

UNIVERSITY OF THE PHILIPPINES

FORESTRY LEAVES

JUN 4 1962

VOLUME XIII NUMBER I



Urban Week Issue - 1961

In this Issue:

Forest Resource Conservation	1
<i>By Paul Zehngraff</i>	
Some Observations on Philippine Forestry with Special Emphasis on Forestry Education	7
<i>By Dr. Hardy L. Shirley</i>	
Forest Rangers, Rizal and Economic Independence	19
<i>By Ernesto Y. Sibal</i>	
FAO in the World of Today	23
<i>By J. N. Corry</i>	
The Response of Ipil-ipil (<i>Leucaena glauca</i>) Seedlings to Phosphorus Fertilization on a Soil from Carranglan, Nueva Ecija	27
<i>By E. L. Stone and L. D. Angeles</i>	
An Interview with Dean Gregorio Zamuco	33
<i>By Benito Lim</i>	
The Kaiñin Problem: Proposals for Its Solution	37
<i>By Napoleon T. Vergara</i>	
Problems of Reforestation	39
<i>By Salvador F. Cunanan</i>	
The National Parks of the Philippines	41
<i>By Vicente dela Cruz</i>	
Our Rate of Forest Destruction is Alarming	45
<i>—The Reforestation Administration</i>	
Charcoal Production and Briquetting	47
<i>By Pancrasio V. Bawagan</i>	
Our Biggest Government Problem	57
<i>By Cesar M. Fortich</i>	
Literary Attempts	59
Campus Notes	61
B. F. Notes	65
FPRI Highlights	71
FPRI Technical Notes	75
Forestry in the News	83
R. A. Notes	95
Abstracts	99
From the Mail Bag	101
Sunshine Corner	107
Editorials	111
Incidentally	113

Malacañang
Manila

M E S S A G E




It seems a sad commentary that very few of us realize the significance and importance of trees, so much so that we have failed to give them due care and attention. If only to cope with this lack of awareness on our part, the celebration this year of Arbor Week from July 23 to 29 is at once appropriate and timely.

Our economic prosperity depends to some extent on the products which come from our forests. Lumber, paper, and medicine are among the essential items provided by trees. Moreover, trees also help in preventing erosion and as planted in our parks and gardens, add to the beautification of the landscape. These are but a few examples of how valuable trees can mean to us, but have we in turn given them care and protection ?

Our national government is devising ways and means to minimize the destructive "kaingin" system and the indiscriminate cutting down of young trees. The Bureau of Forestry, on its part, is conducting a regulatory and educational campaign for the conservation of our forests while seeking the best possible manner of utilizing the wealth they offer.

Yet, it is with our people that the great responsibility of conserving our forests must fall. Through this special issue of FORESTRY LEAVES commemorating Arbor Week, I therefore call on every Filipino to contribute his share in arousing a greater appreciation of the utility and beauty of trees which make our world a better place to live in.


President of the Philippines



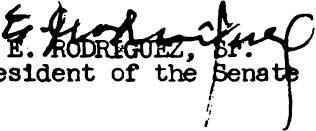
Republic of the Philippines
Office of the
President of the Senate

M E S S A G E

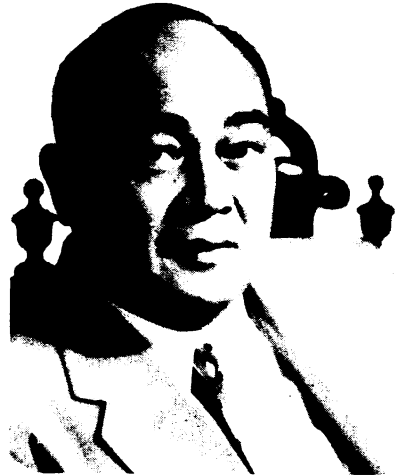
I convey cordial greetings to the readers of FORESTRY LEAVES, the official organ of the alumni and student body of the College of Forestry, U. P., on the occasion of our celebration of Arbor Week.

It is fitting and proper that we should all endeavor to make our people more conscious of our forest resources. Our forests provide our nation not only with many of our daily needs, but also with one of our leading dollar-earning industries. It is rather unfortunate that this source of wealth has lately been taken for granted, and even abused, to such an extent that during the last regular session, Congress has been forced to pass a measure intended to protect our forests from further depletions and careless exploitation.

I urge the alumni and student body of the College of Forestry to lead in a nationwide movement to protect the riches of our country which can be found in our forests. A law remains a law written on paper until it is given living meaning by persons of good faith. Such persons of good faith are found in the ranks of the alumni and student body of the College of Forestry. I know they will live up to the expectation that I express here.


E. RODRIGUEZ, SR.
President of the Senate

Manila, Philippines



H. R. No. 3

REPUBLIC OF THE PHILIPPINES
HOUSE OF REPRESENTATIVES
MANILA

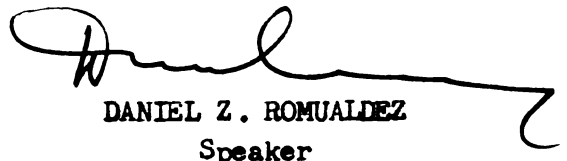
OFFICE OF THE SPEAKER

M E S S A G E

FORESTRY LEAVES, I am glad to know, is in the vanguard of our nation's observance of Arbor Week. It is well that this is so for one could hardly think of better and more sincere advocates of those majestic creations of God with which our country is so richly adorned and whose marvelous beauty and worth cannot be approximated, as the poet wrote, by poems made by fools.

Let the FORESTRY LEAVES be scattered throughout the length and breadth of our land for it seems, sadly enough, that many among our people have still to learn of the value of the forest treasures that a provident God has given us to cherish and preserve.

Manila, Arbor Week, 1961.


DANIEL Z. ROMUALDEZ
Speaker

Republic of the Philippines
Department of Agriculture and Natural Resources
Office of the Secretary
Diliman, Quezon City

M E S S A G E

Perhaps at no time in the history of the country's economy has so much interest been focused on forest wealth as it has today. The effort to preserve adequate forest stand to maintain the ideal balance between forests and agricultural land has reached and occupied the minds not only of government officials but social and civic leaders as well.

But while the country pools its best minds and resources to prevent destruction of forests, it becomes the duty of the alumni of the College of Forestry, University of the Philippines, to share actively in this effort, because this group has within its fold the best minds on forest science in the country today.

May this reminder be foremost in the minds of all U.P. College of Forestry alumni not only during Arbor Week but every day throughout the year.



CESAR M. FORTICH
Secretary
Department of Agriculture and
Natural Resources



UNIVERSITY OF THE PHILIPPINES
QUEZON CITY

MESSAGE

The care and propagation of trees is, for all of us, a task that has no end. Trees conserved are a ready source of wealth. More, they give protection and bring joy. They inspire hope and sustain life -- this means change and growth. When trees are cut with reckless abandon, as it happens now, to feed a hungry market abroad, we needlessly destroy something of our own. Without the protective mantle of our forests, the rich soil will not hold, the wind will tear out its flesh, the floods will come, leaving tragedy in their wake. This is the grim future we face unless we realize that our vaunted rich forest resources are not limitless. We must replace what is cut or destroyed by careless hands. This is the thought that I pass on to you as you observe Arbor Week.


V. G. SINCO
President

Compliments to Forestry Leaves

from

**STA. INES LOGGING ENTERPRISE, INC.
GOLDEN RIBBON LUMBER CO., INC.**

*Producers, Manufacturers and Exporters of
Veneers, Lumber and Logs*

GUILLERMO PONCE
President Class '36 BSF
Oregon State Class '39 MF

Compliments of

The FINDLAY MILLAR TIMBER COMPANY

*Manufacturers and Exporters of Quality
Flywood and Lumber*

Head Office:

A. Magsaysay Bldg.
520 San Luis, Manila, P. I.
Cable Address: FINDMILL
Phone Nos. 5-16-01
5-16-04

Sales Outlets

1. Ozamis City
2. Cagayan de Oro City
3. Iligan City
4. Kolambugan Plant
Lanao del Norte

Forest Resource Conservation*

By PAUL ZEHNGRAFF
Forestry Advisor

It was with a certain degree of reluctance that I accepted Dean Zamuco's invitation to speak at this convocation, for I realize that most of what I have in mind you already know. However, it is always a pleasure to discuss common interest matters with fellow foresters and foresters to be. And somehow I feel that Forest Resource Conservation is a subject that can not be discussed too often — a subject that you, too, will soon be required to preach over and over again.

Once upon a time the greater part of the earth's surface was covered with forest, established by Nature in the process of developing the world into a place fit to live in.

Forests are one of the greatest gifts by Nature, and they have played a most important part in human welfare since the early days of habitation. They have given food, fuel and shelter; they have developed and protected soils and soil fertility; they have provided the necessary raw materials for dwellings, communities, ships, railroads, telephone and power lines, books, newspapers, and innumerable other human needs in the development of civilization. These needs are still increasing.

That the scant population of the earlier days regarded forests primarily as wild lands and therefore forced them to yield space for other developments is understandable. The past century, however, has shown us that a certain balance between cleared land and

forested lands is in more ways than one, necessary to our well being.

The ill effects of disturbing this balance are all too well demonstrated in most places of the earliest civilization. Northwest China, the near East and the middle East are classical examples. The forests have disappeared long ago, and so has the soil that supported them and the early civilization. The greater parts of these areas have become arid deserts, naked mountains, or worn out sparsely settled lands unfit for any kind of production. The explanation is simple: the necessary balance between cleared land and forested land was not maintained. Lands that were suited only for tree growth were lain bare.

When the protective forest cover is removed and not allowed to return, the century old micro-organic life of the soil quickly disappears due to exposure and leaching, and the soil undergoes certain undesirable physical and chemical changes. With the controlling factors gradually removed over large, continuous areas, the climate itself is drastically changed. Temperature ranges become sudden and severe; precipitation becomes sporadic, and drought periods alternate with flash rains that carry away the top soils, depositing them in stream beds, causing floods and destruction, until they are finally washed into the oceans. Winds whip up the dust on barren areas, and air composition is changed to the detriment of human health. Repair measures at this point become disproportionately costly. Timely applied forest conservation, on the other hand,

* Speech delivered at the College of Forestry Convocation, March 22, 1961.

costs nothing and it is considerably more effective.

As foresters we know that the term conservation does not imply that we can not use the treasures handed down to us by Nature. It does imply, however, that we must use them wisely and not destroy them.

Wood is the only renewable natural resource in the world. As the world's populations increase, forests therefore become increasingly important. New uses are continually found for the raw materials they supply, thus resulting not only in increasing consumption due to population increases, but in rapidly increasing per capita consumption as well.

Those nations that still have what now may seem excessive forest areas, and the foresight to conserve and perpetuate them through wise use, will in the future be in a considerably better economic position than those that overlooked the forest potentialities.

During recent years a great deal has been said and written for and against the forest situation in the Philippines. Opinions are naturally greatly divided, varying from the impressions that the forests are inexhaustible, to the gloomy aspect that they will soon be replaced by deserts. It is said that where there is smoke there is fire. It is not my intention in this discussion to add oil to the fire, but rather to present the situation from a forester's point of view and as I have observed it during my stay in the Philippines.

For generations the impression has been had, both in the Philippines and throughout the world, that the Philippines possessed practically inexhaustible forest resources. This impression still exists in most quarters.

A better expression would be that in the form of still extensive virgin forests, composed for the greater part of highly valuable tree species, the Philippines has been blessed with a natural resource, the like of which is no longer found in most other parts of

the civilized world. It is, in fact, the nation's greatest and most important natural resource. That it is not inexhaustible as formerly believed has, however, become evident in recent years.

I stated previously that forests are our only renewable natural resource. They may be perpetuated in different ways. For many species, particularly in the tempered zones, perpetuation of desired species has to be done through artificial replanting. In the Philippines, however, most of our commercially valuable species perpetuate themselves richly and surely without the aid of man. Moreover, the Philippines is endowed with a climate that is extremely favorable to tree growth, so that once the mature trees have been harvested, the young forest will rapidly again produce merchantable timber.

In the virgin forest one may count several thousands of young seedlings and saplings per hectare, eagerly waiting for light through harvest or death of the old trees. Partially, or selectively cut forests quickly close the canopy and again form fully stocked stands. In areas that were left undisturbed following the original commercial clearcut one may observe fully stocked young stands of saplings and poles of the original species successfully competing with and overcoming the temporary species that shield them during the first decade or two. Sample plots in such areas have produced 100 cubic meters or more per hectare of merchantable timber in thirty years — as much as the original cut yielded.

Thus, it is evident that natural perpetuation and the creation, in a comparatively short time, of excellent second growth forest is a natural phenomena in the Philippines provided that the areas are left undisturbed following each harvest.

Forestry is a long-range proposition and foresters must take long-range views and encourage long-range policies. The Philippine

forest policy is clear and to the point. The governing principle, according to Sec. 1824 of the Administrative Code is (quote): "The public forests of the Philippines shall be held and administered for the: (a) Protection of public interest; (b) Utility and safety of the forest; and (c) Perpetuation in productive condition by wise use." Forest laws and regulations are plentiful.

A well trained corps of foresters is assigned to administer and manage the forests. Technical know-how is not lacking and it is improving through an excellent School of Forestry. The lumber industry in general is sympathetic and on the foresters' side.

In the field of forest management, the Bureau of Forestry has instigated and is attempting to enforce a selective cutting system under which only the mature trees are being harvested, saving the younger and thriftier ones for future growth and development. The system is sound in principle and in order to protect their investments and future business through a continuous timber supply, at least the larger lumber companies are cooperating in applying it. Thus, from a distance it would appear that the forest situation in the Philippines is under control.

Considering all these favorable factors, why is it then that there are found, after all these years, practically no second-growth forests in the Philippines, but instead millions of hectares of idle lands, splattered with a scarred snags and stumps and covered with cogon grass on areas formerly covered by dense virgin forests?

Part of the answer seems to be that because of neglected public information on the importance of forestry and forest conservation, the general public of the Philippines regard the forest as wild lands. The products that they produce are taken for granted, and their contribution to national income, to employment and to general welfare are factors that are far from generally understood.

Instead, the common impressions prevail that so long as the forests cover the lands, they are but an obstacle to agricultural expansion. And so long as they are under public ownership, these lands are free to occupy for anyone who will take the trouble to clear them for food production.

Consequently, newly logged over forests, and young, thrifty second-growth forest as well, are being destroyed at will. As soon as a logging road is constructed, squatters swarm in, cut and burn the residual stand and take over the land. Even in virgin forests large scale advanced settling and forest destruction are taking place — all under the cry for expanded agricultural production and a means of livelihood for the pioneers. And primarily due to lack of public information and education in the field of forest conservation.

If the forest lands thus cleared were actually needed for and suitable for cultivation, and would be developed for permanent crop production, there might be some justification. But by far the greater parts are neither needed nor suited for agricultural development. And those that might be considered suitable are rarely fully utilized. Most of the lands are used only a short time, and then abandoned when soil fertility wears out.

Certainly this is neither an experiment, nor due to lack of knowledge. It has been going on since time immemorial, and the huge areas of abandoned and idle lands bear evidence that further attempts will end in failure and abandonment as well.

How long will this be allowed, and in the meanwhile, what will happen to the remaining forests, the forest industries, and the employment that they offer?

Based on past rates of population increases, the population in the Philippines will double within the next 30 years, and with it the demands on the nation's raw materials, employment and food. Surely, the

scarred snags, stumps, and cogon grass that will then be left of the present riches will supply none of these essentials for the coming generations. How then, will those generations evaluate the past stewardship?

To foresters, this needless and thoughtless destruction of the nation's wealth through public misunderstanding and lack of foresight is a nightmare. We have seen, or at least, know of, similar destruction in several other places throughout the world — and the resulting penalties. Lessons are not lacking. We ask ourselves and each other why, with such examples should any civilized country and intelligent people have to make the same mistakes and its future generations pay the inevitable penalties?

As public foresters, anywhere, we are charged with the responsibility of managing and caring for the forests in such a way that they will yield the greatest good to the greatest number of people in the long run. Our entire training, and in fact, our decision to devote our lives to this profession are centered on this.

Since tree crops are long range crops, and since many of the benefits derived from forests are intangible or not generally understood, our mission and our efforts, too, are most frequently misunderstood. We are forced to defend our principles over and over again, generation after generation, to the public whose servants we are. We may even be blamed for the crimes the public commit against the forests. The public support so essential to carry out our tasks is generally not forthcoming until so late that reconstruction measures become disproportionately difficult and costly.

The lot of the Philippine foresters is no better. If anything it is even worse. The Bureau of Forestry is badly undermanned. The budget is seriously insufficient. The general public is apathetic and frequently hostile. Laws are openly disregarded; the authorities are often uncooperative in sharing the responsibility of enforcing them; and

not infrequently are the field foresters reprimanded or punished for attempting to carry out the responsibilities assigned to them.

That the profession of forestry under such circumstances finds itself in a defensive position and refuses to take the blame for the present situation is understandable. There is no need or cause for being apologetic. But that anyone who has observed the present pattern and rate of forest destruction should deny that the Filipino people are in the process of losing forever their most valuable natural resource is incomprehensible.

Nor may it be expected that the forests can be re-established through planting, for although the annual reforestation program has been considerably expanded in recent years, the actual annual replanting covers only a fraction of the annual clearing and burning. To replant progressively and successfully all cleared and destroyed forest lands would absorb most of the total government income from the forest. To catch up in addition on the areas already destroyed and abandoned would be next to impossible physically and financially.

Yet, the responsibility of perpetuating the forests rests squarely on the profession of forestry and the lumber industry, and someday in a not too distant future, we shall be held responsible if we fail. We can not afford to hide our heads in the sand. We owe it to ourselves, to our profession, to the public whose servants we are, and to the coming generations to face that challenge now.

There is no easy way out, however, nor any short-cut formula. Criticism, fears or complaints will not solve the problems, nor will laws without enforcement. It will take concentrated and combined efforts, frankness, courage, diplomacy and leadership. A strong and active Forestry Society can, in cooperation with the lumber industry, do a great deal.

The most important task, and probably the most difficult one, is to win public understanding and support on all levels. We may hope for that only by openly admitting and exposing to all concerned the present situation, the problems we are facing, and the inevitable consequences of continued disregard for the future. The press is our most powerful ally. We must keep it fully informed and on our side in combatting the forces that are working against the general public welfare. Posters, displays, movie shorts and radio are other tools in a general public information and education program. And particularly so, on the part of the individual forester, is good public relations.

The extent of the remaining Philippine commercial forest areas and timber volumes is subject to considerable controversy. The fact is that we have no way as yet to know for sure. Recently updated estimates, however, indicate that the commercial forest areas have been reduced by more than two million hectares during the past 25 years, or an average of about 84,000 hectares annually. Worse yet, observations indicate that the bulk of this reduction has taken place during the past decade and at sharply increasing rates.

How much of the total annual drain on the forest is made up by growth is similarly subject to misunderstanding. However, as the Philippine forests for the most part are mature to overmature, it must be assumed that growth and natural mortality have reached an equilibrium, as is always the case in virgin forest. Actual growth over mortality takes place only in young forests, and since areas of second growth young forests are negligible, one is forced to conclude that the present total drain by all categories, including lumbering, illegal cutting, kaiñgin, fire, and other causes, is a net drain on the remaining resources.

Although the remaining commercial forests are poorly distributed and concentrated

in a few provinces, with several provinces already depleted and suffering the consequences, there are still sufficient good forest left in the Philippines — though not as much as many should like to believe — to serve the nation's needs for generations to come, provided that the line can be held now. In fact, under intensified management and better utilization the forests can last indefinitely.

It is because the forests are the greatest and most important natural resource in the Philippines that technical and financial assistance to forestry has been included in the NEC/ICA economic development program since 1951, and will be continued for some time to come.

The Philippine forests and the term Philippine mahogany are well known throughout the world. The products that they produce are eagerly sought and demand top prices on the world market. Indeed, although forest products are exported mostly in raw form, yet they are the third highest foreign exchange earner, bringing in better than 80 million dollars annually, while local consumption of wood is estimated at 135 million pesos annually. Forest industries provide direct livelihood to nearly a half million people, and indirect or partial livelihood to perhaps several times that number. These are only some of the tangible benefits. The intangible benefits are probably in the long-run even greater.

With adequate protection, intensified management, and very much improved utilization of all that they produce, the potentialities of the remaining Philippine forests, in terms of production, industry and employment, are practically unlimited. It is for these reasons that it has been felt — and is felt to an increasing degree — that assistance to forestry is a sound investment.

The NEC/ICA assistance program includes both the technical and financial aspects. Technical assistance involves primarily the training abroad of Filipino technicians.

To date more than 80 Filipino forestry technicians have received training in U.S. and other countries under this program, and in several instances resulting in advanced degrees. As a result, these technicians now all occupy responsible positions. Technical assistance also includes the stationing in the Philippines of one U.S. technical advisor, and at present three visiting professors under the NEC/ICA financed contract between the College of Forestry and the State University of New York.

Financial assistance includes both U.S. dollars and local currency, namely, dollars for the purchase of commodities that are not available locally, such as scientific instruments, field equipment, and transportation equipment, and local currency for various other purposes, such as construction and project implementation.

Among the several forestry projects that have received NEC/ICA assistance I should like to mention a few of the most important and successful ones.

1. One of the earliest and most successful projects is the Forest Products Research Institute which was constructed and equipped for the purpose of finding means to utilize to better advantage the tremendous volumes of logging waste and tree species for which no commercial uses were formerly found. Because of this important goal, not only NEC/ICA, but other organizations, including the UN, have contributed significantly. The Forest Products Research Institute is now not only functioning well and making significant contributions to the forest industries and the national economy, but is the most outstanding institution of its kind in this part of the world.
2. Another important project is forestry education. It has been fully realized that the future of forest production to a very large degree rests in the

hands of those who are assigned to manage the forests, namely, the foresters, and that the efficiency and capability of these men mainly hinges on the training received. As the available timber areas become smaller, the needs for forest products can be met only through intensified scientific management of the remaining resources. It is essential, therefore, that the young men who chose forestry as their profession receive the best possible training in preparation for future tasks.

The only forestry education institution in the Philippines, the College of Forestry, was largely destroyed during the war, together with most of the teaching equipment. Consequently, one of the only assistance projects was to reconstruct and re-equip the College. The second phase of this project, the expansion of the physical plant, enlargement of teaching staff, and intensified training, is now well under way, first through a recently completed three-year contract with Cornell University, and at present through a larger scale contract with N.Y. State University, School of Forestry, at Syracuse. Under these contracts it is planned to provide advanced training in U.S.A. for a total of 24 young instructors to bolster the teaching staff. Some of these have already returned with advanced degrees, some are now in training, and among the present students we hope to find the rest. As result of this and other improvements being made or planned, we firmly believe that the College of Forestry will emerge as the most outstanding forestry school in Asia.

3. Under a project entitled "Forest Management" and various sub-projects, considerable assistance has been rendered to the Bureau of Forestry since 1952 in order to ease its burden and responsibilities. Under the technical assistance, including this FY, a
- (Continued on page 18)*

Some Observations on Philippine Forestry with Special Emphasis on Forestry Education

by

DR. HARDY L. SHIRLEY, DEAN
*State University College of Forestry
at Syracuse University, Syracuse, N.Y.*

PREFACE

The following report by Dr. Hardy L. Shirley, Dean of State University College of Forestry at Syracuse University, Syracuse, N.Y., was dictated prior to his departure from the Philippines on December 10, 1960. Dean Shirley arrived in the Philippines on November 15 to inspect and review operations under the ICA-NEC sponsored contract between the University of the Philippines College of Forestry and the State University of New York. Enroute to the Philippines, Dean Shirley spent four days in Japan and five days in Taiwan studying forestry conditions and visiting forestry institutions in each of these countries.

Shortly following his arrival in the Philippines, Dean Shirley traveled for a week in the southern islands, visiting Basilan, Mindanao, Cebu and Negros. Most of the journey was made by air and since flying weather was good, he was able to observe from the air the virgin forests of Mindoro and western Mindanao, the cutting operations on Basilan and eastern Mindanao, the denuded hills of Bohol, Cebu and much of Negros, and the forest and agricultural areas of southern Luzon. He visited the Basilan Lumber Company at Port Isabela, Basilan, the Timex Plywood plant at Zamboanga, the Bautista Brothers sawmill at Sangali, the Bislig Bay Lumber Company at Bislig, the Nasipit Lumber Company at Nasipit, a veneer mill near Butuan and the

Insular Lumber Company at Fabrica, Negros. In the course of his trip, he also visited the district offices of the Bureau of Forestry at Zamboanga, Basilan, Davao, Cebu and Bacolod.

In the Manila area he visited with President Sinco and Vice Presidents Isidro and Virata of the University of the Philippines and with Secretary Fortich and Under-Secretary Cunanan of the Department of Agriculture and Natural Resources. He visited the Reforestation Administration and the Bureau of Forestry and conferred respectively with Administrator Viado and with Director Serevo and Deputy Director Sulit. He attended the 50th Anniversary Celebration of the College of Forestry and the 60th Anniversary Celebration of the Bureau of Forestry where he met a number of prominent foresters and men in government service. He also attended a luncheon given by the Philippines Lumbermen's Association where he met many prominent lumbermen.

At Los Baños Dean Shirley had conferences with the faculty members in Forestry and officials of the Forest Products Research Institute, with Dean Umali and several members of his staff in the College of Agriculture and with Dr. Chandler, Director of the Rice Institute.

During the course of his visit, Dean Shirley conferred with the following officials of USOM: Minister Paul M. Summers, Mis-

sion Director; Mr. Leland A. Randall, Deputy Director; Mr. William J. Krossner, Program Officer; and Mr. Donald A. Ritter, Chief, Agriculture Division. He was accompanied on his southern field trip by Dean Gregorio Zamuco of the U.P. College of Forestry; Mr. Paul Zehngraft, Forestry Advisor with USOM; and Mr. Pirhalla of the United States Embassy. In a special conference arranged by USOM, Dean Shirley reported formally to ICA officials and to Director Crucillo and Mr. Lansigan of the National Economic Council; Mr. Tamesis, Regent of the University of the Philippines; and a representative of the Bureau of Forestry. Before leaving the Philippines, he also reported to President Sinco of the University.

* * *

Philippine forests are among the most valuable tropical forests to be found anywhere in the world. They are a great national asset. Approximately 18 percent of the dollar earnings of the Philippines now comes from forest products. Properly managed, the Nation's forests could sustain a great forest industry indefinitely.

But Philippine forests are disappearing. They are being destroyed relentlessly through illegal cutting and shifting cultivation. The soils they once protected are flowing down the mountains to the sea. Silt and boulders are being deposited on bona fide agricultural lands, destroying these for future use. Entire barrios have been swept away by flood waters. Rivers and harbors are being clogged with mud. These are facts known to many informed Filipino people. They are evident for all to see who travel on the Islands or fly over them.

What is not so easy to see is that squatters and kaingin makers in destroying the forests are robbing the 400,000 or more people who depend directly upon forest industry for their livelihood. They are robbing the nation of one out of every seven export dollars. They are even threatening the very existence of the Philippines as a free nation.

These facts too are known to informed Filipino people. Yet somehow the forces of public opinion and the determination of high government officials have not been mobilized to insist that this continual impoverishment of the nation's forests be terminated.

The forest and national welfare. The Philippine forests surpass other tropical forests in that trees of high quality grow together in dense stands. Red and white lauans, apitong and other species of high technical quality form almost pure stands in the undisturbed mountain forests of the Philippines. In South America and in Africa, trees of export quality are scattered at wide intervals often averaging only one per hectare. Such forests can attain high commercial value only by converting them from their natural state into plantations of commercial species.

Philippine forests have enabled the nation to build up a great export trade in forest products since the second World War. Not only has the total Philippine export trade expanded, but forest products trade has grown and the percentage that forest products make up of total exports has increased at a very rapid rate. Data for recent years are as follows:

Year	Total Exports Million Pesos	Forest Products Exports Million Pesos	Proportion of forest products to total exports Percent
1949	496	6	1.3
1953	797	59	7.4
1957	682	89	10.4
1959	1,059	161	15.2

Estimates for the year 1960 indicate that forest products will make up 18 percent of the total dollar earnings of the Philippines.

While export trade in forest products is being built up and forest cutting is going on at a correspondingly rapid rate, the forests themselves are declining in area. Estimates indicated that in 1946, the year of national independence, the nation had 11.2 million hectares of commercial forest land. The cur-

rent estimate is 9.3 million hectares. These two values indicate a decline in forest land by as much as 126,000 hectares per year. These, to be sure, are estimates. But it takes little imagination to appreciate their significance if one travels over recent logging operations or, better still, flies over them and observes how kaingin makers are following behind the loggers, clearing and burning the steep slopes to grow one or, at best, two or three crops of corn or sweet potatoes and then abandoning the land to cogon grass.

In a desperate effort by Filipino and American foresters to dramatize the seriousness of the forest situation in the Philippines, an inventory of forest resources is projected. Only by making a detailed survey can the nation be certain exactly how much forest remains and only with such information can it arrive at a sound policy for managing remaining forest resources. It is estimated that this survey will take approximately three years to complete. Meanwhile, unless stringent protection measures are taken, forest destruction will proceed unabated. Secretary Fortich is to be highly commended for his policy of granting no additional concessions until the results of this survey are determined. Certainly the nation would be unwise to continue the current expansion in timber cutting until it knows how much timber it has and, even more important, how rapidly the timber is growing.

Information on Philippine timber growth is very meager. It is obvious that little net timber growth is taking place in the old, virgin stands. In such forests, losses through age, heart rot and other decay, through wind storms and through damage by insects and other agents offset the increase in timber volume through growth. It is a well known principle in forestry that a given forest type reaches a certain maximum timber volume and from then on over the years losses offset growth. There is also little or no new forest growth on lands taken over by kaingineros. Here the timber is completely destroyed and usually only cogon grass

occupies the land. This grass is aggressive and holds the soil against invasion of valuable timber trees. Abandoned cogon and brush areas are now estimated to occupy 5.5 million hectares of land that formerly supported valuable forests.

Another important fact to bear in mind is that clear-cut forest areas, even if not burned or cultivated, seldom return immediately to the valuable dipterocarp forests they originally supported. Instead, they are usually taken over by temporary forest types of little value. Such forests produce species suitable for pulpwood but they do not produce the high quality timbers that the original forest contained. Many years are usually required for young dipterocarps to establish themselves in this second-growth forest and grow to a point where they can take over when the temporary species have lived out their normal lives.

Public opinion is being aroused. Many people other than foresters are becoming concerned over the seriousness of the forestry situation in the Philippines. Expressions of such concern are being made by business leaders, by economists, by men in public life and even by the common citizen, especially those living in rural areas that have experienced the ravages of floods. In addition, many Philippine lumbermen and executives in other forest-products industries are now favorably disposed towards forestry to a far greater degree than was the case a decade or even five years ago. They recognize that they have a good business and that this business depends upon the continued productivity of the forest. They are ready to take necessary measures, insofar as these lie within their jurisdiction, to stop further destruction of forest land.

There still remains, however, especially in the minds of many seeking public office, the appeal of the slogan "Land for the Landless". Politicians are reluctant to align themselves with a movement that would oppose this humanitarian expression. Moreover, many of them rationalize forest destruction

in the general belief that the nation must have additional crop land to feed a growing population; that kaingin makers and squatters, as well as legitimate land settlers, are developing the land and making it more productive in the total economy; and that there is no other feasible means of dealing with an under-employed population.

All three of these beliefs are actually false. Agronomists at the College of Agriculture have demonstrated that yields from existing low-lying farm lands can be doubled by improved agricultural practices such as through using better varieties of seed, through applying fertilizers and improved tillage methods, and through shifting emphasis from one crop to another (crop rotation). It is also known that much of the land in the Philippines can yield two and even three crops a year instead of one. Forests today occupy very little land that is suitable for permanent agriculture. Where they do so, no forester would oppose clearing off the forest and converting the land to agriculture, provided in the long run the land would yield as high returns in agriculture as it would in forest. The clearing of steep mountain slopes, which appears to be the favorite haunt of the kainginero, develops only erosion, floods, local droughts and useless cogon lands. It does not develop productive farms.

The point cannot be too strongly emphasized that unless illegal cutting, squatting and kaingin making on public lands are stopped, all other forestry measures will be of no avail. It is believed that public opinion can be aroused to accept this viewpoint and that those who espouse the cause of forestry would find a ready reception for it among the general public. It must be recognized, however, that the people who now practice shifting cultivation on mountain lands cannot be driven into the sea. They must be provided an alternate way of making a livelihood. It is the task of industry and government to find this alternate way. Suggestions as to measures that would great-

ly increase employment opportunities will be given further on in this report.

The forest products industries. The forest products industries in the Philippines are still relatively under-developed. They are mostly under-capitalized. This is true even though a few of them have the best of modern equipment and employ as good technical control over their operations as is to be found in any modern industrial nation. Nevertheless, 70 percent of the logs that are currently taken out of the woods are exported as logs. In 1959, log exports brought an average of 94 pesos per 1000 board feet. In this same year the timber, veneer and plywood that was exported by Philippine forest industries brought in an average of 250 pesos per 1000 board feet. Exporting semi-finished products instead of logs, therefore, increased income to the Philippines two and one-half fold.

There is a further consequence of depending to such a large extent upon log export. This is that many logging companies, especially the small ones, utilize only the one product—export logs. Low grade logs that are not suited for export are therefore left in the woods to rot. Probably as much timber remains in the woods in the form of low grade logs and tops following the average logging operation as is removed for sale. Such material brings no income to the man who cut the logs, it brings no income to the operator who built the logging roads, it provides no employment for local labor and, finally, it makes available no lumber or veneer for building houses, schools, shops and factories or raw material for the production of paper to support the economy of the Philippines. The Philippine lumber industry as a whole looks to export trade as the principal outlet for the products it produces. In part, this is because higher prices are available in foreign markets for quality material than can be obtained within the Philippines. In part, it stems from the fact that the export of raw materials rather than finished products requires less capital invest-

ment and offers a quicker cash return. Little imagination and effort, in any event, appears to have been devoted by the industry toward developing markets for veneers, plywood and lumber within the nation itself. Two progressive companies, however, have followed a different pattern and in doing so have demonstrated that money is to be made through processing material for local use.

The Nasipit Lumber Company has erected a hardboard plant that makes a good quality hardboard out of slabs, edgings and trimmings from the sawmill that would otherwise be burned or wasted. The Company has succeeded in treating this product with oils so as to make the hardboard weather resistant and thus suitable for roofing and siding for buildings as well as for a great variety of interior uses.

The other company is the Insular Lumber Company that exports no logs. It saws them all into lumber and converts this lumber in a planing mill into products of high value both for export and for local use. Even the short pieces that are trimmed off the ends of boards, if they are as much as eight inches in length, are made into fish boxes. This company is also to be commended on developing highly skilled Filipino workers and foremen who now supervise most of the departments in the Company.

The Insular Lumber Company is owned by American capital. At present its concessions are sufficient to permit only three additional years of operation. Unless it succeeds in obtaining a new source of logs, this Company will have to go out of business in the relatively near future. If this happens, the Philippines will lose a striking demonstration of how low quality material normally wasted in saw mill operations can yield a profit to the company and provide many jobs for Filipino workers.

The Philippines badly needs a pulp and paper industry to supply paper for newsprint, wrapping paper, packaging material,

for books, and for the many other purposes for which paper is used in today's society. There is ample material in the form of slabs and edgings from saw mills, trimmings from veneer plants, and second-growth temporary-type timber and inferior species that are found on a number of cut over areas to support a pulp and paper industry. Such an industry could provide profitable investment for Philippine capital and many jobs for Philippine workers. Moreover, it would save considerable foreign exchange now being used for the import of paper products.

There are certain maladjustments in the current economy of the Philippines that tend to impede the development of a more intensive wood product industry. Among these are the following.

1) Stringent controls exist over imports. The nation does not have the heavy industry to build pulp and paper machinery or even sawmill machinery. Machinery and parts must be imported and corporations importing such equipment and parts must have an import license to do so. This is cumbersome at best and leads to crippling delays in operation.

2) Inter-island transportation is still under-developed and expensive. Evidence of this is the fact that on the Island of Cebu, people are harvesting Ipil-ipil from steep mountain slopes, cutting it when only one year of age and carrying it on their backs to the city for sale as firewood. But only 150 miles away on Mindanao, especially in the neighborhood of Butuan, sawmill waste is being burned or dumped along the rivers because it has no local value. There is also something wrong with inter-island transportation when a firm such as the Insular Lumber Company cannot afford to ship logs from Mindanao to its plant at Fabrica on Negros and there process it into lumber and other products. It is stated that the freight rate for logs from Butuan to Tokyo is less than the freight rate on the same quality logs from Butuan to Negros.

3) Within the forest products industries themselves, certain economic maladjustments appear to exist that tend to perpetuate the export of logs. Operators believe that they can make a higher net return on their invested capital in exporting logs than they can in sawing lumber, manufacturing veneer and plywood or making planing-mill products. It is, of course, a basic principle of economics that a firm will seek to obtain the highest possible net return on its invested capital. If high grade export logs are abundant and can be obtained from Government forests at a low price, the practice of exporting logs is simply good business from the standpoint of the operator.

It is believed that the Government would be justified in charging operators a considerably higher rate for timber stumpage. If this were done and, at the same time, log scaling was performed in the woods where the trees are harvested and minimum standards were established for quality logs to be scaled, the loggers would be encouraged to utilize much more of the material that is cut. It is further believed that if interest rates were somewhat lower, more money would be invested in the forest-products industry and this in turn would supply more jobs and more material to support the local economy of the nation.

Two additional measures can be taken that would greatly strengthen the forest products economy in the Philippines. The first of these is to make available to local governments a portion of the gross receipts from forest products. Such action would serve to stimulate local cooperation in forestry measures, especially forest protection. This has long been an established practice in the United States. Today, countries and local school districts in the U.S. obtain very substantial revenues from timber sale receipts on national forests and other public lands located within their respective boundaries.

The second measure would be to give forestry enterprises long-term leases on pub-

lic forest lands such as is the practice in Canada. In addition, the companies should be given both the authority and the responsibility to protect the lands they hold under lease and to keep them in a good state of timber productivity. The Companies could be relied upon to cooperate in this since they would be assured that the timber they grew on these lands would be available to them for future harvesting. Obviously, such leases must be carefully drawn to protect the public interest on the one hand and to protect private investment in developing public lands on the other. An alternative to this measure would be for the Bureau of Forestry itself to have the authority and funds to protect the land and control cutting so as to keep the lands in a high state of productivity. This is the pattern that exists on the national forests in the United States. One or the other of these two measures, however, is absolutely essential to keep forest lands producing timber wealth.

Forest products industries must engage in export trade. We have emphasized the importance of building up the local forest economy to provide more employment opportunities and better housing, schools, churches, stores and factories for Philippine workers. But Philippine forest industries must engage also in export trade. This is necessary to build up dollar exchange so that machinery and other products can be made available to keep the local economy operating.

To engage successfully in export trade, Philippine forest industries necessarily must be efficient and must produce products of high technical quality. This means that they must have good machinery and it also means that they must have good technical control over operations. For to commend a permanent place in the export market, Philippine forest products must be of high quality and they must be offered at a competitive price.

There are three factors, however, which operate to some extent against strengthening the position of Philippine manufactured

forest products in the world market. One of these is the restrictive attitude towards foreign capital which might possibly be at lower interest rates than local capital. Another is an artificially high exchange rate. The third is that the industry is using lower grade logs than it is exporting to competing countries.

Efficient operations require technical manpower. Philippine forest are among the world's best. Yet unless they are well managed, unless forest logging operations are well planned and carried out efficiently, unless roads that are built in the forest are maintained and used permanently rather than allowed to wash away, unless mill operations are well laid out and efficiently operated, and unless the products are manufactured under stringent quality control, the Philippines cannot hope to compete successfully in international trade in forest products. This means that there must be a large number of highly trained technologists: general foresters, forest management experts, logging engineers, wood products engineers, pulp and paper technologists, and forestry economists including experts on marketing and international timber trade. All these are important to win and maintain a strong export trade.

Forestry education—the key to better forest use. Education in forestry in the Philippines was virtually at a standstill from 1942 to 1957. During this 15-year period of Japanese occupation, destruction and post-war recovery, the Forestry School almost went out of existence. Many faculty members fled the campus, the buildings were destroyed, the library was burned, the equipment was taken away. The School had to start from scratch in 1945. Apart from the construction of its main building, little progress was made in rehabilitation of the College until 1957 when the I.C.A.—Cornell assistance program with the University of the Philippines was broadened to include forestry. As a result, the technical manpower that would normally have been

trained between 1942 and 1957 and would now be growing up to positions of substantial responsibility do not exist. In other words, there is a great gap in trained men between the ages of 25 and 40. Yet it is to men in this age group that we normally look to carry the main burden of field inspections, of public information, of teaching and of the hundreds of other tasks that must be done to make forestry succeed. It is also upon such men that we normally must rely to serve as junior executives and department heads in the forest industries, and to fill positions of higher responsibility in government service and education. It will not be easy, therefore, to build up a strong faculty at the Forestry College at Los Baños or to build up the technical manpower required in the forest industries and government service, since it will be necessary to work mainly with men who have completed their education since 1957. It was largely in recognition of this situation that the University of the Philippines, the N.E.C. and I.C.A. entered into a contract to supply technical assistance to the College of Forestry.

Progress made by the College of Forestry since 1957 has been very gratifying. But what has actually been accomplished is still very far from what needs to be done to bring the College up to the standard that the Philippines will require to support their forest industries and forest economy. Much remains to be done, for instance, in the improvement of facilities; in the expansion and training of faculty and in the development of new courses and the initiation of graduate education and research. It is for this reason especially that it is desirable that the present assistance Contract with the University of the Philippines College of Forestry be extended beyond 1963.

Before the College of Forestry can be considered fully on its feet, it must be prepared to educate its own people through to the masters degree and it must have a strong research program. This perhaps should be

emphasized. The College of Forestry cannot expect to educate men at the graduate level unless it has a successful research program of its own. Men cannot be taught how to do research unless research is actually being done and they, the students themselves, participate in it. This raises the whole question of how forestry research should be organized in the Philippines. Much can be done by the Bureau of Forestry and the Reforestation Administration, but research is not the primary function of either of these organizations. Their task is largely to protect and manage forest areas for the production of forest goods and services.

Research in forest products is organized under the Forest Products Research Institute. A splendid start has been made in building a good laboratory and acquiring the equipment needed for precision work. The biggest handicap is trained manpower. During the next few years at least, it is highly important that the research activities of the Forest Products Research Institute, the College of Forestry, the Bureau of Forestry and the Reforestation Administration be coordinated and developed together. This is necessary because all too few research men are now available to plan the work and to interpret the data that are gathered.

The College of Forestry has several very pressing needs and it is well that these be clearly understood by everyone. The major ones are enumerated below.

1) *Increased faculty salaries.* The current salaries for faculty at the College of Forestry are considerably below those paid to industrial foresters and to workers in the Forest Products Research Institute. It is desperately important that the Forestry College be able to hold its faculty against offers of industry. It is also important that it holds faculty against offers of the Forest Products Research Institute, the Bureau of Forestry and the Reforestation Administration. It is the College of Forestry and the College of Forestry alone that can produce the technical manpower that all these agen-

cies require. However, the quality of the men that the College can produce will be no higher than the quality of its faculty. Good salaries and attractive working conditions must therefore be provided for the faculty at the College of Forestry and every possible effort must be made to keep these faculty at the College until at least sufficient technical manpower is available to replace them with men of equal competence.

2) *Improved housing for faculty members.* The housing conditions under which some of the younger faculty members are currently living is disgraceful. They would not meet standards of health, privacy or decency in any nation. Three faculty families are currently living in an old Army barracks. It has no ceiling, only a metal roof and the roof leaks. It also has no sidewalls, only nipa thatch. These three families occupy about one-half of the building. Beyond them in the other half students are living. The partition walls extend only to a height of about ten feet. Beyond this is open space. Consequently, every word spoken can be heard throughout the building; every baby that cries, every dog that barks, even a student who drops a shoe on the floor disturbs the entire group. This condition cannot be permitted to last. No faculty member can be expected to study, to grade papers, to improve himself under such conditions. Fortunately in one way, the condition cannot last for the floor is riddled with termites. Sooner or later much of the building will collapse unless repaired.

What Filipinos need as a whole are improved standards — standards of housing, standards of health, standards of cleanliness, standards of privacy. It is desperately important that the nation's college and university students be exposed to such standards and live under conditions that they will seek to achieve and maintain for themselves and their families throughout life. It is up to the faculty to set these standards and they must be helped by the University in doing so.

3) *Improved student housing.* Little further need be said about student housing. It must be greatly improved. Fortunately a new dormitory is currently under construction. Additional dormitory space will be needed as the student body grows.

4) *Scholarship to attract high quality students.* The College of Forestry is now attracting a number of able students, but it must attract many more and can do so if the opportunities available in forestry are widely publicized and particularly if scholarships are made available to students of high promise who otherwise would not be able to attend college. Scholarships will be of little avail, however, unless good living conditions for students are established.

5) *A more rigorous curriculum and program of study.* At present a high percentage of the young men who come to the College are not prepared to do college level work. Many come with poor preparation in mathematics, in chemistry and in physics. Some are said to be so weak that they are unable to perform a simple algebraic manipulation such as transposing a term from one side to the other of an equation. If the College of Forestry is to enjoy stature in its own country and particularly if its students who go abroad are to compete successfully in the graduate schools of Europe and the United States, it must provide its students approximately the same standard of education that students receive in Europe and the United States. Already many of its students are taking four and one-half to five years to complete their bachelors degree. This situation is likely to continue and may become worse if standards are raised and maintained as they should be.

6) *Faculty members educated to the Ph. D. level.* There should preferably be one man in each major area of College instruction and research — forest management, silviculture, forestry economics, forest products, engineering and logging — who holds the Ph. D. degree or its equivalent. It would be asking far too much of the College

of Forestry to send faculty members abroad for Ph.D. education, however, unless some assistance were made available through visiting professors to help fill the gap while some of the regular men are abroad.

7) *A strong program of public education and information.* A strong program of public education and information can greatly strengthen the efforts of the Bureau of Forestry, the Reforestation Administration and the forest-products industry in their nationwide campaign to sell good forest practices to the Filipino people. During the immediate years ahead, every Filipino forester must participate actively in the overall task of explaining forestry and its economic importance to the people of the country. It is his obligation to do this whether he is engaged in teaching or research or is employed by the Bureau of Forestry, the Reforestation Administration or private industry. This work must be done with a crusading zeal for the task is no less than a battle, a battle for the minds of men for which the stake is one of the greatest resources the nation has. Steps are already under way for the College to start meeting its share in this responsibility. The other agencies involved must be mobilized at once to share their strength in the overall task.

8) *Close cooperation between the College and other agencies.* The College of Forestry has the overall responsibility of serving as the main source of technical information for government and private industry in forestry. The faculty can be strengthened and its teaching vitalized by having opportunity to serve with action agencies in the Bureau of Forestry and Reforestation Administration during summer periods or even on assignments of three to six months in duration. Teaching could be strengthened also by inviting, from time to time, men from the Bureau of Forestry and from industry to give lectures, to conduct seminars, and for even longer assignments in teaching courses. Such interchange should be mutually helpful.

It is especially necessary that there be a ready exchange of personnel between the Forest Products Research Institute and the College. In the writer's opinion, and he speaks from personal experience, a research man gains a great deal by having the responsibility and the opportunity from time to time to explain his work and its significance to a student group and even to prepare and teach a course. Thereby he develops a broader background in his research area, he crystalizes his own thinking on the subject and becomes a better research man and a more effective individual in making his research results available to those who will put it into practice. At the same time, faculty members in the forest products field should have the opportunity to participate in an important growing project in forest products research. It would be best if they could be given a certain area for their own development. This intimate cooperation and working together between the two groups can yield intellectual stimulus of high value to both institutions.

9) *Classrooms and laboratories.* The College needs additional classroom and laboratory space. Fortunately such a building is projected and is now in the planning stage. It is hoped that final plans can be completed at an early date so that the contract can be let and construction begun by April 1, 1961. Unless this is accomplished, the possibility of the College obtaining dollar funds to aid in equipping the new building appears exceedingly remote.

10) *Library Improvement.* The College library needs substantial expansion both in space occupied for shelving and in holdings. In accomplishing this it is entirely appropriate that the librarian of the College and of the Forest Products Research Institute work closely together so that the net result to the two libraries will be to give the best possible support to both institutions. Perhaps the best answer to this problem is the development of a common library to meet

the needs of both the College and Forest Products Research Institute.

11) *Experimental and demonstration forest.* A substantial area of the Makiling National Park should be set aside as an experimental and demonstration forest for the College. To make this forest effective, it must be developed with roads. It must be divided into compartments and a program of forest operations planned and carried out to demonstrate good forest practice. This will take substantial capital investment, some of which ultimately can be returned in the form of products that will be harvested from the forest. However, the main purpose of the College experimental forest should not be to make money for the College, but to provide field instruction and demonstration in what good forest practice means.

12) *A change in the status of Makiling National Park.* The recent transfer of the administration of the Makiling National Park from the Director of Parks and Wildlife to the Board of Regents of the University was an important and necessary step in the development of the College of Forestry. However, this action did not completely settle the land problem of the College, inasmuch as the transfer was made with the condition that said area shall be "conserved and preserved as a National Park". Obviously, the College cannot manage the Makiling Park in accordance with this directive and at the same time adequately meet its specific land-use needs for campus and for teaching, research and demonstration in applied forestry. So long as it must be handled as a national park, the Makiling area will continue to be looked upon and used as a public playground and picnic site rather than as a College area for serious academic pursuits. This situation needs to be clarified, and it is recommended that legislation be enacted as soon as possible which will give the University complete jurisdiction to manage the Makiling National Park in whatever way it deems necessary to best

meet the needs of the College of Forestry for teaching, research and demonstration in multiple-use forest management.

13) *A College Board of Overseers.* The needs of the College are so great and the importance of meeting these needs so pressing to the nation that the College needs outside strength. This could be provided through a Board of Overseers appointed by the Board of Regents of the University and reporting directly to them. The membership of such a board should include the Secretary or the Under Secretary of Agriculture and Natural Resources and a few leading citizens who are acquainted with the overall economy of the Philippines, who are devoted to the national welfare and who will see in forestry and forest products an opportunity to strengthen the nation. Including men of the caliber of The Hon. Pio Pedrosa and properly balanced between representatives of industry and the general public, this Board of Overseers could be of great help to the Dean of the College in bringing the needs of the institution to the attention of budget officers, high government officials and to the public as a whole. It could also help in other ways as, for example, through stimulating financial aid to students, research grants, and donations of various kinds that would greatly strengthen the College as a whole.

Most of all Filipino foresters need prestige and public appreciation. They have suffered terrific losses in morale through failure of the public to support them in their efforts to protect and perpetuate the forest. If students and faculty realized that they had a Board of important individuals who were very much concerned with the work foresters are doing, it would raise their morale and increase their devotion to their task in a way that would make them doubly effective.

14) *A great intellectual center.* At Los Baños exist five important intellectual institutions; the College of Agriculture, the Col-

lege of Forestry, Forest Products Research Institute, the Community Development Center, and the Rice Institute. Together these five institutions have or soon will have laboratory and library resources of substantial size. More than that, they bring together in one community experts in many fields. If these five institutions go their separate ways with little or no formal or informal efforts at cooperation, their achievement will fall far short of that which will be possible if they have frequent inter-institute seminars and discussion groups, if they cooperate together on research programs, and if they have a free and informal exchange of ideas from one man to another as in the case where an expert in statistics helps a man in experimental design, a chemist gives assistance to a soils man, a geneticist aids a silviculturist, or a forestry economics expert cooperates with a farm management man on land use and returns from forest crops. This is the type of inter-group stimulation that develops men rapidly and that will serve to focus the entire intellectual resources of the five institutions on the great scientific and economic issues that confront the users of land.

There is much to be gained through furthering closer operative relationships among the Los Baños institutions. In fact, it would seem that the University of the Philippines has an important decision to make—whether it shall or shall not assert positive leadership to bring and stimulate such cooperation. To take positive leadership would mean to assign an Executive Vice President to Los Baños. There is much reason to take such action. Aside from the intellectual results to be achieved, certain efficiencies and economies are very possible through using the University resources as a whole instead of the resources of each individual agency. A common motor pool, a common maintenance staff, and grounds force, a common mimeographing and duplicating center, perhaps even a common editorial office: these are all things that would

contribute to economy and that could greatly facilitate the work of the Center. Even beyond the service to the institutions, however, an intellectual stimulus is another primary concern of the University and this is the possibility of developing its own role as

a major research agency of the Government of the Philippines. At Los Baños exists an opportunity to take a long step forward in this direction because four of these institutions are agencies of the University of the Philippines.

FOREST RESOURCES . . .

(Continued from page 6)

total of 45 of the Bureau's personnel will have received training in the U.S. and elsewhere in various phases of forestry. Financial assistance includes sorely needed office equipment, field equipment and transportation equipment. In addition, local currency and technical support have been given to several sub-projects such as land classification, forest inventory, timber management and reforestation.

NEC/ICA assistance to the Bureau, under the so-called Forest Management project, will terminate this year, not because it is felt that assistance in these phases is no longer needed, but because the program has reached a point where assistance effectiveness will depend on long-range management planning based upon accurate resource statistics. These we do not have, and under the present system of resource inventory they will not be available for many years—too late for the intended use. Consequently, the present forest management assistance project will be replaced with an aerial Forest Resource Inventory which will commence this year and completed three years hence. Assistance to forestry during the next three years, therefore, will be concentrated on two major projects, namely; Forestry Education, and Forest Inventory.

Both are fundamental projects and in line with long-range planning.

It is my personal feeling that although there is still a long and difficult road ahead in forestry, the program is on the right track. Technical know-how in managing the remaining forests on a sustained yield basis is not lacking. Badly needed additional foresters are being trained as rapidly as possible. Due to excellent cooperation by the press, influential public factions are becoming aware of the danger signs. With better public understanding and support will come improved policies, legislation, law enforcement, and probably more adequate budgets. Given such support, the forestry profession together with a cooperative lumber industry, can hold the line, and will see to it that the remaining forests, and those that must be created, will serve the future Filipino generations as well as they do today, or better as they could and should, through intensified management and utilization. The situation is far from hopeless, but as foresters, individually or collectively, we must never let down our guard. Forestry is not only a technical job; it is a never-ending missionary job.

In conclusion let me say that I envy you for the beautiful forests that you will have the opportunity to manage, for the responsibility that you will have toward the future Filipino generations, and for the challenge that faces you.

Forest Rangers, Rizal and Economic Independence*

By ERNESTO Y. SIBAL

Recently, I was part of an audience listening to a group of high school students participating in a national oratorical contest conducted by the Knights of Rizal. One of the contestants was a girl of tender age. I remember the touching seriousness of that young girl as she said:

“Despite our boast of political freedom, we are fast losing our national wealth to foreigners. The vast forests that are our pride are rapidly thinning out. The lumber they yield are cut by Filipinos while the profit therefrom goes to the pockets of aliens.”

My friends, if even a young high school girl could already express such a serious sentiment, truly Jose Rizal, the Great Malayan whose centenary we are celebrating this year, must be right when he referred to our Filipino youth as the “fair hope of our Fatherland.” For, we must admit that this young student — in her simple, innocent way — has keenly recognized and pin-pointed one of the telling symptoms of a serious problem confronting our people.

This problem, our experts say, is economic in nature. The president of our Republic and responsible leaders at the helm of our government agree that our biggest contemporary problem is economic independence; that is, economic independence for all times and continued prosperity for the greater mass of our people.

* Commencement address delivered at the U.P. College of Forestry, College, Laguna, on April 10, 1961.

It is on this subject that I would like to talk to you today, because I believe that our struggle for economic independence is a cooperative effort in which all of us must take every opportunity to help in every possible way.

But before I proceed, allow me first to convey to you all, the good people of Los Baños, the faculty and administrative staff of the College, the cordial greetings of our mother institution at Diliman. And on behalf of my colleagues in the Board of Regents and on my own, I wish to congratulate the graduates of this College in whose hands shall soon fall the caretaking of the God-given wealth of our forests. With the parents, guardians, instructors and friends of the graduating class, I also wish to share their joy of witnessing the completion of a training well done.

Allow me now to go back to my subject.

On July 4, 1946, the Republic of the Philippines as an independent nation was inaugurated. And on every July 4th, thereafter, our people celebrate our so-called “independence.”

At this point, I would like to raise the following questions: Are we truly independent? Do we really enjoy the true blessings of liberty? What is the meaning of independence anyway? Is it merely the elaborate fanfare that characterizes our July 4th celebrations, the parading of beautiful floats

and beautiful women, the making of independence speeches at the Luneta grandstand? Is it the maintenance of a top-heavy and expensive foreign service system composed mostly of political proteges with such high sounding names as ambassadors, ministers, plenipotentiaries and attaches? Or is it something else?

To answer these questions, I choose to refer to the ideals and life of our national hero, Dr. Jose Rizal. In a manifesto written at Fort Santiago on December 15, 1896, Dr. Rizal said in part:

"I place as a prior condition the education of the people that by means of instruction and *industry* our country may have an *individuality of its own* and make itself worthy of these liberties."

From this could be gleaned Dr. Rizal's concept of a truly independent country; that is, a free country is a country with an individuality of its own. In such a country "commerce, industry and agriculture are developed and controlled by its own citizens." It is a country "free from the exploitation of aliens." More specifically, it is a country that can deport undesirable and overstaying aliens at its convenience without kowtowing to the opulent economic masters in its territory. It is a country that can prevent the mushrooming of alien schools which try to develop a citizenry loyal to an alien country instead of one that can be assimilated into its own.

Our country is endowed with a rare natural wealth. We have rich forests of 70,000 square miles of fine timber, seas and fresh water ponds with an annual yield of over 300 million kilograms of fish. And at this very moment, we are sitting on 5 billion tons of mineral ores worth 300 billion pesos, an amount enough to run this government for the next 300 years, without anybody paying a single centavo of taxes! Our silver and gold production ranks fifth all over the world. Our rivers and waterfalls have tre-

mendous potential power for large scale manufacturing and agro-industrialization. Our fertile soil and tropical climate are suitable to a variety of plant life that can feed twice or even thrice our present population of 27 and a half million. And our land area is larger than that of the British Isles, a first class world power. Indeed, we possess a portion of the earth replete with raw materials that can maintain a high standard of living beyond our expectations!

But in this midst of plenty, our people are hungry. The masses are still suffering from poverty and want. We still have about two million unemployed and an undetermined number of underemployed.

Why is it then that despite our rich natural resources our people are poor? To this question, former undersecretary of education Daniel Salcedo has this explanation:

"Our natural wealth is controlled by aliens. And in our cities and towns you will readily see that the machinery of wealth distribution is almost entirely in the hands of foreigners and the role of Filipinos is that of laborers and consumers of native goods processed in foreign lands."

Our political freedom can only be made real, secure and stable only if we enjoy economic independence. Political freedom has no meaning where economic liberty is missing. Economic sufficiency is therefore a necessary condition of political independence. Hence, it is of pressing importance that we must extricate ourselves from this economic bondage. The urgent need of our country is to redeem our economy from the clutches of foreign hands.

But in our effort to take over business and industry from foreigners we are likely to forget that one sure way to accomplish this is to have more Filipinos who are prepared for it—men and women who will awaken their indigenous talents for business and industry, develop them fully and apply them relentlessly.

We cannot replace foreigners by mere legislation in the form of nationalization laws and the like; we can do it faster and more effectively with the application of our own personal and mental capabilities.

Our country is in the threshold of an era of great economic development. It offers to the present-day Filipino the promising opportunity to carve for himself a secure under the sun. It offers the Filipino people the rare circumstances for greatness.

But in this struggle, no Filipino can do it alone. To achieve our goal of economic independence, we must join our forces. For indeed, there is strength in unity.

Every Filipino is called upon to contribute his share in this struggle.

Let us have more Filipino businessmen who shall take Philippine trade and commerce in their hands. Our graduates should follow the example of Rizal who while exiled in Dapitan wrote: "I have established a commercial firm here; I have taught the poor inhabitants of Mindanao to get united in business in order to make themselves independent traders and free themselves from the Chinese and thus be exploited less."

We need more farmers who shall develop our agriculture. Let our schools produce more graduates who shall be proud to till our soil, ten million fertile hectares of which now lie idle and abandoned. It is really quite strange to observe that while we have so much land to work on, two million of our people are jobless.

Each and everyone of us has indeed an important role in this great economic struggle. But for this struggle to succeed, we must be ready and willing to shoulder the sacrifice. Above all, we must have a true sense of patriotism. The patriotic are not only those who serve in the government. They also serve who engage in business, industry, farming and the like.

Recently, Mr. Marcelo S. Balatbat, one of the country's foremost economic leaders

said: "It is not enough to clamor for economic independence but that we should act now and go into business to wrest control of economic activities now in the hands of foreigners."

Mr. Balatbat's call to action is very well taken. But at the same time, it is also necessary that we act with a sense of dedication and mission. Let us get into business, industry and agriculture and forestry, but let us do so not merely for profit but for the purpose of serving our countrymen. In other words, let us do it the Rizal way. Rizal became a merchant, a brick manufacturer, a fisherman, a farmer not only to help himself but also to help his people and his country. Behind Rizal's economic endeavors was always the guiding moral principle of "helping the people even a little."

The lawyer too, the physician, the professor, the salesman, the writer, the artist, the engineer, the scientist, and for that matter, you, the forester, also have a patriotic part in this movement.

Let the Filipino lawyer, especially if he is in Congress, contribute his share in this struggle by serving the interest of his country and his countrymen first, instead of that of the alien. Let the physician provide the health and strength that we may survive the rigors of this strife. Let the engineer build the structures and machines of industry that our people shall have more jobs and more progress. Let the salesman educate our people on the importance of patronizing goods made in the Philippines. Let the writer spread the gospel of economic nationalism through the power of his pen. Let the artist sing it in his music and paint it on his canvass. Let the scientist discover ways and means that shall enable us to fully utilize the wealth of raw materials that lie waiting in the bosom of our mountains, of our rivers and our forests.

And the teacher, the professor — allow me to stress here that the professor's role in this common struggle is a very vital one,

because he deals directly with the human mind. For who was it who said that who ever controls a man's mind, controls the man? It is for this reason that the Filipino teacher has a big job to do. Our people need a new mind—a new mentality that is conducive to the development of economic sufficiency. It is high time that we get rid of that colonial mentality which has been slowing down our progress. There is a great need to change some of our attitudes towards life jobs and life careers. Let us attract more of our youth and more of our best minds to study about business, technology, agriculture and forestry and become merchants, industrialists, farmers, foresters, and the like. We should realize that this group instead of the so-called "professionals" are making a greater contribution to our struggle for economic independence.

Our teachers will be doing our struggle for economic independence a great service if they also see to it that their students imbibe the true spirit of love of country—that love of country which our Rizal exemplified so well in his life and in his death.

But as more tangible proof of their own patriotism our teachers would do well to propagate among their students and other citizens the principles of the NEPA or National Economic Protective Association. Let our mentors develop also among our youth the habits of thrift and industry for these are qualities so necessary in the achievement of economic prosperity.

At this juncture, let us determine where now comes the forester in our efforts for economic survival. How can the forest ranger contribute to the attainment of our economic independence?

It should be remembered that were it not for our rich forests and natural resources our economy would collapse. Without our forests, and natural resources that produce the dollars with which we enjoy the blessings of international trade and enable us to

buy from abroad the equipment we need in the rapid growth of Philippine industry and business. It is also these forests that provide us with materials with which we build our homes and dwellings.

Our most important forest problems today, as you foresters know better than we laymen do are:

1. Development and conservation of our forests.
2. Implementation of our constitutional mandate that the exploitation of our forests lie in the hands of Filipinos.

That our forests are being destroyed at a rate faster than in any country of the world was the shocking pronouncement of Dr. Tom Gill, an authority on international forestry, who came to the Philippines recently. This destruction of our forests also brings destruction to our soil and to our crops. Our floods of 1960 that wreaked tremendous havoc upon life and property were said to be the result of deforestation.

But the equally serious evil that afflicts our forests today is that about 70% of our forest concessionaires are dummies of aliens. Inasmuch as to these dummies and to these aliens the interest of their pockets is far and above the Filipino interest, their main concern is to get rich now as quick as possible. Aware probably that their unpatriotic activities shall not last forever, they ransack the wealth of our forest without regard for the welfare of future generations.

It is therefore the patriotic role of our foresters to protect our forests from undue destruction and indiscriminate exploitation of both Filipino dummies and foreigners. Every Filipino should be made conscious of the vital importance of conserving and developing our forests. And let the aliens realize that they cannot continue to go unmolested in the perpetuation of their fraud against our national economy. You, the Filipino forest rangers, shall see to it that in
(Continued on page 26)

FAO in the World of Today

By J. N. CORRY

*Resident Representative in the Philippines
of the United Nations Technical Assistance Board*

To our Christian Communities this is known as the Year of our Lord 1961. Something slightly less than 2000 years ago Christ entered Jerusalem through St. Stephen's gate riding on the back of a donkey. Today almost 2000 years later if you travel over the bare dusty roads of Jordan approaching Jerusalem, you will see many, many people travelling by exactly this same means of conveyance. You will see people working in the fields, herdsmen and shepherds tending flocks and if you pause to enter a peasant's hut, you will be impressed with how little, life with its harsh labour and toil, has changed over a time lapse of two millenia. This is part of the old world, that part of the world incidentally which has given to posterity the decimal system of calculation, the first alphabet, the first written codified law for human conduct, the religious philosophy which guides and sustains the daily action of so many millions of contemporary beings.

This is the old world in our manner of speaking and indeed it may often appear to the reflective man that old age has brought to this region an ossification of not only the whole structure of social organization but also of the day-to-day routine of working and living.

Today if one boards a modern jet plane at Tel Aviv and turns one's back to the course of the sun, one passes in quick succession those lands with which the pages of history are filled: Syria, Mesopotamia, Per-

sia, India, Burma, China, until we finally come to the Philippines. All of these lands have one thing in common—the main economic activity is agriculture and agricultural methods, systems of land tenure, social organization, the day-to-day routine of living has changed little in two millenia—the years of backbreaking toil yields little surplus from a stubborn earth beyond the immediate family needs.

If the pilot of our jet transport had instead turned his plane so as to keep pace with, rather than flee the sun, we should have passed in equally quick succession the fertile lands of western Europe, the long reaches of the Atlantic, to the New World. We should have passed from a vast area of want and hunger to lands where God's gifts of soil and climate, the industry of man coupled with technology, and that multiplication of man's power over Nature which technology brings, has created a surfeit of material things, has produced food in such abundance that disposal of the surplus over and above what its people can eat is indeed the major problem.

But this same technology which produced this jet plane which enables us to circumnavigate the globe at speeds narrowly short of the speed of sound—which will shortly enable us to outrun the sun and arrive in New York earlier in point of time than when we left London—this same technology which has produced a surfeit of material things in the developed West has broken

down the old barriers of space and time and the isolation of inhabitants of one area or continent from another.

Two world wars in this century have demonstrated unequivocally that what begins as a localized conflict cannot be localized but ultimately reaches out to embrace the world. Does anyone doubt that war which hangs as a dark cloud on our horizon today will not, if it should become a hot war, envelop and indeed annihilate us all?

Toynbee's theory that nations and civilizations become great in attempting to meet the challenge for survival that their age presented must seem on examination, to have a sound ring of truth in it. The new challenge posed by the interdependency of all world communities — by the great contradictions of surfeit and poverty — by the knowledge that ignorance and want and famine in juxtaposition with an excess of food and material things in other sections of the world, has given rise in this the Twentieth Century to the creation of international organizations to meet the whole new series of challenges which beset our age.

Thus we now have the United Nations in the political and economic field, the UNESCO in the fields of education, science and culture, the ILO in the field of labour relations, the WHO in public health, the ICAO in civil aviation, the IAEA in matters of the new atomic age, and last but by no means least, the FAO in the area of one of man's most fundamental needs, the wresting of his physical sustenance from nature — from the field, from the forest, and from the sea.

What characteristics does a world organization created to deal with the problems of food and agriculture present? Firstly, it is an information gathering, analyzing, discussing, policy framing body and it will be broadly effective in terms of having representation from the major countries and geographic areas of the world. At this moment of speaking, FAO has a membership of 88

member states (82 Regular and 6 Associate) drawn from the five continents; it consists of countries varying in size from Canada, 3,845,774 square miles, to El Salvador, 8,259 square miles.

The 88 member states of the FAO meet in legislative session once in every two years to review the world food and agricultural situation, to determine the broad work plans and policies of the organization, to pass the budget for the ensuing two years. Between sessions of the full conference, the affairs of the organization are reviewed by a Council composed of 24 elected representatives of member states.

The seat of the Headquarters is in Rome and there the permanent secretariat which implements the policy directives of the Assembly and the Council, within the budget provided, resides. This is the information gathering, information disseminating, meeting, organizing, and servicing, programme planning and supervising, and coordinating work force. It is assisted in these global efforts by smaller regional offices, located in Bangkok, Cairo, Washington, Mexico City, Santiago and Rio de Janeiro and Accra.

How does the FAO contribute to the global task of improving agricultural methods, crop yields, animal and fish production, improved nutrition and general living standards?

Time does not permit us to examine in detail all the means it uses — rather we can only look this afternoon, and look only briefly, at a few of the more important representative activities.

Let us in the interest of order and system attempt to classify these as (a) assistance to individual countries, (b) assistance to several countries in one region, (c) overall information, research, coordination or promotional campaigns.

This last decade has seen the initiation and the development of the technical assistance programme of the United Nations Agencies. This programme aimed at helping

the lesser developed countries of the world develop their industry and agriculture — including forestry and fisheries — health and education and raise the general level of living standards has of course had a major emphasis on agriculture. So important is this that almost one-third of the total technical assistance funds available annually have been allocated to the FAO for this purpose. Indeed it has become axiomatic in economic planning that industrial development without corresponding agricultural development leads to serious trouble.

Under this programme of technical assistance, the FAO supplies, at the request of member governments — I should like to repeat supplies *only* at the request of member governments — expert advisers to help government departments and bureaus adapt the techniques and the technical advances of the more highly developed countries to their own needs. You will be interested to know that FAO is currently supplying expert assistance to the Government of the Philippines in the specialized fields of animal husbandry, hides and tanning, cotton production, wheat production, control of cadang-cadang disease, deep sea fishing, and in another field, which I have purposely left till the last, — forest products research — there George Hunt, whom many of you must know from his work here at the Forest Products Research Institute, has served with more than ordinary distinction and success.

Every year FAO provides up to a dozen fellowships to allow working level Filipino technicians to study abroad, to observe developments in more advanced countries with a view to applying improved methods and ideas on their return. Within the limits of governing legislation and funds it provides necessary demonstration equipment for the experts it assigns to the Philippines.

In addition the FAO acts as the Executing Agency for the UN Special Fund in major projects within its field of interest. We do not yet have a Special Fund project op-

erating in the Philippines but we are working on a Dairy Development Project which, if approved, would involve importation of equipment, cattle, and supplies to the value of Nine Hundred Thousand Dollars from the Special Fund. This would be used to assist in establishing a Dairy Training and Research Institute here at the College of Agriculture in Los Baños — a project in which the Government and the University would spend ₱1,957,819 in counterpart support over the next five years. Similar type projects of somewhat the same magnitude are under discussion in the fields of cotton production, agricultural education, soil surveys and fertilizer research.

Concurrently with its assistance to individual member states, FAO is engaged on a broad programme of regional projects, projects which by the nature of the problems involved will only yield to a concerted *re-regional* or *area* approach.

Perhaps the best example of this nature is the problem of desert locust control. Since biblical times, the desert locust has been a scourge over a vast crescent arc which swings northward from Ethiopia through Iran, Iraq, Saudi Arabia, to Pakistan and India. Since the locust breeds in one area and its swarms travel hundreds of miles in their flight, they respect no international borders. Any reasonable attempt to control the locust must be on a closely coordinated basis with all the affected countries. In this problem a new and intensive project of study and research has been initiated under FAO sponsorship with funds made available through the Technical Assistance Board and the Special Fund. The FAO, by its international status, can assume leadership and direction which no individual nation in the affected area could assume.

To this example of FAO leadership in regional problems can be added its work in promoting exchanges of views through regional meetings, seminars, and working parties where technical specialists from the area

meet for an exchange of experiences, analyses of common problems, discussions of solutions attempted and the means employed. In such meetings the FAO function is to provide leadership in planning and physical arrangements, but the real consequences, the ultimate value of the meeting depends upon the delegates themselves and their interest and application. Examples of meetings of this sort are the Fish Processing Technology Center, now in progress in Quezon City, the Farm Management Seminar held in Manila and here at Los Baños, last October, and going farther afield, the meetings of the Indo-Pacific Fisheries Congress in Karachi in January this year, and the Far East Conference on Pulp and Paper held in Tokyo in 1960.

Within the short space of time available this afternoon, I have tried to sketch some of the outlines indicating the function FAO fulfills in the world today, its organizations, its aims, its action programmes. I have not dwelt sufficiently, I know, on the labours and patient tasks performed by the Headquarters Secretariat in collecting and analyzing data, in the conduct of special studies, and in the dissemination of a really tremendous volume of information on agricultural subjects to Member States. Neglected also has been the work of the Director-General and the Secretariat in administering and supervising the technical assistance programme, the inspirational work which has been done in organizing and leading off in imaginative ventures such as the Freedom from Hunger Campaign. I only wish to assure you that such a neglect is not intentional, nor is it based upon a feeling that only field operations are important. It is a consequence of the limits time imposes.

The work of FAO, I should like to emphasize, is of vital importance today in the attempts which must be made to lift levels of agricultural and food production, with a view not only to feeding the world's rapidly increasing population but to increase drastically availability of food to those millions

in the world who each day not only arise but go to bed hungry. Let no one suppose that FAO is the magic wand to dispel nutritional want. Let no nation believe that in supporting the organization, it has taken adequate measure of its approach to the world problem of food supply. FAO is a composite of its member states, its policy, decisions, work plans, campaigns, and programmes must reflect the needs of its members. It can provide—in fact it alone can provide—the collective leadership and coordination in planning an integrated approach to the multitude of separate problems involved, but its annual budget of Ten Million Dollars plus the financial support it can draw from the technical assistance programme (approximately \$8 million) and from the Special Fund (approximately \$15 million) are only sufficient to provide on a global basis direct assistance to member states at a few strategic points; it can help to shore up the defenses, to formulate the strategic plan of attack but the physical task of raising the world's food supply in the ultimate devolves upon its separate member states. It is upon them, upon their governments and administrative organs, upon their agricultural leaders, institutions, and primary producers that most of the burden and the toil of the day must fall.

FOREST RANGERS . . .

(Continued from page 22)

accordance with the mandate of our constitution, the exploitation of our forests is made only by bonafide Filipinos. It is in this respect that you can express more tangibly your true love for our country more than those who merely mouth it during election days.

Ladies and gentlemen: The crusade for economic independence is on. In this crusade we must win, for if we lose, what future will there be for us and for our children? With Rizal as our example and inspiration and with our youth as our hope, we cannot fail. The future, I say, is still ours!

The response of ipil-ipil (*Leucaena glauca*) seedlings to phosphorus fertilization on a soil from the Carranglan area, Nueva Ecija

E. L. STONE and L. D. ANGELES

Ipil-ipil (*Leucaena glauca* (L.) Benth.) is a small leguminous tree, native to tropical America but now pantropic. Its capacity for rapid growth, with abundant coppicing and reseeding, has led to its wide spread, and it is by far the most abundant, introduced tree in the Philippines (2). Its value as a soil improver and to suppress *Imperata* grass was recognized early in this country (7). In addition to serving as a green manure or nurse crop the young shoots and foliage are utilized as forage, especially in Hawaii (9), and also provide an important source of leaf meal (5). Though the major value of the wood in the Philippines is for firewood¹, interest in the species has also prompted studies of preservative treatment for posts (3,10) and of pulping quality (1).

Philippine studies on the yield and management of ipil-ipil for firewood have been recently reviewed in an economic study by Vergara¹. His work, as well as many of the earlier reports in the Philippines, is weighted by observations in vicinity of Los Baños, where firewood coppices grow rapidly on relatively young and fertile (e.g. 4) soils from lava and andesite tuff. The vigorous growth there, on eroded limestones of Cebu, and on a variety of other moderately fertile soils has encouraged recommendation of the species as a means of re-establishing forest

cover on the extensive cogonales, or secondary grasslands (6,7,8). Nevertheless, several attempts to plant or direct seed ipil-ipil on such grasslands have resulted in failure (e.g. 8), usually without any certain explanation. This note concerns the probable influence of soil fertility on ipil-ipil at one location where large scale failure occurred.²

The Tala-Talan Creek area of the former Carranglan Reforestation Area, N.E. consists of steep ridges descending to a gently sloping foot slope or piedmont with road interfluves between small streams. Short term records from reforestation areas near Sta. Fe and San Jose, NNW and SSW of Carranglan, indicate an annual precipitation of approximately 2300 mm. The present vegetation consists of old secondary grassland, especially *Imperata cylindrica* and *Themedia triandra*, Forsk. with scattered trees of *Antidesma cumingii* and *Bauhinia malabarica*. A diagrammatic cross-section at the Tala-Talan nursery site is shown in Figure 1.

The soil of the smooth interfluves is a highly weathered red clay loam apparently derived from an acidic granite. The A₁ probably has been subject to some sheet erosion; it is now a 5 to 8 cm. thick, reddish brown, granular, friable clay loam, pH 4.8. It overlies a reddish clay, pH 4.6, that becomes somewhat firm and coarse angular

¹ Vergara, Napoleon T., 1960, Financial rotation for the production of ipil-ipil (*Leucaena glauca* (L.) Benth.) firewood. Unpubl. M.S. thesis on file, Library, State Univ. New York College of Forestry, Syracuse N.Y., and Library, College of Forestry, Univ. Philippines, College (Laguna).

² Thanks are due Professor Teodoro Delizo, College of Forestry, University of the Philippines, and Forester Tranquilino Orden, Bureau of Forestry, for making the problem known to us and for aid in the field. Analyses of the College of Agriculture tap water are by the Department of Soils of that College.

blocky at depth. Perhaps 10% of the surface is littered with stones and boulders which, except as split along the numerous joints or freshened by exfoliation, bear a 1-2 cm. weathering crust. Small stones and fragments of gravel size are almost entirely lacking in the surface soil.

The terrace soil is neither gravelly nor visibly stratified in its upper layers. The surface is somewhat irregular, and angular boulders of the same granite without weathering shells are common. The origin of these terraces is not known with certainty but the present surfaces appear to be deposits, possibly as mud flows, resulting from earlier landslips in the adjacent headwaters area, apparently following destruction of the forest. Weathered feldspar crystals, similar to those in the debris of small current landslips, occur on the surface of the terrace at its upper margin where piedmont and upper slopes join. The present streams are incised in the terraces, commonly near one side; elsewhere the change of slope from terrace to interfluvium may be pronounced or inconspicuous. The soils, however, are sharply delimited at the contact, the terrace soil being brown in color with a surface reaction of pH 6.0 to 6.5.

Ipil-ipil and teak, *Tectona grandis*, were normal in appearance and growing well on the terrace area. By contrast, 2-year old seedling sprouts of planted ipil-ipil on the interfluvium soil nearby bore small, sparse and chlorotic foliage although nodules were present in the roots. A few seedlings of rubber were likewise chlorotic and low in vigor. The appearance of both species suggested severe nutrient deficiency.

Within sight of this area is an extensive slope, similar in soil, on which some years earlier ipil-ipil seed had been broadcast after burning. According to Professor T. Delizo of the College of Forestry, who was present at the time, the seedlings germinated, reached a height of several centimeters and then died out completely.

Experimental

A bulk collection was made from the upper 13 to 15 cm. depth on an interfluvium site 100 meters north of the Tala-Talan nursery headquarters. The soil was transported to the College of Forestry campus at Los Baños, and there dried, passed through a 1/2-inch mesh screen, and used for two series of pot-culture tests. The containers were fruit juice cans, perforated at the bottom for drainage and filled with 1200 gms. of air dry soil. Weights of lime and fertilizers were calculated on the basis of this amount, in reference to a conventional value of 2,000,000 Kg. soil per hectare-furrow depth. The first series was a 3 x 2 x 2 factorial design of potassium and phosphorus application; the second a 2 x 2 x 2 factorial of liming and fertilization. Phosphorus was added as 20% powdered superphosphate, mixed throughout the soil. Potassium as 60% potassium chloride was applied in dilute solution to the soil surface after the seedlings were established. In the second series, reagent grade calcium oxide equivalent to 4 metric tons of calcium carbonate per ha. was mixed with the upper one-third of the soil depth (thus treating that portion at a rate equivalent to 12 m.t./ha.). Supplementary treatments provided comparisons of (a) localized application or "banding" of superphosphate rather than the same amount mixed throughout, (b) of lime mixed throughout the entire soil mass, and (c) of non-inoculated versus inoculated with *Rhizobium* from ipil-ipil nodules. All treatments of the two series and the supplements were in duplicate.

Ipil-ipil seeds were treated with hot water, germinated on paper toweling and, except as noted, inoculated with a suspension of crushed nodules from ipil-ipil roots before planting. The seedlings were later thinned to five per pot and allowed to develop for 5 1/2 months in the open where they received side shade but none overhead. The positions of all pots were at random,

with frequent changes. Approximate field capacity as determined, and to supplement rainfall the pots were periodically watered to this weight, using deep well tap water from the College of Agriculture. It was subsequently learned that this water contained approximately 40 ppm of calcium and 15 to 29 ppm of magnesium. The cultures with larger plants dried rapidly and suffered from wilting in the last two months of growth; the tops were harvested after a severe wilting of the largest plants that resulted in loss of lower leaves.

Results

The treatments, dry weight of tops and least significant differences at the 5% level (L.S.D. 5%), are given in Table 1. Analyses of variance are shown in Table 2. Figure 2 illustrates the cultures and response.

It is evident that ipil-ipil on this soil responded very strongly to phosphorus fertilization, though not at all to potassium. The band, or localized, application of 40 kg P_2O_5 /ha. plus potassium gave a mean yield of 3.0 gms pot, appreciably greater than that from the equivalent treatment with phosphate mixed throughout the soil (Table 1).

Similarly, in series II ipil-ipil responded markedly to lime, as well as to the high phosphorus of the phosphorus-plus-potassium treatment. The two effects were additive, with no indication of a lime-fertilizer interaction and the combined application produced by far the largest seedlings in the study. Lime mixed with the upper one-third of the soil depth was possibly superior to the same amount distributed throughout the entire depth; the mean yield of 3.4 gms (Table 1) for the former exceeded the mean of 2.7 gms from the cultures with lime mixed throughout. Colorimetric tests of soil reaction from these latter cultures at harvest indicated pH 5.9-6.0 throughout; this was in contrast to pH 6.4-6.6 in the limed third, overlying pH 4.6-4.8 below, in the former.

Seedlings in the non-inoculated cultures appeared similar to those inoculated; both were found well nodulated at harvest.

The treatment effects, though large, are probably underestimates, for conditions of the experiment tended to minimize the full response obtainable with lime and phosphorus. The bases added through repeated watering with tap water almost certainly were responsible for an increase in reaction of the surface soil of the control cultures; this reaction was pH 5.9 to 6.0 near the surface at harvest, contrasting with 4.8 to 5.0 near the bottom of the pots. This increase may well have favored growth of the control plants. On the other hand, the large plants in the most effective treatments were handicapped by the limited soil volume and wilting, and the actual yields were further reduced by loss of foliage before harvest. Ipil-ipil seedlings planted in a garden adjacent to the culture series attained a height above two meters during the 5 1/2 month period.

Discussion

A marked response to phosphate fertilization is scarcely unexpected on such an acid, highly weathered soil. In view of the response, it appears likely that much of the effect of lime alone was due to its influence on phosphorus availability. Estimation of a phosphorus response curve from Table 1 indicates that maximum yield would occur above the 200 kg P_2O_5 /ha treatment, at least for the conditions of this experiment which favored phosphorus fixation. Hence the greater growth on the phosphorus-plus-lime treatment may also have been an effect of greater phosphorus availability. Any large response to sulfur contained in the superphosphate is unlikely, in view of the use of tap water for watering.

Although the results of the pot cultures have not been followed by experiments with this soil in the field, there seems little doubt that there, also, fertility exerts a large and probably decisive influence on the growth

of young ipil-ipil. The restricted growth of the controls in the pot cultures indicates that such small seedlings would not have survived long in the field against the competition of grass for nutrients and moisture. The poor growth of larger ipil-ipil and rubber seedlings at this site and the failure of the earlier broadcast ipil-ipil seeding nearby are almost certainly attributable to acute phosphorus deficiency.

Fertilization in the field presumably would require localized placement of phosphate, or lime and phosphate for maximum duration of effect. It is not suggested that fertilization should be considered as an economically feasible means of establishing ipil-ipil plantations in this area. The costs of ipil-ipil belt firebreaks established with fertilization might well be less, however, than the present practice of mowed firebreaks maintained by hand labor.

The most significant application is in selecting planting sites for ipil-ipil or, contrarily, in deciding on the uses of ipil-ipil in reforestation. Ipil-ipil is tolerant of drought (9) and has appeared widely adaptable with respect to soil, but fertility is evidently a major influence to be considered. Caution is desirable in recommending ipil-ipil for firewood production or cogon suppression, especially in areas of highly weathered soils. Though trial-and-error convincingly demonstrate that nutrient demanding species such as ipil-ipil fail on the red soils at Tala-Talan whereas Benguet pine (*Pinus insularis*), having much lower requirements, succeeds moderately well, the cost of information so obtained is unnecessarily great. In this instance the same conclusions might have inferred from current knowledge of soil and species. Commonly, however, the facts needed for planting site decision are inadequate and will remain so until additional studies of species requirements or summaries of existing plantation success are at hand.

It is evident also that the distinction between the more fertile terrace soil, on which teak and ipil-ipil succeed, and the adjacent interfluvial soil on which they grow poorly, is a mappable difference, easily followed in the field or on air photos. Other distinctions within the interfluvial soils, and between the interfluvial and the adjoining slopes are likewise recognizable. Pre-planting soil surveys would have a large significance in guiding proper selection of species in this area.

LITERATURE CITED

1. Almonte, B.D., 1956. Preliminary study on the possibility of using ipil-ipil (*Leucaena glauca* (L.) Benth.) for paper pulp by the semi-chemical process with soda in open vessel. Phil. Jour. Forestry 11: 135-161.
2. Caguioa, Vicente, 1956. Planting exotic species in the Philippines. Phil. Jour. Forestry 12: 1-38.
3. Cortes, R.D. and E. Capili, 1949. Hot and cold bath treatment of ipil-ipil posts. Phil. Jour. Forestry 6: 23-28.
4. Galvez, N.L. and F.R. Pagador, 1951. Some physical and chemical properties of forest and cultivated soils. Phil. Agriculturist 35: 41-46.
5. Gantt, P.A., 1958. Utilization of *Leucaena glauca* as a feed in the Philippines. Proc. Eight Pacific Science Congress (1953) 4B: 601-603.
6. Laraya, Sixto, 1951. Some causes of failure in forest plantations and their solution. Phil. Jour. of Forestry 7: 23-29.
7. Lejano, A.L., 1914. The value of ipil-ipil as a soil renovator. Phil. Agriculturist and Forester 3: 17-20.
8. San Buenaventura, P., 1958. Reforestation of Imperata waste lands in the Philippines. Proc. Ninth Pacific Science Congress (1957) 11: 54-66.
9. Takahashi, M., and J.C. Ripperton, 1949. Koa haole (*Leucaena glauca*): Its establishment, culture and utilization as a forage crop. Univ. Hawaii Agric. Exp. Sta. Bul. 100.
10. Viado, G.B., 1954. Fence post preservatives against subterranean termites. Phil. Agriculturist 28: 272-285.

TABLE 1. TREATMENT AND AVERAGE WEIGHT (OVEN DRY) OF IPIL-IPIL SEEDLING TOPS.

Series I

Treatments, Kg./ha.	0	167 Potash (K ₂ O)
	Oven Dry Weight per Pot, gms.	
0	1.0	.8
40 Phosphate (P ₂ O ₅)	2.1	1.8
200 Phosphate (P ₂ O ₅)	3.8	4.2

Least Significant Differences at 5% level of Probability: 0.7 gms.

Series II

Treatments, Kg./ha.	0	167 Potash (K ₂ O) plus 200 Phosphate (P ₂ O ₅)
	Oven dry weight per pot, gms.	
0	1.1	4.8
4000 Lime (CaCO ₃)	3.4	7.1

Least Significant Difference at 5% level of Probability: 0.8 gms.

TABLE II. ANALYSIS OF VARIANCE FOR SERIES I AND II

<u>Source of Variation</u>	<u>Degrees of Freedom</u>	<u>Square Mean</u>	<u>F</u>
Series I			
Total	11		
Phosphate, P	1	19.89	99.45***
Potash, K	1	.01	n.s.
Interaction, P x K	1	.23	n.s.
Residual	8	.20	
Series II			
Total	7		
Lime, L	1	10.35	57.50**
Phosphate & Potash, PK	1	27.75	154.17***
Interaction, PK x L	1	0	n.s.
Residual	4	.18	

** Significant at the 1% level of probability.

*** Significant at the 0.1% level of probability.

n.s. Not significant at the 5% level of probability.

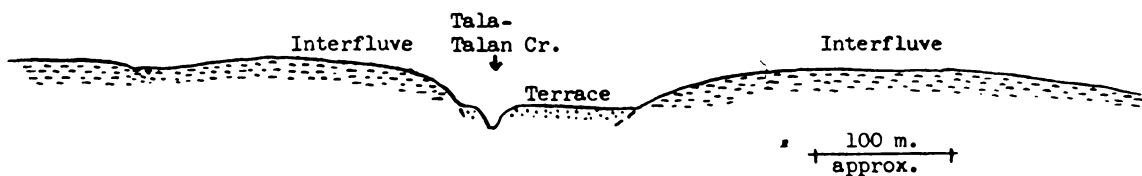


Figure 1. Diagrammatic cross section of Tala-Talan Creek area showing interfluvial and terrace soils.



Figure 2. Response of ipil-ipil seedlings to fertilization: No. 1—Check; No. 2—167 kg K_2O/ha ; No. 3—40 kg P_2O_5/ha ; No. 4—200 kg P_2O_5/ha .

“Edwin Way Teale, the naturalist-philosopher, was talking enthusiastically of his life as a writer: ‘I have the good fortune to have the sort of mind that sees the individual rather than the group. Just as an example — the other night I was awake longer than usual, and so for the first time I tried counting sheep. But the first sheep, as it came to the fence, stumbled and fell, and I began to observe everything about — and became too interested I lost all chance of going to sleep.’ ”

— Wes Laurence

An Interview With Dean Gregorio Zamuco

BENITO LIM

1. Q. *What does the Golden Jubilee Celebration of the College of Forestry mean to you as a Dean and as a person?*

A. It is an event of great consequence. For is there not something admirable in the ability of any institution to continue its existence for the long period of fifty years? Do we not often attach prestige to age as something which has withstood the tests of time, as the repository of past experience if not wholly exhilarated by success, seasoned by its mistakes?

2. Q. *What qualities of the institution have made it endure or persists?*

A. Did not the Jubilee celebration indicate qualities of this institution's enduring strength against the weathering forces of change? While administrators were shifted around and while one bureau replaced another's functions, the College remained intact as an institution for the training of foresters, for the maintenance of research programs, as well as for the protection and productive utilization of our forests. Does not this jubilee suggest that for the College to have been the recipient for governmental and other supports for the period of fifty years, it has successfully benefited significant sectors of the Philippine economy? The total number of trained foresters are over 1,000 which increase at the rate of 2 per cent annually receiving better and better training every year, and the lumber industry which receives impetus from the training and research programs of the College employs more than 75,000 registered workers. The volume of timber harvested goes over

2 billion board feet representing a value in the year 1959, of P185 million, P170 million of which augment our dollar reserves in the form of exports of logs, plywood and veneer. Does not the long life of the College focus all the more clearly to the fact that this institution founded on the unflinching motivation to serve a basic national need, that is, to improve protection of our forests, has been *unswerved* from its cause in spite of the proliferation and even the falsification of needs in the present-day Philippine society?

3. Q. *Are there any distinguishing factors in the nature and condition of its founding which have contributed to make it the institution you have just described?*

A. To understand how the College has remained resolute to its task is to recall the early beginnings of the College when only the most promising were recruited and only the most hardy and dedicated could stay on. These were the days when our buildings were fragile nipa huts which gave very little protection from heat, cold and rain. There were no macadamized roads then, there were merely paths as readily infiltrated by the jungle as they were cleared by bolos. Our instruction came by the harsh method of directly encountering hazards themselves. As our technical equipment were meager we had to rely on ourselves, on whatever strength we could muster to face the demands of improvident wilderness; industry, resourcefulness and agility were traits which had to be acquired overnight. Since we had none of the benefits of specialization, we had

often to learn from one teacher-forester who was wood technologist, silviculturist, ranger, botanist and zoologist all rolled-into one, who was often relied upon to console the downcast and to brighten-up the homesick and the lovelorn.

4. Q. *As one of those who pioneered in the establishment of this institution, would you further explain how you and your group must have felt and how you look back to those times?*

A. The achievements of years imbue those of us who have pioneered in the establishment of the College with self-assurance and even with a sense of pride for the job which we have chosen as a life-long career. Perhaps the main reason why, even during the painful stages of growth, there were many of us who stayed on, was the realization that we had been given the rare privilege of forming not only a politically independent country but also an economically self-sufficient nation. The problems of nation building was real to us, there was the jungle out of which we could create productive wealth or destructive poverty. And the call for builders were addressed directly to us, individually; President Quezon himself challenged us by working among us in the fields in Los Baños; at no time were the needs of the nation more eloquently displayed. In spite of the lack of a legitimate experimental forest, (the transfer of which was not realized until 1960) the lack of adequate funds, equipment and staff members, the College somehow managed to survive.

5. Q. *Would you like to comment on the attitude of the present generation of foresters from those of your group?*

A. Yes, I would like to, the pioneer conditions of the young College which was for us, provocatively inspiring of hardy optimism could no longer be captured by the succeeding generation who saw regional problems more remotely. Besides, enormous problems have arisen which go beyond the

control of any optimistic, hardy and well-planned organizations of foresters for these problems even go beyond the combined powers and capabilities of the College and the Bureau of Forestry.

6. Q. *What are these larger problems? Are they problems of the College of Forestry or of the Philippines as a whole?*

A. The problems besiege not only those of us who serve the College but the whole nation's economy is at the mercy of these entangled problems and it would not be a premature statement to make that the country will soon face a crisis should it not harness immediate reforms to solve them. In a report written by Tom Gill entitled "Forestry Proposals for the Philippines" and which was submitted to the International Cooperation Administration and the National Economic Council, he disentangled the aggravating factors which ravage Philippine forests. What is significant is that before these problems, even a modernized, well-equipped and an excellently-manned College of Forestry is rendered powerless. Of paramount consideration is the increase of population which has resulted in population pressures in forested areas, a phenomenon which goes unappreciated by government authorities who can only see the effects of a swelling population in the slum districts of our cities.

7. Q. *What are the implications of such problems as you have mentioned?*

A. Let me point out that there are more and more squatters in lands designated as national forest reserves, and these squatters do not merely pilfer indiscriminately the unmined forest wealth, its fauna and flora, but sooner or later destroy this wonderful source of wealth by the evil practice of the "kaingin" system which is a type of subsistence agriculture, the nomad farmer shifting his area of operation from one burned-down area to another, abandoning the now infertile soil after 2 or 3 meager crops, to erosion, perpetual aridity and floods. What

the kainginero does not know is that forest soil does not make an ideal farm land, for the moment it is denuded of its crown of trees, it becomes useless and even dangerous to men. The miraculous verdure of forests is the result of many, many years of organic growths and mutual adjustments among vegetation and wildlife. Trees which take decades to grow to maturity send their roots deep into the hard, rocky earth crust, they spread these roots out to create soil, holding this thin top soil together even on steep slopes, and there trees whose years of sheddings gradually invite the growth of a thick mat of ferns, vines, and other smaller plants create a protective covering on the soil against the continuous tropical rainfall of the Philippine climate. While this phenomenon is going on, this area is sought as a refuge by wildlife who among themselves follow the pattern of natural balance as do trees and smaller plants create in order to live in mutual dependents and harmony. Thus in this paradise man can find if he has wisdom, an ally whose boundless resources of timber, resins, herbs, exotic flowers, and game are a boon to his constant struggle for economic progress.

Man can disturb this balance either to his advantage or disadvantage. The kainginero chooses against his own benefits. Out of ignorance or indolence, or force of habit, or all of them combined, he chooses to lead a life of pitiful hand-to-mouth existence, harvesting little food from the burned-down forest area whose wealth of lumber alone he could have exchanged for more food and still greater comforts. He could have prevented soil erosion and aridity by leaving the forest along, thereby providing posterity and heritage of rich soil. Tom Gill mentions that one of the major factors in the collapse of the Maya civilization in South America was the continuous destruction wrought by the kainginero. I would add that the fall of the Harappa culture in India, the Sung culture in China have been greatly precipitated by the same evil practices. To bring our discussion to mod-

ern times, the kaingin system in the Philippines is distinguished by the most hideous variations of the practice very much like the manner in which dope addicts exploit the subtle but deadly pleasures of the vice. There are now hired bands of kaingineros who burn our forests *en masse* (it is more efficient according to them) after whose heels subsistence farmers follow suit, armed much too often with the legal sanction of the "Land for the Landless" program which releases forest areas for agricultural homesteads. Tom Gill is right when he called this government ameliorative program "Land for the Lawless," for what could be more criminal than handing out short, temporary reliefs which create eternal evils?—The perpetuation of poverty in the person of the subsistence farmer whose life is a vicious cycle of drudgery for himself and his family and havoc for the Philippine soil? The vicious cycle does not by any means end here, rather this just propels a series of evils, the abandoned and now arid land area is not returned to the Bureau of Forestry for the necessary rehabilitation but is often taken over by land speculators and land grabbers who swindle the gullible public with the promise of fat agricultural lands or progressive designs of residential subdivisions. The wonder of it is that these evils are not easily dispelled. After the burning of the forests, watersheds are destroyed and soon enough as it did happen in June and September of last year, arable and residential areas in the provinces and in the cities are laid-waste by floods, our navigable rivers are clogged, and our harbours ruined. I do not discount other evil effects of these practices for it is a fact that they make extinct the rare zoological and botanical specimens endemic to our region and there is no doubt that meteorologists agree that lack of sufficient forested area will have adverse effects on the climatic conditions of the country.

8. Q. *How about the implication of these problems in terms of our money economy?*

A. There are many implications, as I have indicated earlier, the darker side of the picture is that the potential employment income could be derived from these industries are not fully realized. Instead of exporting more valuable finished products such as plywood and veneer, we export raw materials as logs and import the finished products at a higher price usually from the same country. In 1959 logs comprised only P128 million of the total P170 export of timber products, whereas plywood and veneer accounted for less than P28 million. The secondary industry is not only underdeveloped but poor production and utilization practices serve to add more and more losses. How often have we encountered irresponsible lumbermen who flagrantly cut down timber without making provisions for another harvest by means of reforestation? Should lumbermen be responsible enough to reforest concession areas, they have no grasp of the basic principles of timber physics which would enable them to derive maximum benefit from every timber cut not to speak of the usual short-sightedness of destroying in the process of cutting timber other forest products which are of no immediate use to them. Besides it is always possible that lumber concessioners who are granted licenses by the Bureau of Forestry are forced to waste their invested efforts, equipment and capital on forest areas which is either depleted by squatters and kaingineros, or does not yield commercial forest products of sufficient quantity to balance investment costs. These hazardous risks are one of the factors which drive well-meaning investors out of the lumber business.

9. Q. *Doesn't the picture appear quite dim to the future foresters?*

A. It is, for any discussion of the state of Philippine forests we must not only caution our successors but must work to challenge them to take on the optimistic vigour of youth as he is benefited by the prophecies of past ex-

perience as well as the gifts of modern science and technology.

10. Q. *Are there positive steps being taken to solve these problems you have enumerated? Say, a definite plan by this College?*

A. There is a plan, although the solutions to the forest crisis as described in the Project Work Plan contracted with the International Cooperation Administration of the U.S. and the State University of New York by the U.P. College of Forestry rests heavily upon the College itself. The expected results of the project embrace such problems of a more national scope than is attainable within the present set-up of the College.

11. Q. *The College seems to be playing a very significant role in this plan, but are there other obstacles facing this institution in its attempt to solve the crisis?*

A. Although I can speak with confidence of the competence and purposiveness of this institution to fulfil plans of project which directly affect its expansions, I have certain misgivings regarding the complete success of the plan as it relates itself to the national implications of the forestry crisis. My belief is shared by my colleagues both by the Filipinos and the assisting American professors that to provide the College with better faculty members, to equip it with better facilities for teaching and research, and to establish means for public information and education on forestry, as well as the creation of the U.P. College of Forestry and an advanced forestry center for South and South-east Asia, are visions much within our control and attainable within the given period stated in the contract. There would be difficulties that is true, one of which is to get sufficient funds to carry on the project after the initial funds stipulated in the contract have been exhausted. Another difficulty
(Continued on page 110)

The Kaingin Problem:

Proposals for its Solution

By

NAPOLEON T. VERGARA

Whenever forestry or forest conservation is discussed in the Philippines today, the subject of kaingin invariably crops up. This happens because forestry practice is the goal while kaingin practice is the principal obstacle to this goal. And this obstacle has grown so large that all other forestry problems are dwarfed. It has become so serious that unless it is solved soon, the future of forestry in this country is very dark.

There is nothing new about the kaingin problem in this country. Records show that as early as the middle of the 19th Century when the Spaniards first established the forest service here, the problem was already in existence. Neither is the problem confined to the Philippines. Almost all underdeveloped tropical countries, particularly those in Southeast Asia, are plagued by it. However, while the other countries have made considerable gains towards the problem's solution, such problem has been increasing by large proportions in the Philippines. Can we ever solve the kaingin problem in this country?

The answer is YES. Any problem can be solved, provided, of course, that the correct solution is applied. This leads to another question: Does the first answer imply that the reason our kaingin problem has remained unsolved so far is because it was not handled right? PROBABLY SO. Let us examine the problem closely and find out if it was really "mishandled".

We should bear in mind that kaingin practice is the illegal occupation by a private individual of a public forest area, followed by the cutting and burning of the forest cover and by the subsequent planting of agricultural crops on the land. Kaingin practice is usually concentrated in mountainous regions since public forests are generally located in such rough topography areas. We can therefore expect that farming on such lands is very difficult. We can further expect that incomes and returns of the kaingin farmer are low, probably even negative, because the land is poor and is more suited to forestry rather than to agriculture. It can be logically concluded, then, that these people do not really want to be kaingin farmers, that is, they do not want to make farms on kaingins, IF they can help it. Why are they engaged in kaingin practice then? Because they have no choice. The real farmers who are in search of land are not able to find good agricultural lands because such good lands are probably occupied by either settlers or land speculators, so they are forced to squat on government forest areas and probably expect to stay permanently. There are also many who are not really farmers but are engaged in kaingin farming nevertheless because they have no other means of earning a living. We thus see the kaingin farmer destroying our forest resources, either consciously or unconsciously, because he is driven by dire necessity. This is NOT to justify the behaviour of the

kaingin farmer. Rather, the above explanation is made to place the kainginero in his correct position — a person trying very hard to put body and soul together without stopping to think whether or not his action adversely affects other persons and other things.

This is the kaingin problem, in its simplified form. However, at this moment, it is no longer simple. Complications have come up, mainly because politicians have joined the picture. These politicians, either because they really have the welfare of the people at heart, or because they simply want to appear as heroes or as saviours so that they will be assured of a majority vote next election time, have been battling for the kaingineros. They have tried twisting facts, manipulating law-enforcing agencies, and putting public opinion on their side in order to prevent the Bureau of Forestry from carrying out properly its task of protecting our forests against these kaingin farmers. The resulting complication has indeed made the problem more serious. However, the basic problem is unchanged, and the basic solution also remains the same.

What is the solution? Can we stop the practice of kaingin farming by putting these farmers in jail? **CERTAINLY NOT!** Since the Forest Law was passed in 1916, we have been trying to prosecute kaingin farmers as forest law violators and putting them in jail upon conviction. Such measure has not, and does not, solve the problem for the simple reason that it neither removes nor satisfies the need of the kaingin farmer and his family for food and shelter. As long as the kaingin remains the only possible source of subsistence, these people will go on making kaingins. The government may succeed in scaring them off through legal action and imprisonment, but that is not solving the problem. It is merely transferring said problem to another location.

What then is the more appropriate solution? We shall try to arrive at it by logical reasoning.

We said a while ago that the kainginero, if he is a real farmer in search of land where he could settle on permanently, makes kaingins only because he cannot find a better place to settle on. There is one logical step to make, therefore, in order to stop him from destroying the forests without depriving him of his way of earning a living: give him a piece of land that is really suited to agriculture. In short, the kainginero should be resettled. If the resettlement project is properly explained to him, he will most probably be very willing to leave his kaingin and move to a better land where his production and income will be greater. Through resettlement, therefore, we may be able to solve the kaingin problem and at the same time improve the welfare of these people in the process.

In the case of the non-farmers who engage in kaingin for want of any other source of livelihood, providing them with non-farming jobs, such as in public works or in reforestation projects, many succeed in getting them off the kaingins.

Can the Government afford to embark on a mass resettlement project for these squatters? **YES.** In fact, the decision to undertake or not to undertake resettlement depends not so much on the cost as on the need to do so. For example, the Hukbalahap problem in this country in the early fifties was recognized as an agrarian problem — the landless wanted lands, and they were going to get what they wanted, even to the extent of killing the owners of large land estates. The late President Magsaysay used force to counter the problem where necessary. It may be pointed out, however, that the success of the campaign against the Huks depended to a large degree on the plan to resettle them — distribution to them of government agricultural lands or of private lands purchased by the government for such distribution, provided they laid down their arms and came down from the mountains to settle in peace. Doubtless, large sums of
(Continued on page 40)

Problems of Reforestation *

By SALVADOR F. CUNANAN

Acting Undersecretary for Natural Resources

When I was informed yesterday to give the closing remarks in this seminar today, much to my desire to be with you this afternoon, I had to decline with much regret because of a previous engagement. However, I am sending this message thru Mr. Marcelino Ganay of the Technical Plans & Schedule Division of this Department.

I saw the wisdom in the selection of the theme, "The Problems of Reforestation." The Reforestation Administration in cooperation with the Jose Rizal National Centennial Commission which is spear-heading this movement should be congratulated because reforestation is admittedly a paramount task facing the country today.

In addition to what have been said by the different speakers on the subjects, I wish to give some observations to what a Forestry Expert, recent visitor to the Philippines, has said: "for thorough forest destruction, it would be hard to find a more flagrant example than in the Philippines today"; also to the report of the Forestry Specialist of the National Economic Council that "our commercial forests have dropped from 11,415,000 hectares to 9,329,280 or a loss of 2,085,720 hectares"; that statistics also reveal "that in at least 31 provinces the remaining tracts of virgin forests have been shaved off from such provinces in Luzon, Visayas and Mindanao".

* Message of the Undersecretary, DANR during the seminar on "Problems of Reforestation" under the auspices of the Reforestation Administration in cooperation with the Jose Rizal National Centennial Commission, held on July 19, 1961 at the GSIS auditorium.

During my travel in the provinces, I saw the rampant destructions of our forest done by unscrupulous kaingineros and squatters. This summer season I saw in Basilan, Zamboanga and other provinces, countless flickering fires in the hillsides and mountains. The Foresters in those areas informed me that many of these burnt areas are not potentially agricultural. Why then is the burning? We have laws to safeguard our forests, but have we implemented them? The field personnel of the DANR, charged with the duties of enforcing our forest laws are doing informational campaign, informing the kaingineros and squatters the ill effects of this senseless forest destruction. They even go to the extent of prosecuting the offenders in the court, but their efforts are thwarted by local sympathizers. With this wanton forest destruction is the over-exploitation of our timber resources because of the lucrative lumber industry. The result of accelerated destruction of forest which has not been accompanied by corresponding adequate reforestation has been felt through the effects of flood, soil erosion, receding of underground water table in our water reservoirs, changes in climatic conditions, etc. The situation calls for the concerted efforts of the agencies under the Department of Agriculture and Natural Resources. This means the Reforestation Administration, Parks and Wildlife Office, the Bureau of Forestry and their sister Bureaus to lead the program of reforestation by amply providing both the material and logistic supports. No single government entity or agency can succeed in its assigned

task without the cooperation of other agencies, either public or private. The growing consciousness of civic organizations and their willingness to cooperate in contending with the problems of reforestation and conservation of our forest resources are worth mentioning. Youth organizations such as the 4-H Clubs, the Boy and Girl Scouts of the Philippines, have likewise shown willingness to extend a helping hand in this regard. In fact the latter organizations throughout the country, have started their projects on forest conservation a year ago.

Cognizant of these problems, the President approved the bill creating the Reforestation Administration Office to take charge of the conservation of our forest resources, complimentary to the functions of the Bureau of Forestry. With the present set-up, I dare say that the reforestation and conservation of the vast denuded areas of the country are better assured, to the end that these resources will bolster and contribute increasingly to the support of the national economy and at the same time to conserve this nation's heritage, for posterity.

I thank you.

THE KAINGIN . . .

(Continued on page 38)

money were spent in said resettlement of the Huks. Expenditures consisted mostly of the purchase of private estates, transporting the settlers to the resettlement site, and providing them aid so that they could start their new life. However, the huge expenditures did not stop the project. The Government considered the Huk problem such a serious threat to our political and economic stability that it had to solve the said problem at all costs.

The kaingin problem is as serious a threat to our economy as the Huk problem was. The practice of kaingin threatens to wipe out our forest; our forests, on the other hand, occupy a major position in our national economy: forests produce export materials worth ₱153 million annually; forest

industries provide a direct source of livelihood for over 400 thousand Filipinos; they provide raw materials for our ever-growing industries; and they give our Government an income of over ₱14 million annually. These economic benefits do not yet include the many intangible benefits derived from forests, such as erosion-, flood-, and drought-prevention. Allow the kaingin practice to destroy our forests and our national economy will be greatly and adversely affected. And once the national economy is ruined, can political disorder be far behind?

Seeing as we do now that the magnitude of the threat posed by the kaingin problem on our economic and political stability equals that of the Huk problem, it stands to reason that the former merits the same attention and effort afforded the Huk problem. The whole national government machinery should be mobilized to solve the kaingin problem — and thus save the Philippines!

The Importance of Courage

“The biggest aid to success in business,” remarks a management engineer, “is courage. With courage a man is willing to take a chance on deciding a thing one way or another, even though he may be wrong. At least half of his decisions are probably right and the result is that he gets something done — more, at any rate, than if he had too great fear of being wrong and kept postponing action.”

— OSCAR ALLISON

“The National Parks of the Philippines”

by

DR. VICENTE DE LA CRUZ

Director

National Parks are areas which have been established primarily to protect and preserve superlative scenery, flora and fauna of national significance which the general public may enjoy and from which it may benefit when placed under public control.

The definition in the “Convention Relative to the Preservation of Fauna and Flora in their Natural State”, done at London, on November 8, 1933, reads (Article 2, paragraph 1) “The expression ‘national park’ shall denote an area (a) placed under public control, the boundaries of which shall not be altered or any portion be capable of alienation except by the competent legislative authority; (b) set aside for the propagation, protection and preservation of wild animal life and wild vegetation, and for the preservation of objects of aesthetic, geological, prehistoric, historical, archaeological, or other scientific interest for the benefit, advantage, and enjoyment of the general public; (c) in which the hunting, killing or capturing of fauna is prohibited except by or under the direction or control of the park authorities. In accordance with the above provisions facilities shall, so far as possible, be given to the general public for observing the fauna and flora in national parks”.

A National Park by its definition denotes that the whole or the major part will be devoted to the recreation, inspiration and education of the general public. Here, the aim is to present nature in its full glory. Scientific intervention in national parks however is necessary, like the control of vegetation,

reduction of obnoxious species of animals, provision of waterholes and salt licks and other devices to attract the fauna. These activities are all done for the benefit of the tourist who will enjoy the sight of nature at its best. Facilities in national parks, so far as possible, should be given to the general public for observing the flora and the fauna.

From their inception, the parks have served as natural museums where the native trees, plants, animals and birds may be seen and studied in their natural state.

To be able to provide for the use and to maintain parks for the benefit of all and to keep these areas inviolate at all times is the great challenge confronting all parks administrators. These things however should not discourage us for on our shoulders rest the responsibility of providing for the future benefits that are now enjoyed and that will be enjoyed by our children and their children after them.

The National Park in a country today is the symbol of the wisdom and aspirations of her people. They stand for their ideals, their pride, their dreams and their expectations for the country they love so much.

To most of us, a national park would just be a place where we may be able to see a deer, a moose, a bison and birds we do not ordinarily see in our neighborhood. To some it would be a place where they can ‘bask’ in the sunshine, or swim in one of the swimming pools or take a short walk along nature trails. But the basic reason

or philosophy behind every national park though obscure to most demands the attention and devotion of men who would cherish ideals which are inextricably woven into the very essence of our democracy. Most would relegate to a very low category the values of the things nature has generously afforded us.

National Parks should be regarded not only as resorts but as a public trust, to be conserved for the benefit of the greatest possible number of people.

The National Parks movement in the Philippines had its beginning in the early 30's when two high government officials after observing the superlative scenery, made the momentous decision of setting aside areas for national park purposes. This resulted in the proclamation of our first National Park in February of 1933. Other national parks were proclaimed later.

The Parks and Wildlife Agency in the Philippines is the end product of transfers and reorganizations. The responsibility for the maintenance, improvement, development and conservation of national parks was first entrusted to the Bureau of Forestry under a special section. This arrangement however did not work out well since the objectives for national parks and that of regular forest use were entirely contradictory with each other. So by and large the work on the different national parks was reduced to patrolling and protection with some modified forest regulation adapted to keep the whole system working. This turned out to be more of a disadvantage since foresters trained on forest resources utilization could not divorce themselves from such an attitude to that of a purely conservation approach. By the middle part of 1952 a law was enacted by our Congress, through the insistence of park-conscious patrons, creating the Commission on Parks and Wildlife under the Office of the President of the Republic, which was given charge with the maintenance of national parks and the con-

servation of wildlife. This new organization though given a status equivalent to that of a bureau was not granted the requisite needs for personnel, appropriation and facilities for maximum performance. Under the Reorganization Act of 1956, the Commission on Parks and Wildlife was abolished from under the Office of the President and a new agency was created under the Department of Agriculture and Natural Resources—the Parks and Wildlife Office. The Office, carried the basic organization, personnel composition and responsibility of the defunct Commission, but was modified to conform with the re-defined functions under the Department of Agriculture and Natural Resources.

For the past three years after the creation of the Parks and Wildlife service, noticeable progress has been achieved. This however must be understood, that up to the present, our main problem is to convince our public and our own government officials of the importance of national parks in the life of a fast growing Republic. Public opinion would not allow us enough leeway for expansion.

In this connection, it would be best if special emphasis is given to educational campaign since any conservation and management program cannot advance faster than what public opinion permits. We have adapted this as one of the main approaches so as to realize the objectives in our campaign of "Why we should have national parks and why we should keep them".

The Philippines of today, has established 39 national parks. They are distributed all over the archipelago with a total area of about 227,329 hectares (886.58 square miles). The area of the different national parks ranges from the smallest which is 10.00 hectares (.039 square miles) to the largest which is 76,900.00 hectares (299.91 square miles). Most of these national parks that we have contain representative flora and fauna of the region. There are seven

of these national parks which by standard are national Historic Sites. For the reason that they possess pre-eminent historic qualities.

The establishment of the National Parks in the Philippines is done by presidential proclamation. All other countries establish their national parks through legislation (their legislative bodies). The setup in the Philippines present a problem that is not found in other countries whose parks are established otherwise. We have found it hard to keep our national parks inviolate and to keep their boundaries unaltered. Many are those who clamor for the exploitation of the natural resources in our national parks under the guise of national or local needs.

The proper use of the park lands which will be accentuated in years to come, created by increased use is one of the major difficulties. Under our concept of national parks, no land shall be sold neither shall any of the resources therein be exploited. However it would be unwise and impractical for the government to shoulder or provide for all the facilities required in the park. Private participation should be encouraged. Provision of accomodation to park visitors and tourists may be left with private enterprise under strict supervision by park authorities. In having all these facilities and in order that the improvements introduced may harmonize with the landscape some allowable interventions may be introduced. We all agree that as national parks they must be maintained and made use of so as to leave them unimpaired for the enjoyment of future generations, but how would it be explicitly possible to bring in the people to our parks without giving them sufficient comfort or convenience? These things we must have to face—modern man with all his conveniences with Nature in her primeval state. Somewhere along the line a compromise must be made. Much as we hate to spoil the natural beauty of our national parks we have to at times. Out of this ar-

rangements problems arise and solutions are constantly being sought. Obviously the building of roads and any edifice erected in the parks impair their natural beauty and would seem contrary to our concept and the governing act. But national parks must be made available for the enjoyment of the people. Here is a basic contradiction which we all must resolve in such a way that the impairment shall be kept at the lowest possible level consistent with the need to make parks accessible, in the practical sense of the word.

At the time when the Philippines is undergoing the exploitation period, it could be expected that the utilization of the natural resources is paramount in the minds of the people. Hence to protect the national parks they should be guarded with zeal and devotion. These shall be the only areas, if ever, that shall be left untouched and unspoiled which shall remain as a monument of a people's love for nature and what is beautiful.

In parks we find representative native flora and fauna. It is only in national parks and other similar reserves that things which nature has provided us quite generously, like the beautiful waterfalls, a blue lake, virgin forests, wild animals and many others, are given protection.

Of the 39 national parks in the Philippines, 31 are forested areas and the majority of these forested national parks contain virgin growth. The outstanding features that may be found in our national parks in addition to the flora and fauna which are of national significance would be hot mineral springs, crystal caverns, beautiful cataracts, waterfalls, natural rock formation and swimming pools, caves, and subterranean rivers. Aside from all these we are very proud to have as one of our national parks, Mayon Volcano, acclaimed as the volcano with the "World's Most Perfect Cone".

Of these special features found in these parks, the wildlife demands the utmost at-

tention and protection as they are the most susceptible to disturbance and molestation by park visitors.

All the wildlife within the park boundaries is rigidly protected and the hunting, taking and wounding of any of the species of wildlife therein is strictly prohibited. Wildlife offers a special attraction to most and because of this, special concern is given to them to keep them within the park.

Wildlife management in national parks is primarily for recreational, aesthetic and scientific purposes, with some economic benefits as by-products. Here, no kind or category of wildlife is given preference to the detriment of any other. In the national park we try to maintain all the native species of wildlife in their natural balanced state. Instead of concentrating on some preferred kind of animal or groups of animals we try to maintain in the parks a well-balanced system of wildlife that will serve the purposes that are outstanding there. This difference in the management of the wildlife in areas other than national parks is most often misunderstood by critics of wildlife management.

Our National Parks however, are often times invaded by man and directly or indirectly are disturbed by his wanton predations. Large numbers of people visit the park each year, for recreational or other purposes. There are those, however, who

enter the park for purposes other than recreation. These are the ones that disturb the smooth operation of our National Parks.

To keep our parks from encroachment and keep them inviolate is our main problem today. The pressures of population increase are great and unless we stand firm in the enforcement of the national park laws and regulations we may fail in realizing the objectives of our national parks.

All these things that we are trying to do about national parks and all the disappointments that we meet to keep them inviolate are all for one great reason — "that national parks be dedicated to the people for their benefit, education and enjoyment and as such shall be maintained and made use of so as to leave them unimpaired for the enjoyment of future generations".

National Parks are dedicated to our people for they stand for what is noble, for what is great and for what is beautiful; it is the symbol of a people's desire for peace and freedom for in it they see the music in the birds; the poise and restfulness of the wilderness; the idealism of the animals. They embody our hopes, our dreams and our aspirations. For in Nature and in her beauty do we derive the inspiration and the reason for our being.

We must endeavor to meet all odds and strive always to keep our National Parks inviolate for the benefit of all.

It's a Beautiful Day

One dark, rainy evening, on my way home, I ducked under a theater marquee to wait out the worst of the storm. I finally summoned up enough courage to make a dash for it. As I started across the street, I saw an elderly gentleman with a cane standing at the curb, looking very uncertain of his next move.

"May I help you across, sir?" I asked.

"If you will," he replied warmly. Together we made our way across the rainswept pavement.

When we got to the other side of the street, he smiled. "Thank you." he said.

"But the sky is very black and it's raining hard," I replied.

"Yes, but it has been a lovely day. You see, I'm blind and whenever a person shows me some kindness, it is always a lovely day."

—JAMES HUGHES

Our Rate Of Forest Destruction Is Alarming

Forest destruction in the Philippines is now the fastest in the world. An estimated 30 thousand hectares of forest land are ruined annually. This is more than three times the present rate of government tree planting. In a few minutes, a careless kainginero can destroy a tree that took many years, a hundred years or more, to grow to the size ready for plywood, or lumber. Failure to replace the tree after cutting, failure to protect young trees from fire and kaingin making, is opening up great holes in the forest cover of the Philippines. This rate of forest destruction is beginning to alarm our people.

The results of uncontrolled forest destruction are becoming increasingly apparent and are causing: 1) flooding of thousands of our fertile agricultural lands; 2) losses of millions of pesos worth of crops, animals and property; 3) damages of dams, irrigation projects, roads and communication systems; 4) silting of water and hydro-electric power reservoirs; 5) erosion of valuable fertile top soil land and its wasteful deposition in the sea; and 6) misery, disease and death to untold numbers of families.

The indirect and intangible bad effects of forest destruction are even worse. Our children and future generations are deprived of valuable wood, timber and other forest products indispensable to human existence.

Throughout the world forest destruction has always brought catastrophe to nearby agriculture, subjecting stable prosperous agricultural lands to flooding, silting and erosion that ends in impoverishment, misery and semi-nomadic existence. Forest destruction adversely changes the local climate of a

region. Examples of such changes are now beginning in the province of Cebu, in the Ilocos provinces and in other forest-denuded communities. History is filled with examples of how destroying the forest also destroys the civilizations which refused to recognize the value of forests. Today vast areas of China, India, Egypt, Greece and other near East countries, once fertile and productive are now barren waste lands because of forest decimation.

What are the causes of forest destruction in the Philippines? The principal causes are: 1) "kaingin" practice, 2) forest fires, 3) illegal and destructive cutting of timber, 4) lack of active public support for the government's program of forest protection and management, and 5) lack of technically trained foresters to adequately staff public and private forestry organizations.

Kaingin practice is an "evil". It causes disaster to great numbers of people, and brings only temporary benefit to the kaingineros. Valuable forest trees are destroyed. Critical forest areas are exposed to water erosion. Abandoned kaingins turn to grasslands, becoming liabilities to the country, not assets.

Forest and grass fires are common occurrences especially during summer. Sometimes these wild forest fires light our countrysides for days. In their wake is desolation and destruction of valuable vegetation — the green carpet of the earth.

Without active public support, the government cannot effectively protect and manage its forest and range lands. Because of limited public support it means that a forest guard on the average is expected to protect about 26,000 hectares of forest land. To ex-

pect a forest guard to protect effectively such a vast area is to ask the impossible and to invite the unscrupulous to take advantage of the only partially guarded forests. In a democracy like ours, it is every citizen's responsibility to lend positive support to every program of forest protection because each citizen is part owner of the government forests.

The administration of our forest resources is vested in the Bureau of Forestry, Parks and Wildlife Office and in the Reforestation Administration. These forestry agencies are hampered in this work for lack of technically trained foresters. More high school graduates of better preparation should be encouraged to pursue forestry training in the U.P. College of Forestry. Such professionally trained foresters are needed to fill

the positions available in government, and in forest industries.

What is the principal force behind the factors contributing to forest destruction? It is man! It is man's practices and attitudes! To change his destructive practices and apathetic or complacent attitudes, there must be public education and information in forestry. People in every walk of life, and at every level of society, must be imbued with an appreciation and knowledge of the importance and value of forest resources. All means of mass communication and education must work together in this program for today the Philippines in a race between forest destruction and forest education and the odds are overwhelmingly in favor of forest destruction.

The Reforestation Administration

*Golden Jubilee, College of Forestry
and Diamond Anniversary, Bureau of Forestry*

November 8, 1961

To the District Foresters

Sirs:

Our records show that so far, no answer has been received by this Office regarding the letter and tracer of Regent Florencio Tamesis, dated February 15, and July 14, 1961 respectively, about the publication of our Memorabilia.

To avoid further delay in the printing of the Memorabilia, we are sending this last appeal to request you that action be taken immediately about the matter, since the Memorabilia may go on press anytime. We request you also to remind all alumni in your district and alumni who have rendered at least 30 years of service as of December 31, 1960, to send in their bio-data and best picture or even snapshots as we need them very badly for our Memorabilia.

We are hoping also that your District send in the advertisement in the amount of ₱_____ minus your 10 per cent commission that we are requesting from you.

Thank you.

*Very truly yours,
For the Editorial Board:*

*JUAN DAPROZA
Asst. Chief Forest Research Division*

Charcoal Production and Briquetting^{(1) (2)}

By

PANCRACIO V. BAWAGAN
Senior Forest Products Technologist
Forest Products Research Institute

ABSTRACT

This study consisted of two phases: charcoal production conducted at the F.P.R.I. and charcoal briquetting conducted at the calcium carbide plant in Iligan City.

Ten charges consisting of slabs, trimmings and edgings, and also round wood from broadleaved species yielded charcoal ranging from 28 to 35 percent or an average of 31 percent based on the oven-dry weight of the wood. Averages of 21 percent volatile matter, 75 percent fixed carbon and 4 percent ash were obtained by proximate chemical analyses of charcoal from four burns.

The duration of the active briquetting operation of charcoal-fine residue at the Maria Cristina calcium carbide plant, was 653 operating hours in 155 days and in the span of 8 months. The operation consumed 792 (20-kg. bag) of cassava flour and 319 cans (5-gal. can) of cassava pulp to produce 330 metric tons of briquettes. The lowest operating cost for producing briquette per metric ton with "6.1 percent cassava flour binder and at 73.5 percent operating time" was ₱28.42; that for briquette production with "cassava pulp as binder and at 56.6 percent operating time" was ₱28.99.

Charcoal-cassava flour briquettes seem very promising for the manufacture of calcium carbide.

INTRODUCTION

The art of making charcoal by pit or kiln method is a very old one. It has been prac-

ticed for centuries in many parts of the world. The basic principle of the process is incomplete combustion.

In the Philippines wood charcoal is produced by the pit and kiln methods. The demand is primarily for ironing and cooking purposes although for sometime now charcoal has been in use for smelting.

In 1953, calcium carbide plant was put up in Iligan City, Philippines, where electric power for industrial purposes is available. The plant needed a considerable amount of wood charcoal because it consumes about 20 to 30 metric tons of it daily. Also, the NASSCO-Iligan Steel Mill consumes about 10 metric tons of wood charcoal weekly. The establishment of these plants seems to have changed favorably the whole aspect of the charcoal making industry in the Philippines. These plants have demonstrated that wood charcoal is a good substitute for coke or anthracite coal the deposits of which have not yet been found in the Philippines. In fact, it is preferred to that of coal because of its higher chemical reactivity. Besides, charcoal is low in sulphur and phosphorus which is a desirable property in the processing of steel and the manufacture of calcium carbide.

More important and interesting aspect about wood charcoal is that its source can be replenished by planting, and presently, there is plenty of sawmill and logging wastes,

¹ Paper presented at the symposium on the 4th Anniversary Celebration of the Forest Products Research Institute, July 5, 1961.

² The briquetting machine used in this study was donated to the Forest Products Research Institute by the government of the United Kingdom under the Colombo Plan.

and cull logs and weed species in the forest that could be utilized. There is also the existence of charcoal fine waste which constitutes about 10 to 15 percent of the useable lump charcoal. A rough estimate of 9,600 metric tons charcoal fines was wasted from 1953 to 1960 based on the charcoal consumption of the above-mentioned plants, or about 1,200 metric tons annually. With the installation of charcoal briquetting plants, charcoal fines that used to be wasted could be recovered in the form of charcoal briquettes and also low grade charcoal out of sawmill and logging waste and unwanted weed trees.



A mountain of accumulated charcoal-fine waste or residue material for briquetting at the Maria Cristina Chemical Industries, Inc., Iligan City, Philippines.

The F.P.R.I. has been conducting a study on the production of charcoal from sawmill wastes in a 2-cord kiln patterned after the 7-cord kiln (2) developed by the U.S. Forest Products Laboratory, Madison 5, Wisconsin, and the commercial feasibility of briquetting charcoal fines in a pilot-size briquetting machine. This paper presents the results accumulated thus far in this study.

CHARCOAL PRODUCTION FROM SAWMILL WASTE

The experiments were conducted at the Forest Products Research Institute, Mt. Makiling area, College, Laguna.

The raw material consisted of mixed broadleaved species in the form of unpeeled sawmill slabs, edgings, trimmings and round

wood from trees cut within the compound of the Institute. The slabs or bolts were tightly stacked lengthwise of the kiln on stringers (2 to 8 inches in diameter) spaced crosswise. The thickest or largest-diametered pieces were placed at or near the top of the charge. Clearances between the rear wall and the charge, and between the ceiling and top of the charge were approximately 2 inches and 1 inch respectively. Practically no space was left vacant along the side walls.

The open-door method of firing the wood charge was adopted. The fire was started near the door by igniting the crib of brands and small pieces of wood previously soaked with crude oil. In about 10 to 30 minutes when the three chimneys started to emit smoke the door was closed and the joints around the door sealed, leaving only the air inlets open.

Normally, after closing the door, the chimney dampers and the air inlets were kept fully open for about one hour to insure a good start of combustion. As the carbonization progressed, the openings of the inlets were reduced gradually, and the side chimney dampers lowered to a desired position to control the burning. When a fast carbonization was desired, the air-inlets were left-wide open. As soon as the volume of the smoke diminished and become bluish, all air-inlets and chimneys were closed and the door sealed to prevent the ingress of air to permit complete carbonization with the stored heat in the kiln. After sometime, the gradual cooling of the kiln followed which indicated the completion of the process of carbonization. The temperature within the kiln during the cooling period and at the time of discharge were recorded by a pyrometer with iron-constantan thermocouple.

Before the kiln was opened, a water hose was made ready for quenching any fire that might start in the charcoal. During the discharging operation, the charcoal bed was examined carefully for existence of fire and ash pockets. The discharged charcoal was

left in the open for at least 24 hours to stabilize before storing.

Charcoal yield and brands (incompletely carbonized wood) per burn were determined based on the oven-dry weight of the wood charge.

CHARCOAL BRIQUETTING

The charcoal briquetting experiment was conducted in the compound of the calcium carbide plant in Iligan City, Philippines, using a pilot-size briquetting machine for producing ovoid-type briquettes of the 1.5 oz. size. The schematic flow diagram of the briquetting operations (Figure 1) indicates the machinery and equipment used.

Raw material

Charcoal fines passing through a 1/4-inch screen were briquetted. These charcoal fines were no longer useable in the manufacture of calcium carbide and were composed of undetermined amounts of bakauan, lauan and coconut shell charcoals, which were exposed to the weather. Cassava flour and cassava pulp waste in the manufacture of cassava flour were used as binders.

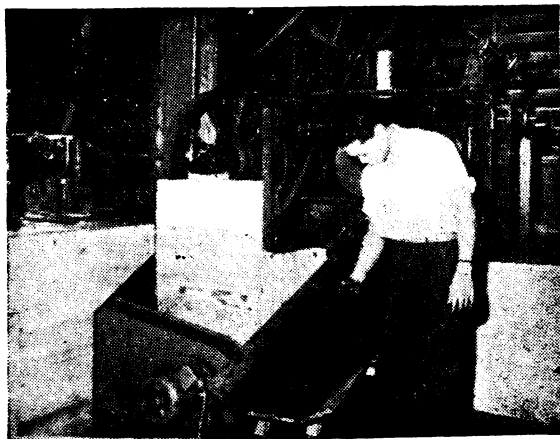
Briquetting operation

The pilot-size briquetting machine was operated by 5 men: 1 mechanic foreman, 1 boiler tender, 1 briquette press operator, 1 charcoal and binder feeder operator and 1 dryer tender.

The blades of the charcoal screw conveyor and the binder screw conveyor were adjusted prior to the briquetting operation, to the desired even feed per minute of charcoal and binder. If and when it was desirable, the charcoal fines could be sprayed with water coming from a spray device which was located just above the charcoal screw conveyor.

Briquetting trials were conducted with 1/16-inch screens, 1/8-inch screens and with screens removed, in which case the disintegrator served primarily as a mixer.

The charcoal-binder mixture from the discharge chute of the disintegrator was delivered by the bucket elevator up and into the vertical heater where it was continuously stirred while steaming.

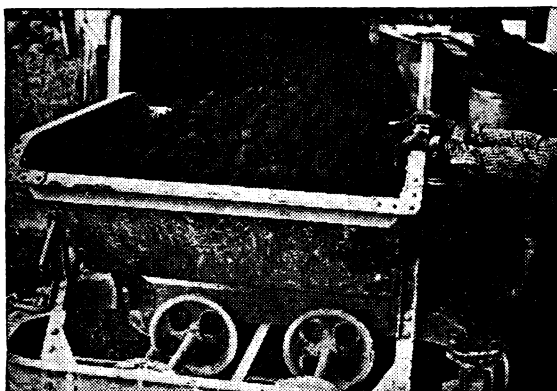


Supervisor inspecting the quality of the green briquettes as they come out from the briquettor and received by an inclined wooden trough.

The steamed mix was discharged at the base of the heater and fed directly into the pugmill or distributor above the ovoid press. By means of the stirring arm, the material was fed through a vertical adjustable feed box (placed centrally between the compression rolls) and down between the turning rolls which compressed it into briquettes.

Drying of briquettes

The green briquettes were dried in an improvised "tapahan" type drier fired with coconut shells and wood barks to a moisture content of about 10 percent. The dried briquettes were stocked in a temporary storage



A buggy full of dried briquettes. The briquettes are ready to be fed into a bucket elevator which will deliver them into a bin near the furnace for the manufacture of calcium carbide.

to safeguard against fire. Finally, the briquettes were loaded in buggies to a bucket elevator which delivered them to the bin situated near the furnace.

Trial runs in the manufacture of calcium carbide

On June 16, 1960, the first trial in the manufacture of calcium carbide using charcoal-cassava flour briquettes of different "charcoal briquette to line ratios" was conducted. This was followed by another trial on Dec. 11 to 28, 1960, using briquette-charcoal mixture and the mixture of briquette, coal and charcoal. The acetylene gas yields of the calcium carbide produced, which is an indication of quality, were determined.

RESULTS AND DISCUSSION

Charcoal production from sawmill waste

A summary of the results covering the series of experiments on 10 charges is given in Table 1.

For efficient carbonization, the diameter or thickness of the individual pieces of wood in the charge should not exceed 7 inches. This also applies to wood slabs piled face to face, in which case the combined thickness should not exceed 7 inches. From stringers 2 to 4 inches in diameter, 12 and 7 percent brands were obtained respectively for cooks Nos. 3 and 5. Those 6 to 8 inches in diameter resulted in lower brand percentage.

The size of the stringers seemed to influence the amount of brands produced.

The open-door method of firing the wood charge was satisfactory. At the given range indicated in Table 1 the moisture in the wood did not show any significant influence on the charcoal yield. A significant influence on the carbonization periods was observed in cooks Nos. 9, 10 and 11, which had approximately the same ranges of wood sizes.

Trials on discharging temperatures from 65 to 110 deg. C. indicated that opening the door when the temperature is about 95 deg.

C. is low enough. Usually small fires occurred at the rear end of the kiln in about 10 minutes after opening the door. This combustion of the charcoal may be due to the rise in temperature caused by rapid absorption of oxygen by the charcoal (1). Previous reports showed that oxygen re-take of charcoal was closely related to the final carbonization temperature. The relationship between carbonization temperature, oxygen re-take and ignition temperature of charcoal are as follows (1,3):

Carbonization temperature (deg. C.)	Oxygen re-take (percent)	Ignition temperature of charcoal (deg. C.)
350	8	165
430	31	150
550	6	215

It is advisable to keep the temperature at 350 deg. C. or to reach 550 deg. C. in the operation of charcoal kilns or retorts (1).

In Table 2, chemical analysis indicates that good quality charcoal that is quite dense and hard was produced based on the requirement for a good smokeless charcoal which should have at least 75 percent fixed carbon and not more than 24 percent volatile matter (2). The maximum kiln temperature seems to influence the volatile matter content of the charcoal which decreases with increase in temperature. The same is true with the ash content of the charcoal which seems to depend on the ash content of the wood. A decreasing charcoal yield proportionately increases the percentage ash in the charcoal. However, this is not true if decreased yield results from burning.

Charcoal briquetting

Briquetting operation—The steam (80 to 180 to 100 psig) required in terms of evaporated water ranged from 7 to 8 gallons per hour. Coconut shells or their mixture with wood barks were used as boiler fuel and found satisfactory.

It was found necessary to water-spray the low-moisture charcoal so there will be

sufficient water to cause gelatinization of the cassava flour. As the charcoal-cassava flour mix entered the disintegrator, the moisture content ranged from 30 to 40 percent.

The 1/16-inch slotted screens were replaced by the 1/8-inch slotted screens to minimize clogging of the screens. When the moisture content of the exposed charcoal was increased due to rain, choking was also experienced in the 1/8-inch slotted screens.

It was found necessary to remove the screens, hence the disintegrator could serve primarily as a mixer. The briquettes produced have coarser surfaces but they seemed satisfactory for the company's purpose. High moisture charcoal fines (up to 39 percent; oven-dry weight basis), without the addition of the water except that due to the condensed steam, were briquetted but the results were not as satisfactory as when low-moisture charcoal was briquetted. The final moisture content of the steamed mixture from the heater ranged from 40 to 50 percent on the oven-dry weight basis.

Drying—The drying time varied from 2 to 3 hours. The drying temperature was 70 to 80 degrees centigrade. The drying operation had been a problem during the entire operation because it did not catch up with the rate of production of green briquettes.

Trial runs in the manufacture of the calcium carbide—The first trial run showed that the charcoal briquette line ratio was high. The succeeding trials confirmed that charcoal briquettes can be commercially used

in the manufacture of calcium carbide either alone or mixed with lump charcoal or coal.

Operating cost estimate—Table 3 shows the summary of the monthly charcoal briquetting operational data and Table 4 shows the unit cost of the different items involved in the estimate of the operating cost per metric ton of the briquettes as indicated in Table 5. The cost of charcoal (Table 5) is purposely omitted to fit the operating cost obtained to any cost of charcoal obtaining in other places.

The percentage operating time (45.0 to 73.5 percent) seems too low under normal commercial manufacturing operation which generally ranges from 80 to 90 percent (Table 3). The cost data obtained could still be reduced, particularly the cost of direct labor. The proportionate decrease in labor cost with increasing percentage operating time is shown in Tables 3 and 5.

The operating cost obtained in April, 1961 for briquetting with cassava pulp as binder deserves careful evaluation because the binder cost is the lowest. Although it has the highest cost in dryer fuel, second highest cost in boiler fuel, and comparatively low percentage operating time of 56.6 percent, it is second lowest in the total direct cost.

Financial requirements

The capital requirement of the briquetting plant employed in this study was estimated at ₱138,340.00 ("Tapahan" dryer and storage building excluded) and itemized as follows:

A. — FIXED INVESTMENT	<i>Item</i>	<u><i>Cost</i></u>
1. Land, 3,000 sq. m.		₱ 30,000.00
2. Briquetting plant building, 28' x 56' (Appendix 2)		5,880.59
3. Original machineries and equipment		17,000.00
4. Accessories & materials added & improvements (Appendix 3)		9,181.85
5. Installation of briquetting machineries & equipment (Labor cost)		2,577.80
6. Laboratory apparatus and office equipment		4,000.00
Fixed Investment Total		₱ 68,640.24
B. — WORKING CAPITAL		
1. Direct raw material inventory (3 months)		59,400.00
2. Salaries and wages (Appendix 4, 3 months)		9,000.00
3. Supplies (3 months)		300.00
4. Incidentals (30 days)		1,000.00
Total Working Capital		69,700.00
Total Financial Requirement		₱138,340.24

Table 1.—WOOD CHARGE, COALED CHARGE, AND OPERATIONAL DATA IN
A 2-CORD DOUBLE-WALLED CHARCOAL KILN

Cook No.	Wood species	Form	Sizes	Mois- ture ¹ in wood ¹	Charcoal ² recovered	Char- coal ¹ yield	Brand ¹	Stringers diameter or thick- ness	Coaling ⁵	Cooling ⁴	Discharg- ing temp.	Remarks
			inches	percent	kg.	percent	percent	inches	hours	hours	deg. C.	
1	mixed	bolts	—	—	—	—	0	6	22	70	80	Scout run
2	mixed	bolts	4-12.5	54	450	31	17	6	27	92	75	8" and up incom- pletely charred.
3	mixed	bolts	1-12	46	387	29	12	3 to 4	29	90	80	8" and up incom- pletely charred.
4	mixed	slabs	1- 8	18	436	32	0	8	23	120	75	
5	mixed	slabs	1-12	33	560	31	7	2 to 4	30	66	95	Brands immediately above the string- ers.
7	mixed	slabs	—	—	—	—	0	—	24	120	95	For demonstration only.
8	mixed	slabs	—	29	—	—	0	6	—	94	110	Air-leak was ob- served.
9	mixed	slabs	1- 3	54	391	28	0	8	48	96	65	
10	mixed	slabs	½- 3	49	542	34	0	6	43	120	95	
11	mixed	slabs	½- 3	45	617	35	0	6	50	93	95	
Average				41	483	31			33	96		

¹ Percentage based on oven-dry weight of wood.

² Oven-dry weight.

³ The coaling period indicated started from the time of firing until the kiln was completely sealed to cool off.

⁴ The cooling period indicated started from the time of sealing (end of coaling period) until the kiln was unloaded.

SUMMARY

Charcoal production

Sawmill slabs, trimmings, edgings and also round wood from mixed broadleaved species were charcoaled in a 2-cord double-walled 3-chimney kiln. For the 10 charges, the charcoal yield ranged from 28 to 35 percent, with an average of 31 percent, on the oven-dry weight of the wood. Chemical analyses of the charcoal from four burns showed an average of 21 percent volatile matter, 75 percent fixed carbon and 4 percent ash.

Charcoal briquetting

The duration of the active briquetting operation was 653 operating hours in 155 days and in the span of 8 months. The briquettes produced amounted to 330 metric tons and consumed 792 bags (20-kg. bag) of cassava flour and 319 cans (5-gal. can) of cassava pulp.

The lowest operating cost (cost of charcoal excluded) was ₱28.42 obtained in March, 1961 with 6.1 percent cassava-flour binder and at 73.5 percent operating time which was the highest operating-time percentage attained. The second lowest operating cost was ₱28.99, obtained in April, 1961 with cassava pulp as binder and at 56.6 percent operating time. The fixed indirect cost which should be added to the foregoing consisted of depreciation, indirect labor and management, and insurance of ₱2.47.

Charcoal-cassava flour briquettes seemed very promising for the manufacture of calcium carbide.

The financial requirement of the briquetting plant employed in this study was estimated at ₱138,340.00, excluding the cost for a continuous or batch type charcoal-briquette dryer and storage building. The amount could be broken down into the fixed investment and working capital which were estimated at ₱68,640 and ₱69,700.00, respectively.

TABLE 2. PROXIMATE CHEMICAL ANALYSIS OF THE CHARCOAL PRODUCED^{1 2}

Cook No.	Maximum kiln temperature	Volatile matter	Fixed carbon	A s h
	deg. C.	percent	percent	percent
1	675	15.5	80.0	4.5
2	625	22.0	73.6	4.4
4	560	22.4	72.6	5.0
5	520	24.0	73.9	2.1
Average		21.0	75.0	4.0

¹ Percentage volatile matter, fixed carbon and ash were based on oven-dry weight of charcoal.

² Done at the F.P.R.I. in accordance with Roger Castle Griffins Technical methods of analysis, 1927, and both commercial methods of analysis of Snell and Biffin 1944, published by McGraw-Hill Book Co., Inc.

TABLE 3. MONTHLY CHARCOAL BRIQUETTING OPERATIONAL DATA¹

Date:	Sept., 1960	Oct., 1960	Nov., 1960	Dec., 1960	Jan., 1961	Feb., 1961	Mar., 1961	April, 1961
Man-hours	956	609	722	874	950	304	600	722
Days operation	26	19	19	23	25	8	16	19
Hours operation	87.5	66.0	80.0	95.0	112.9	42.4	88.3	80.6
Operating time, percent	45.0	46.4	56.1	55.0	60.2	70.7	73.5	56.6
Briquettes produced, MT	39.36	36.30	39.90	50.31	56.79	21.51	45.85	40.39
Briquettes per operating hour, MT	0.458	0.550	0.500	0.530	0.503	0.508	0.520	0.500
Binder used. Bags (20-kg.)	118	97	114	130	151	56	126	(319 cans)
Binder, percent	6.7	6.0	6.3	5.7	5.9	5.8	6.1	5 to 6
Boiler fuel, MT (O.D. wt.)	2.645	2.965	3.050	3.638	3.715	1.675	4.925	4.000
Dryer fuel, MT (O.D. wt.)	2.450	1.575	3.538	3.950	4.625	1.526	4.975	4.130
Electricity, KWH	1826	762	897	1064	1264	475	1344	881
Oil, Liter	4	1.5	1	4	4	2	4	4
Grease, Pound	5	4	2	1.5	2	2	2	2

¹ The briquette contain 10 percent moisture on the oven-dry weight basis. The percentage binder is based on the moisture-free weight of the briquette.

TABLE 4. UNIT COST DATA OF DIFFERENT ITEMS¹

Item	Unit	UNIT COST, PESOS							
		Sept., 1960	Oct., 1960	Nov., 1960	Dec., 1960	Jan., 1961	Feb., 1961	Mar., 1961	April, 1961
1. Cassava flour	Bag (20-kg.)	4.35	4.35	4.35	4.35	4.35	4.35	4.35	—
2. Cassava pulp	Can (5-gal.)	—	—	—	—	—	—	—	1.00
3. Labor	Man-hour	0.76	0.83	0.873	0.78	0.793	0.89	0.75	0.85
4. Coconut shells	Metric ton	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00
5. Electricity	KWH	0.011240	0.011240	0.012213	0.011250	0.010907	0.011439	0.010816	0.011135
6. Dryer fuel	Metric ton	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00
7. Wood bark	Metric ton	—	—	20.00	20.00	20.00	20.00	20.00	20.00
8. Oil	Liter	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59
9. Grease	Pound	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66

¹ The costs of coconut shells, dryer fuel and wood bark are based on their moisture-free weights.

TABLE 5. MONTHLY SUMMARY OF OPERATING COST PER METRIC TON
OF BRIQUETTES DRIED TO ABOUT 10 PERCENT MOISTURE.
(Cost of charcoal purposely omitted).

Date:		Sept., 1960	Oct., 1960	Nov., 1960	Dec., 1960	Jan., 1961	Feb., 1961	Mar., 1961	April, 1961
Raw Material:									
Binder,	₱	13.00	11.60	12.40	11.22	11.56	11.32	11.95	7.90
Charcoal,	₱	—	—	—	—	—	—	—	—
Direct Labor:	₱	18.46	13.55	15.80	13.53	13.23	12.62	9.81	13.40
Power:									
Boiler fuel,	₱	1.68	2.04	1.78	1.62	1.63	1.77	1.85	1.98
Electricity,	₱	0.52	0.24	0.28	0.24	0.25	0.25	0.24	0.25
Dryer fuel,	₱	1.56	1.08	1.48	1.75	1.63	1.77	1.83	2.05
Direct supervision,	₱	4.24	3.25	3.37	3.32	2.94	2.09	1.51	2.64
Maintenance and repair,	₱	1.90	0.85	0.37	1.42	0.85	0.20	1.25	0.77
Total	₱	41.36	32.61	35.48	33.10	32.09	30.02	28.42	28.99

Fixed Indirect cost:

Depreciation (App. 1): ¹ ₱	1.29
Indirect labor and management (App. 4):, ₱	1.05
Insurance (1% of cost of building and machineries), ₱	0.13
Total	₱2.47

¹ Based on 300 working days a year (3 shifts) and 3,000 metric tons of briquettes producible.

A P P E N D I X 1

ESTIMATED DEPRECIATION SCHEDULE

	Estimated Cost	Life (Year)	Annual Depre- ciation
1. Briquetting equipment and machineries	₱28,759.65	10	₱ 2,875.97
2. Building	5,880.59	10	588.06
3. Laboratory apparatus and office equipment	4,000.00	10	400.00
Total annual depreciation			₱ 3,864.03

A P P E N D I X 2

BRIQUETTING PLANT BUILDING, 28 × 56 ft.
(Corrugated G.I. Sheet Roofings and Concrete Flooring)

Materials:	Cost
Lumber	₱ 1,084.15
Corrugated G.I. Sheets	1,491.20
Portland cement	383.10
Sand and gravel, concreting	604.25
Steel bars	330.00
Miscellaneous (C.W. nails, machine bolts, lead washers, post straps, G.I. wire, floor hardener, etc.)	187.89
Total Cost — Materials	₱ 4,080.59
Labor Cost	1,800.00
Total Cost	₱ 5,880.59

A P P E N D I X 3

INSTALLATION OF EXPERIMENTAL BRIQUETTING PLANT

Accessories and Materials Added:	Cost
Charcoal elevator (depreciated value)	₱ 500.00
Two torque arm speed reducers	3,174.00
Steel angulars and steel bars	811.85
Sand and gravel, concreting	318.30
Portland cement	176.80
Lumber	118.42
Electrical materials	2,552.42
Plumbing materials	355.55
Welding electrodes, welding rods, oxygen gas, bolts nuts, washers, nails and G.I. wires	322.23
Miscellaneous (waste cotton, cotter pins, emery cloth, emery wheels, hacksaw blade, paint, brushes, steel shaftings)	143.28
Total Cost of Accessories and Materials	₱ 9,181.85
Labor Cost	2,577.80
Total Cost of Project	₱ 11,759.65

(Continued on page 109)

Our Biggest Government Problem *

By Hon. CESAR M. FORTICH
Secretary of Agriculture and Natural Resources

Mr. Master of ceremonies — Mr. Reyes, President Virata, Dean Zamuco, Director Summers of ICA, Director Crucillo, ladies and gentlemen:

When the master of ceremonies pointed at me, I thought he was the Speaker of the House! So naturally my impulse was that I had the floor right away.

Ladies and gentlemen, this is indeed an occasion for me to be happy. In my short stay in the Department, (I am now about two months as Secretary), I consider this as a major event in my capacity as Secretary of Agriculture. This and the creation of the new office of Reforestation Administration. These two things, the restoration of the Park to the University of the Philippines which should have been the property of the University long ago, and also the creation by a new law of a New Office — the Reforestation Administration. I mention this because the Bureau of Forestry is now separated from this office and this office will have a lot to do with the forestry school of the University of the Philippines. The forestry school of the University of the Philippines and the new reforestation office as created by law will play an important role in this country in the future.

Of all the problems that this government is facing, it is the forestry problem that is very important. For 60 years this country has practically never done anything to preserve our forests. On the contrary, it did a lot to destroy our forests. Now, once and for all we have a law which I hope will be expanded in the future and with the cooperation of the University of the Philippines and research would be the agency that will protect and expand the forest of our country. The picture of forestry

in this country right now is very sad. If one travels from north to the south, by plane, you see nothing but devastation of natural resources; devastation by illegal cutters, by legal cutters and by homeseekers. The illegal cutters are those who steal logs and timber; legal cutters are those granted by the government — the licensees; and the home-seekers are those who look for land and unfortunately they go to the areas where the licensees are, like the forest. Now we have that problem, my friends, all over the country. We have a problem of protecting these present natural resources, the present stand. But we should not only protect, we should also expand. We must see to it that in protecting we are not preventing the industrialization of our forest products. I believe in forest research and my idea of forest research is this: that we should have a forest that can withstand production for one hundred years and if need be, cut them all over but we should have a reserve for the next hundred years. With this, I do hope that it should be the beginning for us to see the light that we should run that way, that we should protect the forests, we should plant trees, we should control all the production so much so that we will have the same natural resources for the next hundred years. I mention hundred years because I think one hundred years is a safe number of years during which a tree may be grown before it is commercially practical to be harvested for the market. We cannot base it on 30 years or 40 years because our own variety of trees are not ready for the market at that age.

Now, we are gathered here on this occasion to officially turnover the park — the Makiling National Park to the University of the Philippines in which the School of Forestry is very much interested. Before I came I thought that I would be met at the boundary of the national park and there to cut the ribbon and that's all. I have no idea that there would be speeches. I did not know that foresters are orators; I feel that I am wrong just as I found out before that

* Extemporaneous speech delivered at the U.P. College of Forestry Auditorium, College, Laguna on September 21, 1960 during the turnover ceremony of the Makiling National Park Administration from the Parks and Wildlife Office to the University of the Philippines.

even the veterinarians are poets. In my meetings with the veterinarians, they emphasized more on songs and beautiful music so that I was very happy to see that even Veterinarians are human beings. It so happened that most musicians are in that bureau (Bureau of Animal Industry), I was indeed exalted to find that they have also the noble appreciation of music—like others. I thought that the only humble ambition of the veterinarians in those days was to look at the animals, appraise them whether they were sick or not and then find a remedy. And I found the same thing with the foresters. I find that my impression was wrong; they also have that fine appreciation of life.

Dean Zamuco mentioned here that this School has become a squatter for the past so many years but what he forgot was that he was one of those *legalized* squatters that no court of law could throw him out, unlike the illegal home-seekers. But I am happy that once and for all this government is seeing the way that it should protect the interest of its State University. I am not an alumnus of the University of the Philippines, my brother was, but bear in mind that I am also a tax-payer and I own a part of the University of the Philippines; I want my investment to be protected. Every citizen of this country should support its State University, that is a supreme obligation. The turning-over of this park is the right move. I see naturally that the director of the Parks and Wildlife Office is not here and his assistant is not here; that is natural and it is understandable. You know, soon after the director left

for United States for the Fifth World Forestry Congress he had two (2) of his office-men come to me prepared with a letter of appeal and reconsideration. I told them: "I am sorry I cannot agree with you and you should be ashamed. I must be frank with you. You should be ashamed of your actuation for not supporting your own property." I disagree with the Parks and Wildlife Office in the way they are running the Parks' property. For them, a park is only a forest for monkeys and other wildlife to go and see. My idea of the park is a place where our own people can go and take a look at the park inside and utilize that park. As it is, I am ashamed to see that our own parks are of no use to our country and people. So that I am happy to be here to turnover the park that could be utilized by the School for a definite purpose. All of the plans for the other parks are up to now useless to our people.

My friends, I had no intention to make a long speech. If I had a prepared speech, I will be mumbling and you could tell in my face that it is not mine. I am indeed very glad to be here with you. It has been an honor and a privilege to be the instrument to help the University of the Philippines in the turning-over of this park so that the School of Forestry of the University may utilize it to a good purpose in cooperation with our government.

I thank you.

12:61
9-6-61
acg, Jr.

BREVITY

The best illustration of the value of brief speech reckoned in dollars was given by Mark Twain. His story was that when he had listened for five minutes to the preacher telling of the heathen, he wept, and was going to contribute fifty dollars; after ten minutes more of the sermon, he reduced the amount of his prospective contribution to twenty-five dollars; after half an hour more of eloquence, he cut the sum to five dollars. At the end of an hour of oratory when the plate was passed, he stole two dollars.

Literary Attempts

REFLECTIONS

By EDMUNDO V. CORTES

(Author's note: The title is original. It was adopted without reference to previous published articles bearing the same title.)

Before I came to enroll in the ranger course eight years ago I didn't know a college of forestry existed. If there ever was one, I never heard of it, nor bothered to find out. Not after I had entered its unique campus was I convinced that there stood somewhere along the hills of Mt. Makiling a school that was soon to shape my life.

The haggard appearance of the building when I first saw it gave me the impression of a "bijon factory" rather than an institution dedicated to producing individuals who would become the guardians of God's leafy creations. Within its walls, I discovered later, dwelt the gems of intellectuals that have sublimated the name of the college thru the years.

As a ranger student my days in the College of Forestry were rigorous and trying. Racking my not-so-docile brain in the classrooms in the morning, I would pause for a 20-minute lunch break, steal a ten-minute nap when opportunity presented itself, then geared myself for the afternoon "physical exercise" up and about the vast Makiling laboratory—pacing the same distance back and forth ten to twenty times, tree climbing, forest surveying, terrace building for an experimental nursery, then winding up in military drill and another physical exercise which they called "physical education". Physical endurance which I developed early in life had helped me get over this ordeal without much ado. As if the tedium of the day was not enough, I had yet to trudge uphill with forestry students from the ROTC drill grounds to the college campus. Only one jeepney then and the LTB bus were plying between these points. How I often felt like barking

at my CO for dismissing our company the last so that I was lucky if for one semester I could have a ride after drill days.

Love of trees was not engrafted in my mind until I took forestry. While yet in the high school, arbor days which featured ceremonies stressing the need for protecting the trees, I took for granted. But one day in 1955, as my first speaking engagement in the Bureau of Forestry, I found myself before a multitude of high school students and farmers expounding on the multifarious benefits and advocating the conservation of our precious heritage and rallying them to plant more trees. With the planting ceremony through, I pictured the sun-dappled crowns of the stately mahogany that would later line along the grounds of every school and park and public plaza in order that every one would enjoy the pure, cool and gentle atmosphere only trees could provide.

Some people do not have a sense of relative values. Engrossed in the humdrum of city life, they lose contact with their environment. They fail to appreciate the beauty of the things right under their noses—like the trees that shield our shoulders from the blistering heat of the sun and fan our tousled hair in our sleep.

Having completed the ranger course, I thought I was already equipped with every necessary weapon with which to go out into the world and face its challenge. But I lacked one important thing I did not learn from the books—the last words of advice from my mentors. For instance, I can remember perfectly well the assistant dean having advised me never to antagonize the boss, reason or no reason.

"Do what he asks you to do, without being obsequious," he said, "yet, no matter how capable you think you are, do it humbly and well."

If for me, five years in the field have been such a rewarding experience because of an efficient service behind me and of the fact that I gained the trust and respect of the many individuals that I met and worked with, I owe it to my district forester and my college professors who have influenced my life a great deal.

Like the Old Soldier who had promised to return and did, I came back not to liberate an ally but to finish the unfinished I had set to accomplish. I came back in the belief that by keeping pace with modern forestry, I could best serve the interests of the organization which I represent and help carry on the good name with which it has always been labeled.

Five years have brought a change on the campus. When I came in 1960 gone was the old school that looked like a "bijon factory". On the same spot where it had stood a beautiful two-story edifice equipped with modern facilities greeted my eyes. With the residence hall completed, the experimental sawmill and technology building underway, soon will follow the construction of the proposed gym. A battery of well-trained faculty is another achievement the college can boast of. Some old and young foresters with actual experience in forestry have been recruited from the field to update and supple-

ment what are taught from American books, by their knowledge in lumbering and timber management. These, to keep pace with the modern trends in forestry education. And I am to benefit from what they have to offer.

I could hardly believe that I was to become a student again. In the field, as an OC, I learned and gained much knowledge about forest rules and regulations which I imparted to my eleven men, all in their late thirties. Back to college, I found myself once more in the classroom learning the "fundamentals" of the same forest rules and regulations under a young instructor. Besides this, however, I have to learn a "lot more" about other aspects of forestry. And this "lot more" which I am about to imbibe will make the big difference when I return to the field.

Forestry has not only taught me to plant, to protect and to love trees. It has also shaped out of a fresh and carefree teener, a young man imbued with a deep sense of responsibility, good dealing and self-reliance.

I have no regret having drifted to forestry. While it is true that never in my wildest dreams did I conceive of pursuing this career because my early and later ambition was to be an engineer, I must admit with all sincerity and candor that having taken the course is, to me, a blessing.

The College of Forestry has built me up into what I am now, and is building me up into what I'm going to be.

SHORT SHORT STORY

Every time a foul ball was knocked into the bleachers, filled with high-school students, it stayed there instead of being returned to the diamond. The youngsters, presumably, were keeping the baseballs for souvenirs. The manager of the park was furious. He stationed a cop at the gate to the bleachers with instructions to search the students at the end of the game.

When they began to file out, the cop looked for bulging pockets. Now and then he would tap a boy on the shoulder and receive a ball in return. He had recovered all but two of the baseballs when a teenage girl walked past him. "Hold up," he said, and pointed. "What's that?"

"Me," she smiled, and walked on.

— CLARENCE ROESER

Campus Notes

FACULTY MEMBERS CONFERRED M.F. DEGREES

By I. V. Barongan

Two young faculty members of this College received their Master's degree at Syracuse University, College of Forestry, Syracuse, New York on June, 1961.

The awardees were Mr. Florencio P. Mauricio, BSF '55, instructor in forest management Mr. Filiberto S. Pollisco, BSF '56, instructor in wood technology. During his stay in the State U, Mr. Mauricio worked with the silviculture department and completed his thesis "Residual Dipterocarp Forest After Selective Logging in Basilan, Philippines" with Dr. Eugene Farnsworth as his major professor. With Dr. Richard S. Pentoney as major professor, Mr. Pollisco completed his thesis "The Simultaneous Calculation of the Moduli of Elasticity and Rigidity of Wood Beams" while working with the Wood Products Department of the College of Forestry at the same university.

Both Mr. Mauricio and Mr. Pollisco had been specially trained "selective timber management" foresters while serving with the Bureau of Forestry before they were absorbed by this College. Mr. Mauricio was timber management assistant at Basilan for some time, and Mr. Pollisco was also timber management assistant at Zamboanga. They went to the U.S. under the ICA-NEC Type A technical assistance program in September, 1959 and returned at the same time in September, 1961. While abroad, the former specialized in applied silviculture and the latter in wood mechanics. Both also represented the U.P. College of Forestry in the 5th World Forestry Congress at Seattle, Washington on August 29 to September 10, 1960.

This brings to a total of seven Master's degree conferred on faculty members of this College through the technical assistance program sponsored by ICA and NEC which started in 1959. Former graduates are Professors Domingo Lantican, (Syracuse U) and Osiris Valderama (Michigan U) in 1957-59; Messrs. Lucio Quimbo and Napoleon Vergara (both Syracuse U) in 1958-59; Mr. Juanito Lamanilao (Oregon) in 1959-60; and Messrs. Rodolfo Yaptengco (Syracuse U), Leonardo Angeles (Cornell U) and Romulo del Castillo (Duke) in 1960-61. Leaving this year (1961-62) are Messrs. Andrew Bacda-

yan (to Syracuse U), Ireneo Domingo (to North Carolina State College), Angelo Mordeno (to Oregon State College), Vicente Saplala (still undetermined) and Armando Villafior (to Syracuse U). Prof. D. Lantican is now at Syracuse working for his doctorate under a Rockefeller grant and Mr. Enriqueito de Guzman at Cornell U under an assistantship grant from that College.

* * * *

C.F. ARBOR WEEK PLANTING

By I. V. Barongan

The students and faculty of the U.P. College of Forestry put a climax to the nation wide Arbor Week celebration, by planting an old abandoned 3-hectare *kaiñgin* near the Mud-spring last July 29, 1961. Also participating in the mass planting were the members of the Alpha Phi Omega fraternity of the College of Agriculture, the personnel of the Makiling Reforestation Project, and the Los Baños Forest Experiment Station who supplied the seedlings.

A total of 7,083 bare-root seedlings of Mahogany, Narra, Ipil and Molave were planted, and two sacks of Mahogany seeds were broadcast. Before the planting started, the area was cleared of wild bananas and climbing bamboos by the organized crews of forestry students. During the noon break, an impromptu program was held during which vocal numbers were contributed by members of the various organizations and fraternities of the College. Called upon by the Adviser of the SBO, Mr. Napoleon T. Vergara who emceed the program, Dr. Francisco Tamolang of the Forest Products Research Institute, gave a brief history of the area planted. He said among other things that he was happy to see that the areas planted during previous Arbor Day celebrations are now completely covered with forests. Before the group disbanded late in the afternoon, they were treated to a refreshment of "bocos" (young coconut fruits) by the Pensionado Club of the College.

During the first few days of the Arbor Week, the Silviculture 3 class under Forester Florencio Mauricio distributed posters depicting the essence of forest conservation, to various public and private schools from Calamba to San Pablo City, Laguna.

SILVICULTURE STUDENTS ATTEND MANILA SEMINAR

By I. V. Barongan

The Silviculture students under Messrs. Florencio Mauricio and Irineo Domingo both young faculty members of this College attended the seminar jointly sponsored by the Reforestation Administration and the Rizal Centennial Commission last July 19, 1961 at the GSIS auditorium. The theme of the seminar was Forest Conservation.

Before the seminar, a movie was shown depicting the role of the forest in the economy of the nation. An inspiring talk of the press relation officer of the Rizal Centennial Commission was warmly applauded. Forester Carlos Cunanan, acting deputy administrator of the Reforestation Administration, the keynote speaker, emphasized the reforestation problems in conjunction with forest conservation, stressing among other things that the major problems of the Reforestation Administration in carrying out its functions are largely lack of financial aid, public apathy, as well as political interference in forestry.

Highlighting the affair was a colorful tinnling number from the Reforestation Administration staff. A series of colored slides depicting the denuded areas in northern Luzon provinces, as well as in the island of Cebu, was shown by Dr. Floyd Carlson, a visiting professor of forestry information and education. He was assisted by Prof. Domingo V. Jacalne, a professor of silviculture in this college. This was followed by an open forum during which most of the questions were directed to Forester Cunanan and Dr. Floyd Carlson. Asked whether the Reforestation Administration could guarantee that the areas being reforested would not be destroyed by kalfgneros in the future, Forester Cunanan answered that he could not guarantee. Atty. Besinga gave the closing remarks in behalf of Atty. Salvador Cunanan, undersecretary for natural resources, who had an earlier engagement.

* * * *

THIS YEAR'S B.F. PENSIONADOS

By E. Cabote

The Bureau of Forestry sent fifteen new pensionados to the College of Forestry, University of the Philippines, at College, Laguna this school year. Seven of the pensionados were high school valedictorians and salutatorians, and

eight were recruited from the field personnel of the Bureau of Forestry.

Chosen pensionados who were high school valedictorians and salutatorians were the following: Naga P. Bolug of Marawi City, Lanao del Sur, salutatorian of Lanao School of Arts and Trades, president of senior class organization and most outstanding PMT cadet, 1961; Honesto A. Clemente of San Fernando, Masbate, valedictorian of San Fernando High School, president of San Fernando High School Student Body Organization and model student, 1961; Ely L. Francisco of Altavas, Aklan, salutatorian of Altavas High School, president of senior class organization, 1961 and received honors for being a model student during his four years study in the high school; Crisanto P. Pascua of Laoag, Ilocos Norte, valedictorian of Ilocos Norte High School, 1961; Cristituto P. Ripaldi of Tondo, Manila, valedictorian of Torres High School, president of Community Council, and auditor of Tondo Youth Council, 1961; Herminio B. Sambajon of Lucena, Quezon, salutatorian of Quezon Provincial High School, president of class organization, editor-in-chief of the "Coconut", a publication of the Quezon Provincial High School, PMT Battalion Commander, 1961; and Demetrio T. Torres Jr., of Batac, Ilocos Norte, second honorable mention of Batac Rural High School, 1961.

B.F. personnel chosen as pensionados this school year were: Juanito R. Ugalino, Forest Guard, District Headquarter, Bacolod City, with four years experience in administrative work; Jaime L. Albay, Forester, Asst. Lumber Inspector, District No. 16, and officer in Charge of Plaridel Timber Management Station; Rosalio B. Goze, Forester, District Headquarter, Masbate, ranger graduate, 1955, and six years experience in administrative work; Angel Mariano, Forester, Officer in Charge of Timber Management Station, Siloy, Zamboanga del Norte, ranger graduate 1955; Benvenido S. Paragas, Forester, Officer in Charge, Sta. Clara Sub Station, Basilan City, ranger graduate, 1955; Juan M. Perez, Scaler, Forest District No. 27, Roxas City, experienced in timber cruising, administrative, reforestation and land classification work, ranger graduate, 1958; Albert G. Picardo, Lumber Inspector, Forest District No. 41, Surigao, Surigao, ranger graduate, 1955; and Romeo S. Valdez, ranger graduate, 1954, Forester, and Officer in Charge of Pigcawayan Timber Management Station, Cotabato from 1956 up to the time when he was selected as pensionado.

The high school valedictorians were selected by a scholarship committee of the Bureau of

Forestry, on the basis of high scholastic records and outstanding leadership. On the other hand the BF personnel selected as pensionados were chosen on the basis of their efficiency in the field service aside from their good scholastic record in their ranger course.

Presently the total number of pensionados sent by the Bureau of Forestry to this College is forty-four, including the batch of pensionados during the preceding years.

* * * *

SFBO ELECTS OFFICERS

By I. V. Barongan

Romeo S. Valdez was elected president of the student body organization last July 5, 1961 over his close rival. Elected with him were Gil Urgino, vice president; Dominador Alonzo, secretary; Neptale Zabala, treasurer; Gregorio P. Principe, PRO; Honorio Cariño, auditor; Pepe Munez, athletic manager; Antonio Lizardo, representative to the Student Union; and Vic Dotimas and Antonio Glori, sergeant-at-arms. Messrs. Valdez, Munez and Dotimas ran under the Students' Party, while the rest were under the Duty Above All Party banner. Mr. Napoleon Vergara, the Adviser of the student body last year, was again appointed as adviser.

A week before the elections, the candidates were formally presented to the student body, at a rally during which they spoke on their platforms. Like veteran politicians the candidates went on a house-to-house campaign using all the vote-getting tactics under the sun. Cigarettes and candies were passed around.

There was a battle of multicolored billboards. Colorful posters bearing the line-up of the rival parties were strung across the College road. Followers of both parties wore shirts bearing the names of their respective candidates.

On the day of the election, something novel in election campaign was ushered by the active participation of coeds from the U.P. College of Agriculture.

* * * *

SCHOLASTIC DELINQUENCY REPORT

By D. Del Rosario

One hundred five students out of three hundred twenty five enrolled in this College last semester were delinquents in their studies according to the Secretary's Office. Of these delinquents, a total of fifty students or 15.6 percent fall under the "warning" category; thirty-

eight or 11.8 percent under "probation"; thirty-two or 10.0 percent under "dismissal" and fifteen or 4.7 percent under "permanent disqualification".

Falling under the warning category are students who at the end of the semester obtained grades below "3" in 25 to 49 percent of the total number of academic units for which they were registered. Probation-students who at the end of the semester got grades below "3" in 50 to 75 percent in the total number of academic units for which they were registered; dismissal-students who at the end of the semester got grades below "3" in at least 76 percent of the total number of academic units for which they were registered; and permanent disqualification-students who at the end of the semester obtained grades below "3" in 100 percent of the total academic units in which they were registered. The delinquency categories are still based on the old rule which states that a grade of "4" is conditional, and a student has either to remove it or repeat the subject. Under the Revised University Code, a grade of "4" is considered a low pass.

* * * *

COLLEGE ENROLLMENT

By D. Del Rosario

A total of 397 students marks this semester's enrollment, according to Prof. Caesar Recto, the College Secretary. This is bigger by 76 over last semester's enrollment. (Second semester '60-61)

The enrollment breakdown is as follows: New freshmen, 141; old freshmen, 40; sophomores, 104; juniors, 45; and seniors, 46; graduate students, 8; cross registrants, 12; and special student, 1. There are two foreign students enrolled, Peter Nathan, an American, and Hinchiranan Sompol, a Siamese. Mr. Nathan is taking special studies in Wood Technology and Lumbering under Mr. Lucio Quimbo and Prof. Agustin Pascua respectively, while Mr. Sompol is finishing his BSF degree. Among the students enrolled are three coeds; a sophomore and two freshmen registered under the Forest Products Curriculum.

* * * *

MAKILING LITERARY CLUB

By D. Del Rosario

The Makiling Literary Club elected its officers for the school year 1961-62, recently. The newly elected officers were Romeo Valdez, pres-

ident; Edmundo V. Cortez, vice president; Dominador Del Rosario, secretary; Rosalio Goze, treasurer; Gregorio P. Principe, auditor; Elpidio Cabote, business manager; Pepe Muñoz, pro; and Angel Mariano, representative to the SBO. Prof. Jose B. Blando is the adviser. They will be inducted at a convocation program sometime in August, with Prof. Carlos Barrios of the COSECA as the guest speaker.

At a special meeting held recently the club planned to sponsor movie shows to raise funds for the publication of a newsletter to foster closer relationship between the alumni, the faculty and the students.

* * * *

HONOR FRATERNITY ELECTS OFFICERS

By D. Del Rosario

The ZETA BETA RHO, exclusive fraternity of the College of Forestry recently held its elections in the botany room.

Elected dignitaries for the school year 1961-62 are: Supreme Fellow-Francisco Lozano; Vice Supreme Fellow-Petronilo Muñoz; Fellow Scribe-Jorge Segueria; Fellow Bursar-Guillermo Valena; Charge 'De Affaire-Claudio Guerrero; Fellow Herald-Dominador Del Rosario; Fiscalizer-Rosalio B. Goze and Fellow Whips-Al-Rashid Ishmael and Victor Dotimas Jr.

There were ten forestry boys who successfully qualified for membership in the fraternity after undergoing the final initiation on July 14, 1961. Two of them Virgilio Fernandez of Pangasinan and Rogelio Dela Rosa of Ilocos Sur, were college and university scholars during the first semester respectively. The other eight successful members were: Pedro Calixto, Canon Castillo, Antonio Federizo, Oscar Gendrano, Antonio Glori, Lope Reyes, Gerundio Petilos, and Antonio Principe. Almost all these new members are under the Bureau of Forestry Study Grant. Added to this year's Rhoads are three old returning members sent to this College as pensionados by the Bureau of Forestry.

The frat chose Miss Ester Vergara as the muse and Dr. A. Manza, a rhoan brod, as the adviser. The new members will be inducted at a pinning ceremony and ball to be held at the International House sometime in September.

* * * *

FORESTRY VOLLEYBALL TEAM WINS INITIAL ENGAGEMENT

By P. Munez

The College of Forestry Volleyball Team this year vanquished the sophomore team of the U.P.

College of Agriculture in their initial engagement on July 28, in the Baker Hall to the tune of 21-12, 19-21, 21-12.

In the first set, a one sided game, the forestry orioles with Macaraeg and Peria as netters easily outpointed the sophies 21 to 12. However in the second set the sophies with unexpected aggressiveness and power turned the tables on the lumberjacks, winning the set on a 21 to 19 count.

Then came the third and last set. Coach Edilberto Cajucom fielded Del Rosario to the net in place of Peria who was assigned as second lineman. Determined to win the game, Del Rosario and Macaraeg alternately punished the Sophies mercilessly with their "kills" winning the set and the game with the score of 21-12.

The forestry team was composed of Domie Del Rosario, Satie O. Macaraeg, George V. Peria, and Nic P. Fuerte. Stoppers Ric D. Zapatero, Emmy T. Hilario, Sil C. Cruz, Molly Valena, Lito G. Rosales, Beato O. Felias, Doming M. Lopez and Mar. Z. Cajucom.

* * * *

GOLDIES SUBDUE JUNIORS

By Molly Valeña

The college of Forestry's Glowing Goldies wave, rose, subsided, then rose again to drown the stubborn Aggie Juniors, 67 to 64, virtually clinching the championship of the UP Los Baños Basketball Intrams.

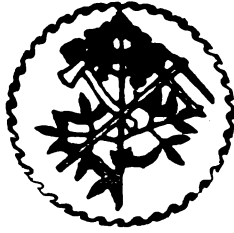
It was the timely blasts of Manny Hilario that saved the day for the Goldies. He ironed out 4 points in a row that virtually broke down the back of the Tractor men.

The Baker Hall crowd, composed of the students and faculty of the two colleges, time and again, booed the referees for bad calls.

The Juniors, started fast and accurately, practically dominating the rebounds and with Atos and Lejano going on a shooting spree, halftime score was 27 to 32, the Juniors taking the lead.

Fiery exchanges of shots followed on the resumption of the 2nd half. With Dy and Valena battling the Junior guards and Reboton and Segueria scoring, the Junior's lead was clipped to 2 points.

Coach Rola, who used only 9 of his players, sent back Hilario who was nursing 4 fouls. The move paid off as Segueria and Hilario broke
(Continued on page 73)



SEREVO MESSAGE

This year's Arbor Week significantly coincides with Rizal Centennial celebration. The first is about trees. The second is about a man. Trees are the most versatile of the natural resources. Rizal, our national hero, was a versatile genius. The services of both have a common denominator — people.

If Rizal were alive today he would probably lament over the fact that the present generation has been committing abuses against the forests and trees. Rizal was a lover of nature. In fact in most of his poems, he described things beautiful around him. The many places that had attracted him could have not been beautiful if there were no trees.

Let therefore, this year's Arbor Week be the start for every living Filipino to regard the trees along the Rizalian way. Uphold the good and fight the evil. This is the Rizal spirit. This is the spirit that we must have if we are to pass on the succeeding generations forests that they can profitably make use of. Let us conserve our forests properly. Let us utilize them wisely. Let us protect them against those who would destroy them. All of these we must do for the sake of those who are coming after us.

Like Rizal, we must tell the truth about our forests: The benefits we derive from the forests and the tragedies that follow without the forests. Rizal did his best to focus the eyes of the world on the foreign tyranny in his country during his time. Let us do our best to impress on those who are not yet impressed the necessity of forest conservation and protection.

TIBURCIO S. SEREVO
Acting Director of Forestry

* * *

SULIT MESSAGE

The nation celebrates this year's Arbor Week amidst the national observance of Dr. Rizal centenary year.

Aside from the two national occasions, we also celebrate Independence Day this July. These three occasions issue a call to every Fi-

lipino to do something very positive in order to lend substance to their respective significations.

The independence Day is the glorious culmination of the Filipinos' fight for freedom. Dr. Jose P. Rizal set afire the torch of liberty that still burns today. In the recollection of the heroic exploits of our forefathers, the role played by our forests has not seen much print.

The Katipuneros established their bulwarks in the forests. Their crude weapons were hastily fashioned out of the raw materials in the forests. The towering trees provided them convenient look-out stations. The timber in the forests enabled them to build their homes. The fruit trees in the forests supplemented their food supply. The fresh water cascading from the forested mountains quenched their thirst.

Even during the last World War, the forests afforded safe sanctuaries to the guerrillas. Our forests are forever useful. Yesterday. Today. And Tomorrow. But as to how much useful our forests can remain depends upon us. We must conserve our forests for posterity. The time to start is during this year's Arbor Week. And there is no time to stop.

(Sgd.) **CARLOS SULIT**
Assistant Director of Forestry

* * * *

THE GOVERNMENT FORESTRY AGENCIES

By Atty. **AMADOR J. EVANGELISTA**
PRO, Bureau of Forestry

There are actually three government agencies that are directly engaged in the task of overseeing the country's still vast forest resources. The forest is a part of the national patrimony. This being a democratic country, the people, in the ultimate analysis, are the true owners of the forest wealth. But the essence of the democratic representation type of government is such that the people must be represented in the management of public affairs by a group of persons chosen by them in a free election. For the people at large to directly run the government would be utterly chaotic.

The people own the forests. However, the state administers the forests for and in behalf of the people. It regulates their enjoyment so that the people may continue enjoying the benefits of the forests for as long a time as possible.

The three government agencies that have to do with the administration of our forests are the Bureau of Forestry, the Parks and Wildlife Office and the Reforestation Administration. These three have different sets of objectives and functions. But they have a common subject—the forests.

Of the three, the Bureau of Forestry is the oldest. In fact, it was one of the first government bureaus to be organized during the Spanish regime. The other two sprung from the Bureau of Forestry. The Parks and Wildlife Office was a section and the Reforestation Administration was a division in the Bureau of Forestry. Of the two, the Reforestation Administration was the latest to be created.

One school of thought believes that the breaking up of the Bureau of Forestry into several distinct offices is a governmental super-extravagance. They say that the solution to forestry problems does not lie in the creation of additional offices which will merely add to the already mounting cost of running the government.

Was the separation of the Parks and Wildlife Office and the Reforestation Administration from the Bureau of Forestry a wise move? It is believed that the move was not only wise but also a necessity. Many people have been sold to the idea that creating a new government office is generally inspired by political motives. May be this is true. And may be not. But one thing is certain: The creation of the Parks and Wildlife Office and the Reforestation Administration was dictated by public interest.

The administration and preservation of national parks, including game and wildlife, and the reforestation of barren areas are jobs that require full concentration. Realizing that the Bureau of Forestry was already over-burdened with multiple tasks, Congress decided to create two separate agencies to take charge of national parks and reforestation.

The fear that there might be overlapping of functions is not justifiable so long as the forestry agencies concerned do not step out of bounds within which they are respectively assigned and coordination in the realization of their goals is not broken by jealousy. Each has a well-defined set of objectives.

The Bureau of Forestry is primarily concerned with the regulation of the utilization of forest resources and the conservation and protection of the remaining public forests. The Parks and Wildlife Office is charged with the maintenance and preservation of national parks and the protection of wildlife. The Reforestation Administration takes charge of the restoration of forest cover to denuded areas. The question of overlapping, therefore, can hardly arise.

There are still other two government institutions that have to do with forests. The Forest Products Research Institute at Los Baños, Laguna, is engaged in the study and investigation of means and ways of improving the utility of the various products of the forests. The Institute is a descendant of the Forest Investigation Division and the Forest Products Laboratory of the Bureau of Forestry.

The other institution is concerned with men. The College of Forestry of the University of the Philippines at Los Baños, Laguna, provides the bulk of technical men constantly needed by the Bureau of Forestry, Reforestation Administration, Parks and Wildlife Office and the Forest Products Research Institute. The only one of its kind in the country, the College offers a two-year ranger course and a four-year course leading to the degree of Bachelor of Science in Forestry.

These then are the government institutions who look after the country's forest wealth in different ways. But there is one institution which is over and above these forestry agencies. That institution is made up of the people. Without the cooperation of the general public, the government forest agencies are doomed to failure.

* * * *

Republic of the Philippines
Department of Agriculture and
Natural Resources
Office of the Secretary, Diliman, Quezon City
General Memorandum Order No. 6

July 25, 1961

RELEASE OF INFORMATION MATERIALS
INVOLVING POLICIES OR ACTIVITIES OF
THE DANR.

This is to call the attention of all the Bureaus, Offices, and Government-owned or controlled Corporations within the Department of Agriculture and Natural Resources to standing

D-1, Arbor Week

September 6, 1961

The Director Forestry
Manila

Sir :

I have the honor to submit hereunder my report in our participation during the Arbor Week Celebration which took place on July 23 to 29, 1961 pursuant to Presidential Proclamation No. 129.

The celebration was undertaken under the auspices of the DANREAIN (Department of Agriculture and Natural Resources Employees Association in Ilocos Norte). This year's Arbor Week celebration was chairmanned by the Reforestation Administration but this Office fully cooperated in every way possible to make the celebration a huge success. The pick-up was used to transport the seedlings from Tangaoan Nursery to Laoag for distribution to the different schools, civic organizations, government and private entities and to private individuals who were very much interested in the planting of trees. In other words this Bureau served as the vehicle to transmit requests for forest tree seedlings to the two reforestation projects not knowing the creation of the Reforestation Administration, a separate and independent entity, now solely in charge of reforestation work and the raising of seedlings for cooperative planting. In view of the distance, the two Foresters in Charge of the two reforestation projects could not attend personally to prepare the groundwork for the program during the culmination day and so the job had to be delegated to Forester Florencio B. Mina who consolidated the numbers and the printing of the program and in preparing the Rizal Park for holding the program. The Forester in Charge of Paraiso Reforestation Project took active part in the celebration by furnishing the seedlings, balled trees and labor in the planting and maintenance of the seedlings while awaiting planting. The Bureau of Agricultural Extension furnished the loud speaker and music. The Bureau of Agricultural Extension, the Ilocos Norte Normal School Ilocos Norte High School and Ilocos Norte Schools of Arts and Trades furnished the literally-musical numbers.

Enclosed are copies of the program. The culmination day was supposed to have taken place on July 28 but due to the heavy down-pour, it was postponed to August 1st. The guest speaker was no other than the Provincial Governor whose interest in reforestation work

directives that information materials involving activities of the different Bureaus, Offices, and Government-owned or controlled Corporations within this Department should not be released to the press without being coordinated by, and cleared through, the Agricultural Information Division of this Office, and that those involving policies should not be released without the prior written approval of the Secretary of Agriculture and Natural Resources.

The attention of this Office, however, has been called to several news items recently published in several dailies released by officials and employees of the different Bureaus, Offices, and Government-owned or controlled Corporations within this Department which were neither cleared through this Office nor previously approved by the Secretary.

This is a gross violation of the aforesaid directives which are found in General Memorandum Order No. 85, dated September 29, 1955.

Needless to state that these unauthorized news items placed this Department in embarrassing situation, particularly those releases which happened to be in conflict with the news items released by this Office.

In order, therefore, to forestall embarrassment in the future on the part of this Department and in order to coordinate all press releases to avoid conflicting news items, it is hereby directed:

1. That no information or press release involving policies or activities of the different Bureaus, Offices and Corporations within this Department should be released without being cleared through the Agricultural Information division and without the prior written approval of the Secretary of Agriculture and Natural Resources; and

2. That, hereafter, Bureau Directors, Chiefs of Offices and General Managers of Government-owned or controlled Corporations within this Department should observe strictly all the provisions of General Memorandum Order No. 85, dated September 29, 1955.

Violation of this General Memorandum Order shall subject the party concerned to drastic administrative action.

This General Memorandum Order shall take effect immediately.

SGD. CESAR M. FORTICH
Secretary of Agriculture and
Natural Resources

A true copy:
7-27-61/chq.

is never faltering as evidenced by his active participation and bold program of massive planting to save the province from further denudation and to restore forest growth in the headwaters of springs, rivers and creeks. Together with Congressman Antonio V. Raquiza, the pet and pilot project is the Operation Reforestation Sumiling. The Sumiling Springs will furnish the water supply of Sarrat and barrios. Already, the water system is under installation. A program of reforestation in the Province is in the offing. It is the plan to plant trees by zone along the Laoag River and the Vintar River.

A new find as a tourist attraction is a cave in Sapat that could be transformed into a tourist spot by making it evergreen to favorably compare with other tourist attraction in the world if fully developed. Congressman Raquiza has beautiful plans to realize his dreams to make this cave a beautiful spot. In fact, a personnel from the Paraiso Reforestation Project is already in Sapat, temporarily, to supervise the raising of seedlings to reforest Sapat. It was the concensus of opinion that it would be cheaper to raise the seedlings right in the place rather than transporting the seedlings from Tangaoan.

After the program, memorial tree planting was done led by the Provincial Governor and Vice-Governor.

Enclosed are copies of pictures taken during the program.

Below is a list of the seedlings distributed during Arbor Week:

Narra	2,361
Mahogany	1,950
Fire Tree	112
Teak	60
Agoho	20
Bunga de China	2
TOTAL	4,505

Aside from the above, there were some 50 balled trees of Narra and Mahogany planted in the Rizal Park.

Very truly yours,

BERNABE S.H. ZUMEL
District Forester

Encls.:
Fbm/oa

COPY PURNISHED:

The Administrator, Reforestation Administration, Diliman, Quezon City

Forester in Charge, Paraiso Reforestation Project, Tangaoan, Piddig, Ilocos Norte
The Provincial Governor, Laoag, Ilocos Norte

* * * *

INCREASE FORESTRY REVENUE

AMADOR J. EVANGELISTA
Acting Chief, Forestry Information Section

Forestry revenue collection increased over ₱5 million this year despite the present lagging state of lumber business as compared to previous years, reported chief accountant Antonio A. Quejado of forestry bureau.

In his 5-year plan report to the acting director Tiburcio S. Serevo of forestry, the accountant chief cited the increase in miscellaneous income (general fund), reforestation fees and forest charges. Collection this year is ₱17,775,918.83 compared to last year's ₱12,454,101.32. He said increase of forestry income was realized through the combined extensive effort of the PCAPE and the systematic procedures on collection observed by the forestry accounting division.

However, Quejado deplored the shortage of personnel but assured the forestry head that forestry revenue collection can be more increased if technical men assigned to do the job will be increased.

Lumber business today is not prosperous as compared to previous years both in domestic and foreign trade, but with systematic procedures, increase in forestry revenue collection is expected, Quejado indicated.-acg,jr.

* * *

CLAVERIA STRESSES FOREST CONSERVATION

By G. P. Principe

Regional Forestry Director Jose O. Claveria stressed forest conservation in his speech over radio station DXJW, Zamboanga City on July 22, 1961.

The occasion was his assumption of office as Acting Regional Director of Region No. 7, and in connection with the 1961 Arbor Week celebration. Region No. 7 comprises the provinces of Occidental Misamis, Lanao del Norte, Zamboanga del Norte, Zamboanga del Sur, Sulu Archipelago, Ozamis City, Iligan City, Marawi City, and Zamboanga City. This region has a total forested area of about 1,507,445 hectares with an estimated forest wealth of ₱150,000,000.00 in standing timber.

Claveria said that when Reorganization Plan 30-A would have been fully implemented, the Regional Office would function with an Assistant Regional Director, and 7 staff officers to represent the divisions of the Bureau of Forestry, namely: Domain Use, Land Use, Forest Management, Administrative Services, Forest Research, Sawmills and Licenses, and Accounting. It will function thru the different Forest Districts and Administrative, Scaling and Management Stations located strategically within the Region.

He said further that cases which could be decided by the Regional Director would be finally acted upon in the Regional Office, thus the backlog and red-tape of centralized administration in Manila will be minimized.

A part of Claveria's speech, which dealt with the 1961 Arbor Week Celebration is as follows:

"It is indeed incumbent upon each full blooded filipino, patriotic enough to be able to see and feel seriously concerned with the bold writings in the wall that conserving our Natural Resources—the forest especially—is the pressing problem of the time which needs everybody's support.

"The days have certainly gone when we complacently think that we have vast, fabulous, magnificent and inexhaustible forest. For according to statistics we are far below the world's average of per capita forest cover of 1.6 hectares because our per capita forest cover of 0.56 hectare is alarmingly low. We belong to the eight lowest countries with Pakistan's 0.04 hectare as the lowest. Perhaps the above superlatives describing the conditions of our forest were true when Manila was merely under a barrio category and the Filipino people did not so rapidly multiply that populous communities mushroomed in all habitable nooks and corners of the country. Certainly the advent of wood using industries and the accelerated needs of the people for wood materials and the nefarious activities of the ply-by-night loggers enhanced, one way or another, the wanton destruction of our forest wealth, which destruction was noted by a famous American forest authority, Mr. Tom Gill, when he said "You are destroying your forest faster than any country in the world". Added to these factors of decimating our forest is the unabatted destructive activities of the squatter-kaiñgineros, which is the single factor in bringing about no less than 5,000,000 hectares of unproductive and denuded cogonal areas today.

"It is needless to speak here about the sad and bitter sufferings and experiences of people in countries devoid of forest like Africa, China, India, Pakistan, Mexico, to mention only a few. Right here in our own country we are actually experiencing the devastating ravages of floods in Central Luzon and the shortage of water to run our hydroelectric plants. The recurrent burnouts in the big cities of Manila, Quezon and Pasay are the results of low water pressure in the Ambuklao and Binga power plants. Also in our own water system in the "City of Flowers", only a slight rain in the area makes the water muddy. This is all the result of denuded conditions of the watersheds that feed these power plants and the local water system in Zamboanga City. All these occurrences are bold warnings of the dangers ahead should we continue to feel indifferent to the Government forest conservation policies.

"It is a well known fact too that forest keeps the equilibrium of nature for any successful venture in Agriculture. And because the economy of the country is purely agriculture, it being the main source of the national income and from statistics about 2/3 of the gainfully employed Filipinos derive their income therefrom, a layman can readily see or imagine the magnitude and tremendous influence of the forest to agriculture. For if the forest is removed the ideal pattern of rainfall is disturbed and so with water supply which is the lifeblood of agriculture. The 5.7 million hectares of agricultural land, distributed to about 1.6 million farms averaging 3.19 hectares per farm will certainly become water thirsty and unproductive land if the equilibrium of nature is disturbed by unabatted forest destruction.

"So you now can see very clearly that one of the pressing needs of the country today is "Forest Conservation". And this is not merely the concern of a handful Filipino, the foresters and other equally responsible officials from the President down, but also of every civic minded and patriotic citizen. No one can successfully detach himself from the beneficial influence of forest because even the society matrons, the funseekers and big business executives, in our big populous cities suffer the inconveniences occasioned by the lack of electric power and adequate water supply. No one can say that he is very far from the forest and therefore, he is not interested. But whether we know it or not the forest continue to benefit us, in one form or another, in our daily life. This is the reason why, this year's theme of Arbor Week is that "Forest Conservation is a National Dedic-

tion". Forest protection is an essential requisite to forest conservation. This is the big problem of the country today. It behooves every Juan dela Cruz, therefore, to make himself be seriously concern with this problem and help solve it.

"It is, therefore, my fervent hopes and ardent wish that during this Arbor Week, from July 23-29, 1961, on top of our multifarious activities and seemingly unending obligations both at home and in our respective professions and callings, we should pause and ponder a while to consider the fact that trees, either forest trees or ornamental and fruit trees, are our silent friends and uncomplaining benefactors. So that we should dedicate and spare even just a little time to plant trees, maybe in our farms, in our school grounds, plazas or in our offices and back yards. Above all, let us be forest conscious not only during arbor week, but throughout the year. All the members of the DANREA (Department of Agriculture and Natural Resources Employees Association) will render to you all the necessary assistance and material help that you may need. Let us, every citizen, the old and the young, rich and poor, the lowly and the highly placed officials, work hand in hand to make this year's Arbor Week observance a success."

I THANK YOU.

"OPERATION RESEARCH"

By Amador J. Evangelista

BF:PR:013:61

Sept. 12, 1961

Acting director Tiburcio S. Serevo of forestry endorsed "Operation Research" and promised technical assistance to municipal officials of Tuba, Benguet, Mt. Province.

Tuba municipal council unanimously approved a resolution launching a project dubbed "Operation Research" aimed at conducting mass analysis of soils to determine the right variety of fruit trees adaptable to climate and soil condition and to undertake fullscale reforestation of denuded areas within municipal jurisdiction.

With an outlay of ₱20,000, the project will increase family income because of expected increase in fruits production and will spark cooperation from kapiñgineros to protect and conserve forest products from destruction.

In a letter sent to Tuba officials, the forestry head commended their leadership and hoped other municipalities to launch similar projects.

Please feel free to call the Baguio City district forester or this office for whatever technical assistance we can extend to you in the proper implementation of the project, Serevo wrote. — acg, jr.

JUST TRY IT FOR SIZE

A Sunday school teacher had been telling a class of little boys about crowns of glory and heavenly reward for good people.

"Now tell me," she said at the close of the lesson, "who will get the biggest crown?"

There was silence for a while, then Johnnie, the hatter's son, answered confidently: "The one that's got the biggest head."

— THOMAS DREIER

Compliments of:

FORMOSO LUMBER
VDA. E. HIJOS DE G. FORMOSO
INC.

Salcedo Street, Vigan, Ilocos Sur
Dealer of all kinds of building Materials
SIMEON FORMOSO
Manager

Compliments of:

TAN HAY LUMBER
Vigan, Ilocos Sur

Dealer of all kinds of Materials

TAN HAY
Manager

FPRI HIGHLIGHTS

By ULPIANO S. DE LEON

MANY EVENTS have transpired in the Forest Products Research Institute since the last issue of this magazine came out. For this reason, it took us a little time picking out the subjects we are featuring in this issue.

WOOD USERS RECEIVE BONUSES FROM FPRI

Local pulp and paper producers and other wood using industries received bonuses recently from the Forest Products Research Institute.

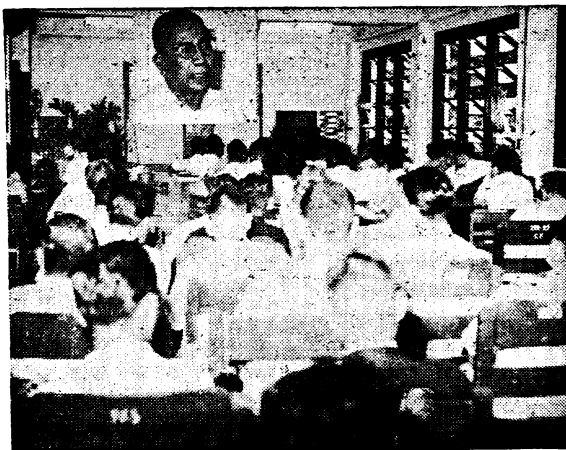
These bonuses were in the form of technical information presented in the papers that were read in the symposium on "Pulp and Paper and Other Phases of Wood Utilization," which was conducted by the Forest Products Research Institute as the main feature of its fourth anniversary celebration on July 5 this year.

In this symposium five important papers carrying useful information on the subjects discussed, which were prepared by senior members of the Institute's technical staff, were read. Copies of these papers were bound in book form and distributed to the participants and to interested parties concerned.

The titles of the papers and their authors who read them were:

1. Pulp and Paper From Wood Wastes, Wood Residues, and Weed Species, by Asst. Director Manuel R. Monsalud.
2. Fiber Dimensions of Some Philippine Fibrous Materials, by Dr. Francisco N. Tamolang, chief, Wood Technology Division.
3. Important Sources and Uses of Tanbarks and Tannin Extracts, by Mrs. Esther V. Gonzales, senior forest products technologist.
4. Charcoal Production and Briquetting, by Engineer Pancracio V. Bawagan, senior forest products technologist.
5. The Utilization of Weed Species and Wood Waste, by Forester Dominador Faustino, chief, Industrial Investigations Division.

About 200 persons participated in the symposium. Most of them were representatives of pulp and paper companies, veneer and plywood plants, manufacturers of secondary wood products, and lumber producers, besides the members of the Forest Products Research Board and high ranking officials of the ICA, NEC,



FPRI Director Cruz addressing anniversary symposium.

U.P. Diliman, and faculty members and students of the Colleges of Agriculture and Forestry, U.P.

The symposium was opened by FPRI Director Eugenio de la Cruz, who also headed the panel that answered the questions raised by the participants.

A luncheon meeting following the symposium was held at the International House, at which Dr. Alexander A. Adamson, president and general manager of the Philippine Paper Mills and 1st vice president of the PULPAPEL, was the guest speaker.

Meanwhile, it was learned from Director de la Cruz that another symposium, entitled "Forest Conservation with Emphasis on Wood Utilization" will be conducted by the Institute by the last week of November.

He mentioned that the "November Affair," which is now being planned, is prompted not only by the clamour of wood users, especially those who attended the recent symposium, but also by the nation-wide campaign on forest conservation.

Besides wood-using industries, all government forest agencies will be invited to participate actively in the affair. The details will be announced later.

* * * *

NEW CONSULTANTS

The Institute has received a substantial shot in the arm with the recent arrival of two American experts.

Serving under the FAO of the United Nations, the two experts are on a year's assignment as consultants to the Institute. They are Professor Lee W. Crandall and Mr. Earl R. Schafer.

Professor Crandall, who is a timber engineering expert, is a civil engineer. He finished his B.S. and M.S. degrees at the University of Wisconsin and his Ph.D. from Stanford University in California.

Until his assignment to the FPRI, he was a professor at the University of Wisconsin teaching for over 13 years about 20 different subjects which included among others, timber design, arches, engineering economy, and plastic steel design.

While teaching at the University of Wisconsin, Professor Crandall was also a consulting engineer for several insurance companies and lawyers. He was also a trouble shooter for over half a dozen laminating companies.

Mr. Schafer is a consultant on pulp and paper. Until his retirement in May 1961, he was chief of the groundwood pulping section of the U.S. Forest Products Laboratory in Madison, Wisconsin.

He was born in Indiana, where he also received his early education. He obtained his bachelor's degree in chemical engineering at the Ohio State University in 1917 and after his graduation worked for a while in a soap manufacturing company at Cincinnati.

Mr. Schafer joined the staff of U.S. Forest Products Laboratory in 1921. For several years he conducted studies on pulping fibrous agricultural wastes. After that he was assigned to the studies on groundwood and chemi-groundwood pulping.

Shortly after their arrival, a welcome party was given in their honor (including their families) by the staff of the FPRI headed by Director Eugenio de la Cruz.

Meanwhile it was learned from FPRI Asst. Director Manuel R. Monsalud that the two FAO consultants were recently honored by the Pulp and Paper Manufacturers' Association at a luncheon at Eastern House, Montinola Building on Padre Faura, Manila following a tour of visit to the Eastern Paper Mills in Marikina, and the New Globe Paper Mills in Malabon, Rizal. They were accompanied by Asst. Director Monsalud.

* * * *

TRIO TO ATTEND 10th PACIFIC SCIENCE CONGRESS

FPRI Director Eugenio de la Cruz and two other high-ranking officials of the Institute will

attend the Tenth Pacific Science Congress that will be held from August 21 to August 31 this year in Honolulu, Hawaii.

The other members of the trio are Dr. Francisco N. Tamolang and Engineer Simplicio B. Bellosillo, who at this writing is still in the U.S. where he satisfactorily earned his master's degree recently from the University of Wisconsin.

All of them will present scientific papers at this international scientific conference. Director de la Cruz will read his paper entitled, "The Research Program of the Philippine Forest Products Research Institute in Relation to Product Development", while Dr. Tamolang will present a joint-authored paper, "Pulp and Paper Research at the Philippine Forest Products Research Institute" with Asst. Director Monsalud as the other author. Dr. Tamolang will also read the paper of Dr. Felipe M. Salvosa on "Common Names of Philippine Indigenous Plants."

Engineer Bellosillo's paper is entitled, "Selecting and Testing Important Species—The Starting Point in Structural Wood Utilization." He will proceed from the U.S. to Honolulu where he will meet Director de la Cruz and Dr. Tamolang.

* * * *

WILL SOON BE BACK HOME WITH THE BEACON

Three senior members of the Institute's technical staff are expected to be back home soon after finishing their studies abroad.

Mr. Agustin Ramos, Jr., a senior forest products technologist of the Timber Physics and Engineering Division, is scheduled to arrive in October from the University of Wisconsin where he has been working on his Ph.D. degree.

Mr. Ramos left on a year's ICA scholarship in 1959 to work for an MS at the University of Wisconsin, which he completed in 1960. Afterwards, on his own, he pursued a Ph.D. degree and expects to complete it in February, 1962. He specialized in timber design under Professor L. W. Crandall.

Forester Rodrigo R. Valbuena is expected to arrive anytime these weeks with an MS affixed to his name, which he earned with distinction from the Yale University.

From reliable sources, it was learned that "Master" Valbuena was designated by the Dean of the graduate school as student marshall, a distinction given only to the most outstanding student. Designated as such, the new *master* re-

presented the other graduates and received for them their diplomas from the president of the University.

He specialized in wood anatomy on an ICA training grant for one year.

Chief Simplicio B. Bellosillo of the Timber Physics and Engineering Division will be back home early next month with an MS from the University of Wisconsin. Like Valbucna, his study was sponsored by the ICA training program. He specialized in wood containers.

Meanwhile it was announced by Director de la Cruz that Salvador Fanega, a junior forest products technologist of the Chemical Investigations Division, is leaving soon for the U.S.

Fanega, who is a chemist, will work for his master's degree on an ICA training grant for one year at the University of Wisconsin. He will specialize in organic chemistry, wood distillation, and charcoal activation.

It was also learned from Director de la Cruz that Reynaldo A. Adriano of the Industrial Investigations Division flew recently to the U.S.

Adriano is a chemical engineer and will undergo specialized training on veneer cutting and plywood gluing at the U.S. Forest Products Laboratory in Madison, Wisconsin. His training is sponsored by the FAO of the United Nations.

* * * *

PROGRESS REPORTS

Four progress reports presenting the results of investigations on four phases of the Institute's research projects were approved in July

by Director Eugenio de la Cruz. They are briefly discussed below:

1. "Progress Report on the Occurrence of Silica in Philippine Woods, Meliaceae," by Jose A. Meniado, Arsenio L. Toñgacan, and Jose Acain. It indicates that out of the 71 species investigated, 11 were found to be siliceous.

2. "Progress Report on the Study of Brash Center or Brittle Heart in Philippine Woods, Dipterocarpaceae," by Arsenio L. Toñgacan and G. O. Turgo. Malaanonang, malapanao, and manggasinoro were investigated using three test methods: hand lens, knife, wood splinter. Results showed that all the three species had brash center within the central portion of the disc. Brash wood of these species was characterized by the presence of compression failures, broken fibers, and by low resistance to shock. Chemical analysis did not show substantial difference between the brash and sound woods of the species.

3. "Rotary Veneer Cutting of White Nato," by Romulo C. Eala and Ramon P. Saraos. Veneers of white nato cut in three thicknesses — 1/8, 1/16, and 1/32-inch showed somewhat satisfactory surface quality. However, deep lathe checks were found in 1/8 and 1/16-inch thick veneers.

4. "Identification of Philippine Woods and Some Plant Fibers by Their Morphological Characteristics and Reaction to Stains," by Emma A. Phillips, et al. Fifteen species including nine hardwoods, three bamboos and three agricultural plants were examined in their macerated form. It describes the methods used in the study and presents the characteristics and color reaction of each of the species included.

CAMPUS NOTES . . .

(Continued on page 64)

the tie and gave back the lead to the Foresters, 44 to 46.

However, Pesky Atos of the Juniors, who sank in a total of 28 points, leveled the score and then on a solo drive, gave back the lead to the Juniors.

Reboton took matters into his own hands and taking advantage of his height and poundage, erupted again and again on the shaded lane, but the Juniors fought back with even greater ferocity to score 54 to forestry's 50.

With still 5 minutes to go, Seguerra, the Goldies Captain was benched for his fifth misdemeanor followed by Hamada.

Dy heaved, Hilario scored on a screen by Cruz, and then Reboton followed up, tied the score at 61 all.

After a charity by Hamada, Hilario swished the cords for 4 points with 2 minutes to go and Koko Clemente's jump shot increased the lead to 66. Reboton, on another bad call by the referee, fouled Lejano who sank both awards, increased the juniors score to 64, only to be muffed by Hilario's throw on an infraction by Atos.

The score was 67-64 at whistle time.

Forestry		Juniors	
Reboton	17	Atos	28
Hilario	15	Lejano	12
Seguerra	12	Gorres	10
Dy	10	Mable	6
Hamada	8	Binco	4
Cruz	3	Janolino	4
Clemente	2	Raymundo	0
Valena	0	Janolino	0
Simbulan	0	Cuenco	0
	* * *		

THE SMOKER'S RALLY TRADITION

By R. dela Rosa

The Smoker's Rally is one of the most significant moments in the life of a freshman in the College of Forestry. It is very colorful tradition bequeathed to them by their predecessors which must be preserved for the future generation of young foresters. Such an occasion is a momentary happiness which signals the end of their freedom. For during the whole year round, they are tracked persistently by a posse of vigilantes who are always itchy to hit the trail as soon as violators make their way. The latter are armed with a pencil and a booklet ready to issue tickets to the wayward ones, entitling them the privilege to donate a fat sum to the SBO wallet.

This year's Smoker's Rally was held with colorful festivities. The new freshmen then are on the alert watching for the secret agents (especially those "victims" of last year's Gestapo). To evade apprehension is a simple matter. One way is to put on their woven native hats with red ribbons (a modified version of last year's) to preserve the beautiful tradition that distinguishes the College of Forestry Freshmen from the rest—a unique costume which catches any stranger's curious eyes. Another is to wear the prescribed nameplate, a way of acquainting themselves with their future brothers in the forestry profession. In a word, they must conform to the rules and regulations made clear to them in bold black and white letters, which they have sworn to obey. Otherwise they will be caught at bay by the cautious vigilantes.

As a tip to the Forestry neophytes the present Vigilance Committee is composed of the following: chairman: Antonio Glori; members: Virgilio Fernandez, Lope Reyes, Gerundio Petilos, Antonio Federizo, Rogelio M. de la Rosa, Antonio Principe, Oscar Gendrano, Pedro Calixto, and Cenon Castillo.

GOLDIES OUTBLAST SENIORS

By Molly Valeña

The Forestry Goldies, counting heavily on the steadiness of their old reliables, outslugged the Aggie Seniors 60 to 56 during the opening game which marked the start of hostilities of the Los Baños Basketball Intramural League at the Baker Memorial Hall last June 29.

The first five minutes of the game saw the Seniors take the driver's seat, as Coach Jess Rola of the Goldies kept juggling his men to find the right combination. It took the combo of Seguerra, Clemente, Reboton, Hilario and Dy to finally outhustle, outspeed, and outshoot the White-shirted Aggies.

At lemon time, the Foresters were leading by 10 points which reached 14 at the start of the 2nd half as the Seniors found it hard to stop the salvos of Hilario—the Goldies' shooting guard, and still harder to find their bearing with 5'11" Reboton blocking all their attempts at the basket.

The Seniors, with Princena and Mascariña converting from the outside with their long toms, came to within striking distance 50-51 with less than 4 minutes to go. Coach Rola had to send back Reboton and Seguerra to relieve Cruz and Hamada, visibly tired with their airtight defense against the barrage of the still fresh and aggressive Seniors.

The shift paid off as Hilario and Seguerra, and then Clemente, exchanged shot for shot with the Seniors' archers, with Reboton and Dy dominating the rebounds.

The league was formally opened by Dr. Artemio V. Manza, Acting Dean of the College of Forestry.

The Goldies who won the Championship last year, nursing badly the loss of most of the members of last year's team like Faustino, R. Clemente, Muñoz, Cayayan, Blando, Marquez, and Arroyo showed the same fighting spirit, speed and deadliness. Rookies like Dy, Hamada and Clemente played like veterans.

Forestry		Seniors	
Hilario	16	Princena	18
Reboton	13	Mascariñas	9
Seguerra	9	Orlanes	8
Clemente	8	de la Mar	7
Cruz	6	Torres	6
Valeña	3	Reyes	4
Hamada	2	de la Paz	3
Borja	2	Quinay	1
Gulmatico	1	Ascarraga	0
Dy	0		56
Alindayu	0		
Simbulan	0		
Cajucum	0		
	60		

FPRI Technical Notes

SHRINKAGE AND SWELLING OF WOOD IN SERVICE

Shrinking is the reduction in the size of wood as it loses moisture. Swelling, on the other hand, is characterized by the increase of the size of wood as it absorbs moisture from the air or other sources. Shrinking and swelling are inherent physical properties of wood. They may be of advantage in some cases but, in most instances, they are among the main causes of wood utilization problems and are undesirable.

Where green wood or freshly sawn lumber is exposed to the atmosphere, it begins to lose its moisture content. During this initial stage of drying, no shrinkage occurs. But, as drying progresses, a time will be reached when the moisture content of the lumber dries to a point called the fiber saturation point (f.s.p.)¹, which is commonly 25 to 30 percent moisture content. However, at the onset of drying, although the average moisture content of the whole piece of wood is still above the fiber saturation point, an appreciable amount of shrinkage already occurs because the surface readily tends to come to the equilibrium moisture content of the atmosphere, which is much below the f.s.p. The outer zones of the wood thus dry below the f.s.p. and tend to shrink even though the central zone is still green.

Fiber saturation point is a theoretical point at which all the free water, or water contained in the wood-cell cavities, has evaporated but none of the water that is bound within the walls of the cells or fibers. When this bound water escapes from the wood the thickness of the cell walls and the diameter of the cells are reduced. The aggregate of all the unit reductions in size of each cell down to a certain moisture level below the fiber saturation point is the total shrinkage of wood at that moisture content. This is proportional to the amount of moisture content removed from wood below its fiber saturation point. Drying and, therefore, shrinking, will continue until the moisture content reaches about 14 percent under Philippine normal atmospheric conditions. On the other hand, when wood absorbs moisture, it expands by about the same amount as its shrinkage when losing an equal amount of moisture.

¹ See Technical Note No. 3. "The Fiber Saturation Point of wood."

A piece of wood does not shrink nor swell equally in all directions. In most species the shrinkage in length (longitudinal shrinkage) is too small to be of practical importance, as it amounts to only a small fraction of one percent from green to oven-dry condition. The shrinkage parallel to the growth rings (tangential shrinkage) is generally about twice as much as the shrinkage perpendicular to them (radial shrinkage) for practically all species. The shrinkage occurring along the width of a plain-sawn or back-sawn or flat grain board is tangential shrinkage and shrinkage in its thickness is, for all practical purposes, radial shrinkage. The reverse is true for a quarter-sawn board. The average shrinkage values from green to 12 percent moisture content for a number of Philippine woods are given in the accompanying table.

The density of wood influences the extent of shrinkage and swelling. In general, although there are numerous exceptions, wood species of higher densities shrink and swell more than lighter ones. The extent to which wood shrinks or swells with a given change in moisture content varies widely, not only between woods of different species, but also between trees of the same species as well as between pieces in the same tree and even between parts of the same piece of lumber.

The loss of moisture from the different parts of a board also varies. Unless the drying is carefully done, the surfaces exposed to the air lose moisture much faster than the inner portions, or surfaces not exposed to the air, and begin to shrink sooner. Such differences in the rate of shrinkage may develop unequal stresses in the different portions of the board and cause checking, cupping, distortion and other seasoning defects of wood. These defects, which are closely bound with differences between radial and tangential shrinkage, are more prevalent in some species than in others. But when drying is properly done they can largely be minimized.

To minimize shrinking and swelling of wood in service, the following should be observed:

1. Before processing into finished products, wood should be dried evenly to the moisture content it will finally attain in service. This, of course, varies depending upon the particular requirements under which the lumber is to be used. Wood to be used in air conditioned rooms

may have different moisture requirements from that to be used elsewhere.

2. When possible, provide reasonable allowance for shrinking and swelling during construction and installation.

3. When weight and appearance are not important, use lighter woods having the required strength.

Use quarter sawn boards if the changes in dimensions across the woods must be minimized but in this way the shrinkage will be greater in thickness. If stability of thickness is more important than stability of width, use plain sawn boards. When lumber is not especially selected it will consist of a mixture of plain sawn, quarter sawn and various intermediate forms and such lumber is acceptable for all uses where there are no strict requirements for stability.

4. Application of several coatings of finishing materials or moisture retardants on all surfaces of the wood product will reduce the rate of shrinking or swelling and thus improve dimensional stability. Applying finish on the upper surfaces of table tops without applying the same finish to the lower surface is common practice but is less desirable than applying to

all surfaces. Under varying atmospheric conditions, especially during the rainy season, the lower surface, on which no finish has been applied, will absorb moisture more rapidly than the top surface. Therefore, the lower surface will swell more rapidly than the top surface which favors the cupping of the table top. Similarly, drying may be more rapid from an unfinished than from a finished surface under conditions favoring loss of moisture.

REFERENCES

1. Pentoney, R. 1953. Mechanism affecting tangential v.s. radial shrinkage. *For. Prod. Jour.* 3(2): 27-32.
2. Schniewind, A. P. 1959. Transverse anisotropy of wood: A function of gross anatomical structure. *For. Prod. Jour.* 9(10): 350-359.
3. Stamm, A. J. 1935. Shrinkage and swelling of wood. *Ind. and Eng. Chem.* 7(10): 401-406.
4. Stamm, A. J. and W. K. Loughborough. 1942. Variation in shrinkage and swelling of wood. Preprint of paper to be published in the 1942 Am. Soc. Mech. Engr.
5. Wangaard, F. F. 1959. What you should know about wood. *Canadian Woodworker.*

AVERAGE SHRINKAGE OF SOME COMMERCIAL SPECIES IN DRYING FROM GREEN CONDITION TO 12 PERCENT MOISTURE CONTENT.

Species	Tangential ¹		Radial ¹	
	Green to 12% M.C. (Percent)	Unit shrinkage Percent per percent M.C. loss	Green to 12% M.C. (Percent)	Unit shrinkage Percent per percent M.C. loss
Acacia	2.4	.20	1.1	.12
Almon	4.0	.28	1.3	.14
Apitong	7.2	.33	3.2	.20
Bagtikan	4.5	.27	1.9	.17
Binggas	4.8	.31	2.7	.22
Dagang	6.6	.31	2.4	.17
Dalingdingan	6.4	.35	2.6	.22
Dangkalan	5.8	.29	4.6	.25
Guijo	6.6	.36	2.8	.22
Himbabao	2.1	.20	1.1	.13
Kamagong	5.3	.34	3.3	.24
Lanutan, Vidal's	3.4	.26	2.0	.16
Lauan, red	4.4	.23	2.0	.17
Lauan, white	4.3	.26	1.9	.16
Mahogany	1.8	.21	1.6	.15
Malabayabas	6.2	.34	5.3	.33
Malugai, big leaved	6.3	.28	3.3	.20
Malugai, small leaved	7.1	.29	4.0	.22
Manggasinoro	3.8	.26	1.4	.12

Mayapis	5.4	.22	2.0	.15
Narig	5.4	.36	2.0	.18
Narra	2.2	.19	1.3	.12
Pahutan	3.4	.22	2.4	.18
Tañgile	5.1	.24	2.3	.16
Yakal	6.8	.40	3.3	.28

¹ The shrinkage percentages are based on the green dimensions.

* * * *

POINTERS ON MANUFACTURING FURNITURE FOR SHIPMENT TO THE UNITED STATES

Much furniture made in the Philippines and exported to the United States or taken home from the Philippines by U. S. residents gives trouble from checking, warping or opening of joints after it has spent one or two winters in the United States. The cause of these defects is the drying of the wood during the winter time in heated buildings. Wood in the living tree may be $\frac{1}{2}$ water, or even more. When cut into lumber and exposed to the air most of the water evaporates and the moisture content of the wood finally attains an approximate balance with the relative humidity of the air. After that point of equilibrium is reached, the wood attempts to keep its moisture content in balance with the relative humidity of the air. That is constantly changing, however, and so rapidly and frequently that the wood cannot keep up with it. The best the wood can do is to remain approximately in equilibrium with the average relative humidity of the air.

In the Philippines the average relative humidity is high in comparison with the humidities prevailing in most of the United States. Wood furniture in buildings in the Philippines normally has a moisture content close to 14 percent which does not change greatly throughout the year because Philippine buildings are not heated and the windows are usually kept open. In the United States, the average relative humidities of the outdoor air vary somewhat in different parts of the country, being fairly low in Arizona, New Mexico, Nevada and similar climates in other States and fairly high along the Gulf of Mexico, the Atlantic Coast and the North Pacific Coast. In practically all parts of the United States, however, even during summer weather, the average relative humidity is lower and the moisture content of air-dry wood is lower than in the Philippines. The moisture content of wood in buildings during the late summer time in much of the United States may get as high as 9 or 10 percent. It may be somewhat higher than this along the Gulf

of Mexico and considerably lower in dry western climates like that of Arizona. During winter, when outdoor temperatures are low and buildings are heated, the indoor relative humidities become very low and the moisture content of wood furniture under some conditions may drop as low as 4 or 5 percent.

If a piece of furniture from the Philippines, with a moisture content of 14 percent, is moved into a heated building in the United States in the late fall or winter, it will lose moisture rapidly in trying to get in balance with the low relative humidity prevailing. The loss of moisture causes the wood to shrink considerably which frequently results in checking, warping, or opening of joints, to the great dissatisfaction of the owner.

Wood shrinks considerably in drying from about 30 percent moisture content to lower moisture content values and the greater the loss of moisture the greater the shrinkage. Boards shrink in width and thickness but do not shrink significantly in length. The shrinkage in width is less in boards cut in the direction of the radius of a log (radial shrinkage) than in boards cut in the direction at right angles to the radius (tangential shrinkage). Some species of wood shrink considerably more than others with the same moisture loss and thus are more likely to give trouble.

Another factor that enters into the behavior of wood in drying is the ability of wood to adjust itself in some degree in tensions or stresses set up as it shrinks. Thus, if wood is dried carefully and slowly it can usually be dried with little or no checking. This is basic in successful kiln drying. If it is dried unevenly or too rapidly, however, the shrinkage stresses become so severe that they are more than the wood can resist and they are relieved by checking or warping.

The design, construction and finishing details of a piece of furniture also have an influence on its behavior during drying. Design and construction details that permit slight movement of the wood as it shrinks are less likely to re-

sult in checking and warping than those that resist all movement. Finishing all surfaces of the wood increases the possibility of avoiding checking or warping in comparison with the normal practice of finishing the exposed surfaces only. Lacquer, varnish, paint and wax finishes do not prevent moisture changes but tend to make the changes take place more slowly. If a table top is finished on the exposed surface but has no finish on the under surface, loss of moisture will be more rapid from the under surface. This will favor uneven drying as well as more rapid drying and encourage the development of internal stresses which favor warping and checking.

The foregoing discussion, although incomplete and technically inadequate, points to some of the important factors that influence the performance of wood furniture and gives the reasons for some of the precautions recommended.

Some furniture manufacturers understand the importance of low moisture content in furniture for shipment abroad and they may be able to dry their lumber to 6 or 8 percent moisture content before manufacturing it into furniture. But wood dried to such a low moisture content in the Philippines will begin to absorb moisture immediately and gradually will come back toward 14 percent. If the low moisture content is to be retained, therefore, the furniture must be manufactured and shipped out of the country promptly so that it does not have time to come back to normal Philippine moisture content. If the manufacturer has storage facilities, however, where the relative humidity of the air is maintained at 40 to 50 percent, either by heating or dehumidifying the air, the wood of the furniture can be held at a relatively low moisture content suitable for export. Unless a concern is equipped to dry the rough lumber to 5 to 8 percent, to store the finished product under suitable conditions and to provide protection against reabsorption of moisture during cargo shipment, it is not advisable that it should undertake to export furniture to the United States.

Most furniture manufacturers in the Philippines are not equipped for kiln drying or for humidity control in store rooms. They try to get their lumber reasonably dry but do not always attain even that objective.

The species of wood from which the furniture is made has an important influence on its behavior. Some species shrink less than others in drying and in this respect are preferable for furniture. Narra is one of the best of the na-

tive Philippine woods in this respect. The so-called acacia (rain tree or monkey-pod wood), which is found to a limited extent in the Philippines, has even lower shrinkage than narra. This wood is seldom made into furniture other than small coffee tables but is commonly found in novelties and carvings of various kinds and these, when made of this species, seldom give trouble in the United States. Other species can be and are used, of course, but the greater the shrinkage the greater the care required.

DETERMINING THE MOISTURE CONTENT OF WOOD

All wood in service contains water, even wood that has been dried. The amount of water in any piece of wood depends on its degree of dryness or, as commonly stated, its moisture content. This, in turn, depends upon the conditions to which the wood is exposed in service. In the lumber trade and in wood technology in general, the moisture content of wood is expressed as a percentage of the weight of the wood when oven dry. A piece of wood cut from a newly felled tree or from a log in the sawmill may contain as much water as wood. In that case it would be said to have a moisture content of 100 percent, meaning that water is present to the extent of 100 percent of the weight of the oven-dry wood. Different species of trees differ in the amount of water their wood contains and, even in a single tree, the moisture content may vary in different parts. In some species the sapwood portion of the "green" or freshly cut wood may have a moisture content as high as 200 percent, in which case, water constitutes two thirds of the total weight. In other species the moisture content of the heartwood may be as low as 35 or 40 percent.¹

The moisture content of wood is determined by weighing a small piece of wood, then drying it in an oven maintained at a temperature of approximately 103 degrees Centigrade until its weight becomes constant, as shown by repeated weighings. The moisture content is then calculated by dividing the loss in weight by the

¹ Although the moisture content of green wood varies widely, all species approach the same moisture content when used in buildings, depending on the average relative humidity of the surrounding air. In the Philippines the moisture content of dry wood in buildings averages in the vicinity of 14 percent. See Technical Note No. 1, "The Moisture content of wood in relation to air humidity".

weight of the oven-dry sample, using the following formula:

$$\text{Percent M.C.} = \frac{W_1 - W_2}{W_2} \times 100$$

In this formula, W_1 means initial weight and W_2 means oven-dry weight. Multiplying by 100 converts the result from a decimal into percentage.

In the determination of the moisture content of lumber in a pile, it is impractical to determine the moisture content of each piece in the pile. Obviously, therefore, it will be necessary to pick at random a few representative pieces from the pile from which the small moisture sample can be prepared. The number of boards taken for sampling should depend upon the size of the pile and the accuracy of estimates desired.

The moisture content of moderately dry wood can be readily determined by certain electrical instruments called "moisture meters". These meters give good results when maintained in correct adjustment and used properly, with suitable species correction factors, by skilled operators. They can be very misleading otherwise. Species corrections for resistance-type moisture meters for a number of Philippine commercial species are available from the Forest Products Research Institute.

When using the oven-drying method of determining moisture content of boards, moisture samples are cut at least two feet from one end of each sample board selected. Moisture samples cut too close to the end of a board are not reliable as a measure of the average moisture content of the board. These moisture samples should be about one inch or less in length along the grain and should include the entire width of the board and as soon as each moisture sample is severed from the board it should be freed from slivers and immediately weighed on a good balance accurate to one-tenth gram. This gives the green weight. The accuracy of the result obtained depends largely upon the accuracy of the weighing. The size of specimens also affects the accuracy and the smaller the specimens used, the greater is the need of accuracy in weighing.

If an oven is to be used, any suitably designed oven with thermometer well so that a thermometer can be provided to indicate temperature during the drying period will suffice. The temperature should, however, be kept as nearly as possible within two degrees of 103

degrees Centigrade. The specimens should be separated from each other in the oven so that the hot air can circulate freely around all sides of each specimen. The length of time the specimens must remain in the oven depends in part on the size of the specimens and also on the drying conditions. Ordinarily 24 to 48 hours should be sufficient. The specimens may be weighed after 24 hours and then again after a few more hours. If there is no further loss in weight, they have reached "constant weight". The final weighing gives the "oven-dry" weight from which the moisture content can be calculated.

Example: Once the oven-dry weight is obtained, the moisture content of the particular specimen can be determined by the formula given above. Suppose that a specimen had a green weight of 12.90 grams while its oven-dry weight was 11.82 grams, then its moisture content is calculated as follows:

$$\begin{aligned} \text{M.C.}\% &= \frac{12.90 - 11.82}{11.82} \times 100 \\ &= \frac{1.08}{11.82} \times 100 = 9.1 \text{ percent} \end{aligned}$$

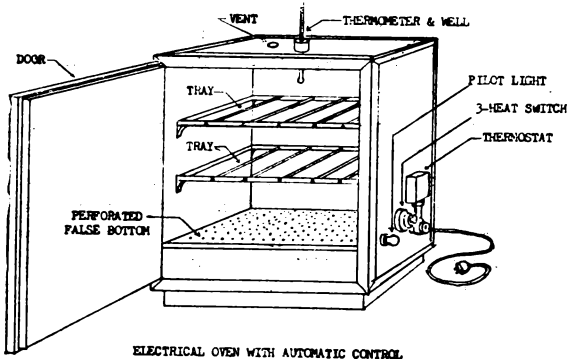
CONSTRUCTION OF AN OVEN

A simple electric oven may be constructed as a double-wall box primarily from aluminum or copper sheets and asbestos cement boards. The walls, which should be insulated with fiber-glass wool, may be made by laying the aluminum or copper sheets on "dexion" frames or high density wood frames, although "dexion" frames are more preferable for longer service. The outside walls should be welded with the inside walls to form solid walls at all sides, top, and bottom of the box.

The top should be provided with two through-perforations between $\frac{1}{2}$ and $\frac{3}{4}$ inch in diameter. One of them will serve as a thermometer well and the other as a vapor vent. There should be a door at the front, which should be well fitted in the opening to minimize heat leakage.

To connect the heating coils, which are placed at the bottom of the oven, to the 3-heat switch, the pilot light, and the thermostat, as seen in the sketch, usually a number of perforations through the right side wall of the oven are provided. Inside the oven, two drying trays to hold specimens may be made of any suitable wire mesh or iron grills to allow hot

air circulation around the wood. To protect the heating coils from chance falling of slivers from the drying wood and to eliminate fire hazards, a false bottom should be provided just above the heating coils. This false bottom should be made of perforated asbestos cement board. The perforations may have a diameter of about $\frac{1}{8}$ inch and the distance between perforations may be about two inches.



ELECTRICAL OVEN WITH AUTOMATIC CONTROL

LAMINATED WOOD, ITS MANUFACTURE AND USES

The mounting demand for glued laminated wood constructions, the improvements in glues and the development of gluing techniques are making the wood-laminating industry grow in importance.

Glued laminated wood consists of boards or laminae bonded together, either in straight or curved form, with their grain directions parallel to each other. Laminated wood is fundamentally different from plywood because in the latter the adjacent veneers or plies are almost always glued with their grains at right angles to each other.

A wood lamination may be of any desired thickness and length provided that it can be bent to the required curvature without any evidence of failure. It could be made of short pieces jointed end to end to form longer laminae, or of narrow pieces glued edge to edge to form wider ones. These factors permit a vast choice in design features, limited only by the service demanded of the laminated products. To obtain a satisfactory glued-laminated assembly, several requirements must be fulfilled. Following is a discussion of some of those requirements.

Seasoned wood is vital in wood lamination. Wood must be dried uniformly to a moisture content approximately equal to that expected in service. A difference of not more than 5 per-

cent moisture content, for example a range of 6 to 11, or 10 to 15 percent, between laminations in a single assembly is recommended. This will avoid serious moisture content changes within the assembly and help to avoid the glue-line stresses induced by moisture changes while in service.

Flat-grain or plain-sawn lumber shrinks and swells more in width than vertical-grain or quarter-sawn¹ lumber of the same size. In a laminated assembly this difference in shrinkage between the two adjacent boards can result in severe glue line stresses. To minimize this, lumber for laminated constructions should be segregated into plain-sawn and quarter-sawn lots. It is advantageous not to mix flat-grain and vertical-grain boards in any laminated assembly.

It is always advisable to rough-surface lumber for laminating as a first step. Although of secondary importance, rough surfacing helps to disclose natural and seasoning defects, aids in the separation of wood according to grain, sapwood and heartwood, and facilitates the elimination of undesirable pieces. It helps attain boards of uniform thickness. A double surface planer is adaptable for this operation.

When long laminations are desired from shorter pieces, the boards are end-jointed. The plain-scarf, hooked-scarf, finger- and serrated-scarf joints are commonly used. When wider laminations are required, edge gluing is done. Some types of tongue- and groove-joints have been used to facilitate edge alignment but they involve greater loss of effective gluing surface than plain joints.

The final surfacing of the stock before assembly gluing is one of the most important operations in the manufacture of laminated wood products. The quality of the finished product depends largely on the accuracy and care with which this operation is conducted. For maximum glue joint strength and durability, the mating faces must be cleanly machined and accurately fitted.

Final surfacing can best be done first on a jointer and then on a cabinet planer equipped

¹ These terms refer to the direction of the growth rings of the tree with reference to the faces of the board. If the smaller of the two angles formed between the growth rings and the wide face of the board is less than 45 degrees, the board is classed as flat sawn. If the smaller angle is greater than 45 degrees the board is classed as quarter sawn.

with well-fitted cutter head mounted on ball bearings. The surfacing operation must be a light cut not more than 1/16-inch at a pass through the planer. Knife marks must hardly be visible on the finished surfaces. Feed rates and cutterhead speed resulting in 20 to 30 knife marks per inch have been found satisfactory.

The success in manufacturing glued laminated products also depends much on the use of the right glue and following the right gluing procedures. Most commonly used for this purpose in the Philippines are resorcinol or phenol-resorcinol, fortified ureas and casein glues. The more durable resorcinol or phenol-resorcinol resin glues would be the best choice for laminated timbers for exterior service in the Philippines because the moisture conditions are too high to permit the use of casein glues. The use of urea-resin glues is questionable because of the observed reductions in strength of glue joints subjected to somewhat high temperatures and humidity conditions prevailing in this country. Each type of glue has a recommended procedure for preparation and application. To attain strong and durable glue joints, these recommendations must be followed carefully.

Various means are used in applying pressure to the laminated assembly. Hydraulic and screw presses may be used for pressing straight members glued with room-temperature-setting glues. With adjustable jigs and pull-down or draw-up clamps, retaining clamps serve best for pressing curved members. The use of screws or nails has not been thoroughly investigated but, in general, nailing as a means of applying pressure is not recommended for high-strength laminated members. However, for some kinds of work nail gluing has been found practical. For laminated assemblies (glued with elevated-temperature-setting glues) requiring transfer from the gluing room to the curing chamber, heavy presses are impractical to use because of their heavy weight. Instead, light presses and retaining clamps are used.

To attain intimate contact between glued surfaces, uniform pressure must be applied to laminated assemblies. Since it is hard to locate clamps close together and simultaneously apply uniform pressure directly to all points on the glue-joint area, caul planks are placed between the clamps and the glued assembly while pressing. For straight laminated assemblies, thick cauls are suitable. In case of curved members of short radius of curvature, two or more thin cauls on each face of the assembly are more effective.

Unless chemical reaction and loss of solvent in the glue are completed, the laminated assembly is inadequately cured. For adequate curing, some glues require ordinary room temperature while others demand higher temperatures. Manufacturers of modern glues always recommend both curing time and temperature for their glues.

Glued laminated assemblies must be machined to final dimension only after they are fully cured. This will prevent occurrence of sunken joints which are objectionable where good surface appearance is a requisite.

Under continuously dry conditions, such as in the interior of buildings, or in the case of equipment, furniture and fixture used inside buildings, where the wood is protected from exposure to extreme conditions of weather and atmosphere, the glue joints will last as long as the wood if proper glue is used and the gluing is well done. Good joints could be attained with animal hide, casein and polyvinyl resin glues and unextended cold-setting urea-resin glue. Due to the humid conditions and oftentimes high temperatures which prevail in most parts of the Philippines, the use of casein, animal hide, polyvinyl resin or even urea glues is of doubtful reliability and may not furnish the length of service required of certain structure. Until further research has established the reliability of these glues under Philippine conditions their use in important structures is not recommended.

Laminated wood products may be used for implement parts, bridges and marine equipment which are subjected to cycles of soaking or wetting and drying, and variations in temperature. The glue for such uses must be highly resistant to water, heat and decaying organisms. These can be met by resorcinol or phenol-resorcinol resin glues with their corresponding cold catalyst or hardener. The wood also must be naturally durable or made so by adequate preservative treatment. For large or irregular shaped products, the preservative treatment may have to be applied before gluing but where the size and shape of the finished products permit, preservative treatment may be applied after gluing and finishing to final dimensions.

Glued laminated wood has some very distinct advantages over other materials of construction. Among these are the following:

(a) Properly designed glued laminated wood structures have greater strength per unit weight than steel.

(b) They have higher safety qualities as in cases of sudden shock and stresses.

(c) They are slightly affected by heat and cold and are themselves excellent insulators against these extremes. If constructed with large cross-sections, these structures are, even if untreated, much more fire-resistant than steel.

(d) They take varnish and paint readily, and being already beautiful in themselves, furnish excellent architectural effects when used as materials of construction.

Some species of wood are more difficult to glue satisfactorily than others. For this reason, a survey of the gluing properties of commercial Philippine woods has been started at the Forest Products Research Institute to determine which species, if any, require special precautions in gluing. A urea formaldehyde resin glue in powder form with HGE cold catalyst and a phe-

nol-resorcinol glue in liquid form with FM 124 cold catalyst are being utilized. Preliminary results of the study on almon, apitong, dagang, manggasinoro, mayapis, red lauan, round-leaved apitong, white lauan, tangle and thick-leaved narig indicate the suitability of these species for laminating. The study is being continued.

REFERENCES

1. Bellosillo, S. B. 1958. Glued laminated wood construction, its status and its future in the Philippines. PAENCOR, Vol. VI, No. 1.
2. Freas, A. D. and M. Selbo. 1954. Fabrication and design of glued laminated wood structural members. U.S. Dept. of Agr. Bull. 1069.
3. Forest Products Research Institute. 1960. Adhesives for wood, their characteristics and selection for particular uses. Technical Note No. 13.

Errata

On page 100 of the Moving-Up Day issue, the last sentence in the fourth paragraph under "Progress of Research Work," which reads: "Toog, apitong, and dagang can all be cut cold successfully . . ." should read: "Apitong and dagang can both be cut cold successfully . . ." thus omitting toog which has not thus far been cut cold successfully.

On the same page and under the same heading, the sixth paragraph, which reads: "In gluing studies, two of the more important reports show that viscosity increases, while pH increases with the pot life . . ." should read: "In gluing studies, two of the more important reports show that viscosity increases, while pH decreases with the pot life . . ." changing the second word *increases* to *decreases*.

STREAMLINED DEFINITIONS

PARENTS: *Two people of opposite gender who are blessed with the gift of children and cursed by the obligation to set a good example for them.*

PEDESTRIAN: *A man who hasn't yet been stuck with a car, or struck by one.*

MARRIAGE: *The most expensive post-graduate co-educational institution.*

CHILDREN: *Miniature people who use child psychology on adult people.*

ADVICE: *About the only free merchandise people are always overstocked on.*

BRIDE: *A girl who wants first to make a good husband, next a good mother, then perhaps a good wife.*

EXPERT: *A beginner with a good letter of recommendation.*

MONEY: *The simplest, yet most powerful mechanical device ever invented.*

— CHAL HERRY

Forestry in the News

LARDIZABAL SEEKS PUBLIC SUPPORT FOR FORESTRY INFORMATION DRIVE

BAGUIO, July 10—Public support of the current revitalized drive on public information and education in forestry was enjoined recently by Mayor Luis L. Lardizabal in a radiobroadcast at a local station on Harrison Road this city.

The mayor called the drive significant because it proves the firm determination of the bureau of forestry and other government agencies concerned with forest conservation to press on the drive in spite of the apparent indifference of the masses and the lack of appreciation of the value of forest in the country's economy.

The chief city executive lauded the joint committee on public information and education in forestry headed by Prof. Domingo V. Jacalne, of the college of forestry, U.P. for creating a local counterpart group which will undertake the information drive to conserve the pine forest of Baguio and Mountain Province.

The address of the mayor, which was read by Domingo Masada, PRO and confidential secretary of the mayor, is as follows:

"The inauguration of this five-minute radio program under the sponsorship of the Baguio committee on public information in forestry is, indeed, both significant and timely!

"Significant, because it puts in bold relief the firm determination and relentless struggle of the bureau of forestry to promote national consciousness on forest conservation, in spite of the apparent indifference of our people to realize the importance of the reforestation program being intensively carried out by the government, and in spite of our seeming refusal to appreciate similar governmental programs all of which are designed to make us understand the value and significance of our forests to the national economic life.

"While it is admitted that our forest resources are definitely exhaustible, they are nevertheless renewable and replaceable... and the time to begin doing so is now. That makes this occasion very timely.

"Fully aware that we just don't seem to realize our fortunes until we shall have lost them, the Baguio committee on public information and education in forestry was created only recently to redeem the residents of this city—before it is too late—from disinterest and unconcern over the efforts of the government to

inculcate among our people desirable traits on love and care for our forest resources.

"To this end, the said committee has decided to carry on this radio program regularly... with the end in view of inviting the public to lend a helping hand to whatever measures the committee may deem appropriate in its venture to disseminate public information on the importance of forest conservation and reforestation of denuded areas hereabouts. This, then, is our program—yours and mine!

"Note should be made that industries supported by our forests are among the major bulwarks of our economic existence. Included in the five leading export items of our country are "logs" and "lumber"—both of which are primary products. The need, themselves, for a program on public information and education in forestry cannot be over-emphasized!

"One cause for alarm among many of our people is the much-publicized claim that our forests are rapidly vanishing. It is our conviction, however, that instead of being a matter of alarm, the reportedly accelerated denudation of our forests should rather call for a concerted move to pursue positive and effective measures calculated to minimize whatever unnecessary drain there may have been, and will be, on our forest wealth. Far from being alarmed, the traces cannot fail to see, if we only bothered ourselves a little bit, should serve as grim reminders to prod us to immediate action.

"Careless exhaustion of our forest reserves, without a corresponding attempt to replenish the same, will surely redound to our detriment, or the pattern of natural logic is such that whatever is used up must necessarily be exhausted!

"But, neither can it be denied that forests can be conserved. It is simply for this reason that I feel optimistic in having taken the liberty to enjoin one and all to extend their wholehearted support to whatever programs on forest conservation the Baguio Committee on Public Information and Education in forestry may adopt from time to time.

"Notwithstanding certain difficulties, the bureau of forestry has spared no efforts to make our forests continually productive. But the bureau of forestry, unless it is accorded public cooperation, indispensable, all these, governmental efforts are futile.

Inspired by all these thoughts, we trust you will not fail us!"

The Manila Times, July 11, 1961.

* * * * *
**TREE PLANTING MARKS
BAGO BANTAY'S '4TH'**

BAGO BANTAY, Quezon City, July 8— Slowly but surely this "problem community" is taking on not only a new community spirit of self-help but a "new look" as well as the result of cooperative tree planting.

The road leading in from the highway is now lined with trees balled, from the reforestation administration's nursery in Los Baños, Laguna and planted last July 4 to mark the local observance of Independence Day.

The Army helped with the truck, the SWA central office furnished fuel, the SWA Quezon City regional branch the bags. All labor was free—given by local volunteers in response to the appeal of the Doña Alicia barrio council and other local civic groups that have also agreed to be responsible for the care of the trees. Both the bureau of agricultural extension and the reforestation administration gave technical advice as well as encouragement. World Neighbor workers served as "bridge."

The U.P. Garden Club, the Barrio Lieutenants' Association of the Philippines and other groups are helping in the Bago Bantay beautification drive. Main problems or needs are planting materials—trees, shrubs, vines, lawn grass—anything that may help.

The Sunday Times, July 9, 1961

* * * * *
**TREE PLANTING DRIVE SLATED
IN BAGUIO**

BAGUIO, July 14— Full-scale planting of barren areas within the watersheds of the principal sources of water supply for this city will be one of the main features of the observance of the Arbor Week here starting on July 23.

For the first time, Arbor Week here will be observed under the auspices of the City Forestry Council, which is headed by Mayor Luis L. Lardizabal as chairman.

Lardizabal had requested former District and City Forester Sixto Laraya, who is a member of the local forestry council, to prepare a program for the observance of Arbor Week, which will be discussed on July 18.

Among the features of the observance as prepared in the proposed program is the planting of denuded areas within watersheds of the principal sources of water supply for the city.

This will be scheduled on July 26. One of the targets of the planting activities is in the vicinity of the Quirino Hill.

Patterned after the program drawn up by the bureau of forestry and other entities, which have something to do with reforestation and forest conservation, the first day of the week will be devoted to thanksgiving and religious services.

The second day will be scheduled for mass tree planting by civic organizations to be led by the city forestry council headed by Mayor Lardizabal.

The Manila Times, July 15, 1961.

* * * * *
SURPLUS OF RUBBER FEARED

NEW YORK, July 14— Synthetic rubber will make further inroads on natural rubber throughout the world this year, industry sources in New York predicted.

And, they said, unless the communist countries increase their buying of natural rubber in the Far East, there will likely be a surplus of that rubber ranging from 10,000 to 30,000 long tons at the end of this year.

These sources are at variance with claims by some trade and producing organizations which predict supply and demand will be in balance this year. They said a surplus is likely exclusive of sales from government-held stockpiles.

Most sources, including U.S. rubber manufacturers and the international rubber study group in London, give about the same figures for this year's production of natural rubber—slightly more than two million long tons.

But they disagree on the consumption figure.

The London group puts requirements at 1,900,900 long tons. Predictions by other U.S. manufacturers are close to this figure.

Meanwhile, world production and consumption of synthetic rubber are expected to rise this year and be in balance. Industry sources estimate world production and consumption this year at about 1,870,000 long tons, compared with, 1,782,000 long tons last year.

The Manila Times, July, 15, 1961.

* * * * *
**NATION MARKS ARBOR WEEK JULY 23;
PROGRAM BASED**

Arbor Week this year will be celebrated from July 23 to 29 in collaboration with the Rizal Centennial Committee for July with "Independence and Economic Progress" as the main theme, Acting Director of Forestry Tiburco S. Serevo announced yesterday.

Serevo said that particular theme for Arbor Week is "Forest Conservation Is A National Dedication," with emphasis on helping the government conserve our forests as a civic duty on the part of every Filipino family.

Serevo urged regional directors and district foresters to make this year's celebration successful. The reforestation administration and the parks and wildlife office have promised to cooperate with the forestry bureau.

The Arbor Week program follows:

July 23, Sunday — Religious groups participation, Thanksgiving masses and religious services.

July 24, Monday — Mass Tree Planting by civic organizations to be led by the Department of Agriculture and Natural Resources and its bureau and offices.

July 25, Tuesday — Tree Planting by public and private schools with technical assistance of the Bureau of Forestry and Reforestation Administration.

July 26, Wednesday — Participation by barrio councils, mass planting in watersheds and denuded areas supervised by the Reforestation Administration, and radio programs in the provinces.

July 27, Thursday — Participation by national, provincial and municipal officials, mass planting in national parks and public grounds supervised by Parks and Wildlife Office.

July 28, Friday — Literary programs and seminars.

July 29, Saturday — Evaluation and follow-up progress of tree planting by a group headed by the Department Secretary.

The Sunday Chronicle, July 16, 1961.

* * * *

HARDWOOD MARKET EXPANSION HAILED

President Garcia has lauded the joint efforts of the Philippine Lumber Producers Association and the Philippine Mahogany Association of the United States to expand the market of Philippine timber in the US and Canada.

In a message to be read at the opening session today (July 16) of the annual Philippine Mahogany Association convention at Boulder, Colorado, President Garcia said he was gratified to note that the two associations have been active in promoting and protecting the interests of Philippine hardwoods in the US.

"Surely economic assistance and cooperation should be praiseworthy aspects of Philippine-American friendship in view of the mutual benefits being continuously realized from the special relations of our two countries," the President said in his message.

Representing the Philippine Lumber Producers Association at the convention are Antonio de las Alas, president, and G. E. C. Mears, field manager of Nasipit Lumber Company.

The Sunday Chronicle, July 16, 1961

* * * *

DE LAS ALAS ASKS U.S. TO HIKE P.I. IMPORTS

The United States can help strengthen the will of the Filipinos to resist communism by expanding the market for Philippine products in America.

This was the main theme of the address delivered today, July 17 by Antonio de las Alas, president of the Philippine Lumber Producers Association, before the annual convention of the Philippine Mahogany Association at Boulder, Colorado.

Alas said it is in the self-interest of the U.S. to stabilize the economy of the Philippine timber products such as logs, lumber, veneer and plywood.

Alas was one of the main speakers at the four-day convention of the Philippine Mahogany Association composed of the leading dealers in Philippine wood products in the U.S. and Canada. The text of his address was made available locally by Pacifico de Ocampo, secretary of the PLPA.

Reviewing the full range of Philippine-American trade relations, Alas pointed out that unlike other countries, the Philippines has not resorted to "a sort of extortion" as some neutral countries have done. He said the Philippines remains the best friend of America in the east and all the Philippines needs now is more trade rather than aid.

Alas warned that unless the economy of the Philippines is stabilized, the Filipinos may not be able to resist the onslaught of communism which is already threatening most of Asia today.

Alas cited three obstacles to the expansion of the Philippine timber market in the U.S., namely 1) High freight rates; 2) American buyers are too selective and 3) The persistent agitation by competing interests to limit plywood imports and to remove the "Philippine Mahogany" trade name as applied to Philippine hardwoods.

Alas urged the members of the PMA to persuade their maritime authorities to reduce the ocean freight which, he said is comparatively higher than rates between other countries. He said the PLPA already has taken measures to remove government obstacles in the Philippines which the steamship lines claimed to be one of the reasons for the high rates.

Alas said if the U.S. would only absorb all grades of Philippine wood products, there would be less incentive to sell most of the logs to Japan and there would be more processing activity in the Philippines.

Alas said he was proceeding to Washington from Boulder, Colorado, to persuade government authorities there not to remove the "Philippine mahogany" trade name and not to limit the importation of plywood from the Philippines.

The Manila Chronicle, July 17, 1961.

* * * *

MASS PLANTING OF X'MAS TREES URGED

BAGUIO, July 17—Primo P. Andres, regional supervisor, reforestation administration, this city, said in a radio broadcast here recently that there is a wide market for pine Christmas trees and urged the people of this city and the Mt. Province to go into mass planting of pine trees to meet the demand for Christmas decoration.

Andres spoke at the weekly program entitled "Pine Patter", of the Baguio Committee on public information and education in forestry over Radio Station, LZBS, on Harrison Road, this city.

The novel tree planting project was launched at the Bau elementary school, Tuding, Benguet, last Friday as a joint activity of the school PTA, barrio council and the Reforestation Administration.

"Much have been said about the conditions of our forests and much have been told about the economic values of our trees particularly the Philippine Mahogany which is widely known all over the world, yet very little importance has been given to our pine trees growing very well in Mountain Province. But if we think for a moment and analyze the role that our pine tree plays in our home, one cannot help but say, "I want to plant, care, and protect the pine tree."

"Every year, during Christmas Season, every family in our country is desirous to own a Christmas tree. It is because by custom and tradition, Christmas celebration is incomplete without decorated Christmas tree in the home, due to the beauty of Pine as a supply of Christmas trees.

"Based on the standard of planting, presently used by the Reforestation Administration, every hectare could be planted to 2,500 seedlings. If about 2,000 will grow to Christmas tree sizes after four years, and if each Christmas tree will be sold at ₱1.00 at the school site, it is very cer-

tain that school will realize on average of ₱2,000 per hectare per year.

"In a conference made by the Parent Teachers Association and yours truly, it was agreed that whatever money realized from the project will be deposited as funds of the PTA. It will be disposed of for the improvement of the school, to pay the tuition and matriculation fees of needy school children, or any other improvement believed wise and proper to benefit the school and school children. It will then be a good help to the community in general and to the school in particular.

"Ladies and gentlemen, I invite you to see and observe this pilot project for raising Christmas trees to give you idea how it is managed. If the school ground in your community has a wide unutilized space, I urge you to undertake a similar project. The Reforestation Administration, a newly created government entity, is ready to cooperate with you by extending the technical advice and also in providing free seedlings. *The Manila Times, July 18, 1961.*

* * * *

FIRST FAO NORTH AMERICAN FORESTRY MEETING

Rome, 14 July—The first session of the newly-formed North American Forestry Commission, a body of the Food and Agriculture Organization, will be held at Mexico City from 24-29 July.

This Commission is the latest among six similar regional forestry organizations—in Europe, Africa, Latin America, Asia Pacific and Near East—through which FAO's regional program is being carried out.

Delegates from the three member countries of FAO—Canada, Mexico and the United States of America—which make up the Commission, will attend four days of discussion and two days of field trips under the auspices of the Government of Mexico, the host country.

Broad problems of forest policy will be discussed during the meeting, while specific items on the agenda include forest insect pests and diseases, forest fires, international trade of forest products, and trends in technical assistance programs.

Progress achieved in FAO's series of timber trends studies, undertaken in cooperation with the UN's regional Economic Commissions, will be reported with a view to implementing a similar study in North America. The first, 'European Timber Trends and Prospects', which appeared in 1950, is now being revised; the second, 'Timber Trends and Prospects in the Asia

Pacific Region, is now being printed; a third is underway covering Latin America, including Mexico; while a fourth has just been initiated in Africa. *FAO Press Release*

* * * *

LOGGING AND FLOATING TIMBER IN USSR

Rome, 20 June—A training course in logging mechanization and floating of timber is now underway in the USSR from 15 June to late July for eight Asians holding fellowships from the Food and Agriculture Organization, FAO has announced.

The group foresters consisting of two Burmese, three Indians, two Pakistanis and one Indonesian, are visiting research laboratories, collective forest farms, felling sites, timber yards, industrial plants and floating timber units within the greater Leningrad-Moscow area. Liaison officer is Mr. Parewics, FAO forestry officer.

The tour breaks down into a series of interspersed lectures and practical demonstrations. Delegates are spending several days at TSNIIME (Central Scientific Research Institute for Mechanization of Forest Exploitation), and will then study organization, equipment and methods at two collective forest farms. The group will then visit timber-floating laboratories of the Institute for lectures and demonstrations followed by two weeks spent with a log-floating unit, where it will review the entire technical process from tree-felling to arrival of the rafts at Leningrad.

A similar training course in arid zone forestry is planned in the USSR in August-September 1961 for a group of 16 foresters led by FAO liaison officer Mr. Mogens Andersen. This will consist of visits to research institutes and planning organizations in Moscow, lectures at the All-Union Scientific Research Institute for Agro-Silvicultural Reclamation, and visits to shelterbelts, ravine afforestation works and erosion control measures around Stalingrad, followed by study of semi-arid forestry in Ukraine, Azerbaidjan and Usbekistan.

FAO Press Release

* * * *

FAO'S ROLE IN LATIN-AMERICAN FORESTRY HONOURED

Rome, 12 April—The Food and Agriculture Organization (FAO) was recently informed that the University "Francisco Jose de Caldas", Bogota, Colombia, has awarded the title of Doctor 'Honoris Causa' in Forestry Sciences to Dr. Egon Glesinger, Director of FAO's Forestry and Forest Products Division.

This distinction comes from a country that occupies a leading position in South American forestry, due not only to the extent of its forest resources but also to its achievements in the field of forestry education. Colombia is, in fact, one of the South American countries where forest education has the longest tradition and one of the few where this education is available at university level.

The award was granted to Dr. Glesinger in view of the number of achievements that he, as head of the Forestry Division, has inspired in the field of Latin American forestry. FAO's Forestry Division instituted a regional office for South America in 1948, two years after the establishment of FAO itself. It is to this office that credit must go for the Institute Interamericano Forestal, Merida, Venezuela, the Grupo Asesor de Capacitacion e Investigaciones Forestales para America Latina, the comision Forestal Latino Americana, the 1954 Pulp and Paper Conference for Latin America, and the Advisory Group on Pulp and Paper for Latin America.

The mention of these achievements in the university's official resolution indicates the extent to which the distinction conferred on Dr. Glesinger is a proof of the Colombian University's recognition of the role that FAO has played in furthering the progress of Latin American forestry.

Dr. Glesinger was born in Teshen, formerly Austria, in 1907. He obtained his Master of Commercial Science degree at the University of Geneva in 1927, his Doctor of Law degree at the University of Prague for International Studies at Geneva in 1932.

He served as Secretary General of the International Timber Committee from 1933-38, was an editorial staff member of *Fortune* magazine from 1941-43, and surveyed the forest industries of North Carolina as special government consultant from 1943-44.

He first joined FAO as rapporteur with the Forestry Commission during 1944-45. He was appointed Chief of the Forest Products Branch in 1946, Deputy Director of the Forestry and Forest Products Division in 1949, and became Director in 1959.

Dr. Glesinger is the author of a number of publications on forestry problems, including *Le Bois en Europe*, *The Coming Age of Wood*, *Nazis in the Woodpile*, and the joint author of many pamphlets, studies and articles on forestry and on integrated land use and development.

FAO Press Release

LUMBER ASSOCIATION CITES CPR FOR SERVICE TO INDUSTRY

Ambassador Carlos P. Romulo will receive a citation today, Friday, July 21, from the Philippine Lumber Producers association for "outstanding service" to the timber industry of the Philippines.

An award in the form of a plaque will be presented to Romulo by Antonio de las Alas, president of the PLPA, at a ceremony to be held at the Philippine embassy in Washington, D.C.

Romulo has been credited by the PLPA with having successfully carried out two missions for the lumber industry: the retention of the trade name "Philippine Mahogany" as applied to the Philippine hardwood and the defeat in Congress of proposals to limit the importation of Philippine plywood to the U.S.

The text of the citation follows:

"Award to Ambassador Carlos P. Romulo by the Philippine Lumber Producers Association for outstanding services rendered to the cause of the lumber industry of the Philippines in making possible through effective representation the continued use of the trade name "Philippine Mahogany" in the United States and in promoting the expanding patronage of Philippine plywood and other wood products in the United States market."

The citation was signed by Alas as president of the PLPA and attested to by Pacifico de Ocampo, secretary-treasurer.

Alas went to Washington later this week after delivering the principal address before the annual meeting of the Philippine Mahogany Association held at Boulder, Colorado, July 16 to 20.

A cablegram from Harry Jordan, president of the PMA, just received by the PLPA office in Manila said Alas received a standing ovation at the Boulder convention when he appealed for wider use of Philippine timber products in the U.S. as means of strengthening the Philippine economy.

He told the PMA, an organization of the leading dealers in Philippine hardwoods in the U.S. and Canada, that a stable Philippine economy would enable the Philippines to help the cause of the free world against communist infiltration.

While in Washington, Alas will investigate reports that competing interests were once more seeking the removal of the Philippine Mahogany trade name from Philippine hardwood. He

will also look into reports that moves were again being revived to place Philippine plywood under limited quota in the U.S.

The Phil. Herald — July 21, 1961

* * * *

ARBOR WEEK MOTORCADE

A motorcade under the auspices of the Children's Museum and Library, Inc., will be held from Victoria, Intramuros, to the C.M.L.I. site on East avenue, Quezon city, tomorrow at 8 a.m. in connection with the national celebration of Arbor Week.

Mrs. Conrada V. Ong, chairman of the C.M.L.I. Arbor Week committee, said various civic organizations like the Young Women's Christian association, the Young Men's Christian association, the Philippine Mental Health association, the 4-H club, the Quezon city Youth Welfare council and the Philippine Youth Welfare Coordinating council would take part in the motorcade.

A literary-musical program and a tree-planting ceremony will follow the motorcade at the C.M.L.I. site. Vicente de la Cruz and Jose Vlado will be guest speakers at the program. Secretary of Commerce Manuel Lim will also speak.

Mel V. Calderon, architect-consultant of the C.M.L.I., has suggested that fire trees, Philippine mahogany, golden showers and narra be planted by the civic organizations which would participate in the motorcade and tree-planting rites.

In the C.M.L.I. Arbor Week committee are Mariquita Castelo, G.S.P. national executive; Eugenio Cruz, bureau of plant industry director; Pompeyo Gregorio, C.M.L.I. adviser; Godofredo Neri, B.S.P. deputy executive; Tiburcio Serevo, bureau of forestry; Pantaleon Tabora; Guadencio Zabala and Victor P. Hernandez.

* * * *

FOREST CONSERVATION THIS YEAR'S THEME

Arbor Week this year which starts July 23 is being celebrated in collaboration with the Rizal Centennial Committee for July with "Independence and Economic Progress" as the main theme, Acting Forestry Director Tiburcio S. Serevo announced.

Director Serevo said that the particular theme for the Arbor Week is "Forest Conservation Is A National Dedication." Helping the government conserve our forests as a civic duty on the part of every Filipino family is being stressed.

Serevo has urged his regional directors and district foresters to make this year's celebration successful. The Reforestation Administration and the Parks and Wildlife Office have promised to cooperate with the forestry bureau.

The Arbor Week program is as follows:

July 27, Thursday—Participation by national, provincial and municipal officials; mass planting in national parks and public grounds supervised by the Parks and Wildlife Office.

July 28, Friday—Literary programs and seminars.

July 29, Saturday—Evaluation and follow-up progress of the planting by a group headed by the Department Secretary.

* * * *

CITE NEED FOR SOIL, WATER AND FOREST CONSERVATION

By ANIANO "Anoy" DAVID
Naga Rotary Club

Authoritative appraisals and pronouncements have been published in the cosmopolitan newspapers these many years warning the Philippines against forest depletion and its sequel such as soil erosion, siltation, floods, drought, shrinkage of underground water table, extreme climatic changes, eventual drying up of streams and so forth. Experts tell us that this matter of forest depletion is so serious that unless congress call a halt to this insane orgy of forest liquidation, the tragic fate of "those nations which fell by the wayside when their natural resources played out" could be repeated here. We are also told that one of the main reasons for the alarming rate of forest destruction now going on in our country is the lack of understanding and appreciation by the public of the role that forests play in human welfare. Other reasons are lack of a rational land policy, absence of laws and utter inadequacy of existing ones, congressional inertia, and the widespread belief that forests, despite their unfavorable location, topography and soil capability, should give way to agricultural expansion. This misconception, or distortion of economic values had cost and is costing the nation tremendous losses every year.

Under the circumstances, one could hardly escape the feeling that something must be done so that our legislative bodies would enact laws favorable to conservation; something must be done to hammer home to the masses of our peo-

ple the absolute necessity of protecting and conserving our God-given resources of land, water, forests, wildlife rangelands—the very sources of practically everything we need in our daily life.

From the technical stand-point, the wrong or correct way of utilizing these resources for the satisfaction of human needs will spell the difference between want and abundance, between poverty and prosperity. The choice is ours. A poor, desolate country, or a progressive, prosperous one. It is that much important.

In some countries the drive for soil, water and forest conservation has assumed the characteristics of a true social movement. Close behind this movement is the recognition of the concept that land is a "trust" a legacy to be handed down to generations still unborn.

"A private timberland owner in Washington State has appealed a law which forced him to either leave seed stock or to plant and reforest the area from which he took his lumber—his own land. The Supreme Court ruled in effect that the private timberland owner had a pact with the unborn—a responsibility to future generations in the way he used the land which belonged to him." Although the land and the trees growing thereon belonged to him, he is not free to log over the area the way he like it, or the way most convenient to his interests. He is bound by law to observe specific forestry practices in his cutting and logging operations. The law in this case provides for the correct treatment of the land so that it may continue to contribute to human needs. Society has a stake in the way the land is used or treated. This is a trend in the right direction in which "men are beginning to realize that they have a certain stewardship of the land, a responsibility for it not only today and in their lifetime but to those who come later."

How to increase agricultural production and supply the basic necessities of a rapidly expanding population without impairing the productive capacity of the soil, is a question that can no longer be ignored. "Responsibility for the care of the productive land rests on all the people of a country." As Dr. Lowdermilk stated in his report to the U.S. Congress: "A just relation of peoples to the earth rests not on exploitation but rather on conservation—not on the dissipation of resources but rather on restoration of the productive powers of the land and on access to food and raw materials. If civilization is to avoid a long decline like the one that blighted North Africa and the Near East

for 13 centuries, society must be born again out of an economy, of exploitation into an economy of conservation."

In the luncheon meeting given by the Philippine Lumber Producers' Association on Dec. 22, 1957, in honor of the delegates to the Southeast Asia Soil Science Conference, the soil problems of the Philippines were described as follows:

"Forest depletion and soil erosion were proceeding at a dangerous pace that could cause the collapse of any program aimed at attaining self-sufficiency in food production.

"Serious soil erosion at the watersheds of the Ambuklao reservoir in the Mountain Province was taking place; unless erosion is checked immediately, the Ambuklao Hydroelectric Power Station which cost the government ₱140 million to construct will be destroyed in a few years.

"Climatic changes and disturbing crop growth in Mindanao have been noted. The changes were attributed to large-scale depletion of forests in that region."

This deplorable situation was brought about almost exclusively by destructive lumbering and by the widespread "KAIÑGIN" system of agriculture; and also by the subsequent occupation and cultivation by squatters of the forest lands thus cleared which in almost all cases are totally unfit for growing food crops. These forest lands owing to their location, soil and topographic conditions, are clearly intended by nature for certain specific purposes such as timber production, wildlife support, and most important of all, for holding the water on the land where it falls, thus minimizing floods and maintaining water supply.

Dr. Tom Gill, foremost authority on forestry matters, who came to the Philippines at the invitation of the NEC and ICA, in a speech before the faculty and student body of the College of Forestry on February, 1959, issued a warning against the conversion of forest lands into agricultural lands. He said:

"Throughout the world and throughout the centuries attempts to establish and grow crops on forest lands have always ended in disaster. Disaster to the forest, to the crops, and to the soil itself. It has been one of the costliest errors man has ever made and is still making. For in some regions it means death to the soil. It means the creation of man-made deserts, A permanent liability instead of a permanent asset."

BARE 'ALARMING STATE' OF FORESTS LUMBER ASSOCIATION PRESSES SETTING ASIDE OF RESERVES, INFORMATION DRIVE

The Philippine lumber industry warned yesterday on the "alarming state" of the forest resources as a result of rampant destruction by illegal loggers and kaingineros.

In a meeting with the press at the Philippine Columbian clubhouse, PLPA officials led by Nicolas Capistrano Jr., acting president, urged the government to implement the following:

1. To set aside permanent commercial forest reserves; and
2. To conduct a nation-wide public information campaign to preserve forest resources through dissemination in public schools of love of trees ideals.

According to Capistrano, "the alarming state of forest destruction brought about by illegal logging and settlers turned kaingineros will result in nation-wide calamities." He cited recent floods as proof of this rampant forest destruction.

Carlos Fernandez, PLPA official, on the other hand, denounced apathy on the part of the government to implement its forest conservation program. He said that no amount of spending nor appropriation for reforestation can solve the problem unless there are reserved commercial forests.

"The main problem is one of law. These talk of reforestation and forest conservation will not amount to anything unless we dig into the real crux of the problem which is the lack of definite forest reserves for commercial purposes wherein legitimate lumbermen could implement the reforestation program," Fernandez said.

Fernandez traced the root of the kaingin problem. He said that after public areas had been delineated as alienable or disposable lands and thus fit for agriculture and settlement, there are those who poach in inalienable lands or forest reserves.

These settlers turn kaingineros, thus resulting in forest destruction, he added. Fernandez declared that forest areas could also be made alienable lands, thus giving premium to "poaching" by settlers.

Jose Sanvictores, another PLPA official, said that the meeting out of penalties to kaingineros and settlers would not solve the problem unless the government reserves permanent commercial forests.

He said that at the rate settlers were destroying Philippine forests, there would no longer be lumber materials available even for Congress to pass a law during the last regular session declaring certain areas as permanent reserves. They said that the salvation of forests was not in banning of logs nor in appropriation of more money for that purpose.

The Philippine Herald — July 22, 1961

* * * *

WOOD ITEMS OUTLOOK IN US, JAPAN BRIGHT

A better outlook for Philippine wood products in the United States and Japan was reported yesterday by Antonio de las Alas, president of the Philippine Lumber Producers' Association, upon his return to Manila the other day.

Alas attended the annual convention of the Philippine Mahogany Association at Boulder, Colorado. De Las Alas also conferred with officials of the Japanese Lumber Importers Association in Tokyo on his return trip.

One of the highlights of the trip, according to De las Alas, was his appeal to American shipping firms to lower the freight rates on Philippine wood products. Shippers' representatives at the Mahogany meeting assured him they would persuade the shipping conference to lower these rates, Alas said.

Commenting on the general economic situation in the US De las Alas said there was fear in many quarters in the US that the defense pending might induce inflation. "As the Philippine economy is still closely linked with that of America, we should now study the repercussions that an inflation in the United States may have in the Philippines," he observed.

Referring to market prospects, De las Alas reported:

"I found that the demand for Philippine wood products in the US is still strong. I received many inquiries on how they can get more lumber from the Philippine suppliers. I told them the high freight rates and the selective US market make it difficult for us to compete.

"In Tokyo, the Japanese told me they need more logs and lumber not only for their export but also for their domestic utilization and the demand is becoming more and more pressing."

Alas also reported that new attempts were being made to prevent the use of Philippine Mahogany as trade name of Philippine hardboard in the US but through the combined efforts of

the Philippine Lumber Producers' Association the Philippine Mahogany Association and the Philippine Embassy in Washington, all moves against the use of this name have been thwarted.

"But we must be ever vigilant as our competitors may spring a surprise any time," Alas warned.

The Daily Mirror — August 9, 1961

* * * *

FAO EXPERTS TO ASSIST FPRI IN LOS BAÑOS

The United Nations Food and Agricultural organization has made available to the Forest Products Research institute at Los Baños, Laguna, the services of L. W. Crandall, timber engineering expert, and E. R. Schafer, pulp and paper expert, to assist the institute in forestry development plans.

Crandall (U.S.) obtained his Ph.D. in civil engineering from Stanford University. From 1948 to the present time, he has been professor of civil engineering at the University of Wisconsin. He has been adviser to the national standards committee. American Institute of Timber Construction, and member, timber design research committee. American Society of Civil Engineers.

Schafer (US) will assist the institute in developing the potentialities of Philippine forest products for utilization in the pulp and paper industry. Since 1942 to the present, he has been supervising chemical engineer at the forest products laboratory in Madison, Wisconsin.

The Philippine Herald July 22, 1961

* * * *

P.L.P.A. CITES DRAWBACK TO FOREST CONSERVATION

The big drawback to forest conservation in the Philippines is the fact that the areas which should be kept as permanent forests have not been delineated in the first place.

This was brought out at a press conference held Friday noon at the Columbian club by the Philippine Lumber Producers association headed by Nicolas Capistrano, Jr., first vice president. Capistrano now heads the P.L.P.A. board in the absence of its president, Antonio de las Alas, who is abroad on a mission for the lumber industry.

Among the resource persons at the press conference were several directors of the P.L.P.A., including P. Fernandez, P.M. Picornell, Jose G. Sanvictores and Aurelio Lagman. The confer-

ence was held as the association's contribution to Arbor Week observance next week.

Capistrano said in addition to the urgent need for the delineation of permanent forests, the government should start an intensive campaign starting among primary school children to encourage the love of trees and to impress upon them the value of forests to the nation.

In his discussion of forestry problems, director Fernandez called attention to the futility of any conservation work unless the permanent forest lines were first drawn. He said the real destruction of trees is caused by settlers who burn the trees and take possession in hopes they would be given priority when the lands are finally disposed of as agricultural land.

Director Sanvictores said among the problems of conservation are the apathy of the rural folk to the conservation problems. He said much work still has to be done to prove to these rural folk that they stand to gain more in the long run by planting trees and harvesting them as crops. (PNS)

* * * *

SQUATTING ON FORESTS IS ILOILO PROBLEM

ILOILO CITY, July 27 — (PNS) — Squatting on forest areas was cited as one of the main problems facing the local forest conservation program.

Fernando Atmosfera, district forester for Iloilo, said that squatters have denuded large areas of forest lands over the past few years.

Other problems confronting the local forestry office are "passive cooperation" of the public in the conservation of forest resources, lack of personnel and inadequate funds for the affective implementation of forest laws, according to Atmosfera.

Atmosfera was the guest speaker at the Iloilo Rotary club luncheon meeting recently at the Ledesma Hotel pavilion in celebration of Arbor week which started July 23. The forest potential of the country is estimated at ₱32-billion, of which about 3 percent or an estimated amount of ₱1.5-million is found in Iloilo forests, Atmosfera said.

He said that the major forest product in the country is timber. The others of minor worth are charcoal, firewood, and wild animals and birds.

Atmosfera stated that the forest area in this province is 216,100 hectares or 40 per cent of the total land area of 530,400 hectares in the

entire province. The thickly forested areas are found in the towns of Leon, Miagao, Igaras, Tubungan, San Joaquin, Lambunac, Maasim, Januiay, Passi and Calinog.

The district forester appealed for cooperation of both the officials and public towards the conservation of forest trees, pointing out that they prevent unnecessary erosion and disastrous floods.

Daily Mirror — July 27, 1961

* * * *

MASS TREE PLANTING RITES HELD

BAGUIO, July 20 — A pilot project on mass tree planting with school pupils and their parents teaming together was opened Friday in Bua and Tuding elementary schools, Itogon, Benguet, under the joint auspices of the barrio council, PTA and the Reforestation Administration.

The pilot project, which was initiated by Benguet Deputy Governor Santiago Totanes and approved by Forester Primo P. Andres, regional supervisor of the reforestation administration, is expected to generate enthusiasm and response in the neighboring barrios, where the hills are barren.

Andres said this project is the first of its kind in the Philippines, whereby all the residents of the community led by the barrio council and the PTA showed a great interest in the mass tree planting, which seeks to reforest a 13-hectare site.

Daily Mirror — July 20, 1961

* * * *

EYE JAPAN LOG MART

Valeriano C. Bueno, executive vice president of the Philippine Association of Log Producers and Exporters, explained Thursday for Japan on a survey of the Japanese log market.

In an interview at the airport, the PALPE executive stated that it is auspicious for the Association at this time to look into the market situation in Japan because of the expected picking up of trade in the fall.

"The upward trend in the plywood demand will directly affect log prices in Japan. Japan is one of the biggest supplier of plywood to the United States, and any increases in American demand will naturally register corresponding increases in the logging trade between the Philippines and Japan," he said.

He pointed out that the slump suffered by log producers in the country in the last few

months necessitates a gradual picking up in business in order for local producers to recover losses exacted by the dip during the months of April, May, and June.

"The increasing depletion of the stock in Japanese log ponds and a possible increase in plywood manufacturing activities at this time will necessarily bring about a growing demand for Philippine log," he said.

Bueno stressed that an accurate survey of the situation in the Japanese logging market will help guide Philippine log producers in their production schedule.

He will stay in Japan for two or three weeks.

* * * *

SQUATTING IN CAMP 7

By Julian N. Jumalon

Neither a forester nor a speleologist, my squatting in Camp 7, a Reforestation Project camp, may bring about brow-arching in some quarter. In the midst of this midget-summer, when lightnings and thunders are supposed to break the soil to give way to colonies of edible mushrooms, that 1,500 feet nursery seems to be a splendid retreat for naturalists and even those who merely detest the heat and dust of a metropolis. Up there, in the last whole week, where leaves cracked under the feet, and the crisp afternoon breeze suggests vestige of a scorching summer, but the nights and dawns are cold, such that when the hour-hand says seven, it's still an early hour to boil coffee.

First impression up at the nursery this time makes one wax sentimental. The Forester in charge, Mr. Tomas M. Binua, with his charming wife around, has infused that area with new meaning and draped the familiar contour with greeneries and lambent colors, indicating artistic flair and love of practical arrangement. The tilapia hole which sadly recalls human wisdom that shrinks into a lamentable capsule fit for a paranoic's consumption, disappeared beneath the brooding crown of the trimmed marang tree, and in its place one beholds a lane fringed with blooming bamboo orchids with flowered and bermuda-carpeted terrace marching up the hill toward the residence of the Forester. One dreams of claret and burgundy, sniffs cinnabar or dazzles the imagination with plutches of oriental almandine from an Emir's gift-box, everytime he gazes at the swaying clusters of rich, bedewed and exotic bird-of-paradise flowers, which break the gamut of waxen green. Nearby, a shower of gold and lavender begins to take shape, while in shy mood, somewhere, the rich warm tones of a healthy *Bixa orellana* seems to cast a balance to the more flirtatious bird-of-paradise whose

use of colors brings to mind a young, sprightly barrio lass.

But one should be sober in taking Campo Siete into his breast at its full-draped stage. This is one moment when one catches that sulking upland not in its grey mood. How often is one disappointed, who goes there to botanize or collect its rich variety of insects, as, more often than not, he'll harvest raindrops and depressing shadows. The brazy sunshine of the past whole week sent my companion and me goat-climbing up the razor-sharp cliffs and forbidding ledges, where we picked Cebu's smallish *Tanaecia*, and took pot-shoots at elegant tawny *Cirrochroa*. Dusky *Cleromes* and the rare reddish *Charaxes*, together with elusive *Hairstreaks*, seem to have agreed that, in order to make the lepidopterist's ordeal more provocative, no other terrain should be a better breeding place, so here, in forbidding defiles and appallingly steep and rough terrain where the last vestige of Cebu's once lush forest is jealously guarded by government Foresters, they take refuge.

In one week, one cannot truly represent this interesting area in his catch of butterflies, but with the consorting fine weather, in a matter of five field trips to trails fanning in all directions, it is possible to amply represent this area, so that the tension a serious hunt brings about, can considerably ease up, releasing the researcher to enable him to attend to other assignments and requests from fellow-researchers in other branches of science. A request from Dr. Behn Marapao of the USC, sent our party of two scrambling along the steep and rough southeastern face of the mountain, where some seven interesting caves are situated, to try our luck with cave spiders and other strange-looking denizens lurking in the sable darkness.

This is indeed a splendid starting-point for those who would like to be professional Speleologists. In this field of cave exploration, there seems to be much in store for the neophyte. To mere sightseers, the interesting formations of stalagmites, stalagtites, helictites, aragonites and the cave bats and swallows, may be compensation enough for the climb to any of the seven caves above the nursery at Camp 7. In order to appreciate or say good-bye to animal collecting inside caves with butterfly nets and flashlights, one has to experience the thrill of having the whip scorpions or giant cave spider scuttle over his body in the dark. Girls will take it as the extreme of odiousness, and some collector will prefer reclining to merely read Sanderson's experiences in Africa with the horrid-looking *Amblypigy*. In the utter zero of darkness inside caves number three, five and one, and on

the semi-twilight rear of caves one and three, we successfully out-smarted the giant and diminutive species after many trials. But these should not discourage the dames and the swivel-chair he-men, from visiting the caves. The inhabitants are harmless and stick to the cave walls where they melt with the dripstone and flowstone unless exposed by the beam of flashlights.

Together with the arachnid and whip scorpions, one comes across the giant cave crickets with nearly a foot of antennae, several species of bats and a swallow which nests in lightless crevices and ledges. For sure other animal life have escaped us. Those inaccessible recesses and narrow caverns surely hide some strange forms of life. A daring crop of Speleologists, if locally available, may tell us something more about these and many other caves in and around Cebu. We add here, that, strangers forms of creatures, do come into the caves at Camp 7, for we saw the broken bottles, rusty cans, rotting papers and other forms of trash littering the otherwise clean cave floors. May the next batch

of visitors entering those beautiful caves enjoy their picnics under the Cebuan sun and leave the inside of caves purely guano-calpeted. All may this apply as well to the beautiful reforested area at Camp 7 where rusty cans, wrapper, broken bottles and other marks of advanced civilization, do not seem to match with the beauty of nature and the hospitality of the Foresters.

Two new things at Camp 7 crept into our attention. Assistant Foresters working with Mr. Binua, caught a horned toad and a snake, which description answers that of a cobra. Between the nursery and the ridge, is the roost of hundreds of huge bats. In the past several days, either unwelcomed interlopers or snappish crows disturbed the roost sending the sleepers soaring over the forest in broad daylight, gritting and shrieking madly. When sobered up by the unkind August sun, they would settle again on the favorite tree, and at such instance, from the window of the Forester's residence, the tree appears like a huge avocado tree with thousands of dark pears hanging from all branches.

Reprinted from Cebu Star

SUCCESS DOESN'T DEMAND A SHEEPSKIN

Are you ashamed of your lack of schooling? You shouldn't be because it is what you know, not how you learned it, which really counts.

One of the greatest intellectuals in human history, George Bernard Shaw, attended school for just five years.

Henry Ford's formal education consisted of only a few years in a country school-house.

Al Smith spent less than seven years in school, yet he went on to become four times Governor of New York, and a candidate for President of the United States.

Cornell University was founded by a man who never graduated from any school, Ezra Cornell. Cornell also organized the Western Union Telegraph Company.

Subway builder Sam Rosoff never had a day of schooling in his life and reputedly could neither read nor write. Yet he managed to amass a fabulous fortune in the construction business.

Robert Fulton, the Wright brothers and Thomas Edison were all large ly self-taught.

— JAMES FOX

R. A. Notes

ALBIZZIA FALCATA NOW PLANTED

Now, hear this!

The discovery of one of the world's fastest growing trees good for planting denuded forests in the country was revealed by the Reforestation Administration.

The trees called "Albizia falcata" are capable of growing four times faster than ordinary species currently used for reforestation purposes. Hence, the extensive propagation of the trees currently undertaken by the Reforestation Administration will speed up the government's reforestation program and save the country's "fast vanishing forests", according to Administrator Viado.

The Administrator further said that "Albizia falcata" could be the most suitable species for the reforestation of critically denuded areas like watersheds of rivers supplying hydro-electric power, irrigation, and water for domestic consumption. Thus, destruction of recurring floods and droughts will be favorably forestalled, he added.

Aside from its reforestation value, the tree is good for pulp making. It is also found to be suitable for veneer in 20 years. Ordinary species like narra takes some 100 years to grow before they can be used for the same purpose.

The "Albizia" was introduced into the Philippines from Moluccas.

Source: Reforestation Newsletter: Vol. I No. I—March, 1961.

* * * *

FIVE-YEAR PLANTING SKED BARED:

The Reforestation Administration announced an all-out campaign to replant wide areas of denuded timberlands beginning this year.

The intensified planting program of bald denuded areas, especially watersheds, is a part of a long-range plan to avert droughts and floods in the country, and to provide continuing supply of commercial timbers.

In a five-year reforestation program beginning 1961 the Reforestation Administration aims to reforest open, deforested and denuded lands with about 5000 hectares expected to be reforested.

Meanwhile, Reforestation Administrator Jose Viado revealed the following figures showing ac-

complishments in reforestation works during the last four years: 1) planted areas from 1956 to 1960 covered about 50.

Source: Reforestation Newsletter: Vol. I No. I—March, 1961.

* * * *

RADIO SERIES

Every Sunday, at 9:30 in the evening from March 12, 1961, a radio series on the work of the country's natural resources will be aired over Station DZBB, 580 kc. on your radio dial. Guest speakers, well-versed on matters pertaining to reforestation, forest conservation, maintenance of national parks, etc. scheduled to be interviewed by Mr. Leon O. Ty, a staff member of the Philippines Free Press and commentator of the Republic Broadcasting System, DZBB.

Administrator Jose Viado talked about "Putting Idle Forest Lands Back to Work" on April 2, 1961 and "Speeding Up Reforestation" on May 21, 1961.

The opinions and facts expressed during these interviews will be highly informative and educational in nature. Spread the news around so that our common undertaking may be more appreciated and popularized. Tune in your radios every Sunday at 9:30 P.M. and hear *your own* program. Invite friends to join you too.

Happy listening!

Source: Reforestation Newsletter: Vol. I No. I—March, 1961.

* * * *

COMMITTEE ON PUBLIC EDUCATION AND INFORMATION IN FORESTRY SETS CAMPAIGN

The Committee on Public Education and Information on Forestry, composed of the heads of the Reforestation Administration, Bureau of Forestry, College of Forestry, Agricultural Information Division (DANR) and the Parks and Wildlife Bureau has started waging its campaign towards the dissemination of information concerning forest conservation, reforestation and the reservation of our national parks and wildlife via the airlines. The special target of the Committee is the people of the rural areas who must become aware of the fact that in order to enjoy the benefits of the forest and lands, these natural resources must be properly preserved and protected. The Committee will attempt to indoctrinate the masses, especially the laymen,

that if conservation is practiced, there will be fewer occurrences of floods, famine, droughts, brown-cuts, water shortage and other inconveniences. Considering the task that it has committed itself to undertake, it is hoped that they will get all the co-operation they need from all public and private quarters.

As the main function of the Committee is mostly the promulgation of programs, a Sub-Committee, composed of the PRO's of the member-agencies is created to assist the said policy-making body.

The experimental project of the Sub-Committee is the radio series scheduled every Sunday evening at 9:00 over Station DZBB, Leon O. Ty, Philippines Free Press staff member, presiding. Our very own Administrator, Jose Viado, is himself invited to be interviewed on two occasions: the first, on April 2; the second, on May 21. He and the other speakers as well shall concentrate on one single theme— forest conservation. The body has made a good start. We pray, it will gather sufficient momentum as it carries on to its praiseworthy mission.

Source: Reforestation Newsletter: Vol. I No. I— March, 1961.

* * * *

ANOTHER FAST GROWING TREE FROM ABROAD INTRODUCED HERE

A fast growing tree that will thrive vigorously on poor soil has been introduced for the reforestation of the country's grasslands by the Reforestation Administration. The species called *Acacia auriculaeformis* is found to be most suitable for planting on cogon areas and grasslands of which the Philippines has vast expanses.

The introduction of *Acacia* brings to two the total of fast growing trees under experimental tests at the agency's various nurseries. The other is *Albizia falcata*.

Reforestation Administrator Jose Viado said that if the trial planting of the *Acacia* will be successful, the species will become the newest addition to the variety of trees presently being planted in the different reforestation projects.

Scientists and researchers of the Reforestation Administration headed by Chief Roman Valera of the Technical Services Division said that the *Acacia* is low and branchy. However, the trees grow fast with reasonably straight boles and stems drawn up when planted at 2 meters by 2 meters apart. In five to ten years, they grow as tall as 8 meters.

The salient difference between the *Acacia* and the *Albizia* is that the former grows well on

poor, dry soil (mountain ranges or highlands) the latter, on damp, watery ground (lowland). However, both can compare favorably as to height and period of maturity.

The *Acacia* is a native of Thursday Island, Torres Strait, Federation of Malaya.

Source: Reforestation Newsletter, Vol. I No. II— April, 1961.

* * * *

OPERATIONS MUTUAL HELP

The Reforestation Administration and the Armed Forces of the Philippines will join hands in planting trees within various army camp reservations.

The agreement was concluded recently at Fort William McKinley following a conference between Chief Paciano Rimando of the Reforestation Management Division and the Committee on Social, Economic, and Military Program of the Philippine Army (SEMP).

It was also arranged that the Reforestation Administration will technically supervise the establishment of forest nurseries and the planting of trees in the army reservations.

For its part, the Philippine Army would provide the labor, water facilities and other materials necessary for the newly planted trees until they could withstand external injuries.

The Philippine Army informed the Reforestation Administration that it plans to establish forest nurseries in Fort William McKinley and in Fort Magsaysay, Laur, Nueva Ecija, as well as in other reservations.

Seedlings coming from these nurseries will be planted on camp pilot reforestation projects within all PA Installations. It said it will furnish the Reforestation Administration with the maps and sketches needed for the proper planning of the proposed planting program.

Source: Reforestation Newsletter, Vol. I No. II— April, 1961.

* * * *

UNKNOWN DISEASE THREATENS PINE PLANTATIONS

An unknown disease attacking Benguet pine trees in the plantations of the Lagangilang Reforestation Project, Lagangilang, Abra, was recently discovered by the Reforestation Administration.

Mariano Blando, officer-in-charge of the project, disclosed that over eight hectares of pine trees have been terribly suffering from the disease. About 2,500 pine trees are planted to a

hectare. The same sources said that approximately 3,000 trees are already helplessly dying.

The disease-carrying organism could not be immediately identified by the scientists and technologists of the newly-created Reforestation Administration due to the lack of laboratory facilities. However, the cooperation of the National Science Development Board, Forest Products Research Institute, University of the Philippines, and the Bureau of Plant Industry has been momentarily sought to determine the cause or causes of the pine scourge.

Administrator Jose Viado said that pure cultures of the causal organisms have so far been isolated and are now being inoculated into the Benguet pine seedlings. He further stated that the earlier the causal fungus is identified, the sooner the remedial measures will be prescribed by his office.

The initial occurrence of the disease was noted last October, 1958, when a few hundred trees towering from two to five meters in height bared yellowing leaves at the lower portions of their crowns. The disease finally spread upward until the afflicted species dried up.

Source: Reforestation Newsletter, Vol. I No. II — April, 1961.

* * * *

"OPERATIONS: REFORESTATION"

Reforestation Administrator Jose Viado will be Ilocos Norte's main speaker on May 1, 1961 during the ceremonies signalling the commencement of the province's "Operations: Reforestation".

The reforestation of the denuded areas in the province of Ilocos Norte will be formally launched on a very wide scale.

Regional supervisor Primo Andres of the Reforestation Administration reported that a Barrio Council mass meeting will be held on the said date after which a mass planting of trees at the vicinities of the Sumiling Subsidiary Nursery of the Paraiso Reforestation Project will be undertaken by all the barrio councils, municipal and provincial officials, school children, boy and girl scouts, civic groups and guests from Manila.

Forester Andres further disclosed that the areas surrounding the Sumiling Subsidiary Nursery which are suitable for planting trees will be divided into lots each of which will be assigned to every council, civic organization, school, or group of persons as their planting project. Each group will care for the saplings until they could withstand external injuries.

Source: Reforestation Newsletter, Vol. I No. II — April, 1961.

* * * *

FORESTER JOSE VIADO CONFIRMED ADMINISTRATOR

The appointment of Forester Jose Viado as Administrator of the newly established Reforestation Administration was confirmed unanimously by the Commission on Appointments, recently.

With his confirmation, Administrator Viado thus became the first chief of the said entity. Prior to the creation of the agency, Forester Viado was the chief of the Reclamation and Reforestation Division of the Bureau of Forestry. By virtue of Republic Act No. 2706, the functions and responsibilities of the said division were transferred to the Reforestation Administration which Administrator Viado now heads.

Administrator Viado was feted with a "blow-out" by his friends and admirers at the New Selecta Restaurant on Dewey Boulevard following the confirmation of his appointment. In the said affair, the executives of the Reforestation reaffirmed their pledges of loyalty to the chief and to the agency in behalf of their constituents. Administrator Viado, in acknowledging their sympathy, said that all he needs to succeed in realizing the goals of the agency is a combination of the fullest cooperation and the highest rate of efficiency which the employees can give. With this, the Reforestation Administration will not fail in its mission to the people in spite of everything, he said.

Source: Reforestation Newsletter, Vol. I, No. III — May, 1961.

* * * *

JAPAN BOUND

Forester Nestor M. Capellan of the Reforestation Administration will leave for Tokyo, Japan, early next month (June) to train in the field of forest management.

Forester Capellan will enjoy a seven-month training grant under the sponsorship of the Japanese Government in cooperation with the Colombo Plan.

While abroad, he will observe the most modern and advanced techniques of forest management in the various forest experiment stations, projects, and nurseries in Tokyo.

Japan is acclaimed to be one of the countries whose forests are the best managed in the world.

Forester Capellan is the current reforestation assistant regional supervisor for Eastern Visayas with headquarters at Cebu City.

Source: Reforestation Newsletter, Vol. I, No. III
— May, 1961.

* * * *

VALERA LEAVING FOR FORMOSA

Forester Roman B. Valera, chief of the Technical Services Division, Reforestation Administration, is scheduled to leave for Taipei, Formosa, this June to study silvicultural trends in the said country.

The ICA-NEC forester-grantee will be away for three months. On his way to the Philippines, he will also visit Japan and Korea to observe the progress made by these countries along lines of silviculture and related matters.

This is the second time Forester Valera is going abroad as a grantee. The first was 1956-57 when he was sent as an ICA-NEC scholar to the United States where he finished his Master of Science in Forestry degree at Michigan State University, East Lansing, Michigan.

Source: Reforestation Newsletter, Vol. I, No. III
— May, 1961.

* * * *

BON VOYAGE

Administrator Jose Viado and his party recently enplaned for West Germany at the invitation of the German Institute for Developing Countries in cooperation with the Food and Agriculture Organization of the United Nations.

The other members of the delegation were Chief Paciano R. Rimando of the Reforestation Management Division and Forester Rafael Navallasca, Reforestation Supervisor for Western Visayas.

The seminar in West Berlin will be supplemented with field trips and excursions to several key spots reforested after World War II as well as to places in West Germany where industrial and technological plants are located.

After the West Berlin seminar, Administrator Viado and his party will proceed to Rome, Italy, to participate in the technical meeting sponsored by the Food and Agriculture Organization with general headquarters at Rome. Scheduled to be held from July 10-20, the said meeting is centered on plant exploration and introduction.

The Reforestation Administration, though a newly created entity under the Department of Agriculture and Natural Resources, is the only agency representing the Philippines in the two international conferences.

According to Administrator Viado, the three-man team will return to the Philippines on the later part of July, this year.

Source: Reforestation Newsletter, Vol. I, No. III
— May, 1961.

* * * *

REFORESTATION PROGRAM LAUNCHED IN ILOCOS NORTE

Operation reforestation was formally launched in Ilocos Norte recently with Defense Secretary Alejo Santos, Governor Jose Evangelista, Congressmen Manuel Cases and Antonio Raquiza, and representatives from various government agencies led by Forester Paciano Rimando of the Reforestation Administration making the kick-off tree planting on the bare hills of the Sumiling area in the town of Sariay.

A joint project of the Reforestation Administration and the province of Ilocos Norte, the initial planting of trees was participated in by more than a thousand people. Seedlings of narra, molave, mahogany, teak, and ipil-ipil were furnished by the Reforestation Administration, the government agency responsible for replanting all the country's denuded areas and watersheds. In the program that followed the tree planting affair the panel of speakers led by Secretary Santos underscored the urgent need to replant the badly deforested and hungry-looking hills that abound not only in Ilocos Norte but also in the entire country.

At one point in his speech, Secretary Santos said the progress of kaingin making has become so alarming that in a decade or two, the next generation might suffer an acute shortage of water both for domestic use and for agricultural purposes. He sounded a call to stop and prevent all kinds of forest destruction like kaingin making, clear-cutting, squatting, and others.

Secretary Santos also promised that the Armed Forces of the Philippines will fully cooperate with the government agencies concerned with reforestation work and forest conservation and protection.

Meanwhile, Forester Paciano Rimando of the Reforestation Administration stressed in his talk that contrary to the circulating belief, the reforestation activities which were formerly handled by the Bureau of Forestry are now entrusted to the Reforestation Administration, an entirely independent entity concerned with the reforestation of denuded watersheds, sand dunes, open lands, and cogon areas. The Reforestation Management Division chief bewailed the current notion of many people that the said agency is being equated with the Bureau of Forestry or is being made a part of it. As a result of this confusion, we lose our identity and the credit which we

(Continued on page 100)

ABSTRACTS

SOME FACTORS AFFECTING SUSCEPTIBILITY TO INSECT BORERS OF FOUR BAMBOO SPECIES IN BUKIDNON

By *Conrado B. Tadeo*

(Bureau of Forestry Research Note No. 51,

June 11, 1959)

Four species of bamboo, (1) Kawayan kiling (*Bambusa vulgaris* Schrad.), (2) Kawayan tinik (*Bambusa spinosa* Roxb.), (3) caña-bojo [*Schizostachyum lumampao* (Blanco) Merr.] and (4) bolo [*Gigantochloa levis* (Blanco) Merr.] were tested as to their susceptibility to insect borers with reference to the position of the moon, splitting and soaking in water before storage. The bamboos which were cut when the moon was on its first and last quarters were least attacked than those cut during the full and new moon. Caña-bojo and Kawayan tinik, either round or split, were the most resistant of the four species. Samples soaked in water for ten days then stored in the open were more resistant than those without any pre-treatment and stored in the open and partial shade. Splitting the bamboo increased its susceptibility to insect attack.

* * * *

PLANTING WHITE LAUAN [*PENTACME CONTORTA* (VID.) MERR. & ROLPE] IN CEBU REFORESTATION PROJECT BY DIRECT SEEDING AND BY NURSERY— RAISED SEEDLINGS

By *Policarpo de la Cerna & Sergio Abarquez*
(Bureau of Forestry Occasional Paper No. 3

November, 1959)

The survival and growth of white lauan by direct seeding and by raising it first in the nursery before planting in the field were tested in this study. Planting by bare-root and earth-ball methods were done on the nursery-raised seedlings.

After three (3) years the heights of the seedlings were 1.50 to 2.00 meters for the earth-balled, 1.30 to 1.50 meters for the bare-root, and .90 to 1.00 meter for those directly seeded. The same sequence in the speed of growth was realized after 11 years in the study. Survival

after three years was 5 per cent in the bare-root, 20 per cent in the directly seeded and 80 per cent in the earth-balled.

* * *

SILVICAL CHARACTERISTICS OF SMOOTH NARRA (*PTEROCARPUS INDICUS* WILLD.)

By *Florencio Asiddao and Monico Nastor*
(Bureau of Forestry, Silvical Leaflet No. 1,

Feb. 1958)

This research study is a compilation of all available results of studies and other important things known about smooth narra. It includes the description of the species, distribution and range, habitat conditions, life history, special features, races, and genetic features. Local names of the tree in the different parts of the country were enumerated. Description was made on the characteristics of the leaves, flowers, fruits, trunk and bark. Environmental factors which influence growth and development like climate, soil, plants and animals were also described. Its seeding habits, kinds of reproduction, and development from reproduction to maturity were shown. The different races, hybrids, uses and commercial importance of the tree were discussed.

* * * *

ROOTING RESPONSE OF NORFOLK ISLAND PINE (*ARAUCARIA EXCELSA* R. BR.) CUTTINGS TO ROOT-INDUCING CHEMICALS

By *Enrique Marin*
(Bureau of Forestry Research Note No. 59,

June, 1960)

All planting stock of Norfolk Island pine are imported from Hawaii due to the failure of this species to bear fruit in the Philippines. This study was therefore conducted to test during four parts of the year the possibility of propagating this tree by cuttings, terminal and sprouts, using alphanaphthalene acetic acid, indole-butyric acid and rootone No. 10, with several cuttings used as control. No success was realized with the first chemical while the two other chemicals and those untreated ones showed 35.42 and 25 per cent success, respectively.

CONVERTING OAK (*QUERCUS* SPP.)
STAND INTO BENGUET PINE (*PINUS*
INSULARIES ENDL.) FOREST

By *Artemio Caleda*

(Unpublished)

The rapid depletion of the Benguet pine forests and the diminution of the areas covered by this species prompted this study to be conducted. The methods used were by girdling dominant trees and by cutting veteran and dominant trees in the oak stands located near or with Benguet pine seed trees. Cutting, although twice more costly, was found much better than girdling in creating good Benguet pine natural regeneration. However, observations in an abandoned *kainigined* area indicated that stripping the forest cover in the oak stands and then subjecting it to controlled burning is more effective than the two methods.

PROPAGATION OF *LINOCIERA RAMIFLORA*,
ALSTONIA MACROPHYLLA, *PTEROCYMBIUM*
TINCTORIUM, *TREMA ORIENTALIS*
STROMBOSIA PHILIPPINENSIS
TINIMISIUM PHILIPPINENSIS
BY CUTTINGS

By *Generosa Cañeda*

(Unpublished)

All the cuttings treated with alphanaphthalene-acetic acid sprouted but only bayating and taluto actually survived at the end of the experiment. Anabiong, batino, karaksan and tamayuan did not produce roots. With the exception of anabiong, all the cuttings treated with potassium permanganate solutions sprouted but only batino, bayating and taluto actually survived. Karaksan and tamayuan were rootless. It was noted in both treatments that the sprouted cuttings were within the 2- and 4-cm. diameter classes.

R. A. NOTE . . .

(Continued from page 98)

rightly deserve falls to the wrong bureau, he said.

Professor Floyd Carlson, an International Cooperation Administration expert on public information and education in forestry informed the crowd that in the Philippines, popularizing the role of the forest in the socio-economic life of an individual is of vital importance and should be given sufficient boost by the government and its people. He said he is here to help train forestry information men in bringing forests closer to the populace via the radio, press, and other communication media.

The cooperative reforestation of the denuded areas in Ilocos Norte is so planned that civic groups, barrio councils, and schools will be divided into waves, allowing each group to reforest specified areas on allotted dates.

Source: Reforestation Newsletter, Vol. I, No. III — May, 1961.

* * * *

TENTATIVE PLAN FOR MOBILE UNITS
(A UN Special Fund Project)

For the purpose of promoting proper utilization of a country's wood resources, it is proposed to form mobile instruction units consisting of one responsible chief, one deputy chief

(locally recruited), two or three craftsmen as instructors and three good drivers, one good mechanic,—the drivers can also be responsible for general duties for demonstrations and for the training of local craftsmen and woodworkers. They would go from village to village stopping long enough at each place to show the local craftsmen and workers the advantages and better results which can be obtained from up-to-date handtools.

In addition to the tools necessary for instruction, the purchase of large quantities of tools must be provided for. A complete set of tools including the maintenance instruments would be handed over to each trainee as a gift, after he had been taught how to use and maintain them. After the team has left then trainees should become permanent demonstrators in the country. A stock of tools stored in the country should be available to supply the instruction unit and the spares for the trainees.

The unit ought to have at least two jeeps and one light all-purpose truck. Apart from demonstration equipment and the tools left to the trained workers, it should also carry sleeping gear and food to ensure its autonomy and not to depend on local resources.

The country should provide the Deputy Chief, in order to facilitate making contacts with the
(Continued on page 106)



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

Z-FAO
(Plan for Mobile Units)

May 25, 1961

The Administrator
Reforestation Administration
DANR, Diliman, Quezon City

Sir:

I am enclosing herewith communication received from the Regional Forestry Officer, Bangkok, and a copy of our answer.

If you are interested to have mobile units pertaining to your office, I suggest that you communicate directly with the Regional Forestry Officer.

Very truly yours,
(Sgd.) TIBURCIO S. SEREVO
Director of Forestry

Encls.:

A COPY FROM A TRUE COPY:
pvt/6-22-61

* * * *

Republic of the Philippines
Department of Agriculture and
Natural Resources
REFORESTATION ADMINISTRATION
Diliman, Quezon City
P.O. Box 2363, Manila

Administration
(FAO-Plan for Mobile Units)

June 1, 1961

The Regional Forestry Officer
FAO Regional Office
Maliwan Mansion
Phra Atti Road, Bangkok

Sir:

We received a copy of your letter to the Director of Forestry, Manila, Philippines dated May 8, 1961.

In this connection, we thank you for your generous offer. This will surely give us an opportunity to expand our field of operation in

fostering efficient reforestation activities in the Philippines.

Please be advised that we are interested in availing of the services of the mobile teams for on-the-spot training of village workers in either or both of the following field of activities:

- (1) Forest Planting
- (2) Reforestation

Very truly yours,
For and in the absence of
the Administrator:
(Sgd.) CARLOS CUNANAN
Chief, Statistics & Extension
Division

COPY FURNISHED:

Department of Agriculture and Natural Resources

Department of Foreign Affairs

A COPY FROM A TRUE COPY:

pvt/6-22-61

* * * *

Z-FAO
(Plan for Mobile Units)

May 25, 1961

The Regional Forestry Officer
FAO Regional Office
Maliwan Mansion
Phra Atti Road, Bangkok

Sir:

With reference to your letter of May 8, 1961 (FOM-268-290-61):

I have the honor to inform you that we are interested to have the mobile team for on-the-spot training of village workers in any one or all of the following field of activities:

1. Techniques of using and harvesting minor products from the forest
2. Producing charcoal and wood tar
3. Use of wood waste

Very truly yours,
(Sgd.) TIBURCIO S. SEREVO
Director of Forestry

COPY FURNISHED:

Department of Agriculture and Natural Resources

Department of Foreign Affairs

A COPY FROM A TRUE COPY:

pvt/6-22-61

FOOD AND AGRICULTURE ORGANIZATION
OF THE UNITED NATIONS REGIONAL
OFFICE FOR ASIA AND THE FAR EAST

FIRST NATIONAL
CONVENTION OF LOG PRODUCERS AND
WOOD MANUFACTURERS

March 20-21, 1961

Manila

Cable Address:

Foodagri

Bangkok

MALIWAN MANSION
PHRA ATIT ROAD, BANGKOK.
TEL. 22407, 22408, 22409

FOM-268-290-61

R E S O L U T I O N N O. 12

8 May 1961

WHEREAS, in holding the First National Convention of Log Producers and Wood Manufacturers, the Philippine Association of Log Producers and Exporters found it necessary to solicit the assistance of various government, private, and individual entities in making the Convention a success;

WHEREAS, in response to the appeal of the Philippine Association of Log Producers and Exporters, the International Harvester Company of the Philippines and Koppel (Philippines) Inc., have kindly sponsored each a luncheon, and the Ajax International a cocktail party for the delegates and the Caltex (Philippines) Inc. and the Shell Company of the Philippines have gratuitously donated funds to help finance the Convention;

WHEREAS, also in response to the request for cooperation by the Philippine Association of Log Producers and Exporters, the Department of Agriculture and Natural Resources, Bureau of Forestry, International Cooperation Administration, United States Information Service, and the National Media Production Center have kindly made available the services of their respective offices in providing the necessary facilities that greatly helped in making the Convention possible;

WHEREAS, in response to the request of the Philippine Association of Log Producers and Exporters for assistance in discussing matters of vital importance to the delegates, the Hon. Cesar M. Fortich, Hon. Jose Locsin, Hon. Salvador Cunanan, Hon. Oscar Ledesma, Hon. Perfecto Laguio, and the Hon. Tiburcio Serevo have kindly given part of their valuable time as guest and keynote speakers for the Convention and Mr. Jose Viado, Mr. Nicolas Lansigan, Dr. Carlson, Dr. Charles Larson, Dr. John Sammi, Mr. Florencio Tamesis, Ex-Cong. Marcos M. Calo, Ex-Cong. Marcial Rañola, Mr. Pedro San Buenaventura, Dr. Paul Zehngraff, Col. Manuel Q. Salientes, Dean Gregorio Zamuco, Mr. Vicente Marababol, Mr. Guillermo Ponce, and Lt. Col. Luciano Gunabe have kindly consented to allow the delegates to avail themselves of their valuable services as resource persons for the Convention;

WHEREAS, the Very Rev. Mons. Vicente Reyes had kindly consented to deliver the invo-

A tentative plan is being contemplated of our Rome Headquarters that mobile units consisting of a few technicians equipped with necessary tools as well as transportation means (jeeps, trucks, etc.) be sent to countries interested in providing technical instructions and training directly to local craftsmen and woodworkers, moving from village to village. The project is supposed to last for several years for one country under the UN Special Fund. In view of the currencies available at the moment by the Special Fund, the technicians and equipment in this project will be provided by some East European countries, such as the USSR, Poland and Czechoslovakia. Although this kind of training projects should come under the national extension services, this Special Fund assistance may prove to be of much help if properly incorporated with other extension activities. The rough outline of the plan is as attached.

This is to ask you, on an informal and preliminary basis, whether your country is interested to have such a mobile team for on-the-spot training of village workers and if so, in which field of activities (such as wood-working, handicraft, charcoal-burning, *planting* and *reforestation*, etc.).

Based upon your response to this preliminary proposal, a more realistic and detailed plan will be formulated at Rome and then contact will be made with you again on a more concrete basis.

We shall be grateful to receive your early reply.

Yours faithfully,
(Sgd.) TOSHIRO NASU
for Regional Forestry Officer

Mr. Tiburcio S. Serevo
Director of Forestry
Bureau of Forestry
Department of Agriculture and Natural Resources

Manila, Philippines

A COPY FROM A TRUE COPY:
pvt/6-22-61

cation for the opening ceremony of the Convention and the members of the local press have extended their utmost cooperation in covering and reporting the activities of the Convention;

NOW, THEREFORE, BE IT RESOLVED as it is hereby RESOLVED: That the delegates of the First National Convention of Log Producers and Wood Manufacturers unanimously express in writing their profound gratitude and appreciation to the International Harvester, Koppel, Caltex, Shell Company and Ajax International for their hospitality and generosity extended to the delegates, to the Department of Agriculture and Natural Resources, Bureau of Forestry, International Cooperation Administration, United States Information Service and the National Media Production Center for their cooperation in making the facilities of their respective offices available for the Convention; to Hon. Cesar M. Fortich, Hon. Jose Locsin, Hon. Oscar Ledesma, Hon. Perfecto Laguio, Hon. Salvador Cunanan, and Hon. Tiburcio Serevo for delivering the main and keynote speeches; to Mr. Jose Viado, Mr. Florencio Tamesis, Mr. Nicolas Lansigan, Dr. Floyd Carlson, Dr. Charles Larson, Dr. John Sammi, Dr. Paul Zehngraft, Ex-Cong. Marcos Calo, Ex-Cong. Marcial Rañola, Mr. Pedro San Buenaventura, Col. Manuel Q. Salientes, Mr. Vicente Marababol, Dean Gregorio Zamuco, Mr. Guillermo Ponce, and Lt. Col. Luciano Gunabe for rendering services as resource persons; and to Very Rev. Mons. Vicente Reyes for delivering the invocation, and to the members of the local press for covering and reporting the activities of the Convention.

RESOLVED finally: That copies of this resolution be duly furnished each and every member of the Convention and every government agency, private entity and individuals who are the recipients of this expression of gratitude and appreciation approved unanimously by all delegates to this Convention.

ADOPTED, March 21, 1961.

(SGD.)

for CANUTO V. PEFIANCO, JR.
Convention Secretary

ATTESTED:

(SGD.)

BRIGIDO R. VALENCIA
Chairman

First National Convention of Log
Producers and Wood Manufacturers

A TRUE COPY
-aRc:11-iv-61

MILLER FREEMAN PUBLICATIONS
500 Heard St., San Francisco 5, California

July 10, 1961

Library
University of the Philippines
College, Laguna
Philippines

Many thanks for your letter regarding the free set of 12 booklets on pulp and paper.

On page 4 we have checked the paragraphs pertaining to your correspondence. Please refer to them.

If any further communication is necessary or if your records do not agree with ours, please use the last page of this letter and return it to us.

We want to handle this matter to your complete satisfaction and if you have further questions or if we can be of service to you in any way, please let us know.

Sincerely,
Circulation Department
Miller Freeman Publications
* * * *

Forestry Library
260 Walter Mulford Hall
University of California
Berkeley 4, California
January 27, 1960

Mrs. Juanita C. Ranit
Librarian
College of Forestry
University of the Philippines
College, Laguna
Philippines

Dear Mrs. Ranit:

Thank you for sending the issue of *Forestry Leaves* which we requested and thank you also for your reply of December 16. Since we have received issues of *Forestry Leaves* somewhat irregularly in the past, we would appreciate it very much if you would include us on your mailing list.

The College of Forestry has been on our mailing list to receive our free publications for some time. We will change our mailing stencil, so that the publications will be sent directly to the Library in the future. It is probable that you have not received the School of Forestry Club annual, so under separate cover we are sending the 1957-1959 issues of *Timber*. I trust it will be of some interest to you.

Very truly yours,
(Mrs.) ESTHER JOHNSON
Librarian

THE FOREIGN SERVICE OF THE
UNITED STATES OF AMERICA

American Embassy, Manila
July 11, 1960

Mrs. Juanita C. Ranit
Librarian, College of Forestry, U.P.
College, Laguna

Dear Mrs. Ranit:

We appreciate your acknowledgement of the books USIS-Manila sent you last month. Several sets of the *Science Bookshelf* were received from the U.S. Information Agency in Washington for presentation to selected recipients. It was through representations made by Mr. E. L. Stone and our recognition of the valuable work being done by the College of Forestry that we included your library in the list.

Needless to say, these books have been presented in order to help sustain the interest in science among the students of your school.

Sincerely,

HAROLD F. SCHNEIDMAN
Chief Information officer

* * * *

U.G.M. FACULTY OF AGRICULTURE
AND FORESTRY DJL. PAKEN (SEKIP)
TELEPH. No. 962 JOGJAKARTA-INDONESIA

Jogjakarta, July, 1960.

To
The College of Forestry
University of the Philippines
Laguna
PHILIPPINES.

Dear Sirs,

Herewith we are providing your institution with the following publications which may be of interest for your staff and constituents:

1 copy: Hollerwoger: Djalan baru dan lama untuk mendapatkan bahan 2 peta hutan di Indonesia.

1 Copy: Heubult: Nitrifikasi.

1 copy: Indrojono: Sekitar mimicy insecta

If you have at your disposal publications of your institution which you consider of importance for our Faculty Library, we will be very glad if you could favour us some of them.

Wishing you a good receipt of this sending and awaiting your response, we remain.

Yours sincerely,
(Sukiswadi, librarian).

FIRST NATIONAL CONVENTION OF LOG
PRODUCERS AND WOOD
MANUFACTURERS
March 20-21, 1961
Manila

RESOLUTION No. 6

WHEREAS, the delegates to this convention are aware of the need for competent men to administer the management of our natural resources, particularly our forest resources;

WHEREAS, the positions of Undersecretary of Agriculture and Natural Resources, Director of Forestry, and Administrator of the Reforestation Administration are positions that need to be filled up by men who, by experience and training, are familiar with the forestry problems of the Philippines;

WHEREAS, His Excellency, the President of the Philippines has appointed Atty. Salvador Cunanan as Undersecretary of Agriculture and Natural Resources, Mr. Tiburcio Serevo as Director of Forestry and Mr. Jose Viado as Administrator of the Reforestation Administration;

WHEREAS, the delegates to this convention are of the belief that Atty. Salvador Cunanan, Mr. Tiburcio Serevo and Mr. Jose Viado are eminently qualified to occupy the positions to which they have been appointed;

NOW, THEREFORE, BE IT RESOLVED AS IT IS HEREBY RESOLVED: That the appreciation and gratitude of the delegates to this convention for the appointment of Atty. Salvador Cunanan as Undersecretary of Agriculture and Natural Resources, Mr. Tiburcio Serevo as Director of the Bureau of Forestry, and Mr. Jose Viado as Administrator of the Reforestation Administration be conveyed to His Excellency, the President of the Philippines.

RESOLVED FURTHER: That this expression of appreciation and gratitude be conveyed to the Honorable Secretary of Agriculture and Natural Resources and members of Congress for their information and guidance.

(SGD.) CANUTO V. PEFIANCO, JR.
Convention Secretary

ATTESTED:

(SGD.) BRIGIDO R. VALENCIA
Chairman

First National Convention of Log
Producers and Wood Manufacturers
Source: Deforestation Newsletter Vol. I No. II,
April, 1961

Republic of the Philippines
Department of Agriculture and
Natural Resources

BUREAU OF FORESTRY
Office of the District Forester
Balanga, Bataan

D-12, Arbor Week
Celebration (1961)
The Editor
Forestry Leaves
College of Forestry
College, Laguna

July 31, 1961

Sir :

I have the honor to request publication of the attached Arbor Week Message of the Honorable Pedro R. Dizon, Provincial Governor of this Province, to his constituents in connection with the Arbor Week Celebration in Bataan this year. The reason for the request is of the object-lesson sensitively touched by the Governor in his message which I feel is inspiring.

Very truly yours,
CATALINO Q. FERRERIA
District Forester

* * * *

MESSAGE

During the celebration of Arbor Week (July 23—29, 1961) much will be said and written about the importance and value of trees to mankind. Men will again be extolled to protect and preserve them. But I doubt whether the celebration of Arbor Week has really achieved anything.

This year's celebration of the occasion brings back to my mind the picturesque mountain side of Bataan Peninsula where once proudly thrived a thick forest with its ever green foliage confidently basking in cool beauty and splendor. I remember that we used to boast that our forest is an inexhaustible source of first class timber and other priceless forest products. During these years our province had not experienced the disastrous effect of floods, droughts, and other natural calamities.

Today we are witnesses to the careless and wanton destruction of this exquisite forest. Our mountains are bare and their beauty is now something of the past. Nature in protest against our indifference has turned its wrath against us. Very soon our mountain soil, because of constant erosion and droughts, shall lose its productiveness unless we admit the value of trees, and take the necessary precaution.

It is high time that we realize the consequences of our omission. And with sincere determination let us exert every effort to preserve and protect the few trees that remain in our forest.

At present the government embarks in a huge reforestation program to replenish our dwindling forest reserves. I fervently hope that this succeeds particularly in this historic Province of Bataan. I, therefore call upon our people to cooperate with the authorities concerned in the implementation program so that we may regain for ourselves and for those who shall come after us the lost wonders of our forests.

PEDRO R. DIZON
Provincial Governor

* * * *

August 2, 1961

The President
Malacañang Palace
Manila

Sir :

We, the undersigned members of the Pulp and Paper Manufacturers' Association, Inc. (PULPAPEL), have the honor to request for the early release of the sum of ₱800,000, Item No. 31(b) of R. A. 3101, for the construction of a Pulp and Paper Laboratory in Los Baños, Laguna. This proposed building is to be used by government chemists and researchers of the Forest Products Research Institute.

Members of the PULPAPEL have had the privilege to visit and observe the work and operations of the Pulp and Paper Section of the FPRI. and we have noted how crowded this section is, so much that there is not enough room to cook in, or to install additional research equipment and facilities that may be forthcoming.

The importance of research, especially in our infant pulp and paper industry, can not be over-emphasized. For while it is true that we are now producing various kinds of paper and our products have earned general acceptance by the consuming public, it must be said that there is still room for improvement in our manufacturing methods.

But most vital of all is our quest for suitable raw materials that are available locally and can be feasibly and economically processed into pulp for paper-making. At present, some of our paper mills use rice straw and sugar cane bagasse for conversion into pulp. But even

these mills have to import part of their pulp requirements.

We do believe that a more intensive and extensive research on forestry and forest products would eventually solve our present pulp problem. Major areas of research studies should include, not only the utilization and conversion into pulp of wood wastes and non-commercial wood species into pulp, but also the development of faster-growing and more pulp-producing trees, methods of increasing pulp yields from wood, recovery of chemicals and other by-products, and other important aspects apropos the manufacture of pulp and paper.

In view, therefore, of all the foregoing and the urgent need to step up and expand government research on pulp and paper, we trust that you will find your way clear to ordering the early release of the appropriation covering the

cost of construction of the Pulp and Paper Laboratory building, in Los Baños, Laguna.

Very respectfully yours,
PULP AND PAPER MANUFACTURERS' ASSOCIATION, INC.;

For:

A. SORIANO Y CIA.
INTERWOOD PAPER MILLS CO.
ACLEM PAPER MILLS
ARCO PULP & PAPER CO.. INC.
BATAAN PULP & PAPER MILLS, INC.
CIA. DE CELULOSA DE FILIPINAS
EASTERN PAPER MILLS CO., LTD.
GLOBE PAPER MILLS
MANILA PAPER MILLS, INC
MINDANAO PULP & PAPER MILLS
PACIFIC PULP & PAPER CORP.
PHILIPPINE PAPER MILLS, INC.
UNIVERSITY PAPER MILL
WORLDWIDE PAPER MILLS

R. A. NOTE . . .

(Continued from page 100)

people and to let other members of the team know the people's customs and prevalent needs. It would be better if he could be prepared by a fellowship before starting on the project. With regard to his profession, there is no special requirement: it is important to find an independent personality, enthusiastic and with the idealism necessary for such an arduous mission. He should help to prepare a detailed working plan based on his experiences and knowledge of his country, including proposals on those tools and working techniques which are most urgently needed. On the basis of this working plan, the instructors should come from European countries which still have solid training in the fields of handicraft. The drivers, and one should be a mechanic, can be hired locally or brought from outside. If selected in the country it could be done in such a way that most, or all, of them could be trained during the mission to such an extent that they could continue to work after the departure of the original team. The purchase of tools should also be based on the detailed working plan.

The most urgent need for training and the greatest number of trainees will be found among the rural craftsmen, i.e. the few skilled men who in every village are engaged in providing the population with their necessary supplies. According to the country there may not even exist such a class of would-be craftsmen and the in-

struction team in that case must try to find other suitable inhabitants of the village, willing and able to be trained.

The following wood consuming handicrafts are needed and training in these fields should be provided for and adjusted according to the working plan mentioned above.

Carpenters, joiners, wheelwrights, the production of shingles, cooperage, baskets (of sliced wood), fruitboxes. The production of efficient tool-handles is a very important item. According to the need also the production of simple tools, such as wedges, splitting ledges, hammers and even drawing knives, billhooks and axes could be included—which means that in this case a skilled smith should be attached to the team and an ambulant forge to the equipment.

Also the techniques of harvesting and using minor products from the forests, of producing charcoal and woodtar, where appropriate, and even the construction of efficient and economic wood burning kitchen and heating stoves should become the subjects of training.

In countries where simple sawmills exist, the maintenance of circular or gangsaws, the best utilization of the roundwood, proper seasoning of sawnwood and the use of wood waste should be taught; but last and not least, where the opportunity exists, the training of forest workers within the limits of the use and maintenance of efficient handtools for timber felling and even

(Continued on page 108)

Sunshine Corner

When Adm. Arleigh Burke, Chief of Naval Operation, was a rear admiral commanding Cruiser Division Five off the coast of Korea in 1951, one of his jobs was to furnish fire support for the most advanced U.N. and ROK troops. However, he spent much of his time ashore in the front lines rather than aboard his flagship. Asked about this by a friend, Burke replied:

"During the last war an Army lieutenant heard rifle fire from behind a line of tents and strolled over to investigate. He found a sergeant busy blazing away at a homemade target. The lieutenant examined the target carefully, but failed to observe any hits. 'I don't see any holes in the target, Sergeant,' he said. 'Where are your bullets going!'

"'Boss,' said the sergeant, 'I don't know where they are going, but they are sure leaving here with a hell of a bang!'

"I don't want to be like that sergeant," concluded Admiral Burke. "I want to know where my bullets are going!"

* * * *

During a coffee break, the conversation turned to whether women dress to please men or to please other women. Most of us regard that they dressed to please men. But a sergeant ended the discussion when he declared, "They don't have to dress to please me!"

* * * *

Scheduled to do a show at a veterans' hospital, George Jessel decided to send a corsage for each nurse. The corsages made a hit, for when Jessel appeared he observed that every nurse was wearing the floral offering.

There'd been just one oversight—all the nurses were male.

* * * *

During office coffee break an attractive young married woman was always surrounded by admiring males, a situation entirely to her liking. But despite all her efforts, the office's most handsome bachelor remained oblivious to her charms. Attempting to attract his attention one morning she asked coyly, "What is the first thing you notice about a girl, Major Davis?"

"The fourth finger of her left hand," he replied curtly.

* * * *

A very young soldier and his bride-to-be came to our manse to be married. When my

husband concluded the ceremony, instead of kissing each other, the couple just stood shyly.

"You may salute your bride now," my husband said. "The ceremony is over."

To our amazement, the soldier turned and gave a very proper military salute—which the startled bride returned.

* * * *

During a recent drive on excessive speed at one of the larger Naval installations in California, a Marine private stopped a military jeep for exceeding the speed limit and politely asked the driver, a Navy commander, for his operator's permit. The Marine proceeded to make out the traffic-violation certificate. "Private," the commander roared, "do you know who I am? I'm the executive officer of this base and I'm en route to a golf engagement with your commanding officer and this will undoubtedly make me late."

"I'm sorry, sir," the Marine replied, "but I'm writing as fast as I can."

* * * *

"When I was your age, young lady," her mother said sternly, "a nice girl didn't think of holding a man's hand."

"But mother," the daughter protested, "nowadays a nice girl has to hold a man's hand."

* * * *

After some years of marriage, the wife of a successful writer divorced him. Writers were too temperamental and unpredictable, she complained, and she no longer could put up with this one's quirks and peccadilloes. What did she do next, however, but fall in love with still another famous author.

The ex-husband read of the wedding and sent his former bride this cable: Heartiest congratulations and best wishes. (Signed) Frying Pan."

* * * *

An Air Force enlisted man stationed in Rhode Island had little difficulty hitching a ride when he stood at the side of the road with duffel bag in one hand and a huge banner tied across his chest reading: "To Mother for Christmas."

* * * *

During a ship's dance, a young Royal Marine couldn't keep his eyes off a pin worn by his partner, which depicted a cluster of Naval signaling flags. "I see you're admiring my brooch,"

she said. "It was a present from my husband and the flags mean, 'I Love you'."

Knowing that the word "love" wasn't in the Naval signal manual, the Royal Marine turned to his manual as soon as he got back to his quarters. What flags actually signaled, he discovered, was : "Permission to lay alongside."

* * * *

A young man-about-town took a glamorous girl out on a date. They were driving down a moonlit countrylane when the engine suddenly coughed and the car came to a halt.

"That's funny," said the young man. "I wonder what that knocking was?"

"Well, I can tell you one thing for sure," the girl answered icily. "It wasn't opportunity."

* * * *

The driving instructor who was giving a lesson to a lady friend of mine explained that he wished her to creep up slowly to a stop instead of putting on the brakes suddenly. He also told her he wanted her to start the car slowly instead of with a sudden jerk.

"In other words," he said, "in this car I want lots of creeps, but no jerks!"

* * * *

An absent-minded professor had a decidedly bad taste in his mouth one morning so he stopped to see his family doctor.

"Pulse seems to be all right," the doctor said after a quick check. "Stick out your tongue."

The professor did and the doctor looked. "Humm," he observed, "it looks okay, but why the postage stamp!"

"Oh," the professor said happily, "so that's where I left it."

* * * *

The young wife approached a post office window and said, "I wish to complain about the service."

"What's the trouble, madam?" the clerk wanted to know.

"My husband is in Atlanta on business and the letter he sent me is postmarked Miami Beach."

* * * *

The homeowner was delighted with the way the painter had decorated his house.

"You did a fine job," he said, "and I'm going to give you a little something extra. Here's \$10. Take the missus to a show."

That night the bell rang and the painter stood at the door, all dressed up.

"What is it," the man asked, "did you forget something?"

"No," replied the painter. "I just came to take the missus to a show."

R. A. NOTES . . .

(Continued from page 106)

plantation of nursery work may be considered in this respect. However, forest workers' training in the whole field of logging should not be the objective of these mobile units. According to experiences gathered elsewhere, permanent training centers at demonstration forests offer the best way to lasting results.

The project should be planned for one country with a duration of several years.

One of the reasons for proposing this project is the fact that considerable amounts of funds are available in Polish Zlotys, Czech crowns and Russian roubles. With these currencies it will be possible to buy not only the tools to be distributed, in Eastern countries but also the necessary equipment for the mobile training team each as vehicles, tools for instruction, campaign materials, etc.

The greatest pleasure in life is to do a good deed in secret and have it discovered by accident.

— Charles Lamb

It is good to have money and the things that money can buy; But it is good too, to check up and make sure you haven't lost the things that money can't buy.

— G. H. Lorimen

Real joy comes not from ease or riches or from the praise of men, but from from doing something worthwhile.

— Sir Wilfred Granfell

"One of the best friends a man has is not comfort but the challenge of antagonistic environment to awaken his slumbering soul."

— H. E. Fosdick

CHARCOAL PRODUCTION . . .

(Continued from page 56)

APPENDIX 4

PERSONNEL REQUIREMENT FOR 3 SHIFTS (24-HOUR OPERATION)

	No. Required	Daily Wage (Per Person)	Total Daily Wage
A. — DIRECT LABOR			
Mechanic-Foreman	3	₱ 7.50	₱ 22.50
Boiler Tender	3	6.15	18.45
Briquette-Press Operator	3	5.95	17.85
Charcoal & Binder Feeder operator	3	4.75	14.25
Dryer Tender	3	4.75	14.25
Sub-total	15	₱29.10	₱ 87.30
B. — DIRECT SUPERVISION AND MANAGEMENT			
Plant Supervisor and Manager	1	15.00	15.00
Shipping and Receiving Clerk	1	6.00	6.00
Sub-total	2	₱21.00	₱ 21.00
GRAND TOTAL	17	₱50.10	₱108.30

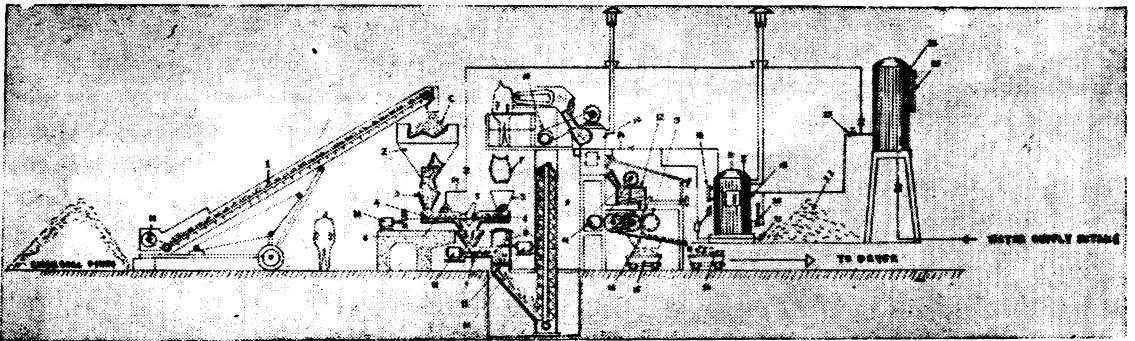


FIG. 1 SCHEMATIC FLOW DIAGRAM OF THE CHARCOAL
BRIQUETTING OPERATION SHOWING THE MACHINERY
— EQUIPMENT USED —

- | | |
|---|---|
| <ol style="list-style-type: none"> 1. Charcoal Elevator 2. Charcoal Bin 3. Charcoal and Flour Hoppers 4. Screw Feeders 5. Permanent Magnets 6. Water Sprayer 7. Mixture Screw Feeders 8. Disintegrator 9. Bucket Elevator 10. Heater 11. Screens 12. Pugmill 13. Briquetting Rolls 14. Screen | <ol style="list-style-type: none"> 15. Fines Wagon 16. Raw Briquettes 17. Steam Trap 18. Water Level Gauge 19. Dairy Boiler 20. Feed Water Pump 21. Drain 22. Coconut Shells 23. Gate Valve 24. Water-Supply Tank 25. Water Level Gauge C Charcoal M Motor F Cassava Flour PI Steam Pressure Indicator |
|---|---|

LITERATURE CITED

1. Anonymous. 1956. "Charcoal from portable kilns and fixed installation." Food and Agricultural Organization of the United Nations. Rome, Italy.
2. Anonymous. 1957. "Production of charcoal in a masonry block kiln -structure and operation." Report No. 2084. U.S. Dept. Agr., Forest Service, Forest Products Laboratory.
3. Bergstrom, Hilding. 1957. "Wood chemistry research at Kolningsslaboratoriet, Part 3: Destructive distillation, spontaneous ignition and distillation in column apparatus." Svensk Pappers Tidings, Vol. 60 pp. 115-123.

AN INTERVIEW . . .

(Continued from page 36)

which I can readily see is the recruitment of more promising young men to carry on teaching, administration, field work as well as important research projects, not to mention the fact that there is the constant threat of losing the energetic and competent staff members who are underpaid and overworked without even decent housing facilities and the leisure for individual research to compensate for low wages. I cannot sufficiently emphasize these problems without sounding more frantic for their implications are profound. No self-respecting educational institution can afford to exist without the continuous financial provisions for its maintenance, and more important because such provisions apply to the gathering of competent minds to solve a national need. For needless to say, no institution whose human resources are constantly suffering from deprivation can achieve excellence in teaching, field work, and research. I think research is paramount because we in the College of Forestry would like to have research projects free from the dictates of quick merchantilism which tend to serve selfish ends of unscrupulous businessmen. Graver still is the corrupting influence on researchers and research methods which delimit themselves before all possibilities of a given study is exhausted. What the College would insist upon is that kind of research which will provide training and research methods for students and simultaneously encourage more advanced projects among maturer faculty members whose ends will benefit society as a whole, and since we are in the College of Forestry the benefits we deem to provide will be in the form of a compendium of scientific knowledge on our forest. The irony is that our own University Administration often overlooks the fact that the College of Forestry is a part of the academic community it has dedicated itself to serve. But these problems of the College are not as bleak as the problems on the national level.

12. Q. *You have mentioned a number of difficulties within the institution itself, how about obstacles outside of the College?*

A. Public ignorance on the forest is a hard nut to crack for this is another form of illiteracy. To educate the public means a program which should be effective both for the masses and the people in authority. This is an area in the Project Work Plan which the College of Forestry cannot solve along without the wholehearted assistance of national government agencies. No matter how well our researchers and field workers describe the crisis and its solutions, unless their findings are disseminated these will remain ineffectual for the vandals are numerous, political expediencies on land grants are rampant and the forest covers thousands of hectares inaccessible to our small staff. Besides, the Bureau of Forestry is the only national agency empowered to do something about the crisis; it is understaffed, and those who are competent in its staff are demoralized because they are underpaid, their projects are unrealized for lack of facilities and funds and, to top it all, it is fast becoming a political sinicure.

13. Q. *How would you propose to counteract this hindrance?*

A. Through findings of the College of Forestry I would propose that the problem related to the national level be brought by the University to the attention of the legislators of the havoc they have been tolerating through negligence and ignorance. Laws regarding forest conservation and proper utilization must be drawn in consultation with those competent in the field and I would personally insist that more stringent laws be passed for punishing forest vandalism. The "Land for the Landless" program must be re-examined in order to bring to light the evils it perpetuates. With these laws must

(Continued on page 112)

Forestry Leaves

Organ of the Student Body and Alumni of the College of Forestry, College, Laguna

GREGORIO P. PRINCIPE

Editor

EDMUNDO V. CORTES

Managing Editor

ISAIAS V. BARONGAN

ANTONIO M. LIZARDO

Associate Editors

R.S. Valdez, A.A. Mariano, B.G. Paragas, T.P. Taloma, R.M. Dela Rosa, *Literary*;
D.T. Del Rosario, E.C. Cabote, O.A. Gendrano, J.L. Albay, F.C. Lozano, *News*;
R.C. Casilla, R.B. Goze, V.A. Fernandez, *Features*; P.S. Muñoz, G.L. Valeña,
D.S. Alonzo, J.B. Seguerria, *Sports*.

APOLINARIO M. PAEZ

Circulation Manager

ALRASHID H. ISHMAEL

Asst. Cir. Manager

IGNACIO G. PATAGUE

Business Manager

HERMINIO B. SAMBAJON

Asst. Bus. Manager

PROF. JOSE B. BLANDO

Adviser

Editorials

WE START TO FISCALIZE

The Society of Filipino Foresters must rise to the challenge of the times. It is, as someone so aptly said, the organization that has the greatest concentration of forestry know-how in the country. But if it is to live up to what it is and to the purposes for which it was organized, then it must discover its strength and, discovering it, must make use of it to carry out its objectives.

Let us recall that our Society has obligations to perform. Our constitution calls upon it, among others,

“(c) To assist in the full development, wise use, and conservation of all forest lands, public or private, so as to assure our country a continuous and adequate supply of forest products and forest influences and other values therefrom”.

There are a number of ways to discharge this particular obligation. With this issue of the SFF Newsletter, therefore, we begin at one of its aspects. Like a physician applying his stethoscope here and there, probing for ills that might be afflicting a man, we shall look about here and there and ventilate problems which might be besetting Philippine forestry today.

In this job, we will not single out the Bureau of Forestry only. To be comprehensive it must include all the sister agencies: Office of Parks and Wildlife, Reforestation Administration, College of Forestry, and the Forest Products Research Institute. And, if called for by circumstances, we propose to include even the Department of Agriculture and Natural Resources, the forest-using industries, and all such agencies and organizations that have something to do with the management — or mismanagement — of our forest resources.

Our primary objective is to arouse a desire for remedial measures. To carry this out, we shall attempt to focus attention one at a time on one area of forestry, present the facts as objectively as we can, call attention to the shortcomings, if there be any. In short, we will fiscalize. We will be blunt. We will call a spade a spade. We will praise where praise is due; we will criticize where criticism is warranted.

Above all we will be fair. We have no ax to grind against anyone. But as we are not omniscient, we anticipate contrary views. We will welcome such views and ventilate them, too. But if we must argue, let us rise above personalities: let us concentrate on the merits of the issues raised.

Finally, we hasten to add that we realize that we have taken up a thankless job. But we feel it is a job that must be done. And our Society is in the best position to do it.

N. P. LANSIGAN

A HEARTENING MOVE

We are reproducing in full an announcement from the President of the Society of Filipino Foresters. It seems that the Society has at long last taken up the job of "fiscalizing" the performance of the various forestry agencies in their basic functions.. By this is meant, we gather, that it would draw attention to the primary responsibilities of this or that forestry office and ascertain what is the score in the discharge of its responsibilities. We also gather that the "fiscalizing" will be done as objectively as possible and will even give praise where praise is due.

Admittedly, the forestry situation today leaves much to be desired. There are numerous factors why this is so, some of them beyond the control of anyone. But while we realize the situation to be so, the danger lies in the possibility of complacency setting in and of thinking that such a situation has become the normal pattern. This danger is not remote. The day-to-day exposure even to strange things can soon rub off the strangeness of anything and make it an accepted part of our everyday world.

If there is an organization in the Philippines today that is in a unique position to "fiscalize" forestry matters, it is the Society of Filipino Foresters. It enjoys a certain independence of thought, of action and of objectivity. We look forward to the success of this job. In fact, we feel it is one job that should have been started long ago.

G. P. PRINCIPE

AN INTERVIEW . . .

(Continued from page 110)

come an agency to enforce them effectively. Of prime importance to legislation and law-enforcement of forest laws is the necessity to have a knowledge of forest areas and its volume. As we appreciate the importance of a regular and scientifically gathered census, we must emphasize the importance of forest inventory. For how can laws be enacted to safeguard forested areas when such areas are not clearly defined? To accomplish this end, the College would need the aid of

many government departments such as the PAF planes for the use of our photogrammetrist, the PC and other armed forces for protection of our rangers who have often experienced banditry in unstable areas. I will add that the support of provincial and municipal governments are needed for many obvious reasons. Finally, our legislators, as soon as a forest inventory is finished, should designate areas as permanent national forests the sanctity of which will be kept by legislation, by some kind of police agency and by education.

INCIDENTALLY

We wish to congratulate the FSBO this year for a very successful Arbor Week planting and for winning the first prize for its beautiful float at the Loyalty Day Parade on October 10, 1961.

This is the fourth time that the College, with the cooperation of the FPRI, wins first prize for its float. Hats off to the very active officers! More Power to you all!



Left to right seated:—Antonio Lizardo, rep. to the student union; Gil Urgino, vice president; Napoleon T. Vergara, Faculty adviser; Romeo S. Valdez, president; and Dominador Alonzo, secretary. Standing same order, Neptale Zabala, treasurer; Petronilo Muñoz, athletic manager, Victor Dotimas Jr., sgt. at arms; Honorio Cariño, auditor; Gregorio Principe, PRO; and Antonio Glori, sgt.-at-arms.

Below are the arbor week planting scenes:



The student body preparing for the planting.



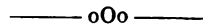
The student body, waiting for the go signal.



Tired but still smiling, the planters spread out their lunch on banana leaves, under a tall bagtikan tree and shout: "Lunch time! Come and have it."



Time out for lunch.



Somewhere in Zamboanga del Norte, members of the local DANREA trudge up the hill to a deforested area to plant forest seedlings.



Members of the Zamboanga del Norte DAN-REA on their way to plant forest seedlings on a deforested area during the 1961 Arbor Week celebration.

— oOo —

From Cotabato comes the greetings from the D-45 Office Personnel.



D-45 Office Personnel, Cotabato City (Left to right) 1st row — Romeo Ulangkaya, Percival Encina, Carlos Fmpedrad; 2nd row — Siwa Ali, Ehad B. Ulangkaya, Asst. D. F.; Pelagio Sumabat, 3rd row — Venancio Menor, Romulo Valerio, and Zoilo Lorenzo.

The UPFACA



The FORESTRY UPSCA alumni organized themselves into UPFACA (University of the Philippines Forestry Alumni Catholic Action.) The organization whose aim is to unite all UPSCA alumni into one active body elected the following officers for this year: Pres. Bob Choy, 1st Vice Pres. Rosie Cañeda, 2nd Vice Pres. Pert Somera, Sec. Julie Gerardo, Treas. Flor Tesoro, Auditor Red Rojo, PRO Archie Arcangel, Sgt. at arms Max Generalao, Jr. and Eddie Cajucom, Prof. Jose B. Blando, Advisers The UPFACA has fifty active members. A meeting will be held in the College of Forestry on November 30, to coincide with the College celebration of Forestry Day.

— oOo —

The Residents of the newly constructed Forestry Residence Hall elected their officers, too.



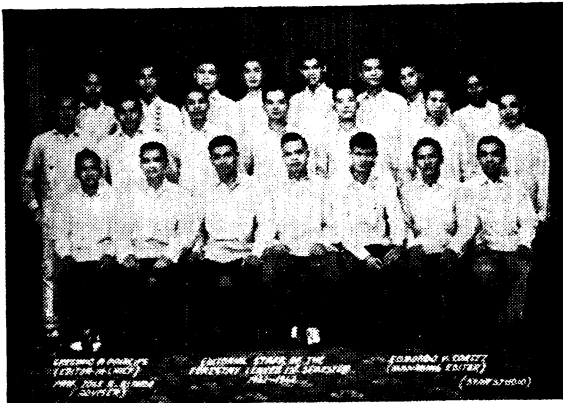
Officers of the FORESTRY RESIDENCE HALL ASSN., College of Forestry, U.P. with their Adviser. Seated (l-r) D. Alonzo; R. Briones; D. Del Rosario, Vice President; M. H. Poblete, Adviser; A. Lizardo, President; R. Valdez, Secretary; I. Patague, PRO; Standing (l-r) — E. Villanueva; M. Lumectin; J. Perez; H. Cariño; A. Paez, Treasurer; F. Pagaduan; and H. Sambajon.



First Residents 1961-62 Forestry Residence Hall College of Forestry, U.P. This newly constructed building will be inaugurated on Forestry Day, Nov. 30. 1961 Mrs. Sofia S. Sincio will cut the ribbon at the inauguration ceremonies.

— oOo —

And days of hard work stretch before this year's Editorial Staff of the *Forestry Leaves* — days of preparation, gathering and proof-reading of materials for the *Leaves* and the *Forestry Leaflets* (College Newsletter)



Editorial Staff of the *Forestry Leaves*, 1st semester, 1961-1962. First row seated from left, R. C. Casilla, Prof. Jose B. Blando, Adviser; E. V. Cortes, Managing Editor; Gregorio P. Principe, Editor; I. G. Patague, Business Manager; A. M. Lizardo, and I. V. Barongan, Associate Editors; 2nd row from left: O. A. Gendrano, P. S. Muñoz, R. S. Valdez, J. L. Albay, B. G. Pargas, T. P. Taloma, A. A. Mariano. 3rd row. from left, F. C. Lozano, R. B. Goze, D. T. Del Rosario, A. M. Paez, A. H. Ishmael, E. C. Cabote, V. A. Fernandez, and R. M. Dela Rosa. (Not in the picture: G. L. Valeña, H. B. Sambajon, J. B. Seguerra, and D. S. Alonzo).

At the FPRI which celebrated its 4th Anniversary on July 5, 1961



A portion of the crowd that participated in the symposium recently conducted by the FPRI. Shown standing, Regent Florencio Tamesis, who is also a member of the Forest Products Research Board, was directing a question to Forester Dominador G. Faustino (not seen in the picture) after the latter finished reading his paper.

— oOo —

Of course, the brunt of the A. W. planting fell on the shoulders of the Reforestation Administration men.



Administrator Viado talks to the faculty, at a faculty seminar in the College Library on the beautiful forests of Germany.



The Faculty in rapt attention listen to the Administrator's travelogue.



Dr. Alexander A. Adamson, president and General Manager of the Philippine Paper Mills and first vice president of the PULPAPEL, who was the guest speaker at the luncheon meeting that followed the symposium during the FPRI fourth anniversary on July 3, traced the history and development of paper making before an audience of about 200 people representing forest products industries, especially pulp and paper producers, high-ranking officials of the ICA, NEC, U.P., FPRI, and others. The affair took place at the International House, College, Laguna.

SULIT RETIRES

Assistant director Carlos Sulit of the Bureau of forestry retired November 4 this year after nearly 47 years of continuous service in the government. He was supposed to have retired last year but for the one year extension granted him by President Garcia.

Sulit started his forestry career as a pensionado in the UP school of forestry in 1913. He was appointed probational ranger in the bureau of forestry in 1915. Through sheer merit he rose from the ranks until he was appointed assistant director. He headed practically all the bureau divisions and also served as associate professor in the UP college of forestry. After liberation, he reorganized the bureau and designated officer in charge, and at various times took charge of the bureau in the absence of the director.

The forestry assistant director finished the ranger course (medalist) from the UP school of forestry in 1915, and, as a University Fellow, obtained master of forestry degree (cum laude) from the Yale school of forestry in 1925. He visited several forest experiment stations, forest products laboratories, and forestry schools in the United States, England, Germany, Switzerland, France, India and Federated Malay states. He visited Japan and Taiwan forestry agencies after attending the 10th Pacific Science Congress in Honolulu, Hawaii, last August.

Sulit is the author of several technical and informative forestry articles published in the UP school of forestry organ and local dailies. An active member of local and international scientific organizations, he hails from Sta. Cruz, Laguna, and is married to the former Miss Hermenegilda Alcantara. — acg.

AMADOR J. EVANGELISTA
Acting Chief,
Forestry Information Section

Forestry Speakers Bureau Training

By G. P. PRINCIPE

The first batch of trainees for the Speakers Bureau on forestry and conservation finished its training course in public lectures and radio talks on October 21, 1961 in the U.P. College of Forestry, Los Baños.

The first training course had for its faculty, professors Carlson, Blando, Jacalne, and Vergara. On the last day of classes was held an extemporaneous speaking contest among the trainees and the first prize, a gold medal, was won by Forester Santos Dueñas. The second prize a silver medal went to Mrs. Emma Artuz Phillips. The medals were pinned on the winners by Dean Gregorio Zamuco at a luncheon given in honor of the trainees.

The first batch of trainees was composed of the following: Eleno C. Capili, Research Forester, and Regulo D. Bala, Forester Supervisor, of the Reforestation Administration; Ulpiano S. de Leon, Information Editor, and Mrs. Emma Artuz Phillips, of the Forest Products Research Institute; Miss Almeida M. Javier, Clerk II and Arturo P. Bislig, Acting Regional Director, Parks and Wildlife Office; Jose R. Claveria, Regional Forestry Director and Santos E. Dueñas, District Forester, of the Bureau of Forestry.

Republic of the Philippines
 Department of Public Works and Communications
 BUREAU OF POSTS
 Manila

SWORN STATEMENT
 (Required by Act 2580)

The undersigned, IGNACIO G. PATAGUE, business manager, of Forestry Leaves, published quarterly, in English, at the College of Forestry, 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:

<i>Name</i>	<i>Address</i>
<i>Editor</i> GREGORIO P. PRINCIPE	College, Laguna
<i>Managing Editor</i> EDMUNDO V. CORTES	College, Laguna
<i>Business Manager</i> Ignacio G. Patague	College, Laguna
<i>Owner</i> U.P. College of Forestry	College, Laguna
<i>Publisher</i> Student Body & Alumni, College of Forestry, Laguna	College, Laguna
<i>Printer</i> Community Publishers Inc.	Inverness, St., Sta. Ana, Manila
<i>Office of Publication</i>	College, Laguna

If publication is owned by a corporation, stockholders owning one per cent or more of the total amount of stocks: NONE

Bondholders, mortgages, or other security holders owning one per cent or more of the total amount of security: NONE

In case of daily publication, average number of copies printed and circulated of each issue during the preceding month of July, 1961;

- | | |
|---|-------------|
| 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 April, 1961;

- | | |
|---|--------------|
| 1. Sent to paid subscribers | 520 |
| 2. Sent to others than paid subscribers | 480 |
| Total | 1,000 |

(SGD.) IGNACIO G. PATAGUE
Business Manager

SUBSCRIBED AND SWORN to before me this 20th day of July, 1961, at Los Baños, Laguna, the affiant exhibiting his Residence Certificate No. A-4762352 issued at Los Baños, on July 20, 1961.

SGD. ARTEMIO ELEFANIO
Justice of the Peace

NOTE: This form is exempt from the payment of documentary stamp tax.
 ACT 2580 REQUIRES THAT THIS SWORN STATEMENT BE FILED WITH THE BUREAU OF POSTS ON APRIL 1 AND OCTOBER 1 OF EACH YEAR.

*Let's Make
 the Philippines Green*

ABARRO & SONS, INC.

*Loggers & Logs / Lumber
 Exporters*

Zamboanga City

Philippines

Compliments of

Z.C. SOUTHERN LUMBER CO.
Dealers of Philippine Mahogany

Zamboanga City

Philippines

Compliments of

NEW PACIFIC TBR. & SUP. CO., INC.
*Loggers & Exporters
 Philippine Mahogany*

Recodo, Zamboanga City Philippines

Compliments of

PANIRAN LOGGING ASSOCIATES

Zamboanga City

Philippines

Compliments of

BAUTISTA BROS. LUMBER CO.
*Loggers & Exporters
 Philippine Mahogany*

Zamboanga City

Philippines

Skagit SJ-7R

COMBINATION YARDER-LOADER

A fast dual-purpose machine that is changing the logging picture. One machine now does both YARDING and LOADING. When working with two CAT Tractors, the SJ-7R offers a production team that is hard to beat.



Call, write or see us

FOR YOUR EVERY LOGGING NEED

- ROEBLING ROYAL BLUE WIRE ROPE
- YOUNG BLOCKS & RIGGING EQUIPMENT
- REMINGTON POWER CHAIN SAWS



1904 - 1960

KOPPEL (PHILIPPINES) INC.

BUENDIA AVE. CORNER MONROE ST., MAKATI

Tel. 8-93-51

BRANCHES AND SERVICE THROUGHOUT THE ISLANDS

Compliments of

NASIPIT LUMBER COMPANY, INC. ANAKAN LUMBER COMPANY AGUSAN TIMBER CORPORATION ASSOCIATED PULP AND PAPER CO., INC.

PRODUCERS * MANUFACTURERS * EXPORTERS

Philippine Mahogany logs and lumber
creosoted lumber, poles and pilings
KILN DRIED & Pressure treated lumber

Members: Philippine Lumber Producers' Association, Inc.

Main Offices:

3rd Floor
Fernandez Hnos. Bldg.
205 Juan Luna, Manila

Tels. 2-47-56
2-69-66

AND

PHILIPPINE WALLBOARD CORPORATION

MANUFACTURER • EXPORTER

Main Office:

R-311 Maritima Bldg.
119 Dasmariñas, Manila
Tels. 2-69-66, L-24
2-47-56

LAWANIT

Hard Wood Board

Sales Division:

R-203 Maritima Bldg.
119 Dasmariñas, Manila
Tels. 2-69-66
L-30, L-31
2-47-56

Sales Information Service:

Jordan Pacific Co.
444 Market Street
San Francisco 11
California, U.S.A.

Cable Addresses:

"NASIPIT MANILA"
"ANAKAN MANILA"
"LAWANIT MANILA"