, College of Forestry has already been effected. Shifting of places of divisions in the central office has already started. Director Amos designated Forester Teofilo A. Santos and Mr. Vicente Leonor, Sr. to work with the Transition and Quarters Committee of the DANR and other committees which the Secretary may create during the implementation period.

* * *

FORESTERS

The district foresters stationed in various strategic forest areas of the country organized recently the District Foresters' League of the Philippines and elected the following officers:

President, Anacleto Hernandez; regional vice-presidents, Angel Miguel for Luzon; Rafael Navallasca for Visayas; and Higinio Rebosura for Mindanao; secretary, Deogracias Juni; treasurer, Primo Andres; PRO, Rufino A. Sabado; and Sgt-at-arms, Justino Ybañez.

The district foresters and other ranking fieldmen of the bureau of forestry attended the recently concluded First National DANREA Convention held at Malacañang community hall. They were honored with a dinner party by the Forestry Circle, social club of the forestry bureau employees.

* * *

PERSONNEL OFFICERS

Ranking government employees from several offices participating in the seminars on personnel counseling under Group I organized the Personnel Officers Club recently with the aim of promoting an exchange of ideas on the implementation of their prospective functions.

The group elected the following officers: Alejo Garcia of NEC, president; Rafael del Rosario of department of labor, vice-president; Nita Vera of the bureau of civil service, secretary; Belen Aventurado of CEPOC, treasurer; Primitivo Najera of GSIS, auditor; and Teofilo A. Santos of the Forestry bureau, press relations officer. Adviser is Mrs. Carolina D. Custodio of the bureau of civil service.

The seminars on personnel counseling for personnel officers and supervisors being conducted by the bureau of civil service for eight Saturdays at two hours each day started last October 20. Commissioner A. del Rosario said these seminars would prepare personnel officers and supervisors for the delicate job of personnel management, guidance and counseling in their own offices.

* * *

DANR TO RELEASE SUITABLE SWAMPLANDS FOR FISHPONDS

Agriculture Secretary Juan de G. Rodriguez today alerted the directors of Forestry, Fisheries and Soil Conservation to pool their efforts in pinpointing all nipa and mangrove swamps in the country for the purpose of releasing all suitable areas for fishpond purposes.

In a memorandum circulated to the bureau heads, Secretary Rodriguez ordered Directors Felipe Amos of Forestry and Marcos M. Alicante to

furnish the Director of Fisheries a map of the Philippines indicating locations of nipa and mangrove swamps.

Applicants for fishpond permits covered by released areas will be required to defray the cost of survey of the land to be undertaken by qualified private land surveyors.

The Department of Agriculture set the following criteria in determining suitability of swamplands for fishpond purposes.

1) *Topography*—Level nipa and swamp lands or tidal flats where there are extensive mounds or elevations and depressions within the area.

2) *Vegetation*—Preferably areas clean of vegetation or areas with small growths that are easy to clear instead of areas thickly wooded with big trees. Thickly wooded or forested areas are costly to clean and prepare for fishpond.

3) *Water supply*—There should be a steady supply of clean water throughout the year and the source of water is the tide which may bring in salt or brackish water. In relation to tide, site should be at elevation ranging from one (1) to four and one-half (4½) feet. The area should be free from pollution.

4. *Drainage*—The site should be capable of being drained when needed. Good drainage is necessary to dry the pond bottom and to get rid of undesirable fishes and water plants, and to simplify the cropping of fish products.

5) *Soil*—Clay, clay loam and sandy clay are the types of soil suitable for fishponds. Hard mud of the above types is preferable to the soft and loose kind. Sandy, rocky and stony soils should be avoided as these types cannot retain water in the ponds and cannot support good growth of fish food. Areas with very thick deposits or organic matter are also to be avoided, although this type may eventually be used after the organic matter had become mineralized.

6) *Freedom from Floods*—The site should not be on the path of extensive drainage basin that may cause sudden big fluctuations of water, resulting in floods. Fluctuations of two (2) meters or less on the average is allowable beyond which such areas may be hard to maintain for fishpond purposes. The danger from flooding may be minimized by constructing the dikes in such a way that they do not obstruct the river or stream.

7) *Marketing facilities*—The site should be near a market and good transportation facilities. Some fishponds are far from population centers but this handicap is neutralized by the availability of fast and cheap transportation facilities.

8) *Other economic factors*—Fish fry for periodic stocking of the ponds should be easily available. The supply of cheap and trained labor should be considered in selecting a site.

SCHOLAR

A Filipino forester is making an impressive showing in the United States by obtaining excellent ratings in the course he is pursuing, according to forestry director Felipe R. Amos.

Martin Lopez, a logging engineer in the bureau of forestry, was enrolled during the fall term in five forestry subjects in the University of Michigan. He got a grade of "A" (excellent) in four subjects and "B" (superior) in one.

Lopez went to the United States late last year as ICA scholar to study applied silviculture. He is expected to stay abroad for 12 months.

* * *

GRASSLAND FARMING URGED

Grassland farming was advocated by Vicente A. Araneta, former president of the soil science society of the Philippines during the association's annual seminar-meeting which opened Monday morning at the bureau of soil conservatoin hall, Florida street.

He urged the soil science group to introduce grassland farming in the Philippines through the society.

Araneta said that grassland farming would bring about the most stable agriculture if properly introduced, especially in relation to some other branches of farming.

Kudzu, which the speaker described as versatile, is a leguminous grass most suited to Philippine conditions. It gives all purpose benefit, compared to some other grasses, especially in raising animal feeds, adding humus to the soil as a cover crop and green manure, as soil-building and soil-conservation grass.

If Kudzu could be propagated as a crop, Araneta said, it would give blessings especially in the manner it protects the vegetative covers of the soil from typhoon, flood hazard, and soil erosion.

While the 100-cavan per hectare rice contest which is now being sponsored by the society gave substantial inducements to improve rice production, grassland farming if indorsed and applied could give even more benefits to our farmers, Araneta stressed.

The past SSSP president discussed the benefits of grassland farming on the basis of his pasture and livestock projects at Sta. Maria and San Miguel, Bulacan.

The other speaker was Dr. Lyle E. Nelson, a visiting associate professor on soils, college of agriculture, Laguna. Dr. Nelson discussed problems of soil fertility research on lowland rice.

* * *

DANR REORGANIZATION

More than 13,000 employees under the department of agriculture and natural resources and

its 12 bureaus and offices realigned ranks and shifted to a new gear this morning—their first day under the reorganized scheme—to make the agency's machinery more responsive to the needs of farmers in rural areas.

Agriculture Secretary Juan de G. Rodriguez advised bureau directors to exploit all possible opportunities in making their services doubly effective. Under the reorganization plan, all units will be closely observed in their activities on the basis of production and performance.

Secretary Rodriguez, however, clarified today a press report that he had failed to implement other details of Executive Order No. 216 issued by President Magsaysay last November 17, concerning Malacañang's plans to streamline the department. To refute this, he pointed out that an underscretary of agriculture had previously been recommended to the President.

The government entities to be absorbed by the department of agriculture were briefed by Secretary Rodriguez several days ago. Plans have been laid out for the absorption by the DANR of the following: Philippine Coconut Administration, Philippine Sugar Institute, Abaca Corporation of the Philippines, Philippine Tobacco Administration, and the National Rehabilitatoin and Resettlement Administration.

For closer appraisal and follow-up of field activities, the department will have two undersecretaries: the undersecretary for natural resources covering forestry, fisheries, and mines now held by Undesecretary Jaime N. Ferrer, and that for agriculture which is expected to be filled today or any time this week by Malacañang.

All bureaus are reinforced with assistant director each except the extension bureaus which will be doubled.

* * *

FROM FORESTRY TO AGRICULTURE 17,500 HECTARES

Batches of lands in different parts of the country were released to the Bureau of Lands by the Bureau of Forestry the other day for distribution to public land applicants.

The areas—actually forest lands good for agricultural purposes—are in Rizal, Mt. Province, Antique, Cotabato, Zamboanga del Sur, Zamboanga del Norte, Camarines Sur, and Basilan City, with a total area of 17,500 hectares.

This is another of those series of land releases for the landless, which is a major policy of the present Administration.

Considering the extent of land conversions from forestry to agricultural use going on these days, this would indicate a definite continuation of a project started sometime ago. Which is the resettlement of landless farmers.

DISTRICT FORESTER URGES HIS MEN TO BEGIN THE YEAR RIGHT

In a conference held at the District Headquarters last January 2, 1957, Forester Jose R. Claveria urged the personnel of Forest District No. 44 to begin the year right.

Discouraging on the tasks that are being undertaken by Forest Officers, Forester Claveria said, "We who identified ourselves in the forestry profession should carry on that unstinted devotion to duty so that it should be emphasized that greater and more efficient service is our ultimate aim destined to protect, conserve and utilize wisely the nation's patrimony—"the forests".

"There should be teamwork, cooperation and close collaboration between the forest officers and the lumbermen and the general public in identifying their problems relative to sustained yield management and protection; work together to suggest practical solutions possible; and to implement tnese solutions in order to make our lumber industry stable not only here in Basilan Island but throughout the Islands".

After the short talk, there was an open forum with the District Forester as the presiding officer.

To a man, the personnel of the forest district resolved to begin the year right.

* * *

TOURIST ATTRACTION ROMBLON OFFICIALS PLAN BEAUTIFICATION PROGRAM

To attract tourists and provincial visitors to Romblom, Romblom, the municipal officials are planning to beautify the municipal park.

Plans for the face-lifting of the Romblom town square were initiated by former Town Mayor Pablo S. Merida and ex-Mayor Jose Miñano. Mayor Isidro Mallorca took up the project and included it in his program to make the "isle of marble" one of the most beautiful and attractive provinces in the Visayas.

With the help of the various government agencies in Romblom province, the move to beautify the municipal park is gaining support day by day.

The local office of the social welfare administration has taken care of the labor in the general whitewashing of the park. Students of the Romblom high school did their share by planting ornamental trees on the town square. A fence was built by the office of the municipal mayor while the local office of the bureau of forestry furnished ornamental trees and plants.

Beautiful ornamental plants and trees have been planted in the various spots of the park. The *Golden Shower, Brazilian Fire Trees, Banaba, Narra, Araucaria* or *Norfolk Island Pine, Spanish Cedar, Mahogany* (Large leaf and Small leaf), *Ba-*

guiw and *Pay-at* will make the town park one of the most attractive in the country.

The local office of the bureau of forestry promised the office of the municipal mayor that it would take care of requisitioning from the Los Baños college of forestry such exotic ornamental plants and trees as the *Amherstia,* Queen of Flowering Trees, Birds of Paradise, Jade Vine, *Saraca Indica, Saraca Declinata,* Palo Santo, Balikbikan, Araucaria and Pink Shower.

Mayor Mallorca also directed his municipal secretary recently to take charge of the requisitioning of ornamental plants from Siam, Burma, Australia, Japan, India and Iran.

If plans will materialize, in two or three years, the Romblom municipal park will become an International Forest.

T. Montojo

* * *

DONATION

The Rockefeller Foundation has made available the sum of $6,000 to the Forest Products Laboratory in Los Baños, Laguna, for the purchase of books, periodicals and other library materials, Director Felipe R. Amos said yesterday.

The laboratory which was built through ICA-Philcusa aid is the biggest of its kind in the Far East and is engaged in studying ways and means to improve the quality of Philippine woods and in discovering useful uses for waste products of lumber and other minor forest products.

In a letter sent to Forester Eugenio de la Cruz, chief of the Forest Products Laboratory, Assistant Secretary Janet M. Paine of the Foundation pointed out that the sum is for use during the period of two years, beginning January 1, 1957, at the end of which time any unexpended balance will revert to the Foundation.

* * *

ASSAULT

A forest officer was assaulted by Mayor Federico Muli of Dinalupihan, Bataan and a representative of licensee heirs of Carmen Reyes, according to a telegram received by forestry director Felipe R. Amos yesterday.

Assaulted in his office was Ranger Jose Cabanayan, officer in charge of the Dinalupihan forest station. The act was allegedly prompted by the forestry official's checking of logs in transit of the licensee.

Ranger Cabanayan said that a criminal complaint had been filed with the local court of first instance. Director Amos directed the District Forester of Bataan to submit a detailed report of the incident. He will inform the Secretary of agriculture and natural resources of the matter.

Meanwhile, Amos instructed his fieldmen to enforce strictly forest laws and regulations for the protection and conservation of public forests. Replying to the Bataan officials' charge of laxity as reported in a weekly magazine, the director said that despite lack of personnel and fund, his bureau has been doing its best as custodian of our vast forest wealth. He requested local officials tc cooperate with the bureau.

* * *

ARMYMEN ASKED TO INTERVENE IN BICOL PARK SHADY DEALS

Agriculture department authorities recently urged the Philippine army, constabulary and local police to take a 24-hour vigilance on illegal operations of kaingineros and timber smugglers reportedly rampant in the Bicol national park in Camarines Sur and Camarines Norte.

Dr. Vicente de la Cruz, officer-in-charge of the parks and wildlife office, particularly requested, in a letter to the commanding officer of the second military area, to let armymen work side by side with park officers so as to effectively curb the illicit activities of timber thieves and squatters in said park.

Cruz disclosed the smugglers operate night and day with such sly tactices that "intercepted illegally-cut timber, held and unloaded along the national road, vanish in the dark before any action could be taken."

In justifying the urgent need for armymen's intervention, Cruz declared "battalions of squatters and timber thieves are again poised to encroach upon the park and intensify their operations with the start of the dry season."

* * *

FREE PAMPHLETES READY FOR DISTRIBUTION

Agriculture Secretary Juan de G. Rodriguez announced today the availability of 30,000 copies of the illustrated bulletin "How To Harvest and Store Vegetable Seeds For Planting."

Jointly published by the University of the Philippines college of agriculture, Los Baños, Laguna, the bureau of plant industry, bureau of agricultural extension, and agricultural information division (DANR, Manila), the bulletin is now ready for free distribution to any interested party at said offices.

* * *

173,915 HECTARES OF FOREST LAND CLASSIFIED

From a total of 173,915 hectares recently classified 54,291 hectares will be released to private ownership and 19,624 hectares retained for forestry purposes a report from the bureau of forestry to the DANR disclosed.

Director Felipe Amos explained that the objectives of land classification work are to determine forest boundaries so that forest management policies can be formulated for the development of forest resources and to set aside areas more suited to agriculture.

The bureau has forty land classification parties of three men each strategically deployed throughout the country.

* * *

DANR ACTIVATES INVESTIGATING COMMITTEE ON TIMBER SMUGGLING IN BATAAN

Agriculture Secretary Juan de G. Rodriguez recently created a committee to probe the alleged rampant illegal cutting and smuggling of timber and other forest products in Bataan national parks, particularly in the Morong side.

Chairmaned by Atty. Moises B. Alete (DANR legal division), the committee members include Atty. Felix Mabbayag and Rufino A. Sabado, both of the foresty bureau.

Likewise, the committee has been ordered to investigate (1) George L. Tunaya's farming of his O.T. license, (2) the attempt of Bonifacio P. Ablola to negotiate the operation of the mentioned compartments to a Chinese, and (3) the fraudulent bidding of supposedly fallen logs on the Abucay side of the parks, conducted recently by the parks and wildlife office.

The secretary ordered the committee to submit its findings and recommendations as soon as possible.

* * *

EXPOSE ANOMALIES IN AGUSAN TIMBER CONCESSIONS

A number of anomalies in the operation of timber concessions in the province of Agusan, was today exposed by Agriculture Undersecretary Jaime N. Ferrer.

The anomalies involve the use of dummies by aliens, operation of licenses by third persons and violations of regulations pertaining to logging and reforestation. In a memorandum to Agriculture Secretary Juan de G. Rodriguez, Ferrer urged the issuance of proper administrative orders to curb the irregularities.

Some 41 cases of the use of dummy in timber concessions, complete with names and other pertinent data, were furnished Ferrer by an investigator of the agriculture department whom the undersecretary recently assigned to conduct intelligence work in Augusan.

The same reports alleged that "about 90% of timber concessioners in Agusan secured their timber licenses without the necessary capacity and ability to exploit timber reservations in accordance with law." Violations of labor laws and tax evasions by timber concessioners were also reported.

Subleasing of rights under timber licenses to third persons was also found rampant in Agusan.

The agriculture department investigator recommended, among other things, the creation of a committee composed of representatives from the agriculture department, bureau of forestry, bureau of internal revenue, anti-dummy board, NBI, Philippine constabulary and department of labor to conduct investigations of licenses mentioned in his report.

* * *

ONE AND A HALF MILLION HECTARES OF PUBLIC DOMAIN RELEASED TO AGRIC. IN FOUR YEARS

A total of 1,436,633 hectares of forest land was classified as alienable and disposable lands and 1,496,974 hectares as timberland, during the last four fiscal years director Felipe R. Amos of forestry today reported to Agriculture Secretary Juan de G. Rodriguez.

During the same period 1,298,167 hectares were classified as alienable and disposable and 1,030,290 hectares, timberlands.

Lands classified for release from public ownership are certified to the Bureau of Lands for disposition under the Public Land Act. The goal for the 1956-57 fiscal year is 1,200,000 hectares for classification and 800,000 hectares for certification.

Director Amos said that of the 129,055 hectares classified last month, 30,164 were set aside for release from public domain. There are presently 40 field parties doing classification work in various parts of the country.

* * *

RESULT OF THE C.S. RANGER EXAMINATION

Names of those who qualified in the Ranger 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.

Name	*General Rating*
1. Mariano R. Peralta	81.9 %
2. Francisco Agruda, Jr.	81.44
3. Alfonso Lucero	80.78
4. Gabriel L. Mandocdoc	80.32
5. Victoriano V. Ladero	79.82
6. Victoriano P. Soriano	79.34
7. Fortunato S. Arcangel	79.2
8. Geronimo P. Falloran	79.18

9. Marciano B. Antonio	78.92	
10. Angel A. Mariano	78.64	
11. Carlos L. Wandisan	78.28	
12. Rosalio B. Gose	78.16	
13. Edmundo V. Cortes	78.08	
14. Silvestre D. Buenaflor	77.96	
15. Filamor M. Yadao	77.96	
16. Radigundo A. Soria	77.82	
17. Alfredo V. Sanchez	77.66	
18. Delfin C. Ganapin	77.6	
19. Tomas M. Binua	76.58	
21. Ramon R. Abijuela	76.5	
22. Francis S. Mabanag	76.46	
23. Cornelio A. Ferrer	76.36	
24. Eufracio L. Reyes	76.18	
25. Gregorio P. Principe	75.54	
26. Anastacio B. Sison	75.48	
27. Douglas Ingosan	75.44	
28. Fernando A. Gonzales	75.36	
29. Hilario S. Sivila	75.3	
30. Wenceslao C. Agbayani	75.28	
31. Calvin E. Borre	74.82	
32. Candido T. Agbisit	74.8	
33. Jose A. Cabanayan	74.74	
34. Narciso P. Martinez	74.44	
35. Eufemio E. Obay	74.28	
36. Camilo E. Agaceta	74.18	
37. Alfredo D. Pintor	73.8	
38. Domingo P. Cimatu	73.7	
39. Cresenciano Q. Dacumos	73.56	
40. Urbano Gonzales	73.32	
41. Lucio L. Quimbo	73.12	
42. Julian T. Gumayagay	73.04	
43. Francisco D. Milan	73.02	
44. Celso N. Versoza	73.02	
45. Justino B. Bernardo	72.94	
46. Tito E. Babiera	72.86	
47. Loreto M. Araojo	72.6	
48. Modesto O. Canave	72.42	
49. Pablo Cabebe	72.4	
50. Bartolome R. Reyes	72.22	
51. Emilio B. Siazon	72.22	
52. Gaudencio Salomon	72	
53. Jove L. Bugarin	71.94	
54. Dante G. Diaz	71.9	
55. Arturo P. Bislig	71.86	
56. Edilberto B. Borja	71.86	
57. Prudencio B. Baroña	71.7	
58. Zoilo L. Udaundo	71.7	
59. Macario S. Sana	71.64	
60. Antonio M. Lizardo	71.46	
61. Ernesto E. Gutierrez	71.44	
62. Bienvenido G. Gutierrez	71.42	
63. David S. Serrano	71.08	
64. Santos M. Jacoban	70.96	
65. Jose C. Tomas	70.86	
66. Sinforoso Ragucos	70.7	
67. Avelino C. Caronan	70.6	
68. Andres C. Lubrin	70.44	
69. Luis V. Baker	70.32	
70. Damaso de la Cruz	70.2	
71. Jose M. Garcia	70.18	
72. Jose A. Campo	70.04	
73. Jaime L. Albay	70.01	
74. Felizardo Arcilla	70.01	
75. Sergio Arias	70.01	
76. Ernesto S. Ayuban	70.01	
77. Anacleto B. Bernardo	70.01	
78. Damian B. Lagura	70.01	
79. Ramon Losorata	70.01	
80. Jose A. Meniado	70.01	
81. Vicente A. Ramirez	70.01	
82. Quirico D. Tan	70.01	
83. Resurreccion S. Noriel	70	
84. Raymundo P. Acosta	81.84	v.p.
85. Filoteo C. Rodriguez	77.06	v.p.
86. Eutiquio Arengo	74.7	v.p.
87. Jose A. Gonzales	74.02	v.p.
88. Domingo C. Valones	71.16	v.p.
89. Ramon P. Caguioa	76.66	v.p.
90. Florencio M. Morales	70	v.p.

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1957 ROMBLON INDUSTRIAL AND AGRICULTURAL FAIR

Novelties made out of marble such as name bars, paper weights, flower vases, flower stand, tableware, figurines, holy fonts, markers, ash trays and other marble housebold articles were among the products displayed at the fair held in Romblon, Romblon, last January 18, 1957, in connection with the nine-day annual feast, January 11 to January 20, 1957, in honor of the town's patron saint, Santo Niño. . . . Various industrial and agricultural exhibits were the main attractions in the municipal fair at said capital town with the Romblon Departmente of Agriculture and Natural Resources Employees association (DANREA) booth and exhibits sttealing the show. . . . Barrio council organizations under municipal secretary Ramon M. Orola, the public schools under district supervisor Leocadio M. Madrona, girl and boy scouts organization, assisted and led by the Romblon Department of Agriculture and Natural Resources Employees association (DANREA) under district forester Maximino R. Reyes, made the affair a very *"huge" success*. . . . Also exhibited were baskets made out of local materials like nito, bago bago, buri, bamboo and coconuts; buri mats called locally "locab" and household articles made of coconut shells husks and midribs; coconut husk decorticating machine in operation and a large chart-poster of the DANREA jortrayting the "Unified Working Program For Better Family Living in the Barrio." . . . A contest on the biggest agricultural product such as farm crop, root crop, garden crop,

(*Continued on page* 72)

College Notes

C.F. ALUMNI PRESIDENT CALLING ALL ALUMNI

Director Felipe R. Amos of the Bureau of Forestry, President of the U.P. College of Forestry Alumni Association earnestly stressed the need of the alumni's attendance at the forthcoming Forestry Alumni Homecoming which will be held in conjunction with the 1957 "Moving-Up Day" celebration on March 24, 1957. In a letter recently circulated to all the C.F. Alumni all over the islands, he particularly called the attention of "those belonging to class 1912, 1917, 1922, 1927, 1932, 1942, 1947, and 1952," not to miss the reunion in the "'school up the hill'".

He also appealed to all the Alumni to be more vigilant of their membership in the organization and informed them of the need of the election of the three new members of the Board of Directors of the Organization vice Asst. Dean Calixto D. Mabesa, For. Carlos Sulit and himself.

He also pointed out the fact that a directory of the alumni should be published when all those alumni in the field could send in their file which, incidentally, according to some reliable sources, would be used as part of the materials to be included in the U.P. Alumni Directory "containing about 23,000 alumni in connection with the Golden Jubilee celebration of the University in 1958.

Meanwhile, the association is holding its election for the three new members of the Board of Director of the association for which ballots for the purpose were enclosed with the letters sent to the alumni.—*J. Amihan.*

* * *

LUMBERING CLASS TO MINDORO

Fifty-five students taking Lumbering I under Professor Gregorio Zamuco and Forester Vergara left on February 28 for a field trip to the Calapan Lumber Company, one of the big lumber companies in Mindoro. The group will observe the logging and milling operations being conducted in the area. Forest surveys and forest valuations will also be taken up by the various crews of the class. The group returned to the campus on Sunday, March 3, 1957.

The group is composed of the following:

Abadilla, F.; Abraham, E.; Abugan, E.; Acosta, R.; Acosta, R.; Aggabao, P.; Arellano, L.; Baloquig, A.; Bañaga, T.; Batcagan, S.; Baysa, A.; Blando, A.; Borree, A.; Bote, R.; Bote, T.; Busa, N.; Caday, E.; Collado, N.; Domingo, I.; Federico, M.; Flores, A.; Flores, V.; Gabot, V.; Galang, M.; Galutera, R.; Gerardo, J.; Gonzalez, D.; Gonzalez, A.; Guadalupe, N.; Guzman, E.; Guzman, G.; Liganor, R.; Martin, R.; Molina, S.; Mordeno, A.; Narciso, P.; Poquiz, A.; Raiz, R.; Reyes, T.; Rivera, A.; Rosario, E.; Salazar, C.; Sardiña, F.; Seraspi, E.; Solarta, F.; Tagorda, J.; Tesoro, F.; Tolentino, M.; Torre, S.; Udañga, A.; Valdez, A.; Valdez, C.; Villarino, A.; Zamuco. I.

—*E. de Guzman*

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REPORT FROM THE BUREAU OF PUBLIC HIGHWAYS

The Bureau of Public Highways has been working with the personnel of the Makiling National Park not only in making possible the access to the park but also in introducing improvements within the campus.

As reported by Mr. Jose Palisoc who is in charge of nurseries within the Makiling National Park, the Bureau of Public Highways has accomplished the following improvements: the planting of ornamental plants and shade trees along the highway in connection with the cooperative planting program. This forms only a segment of the planting program the major portion of which can be seen along the highway towards Manila and other places. A nursery was established near the gate of the College of Forestry which recently has been supplying thousands of seedlings to be planted along the highways. Another improvement taken up is the building of a bodega for tools under the auspices of the Landscape section of the Bureau of Public Highways.

The present problem as revealed by the personnel in charge is the need of water pipes, faucets and water hoses to be used in the nursery. The absence of these facilities according to him retard the best possible care of the plants especially the young seedlings. However, Mr. Palisoc recommended for the increase of more men to work in the nursery especially so that the site of the nursery can be expanded. He further stated that the need of at least a two-hectare site for the purpose of raising seedligs for distribution under the cooperative planting program is very necessary.
—*A. Mordeño*

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FENCE BY THE SILVICULTURE 2 CLASS

Practically everyone in the College has expressed special liking and approval for the laudable project of the Silviculture 2 class under Professor Teodoro Delizo and Mr. Domingo Jacalne. The Silviculture 2 class has been able to push through successfully in erecting a barbed-wire fence around

the premises of the right wing of the College building. Rows of ornamental plants such as San Francisco and Calapuing are planted along the fence. Soon, marble benches donated by the U.P. Senior Council thru Professor Campos will be erected. The fenced area will be an ideal place for the students to hold meriendas, luncheons, and get together parties in the future.

The all out effort made by the Silviculture 2 class is preliminary to landscaping the whole place. The barbed-wire fence will be removed as soon as the hedges are tall enough. A part of the movie funds has been set aside for this project. —*Nick Mulato.*

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VISMINDA ORGANIZED

Recently, the students from the south organized themselves into an organization which they called Vizminda Varsitarian of the College of Forestry. This was planned by the founders in order to insure a closer relationship between students from the Visayas and Mindanao provinces in the College of Forestry. There are at present 75 active members and 3 advisers, majority of whom come from the Visayas.

During its first meeting, officers were elected for the next school year. This was followed by a lively picnic at the Lopez swimming pool. In order to have a "southern atmosphere", native southern delicacies were prepared especially "sumsuman", and there was the usual strumming of guitars and rendering of lively folk songs.

The members proposed some projects which include a College of Forestry signboard to be placed in front of the College building. The organization hopes to have this plan materialized next semester when the organization would have fully established its identity with other College organizations.

During the election the following were elected: Juanito D. Lamanilao, President; Jesse Amihan, 1st Vice-President; Lucio Lee, 2nd Vice-President; Estrella Maico, Secretary; Policarpio Narciso, Jr., 1st Treasurer; Rufino Dorado, 2nd Treasurer; Apeles Villaluna, Press Relations Officer; Romeo Lluch, Business Manager; Angelico Baliquig and Timoteo Tamiok, Sgt.-at-Arms. The advisers are Miss Jesusa Taleon, Mr. Osiris Valderrama, and Mr. Lucio L. Quimbo.—*A. Mordeño.*

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SILVICULTURE 2 AND GRAZING CLASSES OFF TO ILOCOS REGION

The Silviculture 2 and Grazing classes under Professor Teodoro Delizo and Professor Valentin Sajor, respectively, had their joint field trip to the Ilocos Regions via Baguio City last December 22-26, 1956. The group composed of 134 members took three LTB busses from the Forestry Campus and back. The purposes of the trip were: (1) To observe the vegetations of the Ilocos Regions; (2) To get first hand information on the ways of actual reforestation work, and (3) To observe and learn the grasses, browses and other plants that thrive in the region.

At five o'clock in the morning of December 22, the students boarded their respective busses and left for Manila. From Manila they followed highway No. 3 and had their lunch in Carmen, Pangasinan. From there, they proceeded to Baguio via the Kennon Road. Their ascent to Baguio provided them a wealth of scenery and variety of plant life. The group stopped at the Kennon Road Reforestation Project at Tuba, Benguet, and studied its nursery and plantation. In Baguio City, District Forester Edilberto Madrad met them. They enjoyed the beauty of the City, the brief stop-over at the Trinidad Valley and above all, the talk of Hon. Juan de G. Rodriguez in an impromptu program held at the district office in the evening. The following morning, they visited the Pacdal Nursery where exotic species of ornamental plants are raised.

From there, they proceeded to the Caniaw Reforestation Project at Paing, Bantay, Ilocos Sur via Naguilian Road. The group were welcomed in Caniaw where they spent the night. The following morning, Ranger Crisogono Ramos led them to the plantation and later lectured to them on the needs and problems of the project. After lunch, they left the place for Laoag, Ilocos Norte.

Met by District Forester Alejandro Tremor, the group was led to the house of Julieta Gerardo, where delicious food was served. From there, they went to the Tangaoan Reforestation Project, Piddig, Ilocos Norte. The project's personnel went out of their way to tender them supper even though they had just had trouble in putting out the fire which razed their building to the ground. After supper, some members of the party stayed in Tangaoan while the others went back to Laoag to spend their Christmas Eve there.

On the morning of the 25, Christmas Day, the group went to the Paraiso Reforestation Project at Nueva Era. After lunch, the group studied the seedbeds, water supply, plantation, type of pasture and topography of the project. In the afternoon, they bade goodbye to the District Forester and personnel and started their journey back home.

Those from Ilocos Norte dropped in or near their respective places. On their trip back to Caniaw, they rested for refreshments at Professor Valentin Sajor's hometown, Cabugao. They reached Caniaw late in the afternoon where some boys attended the dance in the evening at the nearby school of Paing.

The following morning, December 26, the party went to Vigan before proceeding to Naguilian, La Union. In Naguilian, the town Mayor hon-

ored them with a dance in the evening. By then many students had already gotten off for their places.

On the morning of the last day of the trip, they left Naguilian for Bo. Sumabuit, Binalonan, Pangasinan, where Professor and Mrs. Jose B. Blando gave them a luncheon. From Binalonan, they continued the last lap of the journey back home. At 7:00 P.M. of December 26, only a handful of students out of the original 134 went back to the Forestry Campus.

When a student was asked to comment on the trip, he said:

"The trip was educational because it is really worthwhile to know and see the Ilocos Regions."

—Nicasio Mulato

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FSBO GIFT TO DEAN MABESA

The FSBO in their last meeting, agreed to set aside funds for the purchase of a set of gifts to be given to Dean Calixto Mabesa in recognition of and in profound gratitude for his long, continuous and efficient service in the Bureau of Forestry and in the College of Forestry, U.P.

Dean Mabesa, after 65 years of fruitful service plans to retire on May 19, 1957. The FSBO gift consists of a plaque, a moro-carved cane and the "proverbial" pipe. The gift-giving ceremony will be included in the Moving-Up Day celebration on March 24, 1957.

E. Dizon

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LANDSCAPE MOVEMENT

As a preliminary to the landscaping projects around the college building, the Silviculture class under Prof. Delizo and Forester Jacalne set off a portion of the College ground adjoining the College auditorium with a barbed wire fence and San Francisco hedge. The purpose is to keep campus excursionists from trespassing on the portion set aside for landscaping. Marble benches which will be donated by the U.P. Senior Council thru Registrar Campos will be placed here.

Meanwhile, U.P. Acting President Virata donated a 200-meter burlap to be used as lining for the curtains of the College of Forestry Auditorium for audio-visual purposes. Forestry co-eds will take charge of sewing the curtains.

E. Dizon

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ON FRESHMAN ENTRANCE EXAMS

It will be recalled that the College of Forestry U.P. selected students through competitive entrance examination and interviews. Only through passing the said examination were students admitted and allowed enrolment. Also admitted without entrance examination were those entitlled to entrance scholarship in accordance with the rules of the University i.e. valedictorians and salutatorians of graduating classes of not less than 30 graduates and those students who successfully passed the summer courses given during the summer session.

Because of the satisfactory results obtained, the same pattern has been devised as a medium of selecting students for the next academic year. May 21 will be the last day of filing applications for admission and the entrance examinations will be given on May 28.

Those students desirous of taking the course should enroll on April 12 for the summer session in order that they may get a foretaste of Forestry life and by passing the subjects they registered in, will not be required to take the entrance examination. If sufficient number of students will qualify, the entrance examination may not be given at all.

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FORESTRY COOPERATIVE STORE

A recent improvement of the Forestry Cooperative Store is the addition of a canteen which can accommodate about 40 people. It is the cuisine coupled with efficient and courteous service which has made the coop a popular eatery.

Among the regular customers are some Forest Products Laboratory personnel and employees of the Bureau and College, foreign students, and some of the faculty members of the College of Agriculture.

Not to be out done is the old general store. NAMARCO products are now on sale . . . A proof of its improvement. The Coop supplies the local population with rice, groceries, and school supplies.

The members of the board of the Cooperative Store are:

President, Prof. Eugenio de la Cruz; Vice-President, Prof. Calixto Mabesa; Secretary, For. Domingo Lantican; Treasurer, For. Artemio Domingo Jacalne; Auditor, Dr. Artemio V. Manza; Bookkeeper, Prof. Francisco Tamolang; PRO, Prof. Valentin Sajor; Manager, Lucio L. Quimbo; and Assistant Manager, Mr. F. Lauricio.

—L. Angeles

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MOVIES

For the last two years, the campus atmosphere of loneliness on weekends has been dispelled by the weekly movies held at the Forestry Little Theater. Managing the activity is Mr. Modesto Tobias assisted by Mr. Oscar Cadeliña. Proceeds from gate receipts and pledges are turned in to the College disbursing officer at the end of each semester. These funds are used for the improvement of the College premises and for such equipment are needed by the College. To mention a few: the flagpole in the center of the inner court and the

flag-stone walks which flank it, the public address system and turn table records.

One of the two projectors which are still doing yeoman service was donated by the College of Forestry Student Body and Alumni, one of whom Mr. Abarro donated one thousand pesos.

—O. Cadeliña

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SBO ELECTION

The Dipterocarp Party against the Goodwill on the other hand won the majority of the positions for the Student Body Organization during the election held on February 22, 1957. Unlike the previous years, the election was conducted in a very peaceful way. No rallies whatsoever highlighted the recent election. This was attributed to the indifference of the more active but scholastically disqualified would be candidates. New scholastic requirements had barred former student leaders from running again for office.

The following were elected to compose the officers of the Student Body Organization for the school year 1957-58:

President, Romeo Valdez; Vice-President, Andrew Bacdayan; Secretary, Angelo Mordeño; Treasurer, Romeo Salvador; Auditor, Isidro Esteban; Athletic Manager, Edilberto Cajucom; Sgt.-at-Arms, Bienvenido Rola and Avelino Veracion, Representatives to the U.P. Student Council, Senior—Leonardo Angeles, Junior—Armando Villafor; Representative to the Philippine Collegian, Juanito Lamanilao; and Adviser, Dr. Artemio Manza.

—A. Mordeño

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CALLING ALL ALUMNI

The University will celebrate its golden jubilee next year. One of the features of the celebration is an Alumni Directory containing the names of over 22,000 graduates. And you may be one of them.

Wherever you are, you can help publish the Directory. All you have to do is write to your College, School, or Institute, care of the Dean, or Director, or to your Alumni chapter president, and give the following information:

(1) Name—indicate maiden family name if married female graduate; (2) College, School or Institute, degree earned and year of graduation; (3) Date and place of birth; (4) Home address and telephone; (5) Position, name and address of office or place of employment; (6) Other degrees, where and when secured; (7) Associations, clubs, fraternities, sororities and positions in each, if any; (8) Other personal data.

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MOVING-UP DAY PLANS

The traditional "Moving-Up Day" celebration of the Student Body Organization of the College of Forestry will be celebrated on March 24, 1957 in connection with the commencement exercises of the graduating Foresters and Rangers whose certificates and diplomas will be conferred by Acting U.P. President Enrique Virata.

Regent Modesto Farolan, at present Director of the Tourist Bureau of the Philippines is this year's guest speaker. The day's program begins with the registration of the alumni at 8:00 A.M. followed by an open house at the Forest Products Laboratory, the Experiment Station and the College of Forestry.

After the convocation, a luncheon for the alumni and faculty will be given by the FSBO.

The Forestry Alumni reunion at one o'clock will be followed by the meeting of the Society of Filipino Foresters at 3:00 P.M. after which a merienda will be served.

A formal dance at the Maquiling National Park swimming pool at 7:00 P.M. at which the II Military Area Band will assist, will cap the day's schedule of activities. *—J. Lamanilao*

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VOLLEYBALL TEAM REGAINED CHAMPIONSHIP

The Forestry Volleyball Team once again proved its supremacy in men's volleyball when it regained the championship this year. This victory was a significant one because it is only the volleyball team that won a championship this year in the intramurals. Although the team suffered very much with the graduation of its mainstays and disqualifications of its star players it was still the team to beat because of its valuable rookies, Eddie Unite and Mike Edjan, who bolstered the team.

In a very thrilling, but less-attended championship game at the Baker Hall, the Forestry Volleyball spikers battled their way to a close decision over the strong Sophie team. It was an unexpected win because the local team failed to field some of its regular players, so much so that the forestry students who hardly know how to play the game were recruited. Notwithstanding this handicap, the local boys hammered their way to the championship. The unmerciful booming kills of Eddie Unite and the treach-like defenses of Mike Edjan, Pepe Muñez, Frankie Milan and the rest of the team were to much for the opposition. The cheering was very effective and the coaching of Coach Recto and team captain "Tobie" kept the boys fighting on an uphill fight and finally won this year's gonfalon.

—Angelo G. Mordeno

Education arises out of the universal impulse to explore the world around us. Aristotle wrote that philosophy begins in wonder. He might have added—perhaps he did—that so does education.

—Robert Redfield

• Forestry in the News •

FORESTRY BUREAU STARTS SELECTIVE LOGGING DRIVE

The bureau of forestry has started drafting regulatory fines and penalties for more effective securing of adequate residual stands in connection with the implementation of selective logging as a practical forest conservation measure.

Secretary Juan de G. Rodriguez of agriculture and natural resources told forestry director Felipe R. Amos that he was interested in how the loggers' reluctance to apply selective logging could be remedied. He instructed the director to submit for study and approval the forestry administrative order to insure the practice of selective logging.

The matter was taken up during the visit of Secretary Rodriguez at the forestry bureau yesterday morning (Feb. 5) on the occasion of the latter's reorganization.

As reorganized, the bureau consists of the following functional divisions: administrative services, forest management, reclamation and reforestation, domain use, forest research, sawmills and licenses and forest land uses.—*Manila Times.*

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Now "legitimate" lumbermen have come out to accuse solons and bureau of forestry officials of connivance with "fly-by-night" lumber operators resulting in indiscriminate deforestation and floods. This is a serious charge that bears looking into. We might also blame the top-level economic geniuses who conceived of unlimited barter of logs. That started the solons and the indiscriminate lumbering of our forests.—(*Over a Cup of Coffee*) —Valencia, *Manila Times.*

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LUMBER EXPORT FROM HONGKONG IS RELAXED

The Export Control Committee has relaxed the exportation of lumber to Hongkong with a directive issued by the President to Secretary Juan de G. Rodriguez who is chairman of the said committee.

Prior to this directive of the President, the Committee has been allowing the exportation of this item to Hongkong, subject, however, to the condition that lumber exported thereto should conform to the following specifications:

Narrow sizes: Thickness—1", 2" and 3" only; width—2" and 3" only; length—9' to 16' only.

Short sizes: Thickness—1" and 2" only; width —4" to 12" only; length—4' to 8' only.

In view of this directive lifting this restriction, lumber may now be exported to that country without the need of complying with the above-mentioned specifications. Exportation of logs to Hongkong, however, is still prohibited. *Manila Times*

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SEES FORESTRY RULES DEFECTS

Secretary of Agriculture Juan de G. Rodriguez admitted yesterday "existing defects" in the enforcement of forestry regulations resulting in the depletion of the forestry resources of the country.

At the same time, he said his department working through the bureau of forestry was taking steps to reforest barren areas and to enforce "selective logging." Enforcement of regulations would also be tightened, he said.

Selective logging is the restriction of logging operations to mature trees and the prevention of the destruction of saplings by falling timber.

Forestry Director Felipe Amos said reforestation was being accomplished at the rate of 2,000 hectares a year, but that the forest reserves of the country were being exploited at a 30,000-hectare annual rate.

"We expect to increase the reforestation rate with the ₱2-million set aside for the purpose," he said.

Amos said "apparent indiscriminate logging" carried out by lumber companies was "probably" being done on agricultural areas. "There is no restriction in logging as far as agricultural areas are concerned," he said.

Both Rodriguez and Amos decried the lack of personnel in the forestry service. "We only have nine men who know anything about selective logging," the director said. Only six men are graduated by the forestry school every year, he added.

Director Amos said lumber men were "technically violating" a directive issued by former Agriculture Secretary Salvador Araneta to the effect that their operations should be planned out only as far as their licenses were effective.

He said it was "traditional practice" for lumbermen to continue cutting logs even after their licenses had expired as long as they had submitted a renewal application.

The case of the Tigman lumber company allegedly owned by Rep. Emilio M. Tible was not an exception to that rule, he said. The Tigman lumber company cut some 25,000 cubic meters of lumber after its license expired last June 31, according to the report of C. B. Motos, Sipocot, Camarines Sur, treasurer.—*Manila Times.*

CONCESSIONERS WARNED AGAINST INDISCRIMINATE TIMBER CUTTING

Secretary of Agriculture Juan de G. Rodriguez issued an appeal to forest concessioners not to throw away timber wastes but instead convert them into some other product.

He said three-fourths of the timber cut in Philippine forests were becoming "total losses" as a result of indiscriminate cutting of trees to be sold as logs. Rodriguez pointed out that timber wastes could be made into plywood or other veneer products.

The secretary met with other agriculture officials, foresters of the bureau of forestry and personnel of the International Cooperation Administration to discuss ways and means of conserving Philippine forests.

During the conference, it was pointed out that the department would now be able to implement more strictly forestry rules and regulations with an additional ₱15,000,000 budgetary appropriation. A portion of the amount would be used to employ additional personnel to guard Philippine forests.

The secretary said he had proposed to the National Economic council that applications for forest concessions of less than 3,000 hectares should no longer be subjected to public bidding and to publication requirements. He said this would benefit smaller applicants.

Undersecretary of Natural Resources Jaime N. Ferrer proposed the establishment of permanent forest areas in provinces heavily laden with trees and timber resources. Ferrer pointed out this would stop indiscriminate cutting of trees.

Ferrer's proposal met with the approval of the conferees. However, it was pointed out that legislation was needed before the proposal could be implemented. Agriculture officials said they would make representations for the submission of a bill in congress establishing permanent forest areas.—*Manila Times.*

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HIT TIMBER CONCESSIONERS FOR DENUDING P.I. FORESTS

Aggie Officials are Powerless to enforce Law

Agriculture and forestry officials blamed yesterday irresponsible logging concessioners for the fast dwindling forest reserves in the country.

They admitted at a press conference that these logging concerns were either backed up or owned by powerful politicians who exert political pressure in obtaining tremendous concessions.

Both Secretary of Agriculture Juan de G. Rodriguez and Director of Forestry Felipe Amos pointed out that these politicians-backed lumber concerns were causing the country the loss of 30,000 hectares of forest lumber yearly as well as endangering the industry itself.

Denuding of forests, Rodriguez and Amos also explained, was partly responsible for the floods in Mindanao which had caused property loss amounting to millions of pesos a year.

The conference was called by agriculture officials who wanted to explain their stand on the denuding of forests believed to have caused the recent floods in Mindanao.

Agriculture officials named at least eight congressmen and senators who were exerting political pressure in obtaining greater lumber concessions.

The officials also admitted they were powerless to remedy violations of forestry regulations "on account of technicality."

They pointed out a certain congressman who was able to get 43,000 cubic meters of lumber last year although his license was only for 6,000.

The congressman, they also found out, continued to cut lumber in spite of the fact that his license had expired for several months.

Amos and Rodriguez also said that certain lumber concessioners did not bother to renew their application but presumed their license renewed.

They expressed fear that small independent loggers would inevitably become dummies of aliens unless they were given immediate assistance.—*Manila Times.*

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JAPAN REPORTED EASING OUT P.I. IN U.S. LUMBER MARKET

The "unreliability" of Filipino lumber exporters is bringing about the loss of the Philippine market in the United States in favor of other supplying countries, according to reports received yesterday by the department of commerce and industry from Emilio Torres, commercial attache in Washington, D.C.

Torres said importers in the American southern states would rather buy their mahogany from Japan and British Honduras because he said lumber coming from these countries was more carefully sawn and of better quality.

He said Japanese lumber exporters are more prompt than Filipino exporters. The Japanese and other lumber suppliers, Torres stated, follow "religiously" the specifications desired by the buyers.

The commercial attache said some furniture manufacturing firms in the United States, especially in Georgia and Alabama, use only mahogany from Honduras and Japan.

He said that according to the manufacturers, Philippine mahogany is "porous and the texture rough and consequently difficult to absorb paint evenly."

Torres cited that the Japanese lumber export-

ers are easing out Filipino exporters for the following reasons:

1. The Japanese are very dependable. When they say that shipment will be made on a certain date, it is delivered on that date.

2. The Japanese are very systematic in their sales procedure. They send brochures, complete in informative details, to prospective buyers with almost persistent regularity.

3. The Japanese exporters follow religiously the specifications desired by the buyer.

4. The Japanese lumber is sawn more carefully and has a very neat appearance.

The commercial attache said that Filipino exporters fail not only to send lumber of the highest quality, but also to be prompt in the transactions.

Although some American buyers would rather import from the Philippines for "sentimental attachment," Torres said, the poor quality of products and inferior services offered by the Filipino suppliers are causing the Americans to become reluctant.

Torres suggested that in order to maintain the Philippine market in the United States and to allow Philippine mahogany to break into the southern states where it is not even used, "fly-by-night" producers and exporters should not be allowed to handle lumber exportations to the United States.—*Manila Times.*

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FOREST FEES BILL PUSHED

Finance Secretary Jaime Hernandez this morning recommended to President Magsaysay passage in the coming session of congress of a bill which seeks to allow the municipalities, chartered cities and provinces which collect forest charges to have bigger shares in their collections.

Hernandez also ruled that all sinking fund amortizations and interest payments required in connection with the cadastral survey project of the bureau of lands will have to be provided first from all collections of the costs of survey before any of such collections is credited to the cadastral survey fund for further surveys.

In seeking this change in the sharing of collected forest charges, Secretary Hernandez pointed out that the amount of ₱4,688,654 was the collection for such tax for the year 1955-1956. Of such amount, ₱623,732 was allotted to all local governments in accordance with section 363 of the internal revenue code.—*Manila Times.*

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ADVISE PROPER USE OF FORESTS

Secretary of Agriculture Juan de G. Rodriguez has appealed to all loggers in the country to extend their cooperation in the "judicious" exploitation of forest resources. Rodriguez appeal came in the wake of reports that recent floods in Mindanao, particularly in the Davao-Agusan area, were indirectly caused by indiscriminate cutting of trees mostly by those engaged in the logging business.

A "judicious" exploitation of forest wealth, Rodriguez emphasized, could be practised by selective logging and by either natural or artificial reforestation. Thus only mature trees would be cut in an area released for timber purposes and replanting the denuded site with three seedlings for the benefit of future generations, he said.—*Philippines Herald.*

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₱10 (M) NEEDED FOR REFORESTATION

Agriculture Secretary Juan de G. Rodriguez said yesterday he will ask ₱50 million from Congress for a 10-year reforestation program throughout the country.

The secretary said that the ₱2 million annual appropriation which the department uses for reforesting denuded lands is not enough to meet the expenses of bureau of forestry teams planting trees to take the place of cut timber.

Care in utilization of the nation's forest resources was also stressed by Rodriguez.

"While it is proper for the government to help our citizens develop their logging and lumber business," he said, "we must think of future generations who will certainly be prejudiced by today's indiscriminate and unwise cutting of lumber."

The program proposed by the agriculture secretary envisions the expenditure of at least ₱5 million a year for the next 10 years on reforestation projects from northern Luzon to Mindanao.

The floods which visited three Mindanao provinces recently have been blamed by some forestry experts on the indiscriminate cutting of lumber in Davao, Agusan and Misamis Oriental where logging operations encouraged by high prices have been going on heavily.

Disappearance of substatial portions of Mindanao's forest cover was said to have followed the widespread cutting of lumber by forest concessioners who are in a rush to ship logs to Japan.

Secretary Rodriguez cautioned his subordinates against hasty recommendations for alienation of forest lands for agricultural uses.

"There are certain areas in our country which are perfectly suited to remain as forest zones which must continue as such," he said. He pointed out that there are sufficient areas that can be made available to farmers without lands.

Rodriguez added that several field men in his department are pinpointing those areas that are fit for cultivation to facilitate their occupation by legitimate pioneers who want to have their own farms.—*Manila Times.*

HEAVY RAINS BLAMED BY WEATHER CHIEF CAUSE OF FLOODS

Chief Eugenio Manalo of the climatological division of the weather bureau denied claims that deforestation was the main cause for the heavy floods in Mindanao last week.

Manalo said in a "Newscoop" interview over DZBB that the deforestation in Mindanao for the last five years has not reached the extent that would affect rainfall over the area.

The primary cause of the floods, he declared, was the 27-inch rainfall, the heaviest in the Philippines since 1911, when Baguio had a rainfall of 46 inches in one day, heaviest in the world so far.

The weather man also revealed that it is now rainy season in Mindanao due to the high pressure zone over the Asiatic mainland which sends southeasterly winds towards the equator causing excessive rain in the Mindanao area.—*Manila Times.*

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STEP UP REFORESTATION PROGRAM FOR DENUDED TIMBERLAND

The Philippine constabulary today took a hand in the reforestation of denuded areas in the country following the holiday floods which swept across at least six of the most fertile provinces in Mindanao.

Brig. Gen. Manuel F. Cabal PC chief, ordered provincial commanders throughout the country to enforce strictly all existing forestry regulations in their respective jurisdictions to put an end to the "wanton" denuding of timberlands which had been considered as the major cause of the recent floods and the large scale soil erosion that swept Mindanao.

Cabal's order was sparked by observations he made in the course of his three-day survey of the flooded areas in Mindanao where he conferred with provincial and municipal officials whose jurisdictions recorded the worst havoc and casualties from the flash floods in many years.

The PC chief issued the directive even as he ordered the sending of foot patrols daily to forested areas to keep tab of any violations by logging operators. He said that his order is part of the year-round campaign against timber smuggling and kaiñgings which have lately caused adverse natural penalties.

Cabal said the PC has been carrying out successfully its year-round campaign against timber smuggling in national parks and kaiñgins in forested areas and called the attention of constabulary authorities in Mindanao to double their efforts at enforcing present forestry regulations to counteract what flood control and forestry authorities termed as "danger signals" arising from the abuse that has been wrought on Philippine timber resources.

He explained that since the constabulary had been deputized to enforce forestry regulations, the national police organization has launched a year-round campaign against the wanton cutting of timber and the practice of kaiñging farming in the country's forested areas.—*Philippines Herald.*

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ANTONINO BLAMES GOV'T LAXITY IN ENFORCEMENT OF FOREST LAWS

Gaudencio Antonino, president of the Producers and Exporters Association of the Philippines, yesterday blamed government laxity in the enforcement of our forest laws for the denudation of large tract of forest land and the destructive floods that result from this.

Antonino, who is also a lumber man, admitted that the floods which have caused great havoc on agriculture and resulted in the loss of countless lives could be traced to indiscriminate cutting of timber.

However, he stressed the fact that the government has been laying too much emphasis on reforestation instead of the protection and conservaiton of the country's forest resources. He also mentioned the allegedly indiscriminate classification of forest areas into agricultural lands.

Antonino also cited other reasons for the education of our forest areas, such, as the ineffective enforcement of kaingin laws, the failure of the government to determine the extent and boundaries of forest lands and the lack of incentive to lumber operators to include in their budget items for the conservation of forest resources.

As a remedy to the situation, Antonino gave the following suggestions:

1. Delineate premanent forest lines through the use of additional Forestry personnel and bigger appropriation.

2. In the absence of additional funds and personnel require present timber license holders to delineate tentative permanent forest lines within their respective areas which may be established as permanent upon inspection by and approval of the bureau of forestry.

3. Permanent forest lands should remain permanent unless reclassified by Act of Congress, which should be required to conduct a public hearing prior to reclassification.

4. Give renewable lease terms of at least 25 years to proven and reliable concessioners.

5. Place maximum emphasis on forest protection and conservation rather than on reforestation;

6. Make the enforcement of *kaiñgin* laws strict and absolute, holding as recidivists those *kaiñgineros* who go back to any forest area, the illegal settlement of which they had been previously prosecuted.—*Manila Times.*

THE PROBLEMS OF THE LUMBER INDUSTRY

by SANTOS CHUA

Lumber is one of the six major exports of the Philippines and one of the most important industries. The largest foreign buyers of Philippine lumber and logs are the United States and Japan, respectively.

And yet the industry is at present confronted with many problems, among which the following are the most important:

1. HIGH COST OF PRODUCTION—Many factors bring about this problem. In the first place, lumbering in the Philippines is being carried on a very wasteful manner. There are practically no uses for by-products, such as slabs, bark, and sawdust. Wastes in the forests in the form of stumps, tops, limbs, branches, etc., and in the process of manufacturing logs into lumber amount to 75%. In other words, only 25% of the standing log finds utilization. In some countries wastes have been reduced to only 20%. Secondly, when logs are cut down, there still remains the problem of bringing them to the mill which entails tremendous expense, for it requires, among other things, the building of feeder roads. Another major contributing factor to the high cost of production is the relatively high wage on account of the Minimum Wage Law.

The establishment of the Forest Products Laboratory in the College of Forestry at Los Baños, Laguna, which was financed by the joint efforts of the ICA-PHILCUSA, is aimed not only at solving this problem of high productions cost but also at promoting diversification of home industries.

2. THE KAINGIN SYSTEM—This practice is not so rampant now as it was a few years back. This is because of the government's constant and persistent campaign against this unlawful and undesirable practice.

3. Many writers on the subject claim that another obstacle to the growth of the industry is the disproportionate taxes and charges shouldered by the industry. Personally, I do not think their arguments are sound because the only taxes and charges peculiar to the industry are:

1. Forest charges, for example—₱3.50 per cu. m. for the first group (narra) or ₱1.25 per cu. m. for the third group (lauan).

2. Reforestation charges: ₱0.50 per cu. m. for the first two groups; ₱0.40 per cu. m. for the third and fourth groups.

3. Inspection fees: ₱3.50 per thousand board feet for sawn lumber; ₱1.00 per thousand board feet for logs.

These are not as heavy as they claim to be, for if we relate these charges and fees to the market value of the unit of the commodity to which they apply, we find that they represent only an insignificant percentages, ranging from 6.7% to 7.7% of the market price. Or we might relate the total charges and fees collected to the value of the total volume of timber and lumber production in a given year. In the fiscal year 1954-1955 the forest and reforestation charges and inspection fees paid by the industry amounted to about ₱6 million. Total production of timber and lumber for that year was of approximately ₱172 million. Hence, from the above figures, we see that the total charges and fees represent only 3.4% of the value of total production.

Moreover, considering the magnitude of the task of reforestation and other responsibilities to be tackled and fulfilled by the government, all for the benefit of the industry as a whole, we can say that the changes are even inadequate.

4. HIGH FREIGHT RATES ON LOGS AND FLITCHES—This problem arises out of the natural disadvantage of the commodity's bulkiness. Shipowners justify their high freight rates on logs and flitches by claiming that these entail much handling costs. Therefore accommodation preference is always given to other cargoes, such as sugar, abaca or copra.

The freight-rate problem still remains to be solved. The wisest measure to adopt in this connection would be the establishment of a merchant marine. This should, of course, be pursued as a long-run objective. The short-run adjustment most advisable would be to step up production of sawn lumber and to discourage exportation of logs.

At present Philippine manufactured lumber is being outsold by Japanese processed lumber which is manufactured from logs imported from the Philippines. The reasons advanced to explain this anomalous situation are as follows:

1. Lower wages in Japan.

2. Lower freight rates, which is believed to be the result of government subsidy.

3. Greater operating efficiency.

4. Wider utilization, since almost every inch of the log find utilization because of the higher technological development in Japan.

However, Japanese processed lumber is claimed to be poorer in quality, so much so that large consumers in the United States, such as shipbuilders and furniture makers are turning to other species of hardwoods for their needs inasmuch as the Philippine processed lumber exported to the United States is inadequate to meet their demands. If this situation continues there will come a time when the Philippine lumber industry will collapse, inasmuch as the local market is still inadequate to absorb the present volume of output. The Japanese log importers, being aware of the prevailing market condition of lumber, try to exploit this opportunity to the best of their advantage by lowering their buying price for logs—*Manila Times.*

TREE PLANTING CONTEST

According to an announcement of the Executive Committee of the Columbian Farmers' Aid Association, the deadline for the long-range nation wide tree planting contest has been extended from December 31, 1956 to February 28, 1957. Meanwhile, it has been learned from Bro. Luis A. Aguilar, Chairman of the Committee in charge of the participation of Quezon City Council No. 3781 that his committee is ready to distribute seedlings to participants in the contest. Those who want to obtain seedlings are, therefore, requested to see Bro. Aguilar or the other members of the Committee, Bro. Epifanio of Fernandez, Bro. Dionisio M. Caloza, Bro. Fidel F. Viloria and Bro. Guillermo de los Reyes.—*KCQC Newsletter.*

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TWO FINDLAY OFFICIALS RETIRE

Firm now headed by Allan O'Gorman

The Findlay Millar Timber Company, Inc., one of the oldest lumber development organizations in the Philippines, has announced the retirement of of its principal officers and the election of a new director recently.

Retiring are A. W. Robertson former president and S. M. Austin, vice-president.

New officers and directors are: Allan A. O'Gorman, president; Ralph C. Stover, vice president; James B. Anderson, vice president and treasurer; and Carlos Romulo, Jr., secretary.

Simultaneously, Allan O'Gorman said they were completing their multi-million peso plywood factory in Kolambugan, one of the largest in the Philippines, and that they have plans for still furthur expansion in the future.—*Manila Times.*

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ICA IMPORTATION OF PI LOGS FOR TAIWAN REDUCED

Cut attributed to dollar shortage

Taiwan importation of Philippine lauan logs as financed by the International Cooperation Administration was drastically reduced and would eventually be suspended, the department of commerce and industry reported yesterday.

The department report was based on information received from Domingo T. Reyes, commercial attache to the Philippine embassy in Taipei.

The Taiwan government would not be in a position for some time to have foreign exchange for the import of lauan logs, Reyes disclosed.

He added that the large scale manufacture of hard bagasse boards by the Taiwan Sugar Corporation posed a serious threat to the plywood industry.

Reyes stated, however, that the combined military and civilian lumber requirements in Taiwan called for an increased importation of lauan logs from the Philippines and Douglas Fir from the United States.

Taiwan imported last year from the Philippines round and sawn logs valued at NT$23,098,-207, of which NT$21,804,101 was financed by ICA, the commercial attache pointed out. He stated that for the fiscal year 1955-1956, only US$400,000 was expended.

Reyes also reported that on the imported lauan logs, the Taiwan government levies 25 per cent import duty, 20 per cent defense tax and 15 per cent commodity tax.

He stated that the leading Taiwan plywood manufacturing firms, Fu Shing and Lin Shan Hao, had established their markets in the United States, Panama, South Africa, the Netherlands, Korea, Australia, England, Hongkong, Singapore, North Borneo and Okinawa.

Most of the raw materials used by these firms consisted of Philippine lauan and *hinoki* logs, Reyes observed.—*Manila Times.*

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NE FORESTER GIVES WARNING

Hits indiscriminate cutting of trees in forest reserves

Unless the indiscriminate cutting of timber in Nueva Ecija's forest reserves is stopped immediately, several towns may face the same fate suffered by the people in Mindanao caused by recent floods there, Tranquilino Orden, district forester, said here last night.

Orden has just arrived from a survey and inspection to determine the damage to several forest reserves caused by wanton cutting of trees.

The forester pointed out that the series of destructive river floods in some parts of the province have been caused by unseasonal but heavy rains due to lack of natural barriers to block or regulate the flow of water from the mountains.

In 1955, Orden said, he reccommended the non-renewal of licenses of 24 forest concessionaries in the northern section of the province to protect the watershed of the forest reserve in Carranglan but they, however, came back later with renewed licenses after lodging protests.

The towns of San Jose, Muñoz, Talavera, Sto. Domingo, Quezon, Licab, Aliaga, Zaragoza, Rizal and Llanera will be adversely affected by floods if the Carranglan watershed is further denuded, he said.—*Manila Times.*

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SEEK BIGGER SHARE FROM COLLECTION OF FOREST TAXES

Secretary of Finance Jaime Hernandez urged President Magsaysay to recommend the passage of a bill which would allow municipalities, chartered cities and provinces to have a bigger share in their collections of forest charges.

He forwarded to Malacañang the draft of the proposed bill in response to request of a number of municipal councils.

Hernandez pointed out that according to figures furnished by the bureau of internal revenue, a total of ₱4,688,654.70 was collected from charges for the fiscal year 1955-56. From this amount, ₱623,732 was allocated to all local government pursuant to section 363 of the national internal revenue code.

Hernandez said the share of mupicipalities, chartered cities and provinces was quite low. He said if the bill should become law, and granting that the yearly colletcions would be the same as that collected last fiscal year, ₱703,298.20 or 15 per cent of the total collections, should be added as the share of local governments.

The secretary said local governments had at present a share of 50 per cent of the fines and surcharges imposed under Republic Act No. 371, in cases of violations of forest laws and regulations in their localities. But, he added, the share could not be availed of if there were no violations of forestry rules.

"It is therefore deemed wise to allow local governments making collections on forest charges to have additional shares to give an incentive for them to effect more collections." Hernandez said. —*Philippines Herald.*

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PI MAHOGANY SELLS IN CANADA

Canadian market is still unexpected

Philippine mahogany is still making a poor share in Canada's total mahogany importation in spite of the Philippines being one of the "principal" lumber suppliers of that country, the department of commerce and industry reported yesterday.

Based on the information received from Justino M. Navarro, trade assistant to the Philippine consulate in Vancouver, the department said that although the Philippines ranks fourth as a lumber exporter to Canada, the Canadian import of Philippine mahogany for the first eight months of 1956, amounting to $110,194, was only about 10 per cent of the total mahogany import of that country.

Pointing out the need of increasing Philippine exportation to Canada, Navarro blamed "artificial" hindrances. He traced the direct cause to competition offered by Japanese shippers and slow lumber production.

Other suppliers which are giving the Philippines stiff competition, he said, are the United States and Gold Coast.

The trade assistant added, however, that the 1956 figure registered a great increase in comparison with that of the total for 1955, which amounted to only $12,775. Expectations, he said, are that the volume of Philippine exports to Canada will increase some more this year, provided the "artifical" hindrances are eliminated.—*Manila Times.*

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MINDANAO DELUGE

PEOPLE who are prone to jump to conclusions without first getting the facts and checking and double-checking them attribute the recent destructive floods in Mindanao mainly to deforestation in many provinces there. Because of "indiscriminate cutting of trees" for timber purposes, the forests in various places in the south have been denuded, thus leaving nothing to "block or slow down the rampaging waters," to quote the very words of a high government officials who made a trip to Mindanao a few days after the floods.

There is no question but that the kaiñgin system of farming has wrought havoc on the forest areas in those places, thereby causing deforestation. It cannot be denied, either, that the wanton cutting of trees, especially in Davao and Agusan, has laid waste forested areas which used to be natural reservoirs. Proof of the large-scale logging operations in Mindanao is the export of lumber to Japan the year 1955. Official records show that before the enactment of the No-Dollar Law, only $628,143 worth of logs were exported abroad but during a period of one year after the measure was passed, the lumber shipments skyrocketed to $10,-184,188 from October, 1955 to October, 1956.

Director Felipe Amos of the bureau of forestry admitted in an interview that during the past year there have been feverish logging operations in Mindanao, particularly in the Agusan and Davao areas. It is deplorable, Amos said, that many timber concessionaires do not follow the rules and regulations governing the proper cutting of trees. In other words, only a few operators observe what is known as "selective logging." The rest just wantonly cut down trees of any size or age. The forestry director said that the indiscriminate cutting of trees could be prevented if only his bureau had enough forest guards to go around and enforce regulations. But instead of increasing the number of forest guards, the Reorganization Committee reduced them by cutting down the bureau appropriation by almost half a million pesos. After the reorganization, a forest guard will be assigned to patrol not 30,000, as used to, 60,000 hectares. The bureau of forestry will have a total of only 360 forest guards for the entire country after that office is revamped.

As government investigators' reports indicated, seven provinces in Mindanao were ravaged by the floods: 11 persons were reported dead, two injured and 25 missing. Damage to property was

estimated at a little over ₱2 million, including 673 houses, four airfields, 52 bridges and ₱30,000 worth of fish corrals. No fewer than 4,000 families were rendered homeless.

The weather bureau, in an interview with the FREE PRESS, reported that the deforestation of many places in Mindanao was not the main cause of the recent floods. It was the unusually heavy rainfall during the last week of December according to Eugenio B. Manalo, chief of the climatological division, that brought about disaster. Manalo supported his contention with irrefutable facts and figures.

Records of the weather bureau show that whereas only an average of seven inches of rain fell in Surigao during the first three weeks of last month, during the period between December 23 and 30, 1956, 27.06 inches of rain dropped in that province. That was quite abnormal, Manalo said; during the five years that he was in that province, no such amount of rainfall had been registered.

In various other places that same week, the rainfall was likewise heavy, Misamis Oriental had 13.26 inches, compared to 0.62 the previous week; Cotabato, 4.52; Davao, 5.78, whereas it had no more than 1.19 the week before; Jolo, 6.20, while it registered only 1.19 during the third week, and northern Zamboanga, 10.13. In contrast there was practically no rain in that region between December 16 and 23.

Manalo also pointed out the fact that many areas in Agusan and Davao are marshly and are, therefore, more susceptible to floods than other provinces.—*Phil. Free Press.*

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Now everybody is concerned about reforestation. Here and there we get reports about drying up of rivers and floods because of the absence of natural barriers to cascading waters from the rains. Then, the weather bureau comes with the classic statement that deforestation did not have anything to do with floods. It was the water from the rains that did it, the weather man said. Bright conclusions, no?

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TIMBER, PASTURE LICENSES SIGNED BY AGGIE BOSS

Agriculture Secretary Juan de G. Rodriguez have signed 28 lease agreements and licenses on timber concessions, pasture lands, tree-farms and lode mining deposit.

Rodriguez approved 4 new pasture lease agreements involving an area of 2,075 hectares, 3 new timber licenses involving 4,700 hectares, 1 lode lease, and 20 renewals and amendments to original pasture and timber leases.

In approving the timber licenses, Rodriguez cautioned anew the concessionaires against "unwise and indiscriminate" logging. He stressed the importance of "selective-logging" and the preservation of watersheds to prevent soil erosion and floods.

Signed ordinary timber licenses follow: Benguet Consolidated, Inc. and Balatoc Mining company (amendment); Victor L. Erickson, (renewal); Karapdapan Sawmill company, (renewal); La Vila De Manila (new); Mariano Dy-Liacco Sons & company (renewal); New Pacific Timber and Supply company (amendment);

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Gabriel T. Ortiz (renewal); Samar Mining company (renewal); Margarita S. Santos (new); Laureano Siriban (amendment); Pablo S. Tecson (new); and Bernardo Z. Pamisa (renewal).

Pasture lease agreements: Antonio Medina, Francisco Medina, Jose Medina, Luis Medina (new); Arsenio E. Diaz (amendment); Dionisio Gutierrez, (amendment); Paulino Pascual (amendment); Juan G. Santos (amendment); Manuel Umadhay (amendment); and Reynaldo Atanacio (new).

Tree Farm Lease agreement (amendments) Basilisa Kittikstvedt; Juvencio Ortañez, Angel J. Santos, Mariano V. Concepcion, and Leonor Docusin.

Lode lease contract: Cabapa Mining Company (new).—*Manila Times.*

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TREE BANK FILM ISSUED

To help farmers asking about tree planting under the Soil Bank program, the U.S. Department of Agriculture is currently releasing a new film, "Tree Bank." A copy has been assigned to the Forest Products Laboratory. Tree planting promises to be a popular conservation practice among farmers taking lands out of crop production under the conservation reserve section of the Soil Bank program.

The film, prepared by the Department's Forest Service, explains *what types of lands can be shifted from crop prodution to trees.* It also tells farmers where they can obtain cost-sharing assistance and technical help in their planning and tree planting. Besides the cash value of trees, the film emphasizes their other values to the farmer—in conserving soil and water, providing food and shelter for wildlife, and affording recreational opportunities.

WE SOMETIMES THINK of plywood as a modern article in the building field, but you may be surprised to read that, "The use of hardwood plywood dates back to ancient Egypt. King Tutankhamen had a bed with a hardwood plywood headboard, and the queens of Egypt had cabinets and embroidery stands beautifully made of ply-

wood. This goes to prove that 'there is no new thing under the sun'."—Plan.

OLDEST LIVING THING: The oldest living things in the world are 3 small bristle-cone pines high up in the mountains 20 miles northeast of Bishop, Calif., according to a University of Arizona professor. The pines are 4,000 years old, it is estimated by Dr. Edmund Schulman, head of the university's tree-ring laboratory. The giant sequoias of California, current record-holders for old age, are about 3,000 years old.

Schulman based his estimate on countings of the pine trees' under microscope. He said the trees grow to a maximum height of only 30 feet, with trunks from 25-50 inches across. The trunks, he said, grow just an inch across every 150 or 200 years.—The Forest Log, Salem, Oreg.

CHRISTMAS TREES: More farmers are raising Christmas trees for a cash crop than ever before according to a survey of the Christmas industry conducted by the Forest Service, the U.S. Department of Agriculture has announced recently. About 35 percent of the naturally wooded or pasture lands which supplied 87 percent of the Christmas trees cut in this country last year are owned by farmers. Because farmers have showed increased interest in Christmas trees, 20 states have issued bulletins during the past 10 years telling how to plant and to harvest trees as a thinning process in regular tree growing.

Still the most popular trees are: Douglas-fir, balsam fir, eastern red cedar, black spruce, and scotch pine, in that order.—*USDA Release. Forest Products Laboratory Bull. No.* 240.

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THE EFFECTIVENESS OF TANGLAD (ANDROPOGON SP.) MULCH AS DETERENT TO RATS

As Reported By
CONSTANCIO REYES
Forester-in-Charge
Baguio Forest Experiment Station

Rats are a menace to direct seeding of Benguet Pine. Where they abound they search every inch of the ground, consume practically every seed sown, leaving nothing but shreds of seed pericarp after a night's work. Due to the sharp and tiny bristles at the stems, midribs and edges of the leaves, tanglad was thought to be deterrent to rats. It has been reported that in Salinas Reforestation Project, Nueva Vizcaya, seeds sown in nursery beds mulched with tanglad were not bothered by rodents.

To test the effectiveness of tanglad mulch against rats, an experiment was conducted in Camp 4, Kennon Road, Benguet, Mt. Province. Two plots of 40 meters x 20 meters were established and sown to seeds of Benguet pine. One plot was mulched with stems and leaves of tanglad cut into about 30 cms. in length and laid horizontally on the ground. The other plot, which served as control, was unmulched.

When the place was visited two months after sowing, no germination either in the mulched or in the unmulched plot was observed. Subsequent observations of the plots showed the same result.

The failure of germination can be attributed to many factors. It could not, however, be ascribed to lack or excess of moisture because after the seeds were sown, the precipitation on the ground was just the amount needed to induce good germination. Nor could it be imputed to loss of viability because the seeds were taken from fresh stock. Rats abound in the region. It is safe to presume that the failure of germination of the seeds in the two plots was due primarily to the depredation of rodents since, after careful examination, shreds of seed pericarps of Benguet pines were found strewn all over the ground.

Extensive patch planting of Benguet pine by direct seeding was made by the personnel of the Kennon Road Reforestation Project in the same site, Camp 4. Some patches were mulched with tanglad, other were left untreated.

The fact that there were found few seedlings on some of the mulched and unmulched patches seems to indicate that the seeds were able to germinate because they escaped the rats search and depredation and not because the tanglad which had repelled the rodents.

In this experiment tanglad mulch was found ineffective as deterrent to rodents in Camp 4, Kennon Road, Tuba, Mt. Province.—*Starlight, December,* 1956.

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173,915 HECTARES AS FOREST AREAS

Director of forestry Felipe R. Amos has reported that there were a total of 173,915 hectares of new land classified last month, of which 54,291 hectares were to be released from public ownership and 19,624 hectares were to be retained for forestry purposes.

The director explained that the objectives of land classification work are to determine forest zone boundaries so that forest management policies can be formulated for the development of our forest resources and to set aside areas more profitable for agriculture.

The bureau has forty land classification parties of three men each strategically deployed throughout the country.—*Manila Times.*

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INTENSIFY DRIVE AGAINST ILLEGAL TIMBER CUTTING

Assistance of the Philippine army, constabulary and local police was solicited by the parks

and wildlife office to check illegal operations of kaiñgineros and timber smugglers reported rampant in the Bicol national park in Camarines Sur and Camarines Norte.

Dr. Vicente de la Cruz, officer in charge of parks and wildlife, of the II military area, requesting for the assignment of men to work side by side with park officers in the Bicol national park to check activities of timber thieves and squatters.

According to de la Cruz, timber smuggling was rampant in the Bicol national park and the smugglers had been operating day and night.

Assistance of PA, PC and police authorities was needed especially during the summer months in the wake of reports that squatters and timber thieves were poised to move into the Bicol national park as soon as the dry season started. — *Philippines Herald*

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PHILIPPINE 'MAHOGANY' WINS RECOGNITION BY U.S. COMMISH FTC DECIDES IN FAVOR OF PI

De las Alas prepared brief for PI products

Antonio de las Alas, president of the Philippine Lumber Producers Association, expressed great elation yesterday over the favorable outcome of the litigation involving the use of the trade name "Philippine Mahogany" before the Federal Trade Commission in the United States.

The case which had been long pending before the FTC was finally decided in favor of Philippine protestants.

"It caused us no little worry," De las Alas revealed, "if the decision were made against us because that would mean that the Philippine mahogany market in the United States would be virtually eliminated. The American consumers have been so accustomed to asking words labelled as 'Philippine Mahogany' and the elimination would have caused confusion to the detriment of Philippine lumber exporters."

The head of the Philippine lumber producers said that for past several years the sale of Philippine mahogany suffered a great deal from the competition offered by substitute mahogany coming from South America and Africa. "Dealers of these woods," according to De las Alas, "have worked hard and incessantly against our Philippine woods and their principal strategy was to prevent the use of the term "mahogany" in connection with Philippine hardwood.

He revealed that Philippine lumber producers, in a body, opposed the nefarious scheme so strongly, soliciting the aid of Ambassador Carlos P. Romulo and even employing attorneys to represent them in the American capital. "As president of the association," De las Alas said, "I prepared a long brief which I personally delivered to Washington. In that brief the history and merits of the Philippine mahogany were stated and arguments were adduced against the proposal to ban the use of the term "mahogany" in connection with our woods. The brief was so well-received by the Federal Trade commission and there is no doubt that it was given weighty consideration on when the case was finally adjudicated."—*Manila Times.*

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ON FIRE TREES

By MONA LISA STEINER, Ph.d.

A flower can be beautiful, but a flowering tree—breath-taking. The flaming crown of a fire tree against the deep-blue tropical sky is one of the most exhilarating sights one can imagine. Fire trees, however, have become quite a familiar sight here, but the yellow Brazilian fire tree, just as startling as its red cousin, is still rarely seen. An hour's ride from Manila, the campus of the College of Forestry, Los Baños, offers now a real treat for color photographers and flower lovers, a look at those glowing Brazilian fire trees is already worth the trip.

Much taller than the red fire tree, *Schizolobiumexcelsum* (syn. S. naralhybum) is less spreading, stretching its branches more vertically towards the sky. Like a mat below a flower arrangement, a carpet of golden petals sets off the tree from its green surrounding. All leaves shed, the masses of bright golden-yellow flowers cover the tree, and continue to unfold for about two months. Individual flowers stay only a few days, but new ones are formed all the time during the blooming season.

Even a young tree without flowers is attractive, a simple trunk terminated by a cluster of huge fern-like leaves, resembles strongly a tree fern. Both fire trees take only tree to four years to produce flowers and are one of the fastest growing trees known. Unfortunately the rapid growth has one disadvantage, the wood is soft and brittle, branches break easily during a typhoon. Always prune all severed twigs, and paint the out surface, because borers frequently attack fire trees.

Another pest has killed many young fire trees here, namely caterpillars. They spread rapidly when the tree is covered with young, tender leaves, and eventually kill the plant. Tree spraying is difficult to perform with an ordinary spray gun, for professional services Termino Pest Control, Taft Avenue, can be called. The treatment has to be repeated several times, otherwise new caterpillars are formed and the pest is not eradicated.

Both fire trees, Delonix regia (red) and Schizolobium excelsum are difficult to start from cuttings, they are mostly prepared from seeds. The

organization can do some miracles for any office without the cooperation of the employees.

"I solemnly swear that I will do well and faithfully discharge to the best of my ability the duties of my present position and of all others I may thereafter hold under the Republic of the Philippines."

We honestly believe that we have remained true to our oath of office. And we are sure that we will continue to do so under a reorganized Bureau.

Let us—men of the forest we—take up the challenge together. True to form we will always be.

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FORESTS AND FLOODS

Government officials making a survey of the extent of the damage wrought by the floods in Mindanao will do well to investigate one significant angle: the status of forest lands owned by the government and leased to various concessionaires, or worked illegally by "kaingineros."

The flood that hit Mindanao during the Christmas holidays has been described as the worst in the island's history. Flood waters came from Agusan and Misamis Oriental, and roared down the Davao river and the lowlands following three days of heavy rains.

In pre-war days, heavy rainfall caused flash floods which did only minor damage. Since the end of the war, "kaingineros" have burned down forest areas to make way for clearings, moving on as the property was claimed by legal claimants.

Thousands of "kaingineros" denuded lands in this manner, destroying water breaks completely and never bothering to replant.

Among concessionaires, re-forestation is taken virtually on their own initiative, or they log on the "selective basis," cutting down mature trees and giving young trees and saplings a chance to grow. "Selective logging" is practiced on a wide scale by the bigger firms, but is spurned with impunity by small independent loggers who stake out claims without benefit of a government license.

Conservation is as important as production, if not more so. The indiscriminate cutting down of trees does not merely mean the destruction of major forest resources and by-products, but the exposure to surrounding areas to the perils of inundation. All logging companies pay the government a certain fee to finance reforestation and one may ask: is this amount being used actually to pursue a reforestation program or for something else?

Cebu has seen the dangers of deforestation, uncontrollable floods, and tremendous losses caused by thoughtless raids on the public domain. Mindanao is vast; but it is not so vast that it can forever yield logs without endangering the lives of its inhabitants.

Government officials should make a survey to determine how deforestation has contributed to the Mindanao floods. And whatever the results of the survey, it is high time that the government took a more active hand in evolving a working conservation program before it may prove too late. *—Editorial, Manila Times.*

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Rep. Act No. 115 authorized the collection of ₱.50 per cubic meter of timber of the first and second groups, and ₱.40 for the third and fourth groups cut out and removed from any public forest for commercial purposes, in addition to the regular forest charges. The amount collected is spent by the Director of Forestry with proper authorization for forestation and afforestation of water sheds, etc. To our knowledge only very few concessionaires reforest their logged over areas; practically all of them depend upon natural reproduction or upon the Bureau of Forestry who is authorized by law to do the reforestation work.

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CONSERVATION

A prominent lumberman has given one of the soundest programs yet advanced for forest conservation. He advocates more precise fixing of the boundaries of our permanent forests; prohibiting reclassification except by legislation; placing emphasis on forest protection and conservation rather than reforestation; strict enforcement of the law against "kaingin"; and better incentives to sustained-yield forestry practices.

The sustained-yield method of conservation is actually practiced by very few concessionaires, and even the 50-year-old selective cutting rules are violated by big and small operators. One reason is that concesionaires seek to get as much timber as possible during the life of their concessions.

It may be in order to assure concessionaires of priority in renewal of their concessions, if they practice sustained-yield methods. If they are assured of future advantages to themselves for perpetuating the forests for their re-exploitation 25 or 30 years from now, the incentives will be obvious. Most important, their logging and sawing facilities can continue in the same location for their useful life, and be regularly modernized without reference to a diminishing concession period.

Giving many small concessions to thousands of people who cannot afford to finance sustained-yield operations has been a major cause of forest destruction. Helping "small operators" at the expense of the next generation is all wrong. The small operators have in many cases proved to be just large-scale "kaingeros."*—Editorial, Manila Times.*

FOREST INSTITUTE FINDS GOOD USES FOR ACACIA

The lowly acacia, now relegated to mere firewood, lays claim to one of the Philippine's finest hardwoods approximating the narra; while native bamboos "kawayan" and its sister products, the "buho", qualify as ideal material for paper making.

This disclosure, which may spark new industry for the unassuming acacia and open lucrative markets for local bamboo, was made by Eugenio S. de la Cruz, head of the forest products research institute, U.P., and confirmed by Dr. E. Hurt, the institute's forest consultant and Forest Simmons, FAO expert paper manufacture.

Cruz pointed to acacia's high tensile strength low shrinkage and good polish as having sustained its bid as one of the country's first-class hardwoods. Easy to grow and plummed with umbrella-like cover acacias provide refreshing coolness to streets and backyards. Its branches are chopped for firewood.

Another product which the institute aims to rescue from commercial obscurity is the native bamboo and "buho." Laboratory tests proved that these local pulp materials equal, and in some respects, even surpass imported specimens.

* * *

PRESERVING OUR WILDLIFE

Irresponsible hunters have all but cleared the Novaliches reservoir area of wild ducks which have migrated to the Philippines to escape winter rigors in their North China habitat, the president of a gun and tackle club has reported.

During a visit last week-end by members of the club, the area was completely devoid of these birds, although it is officially the duck season in the country, and these birds under a proclamation by the late President Quezon, are to be afforded sanctuary in this area. Doubtless, permission had been granted to privileged parties to poach in this area, and unmindful of the necessity of preserving this type of wildlife, these hunters have considerably weakened the country's wildlife conservation program.

The tamaraw, like the American bison, is protected by law, not so much for humanitarian considerations, but for the preservation of an animal definitely peculiar to a geographical place. In the case of wild ducks, their value as insect eaters is only too well-known.

We have wildlife preservation laws which specify which animals are to be protected, and which animals can be hunted and at what times of the year. Enforcement of the wildilfe preservation laws, specially against poaching in sanctuaries, should be intensified.

"MM" UNDERTAKES LUMBER SURVEY

A survey tour of the Philippine lumber industry is now being undertaken by M. M. de los Reyes, publisher and public relations executive, in behalf of the Philippine Lumber Producers' Association. He is now in Mindanao on the first leg of a three-week tour which will take him over the entire rural route of the Philippine Air Lines.

While in Mindanao, M. M. de los Reyes, who edits two national tourist publications will also survey the region for tourist spots, in line with the PAL rural service development program and the tourist development projects of the local travel groups.

* * *

STURDY TREE ON KENNON

"Freak of nature' causes arboreal wonder among commuters along equally amazing road

A sturdy tree, which is growing on a solid rock, is causing no small arboreal wonder to thousands of commuters along the equally amazing Kennon Road.

This tree, which has been identified as sangilo (local name) or scientifically called *Pestachia chinenses* is found along the Kennon highwall some 10 kilometers from Baguio. How the tree gained a foothold on top of the rock and managed to grow lustily is considered locally as "freak of nature."

Ranger Emigidio B. Visperas, who gained some national "fame" when he discovered some two years ago what he called the "home of the Benguet lilies" at Bokod, Benguet, Mt. Province, in the course of his forest reconnaissance in the wild territory, first brought the trees to the attention of the *Manila Times* by showing the picture (see cut) of the tree, which he took while returning to his base station from an inspection work at Twin Peaks, Kennon Road.

The forest officer said that the tree is about three meters tall with a diameter at the base of the trunk of about 15 centimeters. Indications are that the growth of the tree appears normal in spite of the fact that it stands squarely on top of the solid rock, from which it could not draw the desired nourishment.

As a proof that the rock on which stands the sangilo tree is solid, advertisement-minded businessmen of Baguio have used the large boulder for publicizing their business to the motorists and passengers, who pass along the road. The bureau of forestry was also quick to use the rock in painting its slogan appealing to the public for the protection of the forest against fires.

Incidentally, the sangilo tree is in great demand among the Igorot artisans, who use the tree as a woodcarving material, for which reasons, the

(*Continued on page 72*)

BF NOTES...

(*Continued from page* 54)

banana, poultry, goat and swine; the most artistic and most complete booth and the most artistic handicraft was also held under the able management of district forester Maximino R. Reyes. . . . Chairman Reyes was assisted by Teodorico M. Montojo, Danrea Secretary; Feliz T. Muyo, Abraham Regalado, Eugenio Gutierrez, Herminio A. Llena and Miss Emiliana Gavino and chairman of all barrio councils. COMMUNITY DEVELOPMENT of the rural areas is the theme of the affair in which the barrios participated prominently . . . Industrialization of Romblon's marble and coconut industry is the main objective of the fair.

Submitted by:
TEODORICO M. MONTOJO
DANREA Secretary

* * *

"LAND FOR THE LANDLESS" AND FOREST CONSERVATION

This hurry to release and distribute land had likely contributed to the severity of floods that took tolls of lives and property in the recent months. This also caused complaints from concessionaires that the stability of their business is being threatened with the uncertain tenure of their forests, a reason for their reluctance to practice selective logging.

The increase in agricultural production, however, have not kept pace with the accelerated rate of land distribution. Production per hectare has not materially increased either.

It is but timely and in order to shift the emphasis of "land for the landless" to intensification of agricultural development of areas that have been released. "More production per unit area" should be our policy. Thereby, we incidentally contribute to the conservation of our forest resources.

Lumberman, 1957

FORESTRY IN THE...

(*Continued from page* 71)

tree on top of the rock may someday to cut down for purposes of fashioning out curio articles that command tempting price in the Baguio market.

* * *

ASSESS LOCAL TIMBER OUTPUT

Secretary of Agriculture Juan de G. Rodriguez assessed Philippine timber output during the past three years at five billion board feet producing one billion and 17 million board feet of lumber with a peak total of six million board feet.

From this production an annual average of 54 million board feet of logs was exported mounting to a total of 800-million board feet logs in three years.

According to Rodriguez these exports alone accounted for ₱219 million as part of the Philippine dollar income, while the government collected a gross ₱16,4500,000 by way of forest and reforestation charges.—*Philippines Herald.*

MODERN LOGGING...

(*Continued from page* 47)

hour per cubic meter to 2.12 in 1956 as against 2.54 in 1954, overtime amounting to 4.4%, in 1956 as against in 1954, of total working hours and efficiency was increased by 15%.

This Trakloader can do the following:

To load logs at three or more highlead settings logs which have fallen from homebound loaded cars, log which have skidded by tractors to the landings, logs left behind each landing due to transfer to new setting, logs cut along advance road construction on time to prevent the attack of pinhole borers and to do yarding where your highlead setting cannot be located for lack of required highlead tree and yard and load logs around a proposed highlead setting as the expensive logs to yard are those closest to the road.

If this Trakloader, under average forest conditions, is used for yarding its daily capacity is 40,000 board feet of logs on 600 ft. yarding distance and if for loading, daily capacity is about 200,000 bd. ft. of logs. Daily fuel consumption is around 15-20 gallons of diesel fuel. In a day, you can use 75 percent of the time for yarding and 25 percent to load the logs yarded.

The Nasipit Lumber Company is ordering one more of this TL-15 Trakloader, Bislig Bay Lumber Co. has ordered one to arrive about March, and the Aguinaldo Development Corporation three Model TL-6 Trakloaders to be here before April.

These diesel powered Washington Trakloaders and logging engines driving through torque converters and Torque Master are the equipment best suited to selective and sustained yield logging operations.

The Edward J. Nell Co. is prepared at all times to help study and solve problems with individual operators or to plan and decide on the logging equipments appropriate for timber licenses in new cutting areas. —END

· Excerpts & Abstracts ·

TIMBER

(Specially prepared for the Manila Times *by "The Economist" Intelligence Unit of London)*

The present situation in the Middle East cannot be ignored either by Far Eastern timber exporters or European importers. The likelihood of a prolonged stoppage of traffic through the Canal will be uppermost in their minds. Just as international trading had settled down again to an almost normal routine, having recovered from the initial shock of Colonel Nasser's nationalization act, the outbreak of war in the Middle East has made the Suez Canal problem seemingly more intractable than ever.

Already the Far Eastern Freight Conference has re-imposed the surcharge on freight rates which was suspended last month because traffic was moving smoothly through the Suez Canal. Further rises must be expected. In addition shipping insurance rates are rising sharply. British timber importers will thus have to press hard for price reductions from their Far Eastern suppliers to assist them to withstand the shock of higher transport costs.

The reaction of the exporting countries is, however, less certain. Many of them find themselves in an already strong market for their products. Others—for example exporters of Japanese oak—have faced a weaker demand recently. On balance, it appears probable that exporters will be willing to make small concessions to hard-pressed European importers to maintain trading. Thus it is known that some exporters of ramin from Sarawak have been accepting orders at prices up to 3 per cent below current market quotations; and although ramin is in a very healthy market, exporters are by no means unwilling sellers at the lower price.

On the other hand, importers searching for alternative sources, should the need arise, may not find it easy to locate supplies. West African woods, especially abura, are at present in short supply. British importers, in fact, experience difficulty in placing any orders for this particular wood.

But it would be mistaken to believe that the British timber trade is over-worried by this situation. In recent weeks a definite improvement has been noted in hardwood trading stemming from a slight pick-up in the furniture industry. However, this has not yet filtered through to the importers, who are anyway anxious to run down swollen stocks, rather than place any new large orders. Before the Suez crisis there was periodic panic selling by importers, which had a depressing effect on the market at that time. The tone of the market is still being influenced by cheap offerings, designed to bring stocks down to safer levels.

Some anxiety is felt in the United Kingdom about the headway which Japanese plywood is making on the American market. In the first half of this year Japan's exports of plywood to North America (United States and Canada) amounted to almost 85,000 cubic meters, compared with a United Kingdom off-take of over 9,000 cubic meters. Even North American producers are perturbed by a situation in which they are being undercut by as much as 30 to 40 per cent in certain cheaper grades. The Japanese industry imports large quantities of logs from the Philippines, converts them into plywood and exports the converted product to these markets at prices below those of competitors.

While this situation persists there is clearly no incentive to direct Philippines-United Kingdom trade in timber. And of course the main obstacle to such trade always remains the more fundamental one of a dollar shortage in Western Europe and the resultant restrictions on imports from countries in the dollar area. The ultimate aim of the British government, at least, is sterling convertibility, but there is little likelihood of its attainment for some time to come, if only because sterling is not strong enough yet to stand up on its own feet in international commercial transactions.

Inevitably, these barriers to trade produce their own distortions. Large amounts of Philippine wood do reach the United Kindom from various sources, such as Japan, either in the form of hardwood or converted plywood. Imports of sawn hardwood into the United Kingdom in the first nine months of this year from Japan amounted to over 1.6 million cubic meters, some of shipped Philippine timber.

Currency considerations apart, it would obviously be more sensible for the United Kingdom to trade direct with the Philippines in this commodity and eventually this should happen.

* * *

TIMBER

The blockage of the Suez Canal has revived hardwood trading in the United Kingdom slightly, but the long term economic effects of this crisis

can only be harmful to the prospects for 1957 timber consumption.

There are two major economic effects of the present situation. First, supplies of oil to West Europe have been cut by about one-fifth. In the United Kingdom, at least, the price of petrol has been increased by about 1/5 a gallon; a rise which must inevitably percolate throughout the whole economy in the form of increased transport costs. Secondly, and more important still there has been the speculative flow of precious gold and dollar reserves, which has led to some talk of a possible devaluation of sterling in the near future.

A number of conclusions can be drawn for the timber trade. In the first place, there will be no relaxation in the government's tight credit policy in the early part of the next year. This will mean, simply, that the timber-using industries cannot hope for any early revival in trading. Before this latest crisis there had been reasonable expectations of a reduction in interest rates at the beginning of the new year and a removal of the restrictions on hire purchase which press so heavily on the furniture industry. Now, if anything, the Government's economic measures will become harsher still—the possibility of a further rise in interest rates cannot be disregarded.

The implications of the credit squeeze for the timber-using industries in the United Kingdom are not pleasant. The number of houses completed this year will be about 6 per cent less than in 1955 and in 1957 it will probably drop below 250,000, which means that there will be less demand for timber in this field. And even though industrial building is going ahead strongly, it is lower than at any time during the past few years. In the furniture industry deliveries to retail shops in the third quarter were 3 per cent lower than in the corresponding period of last year. With no reprieve likely from the government, in the form of easier hire purchase conditions, this industry too will be using less timber next year. Finally, shortage of petrol will curb the home demand for new cars and probably export demand as well, so that yet another timber-using trade will remain in the doldrums for some time to come.

Consumption of timber this year throughout West Europe has been much lower than the record levels of 1955. In the softwood section alone it has fallen by roughly 14 per cent. Yet trade circles have never really been despondent. The general feeling was that the lower demand was merely a temporary and, in many ways, a healthy phase so that the beginning of 1957 would find stocks at a much lower and safer level and therefore buying would be more steady and consistent next year. On the basis of the events of the past few weeks this view must now be revised. The most that can be expected is that consumption will equal 1956 levels. This may appear to take an excessively poor view of the 1957 prospect and, in fact, it is not impossible that the whole economic scene will have been transformed by the Spring. But on the present evidence, at least, the period of readjustment which the trade has experienced this year will have to continue into next year.

Inevitably the closure of the Canal and the likelihood of its remaining out of action for at least another two months has increased a little in the timber trade. Not that there has been any panic buying on a large scale. Stocks are large enough to tide users over well into the new year.

The prices that are paid do not yet reflect the increase in freight costs which apply to all Far Eastern purchases. Certainly the battlecry of all sections of the trade for a reduction in timber prices will have to be muted for the present. The United Kingdom no longer dominates world hardwood markets and producers can usually find other markets for their woods; in any case, the present position with regard to shipping space may restrict supplies.

But looking ahead, with the consumption outlook, not only in Europe but also in North America, not so bright, prices will eventually have to come down to more realistic levels. Such an eventuality would only be in accordance with well-tried economic principles.

* * *

TIMBER

It has been estimated that over 1956 as a whole American output of timber fell by 4 per cent, while actual consumption dropped by over 8 per cent, mainly as a result of the decline in housebuilding, Yet construction work of all other types was strong throughout last year and, in fact, it was only high mortgage interest rates which, in effect, restricted the number of private houses built.

Early assessments made by the trade suggest a continuation of this pattern, at least during the first half of this year. Few commentators expect the American government to lower interest rates and relax credit yet, although the events of the last year have shown that the fall in private building has not hit the timber trade as hard as was earlier expected, it is likely that the trade will be more interested in export possibilities than for a long time. The decline in domestic demand last year was the first since the end of the war. The result is that producers are now showing greater interest in overseas markets.

Shippers are glancing with special eagerness at the United Kingdom markets as a promising outlet for any surplus. In 1955 restrictions on dollar

(*Conttinued on page* 76)

• A Laff A Day •

Wife: "Before we were married, Fred, you used to give me the loveliest presents. Do you remember?"

Husband: "Yes dear, but who ever heard of a fisherman giving bait to a fish after he caught it?"

* * *

Customer: "Have you a book entitled 'Man, the Master of the Home'?"

Salesgirl: "The fiction department is on the other side, sir."

* * *

Three little boys were boasting about their fathers, when the conversation turned to earning capacity. One was the son of a doctor, another the son of a lawyer, another the son of a minister.

"My father makes money fast," said the first boy. "He just goes to the hospital, performs an operation, and sometimes gets $500."

"My father," said the second, "does better than that. All he has to do is go to the courtroom and talk for about a day and he charges his client a thousand dollars."

The minister's boy, however, topped them all. "My dad," he said, "does practically nothing all week, then talks about twenty minutes on Sunday morning, and it takes four men to bring money to him."

* * *

Penalty for bigamy: Two mothers-in-law.

* * *

Nobody in the world is as suspicious as each man at the end of a crosscut saw.

* * *

Lawyer: "Now, make it brief and to the point —how did the explosion occur?"

Witness: "The engineer was full, and the boiler was empty."

* * *

The owner of a drugstore was sleeping peacefully at three o'clock in the morning recently when his telephone rang. "What time does your store open?"

"Eight o'clock," growled the druggist, slamming down the telephone.

A minute later the telephone rang again. The same voice asked: "What time did you say your store opens?"

"Eight o'clock," roared the owner, "and you won't get in one minute earlier."

"Who wants to get in?" asked a very hurt voice. "I want to get out."

A visiting Texan was telling his Minnesota host about the big fish he had caught in the Lone Star state. "As a matter of fact," said the Texan, "I caught one that was eight inches."

Our Minnesota friend told the Texan that a fish that size was small in his state.

"Mebbe so," said Tex, "but down there we measure a fish between the eyes."

* * *

A sight-seer inspecting the Kremlin noticed two oil paintings. He inquired about the first, a moderate-sized portrait of some worthy, and was told it was a picture of the great Russian inventor Ivanov, "who invented radar, wireless, artillery, railroads, leap pencils, the X-ray, the piano and cement roads." Then he asked about the second portrait, which was ten times as large. "That," he was told, "is a picture of Petrov, our greatest inventor."

"And what did he invent?"

"He invented Ivanov."

* * *

The busy executive asked his secretary where his pencil was.

It's behind you ear," she replied.

"Come, come," snapped the big shot, "I'm a busy man. Which ear?"

* * *

A 5-year old girl visiting a neighbor, when asked how many children were in her family replied: "Seven." The neighbor observed that so many children must cost a lot.

"O, no" the child replied, "we don't buy 'em— we raise 'em."

* * *

A Communist is a fellow who likes what he doesn't have so well he wants you not to have it either.

* * *

Patient (nervously): "And will the operation be dangerous, doctor?"

Doctor: "Nonsense, you couldn't buy a dangerous operation for fifty dollars."

* * *

Doctor: "Your husband must have rest and quiet. Here's a sleeping powder."

Wifey: "When do I give it to him?"

Doctor: "Don't give it to him. Take it yourself."

* * *

A doctor told a wife that her husband was dangerously overweight. She said, "Don't worry, doc. I'll help him lose weight by nagging him for a mink coat."—From *Veneer Newsletter.*

EXCERPTS & ABSTRACTS...

(*Continued from page 74*)

imports of timber into the United Kingdom were relaxed by the introduction of a quota system, which, it was hoped, would rapidly lead to a return to the pre-war hardwood trading pattern. But payments nature — progress has been slower than for a number of reasons—mainly of a balance-of-anticipated. This point has now been underlined again by the announcement by the Board of Trade in London of the arrangements for imports of hardwoods from dollar sources during 1957. The quota of £3 million f.o.b., which existed last year, continues unchanged in the current year.

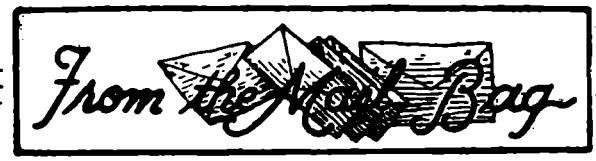
Nevertheless, this does not preclude a sizeable increase in trans-Atlantic hardwood business in 1957 compared with 1956. Imports of American hardwoods into the United Kingdom last year fell by over 40 per cent compared with the 1955 figure. Yet actual consumption of American hardwoods rose: the bulk of the strategic reserve stock of hardwood sold by the government during the course of the year—about 1.5 million cubic feet—was in fact US wood. And its release has reminded consumers of the (probably forgotten) qualities of American timber. Indeed US shippers are already reporting increased inquiries from British importers.

In the annual Furniture Exhibition which is currently being held in London the trend in design and manufacture is definitely towards a darker finish and against the prevailing fashion of light finish, which has held sway for some years. Should this new trend persist, it will increase the popularity of, inter alia, American red oak, which has previously been considered too dark.

Nevertheless, it is as well to bear in mind that the quota system, referred to earlier, does set a limit to dollar trade in hardwoods. Moreover, United Kingdom hardwood consumption prospects are by no means rosy while credit restrictions are retained. Even so it will not be suprising if American timber does increase its share of the British market this year, though probably at the expense of other suppliers. Many Far Eastern shipments of hardwoods have already been delayed by the Suez Canal blockage and American shippers should be able to take advantage of this until the Canal is fully re-opened.

Man being the servant and interpreter of nature, can do and understand so much and so much only as he has observed in fact or in thought of the course of nature. Beyond this he neither knows anything nor can do anything.

—Francis Bacon



U.P. FORESTRY ALUMNI ASSOCIATION
Manila

January 28, 1957

To the Alumni of the U.P. College of oFrestry:

The financial report of the Secretary-Treasurer of the U.P. Forestry Alumni Association as of December 31, 1956 is published herewith for your information. It will be noted that more alumni have paid their annual dues in 1956 than the previous year. However, it is believed that a more creditable showing can be achieved if majority of the alumni, if not all, will contribute their share.

The term of office of three members of the Board of Directors of the Association, namely: Asst. Dean Calixto Mabesa, Forester Carlos Sulit and the undersigned, will expire at the end of the present academic year. It is requested that the enclosed ballot be accomplished and submitted as soon as possible to reach the Committee on Election, College of Forestry Alumni Association, College, Laguna, not later than March 21, 1957. In this connection I would like to remind you not to forget to make yourself in good standing by paying your alumni fees.

The Forestry Alumni Homecoming will be held in conjunction with the 1957 "Moving-Up Day" celebration which will be on March 24, 1957. It is earnestly hoped that many of our alumni will join us on that day particularly those belonging to Class 1912, 1917, 1922, 1927, 1932, 1942, 1947, and 1952. I am sure that many of the alumni will be happy to meet you in the "school up the hill."

The reaction that was received on the forms sent out by the Assistant Dean, Professor Calixto Mabesa, for the Forestry Alumni Directory has been encouraging. However, the Directory cannot as yet be published unless we get a much better response from the alumni, if possible, 100 per cent. So I would like to urge those who have not as yet submitted their forms to do so right away. I wish to state in this connection, that the U.P. Alumni Association has decided to publish a U.P. Alumni Directory containing about 23,000 alumni in connection with the Golden Jubilee celebration of the University in 1958. Every alumnus should help make this project a success. The necessary forms will, in due time, be distributed.

(SGD.) FELIPE R. AMOS
President

ABSTRACT FROM THE CONSTITUTION AND BY-LAWS OF THE U.P. ALUMNI ASSOCIATION

ARTICLE I

1. Every person who is a holder of any degree, title, or certificate granted by the University of the Philippines, or who is a former regular student of the said University having been registered for at least two academic years or their equivalents and not having been dismissed from said institution for misconduct or for deficiency in scholarship, may, upon approval by the Board of Directors of the University of the Philippines Alumni Association, become a membe rof the Association.

2. Members shall have the right to attend and propose resolutions at all meetings, although they shall have the right to vote at all elections only when they are in good standing.

3. Every member shall pay an initiation fee fee of five pesos (₱5.00) and a yearly fee of two (₱2.00).

4. Members who pay the amount of twenty pesos (₱20.00) shall be entitled to life membership.

STATEMENT OF RECEIPTS AND DISBURSEMENTS FROM JANUARY 1, 1956 TO DECEMBER 31, 1956

RECEIPTS:		
Cash on hand as of January 1, 1956		₱1,772,25
Collection from alumni and others:—		
Forestry alumni entrance fee	₱ 96.00	
Forestry alumni annual fee	125.00	
Forestry alumni guest house	42.00	
Ahern Medal Fund	8.00	
		271.00
Total		₱2,043.25
DISBURSEMENTS:		
Postage and stationery (Receipt Nos. 1, 2, 3, 4, 5, & 7)	₱ 36.10	
Materials for citation & diploma for 1955 Distingushed Alumnus (Rec. Nos. 6, 8, & 9)	9.95	
		46.05
CASH ON HANDS AS OF DECEMBER 31, 1956		₱1,997.20
Forestry alumni entrance fee	₱ 607.55	
Forestry alumni annual fee	476.60	
Forestry alumni guest house	564.00	
Ahern Medal Fund	349.05	
Total	₱1,997.20	

Certified Correct:
(SGD.) GREGORIO ZAMUCO
Secretary-reasurer

December 31, 1956
VERIFIED AND FOUND CORRECT:
(SGD.) TIBURCIO SEREVO
Auditor

APPROVED:
(SGD.) FELIPE R. AMOS
President

University of the Philippines
COLLEGE OF FORESTRY ALUMNI ASSOCIATION
COLLEGE OF FORESTRY
College, Laguna

January 10, 1957

Dear Fellow Alumnus:

The U.P. Forestry Alumni Association plans to publish an alumni directory in accordance with the clamor of many of its members. This project was recently given a big boost by the U.P. Alumni Association because its Board of Directors approved a resolution authorizing the publication of a book containing all the names, address, positions or occupation, etc. of the graduates of the University of the Philippines for the Golden Jubilee Celebration of the University in 1958. We would like to have complete and up-to-date information concerning our alumni. Will you please fill the enclosed form and return it to me as soon as possible? If you happen to have a photo please attach it to the form.

If you know of any of our alumni who has not yet submitted his PERSONAL INFORMATION SHEET, it will be greatly appreciated if you can urged him to do so as soon as possible. We really need the information. Any typewritten or handwritten form will be accepted.

Thank you for your cooperation.

Very sincerely,
GREGORIO ZAMUCO
Secretary-Treasurer
U.P. Forestry Alumni Association

SOCIETY OF FILIPINO FORESTERS
P. O. Box 2445, Manila

February 15, 1957

To the Members of the
Society of Filipino Foresters:

The ninth (9) annual meeting of the Society of Filipino Foresters will be held in conjunction with the 1957 "Moving-Up Day" celebration of the College of Forestry, at College, Laguna, which will be on March 24, 1957. I am, therefore, inviting you to attend this annual meeting. A program of this meeting is herewith enclosed. If, for some good or justifiable reasons, you cannot attend this general meeting, you may be represented by a proxy, provided you notify the Executive Secretary to that effect by giving the name of the proxy enough before the date of the meeting in consonance with Section 8 of Article XI of the Constitution and By-Laws of the Society. I, of course, prefer that you attend personally this general meeting because important matters will be taken up for the welfare and expansion of the Society. I am sure that many of the members will be happy to meet you in the "school up the hill." The meeting may allow each member to an exchange of pleasantries and opinion as well as reminisce the old days.

It is earnestly hoped that many, if not all, of the members will join us in this general meeting.

Sincerely yours,
FELIPE R. AMOS
President

9th ANNUAL MEETING
Sunday, March 24, 1957
College of Forestry Auditorium
Forestry Campus, College, Laguna

9:00 A.M.—REGISTRATION OF MEMBERS, PROXIES, AND PARTICIPANTS

9:30 A.M.—VISITS TO FOREST PRODUCTS LABORATORY, EXPERIMENT STATION, COLLEGE OF FORESTRY, PLANTATIONS, NURSERIES, AND OTHER DEVELOPMENTS IN THE CAMPUS.

12:00 Noon—LUNCHEON AT THE FORESTRY MESS HALL.

1:30 P.M.—BUSINESS MEETING OF THE SOCIETY.

1. Roll Call—(proxies to be included)
2. Induction of officers and council members for the year 1957 and 1958

OFFICERS

President— Felipe R. Amos
Vice-President—Porfirio San Buenaventura

COUNCIL MEMBERS

FELIPE R. AMOS

Tiburcio S. Serevo	P. San Buenaventura
Eugenio de la Cruz	Florencio Tamesis
Florencio Asiddao	Teofilo A. Santos
Carlos Sulit	Jose Viado

3. Approval of the minutes of the previous annual meeting
4. Reading of the annual report of the President
5. Reading of reports by Committee Children
6. Unfinished business
7. New business
   a. An amendment to the Constitution and By-Laws of the Society regardig members tendering resignation from the Society because of financial stringency or old age and other personal reasons.
   b. Stand of the Society on flood erosion which were flared up recently by newspapers.
   c. Honorary Membership of Hon. Juan de G. Rodriguez, Secretary of Agriculture and Natural Resources, and others.
8. Presentation of resolutions

ADJOURNMENT
REFRESHMENT

4 January, 1957

Dear Mr. Amos:

Please refer to your Z—Pictures (Mail) dated December 6, 1956, forwarding certain photos which were taken during my last visit to the Philippines. These will be a precious addition to my album, reminding me always of the good friends I have in the Philippines Forest Service.

You may remember that during our last discussion on the question of APFC Meeting, we originally wanted the Meeting to be held on 13 March, 1957 but later on according to your wish the date was advanced to 6 March, 1957. The Indonesian Government has now moved the FAO, Rome, to shift the date to 4 June, 1957 to suit their convenience. In a matter like this, we as an organization have to go by the wishes of the host country. I shall write to you in detail as soon as I have got final confirmation of this date. Meanwhile, I thought I should keep you informed of this new development. I hope, this change would not greatly inconvenience you though, I know, such last minute changes are most annoying.

In this connection, I also had your approval of the APFC Provisional Agenda. On my return, I find that our Headquarters feels that it should be rewarded in a different way and needed inclusion of one or two additional subjects. I am enclosing a copy of the revised version of the Agenda and I hope, you will have no objection to these changes.

My wife joins me in sending our best wishes for the new year to Mrs. Amos and yourself. Please also convey my best wishes to other members of the Philippine Forest Service.

Yours sincerely,

C. PURKAYASTHA
Regional Forestry Officer

Mr. FELIPE R. AMOS,
Director of Forestry,
Bureau of Forestry,
Department of Agriculture and
Natural Resources
MANILA, Philippines

* * *

ASIA-PACIFIC FORESTRY COMMISSION
FOURTH SESSION
(Bandung, Indonesia, March, 1957)
PROVISIONAL AGENDA

1. *Adoption of Agenda*
2. *Election of Officers*
3. *Current FAO activities in the region*

Major policy issues of regional interest

4. *Forest policy*
   (a) Review of national progress reports
   (b) Education in Forestry
   (c) Watershed management and shifting cultivation

Specific activities of FAO or Governments requiring consideration

5. *Activities requiring guidance from the Commission*
   (a) Forestry and forest products research
      (i) Silviculture and management
      (ii) Forest products
   (b) Teak
   (c) Forest operations
   (d) Regional study of wood resources and requirements
   (e) Forestry statistics
6. *Matters requiring government attention or international cooperation*
   (a) Forest inventories
   (b) Housing
   (c) Fuelwood
   (d) Pulp and paper
   (e) Grading and standardization
      (i) Nomenclature
      (ii) Hardwood logs (non-teak)
      (iii) Sawn hardwoods (non-teak)
7. *Future orientation of FAO's work in the region*
   (a) Regular program (with special reference to 1960/61)
   (b) Technical asisstantce
8. *Date and place of next session*
9. *Field tours**
10. *Consideration and adoption of report*

* Field tours will be arranged before and after the session to inspect pine, acacia, cinchona, agathis and other plantations in the Tangkuban-Prahu and Sukabumi areas; virgin forests at Tjibodas; the Forest Research Institute, Soil Research Institute and the Botanical Garden at Bogor; teak forests (management, reforestation, extraction, sawmilling) at Tjepu; afforestation work on degraded land at Solo.

* * *

November 7. 1956

TO WHOM IT MAY CONCERN:

This is to certify that Mr. Eulalio C. Garduque, * who has been appointed as Instructor in Mathematics and In-Charge of Forests of the Mindanao Agricultural College has the following duties:

I. Teaching Assignment:
   1. Teaching mathematics and forest products utilization, conservation, and reforestation, including improvement of rangelands, pastures and wild games.

II. Project Assignments:
   1. Logging and operation of the college sawmill.
   2. Organization or establishment, maintenance, and operation of a forestry nursery.
   3. Supervision and management of school forests.
   4. Undertaking reforestation work and the conservation of forest resources including the further development of the watershed of the school reservation.

(SGD.) ZOSIMO MONTEMAYOR
President

* Mr. Eulalio C. Garduque:
1. Class '36 Ranger Course, U.P. College of Forestry;
2. Administrative Officer, Forest District ..o. 39 (Bukidnon Province), his official designation whether resigned November 15, 1956, with station at Malaybalay, Bukidnon.
3. Member, Society of Filipino Foresters.
4. Native of Pasuquin, Ilocos Norte, but residing in Maramag, Bukidnon.

Sent in
By V. Sajor—'17 Ranger
Bureau of Forestry
Manila
December 31, 1956

* * *

The Editor
"FORESTRY LEAVES"
College, Laguna
S i r :

In order to correct the impression that might have been created in the minds of readers on an abstract in the July, 1956 issue of the "FORESTRY LEAVES" (pp. 63 and 64) with the misleading title, "Found Basilan Forest Poorly Stocked Logged Over-Areas" on our Research Notes No. 17—*Under-planting With Large-Leaf Mahogany in a Logged-over Dipterocarp Forest,* please publish the following rectification in your next issue:

As indicated by the title of the research note, the main point discussed is the result of underplanting large-leaf mahogany in a poorly stock dipterocarp logged-over area in Basilan two years after planting. The research was not to determine whether or not the logged over areas in Basilan are poorly stocked, but to present the possibilities of underplanting large-leaf mahogany where the logged over was only in the introductory explanation as to the condition of some logged-over areas, the site where the underplanting was undertaken and the condition of the site where similar underplanting may be employed to improve the residual growing stock.

(Findings two years after planting are: 47% survival out of a total 535 seedlings planted; average sizes reached: diameter, 3.12 cms. dbh; height, 4.0 meters; good growth found on moderate, well-drained slope with clay-loam soil; "chimney-like" opening through the underbrush provided for the seedlings favors development of long, clear boles; spacing—3 x 3 meters, but could be 7.6 x 7.6 meters, as in Puerto Rico).

It is regretted that the reviewer, being a non-

technical man, did not submit his review to the undersigned.

Very truly yours,
MARTIN R. REYES
(co-author)

* * *

Republic of the Philippines
Department of Agriculture and Natural Resources
BUREAU OF FORESTRY
Office of the District Forester
Romblon, Romblon

February 1, 1957

The Honorable
The Secretary of Agriculture and Natural Resources
Manila

S i r :

I have the honor to inform you that the Romblon DANREA sponsored the celebration of the third Barrio Farmer's Week in this province. Unlike previous years this year's Barrio Farmer's Week under the auspices of the Romblon DANREA with the cooperation of the public schools under District Supervisor Leocadio Madrone, the barrio councils under Municipal Secretary Ramon N. Orola and the boy and girl scouts organization, was held January 12-20, 1957 to coincide with the Romblon Town Fiesta celebration. This was made possible thru the request of the Municipal Council of Romblon that the barrio farmers week be celebrated to coincide with the nine-day town fiesta of this capital town so that more people will be able to participate in the open forums, demonstrations, discussions, etc. January 18, 1957 was set aside as the Industrial and Agricultural Fair Day sponsored also by the Romblon Town Fiesta Committee on Agricultural and Industrial Exhibits chairmaned by DANREA Chairman Maximino R. Reyes, district forester of Romblon. The Romblon Fair was the most important day of the celebration.

Novelties made out of marble such as name bars, paper weights, flower vases, flower stand, tablewares, ash trays and other household articles were among the products displayed at the fair. Various industrial and agricultural exhibits were the main attractions in the municipal fair.

Barrio council organizations, the public schools, the boy and girl scouts organization initiated by the Romblon Department of Agriculture and Natural Resources Employees association (DANREA) made the affair a big success. (The Romblon DANREA sponsored the third Barrio Farmers Week and the Romblon Industrial and Agricultural Fair.)

Also exhibited were baskets made out of local materials like nito, bago, bamboo and coconuts; mats made of buri called locally "locab" and household articles made of coconut shells and ceramics.

A contest on the biggest agricultural product such as farm crop, root crop, garden crop, banana, poultry and swine; the most artistic booth; the most complete booth and the most handicraft was also held.

Most of the recipients of the prizes were: Alad-Logben-Cobrador and Cajimos-Agbudia-Agtongo barrio schools which tied for first place for the most artistic booth; Romblon High-Romblon ElementarySchools booth for second prize and Lenos-Bagacay barrio school for third prize. Cogon barrio school won the first prize for the most complete booth with Alad-Logbon-Cobrador and Agnipa-Lanas-Ginablan barrio schools for second and third prizes respectively. Romblon High-Romblon Elementary schools won the prize for the best handicraft while Calavogo barrio school won the prize for the biggest rooster. Lonos-Bagacay won the prize for the biggest pig; Alad-Logbon-Cobrador won the prize for the biggest goat; the prize for the prize for the biggest coconut; Romblon High-Romblon Elementary won the prize for the biggest hen; Agpanabat-Palhi won the prize for the biggest jackfruit (nangka); Cajinos-Agbudia-Agtongo won the prize for the biggest ubi; Sablayan-Ilauran barrio school won the prize for the biggest cacao; Alad-Logbon-Cobrador won the prize for the biggest banana tioing with Agnipa-Ginablan-Lunas. Donors for the prizes are: Engineer Salustiano S. Madali, Municipal Secretary Ramon M. Orola, Municipal Mayor Isidro Mallorca, Mr. Simon M. Mingoa, Councilor Antonio Morano, Mr. Patrotico V. Morano, Mrs. Luz N. Fondevilla, Mrs. Elisa Madali, Engineer Francisco Ll. San Luis, Captain Julio Alayon, Dr. Anttonio Ylagan, Mrs. Sofronia N. Solidum, wife of Provincial Governor Manuel L. Solidum is chairman of the Committee on Prizes, Romblon Town Fiesta.

The Romblon DANREA booth was the model of all other booths in the Romblon Fair in which the bureaus of Forestry, Agricultural Extension, Animal Industry, Plant Industry and Mines were represented.

Chairman Maximino R. Reyes of the Committee on Agricultural and Industrial Exhibits was assisted ably by Teodorico Montojo, DANREA Secretary; Felix T. Muyo, Adult Education Supervisor; Abraham Regalado, municipal agriculturist; Eugenio Gutierrez, DANREA Treasurer; Herminio A. Llena, DANREA Pro; Emiliana Gavino, Social Welfare aide; all the deputy forest guards of Forest District No. 25, Romblon and all barrio council chairman of Romblon.

Very respectfully,
For the DANREA Chairman:
TEODORICO MONTOJO
DANREA Secretary

THE IMPLEMENTATION...

(*Continued from page* 43)

growing stock which are destroyed or injured and not compensated by equivalent non-designated trees.

b. For a serious violation of the conditions in the license, rule, regulations or instruction, after due warning, a portion or the whole of the forestry bond shall be confiscated, the operation suspended, or the license cancelled, depending on the gravity of the violation.

Program of Implementation. — Our lack of men with the basic technical training for this work is attributed to the fact that we are hastening the delimitation of the permanent forest which is a pre-requisite to the stability of timber production areas where selective logging under management plans for sustained yield shall be enforced. Most of the foresters are in land classification parties for this purpose. However, we are drawing B.S.F. and Ranger graduates of the College of Forestry, University of the Philippines, for management work in addition to the men already in the service who are available for the project. It will take some time before we can possibly cope well with the full-dress implementation of selective logging in all license areas.

Full-scale implementation is programmed to be undertaken in the order of the following groups of licensees:

(1) Twenty six (26) timber licenses having 20,000 hectares and over of forest areas each, covering 1,220,000 hectares in 14 provinces.

(2) Thirty seven (37) timber licenses having 10,000 to 20,00 hectares each, cover-areas each, covering 517,900 hectares in 18 provinces.

(3) One hundred (100) timber licenses having 5,000 to 10,000 hectares each, covering 685,600 hectares in 18 provinces.

(4) One thousand two hundred forty five (1,245) timber licenses below 5,000 hectares each, covering 1,146,000 hectares in 44 provinces.

Tree marking is now being conducted in 10 timber license areas covering about 275,-000 hectares in 3 districts.

There is included in the proposed Budget for 1958 now under consideration by Congress a 15 million-peso bond fund of which 3 million pesos will be ear-marked for natural reforestation through selective logging. If approved, the implementation of the selective logging program will be intensified and accelerated.

A Selective Logging Bill is being submitted to Congress for enactment. A Selective Logging Regulations will soon be in effect. These will strengthen the said program.

It should not be interpreted, however, that just because tree marking is not yet initiated in a license area, care should not be exercised. It should be borne in mind that there is an existing cutting rule to the effect that undersized trees cut and damaged shall be invoiced and paid for at four times the regular rate. Young thrifty trees irrespective as to whether they are marked or not, if cut or carelessly destroyed, are subject to this rule. This will be taken care of, in the meantime, by inspection done periodically by forest officers in license areas where tree marking is not yet instituted.

This program entails more efforts and sacrifices on the part of timber licenses, in order that it will succeed. Most of our timber licensees know and believe in the soundness of this program, both on the standpoint of the stability of their business and continuing usefulness of the forests. We are confident, therefore, that they will do their share of the responsibility.

The Bureau of Forestry, as custodian and manager of the forest resources, will see to it that the forests will be left in good condition, through the enforcement of selective logging, to render all the benefits for the enjoyment and prosperity of most of the people in the long run.

EDITORIALS

WANTED: A CAMPUS FOR OUR COLLEGE

Originally, the College of Forestry was under the joint administration of the University of the Philippines and the Bureau of Forestry, with the Director of the latter as ex-officio Dean of the College. Under that set-up, the Makiling National Park, in which the College is situated, and which was then under the jurisdiction of the Bureau of Forestry, was used by the Faculty and the students as a campus and as a vast outdoor laboratory. This was so, because the main reason for turning the Makiling forest into a National Park was to make the forest always available for educational purposes. As a park, it is not subjected to exploitation, and the whole forest, including the plantations and arboretums could be preserved for forestry education. Long-term research projects which require several generations before they are concluded are likewise protected.

Then came the creation of the Commission on Parks and Wildlife which wrested from the Bureau of Forestry control of the National Parks in the Philippines, including the Makiling National Park. Not long after that, the College was completely divorced from the Bureau and thrown entirely under the sole jurisdiction of the University of the Philippines. That made the College a squatter on the park. Now, it has no campus.

An ordinary college without a campus is ridiculous, but for a college of forestry to have no campus is unthinkable. Our College *must* have a campus of its own. Forestry Education, in order to be effective, must have at its disposal a forest area where research projects, field exercises and outdoor classes could be held without interference. That forest must be quite sizeable, must be free from exploitation, and must not be far from the College itself. All of these qualifications are found in the Makiling National Park. Moreover, since it is a known fact that the Makiling forest was set aside as a park with the aim in view of using it for for-

The Staff of the FORESTRY LEAVES

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College, Laguna

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estry education, everything else must be subordinated to this aim. It is imperative as well as logical, therefore, that the Makiling National Park be transferred to the University of the Philippines in order to become the much-needed campus of the College of Forestry. — *ntv*

ON THIS THE FIFTEENTH MOVING UP DAY

Again the proverbial graduation exercises speech will stress that commencement does not mean the end of all studies but the beginning of a graduate's life. Again he will be told that as he leaves the portals of his Alma Mater he steps into the threshold of life. The same stock phrases of "Don't rest on your laurels," "You'll be faced with the grim realities of life," "Strive in all your undertakings to bring honor to your Alma Mater, your parents," etc., etc., will be heard. Laudatory phrases extolling the graduates will serve as the toothsome and tempting frosting of the Graduation Cake Speech.

Seldom if ever have we heard the Commencement Speaker stressing the fact to the Faculty and the Graduating Class that too often the graduates have passed their examinations by cramming, cribbing, parroting their professors, and resorting to all known devices just so they could fulfill the college requirements for graduation.

Graduation time should serve to mark the time and place when a graduating student should pause and reflect whether the diploma he will receive truly represents efficient, honest and hard work all the way from the elementary grades, through high school, to the senior year in college. It is a sad commentary on present educational standards that many students nowadays pass from one grade to another without even knowing why and how the so-called Diploma Mills have thriven on "intellectual manure." It is also high time for the faculty to ponder whether or not the students being graduated have truly "moved up" mentally, morally and spiritually. A one-sided development cannot assure them an honest, unselfish and civic-minded citizen. In the old days, we used to take pride in saying that no alumnus of the college had entered Bilibid and that the Bureau of Forestry personnel have never been found wanting in honesty, efficiency and integrity.

Can the same thing be said of some of our alumni now? We pause for reply.

TO BRASS TACKS NOW ON SELECTIVE LOGGING

Selective logging has been the popular topic of conversation and publicity. But when it comes to how it is done, nothing definite has been reached. Practically all the talks were in generalities.

This publication takes pride in presenting to our readers, especially the logging operators and forest officers, an article on page 39 by authorities and experienced men of the Bureau of Forestry on the ways and means of implementation. It deals comprehensively not only with the *how*, but also with the *determination* of the Government to implement selective logging. It bares the definite and clear-cut program of implementation by the Bureau of Forestry.

Over two year ago, the Government adopted a policy and program of selective logging. The groundwork has been laid. Now, the way is shown. There should now be no reason for licensees to dilly-dally the practice of selective logging in their areas. And equally important, the forest officers must work harder,

work more with the loggers to effect the saving of trees. For the desired results ultimately depend on the loggers and forest officers in the field.

—E.T.

ASSISTANT DEAN MABESA'S FRUITFUL SERVICE

By May 9, this year Assistant Dean Mabesa will have completed his sixty-fifth birthday. Born at Hinigaran, Negros Occidental, his is a story that reads like Horatio Alger's. His career has been one continuous uphill climb and should serve as an inspiration for those intelligent and industrious but easily discouraged young men who believe that the only way to reach the top is to use "pull." Coming as he did from a poor family, young Mabesa knew at the very start that the odds were against him. And so instead of giving up in despair, he made use of the obstacles that beset his way to toughen him for the greater and harder obstacles ahead.

Working his way through the Iloilo High school, he graduated in 1913. Then he was chosen as a pensionado to study in the School of Forestry, at that time a department of the College of Agriculture, and here he graduated *second honor* of the 1915 Ranger Class. Soon after graduation, he was appointed Ranger in the Bureau of Forestry. But in the First World War, he joined the Philippine National Guards and when this was demobilized, he was discharged in 1919 with the rank of first lieutenant. Upon rejoining the Bureau, he was detailed instructor in Dendrology and military science in the College of Forestry in 1920. He resigned, in order to take advance courses in forestry in the United States. While there he worked his way through college doing all kinds of manual labor until his graduation with the B.S.F. degree *cum laude* in 1923. After finishing his bachelor of science degree, he was given a government pensionadoship so he could take his M.A. at the New York State College of Forestry at Syracuse University. He later pursued special courses in wood technology in the U.S. Forest Products Laboratory at Madison, Wisconsin.

After his arrival from the United States on March 5, 1925, he rejoined the Bureau as forester. He was later appointed as Assistant Chief, Division of Forest Products on January 1, 1933. But five years later this division was abolished, and on March 16, 1938, he was appointed wood technologist. He later resigned from the Bureau so as to devote his full time in the College of Forestry. Upon the retirement of Professor Harold Cuzner on April 15, 1953, he was appointed Forester-in-Charge of the College. Two years later came his appointment as Assistant Dean of the College. The Faculty, Student Body and the Alumni are grateful to him for his untiring efforts in bringing about many improvements to the College, his greatest contribution to the cause of forestry education having been the tremendous task of enlisting and coordinating the support of the Alumni, winning the sympathy and support of Congress and the President himself so that H.B. No. 324 became one of the "must" bills to be presented before Congress during the last days of its session. This work alone should entitle him to the most distinguished award given to the most outstanding alumnus of the year, an award which he won last year.

Besides his teaching load that would have broken many a dean's back, he has kept doing and helping others do research work. He is also a member of

(*Continued on page* 87)

Incidentally.....

When the College of Forestry new building was being inaugurated and presented three years ago, perhaps only a few people realized then that President Magsaysay had a hand in making the long cherished dream of the Faculty, the Alumni and the Student Body a reality.

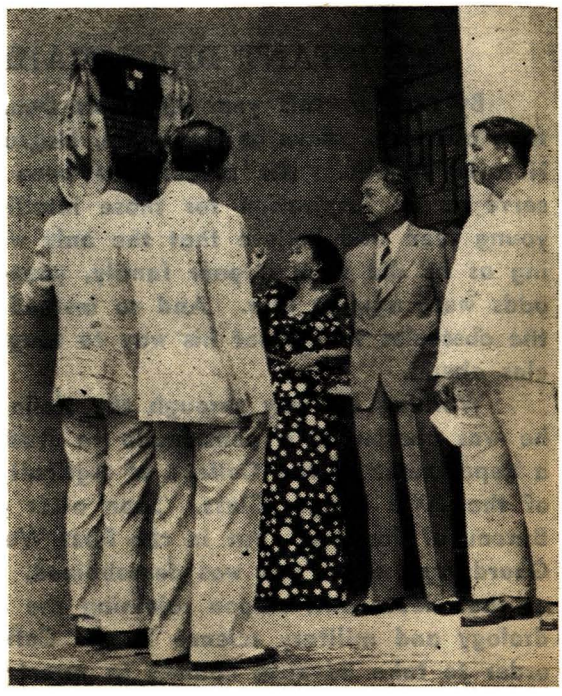
It was but natural that on its inauguration some would claim with pride that they had a lion's share in the construction and expansion of the new College building. They deserve not only honor but the deep gratitude of all forestry men and their conservation-minded friends. We do not wish to be grudge them the honor and pleasure that come to people who have done something good for the country.

Only we wish the people to know that the late President had a soft spot in his heart for us. That he selected H. B. No. 324, among those many recommended as urgent, during the last days of session, should be something that we should not forget. And for which we should be ever thankful for the years to come. When he signed Rep. Act 989, he had helped move forward forestry education, research and conservation. It would enable the College to train more men as the future guardians of our country's vast natural resources.

* * *

We have been waiting for the President's message for our graduation issue. Usually the message was sent to us well ahead of deadline. Or when it was already nearing deadline, the President's Office would wire us that the message was on its way. And sure enough the coming mail unfailingly brought it.

As our deadline neared we began to worry. Then the tragedy that struck deep into the Nation's heart had had its numbing effect upon us. We could not believe our eyes... we refused to admit that the President was dead. And so we went to Malacañang to ask if there was a message for the



The Inauguration of the College of Forestry building in 1954. Mrs. Jacobo Gonzales unveils the plaque while President Tan, Secretary Araneta, Mr. Crucillo of the PHILCUSA and Hon. Jacobo Gonzales look on.

Forestry Leaves. One of the men working under Mr. Noli Reyes after ransacking the file which he had already neatly tied said that as far as he knew there was no message for us, but he promised to call us later. True to his promise the phone rang while we were busy going over the proofs in the Press, and we were told that the party concerned was going over their files, and that we would be called again the following morning.

Early March 19, while working on the last pages of the Leaves, the phone rang again. Mr. Buan told us that the message was found among the three messages to be last signed by the President, before he left for Cebu on that fateful day of Mar. 16. You will note that the President's message on page 1 of this issue bears the date "MARCH 14, 1957".

We shall never forget the circumstances under which we got the message. The Ma-

lacañang grounds were thronged with people. A long queue of eager, patient and sad people, young and old, moved slowly towards the hall where the country's most beloved President's remains lay in state. The doors were securely guarded. We told the guards our mission and we were told to pass through the wooden gate. And there again, we were refused admittance. We returned to the main door to the Appointment Secretary Office. We begged that we be allowed to call Mr. Buan. This the palace guard did for us, and soon came the voice at the other end, and upon our identifying ourselves, asked where we were. In two minutes he was at the door, holding an envelope, bearing President Magsaysay's message.

* * *

Again the well-known Makiling National Park Gate will say "hello" to all the alumni, the old and young, and their better halves. Those who have been away for so many years will wonder at the tremendous changes that have taken place. Of course the old familiar trails are still here, the arbored walks carpeted with fallen leaves, the flower laden vines and the tall tall (so tall now) trees screening the skies above, the "ole Swimin Hole" is still there, but neglected and desolate, the old buildings gone, only the ruins of the old administration building, which is an eyesore. You will hear back of the school the familiar call of birds and the crash of our simian friends as they "trapeze" from one branch to another. You will note that the students are much younger... some of these are sons or daughters of your former classmates, maybe.

* * *

We are now in quandary. We really do not know whether we are already "divorced"

The Gateway to the Makiling National Park and the Forestry College Campus.

as some of our friends in the Bureau want us to believe. Or whether we are still a part and parcel of the Bureau as in the good old days. We asked the Director, (our ex-officio Dean) and he told us that by virtue of the Reorganization Act, effective Jan. 17, 1957, he was "legislated out". But then the suspension order came. And so we asked the U.P. people. We were directed to see the Budget Office. There they admitted that the suspension has made "confusion worse confounded". But, at least, some of the Chiefs believe that the suspension means "status quo".

ASSISTANT DEAN . . . *(Continued from page 85)*

various scientific and honorary organizations, among which may be mentioned, the National Research Council, Society for the Advancement of Science, Forest Products Research Society, International Society of Tropical Foresters, the Los Banos Biological Science Club, Society of Filipino Foresters, the *Alpha Xi Sigma* (Honorary Forestry Fraternity). And for his loyalty and unselfish service to youth he was awarded a bronze narra leaf by the Y.M.C.A.

Republic of the Philippines
Department of Public Works and Communications
BUREAU OF POSTS
Manila

SWORN STATEMENT
(Required by Act 2580)

The undersigned, MODESTO T. TOBIAS, business manager of FORESTRY LEAVES published quarterly in English at College, Laguna after having been duly sworn in accordance with law, hereby submits the following statement of ownership, management, circulation, etc., which is required by Act 2580, as amended by Commonwealth Act No. 201:

Name	*Post-Office Address*
Editor, Jose Maniado	College, Laguna
Managing Editor, Oscar Cadeliña	College, Laguna
Business Manager, Modesto T. Tobias	College, Laguna
Owner, U.P. College of Forestry	College, Laguna
Publisher, Student Body and Alumni, College of Forestry	College, Laguna
Printer, Community Publishers, Inc.	1986 Herran St., Manila
Office of Publication	College, Laguna

If publication is owned by a corporation, stockholders owning one per cent or more of the total amount of stocks:

NOT APPLICABLE

Bondholders, mortgagees, or other security holders owning one per cent or more of total amount of security:

NOT APPLICABLE

In case of daily publication, average number of copies printed and circulated of each issue during the preceding month of NONE, 19——:

1. Sent to paid subscribers	NONE
2. Sent to others than paid subscribers	NONE
Total	NONE

In case of publication other than daily, total number of copies printed and circulated of the last issue dated July 31, 1956; Volume IX, No. 1

Sent to paid subscribers	519
2. Sent to others than paid subscribers	481
Total	1,000

MODESTO T. TOBIAS
Business Manager

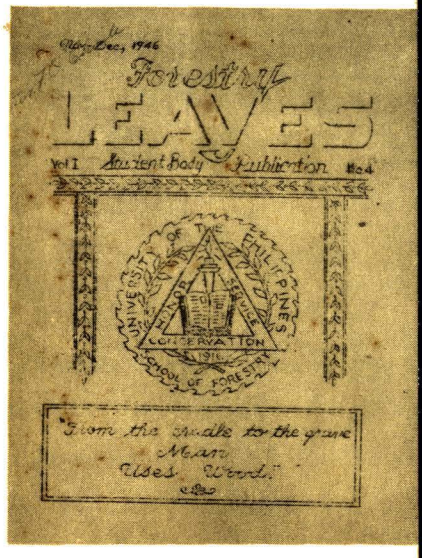
Subscribed and sworn to before me this 29th day of September, 1956, at Los Baños, Laguna the affiant exhibiting his Residence Certificate No. A-4094590 issued at Los Baños, Laguna, on January 14, 1956.

GENARO CATALAN
Mayor, Los Baños, Laguna

NOTE: This form is exempt from the payment of documentary stamp tax.

FORESTRY LEAVES '46 to '5

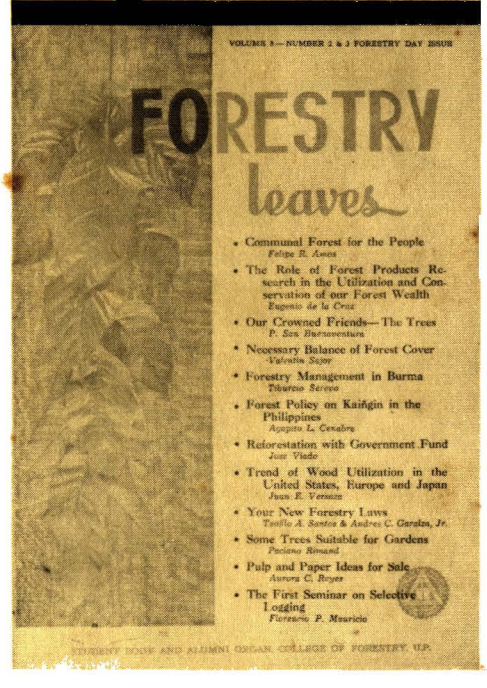
1946



1947

1954

1956



LET US CONSERVE OUR FORESTS BY WISE USE

Subscribed and sworn to before me this 29th

Republic of the Philippines
Department of Public Works and Communications
BUREAU OF POSTS
Manila

SWORN STATEMENT
(Required by Act 2580)

The undersigned, MODESTO T. TOBIAS, business manager of FORESTRY LEAVES published quarterly in English at College, Laguna after having been duly sworn in accordance with law, hereby submits the following statement of ownership, management, circulation, etc., which is required by Act 2580, as amended by Commonwealth Act No. 201:

Name	*Post-Office Address*
Editor,	
Managing Editor, Jose Meniado	College, Laguna
Business Manager, Modesto T. Tobias	College, Laguna
Owner, U.P. College of Forestry	College, Laguna
Publisher, Student Body and Alumni, College of Forestry	College, Laguna
Printer, Community Publishers, Inc.	1986 Herran St., Manila
Office of Publication	College, Laguna

If publication is owned by a corporation, stockholders owning one per cent or more of the total amount of stocks:

NOT APPLICABLE

Bondholders, mortgagees, or other security holders owning one per cent or more of total amount of security:

NOT APPLICABLE

In case of daily publication, average number of copies printed and circulated of each issue during the preceding month of NONE, 19——;

1. Sent to paid subscribers	NONE
2. Sent to others than paid subscribers	NONE
Total	NONE

In case of publication other than daily, total number of copies printed and circulated of the last issue dated July 31, 1956; Volume IX, No. 1

Sent to paid subscribers	519
2. Sent to others than paid subscribers	481
Total	1,000

MODESTO T. TOBIAS
Business Manager

Subscribed and sworn to before me this 29th day of September, 1956, at Los Baños, Laguna the affiant exhibiting his Residence Certificate No. A-4094590 issued at Los Baños, Laguna, on January 14, 1956.

GENARO CATALAN
Mayor, Los Baños, Laguna

NOTE: This form is exempt from the payment of documentary stamp tax.

ATTENTION ALUMNI

You are requested to send in your personal information sheets at your earliest convenience. If you have not as yet received a copy of the information sheet, please write either to the Secretary, Forestry Alumni Association, or to the Business Manager, *Forestry Leaves,* College of Forestry, U.P., College, Laguna. A Forestry Alumni Directory is being prepared.

PHOTO-OFFSET by COMMUNITY PUBLISHERS, INC.

A tractor logged area in Western Mindanao Lumber Company, Basilan Island. Note the density of undamaged dipterocarps by selective logging that will produce the second cut under a sustained yield management. Operated by O.T. Licensee Engineer Gaudencio Antonino.

G. S. MAÑALAC ENTERPRISE

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