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FORESTRY

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Edge of Virgin Forest under selective logging of Nasipit Lbr. Co.

Republic of the Philippines
Office of the
President of the Senate

M E S S A G E

Through the FORESTRY LEAVES, I take great pleasure in greeting the students and alumni of the College of Forestry of the University of the Philippines and to congratulate them for the laudable work and study they have undertaken along the line of forestry. The public takes due cognizance of the importance of this course and well notes the numerous benefits the country derives therefrom.

The increase in our lumber production is the immediate result of reforestation, the use of modern methods of logging and the introduction of new and improved machineries for lumbering. The place Philippine lumber now enjoys in the world market can well be attributed to this group of enterprisers well schooled in the methods of modern forestry and the country should lose no time in handing over the laurels to them.

May we anticipate many more fruitful years for forest industries and may God bless this, our young Republic!


E. RODRIGUEZ, S.

Manila
November 16, 1957



IN REPLY, ADDRESS
DIRECTOR OF FORESTRY
MANILA, PHILIPPINES

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

Forestry Day
(UP College of Forestry)

M E S S A G E

The College of Forestry of the University of the Philippines is one institution that can look back with surgingly justifiable pride and look forward with brimming confidence.

There can be no better proof of its worthiness as an educational institution than the fact that the Bureau of Forestry has earned for itself an enviable name in the public service.

Surely, it would be impossible for the Bureau of Forestry to enjoy such a prestige without the sturdy men who came out from the portals of the College of Forestry. If one wants to know how forestry graduates have fared, he only has to go to the Bureau of Forestry. Even outside of the government service, they have impressively asserted themselves.

On the occasion of Forestry Day, I would not congratulate nor extend good wishes to the College of Forestry. Congratulatory greetings are proper only for those whose attainment of success has coasted along the torrent of chances and for those whose triumph is least expected. The forestry students are expected to come out successfully. That is the only way out they know. For the College shelters only men possessed with unwavering determination and faith. It would be likewise unnecessary to wish the College and its faculty members and student body more successes. That is, to use an old cliché, already written on the wall.

I would rather enjoin everyone in the College of Forestry to offer thanks to the Greatest Instructor for having made possible what he is now.


FELIPE R. AMOS

Director of Forestry

November 30, 1957

The Consulting Forester, His Qualifications And Problems*

By AGAPITO L. CENABRE

FELLOW FORESTERS, STUDENTS AND GUESTS:

This is indeed a pleasant experience. While from your young faces I can discern your animated expectation of what I may say here that might add to what you have learned from your books and professors, I am, on the other hand, deeply touched living over again the 48 odd years in the government service in which most of you, if not all, hope to be taken. For it was from these very portals that I came out in 1914 full of youthful exuberance and hope, conscious of the immense task of a forest conservationist and the thought that my Ranger Certificate would enable me to do my bit in the CONSERVATION BY WISE USE of our vast natural forest resources. This could and must be your feeling now; and for those who would be stepping out with the BSF degree, the feeling would obviously be greater.

Mine was the rare privilege of having joined the ranks of those heroic men, valiant and unyielding in their struggle to conserve our forest patrimony, but rarer still is this opportunity afforded me by this kind invitation of our Alma Mater through my good friend and your professor, Forester Valentin Sajor, of reentering the same portals and be with you today no longer to study because I took further studies in this institution later and received the BSF degree in 1928, but as one who has "passed through the mill," and I feel again as one of you.

Way back in April 1, 1908 I entered the service of the Bureau of Forestry as a temporary ranger with an initial salary of ₱20.00 per month and a per diem of ₱.50 while in the field. By dint of hard work, loyalty, honesty and devotion to duty I gradually rose

from the ranks and at the time of my retirement from the service on February 28, 1954 I was holding the rank of Sr. Forester and Assistant Chief of Division. My story is long and I hope that someday I may have the chance of meeting some of you to tell you more about it.

But perhaps you would allow a little interruption that I tell you something about my history before I go further, because in that way only would we understand each other. I was born on August 18, 1888 in the little town of Pamplona in the province of Cagayan. As with the majority of you I also completed my early education there in 1903. My public life was started as a municipal teacher from 1903 to 1905 but I yearned for higher education and came to Manila where I studied in the Manila High School in 1907. After qualifying in a third grade civil service examination on April 1, 1908 I entered the service of the Bureau of Forestry as Temporary Ranger. Those were the early days of the American occupation and as there were no Filipino Foresters, American Foresters were our superiors who were quick to reward deserving subordinates. I was fortunate to catch their scrutinizing eyes so I was assigned in Los Baños, Laguna, as a reward for excellent service rendered in order to pursue higher forestry course which enabled me to obtain the BSF degree. Of course I passed the required civil service examinations for ranger, assistant forester, and forester.

The following is a brief summary of the positions I have held in the Bureau of Forestry:

Temporary Ranger
Assistant Ranger
Ranger-Officer in Charge of Station

* A talk delivered at the Convocation of the Forestry Student Body Association under the auspices of the Forest Administration Class, under Professor Valentin Sajor.

Senior Ranger-Officer in Charge of Forest District
 Forest Supervisor
 Forester
 District Forester (Cebu, Bohol, Oriental Negros, Northern Mindanao, and Samar and Leyte Districts)
 Assistant Chief of Division
 Forester-at-Large, In Charge of Public Relations; Special Projects and Inspection Service
 Acting Chief of Division (Division of Forest Lands and Maps and Forest Management and Forest Concessions)
 Assistant Chief of Division (on special detail as District Forester of Cotabato and Davao)
 Superintendent of the Mount Apo National Park
 Forester in Charge of the Bureau of Forestry, for and in the absence of the Director of Forestry, during the emergency as per Special Order No. No. 491 dated December 24, 1941, issued by the Undersecretary of Agriculture and Commerce.
 Supervising Forester for Mindanao and Sulu in addition to my duties as District Foresters of Davao.
 Division Forest Inspector (Northeastern and Southern Mindanao)
 Sr. Forester and Assistant Chief, Division of Forest Concessions and Sawmills and member of the Advisory Staff; investigating and efficiency committee of the Bureau of Forestry.

On the occasion of the Golden Anniversary of the Bureau of Forestry on April 14, 1950, I was the recipient of a service award diploma and a special gift from Secretary Placido L. Mapa of the Department of Agriculture and Natural Resources. The service award was in recognition of continuous, faithful and meritorious service rendered to the bureau for not less than 25 years, while the special gift was for attaining 42 years of service in the same Bureau. I was one among the few veteran employees of the Bureau who were instrumental in the establishment of the Cinchona Plantation in Mindanao; responsible in initiating and working for the passage of the Act No. 3294 which deals with the disposition of kaingin fines; and labored, as a lone lobbyist, for the passage of a reforestation

bill known as Commonwealth Act No. 119, the first substantial reforestation fund to be released.

I did not confine myself to the work of the Bureau of Forestry alone as some might mistakenly think as can be seen from the following summary of my outside activities:

Selected by the *Magindanao*, oldest Davao weekly, as Forester of the year 1939.

During the early part of 1942, in addition to my duties as District Forester of Davao, I was detailed to head the Department of Industry of the City of Davao and subsequently as Acting Provincial Agricultural Supervisor, Bureau of Plant and Animal Industry.

After liberation, I was designated by PCAU No. 29 as liaison officer for Mindanao and Sulu between the PCAU and the Bureau of Forestry.

It may not be amiss to mention in passing that I had made my contributions to Philippine botany and forestry. As a result of my botanical collections throughout the country in the early days, the world famous botanist, Dr. Elmer D. Merrill named in my honor the following species:

1. *Eugenia cenabrei* Merr. N. Sp.
2. *Arthophyllum cenabrei* Merr. N. Sp.
3. *Semecarpus cenabrei* Merr. N. Sp.
4. *Strychnos cenabrei* Merr. N. Sp.
5. *Glochidion cenabrei* Merr. N. Sp.
6. *Sterculia cenabrei* Merr. N. Sp.
7. *Knoma cenabrei* Merr. Quia N. Sp.

I had contributed my share in making popular in the Philippines memorial tree planting as well as the arbor and bird's day celebrations, and also prepared some papers for publication. Of those published the most widely known or read, especially by scientists, is the paper entitled "Cinchona Culture in the Philippines."

In testimony of some of my civic activities, the following may be mentioned:

- (1.) While assigned as District Forester of Davao, I served as Consulting Technical Adviser of the Davao Lumbermen's Association. In a resolution, duly passed, the association accredited me as the guiding spirit that led to the organization of the association and the one who has shown great interest, zeal and

skill in helping enhance the success and prestige of the association.

(2). Member of the Rotary Club of Davao. As a departing member in 1948 and as token of my services to the Club, a resolution was approved, pertinent portion of which is quoted as follows:

"WHEREAS, the older members of the Rotary Club of Davao are unanimous in giving Rotarian "Tito" Agapito L. Cenabre almost exclusive credit for the immediate revival of the Rotary Club of Davao shortly after liberation as a result of which the Rotary Club of Davao had been among the first in the Philippines to have been accorded by Rotary International, a renewed CHARTER as a recognized member thereof, hence, Rotarian "Tito Agapito L. Cenabre has been, as he is, rightfully regarded as the personification of the Rotary Club of Davao since liberation."

(3). Organized the BSP in Davao before and after the war where I served in various capacities such as Field Scout commissioner-at-large for camping from 1934 to 1939.

(4). President, Davao Council, BSP, 1940-1947; Honorary Adviser, Davao Council; Regional Scout Commissioner for Mindanao and Sulu, 1947; Field Scout Commissioner-at-large, BSP, to date in Manila. In recognition of my scouting activities I was awarded on May 11, 1947 the Silver Thanks Badge citation by the National Council, BSP, for meritorious and outstanding service rendered to BSP.

(5). On May 1, 1949 I received the Bronze USA citation with the following engraving:

"For his continuous outstanding service as a Regional Council wide basis as District Forester and Regional Scout Commissioner for Mindanao and Sulu for many years. Through his indefatigable efforts, the movement has gained secure and ever widening ground in many provinces in Mindanao. In various other ways he has demonstrated a positive interest in the welfare of the local boyhood through volunteer service in Scouting. A real Scouter and leader."

(6). President, Department of Agriculture and Commerce Davao Employees Association from 1940 to 1946.

(7). Associate Member, National Research Council of the Philippines.

(8). Member, Philippine Scientific

Society.

(9). Member, Society of Filipino Foresters.

My retirement from the Bureau of Forestry was not a happy event and my feelings on this occasion were reflected in my parting letter in this wise;

" x x x x I am now retired since February 28th 1954. Of course the reality of such severance is poignant indeed minimized only by the thought that I always did my best in the interest of our country and the forestry profession.

I cease to be an employee of our Bureau, but my love for forestry will always remain, as well as the warm association I had with you. Above all, of course, I wish to thank you and those who have worked with us directly during all these years for their cooperation, and those other co-workers in the Bureau with whom I have come in contact, for all the help, courtesy and understanding extended to me.

This severance is, however, not the parting of my ways and yours. I find my mind and body still responsive to our work and I believe I can still be of service to forest users in a private way. x x x "

After my retirement, contrary to what most retirees do, I continued my work in Forestry outside of the Bureau of Forestry. Somehow I love forestry and my life has been devoted to it. Through my own initiative, on July 1, 1954, I established my office at the Capitol Theatre Building in downtown Manila, and began to advertise myself after obtaining registration papers and paying my occupation or privilege tax as I was entering a line of endeavor wherein I had to come into competition with fellow professionals. There are very few who practice Forestry in a private capacity. The majority of forestry graduates enter the service of the Bureau of Forestry or are employed in lumber companies. It is not my intention to discourage you from entering the service of the Bureau of Forestry for the service challenges you now and in the future in the task of forest conservation, nor from seeking employment in private lumber companies where remunerations are enticing. However, the private practice of forestry is just as challenging and just as remunerative

once you have established a name. I adopted the title of Consulting Forester and hung my shingle at the door of my office. Under the provisions of the National Internal Revenue Code the office of consulting forester came under the category of "appraiser or concessioner of domestic or foreign products" and is subject to the payment of privilege tax of ₱50 per year, which I readily paid.

The work of a consulting forester is wide and in order to qualify as such, one must satisfy the requirements found in the definition of a Consulting Forester. In my own personal opinion, a person who shall carry the title of "Consulting Forester" must have sufficient experience and background. A "Consulting Forester" must possess not only technical education and practical training but he must also be *well-versed or conversant* with forestry principles such as forest conservation and forest utilization, as well as forest laws and regulations, forest land uses and forest policy, forest conditions and the problem involved for proper solutions for the benefit of both the government and the forest users. These can only be obtained through long period or years of actual practice, observation, study, research and experimentation. Likewise, a "Consulting Forester" must keep himself abreast of the knowledge and technique of his profession through constant and appropriate study and of the progress and development of forestry practices of other countries. Besides, a "Consulting Forester" must be an "ambassador of goodwill." I do not claim that I satisfy all the requirements in this definition although I have adopted the title of "Consulting Forester". However, I do believe that a substantial compliance with them is sufficient provided it is supplemented by continued study and application to work.

In consulting work, the practitioner will be beset with the multifarious problems of public relations, among which is the problem of collection of professional fees and the maintenance of goodwill. The problem of collection of professional fees is common in all the professions but this should not be discouraging as there are better times when sub-

stantial fees come in without much asking. Although they are tempting, fees should not be the measure of your service but rather the maintenance of a good name and the winning of the confidence and good-will of clients because they are the key to the success of a consulting forester. However, fees are necessary to run the office of a consulting forester and so he must be a kind of an artist at the game.

There are occasions where a consulting forester shall use his wit and tact in dealing with clients especially when he is committed to help two clients whose interests conflict with each other. To cite you a concrete example: When the Mindanao Lumber Company, Inc., and the Sarbro and Company, Inc., were both applicants for the same vacant timber concession. Being a consulting forester for both companies I had to work for the good of both, yet their interests in this instance came to collide with each other as both were striving to acquire the same forest concession. I had to advance the cause of the first one who called for my assistance and had to leave behind the other as it would be unethical for me to advance the cause of both conflicting interests.

As I told you a while ago, a consulting forester must have sufficient experience and background. These experience and background will be much needed in his practice especially in difficult and important assignments. An example is the time when I accepted the offer of the Food and Agriculture Organization of the United Nations in Rome, Italy to prepare a manuscript on shifting cultivation in the Philippines. It was not easy to prepare a manuscript on a controversial subject where there is a dearth of the necessary materials, data, and information. I was provided with an outline to follow, which outline was too broad in treatment and did not elicit the technical details they wanted. Thanks to my assignments in many province in the Philippines, my long service in the Bureau of Forestry in several capacities, and my continued interest in shifting cultivation that I had accumulated a wealth of data, inform-

ation, and materials which enabled me to prepare the manuscript to the satisfaction of the FAO in Rome. To add to the data, information, and materials, I had to make further researches, ask information from my colleagues, buy materials, and delved into subject matters not forestry in nature as were indispensable towards the making of a good manuscript. The natural, economic, social, administrative and legal aspects of shifting cultivation in the Philippines had to be discussed thoroughly and research on geography, economics, sociology and the laws had to be undertaken. When I submitted the finished manuscript to FAO in Rome, I thought that I had already covered all phases of the subject matter. I was surprised to find that my readers wanted more details particularly on the shifting cultivation of the non-Christian tribes and they asked me further questions which I answered with the desired details.

Another problem of a consulting forester is advertisement. Several solicitors of advertising firms approached me and I thought that in order to inform the public accordingly I had to advertise in the local magazines and those advertisements cost me a considerable sum of money. Consulting Foresters are not known in the Philippines and I believe the public ought to know more about them. The general impression is that a consulting forester is a member of the Bureau of Forestry or an employee of a private lumber company, and on account of this impression a consulting forester is apt to be mistaken. I am, however, confident that in the future the practice of consulting forester may become like one of the established professions.

The work of a consulting or practicing forester is wide and one cannot hope to have a mastery of all its phases within a lifetime. He must choose one or two branches of the work where he can specialize. Any one of the following specialization is recommended:

- Forest Inventory
- Logs and Lumber Grading and Sealing
- Lumbering (Logging and sawmilling)
- Forest Laws and Regulations
- Forest Surveying and Mapping

- Forest Management and Protection
- Forest Pests and Diseases
- Land Classification
- Silvics and Silviculture
- Reforestation

Several lumber concessionaires among them Mr. Henry S. Thompson, President of the Insular Lumber Company (who arrived from the United States) accompanied by Mr. Harry C. Pope, Director and General Manager of said firm offered me contracts on timber cruising and forest inventory and the fees were tempting. Because my physical condition did not permit me to undertake the work so I politely rejected the offers.

I am at present specializing in Forest Laws and Regulations and in this work the nature of my duties is assisting forest users follow the forest laws and regulations to the letter as the majority of them are ignorant of the provisions of the laws and to help them in the protection and enforcement of their rights under these laws and regulations.

My office as Consulting Forester is the pioneer of its kind in the Philippines. It has been established primarily for service (1) to assist and collaborate with the Bureau of Forestry in its mission to conserve our forests by wise use; (2) to bring the forest users closer to the government; and (3) to help solve the problems of forest users. Of course it collects nominal fees for expenses in running the office. But if a forest user cannot pay the fee, my office helps him, free of charge, in obtaining what he wants from the Bureau of Forestry. In view of this, my policy in running the office is to be careful, diplomatic and courteous so as to establish a private practice that will win the confidence and respect of forest users in particular and will serve as model for service to the public in general. At the same time I observe strictly and judiciously the code of ethics for professional foresters in carrying out the business of my office as Consulting Forester.

I owe my success to the several friends I have made in and out of the Bureau when I was still employed there.

Now, my friends, if you decide to make Forestry as your career, and practice as a

professional consulting forester after having acquired the necessary education, experience and training, both in the government service and private firms, I can only add—that while you are still in college, aside from what you learn in your books about Forestry you should continue and learn to speak effectively, to develop self-confidence, to sell yourself and your ideas above personal interest, to improve your power of observation, to increase your ability to handle people, to win more friends, to improve your personality and to prepare for leadership.

I admit I may not have realized the importance of these qualifications in my college days and its relation to my present work in spite of the fact that my professors and chiefs have put so much effort in emphasizing these points to me. However, in the course of time and practice, later, I have learned to overcome some of my handicaps and shortcomings.

Those are the things I can impart to you, my friends, to prepare you for a better start in the profession because it is high time you

should know them now. You should not wait to learn from your own experience alone, as I did, but you must also profit from the experiences of others.

All these and many more have made of me a consulting Forester. I only hope that with the ideas I have told you, coupled with those of others who may yet impart to you, we shall have made an ideal consulting Forester of you.

I thank you.

Integrity comes high. Few seem able to afford it. Stuart Chase said that it was a luxury. Nevertheless, a long time ago Socrates uttered a truth, "The shortest and surest way to live with honor in the world is to be in reality what we would appear to be, and if we observe, we shall find that all human virtues increase and strengthen themselves by the practice and experience of them."

— Marios Hansome

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Why Our Forests Should Be Preserved And Conserved

By
Sr. Forester TIMOTEO QUIMPO¹

It is human that what we have in plenty we use them with dissipation. God in his infinite wisdom has made plenty the things we most need. Water which is important in our daily life is inexhaustible, the soil, the mines and the forests abound everywhere. But all these, if not wisely used, will be exhausted. The forests one of the most important heritage that man has should be preserved and conserved for the benefit of the generations to come. We not only preserve the individual trees which compose this forest, but also we are helping other resources which directly or indirectly, depend upon it. We have experienced drought and to conserve water, we have constructed irrigation system which has cost the government considerable sum, yet we find our rivers dry when we most need water.

Less spectacular but more deceitful is the yield of our farms, because of soil erosion, the results of gradual but persistent loss of the rich top soil due to careless cultivation. Many of our farmers do not realize and will not realize this until their farms will produce no more. The hardships which many farmers felt and endured in Cebu, Ilocos, Cavite and other places in Luzon and in our province in the municipalities of Opol, El Salvador, Alubijid, Initao, Balingasag and Tagoloan are due to soil depletion.

Our neighbor province, Davao, is now losing a great portion if not all the abaca plantation due to mosaic disease and in some provinces where coconuts are raised, Cadang-cadang, another disease threatened to wipe

out plantations. A great amount of money has been spent in looking for a cure of these diseases but until now no specific cure has been found and it has already reduced our national wealth by the millions of pesos. Recently, the Bureau of Soils claimed that these diseases are caused by soil depletion and the remedy is to bring back the soil to its former conditions. This can be done by commercial fertilizers and right cultivation which is expensive and by the forest for lesser cost.

The tress are perpetual pumps which need no expense. They are living fountains. Their roots take up the water from the subsoil by transpiration as water vapor. They do not only obtain this water supply from the surface layers of the soil like grasses and field crops but also from the subsoil very often down to the water table. Wit the transpiration from the leaves of the trees in the forest the air above it is cooler and rain is a greater possibility.

The forest is more than the logs and timber which we get from them. It has several functions. It is soil-building, soil-conserving, water-retaining, water-conserving, rain-producing, wealth stabilizer, wind breakers and, last but not least, a provider of biological control of pest and disease which play great havoc on our agricultural crops. It is needless to explain to you all these beneficial effects but it is sufficient to say that civilization and empires have disappeared because their forest have been wantonly destroyed. The proper balance of the forest to agriculture is the safeguard of the progress of any country. When the forests on the slopes of the mountain and hills are destroyed the cumulative start of erosion by wind and water is started result-

¹ Speech delivered by Sr. Forester Timoteo Quimpo before the Seminar of the Boy Scouts held on July 17, 1957 in Cagayan de Oro City.

ing in the reduction of water storage capacity of the soil and the excess water during the rain descends from the mountain, washing away the fertile soil of our valleys carrying the debris of the hills, covering the fertile top soil of the lowlands, like what recently happened in some municipalities of this province. Erosion is the cause of the silting of the Osmeña Water Works in Cebu and of the irrigation works in Central Luzon. This eventually will cause the scouring of stream beds like that in Kabulig River in Balingasag and the spread of aridity in the farm nearby. The land which once was fertile is turned unproductive and the local progress is retarded, if not suppressed. With this, history is replete with examples. Mesopotamia which was once a fertile and prosperous land is now virtually a desert. Palestine and Syria had the same experience. The poverty of China and India, once the Cradle of Civilization, is due to the wanton destruction of their forests which brought erosion and aridity in their lands.

Shall we wait for all these calamities? Shall we not learn from the lessons of history? The wanton destruction of our forest must be stopped. It is already somewhat late to correct the evil but it is never too late to reform.

The forest is a resource which can be rapidly and thoughtlessly abused. It is a living resource. It can be replaced but it needs a longer span of years to regenerate, that we who plant the trees now will never see the fruits of our labor. Our forest is not inexhaustible and we have already destroyed them to a level lower than the safe minimum necessary for the well-being of the country and because of this a more drastic action for the preservation and conservation of this resource is believed to be in order.

We believe that the safe margin of the forest balance in our country as well as the province of Misamis Oriental is 42% of the total land area. If we want to be sure that our farm lands are protected and have the assurance of adequate supply of material benefits from our forest, we should maintain it at that level. Our commercial forest now is

only about 12,000,000 hectares representing 28½ of the land area of the Philippines. The forest cover of the island of Mindanao today is 53% and we are feeling already drought and aridity and the ideal climatic and physical conditions of the island are fast disappearing. In other provinces the forest are already about to go.

The lumbering industry in Misamis Oriental is presently confined to accessible places near the coast and the road. This is easily understood as the cost of production is very much less, but the industry has to compete with the illegal kaingineros who only destroy the forest for a pittance of its value. Presently it is impossible to find a solid commercial forest which is not honey-combed by the kaingineros. Thus we are losing a great amount of our potential income.

Since 1902 when the usefulness of our forest began to be appreciated because of the valuable and durable timber we have in them, we have cleared around half a million hectares and today we have over five million hectares of cogon lands. One and a half million of these areas should be held permanent forest and should be planted to trees to protect the watershed of destructive rivers. The government have been planting trees in these areas but only about 1000 hectares could be planted yearly at a great cost. Losses are encountered because of fires, negligently set by people who are ignorant of the damage they may cause. It is, therefore, important that we educate our people on the beneficial effects of our forest upon our lives, financially and socially. We should teach them to love and respect the trees and forest. We should establish woodland parks in all towns like in the old countries of Europe and even in America. We should line our roads with trees. We should convince every family to plant trees either for their fruit or shade in their yards. In one word, we should plant trees in vacant places anywhere and any place.

To you, Boy Scouts of Misamis Oriental, I would urge you to comply with that rule of your Organization to do one good thing a
(Continued on page 13)

The Need For Forest Genetics

By
ROSALES A. JUNI

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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CAGAYAN DE ORO CITY

FORESTS AND FLOODS*

By
TEOFILO A. SANTOS
AND
AMADOR J. EVANGELISTA

It takes a tragedy to awaken the public from lethargy. Let us take the case of the recent floods in Mindanao. Before the floods came, how many people realized the importance of forests? Even now many people know little about forests aside from the fact that they are the sanctuaries of outlaws and wild beasts. Others — the money-minded ones—are more often than not the worse enemies of forest conservation.

Of the country's total land area of 29,740,972 hectares, 18,388,915 hectares are forest lands. Commercial forests embrace 11,415,000 hectares and non-commercial 4,459,900 hectares. In an evaluation report rendered by the then Secretary Salvador Araneta of agriculture and natural resources, our forest wealth has an estimated value of ₱27,860,611,000, four times more than the combined value of other natural resources. Our forests have an estimated standing timber of 1,081,777,963 cubic meters or about 458 and 1/2 billion board feet. Of this amount of timber, about 376 million cubic meters are found in Luzon, 166 million in the Visayas and 539 million in Mindanao.

Our forest resources consist of the following:

(a) *Timber* which is turned into wood for construction and for industries using wood as raw materials. A major product of the forest, it does not include firewood and charcoal.

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

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

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

(e) *Indirect benefits* of the forest consist of the influences of forest upon stream flow and erosion, the conservation and enrichment of the soil, and climate. Forest also serves as shelter and habitats for wildlife and game animals, hunting grounds and fishing areas, and offers healthful outdoor recreational opportunities for the people.

The Bureau of Forestry is charged by law with the responsibility of "protecting and conserving the public forests in such a manner as to insure a continued supply of valuable timber and other forest products for the future, and regulating the use and occupancy of the forests and forest reserves, to the same end." The Philippines is divided into 46 forest districts, each under a district forester. There are, aside from district headquarters 80 stations, 20 scaling stations, 39 reforestation projects, 15 provincial nurseries, one city forest nursery and 450 deputy forest guards.

The Bureau has a total of 1,836 personnel, about 300 of whom are in the Manila office. The number of employees includes those doing clerical work. One can imagine the impracticability of fully covering the 18,388,915 hec-

*—Published in the Sunday Times Magazine, January 27, 1957, Vol. XII, No. 24

tares of forests lying in the various sections of the country with such a limited number of employees.

According to the foresters in the Bureau, forests have been glorified as the only effective panacea for our flood troubles. They maintain that forests cannot prevent *any kind of flood*. They admit, however, the fact "that with forests and other vegetative cover on watersheds, floods are less frequent and have lower crests than when the balance of nature has been disturbed by the hand of man."

Studies of silt in flood waters in China revealed that the average flood volume for a period of 40 days was 150,000 second feet and that flood water had an average of 4.5% of silt. Applying a conservative figure of 4 per cent weight as the amount carried by the average rivers in our country, authorities estimated that the annual soil loss in the Islands is 200,000,000 cubic meters or 500 million metric tons and will cover an area of about 600 square kilometers 30 centimeters deep. Topsoil which is the richest part of our tillable lands is washed away.

Flood Formation. — Experts listed down the following factors responsible for the occurrence of floods:

- 1) Unusually heavy or prolonged precipitation.

- 2) Rapid run-off to stream channels.

- 3) Inability of the stream channels to accommodate the discharge coming to them.

Floods may be aggravated by the following conditions:

- 1) Absence of vegetal obstruction.

- 2) Shallowness and non-porosity of the soil.

- 3) Unusual gradient of the soil.

Forests alone cannot prevent floods. G. R. Phillips and B. Frank hold that "only a properly designed combination of watershed and waterway treatments, encompassing all portions of a drainage basin and involving both watershed improvement and reservoirs and other necessary engineering works, can assure maximum flood protection." Engineering gimmicks alone like dams and levees are, therefore, neither capable of preventing

floods. This was proved by the Mississippi River incident in which the huge levees built around it were, to quote an Associated Press item, "pushed like corks."

Forestry experts say that forests help control water flow by the following ways:

- 1) By absorption by the crowns and tree trunks of a portion of the precipitation.

- 2) By keeping the soil porous and increasing its water holding capacity.

- 3) By intercepting and retarding run-off.

- 4) By decreasing the volume of detritus and sediment carried by water.

The experiments conducted by scientists showed that the amount of precipitation held by vegetal cover was smallest in grass lands, greater in agricultural lands, greatest in forest lands and zero in denuded lands. C. W. Forsling writes that "the accumulation of run-off from torrential downpour is very much in inverse proportion to the density of plant cover." A very big portion of our agricultural lands are planted to seasonal crops. During off-season, these lands are bare so that water absorption by vegetation is so low that a moderate rainfall can easily cause floods.

If Central Luzon is the "rice granary" of the Philippines, Mindanao may be aptly called the "looting premier" of the country. The great bulk of woods being exported and used for local consumption comes from that Island. Figures from the Bureau of Forestry show that the biggest sawmills and lumber companies are to be found in Mindanao. More licenses and permits to utilize forest lands have been issued in Mindanao than in Luzon and Visayas. The annual cut is greater in the "Land of Promise" than in the other two islands.

This goes to show that our forests in Mindanao, the recent scene of destructive floods, are subject to greater drain by human exploitation.

The Mindanao floods have been attributed to the indiscriminate cutting of trees in that place. This state of affairs in the island's forest has been blamed on the Bureau of Forestry's laxity in the issuance of licenses. Director Felipe R. Amos of Forestry says

that applicants are thoroughly screened by his technical men before they are issued licenses. How can the Bureau, he asks, refuse to issue licenses if the applicants satisfy the requirements of pertinent laws, rules and regulations? Forestry officials bewail the fact that supervision of logging activities cannot be intensively carried out due to lack of men and traveling funds.

Loggers are not the only persons responsible for deforestation. There are the kaingneros who dramatize their economic plight to the authorities to get away with their illegal activities in our virgin forests. They clear valuable forest areas to plant a few insignificant crops. Using a shifting method of cultivation known as kaingin, they burn down trees and destroy other vegetative cover of the forest. Once they are through with a piece of forest land, they move to another, and so on. The abandoned areas, being denuded, cannot hold even a small amount of precipitation.

Agricultural lands badly misused also contribute to the uncontrollable surging of surplus water. More and more forest areas are being released from time to time for agricultural and settlement purposes to appease the landless. For the past three years, 1,175,098 hectares have been certified as alienable and disposable lands. The release of forest areas should be limited and permanent forest lands be kept for posterity.

Crooked rivers and streams, if not straightened by excavating channels, across the neck of the bends, have low flood-carrying capacity, according to P. McNee who undertook a study of floods that inundated Malaya in 1954. We have many rivers and streams of this kind, especially in Mindanao.

If only to help minimize floods, the selective timber management program strongly advocated by Director Amos should be nationally adopted to the letter. The important object in selective logging is to leave an adequate residual growing stock of undamaged

trees. The Director believes the system is the most reliable and cheapest means of restocking cut-over areas. Reforestation is expensive and tedious. But it seems most of the lumbermen are not receptive to the program although its adoption would in the long run redound to their benefit. Forests are replaceable resources if they are properly managed.

Nothing can prevent floods. But something can be done to give the public maximum protection. It requires the combined efforts of engineers, foresters, agriculturists, weathermen, soil experts and other technical groups.

The timely and correct prediction of the precipitation and wind velocity would prepare people against the possibility of destructive floods. A sound system of farming should be adopted in order to save the soil from erosion. Rivers and streams should be surveyed to determine their flood-carrying capacity. Marshy lands should be reclaimed.

Forest, however, are still the best natural agents in minimizing floods. The government should see to it that the bureau charged with the keeping of our public forests is given the full support it deserves.

WHY OUR FORESTS SHOULD ...

(Continued from page 8)

day, that is to plant a tree or convince your elders of the benefits man gets from it and urge them to leave this country of ours to you as it was left to them by their elders, by conserving the forests by wise use.

Man's greatest discovery is not fire, or the wheel, or the combustion engine or atomic energy, or anything in the material world. It is in the world of ideas. Man's greatest discovery is teamwork by agreement.

— B. Brewster Jennings

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Dry-Wood Termites And Their Control

By
FAUSTINO C. FRANCIA¹

INTRODUCTION

Severe damage to structural timber, woodwork, furniture, and wood products of all kinds is often the result of unhindered dry-wood termite infestation. The damage may become so extensive as to render the affected buildings worthless and unfit for human habitation.

Dry-wood termites ("unos") are so-called because they inhabit and feed on dry wood. They can live in wood with as little as 2.5 to 3.0 percent moisture content (1) and can withstand excessive aridity (6). The ability of these termites to feed on dry wood is made possible by the presence, in their digestive organs, of microorganisms, mostly protozoa, that aid in digesting the wood (3).

Like the subterranean termites ("anay"), their near relative, these insects are soft-bodied, wingless for the most part of their lives, and social in habits. They live in colonies with their respective "queens", "kings", and "soldiers". The immature forms (nymphs) are the workers and food providers and are responsible for doing much damage to wood. In the course of time, these nymphs develop into winged reproductive adults.

In the forestry campus, College, Laguna, emergence and colonizing flights of the adults have been observed at night from April to September. Attracted to light in the beginning, they swarm around lighted lamps and bright lights. The flight is usually brief; they soon cast off their wings, pair off (male and female), and seek cracks and crevices in dry wood or bore directly

into it. If the wood is suitable for their requirement, they begin a new colony. Only a small percentage of the colonizing adults succeed in starting new colonies; aside from the mortality which results from long exposure in the attempt to find suitable breeding places, many of them fall prey to house lizards, bats, ants, spiders, and other predators.

The successful pair, in time, produces young from eggs. The initial growth of the colony is slow, however, and the number of nymphs produced after two years may be from eight to fifteen only. Nevertheless, the queen (female termite), in the constant company of the king (male termite), increases in fecundity with each succeeding year, for about 10 years (2), so that the nymphs as well as their galleries in the wood continue to increase in number. Eventually, the whole length of the infested structure may become so damaged that only a thin shell remains. Before this happens, however, the entire colony or a portion of it may have already moved to some adjoining wooden structure.

Except when they are on their wings, dry-wood termites never show themselves out of their galleries and are therefore seldom seen. Their presence is nevertheless easy to detect. The accumulation of tiny fecal pellets (fig. 1) below or at the base of wood structures is the tell-tale of their depredations. Unlike their subterranean relatives, dry-wood termites do not need gallery connections to the ground.

PHILIPPINE DRY-WOOD TERMITES

Dry-wood termites belong to the family Kalotermitidae of which there are nine

¹ Entomologist, Forest Products Research Institute, College, Laguna.

known species in the Philippines. Of this number, two are frequently encountered doing much damage to buildings. These are *Cryptotermes dudleyi* Banks² (fig. 2) and *C. cynocephalus* Light (fig. 3). These two species have soldiers with square, high, brownish-black heads. The former species, however, can be readily distinguished from the latter species by the relatively bigger size of the individual members of *C. dudleyi* species and by the low, broad, smooth head, and longer mandibles of its soldiers (fig. 4).

C. dudleyi occurs not only in the Philippines but also in Central and South America, Indo-Malaya, Papua, and Australia. In other countries, this species is frequently associated with some other dry-wood termite species (9). In the Philippines, a colony of *C. dudleyi* has been found in a wood chunk heavily infested by *C. cynocephalus*. *C. cynocephalus*, considered native to the Philippines, is now also reported in Java (8). World commerce has been greatly responsible for the wide distribution of these destructive pests.

Other species of the family Kalotermitidae in the Philippines are: *Kalotermes mcgregori* Ligh, *K. taylori* Light, *Neotermes lagunaensis* (Oshima), *N. malatensis* (Oshima), *N. microphthalmus* (Light), *N. parviscutatus* (Light), and *Glyptotermes chapmani* (Light).

CONTROL MEASURES

A. Preventive control:

To prevent dry-wood termite infestation from taking place, the following steps should be considered:

1. *Inspection of second-hand lumber before using.*—Second-hand or old seasoned lumber intended for use should be checked carefully for evidences of infestation, such as excretal pellets and tiny plugged holes. Infested usable lumber should be kiln-dried or steam heated to at least 150 F. for 1-1/2 hours. Otherwise, such lumber should never be used in buildings. Discarded lum-

ber from infested buildings should be burned.

2. *Screening of doors and windows.*—The use of wire screen, 20 meshes to the inch, on all doors, windows, and ventilation openings will prevent the entrance of winged termites into the buildings through these openings.

3. *Spraying swarms of colonizing adults.*—Very often, during the emergence season of winged termites, swarms occur around lighted lamps and other bright lights in the building. Finely atomized sprays containing pyrethrum will give a good knockdown. Sprays from aerosol bombs containing "Freon", 0.3% pyrethrins, and 3.0% DDT will also give a good kill and prevent the termites from forming new colonies. Spraying, however, cannot be counted upon to kill them all.

4. *The use of treated and naturally durable wood.*—Sapwood lumber is generally susceptible to the attack of dry-wood termites and should be avoided as much as possible in structures where permanent strength is desired and in places where the removal of the sapwood or remedial control treatment would entail much labor and expense.

Among the local timber species whose heartwood is very resistant to termite attack are: akle, dungon, guiyo, ipil, manggachapui, molave, saplungan, and yakal. But their sapwood is not resistant.

Sapwood lumber can, however, be made resistant by proper preservative treatment. Snyder (7) is of the opinion that dipping lumber for 3 minutes in a 5.0% oil solution of pentachlorophenol or three-coat brush applications of the same solution to all surfaces will give considerable protection.

5. *Painting exterior woodwork.*—Painting the exterior of the building with several coats of heavy paint will be of help in protecting those surfaces from dry-wood termite attack if the termites have not already entered. Termites ordinarily do not

bore through paint to enter wood. All outside cracks and crevices should, if possible, be filled with putty or plastic wood. Paint on the outside, however, does not protect the inside surfaces.

B. Remedial control:

Where infestation has already taken place, but is not too extensive, it can be stopped by one of the methods that follow:

1. *Replacement of infested wood.*—If the infestation is severe but localized and the wood can readily be replaced, the infested pieces should be removed and burned immediately.

2. *Heating of infested pieces.*—Killing termites present in furniture can be effected by heating the articles for 1-1/2 hours at 150°F. in a dry kiln or other suitable heater (7). Infestation in limited areas in *flooring* and similar *woodwork* can also be stopped by a 10-minute exposure to *infrared heat radiation* (5). If the infestation is widespread, however, heating one or two spots cannot be expected to control the entire colony.

3. *Injection of insecticides into infested materials.*—Where other methods seem impractical to apply, injection of liquid insecticides or blowing insecticidal dusts into the termite galleries by means of a spray gun or dust bellows is recommended. Auger holes into the galleries, to permit injecting the insecticide, should be made not over 18 inches apart and then the holes sealed with putty or other suitable material after the treatment. It is believed that unless the holes are sealed the termites may block off the dusted galleries by means of a semi-carton of their own manufacture (4).

Among the effective oil solutions of insecticide used for the purpose of injection are: 6.0% DDT, 2.0% chlordane, 5.0% pentachlorophenol, 0.4% lindane, and trichlorobenzene. Where liquid insecticides are not desirable one ounce of the following insecticidal dusts, finely powdered, is sufficient to treat 15 to 30 holes: 50.0% DDT, sodium fluosilicate, paris green, sodium fluoride,

and calcium arsenate (7).

These insecticides are poisonous to man and animals and should not be applied where they might contaminate food and drinking water nor stored in places within the reach of children and pets. They should be handled with care.

4. *Fumigation.*—Methyl bromide and hydrogen cyanide (HCN) fumigation of entire buildings is sometimes practiced in the United States and other countries for getting rid of dry-wood termite infestation. Two and one half pounds of methyl bromide or 2 pounds HCN is used to fumigate 1000 cubic feet of space (7). *These are deadly poisons.* Fumigation with them is very dangerous and should be undertaken only by experienced and licensed professional fumigators. The treated building must remain unoccupied until all the poison has dissipated.

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Dry-Wood Termites



FIG. 1 Excretal pellets of dry-wood termites greatly enlarged.



FIG. 2 *Cryptotermes dudleyi* Banks, nymphs, greatly enlarged.



FIG. 3 *Cryptotermes cynocephalus* Light, nymphs, greatly enlarged.

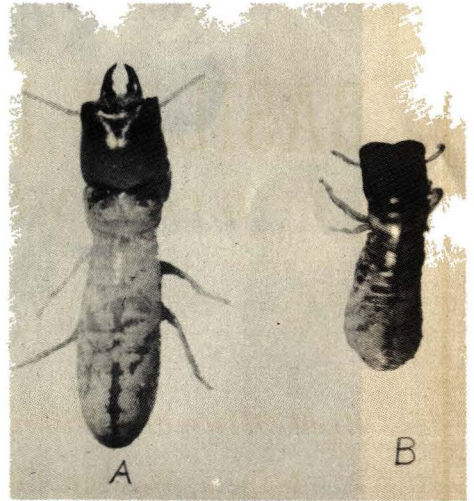


FIG. 4 Dry-wood soldiers (A) *C. dudleyi*, (B) *C. cynocephalus*, greatly enlarged.

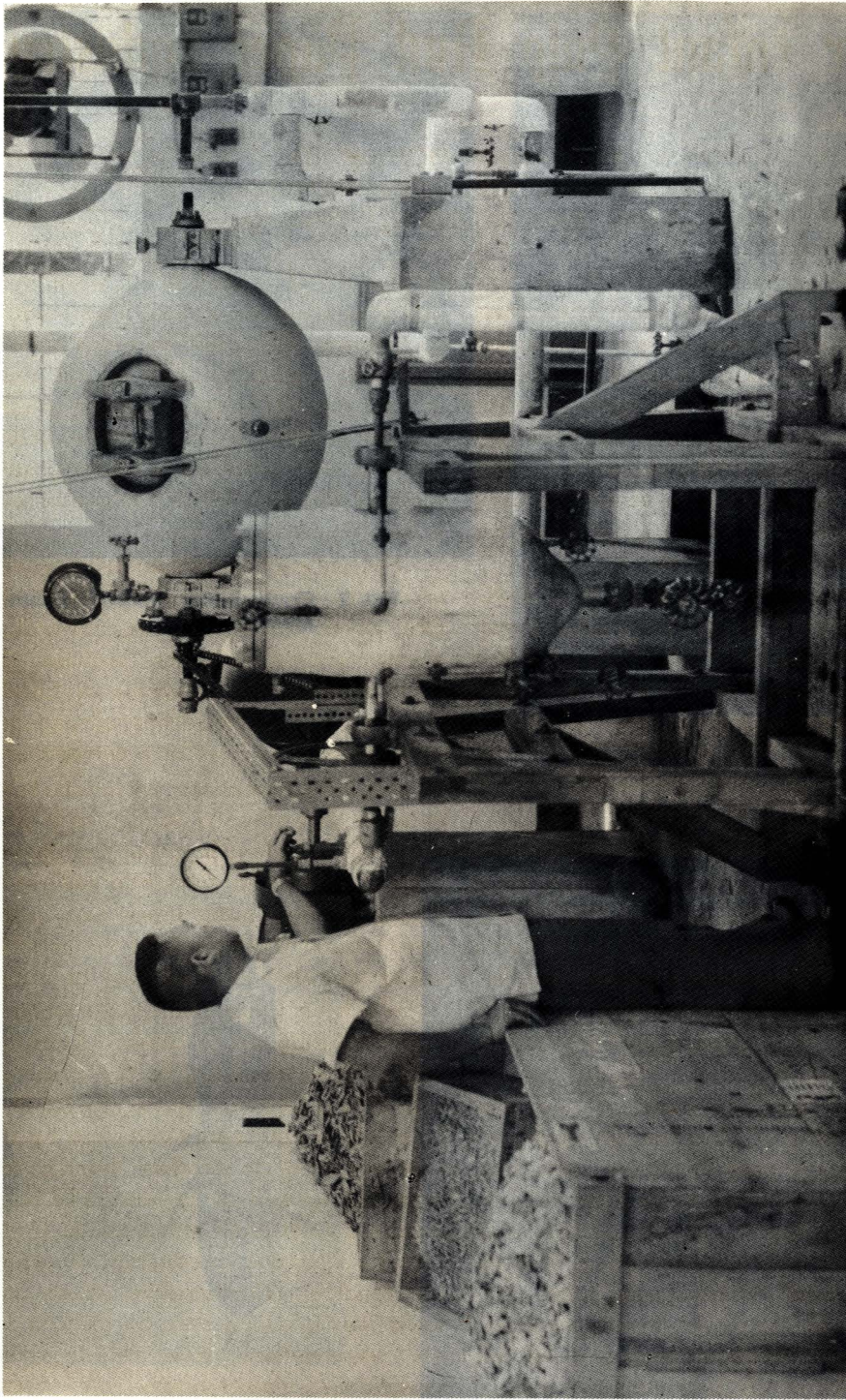


FIG. 1. Showing wood and bamboo chips, an operator, and the rotary digesters employed at the FPRI in pulping studies.

Our Infant Pulp And Paper Industry

By

MANUEL R. MONSALUD

Chief, Chemical Investigation Division
Forest Products Research Institute

Recent newspaper articles report the formation of several pulp and paper companies in the Philippines. Some active, foresighted entrepreneurs have felt the need of producing pulp and paper here to supply our annually increasing consumption of these articles. This will help conserve our fast diminishing dollar reserve, which should be used only for importing essential goods that we cannot produce for ourselves.

According to statistics compiled by H.K. Collinge, United Nations' pulp and paper consultant, recently on a tour of duty in this country, and reported to the Philippine National Economic Council on Jan. 30, 1957, this country in 1955 imported 71,295-tons of all kinds of papers and fiber-boards valued at ₱33,626,000.

Collinge classified these papers and fiber-boards roughly into cultural papers, such as printing and writing papers; fiber-board, excluding building boards and products thereof; coarse papers including wrapping, bag papers and converted products; miscellaneous papers such as office supplies, sanitary, health, absorbent papers, etc.

In view of this heavy importation, one cannot help asking: "Can we not economically produce here pulp and paper on a bigger scale than what we have done heretofore, thus expanding this infant industry and creating jobs for the unemployed as well as conserving dollars?" This question is not easy to answer. There are many factors involved.

There is a big local company that, for the last six years or so, has been seriously studying the problem of installing a 200-ton integrated pulp and paper mills in Mindanao

to produce newsprint, bond, wrapping papers and possibly other kinds. This company has spent more than a million pesos in this study, but so far it has not put up the machinery or buildings. It is very cautious in approaching the problem from all conceivable angles, for if it ever puts up a factory, an investment of ₱50,000,000 or more will most likely be required.

Factors such as proper factory, site, easy access to longtime replenishable materials like wood, bamboo, or agricultural fibrous wastes, stream pollution problem, distance from markets, procurements of suitable machinery and capable technicians, adequate capital have to be carefully considered.

Regarding local raw materials, this writer believes that there is enough of it in certain parts of the country to supply the demand. We still have vast forests in several regions. The great deforested areas may still be reforested and those parts of the country unfit for agricultural purposes may be afforested.

We have more than 3,000 wood species in the Philippines in about 15,000,000 hectares. More than 1/2 of the country's total land area is forested. Out of the 3,000 species, 65 or more are being dealt with by the sawmill operators to produce lumber for local consumption and for export. The rest of the species do not have much use at present except for firewood, production of charcoal, or for fencing. Furthermore, there is much wood waste, which may be utilized for pulp and papermaking, from the logging areas, sawmill and veneer plants.

Regarding technical know-how, our country at present does not have sufficient men

well trained in pulp and paper technology. It is true that we have young engineers and chemists, but these people need an opportunity to learn for some time the techniques of this specialized industry. In the meantime, our country should engage the service of foreign pulp and paper technologists to start operating the mills to be established here, and to train local technicians to take over the job later.

I believe there is enough local capital lying idle waiting only for an opportunity to be invested. By nature our local capitalists are conservative. They hesitate to venture into a new field unless it has been demonstrated that it is a paying proposition. In other words, reliable and convincing information on all the aspects of pulp and papermaking should be disseminated to these prospective investors to guide them in their decision whether or not to put up the capital to finance the establishment of pulp and paper mills in suitable places in this country.

Equipment and machines needed cannot yet be manufactured here. However, these may be obtained by ordering them from foreign countries like the U.S., Japan, Sweden, or Germany. This, of course, necessitates the expenditure of dollars, but in view of the advantages to be gained, we should be able to pay for them.

The Forest Research Institute presently undertakes pulping research and chemical analysis of our Wood and bamboo species. This is to learn what species can be used profitably for pulp and papermaking, production of wallboard, and other pulp products, and to develop the best mixture of species and the best processing techniques for producing the various products desired. The main function of the Institute is to be of service in the development and improvement of the wood-using industries of the country, and it is now manned and equipped to render such service.

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The Specific Gravity of Balobo (Diplodiscus Paniculatus Turcz.) from the Makiling National Park

By
FRANCISCO N. TAMOLANG¹
AND
BRIGIDO B. BALCITA²

INTRODUCTION

The specific gravity of balobo (*Diplodiscus paniculatus* Turcz.), a "weed species" which is abundant in many forests of the Philippines, has not been determined so far, although Reyes (7) described the structure as well as the general characteristics and properties of the wood. Had this been determined earlier, it might have been useful in appraising the strength of the timber and in the exploration of any possible or special uses to which this wood could be put. In the past, there were trials on balobo for the manufacture of tennis rackets and bowling pin but the results of these attempts were not conclusive because studies on its physical properties were inadequate, particularly its specific gravity.

The specific gravity of wood, of course, is the ratio of the density of a unit volume of that substance to the density of distilled water at 4 degrees Centigrade. There is the common and accepted knowledge that this specific gravity or relative density of the wood is a reasonably good indication of its strength and to a certain extent its workability, shrinkage and ability to hold paint in comparison with other species. Within a given species, also pieces of low specific gravity will be found weaker than those of higher specific gravity.

The investigation here reported covered the specific gravity of balobo from the Makiling National Park, Laguna. The objects were:

(1) to determine the average specific gravity of balobo from this locality and (2) to find the range of variation of the specific gravity within the tree as well as between trees.

This study was carried out in the Forest Products Laboratory, Bureau of Forestry, College, Laguna from October, 1955 to April, 1956.

REVIEW OF LITERATURE

No reports of studies on the specific gravity of balobo were found but numerous studies along this line with other species have been conducted locally as well as abroad.

It is well known (1) that specific gravity varies between different species and even with the different parts of the tree. Desch (2) further stated that in general the heaviest wood is found at the base of the tree, and a gradual decrease in density occurs in samples from the base to higher levels in the trunk as well as at any given height in the trunk from the pith to the outside of the tree in ring-porous hardwoods.

With one species, bagtikan (*Parashorea plicata* Brandis), Faustino (3) asserted that climate had something to do with specific gravity as trees from along the Pacific coast side of the Philippines had a higher specific gravity than those along the western coast.

On the other hand, Paul (5) mentioned that specific gravity is dependent upon the relationship of soil fertility, transpiration of water by the tree crown and assimilation. He also observed that crowded, slow growing

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hardwood trees had lower specific gravity than rapidly growing trees of the same species.

In some instances, specific gravity may be partly useful indication of certain hardwoods which may be considered desirable for pulp and paper making studies. This was implied by Muhlsteph (4) when he grouped cellulose fibers into four types³, namely: *Group I* comprises the cellulose of *very light* tropical woods, which yield very strong hard sheets; *Group III* comprises woods of deciduous trees of medium density, which yield soda pulp sheets of a still good cohesion; and *Group IV* are heavy woods which yield only very loose sheets.

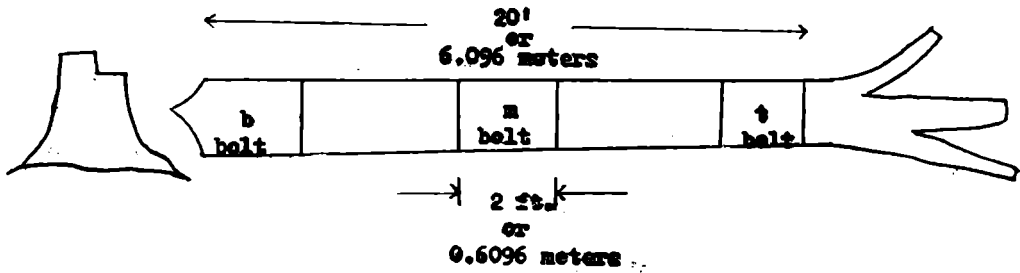
Reyes (7) used the following descriptive terms for wood of different specific gravities:

Specific gravity	Description
less than 0.3	— exceptionally light
0.3 to 0.4	— very light
0.4 to 0.5	— light
0.5 to 0.6	— comparatively light
0.6 to 0.75	— comparatively heavy
0.75 to 0.9	— heavy
0.9 to 1.05	— very heavy
over 1.05	— extremely heavy

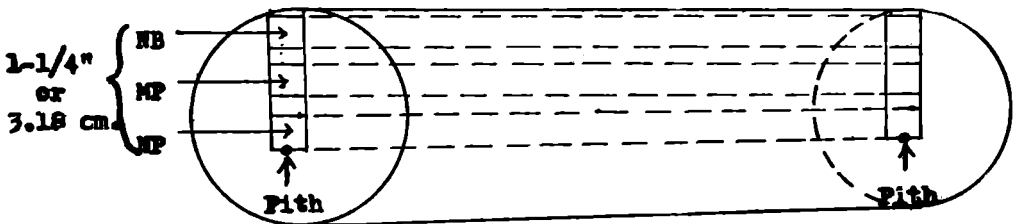
MATERIALS AND METHODS

1. *Materials.* — Four trees of balobo (*Diplodiscus paniculatus* Turcz.) were cut in Makiling National Park, from each of which one log, about 20 feet long, was collected. Botanical vouchers and materials were collected from each tree. The measurements of the trees were as follows:

³ *Group II* comprises conifers which yield strong sheets woolly to the touch.



a. Sampling diagram for each tree.



b. Cutting diagram for each bolt.

Figure 1. Sampling design for the determination of specific gravity of balobo.

Tree No.	Ht. of stump in meters	Diameter in cm.			Direction of lean of tree	Clear length (meters)
		Butt	Top	Average		
1	1.8	27.00	16.50	21.52	North	6.1
2	2.1	30.00	25.25	27.62	East	7.6
3	1.5	26.30	20.00	23.15	West	6.7
4	1.4	24.25	20.35	22.25	South	9.1

From each log (Fig. 1), three bolts 2 feet or 0.6096 meters long were obtained, one each from the butt, middle and top sections respectively. Also from each bolt, three samples or sticks 1-1/4 inches (3.18 cm.) square and 2 feet (0.6096 meters) long were taken from three portions of the cross section, i.e. near the pith, near the bark and the midportion. Each stick was planed so as to produce a cross section 1-inch (2.54 cm.) square. From each stick, twenty 1-inch cubes or test blocks were cut which were labeled to indicate their source and position in the stick and whose edges and ends were smoothed with sandpaper to remove silvers and other protrusions. Each tree, therefore, was represented by 180 test blocks or cubes from 9 sticks and, for the four trees there was a total of 720 test blocks from 36 sticks.

2. *Methods.* — To recover any loss of moisture of the test blocks during their preparation and make certain that each block was saturated or water-logged before beginning the measurements, they were immersed in water for about one day and one night (depending upon the length of time they were exposed to drying during preparation) until they sank, after which they were considered practically saturated. After the blocks were removed from the water and drained, they were kept in their saturated condition as much as possible by covering them with wet gunny sack while their individual weights were being taken.

a. *Determination of volume and weights.*

In this water-saturated condition, each test block was weighed on a Torsion balance to determine its green weight. It was then immersed in a beaker full of mercury to determine its

volume by displacement. The weight of the displaced mercury that overflowed from the full beaker was determined and recorded and provided the data from which the volume could be calculated. After the blocks had undergone this process, they were dried to constant weight in an electric oven at a temperature of 100° to 105° C. maintained for at least a period of forty-eight hours. They were then removed from the oven and immediately placed in a desiccator so as to allow them to cool without reabsorbing moisture. Finally, the oven-dry weight of each block was determined.

b. *Computation of data.* — The standard method being used by the Forest Products Laboratories of the Philippines and the United States (Madison) was used in the computation of the specific gravity of each block. This is the ratio of the oven-dry weight of the test block to the weight of the volume of water displaced by the block at the time of test. However, since mercury was used instead of water in the displacement procedure, the weight of water displaced was calculated by dividing the weight of the displaced mercury by 13.59, the specific gravity of mercury. Also, using the standard formula used by both laboratories, the moisture content (M.C.) of each block was determined.

All data for each tree as well as for the four trees were arrayed and their respective dispersion tables prepared. Such statistical constants as true mean, standard deviation, standard error, required number of samples to attain a desired accuracy of 5 per cent, and coefficient of variation were computed. The significances of the difference of specific gravity were also determined.

RESULTS AND DISCUSSION

The average specific gravity at test (ave. 70.90% M.C.) of balobo in each sample ranged from 0.568 to 0.714 (table 1). The coefficient of variation was 6.06 per cent indicating that the samples were slightly variable. The variations in average specific gravity were found associated with the location of the samples from the butt to the top section or bolt of the log as well as from the pith to the bark (table 2). In the former, the trend of decrease was from the butt (0.678), the middle (0.658) the next, then the top (0.651). In the latter, the trend of increase was from the pith (0.645), the midportion (0.672) the next, then near the bark (0.673). Between the butt and middle sections and between the butt and top sections, the variations in specific gravity were significant while that between the middle and top sections was insignificant. These showed that, on the average, balobo at the butt was definitely denser than either of the middle or top sections although there was also the tendency for the middle

to be denser than the top as manifested by a probability of 87.24 out of 100. On the other hand, between the three portions of the cross section of the log, only the variation between those near the bark and the midportion was insignificant. This indicated that both portions were evidently denser than that near the pith. Coincidentally, these manifestations of density variation substantiated the trend of decrease in the thickness of the cell wall of balobo fibers from near the bark to the pith as well as from the butt to the top sections of the trunk as previously observed by earlier investigators (8).

Comparison between trees. — In table 3, all four trees studied were found to vary significantly with each other in their specific gravity. An attempt to analyze the variations in each tree unexpectedly showed an interesting result which may lead to the discovery of another probable factor (not assessed before) affecting the incidence of specific gravity variations. Apparently in table 4, the different portions of the trunk of each tree varied sig-

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nificantly in specific gravity. The densest portions of the log were found near the bark in the case of the two trees whose lean was either toward the north or south while those whose lean was either toward the east or west had their densest portions near the mid-portion. However, there was the lack of replications in each case; hence, it is speculative, as yet, to consider whether or not this variable effect in density is really affected by the lean of the tree. To be appreciated, nevertheless, this finding although incidental, may prove of value as a clue to further study and consideration of this nature for one of those conditions influencing the occurrence of variability in specific gravity of wood.

SUMMARY

Specific gravity determinations were made on balobo (*Diplodiscus paniculatus* Turcz.) trees from the Makiling National Park, Laguna. From the results of the investigation, the following points were noted:

1. The average specific gravity at test (ave. 70.90% M.C.) of balobo in the several samples ranged from 0.568 to 0.714 with an average for all the samples of 0.663 + or - 0.002. The co-efficient of variation was 6.06% indicating that the samples were slightly variable.

2. The specific gravity of balobo in the several samples were found to decrease from the butt to the top section of the log as well as from near the bark to the pith.

3. Between trees, the average specific gravity varied significantly.

4. In the attempt to analyze the variations in each tree, it was found that trees leaning either toward the north or south were densest near the bark whereas those that leaned either toward the east or west were densest near the the mid-portion. This finding, although incidental, may serve as a starting point for further study on the possible effect of the lean of a tree on its specific gravity.

ACKNOWLEDGMENT

This investigation is a part of the research project of the Forest Products Laboratory on

the specific gravity of Philippine woods being undertaken by the Timber Physics Section. This was carried out upon request of Timber Physicist Rosario T. Cortes who is now in Australia on a fellowship under the Colombo Plan.

The authors are gratefully indebted to Professor Eugenio de la Cruz and Mr. George M. Hunt, Chief and Consultant respectively of the Forest Products Laboratory for their advice and permission in the carrying out of this work; to Professor Rosario T. Cortes and his staff for the facilities extended to us; to Professors Calixto Mabesa and Jose B. Blando and Mr. Domingo Lantican, of the College of Forestry, University of the Philippines for going over this paper.

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Table 1. Statistics of the specific gravity of balobo (*Diplodiscus paniculatus* Turcz.).

Items	No. of Samples		Specific Gravity								
	Tested	Re-quired	M	S. E.	Cv. %	Near Bark S.E.	Cv. %	Mid-portion S.E.	Cv. %	Near Pith S.E.	Cv. %
4 trees:											
Whole	720	4	0.663 +- 0.002		6.06	0.673 +- 0.002	4.55	0.672 +- 0.002	5.24	0.645 +- 0.003	7.12
Butt	240	3	0.678 +- 0.002		4.16	0.695 +- 0.001	1.58	0.685 +- 0.003	4.16	0.658 +- 0.003	1.65
Middle	240	7	0.658 +- 0.003		6.62	0.676 +- 0.002	3.11	0.663 +- 0.005	6.58	0.637 +- 0.006	8.07
Top	240	6	0.651 +- 0.003		6.08	0.648 +- 0.004	5.12	0.668 +- 0.003	4.13	0.640 +- 0.006	7.64
Tree No. 1											
Whole	180	8	0.624 +- 0.003		6.89	0.646 +- 0.005	5.85	0.634 +- 0.003	3.93	0.600 +- 0.006	7.76
Butt	60	1	0.670 +- 0.002		2.76	0.690 +- 0.002	1.47	0.663 +- 0.002	1.57	0.655 +- 0.001	1.70
Middle	60	2	0.608 +- 0.004		5.36	0.645 +- 0.003	2.22	0.609 +- 0.002	1.50	0.572 +- 0.003	1.94
Top	60	4	0.601 +- 0.004		5.12	0.604 +- 0.002	1.79	0.631 +- 0.002	1.62	0.568 +- 0.004	2.90
Tree No. 2											
Whole	180	1	0.692 +- 0.001		2.46	0.693 +- 0.001	1.36	0.707 +- 0.001	1.49	0.678 +- 0.002	1.78
Butt	60	1	0.698 +- 0.002		2.44	0.700 +- 0.002	1.40	0.714 +- 0.002	1.03	0.681 +- 0.003	1.87
Middle	60	1	0.693 +- 0.002		2.28	0.693 +- 0.001	0.92	0.710 +- 0.002	1.32	0.677 +- 0.002	1.12
Top	60	1	0.684 +- 0.002		2.27	0.686 +- 0.002	0.96	0.698 +- 0.002	1.00	0.699 +- 0.003	1.72
Tree No. 3											
Whole	180	2	0.686 +- 0.002		3.35	0.673 +- 0.004	4.32	0.706 +- 0.002	2.17	0.688 +- 0.002	2.01
Butt	60	1	0.695 +- 0.002		2.23	0.696 +- 0.002	1.08	0.709 +- 0.001	0.90	0.678 +- 0.003	1.84
Middle	60	1	0.693 +- 0.001		1.36	0.687 +- 0.002	0.99	0.696 +- 0.002	1.29	0.694 +- 0.002	1.49
Top	60	3	0.669 +- 0.004		4.38	0.634 +- 0.004	2.44	0.683 +- 0.002	1.33	0.692 +- 0.004	2.30
Tree No. 4											
Whole	180	3	0.648 +- 0.002		4.48	0.678 +- 0.002	2.16	0.652 +- 0.002	2.02	0.619 +- 0.002	2.54
Butt	60	4	0.656 +- 0.004		4.97	0.695 +- 0.003	1.99	0.653 +- 0.001	0.83	0.619 +- 0.003	1.81
Middle	60	4	0.659 +- 0.004		4.88	0.676 +- 0.002	1.54	0.640 +- 0.003	2.11	0.609 +- 0.002	1.43
Top	60	1	0.631 +- 0.002		2.49	0.662 +- 0.002	1.36	0.661 +- 0.001	0.97	0.632 +- 0.002	1.04

LEGEND TO ABBREVIATIONS:

S. E. = Standard Error.

Cv. = Coefficient of variation.

Table 2. Significance of the difference of the specific gravity of balobo (4 trees) between the different portions of the bole.

Between Sections of trees	Means	Diff. of Means	Standard Error	Standard Error of the Difference	Normal Deviate	Significance *
Butt Middle	0.678 0.658	0.020	0.0018 0.0028	0.00333	6.01	Significant
Butt Top	0.678 0.651	0.027	0.0018 0.0026	0.00316	8.54	Significant
Middle Top	0.658 0.651	0.007	0.0028 0.0026	0.00382	1.83	Insignificant
Near Bark Mid-portion	0.673 0.672	0.001	0.0020 0.0023	0.00305	0.33	Insignificant
Near Bark Near Pith	0.673 0.645	0.028	0.0020 0.0030	0.00361	7.76	Significant
Mid-portion Near Pith	0.672 0.645	0.027	0.0023 0.0030	0.00378	7.14	Significant

* Level of significance used is twice the standard error of the difference between the two means or a probability of 95.45%

Table 3. Significance of the difference of specific gravity between four trees of balobo (*Diplodiscus paniculatus* Turcz.).

Between trees	Means	Diff. of Means	Standard Error	Standard Error of the Difference	Normal Deviate	Significance *
No. 1 No. 2	0.624 0.692	0.068	0.0032 0.0013	0.00345	19.71	Significant
No. 1 No. 3	0.624 0.686	0.062	0.0032 0.0017	0.00362	17.13	Significant
No. 1 No. 4	0.624 0.648	0.024	0.0032 0.0022	0.00388	6.19	Significant
No. 2 No. 3	0.692 0.686	0.006	0.0013 0.0017	0.00214	2.80	Significant
No. 2 No. 4	0.692 0.648	0.044	0.0013 0.0022	0.00256	17.19	Significant
No. 3 No. 4	0.686 0.648	0.038	0.0017 0.0022	0.00278	13.67	Significant

* Level of significance used is twice the standard error of the difference between the two means or a probability of 95.45%.

Table 4. Significance of the difference of specific gravity between the three portions of the cross section of the trunk in four trees of balobo (*Diplodiscus paniculatus* Turcz.).

Between Sections of trees	Means	Diff. of Means	Standard Error	Standard Error of the Difference	Normal Deviate	Significance *
Tree No. 1						
Near Bark	0.646#	0.012	0.0049	0.00585	2.05	Significant
Mid-portion	0.634		0.0032			
Near Bark	0.646	0.046	0.0049	0.00774	5.94	Significant
Near Pith	0.600		0.0060			
Mid-portion	0.634	0.034	0.0032	0.00680	5.00	Significant
Near Pith	0.600		0.0060			
Tree No. 2						
Near Bark	0.693	0.014	0.0012	0.00184	7.61	Significant
Mid-portion	0.707#		0.0014			
Near Bark	0.693	0.015	0.0012	0.00200	7.50	Significant
Near Pith	0.678		0.0016			
Mid-portion	0.707	0.029	0.0014	0.00213	13.62	Significant
Near Pith	0.678		0.0016			
Tree No. 3						
Near Bark	0.673	0.033	0.0038	0.00429	7.69	Significant
Mid-portion	0.706#		0.0020			
Near Bark	0.673	0.015	0.0038	0.00420	3.57	Significant
Near Pith	0.688		0.0018			
Mid-portion	0.706	0.018	0.0020	0.00269	6.69	Significant
Near Pith	0.688		0.0018			
Tree No. 4						
Near Bark	0.678#	0.026	0.0017	0.00240	10.83	Significant
Mid-portion	0.652		0.0017			
Near Bark	0.678	0.059	0.0017	0.00278	21.22	Significant
Near Pith	0.619		0.0022			
Mid-portion	0.652	0.033	0.0017	0.00278	11.87	Significant
Near Pith	0.619		0.0022			

Highest value per tree.

* Level of significance used is twice the standard error of the difference between the two means or a probability of 95.45%.

⁴ According to Richardson, C.H. (*An Introduction to Statistical Analysis*) if the normal deviate is greater than 3, the difference is certainly significant. Likewise, if it is greater than 2, the difference is (possible) significant and if it is less than 2, the difference is (probable) not significant.

Some Selective Logging Techniques And Guides* Practiced In The Nasipit Lumber Company

By
The Timber Management Staff
Agusan Forest District

It is believed that the success of the government's program on selective logging depends largely upon our ability to introduce logging techniques that are conducive to the saving of more adequate number of uninjured residual trees in the logged-over area. The early return of logging operators to the same area they have operated depends largely upon the adequacy of these trees saved from destruction and injuries in the course of logging operations. It would, therefore, be necessary to control the operation of these logging operators by introducing logging techniques that will minimize or prevent the cutting, injuring or destroying of these trees, both large and small, which must remain to insure the continuity of production.

1. SPAR TREE

Spar trees properly located is considered one of the important functions of tree markers, and much so, on the part of the company's survey crew or the logging foreman. On it depends the location of planned cableways and the number and condition of residual trees. A coordination and consultation with the survey crew and logging foreman should be resorted to by tree markers so as to properly locate these spar trees. Some pointers for a correct location of spar trees are the following:

(1) It must be on the highest point in the

set-up where at least two or more gullies, creeks and the ridges run towards it or emanates from it. Observation shows that on the highest point or top of hill in settings, there emanates from it creeks, gullies or ridges. Hence, these creeks, gullies or ridges will serve as main cableways. Another reason is that skidding of logs from the felling areas will have the principle of the "fishing rod" or yarding will be in the "uphill procedure". Logs being yarded uphill are easier to control than logs yarded downhill. The saving of more residual trees will be in our favor when yarding under this condition.

(2) It must be centrally located in the setting so that all trees felled and bucked could be yarded. It is not a good policy to have trees felled and bucked and then not yarded, because it is against the policy of closer utilization.

2. TREE MARKING PROCEDURES

For the purposes of having closer control of cutting or on the operation, marking of trees by designating individual trees that are to be left and to be cut are conducted. Tree marking is done by trained forest officers with the help of licensee's or company's forestry crew. It is guided by the minimum requirements of residual stand.

A. Marking Trees to be Cut

A new method conducted in Agusan that was not practiced in Basilan before is the

* The logging techniques described here had been demonstrated in a work shop-seminar conducted by Forester Eulogio Tagudar and the timber management staff in Agusan under the supervision of District Forester Vicente Marababol and direction by Forestry Supervisor II Martin R. Reyes of the Forest Management Division, in April and May, 1957. These are now regular practices in Nasipit Lumber Company. They are recommended for application by other logging companies in accordance with the selective logging program under Forestry Administrative Order No. 23, dated October 14, 1954.—BU-REAU OF FORESTRY.

marking of trees to be cut, as well as specifically marking its direction of fall where it will cause the least damage to the marked residual trees. This method was adopted as a result of months of observations and studies of actual felling operations. The purpose is multiple: first, it is to reduce damage in the course of felling; second, it will be used as a basis in determining regulatory fines against the company for injuries or damages on marked trees to be left due to carelessness of fallers in not following the direction of fall as indicated by the mark on the stump of the tree; third, it will simplify marking trees to be left because all unexploitable trees marked with "X" will not be marked by forest officers or the company crew and it is also a means of preventing fallers from felling on top of the other felled trees. The latter method done by fallers facilitates bucking but it causes breakages, splits and checks on the logs.

Procedure. — Markers of trees to be cut consist of two members. One member, who is usually the leader, selects the trees to be cut; estimates the heights of the tree and widths of the crown; determines the range or direction within which the tree is to fall; reconnoiters places where it will cause the least damage to the marked residual trees and shouts or signals the painter where the tree is to be felled. As soon as the exact place for the direction of fall is determined by the leader, the other member strikes his marking gun stick to the tree and adjust its sight to the direction where the tree is to be felled. He then paints the T-square. The leader marks a residual tree that will be destroyed or damaged with "X". He (leader) moves to the next tree and the other member follows him.

Trees designated to be cut but will be used as rub trees are marked with a star "*" to indicate that the same should not be cut by the fallers until they have served the purpose. However, the tree marker and the yarding crew must exert efforts to look for non-dipterocarp trees to be used as rub trees.

The direction of fall can be determined on

four conditions of standing trees enumerated as follows:

1. Straight and evenly-crowned trees that can be felled in any direction on a windless day.

2. Leaning trees that can be felled against their leans on either side of the tree within a quarter-circle.

3. Leaning trees that can be felled in the direction of its lean.

4. Heavily branched or forked trees on one side that can be felled in any direction within a quarter-circle on either side of the tree.

In placing the mark for the direction of fall of the above classes of standing trees to be felled, it should be in the direction where it will cause the least damage or no damage at all to the marked residual trees or clumps of seedlings, saplings and poles. All efforts should be exerted to study and determine the position of the lean of the tree as well as the arc or range wherein possible falling could be done without the use of the felling wedge or its use (felling wedge) could be minimized in each setting.

Pointers in Determining the Direction of Fall.

— Fallers are the key to the efficient leaving of more healthy residual trees in the logged-over areas. Hence, they should keep in mind the following pointers:

1. Always follow the mark in the direction of fall of trees to be cut.
2. If the trees to be cut are not marked in licensed areas or if marked but some direction of fall are found to be faulty, the following should be considered:
 - a. Fall trees, where possible, to avoid injury and knocking trees marked to be left and clumps of young forest growths such as red lauan, tangile, white lauan, almon, mayapis, apitong and bagtikan.
3. In high-lead settings, trees should be felled downhill or diagonally to the contours (preferably toward the spar tree) and accessible to yarding cables in the creek and gully bottoms to prevent too much sweep of logs felled as to knock standing trees. Creeks and

gully bottoms, if they originate from spar trees, shall serve as cableways. As much as possible, in other cable roads, should the position of standing trees warrant, trees should be felled parallel or diagonal to said cableways.

4. In tractor settings, if standing trees warrant, felling of trees to be cut should be perpendicular or diagonal to pre-laid main or secondary tractor roads. This method will facilitate the pulling out of logs to the tractor roads without entering areas between the roads and avoid si-washing around or sweeping down residual or groups of young trees.
5. If it is impossible not to hit marked trees try to fall only one marked tree without entering areas between the but not to groups of clumps of marked trees, but it should be compensated by a better looking tree among those marked "X".
6. Before felling a tree, fallers should scout or reconnoiter the location of marked trees to remain, then the direction of fall is decided to prevent damages to those marked trees.
7. Fall trees away from a clump of trees to be marked as residuals or where it will cause the least damage.
8. Fall trees towards or away from the spar tree or diagonal to the runway of the main yarding cable.
9. Prevent the felling of trees on top of other trees.
10. Trees shall be felled in such a way that it will not hit a nearby stump or fell across gully to avoid breakage.

B. MARKING TREES TO BE LEFT

Although we are at present marking the trees to be cut, we do not abandon marking trees to be left for the following reasons: (1) to familiarize fallers and yarders on the kind of trees we want to be saved and (2) to determine the number of residual trees damaged by fallers and yarders so that the amount of fines could be easily computed on the marked trees that were destroyed. Besides, during yarding, in either high-lead or tractor settings, yarders could still look out for the marked residuals. Trees to be left are painted with numbers below sawcut line with horizontal band on both sides of the number. The marks placed on the residual trees could be

readily seen at a distance, thereby alerting fallers to be cautious in felling and yarding operations.

Determining the minimum requirements of residual stand to be left with our goal of about 60% of the number of trees in 20 to 70-centimeter diameter group, in the proportion that the stand of the dipterocarp forest will allow, is done by sampling estimates by the circular plot method. (See attached Table I). About 20% to 30% in the 70 cm. class are only marked when necessary. If the above conditions do not work in settings where the trees are predominantly in the exploitable or mature and over-mature diameter classes and where the lower diameter groups are too few in number, we resort to the marking of all unexploitable trees that are believed to be saved during logging, most if not all of the 70 cm. class trees and some of the 80 centimeter diameter trees as residual growing stock and for seed tree purposes. The last method shall constitute about 40% of the entire stand. After the minimum requirement is determined, tree marking in a particular setting is started, having always in mind the following guides:

1. Staking of proposed cableways shall be done before marking in high-lead settings so that trees desired to be left in these planned cableways shall not be marked.
2. In high-lead settings, tops and sides of ridges, especially if the ridges originate from the spar trees, marking of residual trees is heavily done.
3. On creek and gully bottoms to be used as main cable roads, marking of trees is minimized or nil.
4. In planned cableways other than creek and gully bottoms trees need not be marked. The width of these cableways shall be kept to the minimum necessary for the passage of end-choked logs during yarding.
5. In tractor settings, trees to be left should be confined between proposed skidding trails.
6. Under the coverage of the fall of big trees, no residual trees shall be marked.
7. Within roadways of main and spur roads no trees will be marked.
8. Within 35 to 40-meter radius of spar trees, no marking shall be conducted.
9. In high-lead settings select 3 or 4 "Seed Trees" equidistant from each

other on the outer periphery of the log landing just immediately beyond the guyline area and shall be near the right-of-way of the main cable to assure natural regeneration of the clear-area around the spar tree. Cut all vines twining around trees marked to be left.

D. OTHER TREE MARKING RULES

1. Trees to be marked are Philippine Mahogany species, apitong and other commercial species commonly sawn.
2. All the trees marked in each set-up are intended to be left uninjured. Allowance had already been given for logging damages during the marking. However, there are cases where a tree marked to be left cannot be avoided, so if it is impossible not to damage it, it should be compensated for by an unmarked or undesignated tree to be cut provided that the compensating tree is more or less the same as the tree to be damaged.

3. FELLING TECHNIQUES

Felling damages to the residual stand is quite big. Studies conducted in Basilan and Agusan shows that as much as 10 to 15% or sometimes more of the entire stand in a setting is damaged in felling. The wounding of residual trees caused by the lodging or crushing of unmerchantable or miscellaneous species and by trees to be cut, is another form of injury.

However, a great many of the trees marked to be left can be saved during the course of felling by exercising more care in felling the trees and the use of felling wedges. The pressure exerted by a wedge driven in the sawcut by blows from a sledge hammer is so tremendous that even very large trees can be forced to fall against their natural leans by judicious wedging. The use of this tool plays an important role in the saving of more residual trees during felling. In this company (NALCO), the use of felling wedges is strictly enforced. Each pair of fallers is required to carry 2 wedges and sledge hammer every working day. Failure to bring them means no work for the day. The Logging Superintendent and the Bull Bucker see to it that all fallers are provided with these necessary tools.

Discussed hereunder are procedures in felling four different classes of standing trees to be cut.

A. Felling a Leaning Tree Against the Lean

In felling trees of this type, a shallow undercut is preferable. This is to prevent big splits of the butt logs and premature felling of the tree. After several factors have been weighed and decided on where to fall the trees, and after taking into consideration the places of marked residuals or by following the mark as indicated in the tree, as done in this company, the undercut is sawed horizontally to the depth of about 1/5 to 1/3 of the diameter of the tree and then chopped by an ax to the end of the sawcut forming a diagonal opening of about 45 degrees with the bottom of the sawcut. After the undercut is finished, the backcut or felling cut is sawed off at an angle to the undercut not parallel to it as in the felling of erect and evenly-crowned trees. In this method of sawing the backcut, one side will already be completed while the opposite side is still partially cut. As soon as the fallers know that the tree starts to fall, they rapidly complete the backcut while the partially cut side or unsevered side hold and pulls the tree to the side against the lean. Such trees when felled against their leans can be "pulled" away from their leans by leaving a wider band of uncut wood on the side where the direction of fall is desired. This uncut section acts as a hinge that will throw the tree to a desired direction to avoid hitting marked residual trees or clumps of dipterocarp trees. Under some cases, however, wedges are necessary to prevent the saw from being pinched in or to help direct the fall of the tree at open places or where damages to the residual stand will be least caused. Please see illustration on the procedure of felling this kind of tree. Figure 1.

B. Felling a Leaning Tree in The Direction of its Lean

In felling leaning trees in the direction of their lean or natural "pull", the undercut is usually deeper than for straight and leaning trees to be felled other than their leans. This is necessary to prevent premature felling of the tree before the backcut has been severed off sufficiently and to prevent splitting of the butt logs. Corner notches are usually chopped on each side of the undercut in these trees to prevent pulling side splinters as the tree falls. The procedure in felling this tree is the same as in felling an erect and evenly crowned tree. Illustration for corner notches is shown in Figure 2.

C. *Felling Trees Heavily Branched or with Forked Branches on one side*

Trees heavily branched or with forked branches on one side can be felled, like leaning trees, in any direction within a quarter-circle on either side of the tree to avoid injury or destruction to marked residual trees or groups of dipterocarp seedling saplings and poles. See illustration, Figure 3 on the method of felling trees within a quarter-circle on either side of the tree.

D. *Felling an erect and evenly balanced crowned tree*

A straight or an erect and evenly balanced-crowned tree, in a windless day, can be felled in any direction to avoid injuries to the residual stand. If it is properly undercut and backcut, even without the use of felling wedges, it could be felled squarely in the direction of the undercut. After locating the places of marked residual trees or following the mark on these trees to be cut and taking into consideration that this tree will not break when felled, the undercut is sawed and chopped. The backcut or felling cut, which is about 1 to 4 inches above the bottom of the undercut, is sawed on the opposite side of the tree by a felling saw and it advances in a parallel direction to the undercut until a small uncut wood section for holding breaks off. As this (uncut wood for holding) breaks off, the tree falls and settles. In an erect and evenly balanced tree, the uncut section has a uniform width from side to side not like leaning trees felled against their leans which is wedged or angled shaped. Please see illustration Figure 3-a on the method of felling this particular kind of tree.

4. *HIGH-LEAD YARDING TECHNIQUES AND PROCEDURES*

Moving logs from points in the felling and bucking areas to landing or points of destination is done by power units. In high-lead yarding, the principle involved is the attaching of the logs to a stationary power unit pulling the log to it by means of cables reeled in by a drum, like the cable yarders. Because of the strength and speed of cable lines during yarding all trees uncut along its path are knocked down, broken or seriously damaged. These damages, however, could be kept at minimum by the proper choice of yarding equipment and application of logging techniques and effective supervision of the work.

A. *Si-Washing Block Combined with Si-Wash Trees*

"Si-Wash Block", also called "flying dutchman", when combined with si-wash trees is an effective method of saving young trees during the course of yarding on hill sides and promontory ridges. The use of this method of yarding is motivated by the desire of both the Government and the company to save marked residual trees on hill sides, specially on sloping grounds where a pull of gravity augmented by jerking and fast reeling in of the main line operate. Hence, to counteract or control the downward play of logs, the si-wash block rigged between the spar tree and butt rigging assembly within the guy line area (fig. 4) or any point between the lead tree and the haulback block (fig. 5), overcomes some of the gravitational forces and guides the main line to a more or less favorable or controllable yarding cableway and minimizes the too-much play of logs yarded on this topography. The si-wash block, having a special groove to fit 1-1/2 or 1-1/4 inches cable lines and has a wide throat to pass butt riggings should be used. This block is hitched to a stump with 1-1/4 or 1-1/2 inches wire rope strap about 140 to 150 feet away from the spar tree. At about the middle or at the strategic places along the half moon's loop, si-wash trees are used as a combination with the block which bends further the main line thereby plays a vital role in avoiding injuries or destructions to groups of residual trees along the slope. The si-wash trees are chosen at strategic places above or below the group of residual trees so that logs being hauled in could do the least damage or none at all to these trees. Although si-wash trees are not as effective as the bullblock in saving residual trees on promontory ridges and hill sides, it still could serve the purpose.

B. *Slowing Down of Main Line*

Fast and jerky pull of the mainline during the yarding operation is one of the main causes why residuals are uprooted, broken and seriously injured along cableways. To prevent the occurrence of such damages on these trees in this method of yarding, the main cable line should be slowed down as soon as it passes beside or through residuals or should be stopped about 3 to 5 meters or more when "logchaser" believes that the residuals are in danger of being damaged. The precautionary distance is such as that an allowance could be given for delayed relay of yarding codes from the hook tenders to the whistle punk

to the engine operator, and much more so on the pulling momentum of the log even after a brake had been applied to the engine.

When a hang-up is sure to happen on a residual, the precautionary distance and stop are observed. And then followed by the placement of the end of the log in such a way that it will turn around and miss the residual when the line is pulled. It is regrettable to state that some men are lazy or have the tendency to follow the log being yarded only either by sight or following it within seeing distance even on flat terrains. In rugged terrains where following a log is tiresome, log chasers should post or station themselves on strategic places where they are within reach for possible hang-ups both on residual or obstacle. It is believed that only through constant lookout of the running log by the "chokerman" can they relay efficiently signals to slow or stop the main cable line upon reaching a residual tree most likely to be injured by the log.

C. Extension Chokers

To reduce the number of cableways in a setting in yarding logs in any terrain, extension chokers should be used to reach one or more isolated logs felled between major cableways. It is our belief that the less the cableways in any setting the less is the destruction to the residual stand. The extension chokers mentioned herein are addition or joining of 2 or more chokers, usually a combination of 3 chokers with varying lengths of 35 to 60 feet. In an ordinary high-lead yarding, only one choker is attached to the butt rigging assembly. To reach one or more isolated logs between major cableways, one or more chokers are joined together. When the log reaches about 1 to 2 meters to the cableways, the main line is stopped and the first two chokers (if 3 chokers are used) are detached from the butt chain hook and the last choker tied to the log is hooked and the main line is again reeled in. Rub trees of non-commercial species must, however, be used to direct the logs away thus shielding residual crop trees along the chokers from being swept down or severely injured. See illustrations, Figure 6.

D. Log Guides

In skidding or yarding logs on promontory ridges and hill sides with or without the use of bullblocks, si-wash blocks and extension chokers, logs shall be strategically post-

ed along cableways on slopes or places in front on the cable side of marked trees on level areas and slopes. (Fig. 7). When all the logs in this loop are yarded to the landing, the logs used as guides should be yarded consecutively from the far end to the landing. A log guide can be moved away from a saved residual by chokers and rear or opposite side stump (or non-commercial tree) combination to deviate the log from the saved residuals and placing said log in the middle of the main cableway.

E. Maximum Yarding Distance

The maximum yarding distance recommended to be followed for highlead yarding shall, as much as possible, be limited only to a radius of 900 feet. Only under extreme circumstances may yarding distance of 900 feet be allowed. Observation and study show that the longer the hauling distance the more destruction to the residual stand and the more uncontrollable will be the main cable line. The damages or destruction such as uprooting of marked trees, sweeping down of forest growth, breaking of branches and scraping of barks of trees are caused by excessive play of the main cable during yarding due to the looseness of the main cable line. Keeping the 900 feet yarding distance may reduce the fear of the yarding crew in not producing their quota for each day because the longer the hauling distance the slower the movements of logs from the felled areas to landing especially if the main line traverses across creeks and ridges.

As regards the maximum distance in tractor yarding, this will be governed on how the individual operation considers his own economic distances, relative to the conservation program to be attained, as each logging show presents variable problems to the logger.

5. TRACTOR YARDING TECHNIQUES

Skidding logs by tractors equipped with winches and logging arches either the crawlers or rubber-tired (sulky) type is another method of moving logs from the felling areas

to the landing. The principle involved is the attaching of the logs to the mobile power unit and the power unit and the logs move to the landing. During this process, tractors with or without load when going back and forth (from the landing to the felling areas) will likely cause injury or will injure residual trees, especially when done during the rainy season. Changes of tractor roads during this period usually occur because after 3 or more passes of the tractors with and without load on same place, they dig deep into the soil and are stuck up. Sources of injuries or damages in tractor yarding are done by the bulldozer's blade, load (logs) and the tractor wheels. At times injuries in tractor settings are mostly done by careless tractor operators. Because of the human desire to produce more logs per day (tractor operators are paid by contract on the amount of logs they could put out each day), little initiative is used by these operators to protect the marked residual trees.

Discussed hereunder are techniques in tractor yarding which are believed when practiced intensively to minimize damages to the residual stand within reasonable limits.

A. Laying Out Tractor Roads Before Felling And Yarding

Before felling and yarding operations were conducted, skidding trails and back trip trails (tractor roads) were established. See attached sketch Figure 8, for proper laying out tractor roads. In level areas, tractor roads were established as straight as possible by bulldozing them, yet avoiding groups of residual trees and forest growths. In rolling areas, skidding roads may follow top of ridges and gullies (if dry season) and secondary skid roads may branch out at 45 degrees to the main skid roads.

B. Felling Trees in Tractor Setting

Felling trees in this tractor set-ups should be done, if position of standing trees warrants, perpendicular or diagonal to the tractor roads. Sometimes trees are felled to fall along the

roads to avoid further damage of residual trees inside the loop. This facilitates the pulling out of logs to the tractor roads and avoid si-washing around or sweeping down marked residual trees or groups of young trees.

C. Skidding Procedure in Tractor Settings

In skidding logs between those established tractor roads, tractor operators should first clear the tractor roads by the use of the bulldozer's blade on the side of the logs where no marked residual trees will be destroyed. Later he backs up to the load (logs). Logs from inside or between secondary roads shall be pulled out by cable to the road with the tractor stationary at the road. The operator should pull out the top or butt logs to the side of the next log and so on, and then tractor and logs moved to the skid roads and to the landing. Pulling out two logs cut from the same tree is permitted on open spaces where no residual trees will be destroyed. Skidding shall be confined to the skidding trails and backtrip trails. Tractor operators should not make short cuts to the landing nor should they change skid roads as often as they please. Pulling should be done endwise not sidewise. The latter, hooking two logs cut from the same tree at the same time, is destructive. Tractor operators should back up only on tractor roads and open spaces. During rainy season, only crawler-wheeled logging arches should be used as they are more floatable than rubber-tired logging arches. If the main or center tractor road becomes impassable, the secondary tractor roads should be used and not just any place the driver may choose.

6. GUIDES FOR THE COMPANY'S SURVEY CREW

1. Location of spar trees should be a coordinated task between the company's survey crew and the management officer of the Bureau of Forestry.
2. Spar trees should be located on top of hills or spot in the setting where two or more creeks, gullies or ridges emanate

- from it. Creek and gully bottoms will then be used as main cable ways in yarding.
3. Locate boundaries of settings, where possible so as not to yard across ridges. These ridges should not, if crossed, be higher than the base of the spar tree.
 4. Boundaries of setting should include natural features such as, creeks, gullies, and ridges, provided the trees to be felled will slide down to creeks, and gullies, that could be reached by the yarding cables and favorable to yarding.
 5. The radius of boundaries of settings should be limited only to the standard length of 900 feet and not over to avoid a loose and playful main cable line during actual yarding.
 6. Boundaries of settings should be painted with any visible color to guide fallers, yarders, B.F. and company crews.
 7. Survey lines for road location should be clearly laid out and visible on the ground by stakes properly labeled as main haul road, spur road, skyline and donkey trail, and others.

7. GUIDES FOR ROAD CONSTRUCTION CREW

1. Road rights-of-way for main haul road should only be 30 meters wide, that is, 15 meters on both sides of the road, reckoned from the center. Clear cutting will be allowed only within the roadway. There should at least be 2 healthy residual trees or more within every 50 meters along each side the road, so that on a per hectare basis, at least there will be left about 25 trees per hectare.
2. For spur road rights-of-way, only 10 meters wide shall be allowed, that is, 5 meters on each side from the center of the road. At least 1 or more healthy residuals shall be left within every 50 meters.
3. No poles of the dipterocarp species shall be cut to be used for corduroys, except those allowed in 1 & 2 above, within the rights-of-ways, alienable and disposable areas and those unintentionally damaged during logging.
4. Bulldozer operator should not dump scraped earth on the base of residuals along the spur line or main haul road to prevent it from being killed by air suffocation.
5. Follow strictly cut-line as laid out by the survey party to avoid damages on trees marked to be left beyond the road way of the proposed road.

8. RESIDUAL INVENTORY

After each set-up is logged, all efforts should be exerted to have them inventoried so that the remaining growing stock could be determined, to know if improvements of logging techniques should be done and if the number of remaining healthy residual trees will be sufficient for the next cut. For the purpose of recording the residual trees, the marking record previously used should be used. The criteria to be followed are:

- A. Criteria for Healthy or Standard Residual Trees:
 1. No damage sustained on all previously marked and unmarked unexploitable dipterocarp trees having escaped injury during logging.
 2. Not more than 1/6 of the crown that is, if 1/5 of the crown is injured it will be considered not healthy.
 3. Any injury on the trunk reaching the wood (beneath the cambium) should not be more than 5 centimeters wide and 50 centimeters line parallel to the longitudinal axis of the trunk.
 4. Not more than 1/3 of the buttress is badly battered.
 5. Not more than 1/2 of the circumference at any place on the trunk is girdled and deeply indented by wire rope.
 6. Not more than 1/6 of the root system is removed or disturbed.
- B. Doubtful or Substandard Residual:

The injury shall be:

 2. More than 1/6 to not more than

1/2 of the crown is injured or removed.

2. Any injury on the trunk reaching the wood, over 5 centimeters wide to 1/3 of the circumference and not more than 2 meters long along a straight line parallel to or along the longitudinal axis of the trunk.
3. More than 1/2 but not more than 2/3 of the circumference of the trunk is girdled or seriously indented by wire rope.
4. Over 1/3 but not more than 1/2 of the number of buttresses are battered.
5. Over 1/6 but not more than 1/4 of the root system is removed or disturbed.

9. PREPARATION OF TREE MARKING AND INVENTORY REPORTS

A. Tree Marking Report

Preparation of this report consists of a stand and stock table patterned after the present standard procedure of preparing timber valuation tables for forest reconnaissance and inventory reports for each setting. Briefly, it is by diameter classes at 10 centimeters interval and by species. Below the total is the computed total per hectare of the number and volume of the trees of each diameter class.

B. Residual Inventory Report

Preparation of this report consists also of a stand and stock table for each setting of the healthy residual trees and doubtful or substandard residual trees. A separate report should be made for the summary of the healthy residual trees. If time is not available, only the report for the healthy or standard residuals inventoried should be reported and forwarded to Manila unless the other is called for. To make this report simple and easy to prepare, compute the total per hectare for each diameter classes by dividing the total number and volume of the trees in each diameter class group by the area of the setting. It is not necessary to compute

the per hectare basis of each species, unless called for.

Computation for the tree marking, residual inventory, original stand and other data should always be done on per hectare basis for simplicity and ease of comparison.

10. REFORESTATION WORK

(in connection with selective logging)

On bare areas around spar trees and cableways, dipterocarp wildlings should be planted. The semi-balled method of transplanting should be done. Planting stock should be taken from the nearby areas around spar trees to avoid long exposures and disturbances of the root system. The method is easy and simple. Just thrust the spade at four or more different places around the wildlings chosen to be transplanted and then lift the soil together with the wildlings. See to it that the root system are not disturbed and the soil around the wildling intact. This method of reforestating bare areas around the spar trees and cableways in Basilan was found to be successful. It is believed that this may also be successful in Tuñgao.

11. OTHER CONSIDERATIONS:

Selective logging desires to minimize if not eliminate logging destruction. It is, therefore, normal and advisable to discover other ways and means to improve present logging techniques. It must be borne in mind that it must be simple and practical and not a business loss, yet the object of saving an adequate residual stand is not hampered. Our guiding motto should be "more production but less destruction."

1. Locating planned cableways should be simplified so that even by mere reconnaissance of settings by noting positions or direction of creeks, gullies, ridges and position and location of standing trees to be cut and trees to be left in relation to the spar tree, the proposed cableways could be determined. In determining the possible location of cableways, we must base it on the theory that wherever the logs are, there the cableways will pass.

2. There should be developed a method of establishing tractor roads in tractor settings, like the procedure in establishing boundaries of high-lead settings that could be easily established by company survey crew or could be followed by the yarding foreman. Some sort of tractor roads as simple and straight as possible yet avoiding clumps of marked residuals, such as, the "leaf-vein" or straight formation of tractor roads (not winding roads) may be the most feasible.

3. If the crew and B.F. personnel have time, specially if the marking is well in advance, girdling of big miscellaneous species and other uncut-badly-defective dipterocarp trees should be conducted. Painting of injured portion of healthy residuals with tar

or wood paint to minimize the invasion of wood destroying fungi and insects should be conducted.

4. Gathering data and studies on taper and actual merchantable length of dipterocarp to revise the present inventory or valuation table which disregard more than 5 log length should be conducted to improve accuracy of estimates in tree marking and residual inventory.

REFERENCES:

Serevo, T. S. & M. R. Reyes. 1957. The implementation of selective logging. *Forestry Leaves* Vol. II Nos. 3 & 4.
 Wackerman, A. E. 1949. **HARVESTING TIMBER CROPS**. 1st. ed. McGraw-Hill Co., Inc. New York.
 Bureau of Forestry. Various instructions on selective logging.

Table I.—Determination of the minimum requirement of number of trees to be marked to be left in a set-up. (Data is taken from average of 3 or more samplings of 18-meter radius, each .1 Ha. To convert to per hectare basis, move the decimal point one place to the right, as was done to get the figures under Col. (3) of the following table):

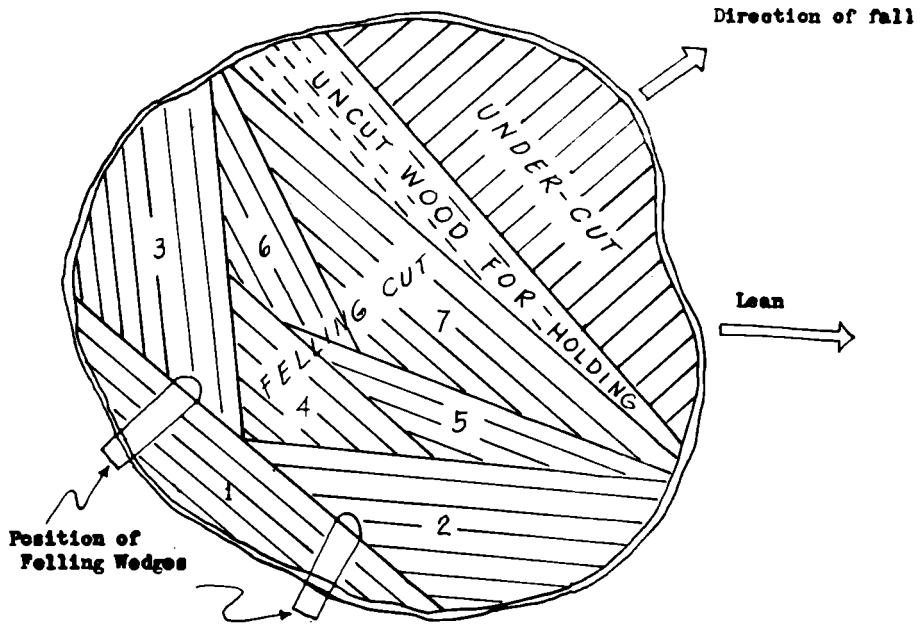
Dia. classes in cms.	Average number of trees per hectare	60% of total Number of trees	Trees to be marked per hectare (Number rounded)
20	3	1.8	2
30	7	4.2	4
40	4	2.4	2
50	8	4.8	5
60	7	4.2	4
70	5	3.0	3
Total	34	20.4	20

Computation for number of trees to be marked to be left in the set-up:

1. Area: 15 hectares
2. 60% of 34 trees (34 x .60) = 20.4 trees
3. Total number of trees: 20.4 x 15 = 306 trees

NOTE: For facility in marking, just take 60% of the total number of trees in the 20-70 cm. diameter class group for goal in marking.

<p style="text-align: center;"><i>Compliments of</i></p> <p style="text-align: center;">Claudio Azcarraga</p> <p style="text-align: center;"><i>Timber, firewood and charcoal licensee</i></p> <p style="text-align: center;">General Nakar & Infanta, Quezon</p>	<p style="text-align: center;"><i>Compliments of</i></p> <p style="text-align: center;">Ester C. Utulo</p> <p style="text-align: center;"><i>Almaciga Concessionaire</i></p> <p style="text-align: center;">Gen. Nakar, Quezon</p>
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a. Detailed procedures of felling leaning trees against their leans.

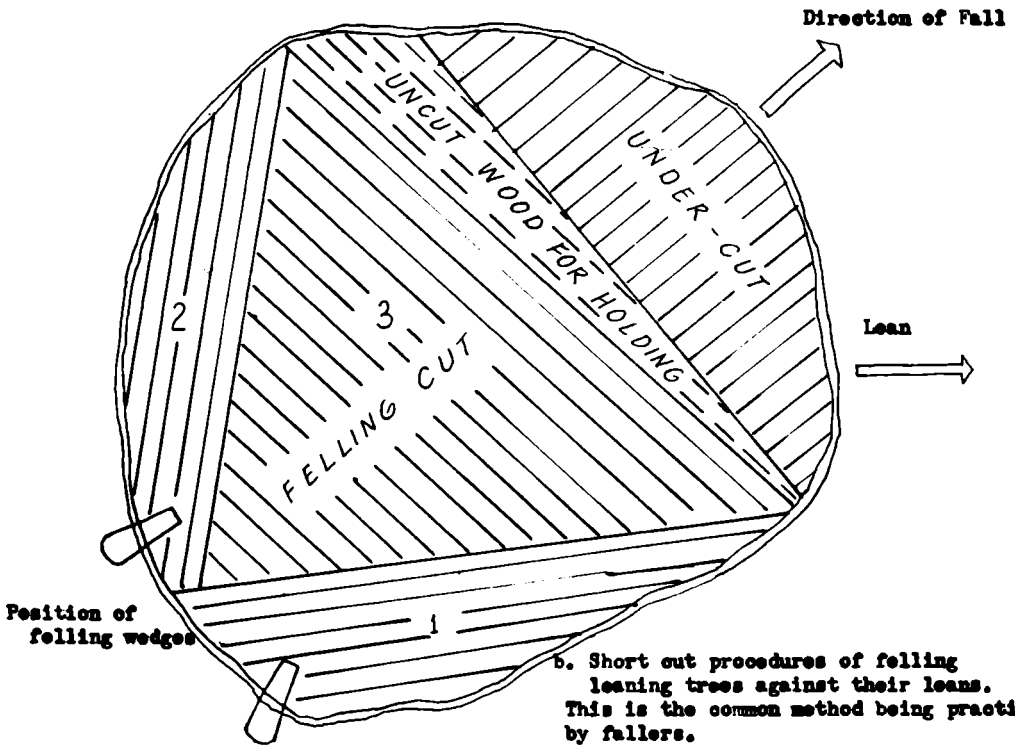


Figure 1- Procedure in Felling Leaning Trees against their leans.

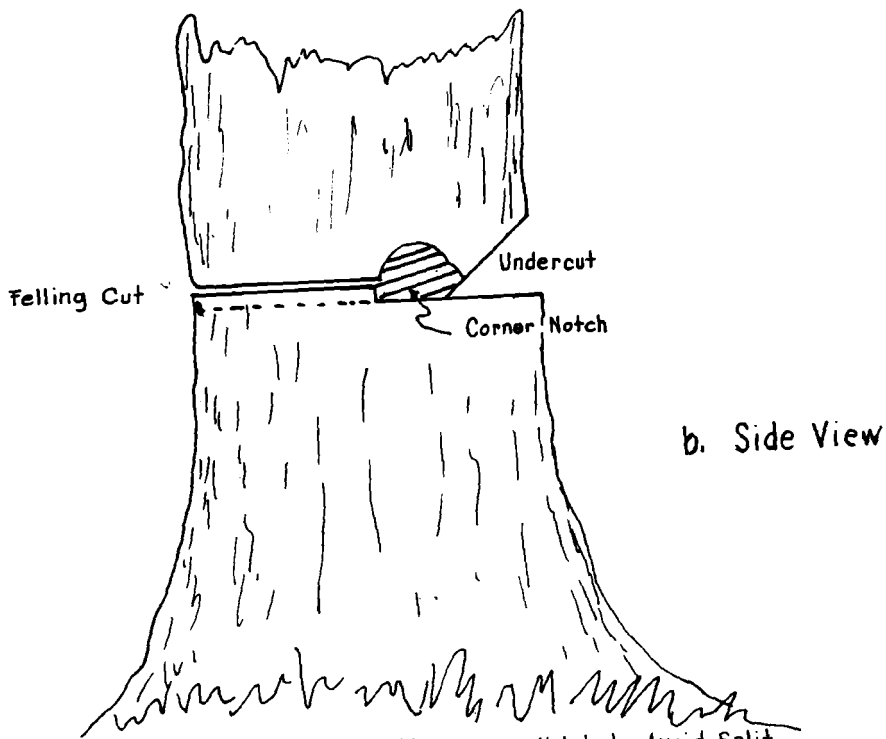
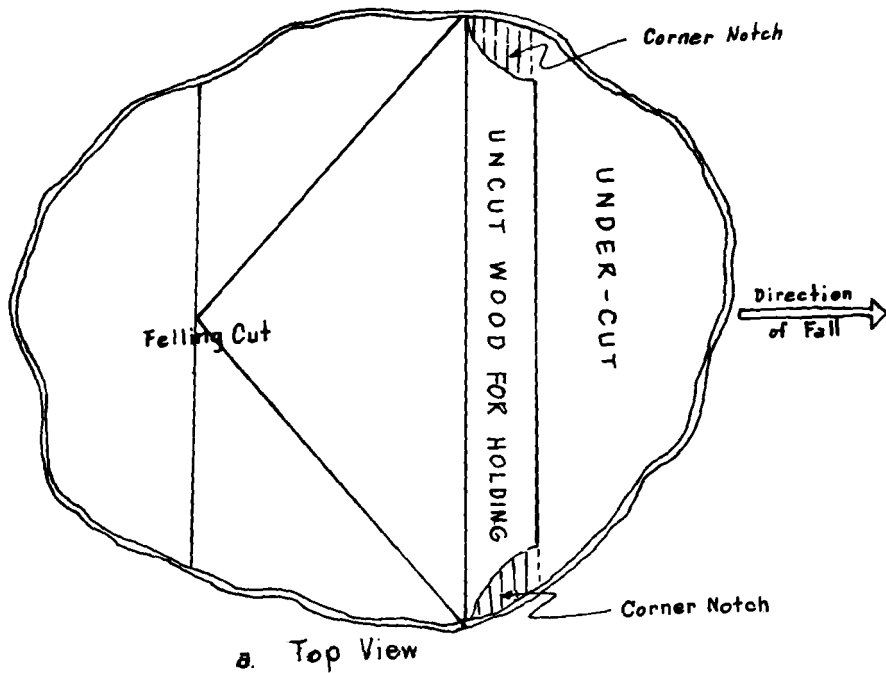


Figure 2 - Making Corner Notch to Avoid Split.

**Felling Technique
for saving Residuals**

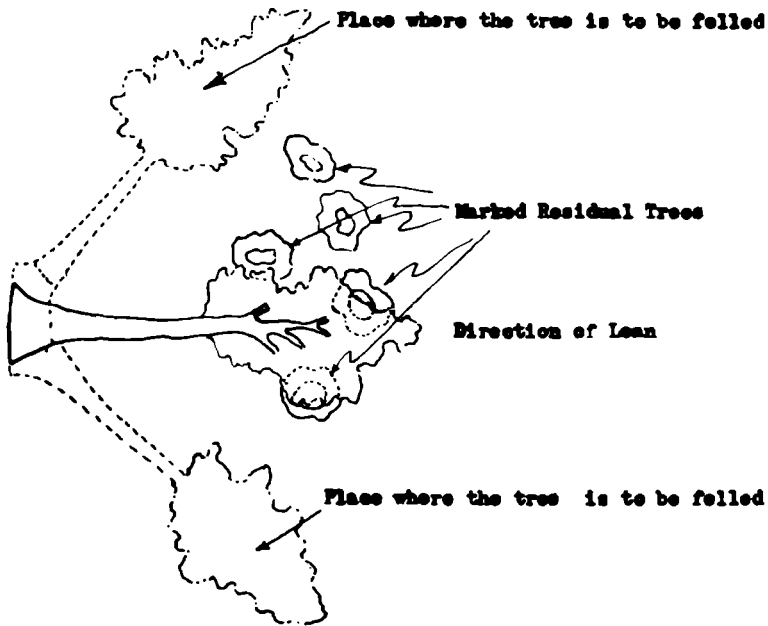


Figure 3 - Illustration showing felling Leaning Trees within a Quarter-Circle on either side of the tree.

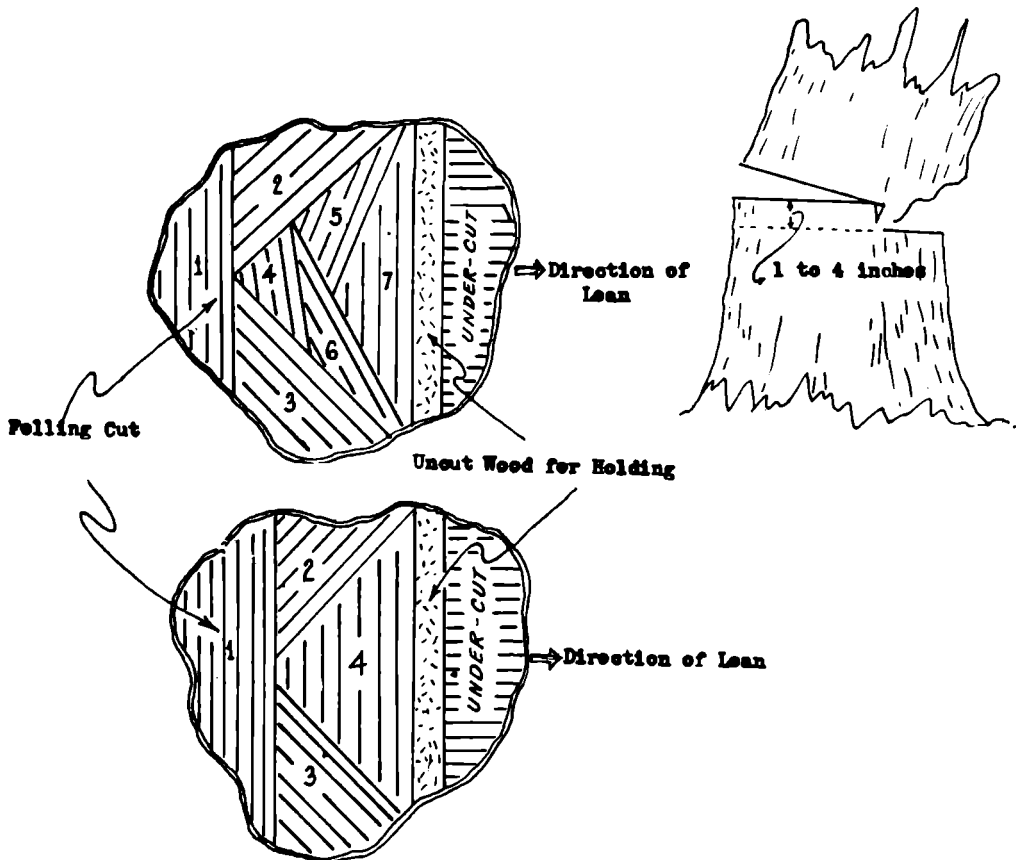


Figure 3-a - Procedure in Felling Erect and Evenly-Balanced Tree.

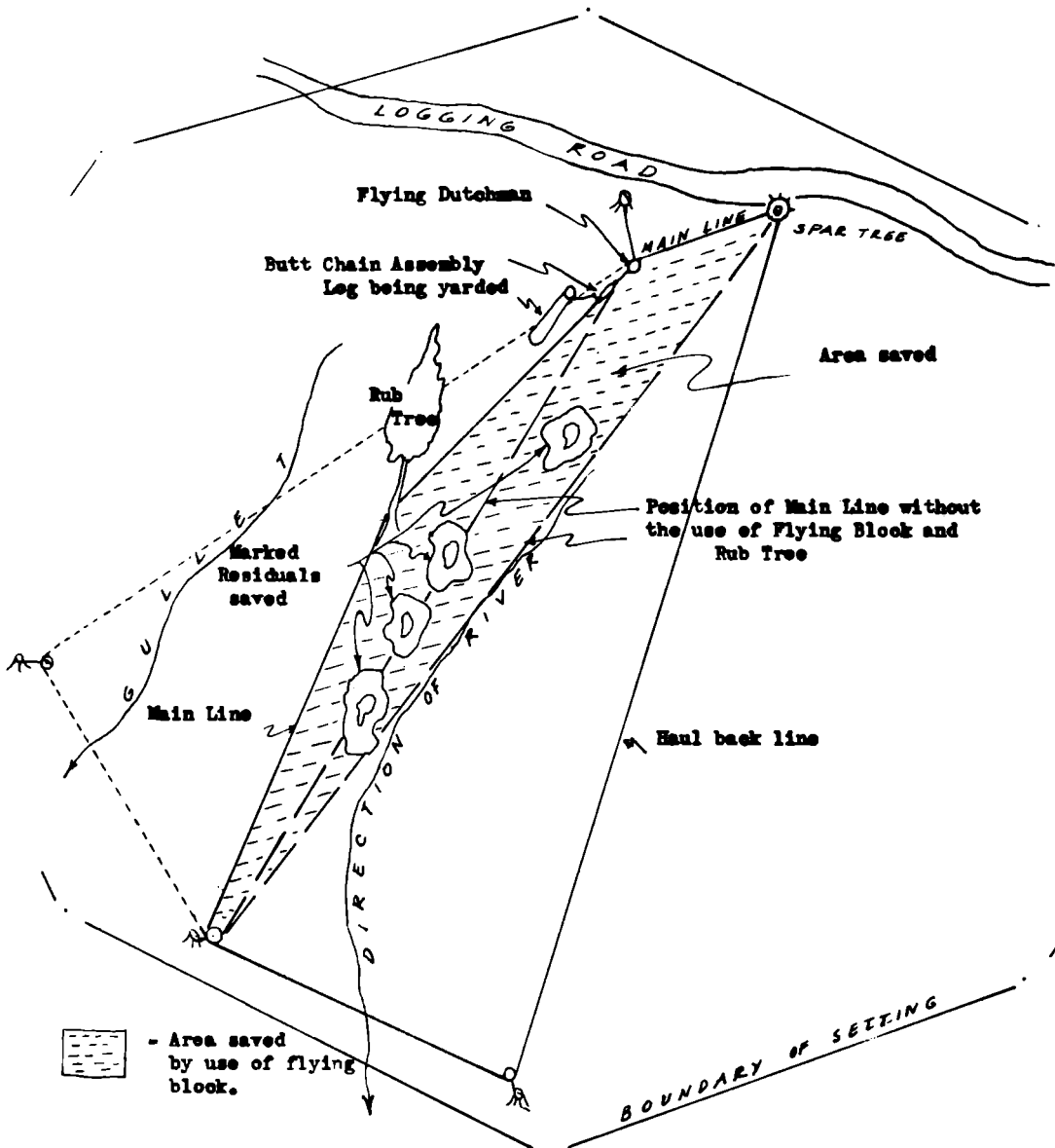
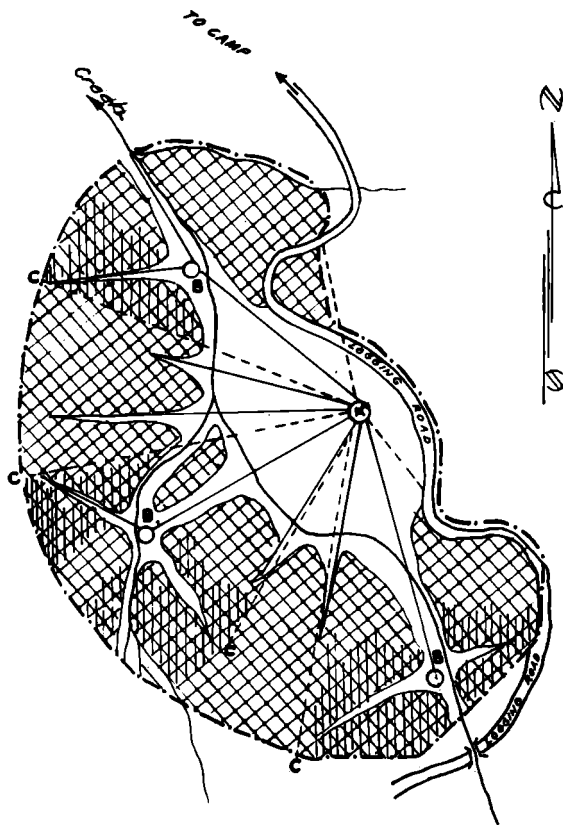


Figure 4.- "FLYING BLOCK" or "FLYING DUTCHMAN":

A yarding technique to save healthy residuals from destruction or injury.



LEGEND

- - Location of Bullblock
- ⊗ - " " Spar Tree
- - - - Cable Roads
- - - - Boundary of Set-Up
- - - -
- ▨ - Undamaged Portion
- - Damaged Portion
- ▩ - Portion that might have been damaged if bull-block was not used

Figure 5.- Si-washing with Bull-Block in Highlead

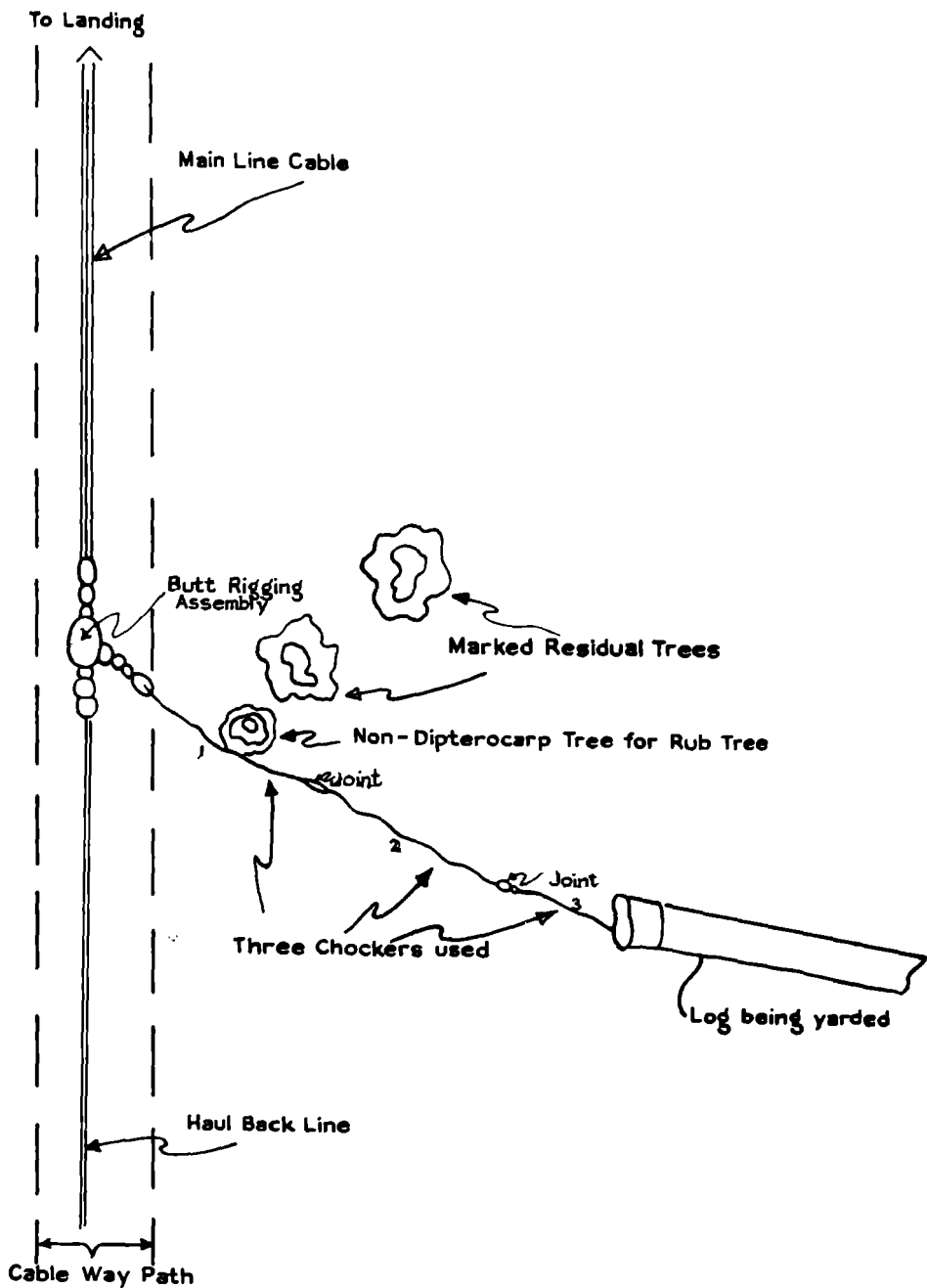
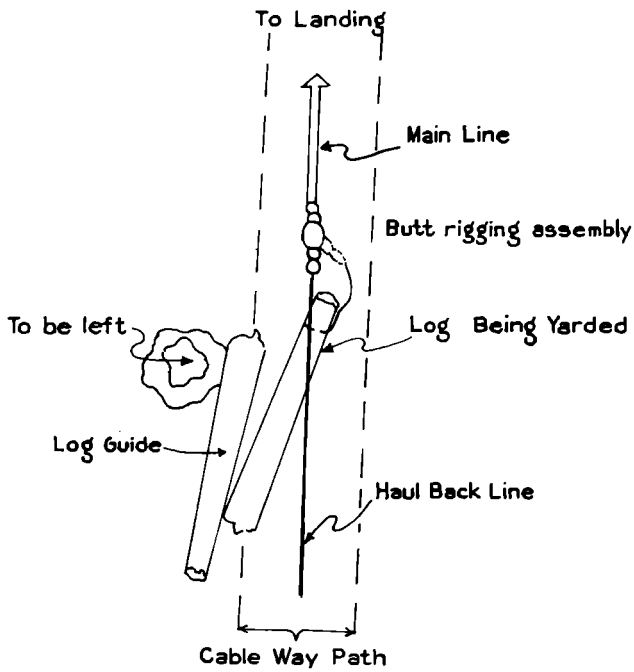
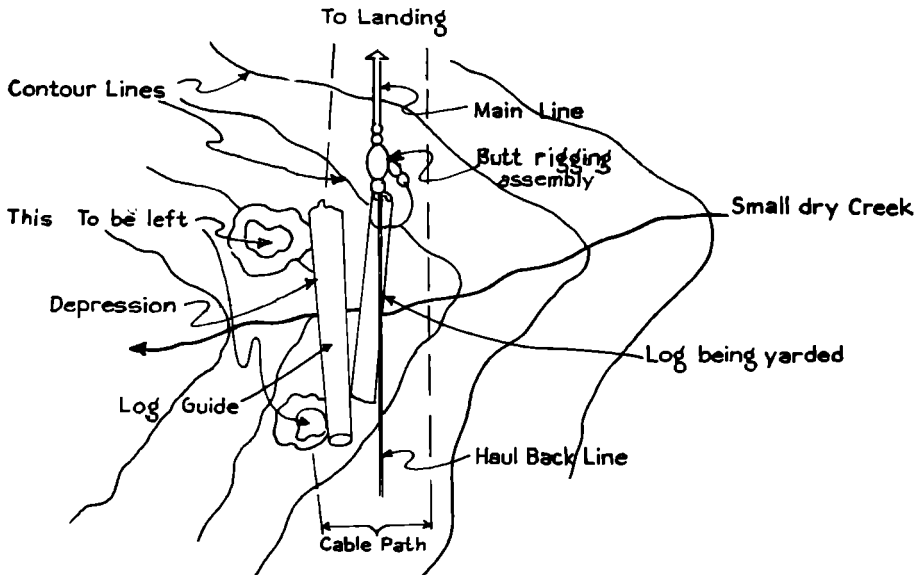


Figure 6.- Illustration showing the use of Extended Chockers.

Yarding Techniques for Saving Residuals



-A- IN FRONT ON THE CABLE SIDE OF RESIDUAL TREES



-B- ON MODERATE SLOPE NEAR SMALL CREEKS & GULLEYS

Figure 7. - Illustration showing the use of Log Guides on Level and Rolling Areas.

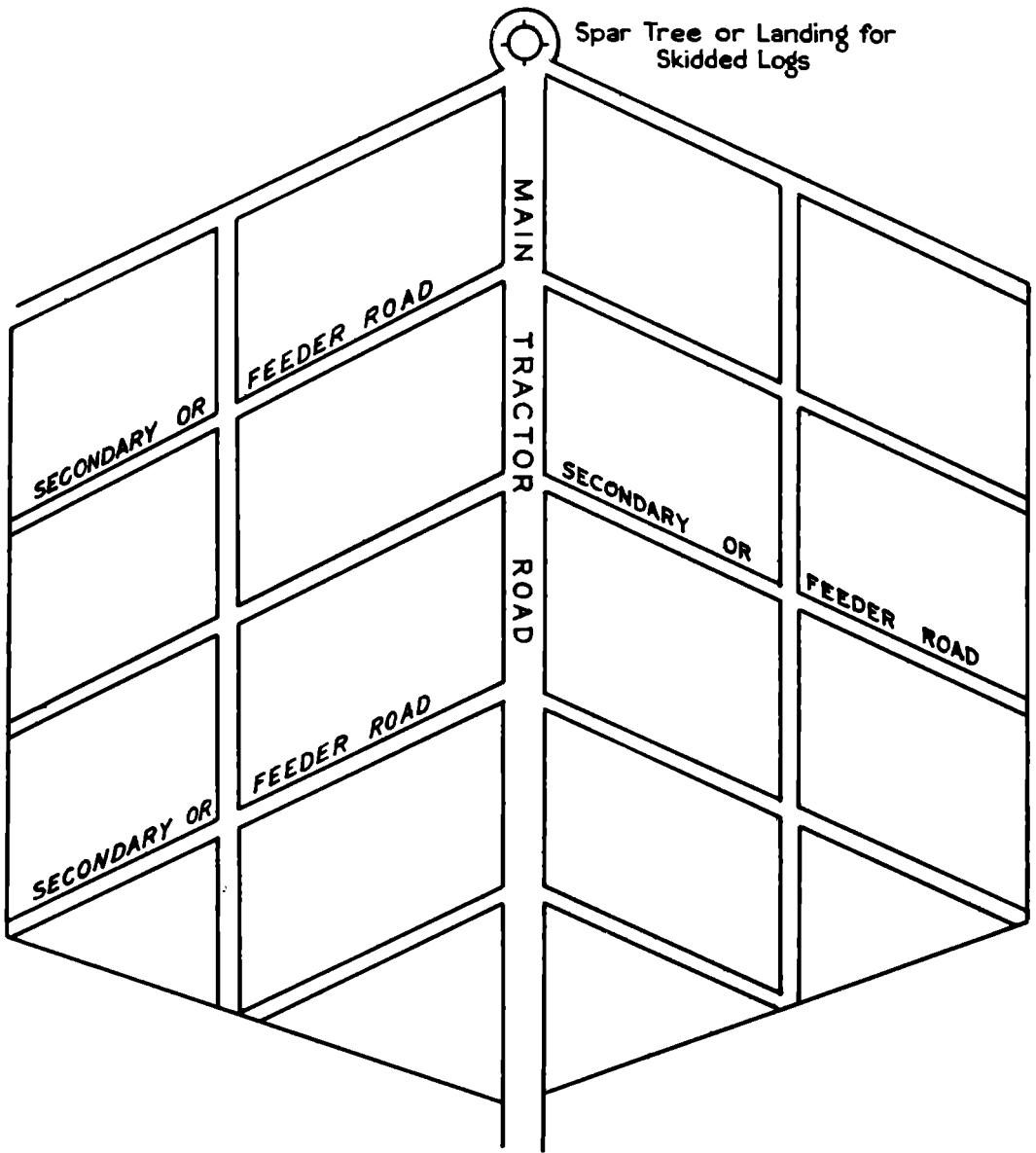


Figure 8.- The "Leaf Vein" or Straight Formation of Tractor Road

Forestry Landscaping

By Forester CARLOS CUNANAN

I. Introduction

The purpose of this write-up is to tell you in words — something about an art of visual forms, of the things we see, known as landscape or landscape design. Like all other forms of design it must change and grow with the times. Even the world changes for the better. Forestry Landscaping, therefore, may be defined as the employment of the knowledge of Forestry in the art of visual forms. It is like associating certain sounds with color.

There is none in the books to pin-point the date and place of the origin of landscaping. We have every reason to believe, however, that this art was as old as civilization itself. It undoubtedly unknowingly was started by feminine hands, because of the women's intuition for visual forms. Later the project called for the combined efforts of the male of the species. This was later followed by all the members of the family as an individual group, and then by what we have today the organized groups. It has to be admitted, though, that we have barely scratched the ground on this regard. It can not likewise be denied that the celebration of Arbor Day started by the late Governor Norton of Nebraska, which gained momentum in the Philippines, until we have today the Arbor Week, did contribute and is still contributing to the art of landscaping.

II. Kinds of Forestry Landscaping

All are agreed that landscaping is an art. And since it is an art, the treatment of the different subjects must likewise be different. For example: the arrangement of the plants, and even the kinds or species of plants needed for the school grounds usually differ from

those needed for the cemetery. Those for public buildings differ also from those for the private offices. Even those for the street corners differ from those for the main highways. Each subject or kind of subjects calls for a different set of standard rules. As a practice, the private enterprises are not so much concerned about the landscaping of their grounds, especially when the future of the business is not bright. In the case of the government buildings, the landscaping work thereat must be in accordance with the whims and caprices of the boss. It will appear really stupid if you will plant a shade tree, like *Narra*, in a place where shade is not needed. It is also like wearing your garden clothes, when you are going to make a purely social call, or wearing your Sunday clothes, when you are going to the market. It is not however the intention of the writer to discuss the different procedures of landscaping, the treatment of the different subjects and the kinds of planting materials needed thereon. These have been treated already by various writers.

III. Purpose of Forestry Landscaping

Let us take an specific case— the home lot. The first impulse of one starting house is to make the surrounding of the house beautiful. A rose is planted here, another flowering plant there. Different kinds of hedges are introduced. Flowering trees which also provide abundant shade are planted. Even fruit trees are not overlooked. All these steps point to the creation of wholesome surroundings.

The main concern though of any family is the health of that family. In the same manner that the government is concerned

about the health of its people. Wholesome surrounding is one contributing factor to the health of the people living within that surrounding. Once landscaping is started, that landscape must not only be maintained, but also improved in accordance with the progress of the times. In this way the parents chance to employ their otherwise would-be idle hours. This will in turn create, incite and develop their liking for outdoors.

The seemingly valueless little efforts contributed by the young children of the family to the landscaping of the property will likewise contribute to the increased value of that property. It goes without saying that improvements are assets added to the value of the property. Since landscape is an improvement, it therefore has value. The same property will again increase in value if it is located in a properly landscaped neighborhood. To understand the value of landscape better, try to go to the different subdivision offices in any city or suburb, and you will find that the unit cost of a landscaped subdivision is more than any that is not improved. The manager will invariably say that we have done this, and we have done that, for the sake of our customers.

IV. Problems to meet in Forestry Landscaping

In any undertaking, a plan, although defective, is better than no plan at all. This is granting that we have already the site. The preparation of the plan requires technical know-how. Some experts prepare to work on an area that has been cleared of vegetation, in view of the fact that they could introduce their own ideas without hindrance. There are numerous disadvantages to this procedure. The elimination of the vegetation eliminates likewise the guide as to what species or association of species are to be considered in the landscaping of the area.

Since it takes time to grow plants, especially trees, some specialists prepare to begin their landscaping or rather center their work around the desirable vegetation already

existing on the area. Some vegetation may therefore be eliminated if the same interfere with the working plan designed for the area. Some species are preserved, and may later on be totally eliminated their temporary use being to make the area not to appear totally barren. Others are used as nurse trees of whatever species are introduced therein.

Ordinary garden tools needed in this work are readily obtainable even in the local markets. Fertilizers are also obtainable locally.

One of the greatest problems of landscaping is the financial side of it, hence the site must therefore be kept to within the practical size. Large estates require the so-called manicured treatment. It takes hours of hard labor to trim, water or otherwise treat expansive landscape. Planting materials to be used must be handy and require the minimum of care. It is sheer folly to plant a beautiful tree or shrub if the same will easily succumb to drought and insect and pest diseases. The use, therefore, of handy and native species is desirable. Besides they are not hard and expensive to get as compared with the exotic species.

Technical advice is not always available. Even if it is available, it is still suggested that the actual work be done or supervised by the owner. The creator is more satisfied and retains greater interest in the object of his creation. This statement of fact is true, anywhere, any time.

V. Reasons for Recommending Forest Trees

The use of forest trees for the beautification of the home-lot is not without plausible reason. As a rule, forest trees are more beautiful either because of their leaves, flowers, arrangement of the branches or because of their very symmetrical form. Some forest trees, like the Mabolo, Santol, etc. have edible fruits. The main objection to the fruit tree is that when it is in fruits the small boys try to fall the fruits with their sling shots. Sometimes they climb the tree and break the

branches to get the fruits. Such tree is like a woman with a once beautiful face disfigured by accident.

Again fruit trees easily succumb to strong winds, besides being susceptible to attack of insect pests and diseases. We should not lose sight of the fact also that fruit trees generally do not favorably react to poor soil condition in the same way the forest trees do.

VI. Done By the Government

The Bureau of Forestry, through its forest nurseries scattered throughout the Islands, furnishes planting materials free of charge to government entities desiring to do landscaping work. The expenses for labor and materials incurred in connection with the balling of the plants have to be shouldered by the entities concerned. A nominal fee for the cost of the seedlings is charged to private parties. All parties concerned could avail themselves of the technical know-how of the Bureau of Forestry personnel. Without this knowledge one is likely to drive a square peg in a round hole—like planting a beautiful flowering tree, because of its attractive flowers alone, without considering other factors, such as whether that tree will grow in accordance with the dream of the planter or not etc.

The President Assistance to Community Development commonly known as PACD with Headquarters at Malacañang is another government entity doing something to make our backward urban community a better and more wholesome place to live in. Even the beautification of the grounds of our schools is being attended to. Likewise in the landscaping of our barrio, feeder roads, a contributing artery to the bulk of our commerce and industry, are not left untouched.

Speaking of roads, we now have in the Bureau of Public Highways, an Office under the Landscape Superintendent, charged with the beautification of our national roads, as one of its functions. Formerly this Landscape Office has been dependent upon the Bureau of Forestry for planting materials. Now it has a nursery of its own at College, Laguna.

The following are among the species recommended for planting:

1. For shade and beauty (because of their green leaf canopy and strong root system):
African tulip (*Spathodea campanulata*)
Anonang (*Cordia dichotoma*)
Banaba (*Lagerstroemia speciosa*)
Bitao (*Calophyllum inophyllum*)
Camagon (*Diospyros discolor*)
Narra (*Pterocarpus indicus*)
Sampaloc (*Tamarindus indica*)
Talisai (*Terminalia catappa*)
Teak (*Tectona grandis*)
Etc.

2. For lawns (Trees show best when appearing individually)
Araucaria augustifolia
" *excelsa*
Golden Shower (*Cassia fistula*)
Mountain Ago (*Casuarina rumphiana*)
Pink Shower (*Cassia javanica*)
Etc.

3. For wood and edible fruits:
Caimito (*Chrysophyllum cainito*)
Camachile (*Pithecolobium dulce*)
Chico (*Achras sapota*)
Ipil-ipil (*Leucaena glauca*)
Mango (*Mangifera indica*)
Etc.

4. For aesthetic effects:
Balikbikan (*Drypetes bordenii*)
Bottle Brush (*Callistemon lanceolata*)
Palosanto (*Triplaris cumingiana*)
Queen of Flowering Plants (*Amherstia nobilis*)
Saraca (*Saraca declinata*)
Etc.

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 (Second row left to right): E. Cajucom (Athl. Manager), P. San Pedro, B. Rola, M. Tandoc (Co-Capt.), I. Zamuco (Captain), E. Varona (Coach).
 (Sitting same order): P. Muñoz, L. Agcaoile.

BOYS VOLLEYBALL TEAM

(Standing left to right): Mr. L. Quimbo (Coach), E. Orantia, N. Gadon, L. Lee, E. Unita (Captain), A. Agustin, M. Edjan, E. Cajucom (Athl. Manager).
 (Sitting left to right): P. Muñoz, M. Lumeres, M. Ulita, P. Collado, B. Salud.



FOOTBALL TEAM

(Standing left to right): Mr. L. Quimbo (Coach), J. de la Cruz, A. Villaluna, J. Khrisnamra, B. Rola, P. San Pedro, R. Acosta (Captain), P. Muñoz, N. Gulmatico, X. Dinh Vinh, E. Cajucom (Athl. Manager).
 (Sitting left to right): M. Cortes, T. Reyes, R. Sitchon, I. Zamuco, C. Arroyo, F. Torreda.

GIRLS VOLLEYBALL TEAM

(Standing left to right): Miss J. Taleon (Coach), V. Valida, G. Galicia, W. Solis, E. Maico, A. Rimbon, D. Mong, C. Salazar, Eddie Cajucom (Athl. Manager).
 (Sitting left to right): F. Peralta, J. Manar-paac, R. Villadelgado (Captain).



Here and There



Bureau of Forestry Booth—Mindanao and Sulu Exposition and Fair Cotabato, Cotabato. Forester Miguel Pato, No. 5 from left (standing).



Interior view of Bureau of Forestry Booth at the Mindanao and Sulu Exposition Fair.



Forestry crew of Nasipit Lumber Company (first five from left and timber management officers next batch to the right) of the Bureau of Forestry at Agusan. Forest officers starting from 6th from the left are: P. O. Quintana, Officer in Charge, Tuñgao Management Unit; E. T. Tagudar, Timber Management Assistant and in charge of the Workshop-seminar; F. Abraham, TMA for Agusan; Ranger J. Valdez, A. Udarde, V. Antonio and A. B. Sison, timber management officers.

Here and There



The Freshman Class and their Adviser, Dr. Artemio Manza.



High School Students and Pupils at the Communal Forest at Bambang, N. Vizcaya during the Arbor Week

Here and There



Forester District No. 39 Personnel. Forester Timoteo Quimpo at middle of front row.



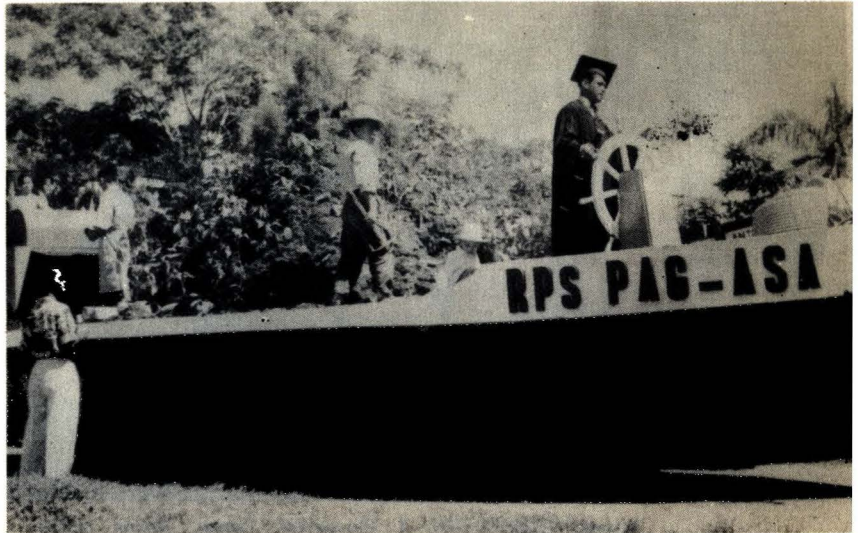
Forest District No. 14 Personnel. Forester Nemesio Jucaban No. 3 from left, front row.



Forest District No. 26. Forester Vicente Agaloos, No. 5 from left, front row.

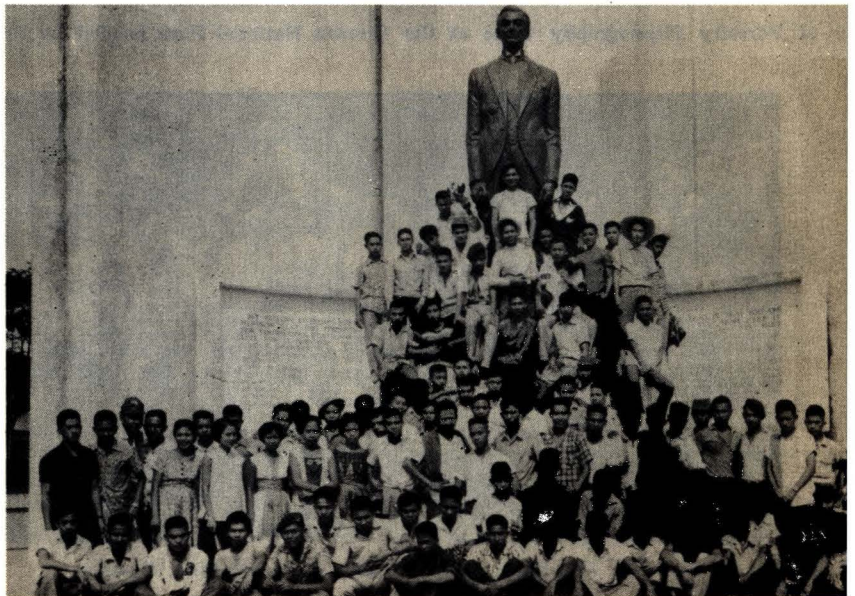
Off Campus Scenes

The Winning Forestry Float at the Loyalty Day celebration on Oct. 10, 1957.



Rear end of Float showing *Filipinas* holding the Torch of Knowledge as the FPRI Universal Wonder Machine rolls on.

The Physiography Class at the Perez Park in Lucena, Quezon.



Off Campus Scenes



Forest District No. 1 Personnel, Laoag, Ilocos Norte
Forester Alejandro Tremor No. 4 from left (sitting).



ge of Forestry Physiography Class at the Quezon National Park headed by Professor Teodoro Delizo.



The Class at the Quezon National Park Nursery.

Reminiscences of the Ranger Class '30

BY FORESTER VICENTE AGCALOOS
District Forester Antique

This class is composed of 31 adventurous young men hailing from various sections of the country. Aside from being one of the last batches of all Belo Boys, Class 1930 represents the ranger class with the biggest number of ranger graduates.

With 30 Belo scholars and 2 private students, the class started in full swing with the opening of the summer class in botany in April 1928. At the end of the summer session the two private students qualified and became Belo scholars, too. But at the end of the first year one of the students fell by the wayside leaving 31 to finish the course.

The real grind commenced in June, 1928. Each student had to struggle hard throughout the school year, not only to maintain, at least, passing grades in all academic subjects, but also to submit himself to rigid discipline, toughen himself by waking up early each morning to scrub the floor and clean his quarters surroundings. Each Saturday was spent in tree planting or brushing the forest plantations in the school premises. Sunday was a rest day. Students were allowed to leave the school campus to attend Sunday services but they had to return and be in the students' quarters not later than 9 p.m. One must be alert and industrious to avoid being listed in the School's Blue Book which was kept by an oldtimer known for his physical stamina, proficiency in forestry activities which required brawn and brain, and strictness to students under his charge. For two whole school years, the students had to perform religiously such duties and other assignments as were given them by the school authorities. Any student failing to make passing grades on all subjects and could not stand the rigors of actual field work was given a warning to improve himself and if af-

ter two warnings he failed to improve himself he was immediately ordered to pack up and "beat it." This rigid training and strict discipline imposed upon the students made the pre-war Belo boys well prepared for the forestry service.

The summer of 1929 inured the students to field camping exercises for about thirty days in Mt. Banahaw, San Bartolome, Laguna. This was a training in forest surveys and reconnaissance under the supervision of the late Forester Antonio P. Racelis and Foresters Mamerto Sulit and Juan Versoza. The object was a reconnaissance of the Talahibin Block at the southeastern side of Mt. Banahaw, San Bartolome, Laguna. The students pitched camp on a site where there was a good water supply at the base of Mt. Banahaw. The party was divided into 5 groups of six students with a captain for each crew. The crews were given daily assignments to perform. Rain or shine, the students had to wake up early, "gobble up" breakfast and start working not later than 7 a.m., each day, and return to camp in the afternoon.

At Mt. Banahaw the students practised their knowledge of forest surveying by running actual strip surveys, sketching, contouring and timber estimating.

Each crew had to run strip surveys. At times the strip survey lines passed through perpendiculars, precipices, deep ravines and swollen streams. At one instance a student complained that he could not go on with his crew because of the rough topography aggravated by the succession of precipices to be traversed. The professor remarked: (Gee whiz), you cannot become a ranger; if the pigs can pass that way why can't you." Henceforth nobody complained anymore.

The Senior Class composed of 31 strong in spite of many obstacles successfully ended their two-year training with their graduation exercises on March 18, 1930. The next morning they were all appointed and sworn in as full-fledged rangers of the Bureau of Forestry. For the upbringing of this corps of 31 rangers, credit should go to the undying devotion to duty of Director Arthur F. Fischer, Foresters Carlos Sulit, Antonio P. Racelis, Doroteo Soriano, Porfirio San Buenaventure, Juan S. Versoza, Alberto Barros, Ricardo Buhay, Marmerto Sulit, Evaristo Tabat, Harold Cuzner and Mrs. Anne Pendleton.

After the lapse of about 27 years, 14 men in the Ranger Class of 1930 have remained thru thick and thin, in the forestry service; 7 had passed to the Great Beyond; 2 are holding responsible positions in the Bureau of Fisheries; 1 with the Bureau of Mines; 1 is a Lieutenant in the Philippine Army; 2 are holding key positions in private business firms; 1 is a practising lawyer; 1 doing private business by himself; and the whereabouts of 2 are unknown.

Of those remaining with the forestry service, 2 are District Foresters; some are forest supervisors, administrative officers, lumber graders, Chief of Land Classification parties, Officers in Charge of regular forest stations and reforestation projects.

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A Centuref Project

By
ALFREDO VIR. SANCHEZ
Forester-I

From atop the old church tower of the Catholic Church in Laoag, Ilocos Norte, I surveyed one late afternoon with great concern the treeless mountains of this *provincia*. Our records show that there are 81,300 hectares of open land in our district. Our nurseries can only plant an average of 500 hectares a year which is rather a very slow rate of rehabilitating our lost forest. I came then to think deep of a way by which we could speed up the birth of trees. The first thought that came to my mind was to lay down a plan of attack and submit the same to the Director of Forestry for approval. So with my notebook and a five-inch long pencil I started scribbling all random ideas in my mind. I opened my discussion with a short prayer for good guidance and in this prayer I even wished I could have the power of creation. Would it not be wonderful and miraculous indeed if by just saying "let there be forest" a stand of Molave and Narra trees would soon greet the blowing wind with a "Hello". But then wishing alone won't work as Don William Shakespeare said, "If to do (wish) were as easy as to know, chapels would have been churches and poor man's cottages, palaces." So I forgot all about the supernatural power and engaged myself in more realistic ideas.

What was the cause of our open land? Our books say due to the Kaingineros, principally. Is it really? Well nobody ever contradicted that, not even the kaingineros themselves. Our first project, therefore, is to stop kaingin making. The trouble is, who will take the responsibility of enforcing the cease firing or cease cutting order of the Director? "I will" said Mr. Ranger, "but I can not promise

concrete results". We know that much. Mr. Ranger though how much he tried he could hardly budge an inch of improvement. How about Mr. Forest Guard? Well he seems powerless inspite of his authority under Section 1818 of the Revised Administrative Code as amended by Act No. 3809 and also he seems already accustomed to seeing "infiernos" on the slopes and tops of our mountains. It is really hard to stop kaingin making. Just imagine, we have been at war with the kaingineros since 1863! If I am not mistaken, no peace treaty has ever been signed yet for lack of liason officers. We are out numbered all the time, remember? Much more, the kaingineros are also wise. You cannot just register their thumb marks and if they did, they are like the Reds of North Korea. They will sign all right. They will have a truce with you and would promise to respect every tree in the mountains but that is only on paper. They will violate all terms agreed upon. Of course they look so repentant and vow not to kaingin again, to make the occasion memorable, they will even invite you for a "basi" or "tuba" drinking spree. You, who always think that drinking is a reliable PR, mix it up with them with a toast of "long live the forest"! We leave them with the hope that they stop building bonfires only to find out later after a surprise visit that these kaingineros who had promised in the name of heaven are again running amok in the forest. The remedy therefore is to multiply the number of forest officers to run after these vandals of the forest. Again, multiplying is not an easy business. The products of the College of Forestry are not enough to answer the lack of personnel of the Bureau of

Forestry. You ask me why. Well, let us be honest. You see, "Many are called but few are chosen", sayeth the Lord. Same truism holds in the College of Forestry. Many had registered but only a few remained. Now here comes another, "why?" Yes, why? Your answer is as good as mine. There are so many common reasons of the students, past and present, valid or otherwise. For the sake of reciting them again, let me put them on record. The College of Forestry, being a state institution, (imagine U.P.) and maybe because of its high location, has a high standard of grading and everything. Just think of this, *Ha* 75% is our 38th parallel line. If you cannot cross that border you are likely to be under the Red (ten times underlined) rolls. You are given of course the chance to dye your grade with blue, but suppose you cannot? Then God bless you! You know, some say our fieldwork in Los Baños is very hard. Indeed it sometimes is. But what of it! Aren't we born to labor? Weren't we given two hands to work, a mind to think, a tongue to talk, two eyes to see and to feet to walk, run and climb with. Individual differences I suppose. This is especially true to those who are used to walk on a fairly level paved road. Then we have this introduction to trees and palms and woods which are all snobbish. You say, "Hi!" to them. They will not even answer you. It takes time before you can register their names and to learn them by heart is another difficulty for some one had baptized them in Latin. It's harder than learning the *kyrie eleyson*. In general, we got to accept that there are lots of difficulties which make life in College more interesting and memorable. Modesty aside, I pushed through, hardly though. My formula was this, "If others can pass, why can't I". You can add to this something like this, "If one will pass, I will pass". This phrase had been my propeller and it carried me to the last ditch of my battle ground. A good advice is to take it easy always. Do not worry. Just work and find pleasure in your work no matter how hard."

Now let us go back to our problem. Since we could not as yet deploy forestry made

men in the field, I mean sufficient number to counterattack the kaingineros, let us resort to some body else. We have the Municipal Mayors and Barrio Lieutenants to turn to. To minimize kaingin-making, if not stop it altogether, we should seek their cooperation to please discipline their subjects. Barrio lieutenants could be deputized as deputy forest guards or barrio forest guards without or with compensation. But if Mr. General Fund could afford it, let us give them something for their cigarettes. Papers of deputization should if possible be in linen paper to be framed with the picture of the lieutenant. In this manner we could elevate his ego. Then let us not also forget the kainginero. For every convert kainginero, let us give a medal. It need not necessarily be a valuable one. Then once a kainginless area is attained, we can go on with our Centuref Project. By the way, "Centuref" is a marriage between the word *Century* and *Reforestation*. In full we can call it "Century Reforestation Project", abbreviated as C.R.P. not C.P.R. please.

Our task now is to establish a reforestation project for every barrio all over the country. How can we make the people move and acclaim that this project is a *manna* from Heaven? I have the following to offer:

First, we have the so called Tree Farm Lease. Let us feed the people with all information about this farm lease. Benefits derived from it should not be left undiscussed. We need to have a wise and friendly persuasion so we could win their hearts. In this project, barrio lieutenants should first call a meeting to find out whether the people would be willing to apply as a whole under this lease. If willing, then a corporation could be formed. The title may be either, "Calima Community Tree Farm Lease", or "Community Tree Farm Lease", or "Barrio Calima Tree Farm Lease" or Hacienda de Barrio Calima. Rentals may be on the basis of percentage of the gross income to free the poor people from paying when the trees are not yet bearing fruits. Fruit trees for planting may either be one of these species: coffee, cacao, coconut, camito, mango etc., or a combination or

one or two or a mixture of all. Care should be given in the selection of plants. Soil should be examined first. Preferably landscaping should be done first before planting. It is easy to move trees in the map than on the ground I should like to add in this connection that Community Development Officers could render a big help in this project. In the Training Center for PACD here in Ilocos Norte, every effort has been exerted to make these officers realize the importance of reforestation. They pledged (hope not a kainginero pledge) to bring to the rural folks the urgent need of reforestation in which the people could do their share via the Tree Farm Lease.

Second, we have the woodland lease. This differs from the Tree Farm Lease in that this is solely for the planting of forest trees not fruit trees, plus, of course, free of rentals. The same process could be followed as in Tree Farm Lease. Species such as Ipil-ipil, Benguet Pine, Mahogany, Narra, Para-rubber, Santol, Bitao, etc. are ideal for planting. Ipil-ipil plantation can answer the acute shortage of firewood for the flue-curing barns of the tobacco provinces as well as for charcoal and for household consumption. The leaves were found good feeds for animals and the seeds could be used for adulterating coffee. Benguet Pine finds profitable market during Christmas season. Para-rubber can answer the demand of our shoe and tire factories. Santol will find a place in the wooden shoes or bakya industry and even reach as far as the altar on account of the "saint makers". Bitao for our wood carving and furniture industries. And let us also hope that the seeds of Bitao could be sweetened by the Forest Products Laboratory.

Ipil-ipil Project is discussed elaborately in the article of the Director of Forestry published in the Forestry Leaves dated July, 1955, entitled "Ipil-ipil — Firewood Crop Prospectus".

Let me single out Benguet Pine Plantation. All conditions being favorable, ten hectares of Benguet Pine Plantation can easily yield also a lot of money. Let us say, four hundred seedlings are planted in one hectare, that

is, at 3 meters apart. At the age of from 4-5 years, the plants are already ready for the market. Tagging each plant from ₱3.00 to ₱5.00, in one hectare one can get from ₱1,200 to ₱2,000, clear cutting. The cost of planting per hectare of Benguet Pine potted seedlings is ₱11.00. Of course the cost of planting stock, transportation, harvesting and supervision has to be considered also. This can be safely placed at ₱500.00 per hectare. Simple arithmetic will give you a net income of from ₱700.00 to ₱1,500.00. Surely money can grow on trees!

Third, I have in mind the Bureau of Education. This bureau can do a double job, first by injecting into the minds of the students the value of trees and second by making them implement these teachings into action. If only all barrio schools would have a project of one to two hectares each, then it will not take a thousand years to reforest our cogonlands that need reforestation. In Ilocos Norte, for example, the Governor initiated a province wide seed collection by requiring each pupil to submit one chupa of ipil-ipil seeds at the end of the school year. The result was very heart-warming. At the end of the drive there were sacks and sacks of ipil-ipil seeds collected. This goes to show that even the school children with the proper guidance can help in bringing back our lost forests.

Last, I believe some of the Congressmen need to be invited to a "Gripe Session" ceremony especially those who are fond of slashing the appropriation for our bureau, particularly the funds for reforestation. Then it would be high time for the parties concerned to follow the Spanish saying of "El que no chilla, no mama" (No milk for the non-howling baby). It would be high time then for them to make a "howling success" of the occasion.

* * *

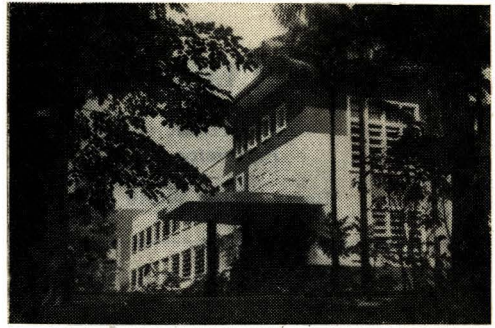
Truth is not a crystal one can put in one's bag, but an infinite fluid into which one falls headlong.

— Robert Musil

<p><i>Compliments of</i></p> <p>R. R. C. Lumber</p> <p>Tagbilaran Bohol</p>	<p><i>Compliments of</i></p> <p>Uy Pingcon Lumber</p> <p>Tagbilaran Bohol</p>
<p><i>Compliments of</i></p> <p>De Vera & Sons Lumber</p> <p>Cahayag, Tubigan, Bohol</p>	<p><i>Compliments of</i></p> <p>Leonardo A. Tiro <i>Timber Concessionaire</i> LOG AND LUMBER <i>Dealer of</i> PHILIPPINE MAHOGANY <i>Concession: Medina, Misamis Oriental</i></p>
<p><i>Compliments of</i></p> <p>Mr. Francisco Plaza O.T. LICENSEE</p> <p>Sulat, Samar</p> <p><i>Sells Lumber at Reasonable Prices</i></p>	<p><i>Compliments of</i></p> <p>Crispina O. Miras <i>Dealer of Logs</i></p> <p>Tayabas, Quezon</p>
<p><i>Compliments of</i></p> <p>Estelita O. Pasambo <i>Dealer of square and round logs</i></p> <p>Atimonan, Quezon</p>	<p><i>Compliments of</i></p> <p>Gumaca Lumber <i>Lumber, Hardware and General Merchandise</i></p> <p>Gumaca, Quezon</p>
<p><i>Compliments of</i></p> <p>Mr. & Mrs. Martin Punzalan <i>Dealer of 1st group lumber and all minor forest products</i></p>	<p><i>Compliments of</i></p> <p>Mr. Catalino Guitarte <i>Timber Concessionaire</i></p> <p>Polillio, Quezon</p>
<p><i>Compliments of</i></p> <p>Quezon Lumber</p> <p>LIM TIONG DENG <i>Proprietor</i></p> <p>Gumaca, Quezon</p>	<p><i>Compliments of</i></p> <p>Bacarra Lumber</p> <p>ANG SUE <i>Proprietor</i></p> <p>Bacarra, Ilocos Norte</p>

F.P.R.I. HIGHLIGHT

by nora alda



The Forest Products Research Institute

WHAT'S UP AT THE F.P.R.I.

The Forest Products Research Institute is now a going concern and the conversion from the former Forest Products Laboratory and the Forest Research Section of the Bureau of Forestry is practically complete. As of November, the FPRI had 139 full time permanent employees on its staff and 10 emergency laborers. The permanent staff will be increased somewhat after January 1.

The operation of the Institute has been hampered considerably since the first of September, because of the breakdown in the power plant of the College of Agriculture which furnishes electric power to the Institute. It has been possible, however, to operate the veneer lathe a few days per week since October 15. The sawmill was operated on November 7, for the first time since the breakdown. It has not yet been possible to operate the pulp wood chipper and the lack of fresh chips has caused delay in pulping studies.

Breaking-in operations are underway to get the new paper machine into smooth operating condition. This machine will make a continuous sheet of paper 8½ inches wide and as long as pulp is fed into it. Some time will be required yet, however, before the machine can be expected to operate with complete smoothness in all details. So far as known, this machine is the only one of its kind in this part of the world and it is expected to be of great value in working out problems connected with the manufacture of pulp and paper from Philippine woods and bamboos.

THE DIRECTOR OFF TO ROME

Director Eugenio de la Cruz of the Institute left Manila on October 30 to attend the FAO Conferences in Rome, as a member of the Philippine FAO Committee. On his re-

turn from Rome, Director de la Cruz plans to stop at the ninth Pacific Science Congress which will then be in session in Bangkok, Thailand.

HOME AGAIN

Miss Esther Vergara, Jim Escolano, and Joe Orozco were feted at a bienvenida party held on October 15, 1957 at the FPRI lobby. The honorees have just arrived from the Forest Products Laboratory at Madison, Wisconsin, where they obtained a year's training in their respective field of work. Plenty of sweet lanzones and cookies were the main feature of the event. When asked what they thought of being back at the home base again, "there's no place like home" was all that they could say.

"LUPANG MAPALAD, PERLAS NG SILANGANAN"

A cornerstone with a long statuesque pole and the Philippine national flag proudly waving at its top, has recently become a part of the imposing frontage of the FPRI building. This new addition in the front lawn symbolizes greater strength and cooperation in the work being done at the Institute all for the greater glory and honor of the Motherland.

COMINGS, COMINGS, AND MORE YET COMING

The ordinarily quiet and still lobbies of the FPRI building are now full of life and activity with the addition of personnel in its various sections and divisions. Since September 1, 1957, the Institute can boast of 26 new members in the staff. But that is not all, we still have more of them coming. We only have to wait and see.

(Continued on page 62)

<p><i>Compliments of</i></p> <p>Batac Lumber</p> <p>CU CHIOK <i>Proprietor</i></p> <p>Batac, Ilocos Norte</p>	<p><i>Compliments of</i></p> <p>Liberation Lumber</p> <p>ANSELMO LIM <i>Proprietor</i></p> <p>Bacarra, Ilocos Norte</p>
<p><i>Compliments of</i></p> <p>San Nicolas Lumber</p> <p>CHUA CHI CHEK <i>Proprietor</i></p> <p>San Nicolas, Ilocos Norte</p>	<p><i>Compliments of</i></p> <p>Avenue Lumber</p> <p>LIM YOC BENG <i>Proprietor</i></p> <p>Laoag, Ilocos Norte</p>
<p><i>Compliments of</i></p> <p>Laoag Lumber</p> <p>GASPAR PALANCA <i>Proprietor</i></p> <p>Laoag, Ilocos Norte</p>	<p><i>Compliments of</i></p> <p>Far Eastern Lumber</p> <p>GREGORIO PO <i>Proprietor</i></p> <p>Laoag, Ilocos Norte</p>
<p><i>Compliments of</i></p> <p>Batac Lumber Yard</p> <p>ANDRES CHUA <i>Proprietor</i></p> <p>Batac, Ilocos Norte</p>	<p><i>Compliments of</i></p> <p>National Lumber</p> <p>TAN BUN <i>Proprietor</i></p> <p>Laoag, Ilocos Norte</p>
<p><i>Compliments of</i></p> <p>Republic Lumber</p> <p>TAN CHIAN YEE <i>Proprietor</i></p> <p>Laoag, Ilocos Norte</p>	<p><i>Compliments of</i></p> <p>Currimaos Lumber</p> <p>GO PENG <i>Proprietor</i></p> <p>Currimaos, Ilocos Norte</p>
<p><i>Compliments of</i></p> <p>Piddig Lumber</p> <p>KOU KUI <i>Proprietor</i></p> <p>Piddig, Ilocos Norte</p>	<p><i>Compliments of</i></p> <p>Vicente Ong <i>Lumber Dealer and Contractor</i></p> <p>San Jose, Antique</p>

• Forestry in the News •

LOG BARTER CURBS SEEN *Central Bank mission winds up; efforts to depress prices noted*

By MAXIMO SOLIVEN

Tightening of supervision over log barter exports from the Philippines by the no-dollar import office will be proposed by R. Marino Corpus, head of the Central Bank survey mission upon his return to Manila this week.

This was disclosed following a two-week spot inspection of the Japanese lumber industry and a series of conferences with lumber officials conducted here by CB export department chief Corpuz.

He said today that his findings supported the contention of Commerce Secretary Pedro Hernaez that restrictions on log barter should be studied and implemented.

It was disclosed that Japanese lumbermen tried to blame barter trade for extensive overbuying of Philippine logs in 1956 and early this year which resulted in a serious drop in importation due to overstocking.

Corpus pointed out that no barter permits were approved by the no-dollar screening board of which he is a member without the opening of a letter of credit by the Japanese buyer.

He reported that there was evidence that the Japanese lumber groups are launching "united" efforts to force down prices of Philippine logs.

The drive is headed by the Japan Southsea Lumber Conference based at Osaka which was formed by importers, manufacturers, wholesalers, and retailers July 18.

The CB mission found that this body was primarily concerned with "selective buying" of the best lauan and other Philippine logs but was also importing low quality sawlogs to maintain their import figures which is the basis on which the ministry of international trade and industry awards producers and importers dollar allocations.

Visiting log ponds in Tokyo, Nagoya, and Osaka, the mission discovered many sawlogs and rejected logs—rotting unused. Because of this policy, Nasao Ichikawa, chairman of the Japan Lumber Importers Association and Southsea Conference vice chairman, revealed that there is an existing stock of 121,738,000 board feet logs in these areas.

Japan annually consumes 16.8 billion board

feet of which 1.1 board feet are imported. Local logs are used for domestic purposes while imported logs are farmed out to over 400 plywood factories mainly for reexportation.

It was learned that by far the greatest percentage, 698 million feet, comes from the Philippines and only 144 million bd.ft. from Borneo, 8 million from Indonesia, 150 million from Canada and the United States, 60 million from Russia and 40 million from other countries.

Corpus noted a continuing supply of Philippine logs essential to survival and expansion of lumber industries here although dollar paring by MITI has reduced the quotas.

Importation from the Philippines has sunk from original highs of \$37 million in 1955 to \$26 million in 1956 to about \$15 million from April to December this year.

He warned that this reduced budget would compel Japanese buyers to demand lower prices from Filipino loggers and care should be taken not to strip Philippine forests of choicest trees to underwrite the trend.

There are now 14 plywood factories in the Philippines with expansion plans foreseeing 28 in the next year, and these should be supplied, he added.—*Manila Times*, November 18, 1957

* * *

LUMBER PRODUCERS ASK SHIP COMBINE TO CUT FREIGHT ON LOGS FROM PI TO US

The Associated Steamship Lines has been requested by the Philippine Lumber Producers association to consider the possibility of reducing freight rates on logs and lumber from the Philippines to the United States.

Antonio de las Alas, association president, told the shipping combine that there has been a consistent downward trend in freight rates all over the world owing to the slackening of business.

He said the United Kingdom was the latest country to experience a further reduction in freight rates.

A more recent local indication and acknowledgment of this tendency, he said, is the gradual reduction of freight rates for copra from the Philippines to the Pacific coast of the United States. As of last May 14, the contract rate of \$30 per long ton was gradually reduced to \$27 per long ton, and later to \$23.50. As of August 12, the rate was reduced further to \$21 and although this has been granted in the form

of "emergency rates", the concession has been extended to next Oct. 21.

This tendency, according to Alas, shows a preferential treatment for copra by the shipping combine, and under the same pattern, it is hard to explain why it cannot afford the same consideration to lumber exporters. He added:

"The question of freight rate has always been a serious obstacle to the rapid and extensive expansion of the lumber industry, particularly the maintenance and increase of Philippine mahogany trade in the United States. Notwithstanding insistent demands from the United States market for Philippine mahogany, present supplies could hardly meet the demands of the United States market owing to the high freight level, which make our woods incompetent in that country. Whatever local benefits and advantages might have been obtained by the lumber industry are invariably nullified and counteracted by the arbitrary maintenance and increase of ocean freight rates."—*Manila Bulletin*, September 17, 1957

* * *

LUMBER TRADE BOOST HAILED

Local lumbermen hailed the move of the Central Bank and the Philippine Producers' association to save the lumber industry from a total collapse.

Log producers here partly blamed the government for the decrease in the exportation of logs because of the stringent policy in the exportation of logs.

They claimed that Agusan, being the biggest lumber producing province in the Philippines today, is the most adversely affected by the present unsteady market of logs in foreign markets. At present, only regular exporters who still have unexpired contracts with foreign markets are shipping logs to Japan.

As a result of the cancellation of the letters of credit of special exporters, thousands of workers have been laid off. In some logging areas, few are still working on a rotation basis.

Millions of board feet of exportable logs which could not be shipped abroad are now fast deteriorating. Local sawmills, veneer and plywood factories cannot absorb all the logs which were not sold to Japan during the past two months due to lack of bottoms.—*Manila Bulletin*, Aug. 17, 1957

* * *

LITERATURE ON LUMBER INDUSTRY DONATED TO UP

Upon the request of the University of the Philippines Library, the following publications on lumber which will be of considerable help

and informative value to the UP student body as reference materials were donated by the Philippine Lumber Producers' Association.

1. The International Aspect of Philippine Wood Industry by A. de las Alas (2 copies);
2. Memorandum for the Honorable Chairman and Members of the Federal Trade Commission, Washington, D.C. (2 copies);
3. Testing and Evaluation of Apitong from the Philippines by Timber Engineering Company, Washington, D.C. (2 copies);
4. Restriction on Log Exports by A. de las Alas (8 copies);
5. The Philippine Lumberman (Back issues, 9 copies);
6. Philippine Lumber Producers' Association—1956 Annual Report (8 copies);
7. The Philippine Lumber Industry and its Problems (10 copies), by A. de las Alas.

* * *

TIMBER REVENUE LOSSES

Aranas says poor tax assessment, evasion by concessionaries cost government millions

Jose Aranas, collector of internal revenue, yesterday said that the government was losing several million pesos yearly in non-collected revenue from the lumber industry because of poor tax assessment.

The national government collects from the timber industry an annual income of ₱5 million representing forest charges alone, excluding income taxes paid by timber concessionaires and lumber men.

Aranas said, that through "tax avoidance" and underdeclaration of income, the government has not been able to collect the correct taxes due from the industry.

In a letter to the director of forestry, Aranas pleaded for cooperation in the collection of forest charges. He asked the director to cooperate by withholding the renewal of timber licenses until all the outstanding tax obligations of the concessionaires have been fully paid.

Aranas said BIR examiners have been instructed to "carefully but correctly" determine assessments.

Aranas has sent out a team of examiners.

The BIR team fanned out, for a start, to Mindanao, where a large number of timber and logging concessions are in active operation.

From the BIR specific tax division headed by Gaudioso Abesames, Aranas bared the increase of ₱16 million in collections from cigars and cigarettes taxes for the fiscal year which ended last June 30, as compared to those of the previous fiscal period.

HARDBOARD

Newest industry to invade the Philippine market is the Philippine Wallboard Corporation, an affiliate of Nasipit Lumber Company, which introduced to the public a "hardboard" made of residual material left over from sawmill operations.

Carlos Fernandez, vice president of the firm, in a press conference yesterday at the Philippine Columbian, did not fail to emphasize the importance of the product from the standpoint of the national economy as well as of the lumber industry. Henceforth, he said, not only will Filipino construction men have readily available a superior building material but it will also enable the country to utilize fully forest products that used to go to waste.

The locally produced hardboard is similar in appearance and texture to imported "Masonite." Sawable and any-proof, the product has over a thousand uses in practically all kinds of industries. The "Lawanit" as it is called, is being turned 4,000 pieces (8 ft. x 4 ft.) daily from the Nasipit plant in Agusan, Mindanao. The machineries that produce them were imported directly from Sweden to meet local specifications.

Fernandez paid his compliments to RFC Chairman Eduardo Z. Romualdez for the financial assistance lent by the RFC in making possible the establishment of the hardwood factory. Romualdez, in return, said his organization is always willing to lend a hand to industries designed to enrich the national wealth.

Antonio de las Alas, president of the Philippine Lumber Producers' Association, welcomed the new industry and said that the country should be grateful to Carlos Fernandez and his associates for their courage and foresight in blazing a new path toward healthy industrialization.—*The Manila Times*, August 17, 1957

* * *

CB REQUESTS LOG EXPORTERS

Corpus' request made during dinner given by lumber shippers

PLPA head De las Alas contends that while CB must enforce rules, it is nevertheless true that best gov't is less government.

Central Bank export department head, R. Marino Corpus the other day called on the Philippine Lumber Producers Association to list down mal-practices allegedly being committed by local log exporters and propose tangible solutions to the industry's export problems.

The CB official aired the challenge at a dinner given in his honor Wednesday evening by officers and members of the lumber group, head-

ed by PLPA President Antonio de las Alas, at the Swiss Inn.

At the same time, Corpus sought the association's views on export department regulation, seeking to standardize procedures largely involving supporting documents to negotiated copies of export licenses, accounting for undrawn proceeds, miscellaneous provisions and deductions without authorization.

De las Alas pointed out that while he realized that the CB must enforce regulations to avoid circumvention of the country's export laws and Bank rules, "the best government is the least government."

The PLPA head stressed that the lumber industry could be the bulwark of Philippine economic progress, citing the example of Finland, in which 60 per cent of the economy is founded on the log, timber and lumber trade.

At the conference, Corpus defended his department's recently issued requirement that the log exporter submit a copy of a re-measurement list reportedly being made of log arrivals in Japan by the Japanese importers through an independent surveyor.

Although some of the lumbermen denied the existence of such a practice in Japan. Florencio Tamesis, PLPA director admitted that there was a Japanese "inspection service" measuring log shipments but added that the re-measurement concerned was merely for the purpose of informing prospective buyers and end-users of logs of the availability of stock.

Tamesis said that he was not acquainted with the basis on which the re-measurement was calculated.

It was disclosed yesterday that the PLPA board of directors would meet tomorrow morning to determine the association's recommendations to the CB on the existing regulations and the proposed standardization plans.

Corpus further asked the body to present his department on a regular basis, with a one sheet schedule of log prices by class grade, region and a price scale giving the Bank a "definite leeway" by which to determine whether price offers submitted by individual exporters were "reasonable".

Gaudencio E. Antonino, president of the Producers and Exporters Association of the Philippines and head of the Western Mindanao Lumber Company, charged at the meeting that the check prices imposed by the CB were higher than his customers "were willing to pay."

He maintained that the Bank's policy not only accomplished its purpose of protecting the international reserve but succeeded "in denying actual exports."

Antonino proposed that the sales report of the log exporter could be "notarized" to insure its reliability, since falsification would be a criminal offense.

He stated that the so-called "re-measurement" list was not an actual practice in Japan and had "never been adopted" by his buyers. De las Alas supported this allegation with the report that he had asked members of the association whether such a requirement is imposed by Japanese importers and had been assured that it was not done.

Corpus, however, said that he could produce actual documents showing the existence of the method.

He asserted that a single Japanese claim for rebate based on the re-measurement survey of a surveyor in that country had called for a refund of as high \$189,000.00.

The CB export department chief declared that the CB investigation of about 20 local log exporting firms dealing with Japan which he initiated on April 15 had uncovered evidence in several instances of "secret contracts" made between buyer and exporter, pre-arranged "de-goku" discounts, falsified invoicing of peeler and veneer logs as "sawlogs" to clear excessively low prices through the Central Bank.

De las Alas said in response that he would "fight for the recognition by the Japanese and other foreign buyers of the Bureau of Forestry certification as the basis for measurement of log shipments abroad."

He agreed with Corpus that a re-measurement of logs by a foreign importer would constitute "mistrust" of the certified report made by a Philippine government agency.

As the offshoot of the session, it was expected that the PLPA may press the Central Bank to send a fact-finding mission to Japan to determine the actual market status for logs there.—*Manila Times, October 14, 1957*

* * *

FORESTER CRUZ APPOINTED DIRECTOR

Sr. Forester Eugenio de la Cruz took his oath of office recently before UP acting President Enrique T. Virata as director of the newly created Forest Products Research Institute.

The appointment was made by the Forest Products Research Board and approved by the UP President. Constituted as the governing body of the Institute, the board is composed of forestry director Felipe R. Amos as chairman ex-officio, UP College of Forestry Dean Calixto Mabesa as member ex-officio, Jose G. Sanvictores representing the lumber industry, Florencio Tamesis representing other forest products industries, and Dominador Cepeda representing con-

sumers. The last three were appointed by the President of the UP with the consent of the Secretary of Agriculture and Natural Resources. Tamesis and Sanvictores will serve for 3 years, while Cepeda, one year.

The Institute was created by Reorganization Plan No. 77 which was implemented by Executive Order 257, to answer the need for a semi-autonomous entity charged with the prosecution of extensive research and development programs designed to improve techniques and methods in wood production and utilization and develop new forest products industries. Located at Los Baños, Laguna, the institute is under the general supervision of the UP.—aje

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₱103 MILLION FOR FOREST MANAGEMENT AND REFORESTATION

The bureau of forestry has started drawing plans for the expansion of scientific forest management and reforestation program following the approval of the initial allotment of ₱3,557,825.00 out of the authorized appropriation of ₱10.3 million from Bond and Loan Issues to be amortized by the Reforestation Fund collections, director Felipe R. Amos revealed.

The additional fund, Amos said, will enable his bureau to intensify scientific management of commercial forest areas through the adoption of selective logging which is a natural means of reforestation. Also to be undertaken with greater impetus is the present program of artificial reforestation done by systematic and efficient actual planting of denuded watersheds, grasslands and other forest lands.

Steps have already been taken to organize 45 timber management stations each to cover at least one or more license areas and to be charged with the responsibility of implementing selective logging and timber stand improvement. The 39 reforestation units will be increased by 55 new projects.

The grant of additional fund for reforestation purposes was facilitated by the desire to forestall the recurrence of destructive floods caused by illegal kaingin and indiscriminate timber cutting as well as to insure abundant supply of forest products.—aje

* * *

FORESTER TAGUDAR LEAVES FOR U.S.

Forester Eulogio Tagudar of the bureau of forestry left yesterday for the United States as an ICA grantee to study and observe forest management in that country.

He will visit the United States Department of Agriculture and Forest Service, Washington International Center and the School of Forestry of Yale University. He will also observe log-

ging operations in leading American lumber firms.

A graduate of U.P. College of Forestry, Taguig was in charge of the implementation of selective logging and timber management in Agusan.—aje.

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OUR FORESTRY LAWS

I sincerely wonder how Senator Fernando Lopez, Rep. Eulogio Rodriguez, Jr., and Rep. Guillermo Sanchez have taken the recent Pan-gasinan disaster.

As early as January this year, the agriculture secretary invited the three so-called public officials to mull the problem of forest protection. But Messrs. Lopez, chairman of the Senate committee on agriculture Rodriguez, Jr., the lower house counterpart of Lopez: and Sanchez, chairman of the lower house committee on forests, chose to snub the proposed parley.—*The Herald*

* * *

JAPANESE LUMBER IMPORTERS WROTE ALAS THAT MOVE 'IS UNREALISTIC'

Head of PI lumber exporters say measure casts unfavorable reflection on our forestry people.

A recently established Central Bank requirement that the CB be furnished a re-measurement list of all Philippine log shipment arrivals in Japan certified by an independent Japanese surveyor was defended yesterday by CB export department head R. Marino Corpus, as necessary to curb "dishonest practices."

In a memorandum to Antonio de las Alas, president of the Philippine Lumber Producers' Association, Corpus replied to objections raised by the PLPA and the Japan Lumber Importers' Association that it would be "difficult" for Filipino loggers and Japanese importers to submit such a list.

Masao Ichikawa, chairman of the Japan lumber importers group, had written De las Alas that the association's board of directors at a meeting on August 30 had condemned the CB move as "hardly realistic."

Supporting Ichikawa's contentions, the PLPA head wrote Corpus on September 14, pointing out that the regulation "implies in effect a mistrust of our government agencies officially undertaking the measurement and scalling of our logs before shipments are allowed."

De las Alas maintained that the measure constituted "an unfavorable reflection on the reliability of our own Bureau of Forestry officials specifically in charge of such functions."

The CB requirement provides that in connection with approvals of sales reports on shipments of logs to Japan, the applicant should submit within 15 days after discharge a re-

measurement list certified by an independent surveyor at the port of destination.

Corpus, in a sternly worded rejoinder, reminded the PLPA president that he personally had pointed out the existence of "dishonest" practices in the trading of logs and lumber and had professed a strong desire to see that such questionable practices and trade procedures should immediately be corrected.

The CB official denied that the practice should be construed as a "sign of mistrust" of the Bureau of Forestry officials who pass judgment on the logs before shipment but asserted that the two checks were "complementary or supplementary" to one another.

He furthermore cited that Japanese log buyers had themselves instituted the practice of re-measurement, adding that while this in essence was "mistrust" by the Japanese buyer of the Philippine log exporters none of the lumber producers or Philippine loggers who were forced by this Japanese imposition to foot the re-measurement bill had "ever raised the anguished cry of protest and mistrust."

Corpus declared that the "re-measurement" list is not a new institution but an "already established practice in Japan."

Referring to the CB investigation launched on April 15 by his department of 159 Filipino log exporters, in connection with their dealings with Japanese importers, he averred that examination of the records and books of log and lumber exporters "confirmed the existence of such re-scaling lists which we found is being furnished by the Japanese buyers themselves to the Philippine exporters as a matter of general practice."

He said that he could produce statements and communications of Japanese importing firms confirming this practice.

Corpus stated that with respect to differences that may exist between the certification of the Bureau of Forestry made "prior" to the loading of logs and the re-measurement made "after" arrival in Japan, these would "be resolved on their individual merits."

The CB export department chief categorically denied Ichikawa's assertion that the Bank requirement is "exceptional and unusual" and said that it is not difficult to secure since the CB was only asking for "a copy of the re-measurement list furnished the Philippine log exporter by the Japanese buyer."—*Sunday Times, September 22, 1957*

* * *

PLYWOOD

Norman Davidson, Jr., president of the Pacific Wood Products Co. of Los Angeles and Jay

Wallenstrom, vice president of the Rodis Plywood Corporation of Marshfield, Wisconsin, both asserted that American importers of Japanese-processed Philippine Mahogany have taken up steps to procure their requirements directly from Philippine processors.—*The Manila Times*, Aug. 15, 1957

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NEW INDUSTRY ESTABLISHED IN AGUSAN, USES WASTE TIMBER

A new enterprise utilizing the waste product from sawmill operation into the manufacture of "hardboard" has been established in Nasipit, Agusan, center of the lumber industry in the south.

After 32 months of construction, the modern plant of the Philippine Wallboard corporation, an affiliate of the Nasipit Lumber Co., was placed in commercial operation earlier this month. It is now turning out 50 tons of hardboard which will eventually be raised to 80 tons daily.

Yesterday, Carlos Fernandez, head of the new organization, announced introduction into the market of its product known here as the "lawanit."

"The aim of the plant," Fernandez told a press conference at the Columbian club, "is to convert the residual material left over from the sawmill operation into a building board panel of great utility."

The raw material for this new industry does not cost the company anything. "As a matter of fact," the company executive said "it might even be said that the raw material has a negative value in that it costs money to burn and destroy it."

Only around four per cent of the raw materials, consisting mainly of chemicals, is imported. The main raw material is said to be abundant and will require a three-fold expansion in present facilities of the wallboard plant to enable full utilization of existing supplies.

Although marketing of the product for the present will be confined locally, it is the company's objective to export it eventually and contribute to earning dollars for the economy.

In brief, the process involved in the new enterprise consist in reducing the residual material into uniform size chips, converting the chips into ground pulp through the combined application of steam and attrition, forming the pulp into a continuous wet mat and finally pressing the mat in a high pressure, hydraulic press.

Equipment for the plant was purchased from Sweden with Central Bank dollars and installation was handled by Swedish engineers. Fi-

ancing was arranged through the Rehabilitation Finance corporation.

The Nasipit plant is the first of its kind in the Far East. A sister plant is now being built in Nagoya, Japan. The only other hardboard plants near this area are in Tasmania and Auckland, New Zealand.

Mr. Fernandez thinks this new industry is a distinct contribution to the economy. He explains: ". . . this new concept of utilizing wood material is applicable to the enormous amount of vegetable material left in our forest, unutilized because it is considered non-merchantable. When this large amount of forest material is given value through the establishment of proper conversion plants, the value of our forests will increase many fold. That change might be the key to the effective conservation of our forest lands and will prevent their denuding—a measure considered by everybody of the utmost importance and yet hardly ever put into effect."

Viewed from a larger aspect, he adds, this new plant creates wealth not obtained through more extensive use of local resources. "Rather, it is achieved through a higher and more intensive utilization of our raw materials. I believe this is most important because in the Philippines we might say that we have no frontiers left; all the good lands have been practically occupied, and our only hope is through wiser exploitation of our resources . . ."—*The Manila Bulletin*, Aug. 17, 1957

* * *

5-YEAR FORESTRY GOAL EXCELLED

The Bureau of forestry, at the termination of its five-year land classification counterpart project, has delimited a total of 4,298,304 hectares of forest land exceeding its goal of 2,000,000 hectares by 2,298,018 hectares. Forestry Director Felipe Amos has reported to Agriculture Secretary Juan de G. Rodriguez.

The I.C.A.-N.E.C. project, which started Feb. 1, 1952, reached its fifth year Jan. 31 this year. Of the over-all area, 2,000,286 hectares were classified as agricultural land while 2,298,018 hectares remain permanent forests.

In addition, for the fourth quarter of the last fiscal year, a total of 242,452 hectares of forest land was reported classified by the bureau of forestry. This over-all area is embraced in 64 projects of which 83,244 hectares are alienable as agricultural lands and 159,208 hectares as permanent timberlands.

According to Director Amos, classification of erstwhile forest lands into agricultural lands must meet five conditions: 1. open, cogonland or brush land with inclination from zero to 10 degrees; 2. soil must at least have one foot deep

of alluvial or loamy clay sold; 3. forest areas with timber stand of not more 400 cubic meters of timber each hectare; 4. favorable climatic and other conditions; 5. considerations like economic and social factors.

Secretary Rodriguez pointed out that areas needed for forest purposes, if established as permanent timberlands, could be closely supervised in the utilization of forest products and prevention of soil erosion and climatic extremes and protection of watersheds.

Meanwhile other reports received by Secretary Rodriguez indicated that persons claiming to have influence with bureau of lands officials have been swindling public land applicant.

He asked that any person, even lands bureau inspectors or other personnel, who asks for fees or "expense money" for pushing through their applications, getting their cases settled on their land patents issued, should immediately be reported to Lands Director Zoilo Castrillo.—*The Manila Daily Bulletin*, August 15, 1957

* * *

DRIVE AGAINST DELINQUENT HOLDERS OF TREE FARM LEASES LAUNCHED

District Forester Rafael L. Quidilla of the local forestry office launched the other day a drive against delinquent holders of tree farm leases for coffee planting within this city.

Quidilla requested city treasurer Domingo Cabali to prepare a list of the payment of rentals made by the holders of tree farm leases within the City of Baguio so that the former may be able to determine who are the delinquent leaseholders.

The forestry official warned leaseholders that failure to pay the required rentals one year after they are due, without justifiable reason, is sufficient reason to cancel the lease without prejudice to the city government in collecting the unpaid rental.

Parallel with his drive against delinquent leasees is another drive against tree farm lease "speculators" outside of Baguio. Quidilla said he will soon direct an on-the-spot inspection of the areas covered by tree farm leases to determine those which are not being developed.

* * *

BOOKS ON LUMBER

Among the new publications received from U.S. Products Laboratory by the Philippine Lumber Producers' Association for reference use by lumber producers, forestry students and forestry technicians are the following:

How Can Sticker Stain in Hardwood Be Prevented?

Chemical composition and use of Bark Board Materials from Wood Waste
Wood Residues in Compression and Extended Products

Resume of Some of the Newer Products of Wood Utilization

Hardboard: Processes, Properties and Potentials

Fabrication of Small Clear Specimens of Timber

Effect of Particles Size and Shape of Resin Bonded Panels

Coating for the Preservation of end checks in Logs

Settlement to Deflection and Stresses

Elastic Buckling of Sandwich Panel

Supplement to Mechanical Properties of Plastic Laminates

List of Publications on glue, Glued Products, Veneer.

Packaging Research (U.S. Wood Products Laboratory)

Factors Affecting Strength

Durability of Water-Resistant Woodworking Glues

Bending strength and stiffness of plywood

List of Publications Relating to Fungus in Woods

Comparison of Wood Preservatives.—*Manila Times*, August 7, 1957

* * *

OPEN UP MORE TIMBER LANDS

Land classification work reached its peak during the fiscal year 1956-57 as an aggregate area of 1,299,146 hectares was classified by the bureau of forestry's 45 field teams deployed in strategic points of the country.

Director Felipe R. Amos said the 1956-57 accomplishment topped all previous years. Of the total area classified last fiscal year, 501,474 hectares were delimited alienable and disposable and 797,672 hectares as timberland.

The forestry director revealed that as of last June 30, the bureau has already certified 11,696,237 hectares as alienable and disposable and established 3,223,210 hectares as timberlands, leaving 14,821,525 hectares still unclassified. Only last month, 103,897 hectares of new land were classified of which 22,047 hectares were to be released from public ownership.

Amos recommended that areas needed for forest purposes should be established under a congressional act as permanent forests and placed under scientific management for the perpetuation of forest crops as well as the forest value and influences.—*Manila Bulletin*, August 10, 1957

veneer, plywood industries to receive big assistance

Domestic plywood and veneer manufacturing is expected to receive a big boost with the recent arrival in the country of Dawson Zaug, who has joined the Industrial Development Center on the 18-month contract as plywood and veneer consultant.

Zaug, who has had 20 years experience in the manufacture of plywood and veneer and was vice president in-charge of manufacturing of the American Plywood Corporation, will serve under the economic and technical cooperation agreement entered into between the Philippines and United States governments.

He will assist IDC with the development of the domestic plywood and veneer manufacturing industry, particularly in advising and assisting new and existing plants on their production problems.

In consultation with IDC specialists, Zaug is entrusted with developing a working plan for concrete advice and assistance to the industry within the framework of the NEC economic development program.—*Manila Times*, July 28, 1957

* * *

taiwan plans to purchase philippine 'lauan' logs

Formosa's foreign exchange and trade control commission has authorized the Taiwan supply bureau to purchase Philippine lauan logs in the total amount of 2,400,000 thousand board feet, the department of commerce and industry reported yesterday.

The department stated that the Taiwan supply bureau will import lauan logs to keep in stock raw materials for the manufacture of export grade plywood, for six months' use and for a more efficient programming of production.

Domingo T. Reyes, commercial attache at the Philippine embassy in Taipei, informed the department of commerce and industry that "although plywood manufacturing is an infant industry in Taiwan, it is developing markets in the United States, Hongkong, United Kingdom, Malaya and Ryukyus."

He stated that increasing export of Philippine lauan logs to Taiwan redounds to the exclusive advantage of the Philippines. However, he expressed the fear that once the Taiwan plywood industry is fully developed, the Philippines might find itself in a disadvantageous position similar to that in the case of Japan's plywood industry.—*Manila Times*, July 28, 1957

notes on plant introduction

The S. S. "Golden Bear" one of the finest, biggest and most modern freighters afloat, sailing from San Francisco, California, in its maiden voyage to the Far East docked at Manila on February 28, 1955. On board were ten (10) California redwood (*Sequoia sempervirens*) saplings consigned to the Government of the Philippines from the people of California, thru State Governor Goodwin J. Knight. The seedlings were presented by the Master of the vessel, Captain S. M. Rogenes, to the Honorable Salvador Araneta, then Secretary of Agriculture and Natural Resources, who represented President Magsaysay in the presentation ceremony held on board the boat on March 1, 1955. Captain Rogenes read the following message from Governor Knight:

"To the President of the Philippine Republic, the Honorable Ramon Magsaysay, and to the People of the Philippines:

On behalf of the people of California, it is a pleasure to present to you these redwood trees as a living token of our abiding friendship for the men and women of the Republic of the Philippines.

May these trees thrive in the fertile soil of your great country, and remind all who look upon their towering splendor in the years to come, of the devotion of our two peoples to the enduring principles of liberty, justice and human dignity.

(Sgd.) GOODWIN J. KNIGHT
Governor of California"

Secretary Salvador Araneta, after receiving the saplings, made the following remarks:

"I have been asked by President Magsaysay to accept in behalf of the Filipino people the redwood saplings which the people of California thru Governor Goodwin J. Knight have presented as a living token of their friendship for this country and the Filipino people.

I am not sure whether these saplings will thrive in our soil. We hope, however, that these trees coming as they do from a friendly people will thrive in our friendly soil. And the fact that the giver and the receiver are both known for their unshakeable devotion to the principles of democracy, these saplings should grow to big trees.

In the best traditions of friendship and democracy which bind the peoples of the Philippines and California, these historic redwood trees, said to be the oldest, tallest and largest in the world, will rise to the sky to ask our Almighty God to keep forever our peoples together in the side of freedom, justice and human dignity.

In behalf of the Filipino people, President Magsaysay wishes to thank the Governor and the people of California in particular and the whole American nation in general."

Immediately after the turning ceremonies, the saplings were brought to Baguio and placed in the green house of the Pacdal Forest Nursery for observation and care. It was observed that when the saplings were received the leaves and stems were turning brownish and were all smeared with engine oil. Apparently, the saplings were placed near the engine room of the boat and the heat greatly affected them. The oil were wiped off carefully from the stems and leaves. In spite of diligent care all the saplings died.

The Governor of the state of California, upon learning of the death of the saplings previously shipped, sent another ten (10) redwood saplings via the same boat. They were received in the Philippines on March 3, 1956. Secretary Juan de G. Rodriguez received the shipment during a short but impressive ceremony.

The saplings were also sent to Baguio for trial planting. To this date three (3) of the saplings are living. Two (2) saplings planted in the Pacdal Forest Nursery at an elevation of about 4,600 feet above sea level, have attained the height of 106 and 96 centimeters, respectively. Another one planted in the Forest Experiment Station ground in Atok, Benguet, at an elevation of about 6,000 feet above sea level has also attained a height of 155 centimeters. To all appearances, the three saplings may survive and grow side by side with our endemic trees, in all their "towering splendor", ever reminding us of the bond of friendship between the Americans and the Filipinos and the "devotion of these two peoples to the enduring principles of liberty, justice and human dignity."

(*Research Notes*—Forest Research Division, B.F. October 18, 1957).

* * *

Director Eugenio de la Cruz of the Forest Products Research Institute enplaned for Rome this morning to join the eight-man Philippine delegation, headed by Agriculture Secretary Juan de G. Rodriguez, to the Ninth FAO Conference to be held at the FAO Headquarters there from November 2 to November 22.

Director E. de la Cruz is a member of the FAO committee of the Philippines representing the Forest Products Research Institute.

On his return from Rome, the Director will participate also in the Ninth Pacific Science Congress which by the time shall have been in session at Bangkok, Thailand.—*Evening News*, October 30, 1957

* * *

You are indeed doing an extremely successful job, George Mulgrue remarked in amazement

before Forest Products Research Institute officials after a four-hour tour yesterday to the different laboratories and offices of the FPRI, College, Laguna.

Mr. Mulgrue, Regional Information Adviser of the FAO detailed in Bangkok, Thailand, arrived in Manila last August 28, to make observation in different government offices, especially on the development and utilization of our agriculture and natural resources.

Asked what prompted him to visit the FPRI, Mulgrue said, before coming to the Philippines I heard that this Institute has been making remarkable success, so I made it a point to see for myself how far you've gone in your work, he added.

Accompanied by Assistant Director Juan B. Cabanos of the Agricultural Extension Bureau and Dr. Valente Villegas of the College of Agriculture, University of the Philippines, Mulgrue arrived here at 11:30 a.m. Through previous instructions of Director Eugenio de la Cruz who, at the time was in Manila, he was shown around by Technical Adviser George M. Hunt, together with the chiefs of the different divisions of the Institute. Mr. Mulgrue is leaving for Tokyo today.—*Manila Daily Bulletin*, September 4, 1957

* * *

Miss Ester Vergara, the first woman from the Philippine Islands to be granted a research fellowship in Wood Chemistry, completed today a year's research at Forest Products Laboratory here, and will return to the Philippines.

This was a news carried in the Aug. 16, 1957 issue of the "Capitol Times" and in the Aug. 17, 1957 issue of the "Wisconsin State Journal."

Meanwhile, Director Eugenio de la Cruz of the FPRI stated that upon her arrival, Miss Vergara would be assigned to work on wood extractives at the Forest Products Research Institute wherein a newly installed Llyod Extractor is provided for this particular work.

A trainee-grantee under the ICA Technical Assistance Program, Miss Vergara, an Analytical Chemist of the Philippines Forest Products Laboratory (now Forest Products Research Institute) left for the U.S. last September 28, 1956.

While in Madison, she worked with Dr. Ralph Scott in Wood Chemistry on the chemical analysis of the bark of the loblolly pine. She also attended courses at the University of Wisconsin.

A Bachelor of Science in Chemistry graduate of the state university, Miss Vergara joined service in the F.P.L. in 1955, and having shown exceptional talent in her assigned job, she was granted this research fellowship.—*Manila Daily Bulletin*, September 4, 1957

Another step toward facilitating the extensive research and development program to improve techniques and methods in the production and utilization of forest products was taken by the Forest Products Research Institute with the recent appointment of six key officials by Director Eugenio de la Cruz.

The officials who recently took oath of office before Director E. de la Cruz were For-ester Luis Aguilar, Assistant Director; Atty. Eloy Velasco, Administrative Officer; Simplicio Bellosillo, Industrial Investigation Chief; Rosario T. Cortes, Wood Preservation Chief; Francisco N. Tamolang, Wood Technology Division Chief; and Manuel R. Monsalud, Chief, Chemical Investigations Divisions.—*Manila Daily Bulletin*, September.

* * *

TAIWAN ALLOCATES SUM FOR P.I. LOGS

The department of commerce and industry reported yesterday that Taiwan has allocated \$400,000 for the 1958 importation of lauan logs from the Philippines for the use of plywood manufacturers.

Domingo T. Reyes, commercial attache at the Philippine embassy in Taipei, informed the department that the allocated amount is part of the \$35 million allocation for Taiwan's commercial procurement for 1958 under the United States Aid Program.

Reyes also reported that a total of 28 consular invoices were issued by the embassy for the period from January to September 1957. These invoices showed that Philippine imports from Taiwan during the 9-month period aggregated \$74.495.

Principal imports consisted of industrial salt valued at \$37,800; citronella oil, \$13,390; fruits and preparations, \$10,594; tea, \$4,789; and camphor resin, powder and tables, \$3,384, he said.

At the same time, the trade official pointed out indications that Taiwan may revise its overseas investment policy. The proposed revision, which was agitated by local businessmen, seeks to disallow overseas investors to import commodities into Taiwan for sale, he said.

At the same time, the trade official pointed out indications that Taiwan may revise its overseas investment policy. The proposed revision, which was agitated by local businessmen, seeks to disallow overseas investors to import commodities into Taiwan for sale, he said.

However, the contemplated revision was strongly opposed by the Chinese overseas affairs commission which claimed that the rapid expansion of overseas investments totalling \$17.66 million, NK\$19.6 million and £26,000 from 1951 to June, 1957, were due to relaxation of

regulations, Reyes said.—*Philippines Herald*, Nov. 9, 1957

* * *

JAPAN NEEDS LUMBER

Central Bank mission finds Japanese plywood firms dependent on PI logs

By MAXIMO V. SOLIVEN

Japanese lumber and plywood manufacturers are "absolutely dependent" on Philippine lauan logs, a Central Bank survey mission here stated today.

R. Marino Corpus, head of the mission, pointed out that the survival and expansion of these dollar-earning Japanese industries are contingent on the assurances of continued stable supply of lauan from the Philippines.

The mission disclosed that there appears to be a move among Japanese buyers to force the lowering of lauan log prices to salvage manufacturers from losses incurred by previous buying at high costs and freight rates and tight credit policies imposed by the Bank of Japan.

The Corpus group which returned yesterday from a week-long on-the spot inspection of plywood and lumber mills and log ponds in Nagoya and Osaka, indicated that the current slump in Japanese export and government trade restrictions have forced importers into "selective buying."

Figures submitted by the Southeast Asia Lumber Conference here showed approximately 50 million board feet of overstocked logs here the bulk of which deteriorated from long storage in log ponds.

Masao Ichikawa, chairman of the conference, said there is an existing stock of 120 million board feet while the monthly consumption is 70 million board feet. Eighty per cent of this comes from the Philippines, he added.

Of the 960 million board feet imported annually by the conference 720 million board feet is from the Philippines.

* * *

TIMBER

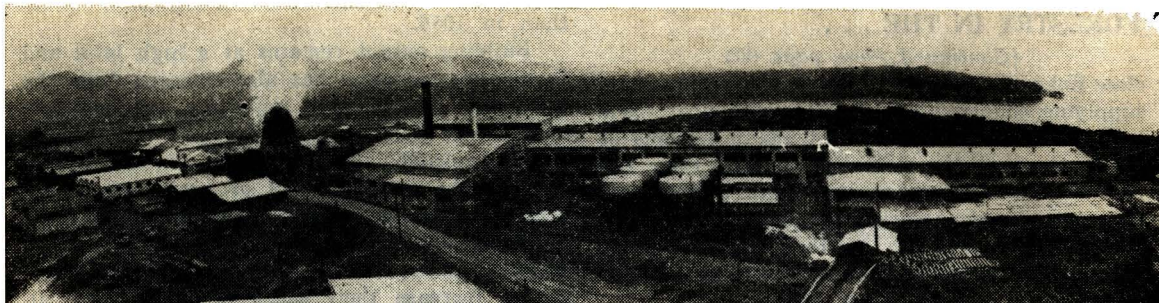
Specially prepared for the Manila Times by "The Economist" Intelligence Unit of London

From August 1 imports of hardwoods into the United Kingdom from countries in the dollar area will be under Open General Licence; the dollar quota for such imports has been abolished from that date and importers will then be free to purchase as much dollar hardwood as the British market can absorb. But this decision, though welcome to both supplying countries and importers, is likely to cause any radical change in the pattern of United Kingdom hardwood imports for the present.

It will take a long time to reestablish the

(Continued on page 62)

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FORESTRY IN THE . . .

(Continued from page 60)

close links which existed between the dollar areas supplying countries and the British timber trade before the war. It is felt by many sections of the trade that the American missed their opportunity in 1955 when the quota system was first introduced, American producers were then content to concentrate on their buoyant home market and showed themselves unwilling to cater for the needs of the U. K. market.

The position has altered appreciably since then; the American home market is no longer such an attractive proposition to producers; prices and profits have fallen. American producers are now certainly keener to renew the British connection. They appear willing even to adjust their specifications to suit British users. But shippers will first have to overcome a barrier on the British side caused by ignorance of the qualities of American woods and long familiarity with timbers from other parts of the world.

Even so, there is no reason why such a connection should not eventually be renewed on a larger scale than at present. British hardwood importers are complaining of difficulties in connection with supplies from Far Eastern sources, especially from Japan, where prices are rising and shipping delays are common. American shippers certainly have the advantage of speedy shipment in competition with Japanese timbers. Moreover, prices elsewhere have also been rising of late and this should increase importers' interest in dollar hardwoods, if shippers' prices there are keen enough.

However, there will be noticeable resurgence in buying of dollar hardwoods in the immediate future. In the past two years the quota of L3 million has proved ample for the needs of the market and trade opinion is that the demands for oak, maple and birch, the main dollar hardwoods used in the United Kingdom, should remain within the limit of the formerly existing allocations. Indeed, this would seem to be the Government's reason for this unexpected move towards freedom. It had been anticipated that the quota would gradually be raised, but complete freedom was not expected for some years yet.

Meanwhile, consumption of timber in Europe is slowly recovering, country to expectations at the start of the year. Softwood consumption in the United Kingdom is a full 4 per cent up on last year's figures. Imports of sawn hardwoods up to the end of May amounted to 9.9 million cubic feet more than during the same period of 1956; roundwood imports, however, are lower

than in 1956.

Building output remains at a high level and furniture production has also emerged from the doldrums. Stocks with importers are now low enough to permit more forward buying. It seems probable, therefore, that in the second half of the year imports of hardwood should continue to exceed 1956 levels. But it will be too early for dollar hardwoods to reap any significant gains; in the longer run such woods should increase their share of the market although it still remains conjectural whether they can ever regain their pre-war position. Hardwood suppliers everywhere will watch with great interest future developments in Britain's hardwood market.—*Manila Times, August 10, 1957*

Availabilities of Hardwood in the U.K.

Monthly averages in cubic feet.

	Total	Imported	Home prod.
1954	5.42	3.32	2.10
1955	5.57	3.61	1.96
1956	5.14	3.39	1.75
1957			
Jan.		3.53	
Feb.	4.79	2.46	1.74
Mar.		3.17	
Apr.	—	3.92	—
May	—	3.70	—

F.P.R.I. NEWS . . .

(Continued from page 49)

"T'WAS THE NIGHT BEFORE CHRISTMAS . . ."

The cool breeze in the mornings, the very short days and the fast approaching darkness in the evenings and the occasional yuletide chants coming from your neighbor's radio are all symptoms of just one thing — it's Christmas again.

And with the coming of Christmas, some of the FPRI staff have already begun cleaning the cobweb and the dust that have settled all year long on their yuletide trimmings and decorations. Some have also started thinking of what things to do and how to do them, what gifts to give and to whom to give them, and a host of other little things that help make Christmas just what it is for.

Of course, there is the usual Christmas program at the FPRI, the presentation that usually turns out to be a talent show; probably the Choir, if the choirmaster and members will have the extra energy to devote to the practice of the carols; and the usual pleasant greetings that is saved and said only on that particular time of the year — "MERRY CHRISTMAS AND A HAPPY NEW YEAR TO ALL FROM THE FPRI STAFF AND PERSONNEL."

• College Notes •

The visiting professors at the College of Forestry are two of a three-man team which is to assist with teaching and research during the next three years. The third man has not yet arrived. After 18 months at the College the present men will leave and be replaced by other men who will stay for a second 18 months period. The program is arranged by a contract between the University of the Philippines and Cornell University of Ithaca, New York and is sponsored by ICA.

Dr. Richard E. Pentoney did his undergraduate work in Forestry at the University of California. He received his BS in 1949, has his M.S. and his PhD in Wood Technology from the State University of New York, College of Forestry at Syracuse University. He is at present on leave from his position at the College of Forestry where he was engaged in teaching elasticity of wood and plywood, and rheology of wood and polymers. His research activities have been devoted to studies of the acoustical and rheological properties of wood in an attempt to develop non-destructive tests for various wood properties. His position at our College is Visiting Associate Professor in Forest Products and has been assigned to work closely with Filiberto Pollisco.



Dr. R. E. Pentoney

Dr. C. Eugene Farnsworth received his B.S.F. from Iowa State College, his M.F. from Yale University and his PhD from the University of Michigan. He is at present on leave from his position as Professor of Silviculture at the State University of New York College of Forestry, at Syracuse University. At Syracuse he teaches courses in silviculture and is concerned with



Dr. C.E. Farnsworth

research projects in management of hardwood forests, plantation management, forest tree seed, and forest tree nursery practice. At the College of Forestry he is Visiting Professor of Silviculture.

On October 22, 1957, Teodoro Delizo, Professor of Silviculture at the College of Forestry; Filiberto Pollisco of the teaching staff of the College; Dr. Richard E. Pentoney, Visiting Associate Professor of Forest Products at the College of Forestry; Dr. C. Eugene Farnsworth, Visiting Professor of Silviculture at the College; and Dr. Paul Zehngraff, Forestry Consultant of ICA in Manila left Manila by air for a ten-day visit to the forest areas of Basilan Island and Eastern Mindanao. Drs. Pentoney and Farnsworth have recently arrived at the College of Forestry for 18 months assignments under the terms of a University of the Philippines-Cornell University Contract sponsored by ICA. Dr. Zehngraff has also recently arrived in the Philippines to replace Mr. Paul Bedard who was the ICA Consultant here for several years.

The itinerary of the trip was arranged through Mr. F. R. Amos, Director of the Bureau of Forestry and the representatives of the companies which the group visited. On landing at Zamboanga, the group was met by Mr. Higinio Rebosura, District Forester of the Bureau of Forestry. After an excellent luncheon and a stimulating discussion of local forestry problems, Mr. Rebosura showed the visitors around the city and adjacent areas. Mr. Lloyd Anderson, General Manager of the Basilan Lumber Company also welcomed the group to Southern Mindanao.

During the late afternoon the travellers went to Isabela on Basilan Island where they were met by Mr. Jose Claveria, District Forester, who had made the local arrangements for a four day visit. From the guest house of the Basilan Lumber Company, Mr. Claveria, with his staff, and several supervisors from local companies, conducted field trips to the operations of the Basilan Lumber Company, Western Mindanao Lumber Company, Santa Clara Lumber Company; and to several coconut, rubber, pepper and abaca plantations. The visitors were provided an excellent opportunity to see at first hand many of the local problems and to appreciate the excellent job the logging companies and the Bureau of Forestry are doing on the island. Mr. Anderson, General Manager; Mr. Donald Welsyskey, Superintendent, BPC Plant; Mr. Feliberto L. Alcarmen, Forest Engineer; and Mr. T. Ignacio, Logging Foreman of Basilan Lumber Company; Mr. Felipe Sanson, Field Man-

ager; Mr. W. Agbayani, Logging Superintendent of Western Mindanao Lumber Company; Mr. F. G. Manuel, Mill Manager, and F. Santillan, Forest Surveyor of Santa Clara Lumber Company, accompanied the visitors on part, or on all of the trips to the logging operations of the local companies.

On Sunday, October 27, the group left Zamboanga and flew to Buenavista where Regent Florencio Tamesis, previously Director of the Bureau of Forestry and Dean of the College of Forestry, and at present General Manager of the Nasipit Lumber Company and Mr. Vicente Marababol, District Forester of the Bureau of Forestry met the plane. For the three days of the following week, Mr. Tamesis and Mr. Marababol arranged a series of field trips, and the group was extended the hospitality of the Nasipit Company.

Here also, a carefully planned program provided the visitors an opportunity to see the operations of Nasipit Lumber Company, Agusan Timber Company, Valeriano C. Bruno Logging Company, Mahogany Products of the Philippines, and Plywood Industries Inc. Mr. Marababol and his staff; Mr. Dagondon, Logging Superintendent of Agusan Lumber Company; Mr. Merin, Logging Superintendent of Bruno Logging Company, and Mr. Natonton, Logging Superintendent of Nasipit Lumber Company spent a considerable time explaining the operations of their respective companies. On Wednesday, October 30, 1957, Mr. Tamesis conducted the visitors through the plant of the Nasipit Company at Nasipit. On the next day, the trip was ended by flying back to Manila.

The three men from the United States were greatly impressed by their first opportunity to visit the forest operatives and the mills of the Mindanao area. The size and quality of the timber, the amount and quality of logging equipment, the scale of the operations, and the general acceptance of the principles of selective logging combined to demonstrate the scope and progress of the work of the Bureau of Forestry and the Lumber Companies. The men who were privileged to make the trip, felt they had been provided an unusual opportunity to see at first hand many of the forestry problems of the region.

There was an excellent opportunity to meet and visit with past students and graduates of the College of Forestry. A partial list of these is provided below:

Zamboanga City:—

1. Higinio D. Rebosura, District Forester, Bureau of Forestry.

2. Lucilo Torrea, Administrative Officer, Bureau of Forestry.
3. E. Mangantulao, Ranger, Bureau of Forestry.
4. M. Ellazar, Ranger, Bureau of Forestry.
5. J. Camacho, Ranger, Bureau of Forestry.

Basilan City:—

1. Jose R. Claveria, B.F.
2. L. Diaz, Administrative Officer, B.F.
3. F. P. Mauricio, Forester, B.F.
4. D. U. Antonio, Forester, B.F.
5. F. Barrer, Forester, B.F.
6. M. Valera, Ranger, B.F.
7. M. Abundo, O.C. Parks & Wildlife
8. Q. Tan, Ranger, B.F.
9. D. Rojas, Ranger, B.F.
10. B. Paragas, Ranger, B.F.
11. J. Orallo, Ranger, B.F.
12. A. Turqueza, Ranger, B.F.
13. B. Gutierrez, Ranger, B.F.
14. W. Agbayani, Logging Superintendent, Western Mindanao Lumber Company.
15. Forester N. Denoga, Manager U.P. Land Grant.

Agusan:—

1. V. Marababol, District Forester, B.F.
2. F. Abraham, Jr., TMA, Forester, B.F.
3. L. Zapanta, Forest Guard, B.F.
4. A. Sison, Ranger, B.F.
5. F. Tamesis, Gen. Manager, Nasipit Lumber Co.
6. D. Dagondon, Logging Supt., Agusan Lumber Corporation.
7. J. Natonton, Logging Supt., Nasipit Lumber Co.
8. Forester Merin, Logging Supt. Valeriano C. Bruno Logging Operation.

* * *

FORESTRY ALUMNI DIRECTORY

For the past months, the forestry alumni throughout the country and abroad were requested to fill in and send in their personal information sheets in connection with the participation of the College of Forestry Alumni in the "giant" University Alumni Directory.

Up to the present, only about 50% of the expected 924 rangers, 329 B.S.F., graduates and a considerable number of non-graduates have responded. These alumni include those who are already in the field, in the army, in the different bureaus of the department and in foreign countries.

According to Professor Gregorio Zamuco, Secretary of the Forestry Alumni Association, the main problem is the inability or indifference

PENSIONADOS

of the alumni to respond after receiving the necessary forms, while others have filled twice or even thrice the personal data forms. This is the reason for the difficulty encountered by the committee in preparing the list for the directory.

However, the alumni directory must be submitted whether complete or not by 1958 when the University celebrates its Golden Anniversary. It will be included in the university Alumni directory and in the special issue of the *Forestry Leaves* in connection with the Golden Anniversary of the University of the Philippines.

— A. G. Mordeno

* * *

FORESTRY DAY ACTIVITIES

The traditional Forestry Day reels off again in a two-day celebration.

As usual, the whole affair will be opened by the general cleaning of the surroundings by the students in the morning of the first day. Then, local cage followers will be treated to a double header at the Forestry Basketball court pitting the speedy Forestry Midgets against the visiting Ateneo de San Pablo Jr. in the opener. Main protagonists in the second game will be the vaunted Forestry Goldies, runner-up in the last intramurals against the Ateneo de San Pablo Alumni selection.

During the evening, amateur singing and instrumental contest will be held at the Forestry auditorium. Talented Forestry students are expected to show their wares to win the prizes that will be given to the winners.

Beginning at 6:30 a.m. of the second day, there will be an open house of the college building and dormitories. Floral offering at the cenotaph will then precede the convocation to be held at the auditorium with Undersecretary Trinidad as guest speaker. Luncheon will be served at the Mess Hall after the convocation.

In the afternoon games will be played on the campus. At the basketball court, the Forestry Selection takes on the Calamba selection, while the Forestry Swatters will cross bats with the Forestry Products Research Institute softball team. The softball game is expected to be a rubber-match because both teams met last Forestry Day but the game ended in a tie.

The "grand finale" of the whole affair will be a dance at the Forestry Swimming Pool sponsored by the student body. Prizes will be awarded to the winning pairs and participants of the contests during the dance.

— A. G. Mordeno

Mr. Domingo Lantican and Mr. Osiris Valderrama, both members of the College of Forestry staff, left for the United States last September for their Master's degree under the ICA grant. Mr. Lantican is enrolled at the New York State College of Forestry at Syracuse University for his graduate study in Wood Technology, while Mr. Valderrama at the School of Forestry, University of Michigan for his M.A. in Forest Management.

The grant will finance, besides, educational fees, the living expenses for the recipients throughout their stay abroad.

Mr. Lantican before leaving for the United States had been teaching Forest Products and Wood Technology here, while Mr. Valderrama was in charge of Forest Engineering. Both graduated from the U.P. College of Forestry in 1951.

— O. B. Cadeliña

* * *

FORESTRY RECIPIENT OF U.P.S.C. DONATION AND SCHOLARSHIPS

During the last meeting of the U.P. student council last Sept. 8, 1957 at the College of Agriculture campus, the college of Forestry was granted two berths of the six U.P.S.C.—sponsored scholarships and the amount of ₱500 for the rehabilitation and reconstruction of the Forestry Basketball Court as its project in Los Baños.

Through the able representation of Leonardo Angeles, senior council representative and Armando Villaflor, Junior council representative, the college was granted the amount of ₱500 embodied in the resolution presented by our representatives.

Out of the six U.P.S.C.—sponsored scholarships for the second semester of the Academic Year 1957-58, two berths went to the College of Forestry. The lucky recipients are Bienvenido Rola and Alfredo Cañete. They are entitled to ₱160.00 each for the second semester. Out of the different colleges of the University, the College of Forestry had the most number of candidates composed of Edilberto Cajucom, Romeo Salvador, Adolfo Decena, and Alfredo Cañete. The qualification was a grade of "2" or better and the selection was based on the policy of helping the financially-handicapped but deserving students.

— A. G. Mordeno

* * *

FSBO RESOLUTION

Every end of the semester, all students from the College of Forestry are required to go down to the Physical Education Department, Depart-

ment of Military Science and Tactics and the U.P. Los Baños Infirmary for final clearance. The students are obliged to go down regardless of whether they have or do not have any accountability. This greatly inconvenienced the forestry students because in many cases a student fails to get the signature of the personnel concerned of the above-mentioned departments at one time due to various reasons. He has to return not only twice but sometimes thrice to these departments until the personnel concerned could finally attend to him.

In answer to this problem, the Forestry student Body presented a resolution requesting the office of the secretary of the college of Forestry to make an arrangement with the above-mentioned departments, so that students of this college who have no accountability, money or otherwise, need not go down for final clearance anymore. Copies of the resolution were furnished to the Dean and Secretary of the College of Forestry, directors of the P.E. Department and U.P. Los Baños Infirmary, and the commandant of the DMST.

The resolution was approved and immediately took effect beginning with the last clearance period.

— A. G. Mordeno

* * *

THE SOPHOMORE DANCE

by Nick N. Mulato

The Sophies gave the kick-off shindig for the second semester at the Forestry Pavilion on November 9.

The colorful affair which began at seven o'clock and ended past twelve was a success. Some Sophies really brushed out their latest steps in the popular crazes—Rock 'n Roll and Calypso. But somehow, a greater portion clamored for sweet pieces. The final phase of the barn dance was the induction of the Sophomore Class officers performed to them by their adviser, Dr. Artemio V. Manza. The following were inducted into office.—

President, Benito Battung; Vice President, Bienvenido Rola; Treasurer, Bienvenido Barcarse; Secretary, Isidro Esteban; Auditor, Avelino Veracion; Rep. to the SBO, Bernardo Sinues; PRO, Jessie Corotan; Ath. Manager, Apeles Villaluna; Bus. Manager, Antonio Asuncion; Sgt.-at-arms, Ruperto Somera and Robert Choy.

* * *

THE U.P. BETA SIGMA FRATERNITY

The U.P. Beta Sigma Fraternity (Los Baños—Forestry Chapter) capped its screening and initiation proceedings with solemn induction ceremonies at the Agricultural Engineering building last semester. Since then, they have under-

taken a few face-lifting activities in the college. Together with their Aggie brods, they sponsored the Kabayao concert in Los Baños. The show was an immediate sensation as shown by the enthusiasm of both the students and faculty members in the audience.

The more serious side of the Betan activities was the Annual Pinning ceremony for the new members. A formal affair was held at the Baker Memorial Hall on November 29. There were 24 new members from the College of Forestry that were "pinned". They are—Agustin, A.; Asuncion, A.; Barcarse, B.; Caday, E.; Choy, R.; Dizon, E.; Dumo, R.; Cruz, J.; Dumpit, S.; Ellazar, C.; Galapia, P.; Jaramillo, T.; Llacuna, V.; Necesito, A.; Queja, B.; Piano, R.; Sales, E.; Salud, B.; Somera, R.; Tandoc, M.; Tuzcano, T.; Udarbe, M.; Ulita, M.; and Veracion, A.

Their energetic prexy, Vic Veracion has this to say of the new members—"They are such a fine bunch".

— Nick N. Mulato

Unhappiness indicates wrong thinking; just as ill health indicates a bad regimen.

— Paul Bourget

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• DANR Notes •

DANR UN WEEK COMMITTEE FORMED

Secretary of Agriculture Juan de G. Rodriguez recently organized a committee to take charge of the department's participation on October 23 in the observance of the United Nations Week from Oct. 17 to 23.

Secretary Rodriguez is chairman of the food and agriculture organization committee of the department of agriculture and natural resources.

Designated to form the committee are Undersecretary of Agriculture Jose M. Trinidad as vice chairman, and Director Domingo B. Paguirigan of the extension bureau, Eduardo R. Alvarado of the agricultural information division, and Dr. Pedro Sales of the Philippine National FAO committee as members.

For and in the absence of the chairman, Undersecretary Trinidad may call upon any of the bureaus and/or offices under the department to contribute materials or personnel to make the participation a success.

* * *

REPORTS FISH STOCKING IN ZAMBALES AND PANGASINAN

Fisheries Director Heraclio R. Montalban reported to the department of agriculture that a fish stocking team headed by Adolfo M. Aldana, undertook the planting of thousands of various fresh water species in inland water in Zambales and Pangasinan from September 17 to October 19.

Lake Looc in Castillejos, Zambales, was reportedly stocked with 12,000 assorted fish seeds such as catfish, dalag (modfish), fresh water shrimps, climbing perch, and giant gourami. Several streams in Aguilar, Pangasinan, were also stocked with the same species amounting to 14,000 fish seeds.

In Aguilar, fish seedlings were planted in the rivers in the presence of barrio lieutenants and rural folk. The stocking team together with district fishery officer Andres L. Pacis was invited to attend a special session of the municipal council of Aguilar, where all the barrio lieutenants of the municipality were also present.

Fishery laws and regulations on fisheries conservation were explained. The municipal council and all present were also informed of effective methods of fish stocking in order to increase the productivity of rivers and streams.

Mayor Domingo Madrid of Aguilar enjoined the people to adopt the fishery measures recommended by the fishery officers.

* * *

THE TREND IN SAWNWOOD: PRESENT AND FUTURE

Rome, 29 October—Of the 66 million cubic meters of sawnwood consumed in building in Europe (excluding USSR) in 1955, 17 million cubic meters, or 25 percent, went into new housing. This entered into the three principal sectors—structural elements, joinery elements and auxiliary timber—in the approximate proportions 50, 30 and 20 percent. While consumption per dwelling unit fell from 9.1 to 7.6 cubic meters between 1950 and 1955, total consumption of sawnwood in new housing rose from 12.2 to 16.7 million cubic meters as result of the considerable expansion in the European housing program.

This is the principal conclusion of a study entitled "Trends in Utilization of Wood and its Products in Housing"*, published by the joint Secretariat of the Food and Agriculture Organization (FAO) and the Economic Commission for Europe (ECE), at the request of the Timber Committee of the ECE.

This study has a limited aim—to assemble and review such evidence as is available on recent trends in the utilization of wood and its products in one particular sector, new residential construction, thereby throwing light on the trend in consumption of sawnwood in Europe.

* * *

DANR JOURNAL OF ANIMAL INDUSTRY OUT

Interesting, educational and informative articles on chickens and animals by well-known authorities on the matter have been incorporated in the new "Philippine Journal of Animal Industry" published by the department of agriculture and natural resources.

Leading article is on problems of veterinary education in the Philippines authored by Dr.

* Prepared jointly by the Secretariat of the FAO and ECE; Geneva, 1957. 49 pages including 58 tables. Available in English and will shortly be available in French and Russian. May be obtained from the Sales Section, European Office of the United Nations, Geneva, or may be ordered through Sales Agents for UN Publications. Price \$0.50 or 3/6 sh., or the equivalent in local currencies.
FAO/57/10/7228

Jose B. Uichanco of the UP college of veterinary medicine.

This is followed by an important paper on how to prepare and preserve different meat recipes through the use of wide-mouth packers jars by Drs. Nicolas S. Sevilla and Eliseo S. Contreras, both of the animal products division, bureau of animal industry.

Other treatises of value to poultry, swine, horse and cattle raisers include: 1) Viability of swine kidney worm larvae in different types of untreated and salt-treated soil, 2) Studies on lapinized hog cholera vaccine, 3) Portable breeding, growing and laying pen, 4) Sahiwal cattle under Alabang conditions.

5) A preliminary report on up-grading the native chicken, 6) the capacity of Berkjala hogs for concentrate and soilage, 7) Closed and open-type colony houses for chickens, 3) Blood sugar level and effect of glucose injections on rats infested with trypanosoma evansi, and 9) Comparative palatability of soilages for horses.

Among the contributors to this "Journal of Animal Industry", Vol. 16, Nos. 3-4 are: Zaccarias de Jesus, Basilio A. Bautista and Valente Villegas of the UP college of agriculture; and A. B. Coronel, F. A. Jimenez, Director Laureano S. Marquez, Pablo B. Agcanas, Benito S. de Leon, Tomas V. Rigor, Pacifico N. Ramon, A. M. Castillo and Z. B. Joaquin, all of the bureau of animal industry.

Every copy of the journal sells at only ₱1.50 in the Philippines and at \$1.00 in the United States and foreign countries. Yearly subscription costs but ₱6.00, locally, and \$4.00, abroad.

Communications along this line should be sent to Eduardo R. Alvarado, chief, agricultural information division, department of agriculture and natural resources, Manila.

DANR HANDBOOK OF AGRICULTURE IN GREAT DEMAND

Requests for free copies of the pocket Handbook of Agriculture published by the agricultural economics division of the department of agriculture and natural resources has been flooding the office for the past few weeks, it was learned from Dimas A. Maulit, chief of the agricultural economics division.

Although the handbook is primarily intended for government field workers in agriculture, requests from government officials and employees, private individuals and business organizations and other parties in all parts of the country keep on coming, Maulit said.

At present there are but a few copies left of the handbook reserved for government field officers. Should there be extra copies left after the distribution, copies will be sold at cost to interested parties, he further said.

Meanwhile, reprinting of the handbook will be requested as soon as funds become available, to meet the great demand for this publication, and fully satisfy the needs of the fieldmen of the department of agriculture and natural resources.

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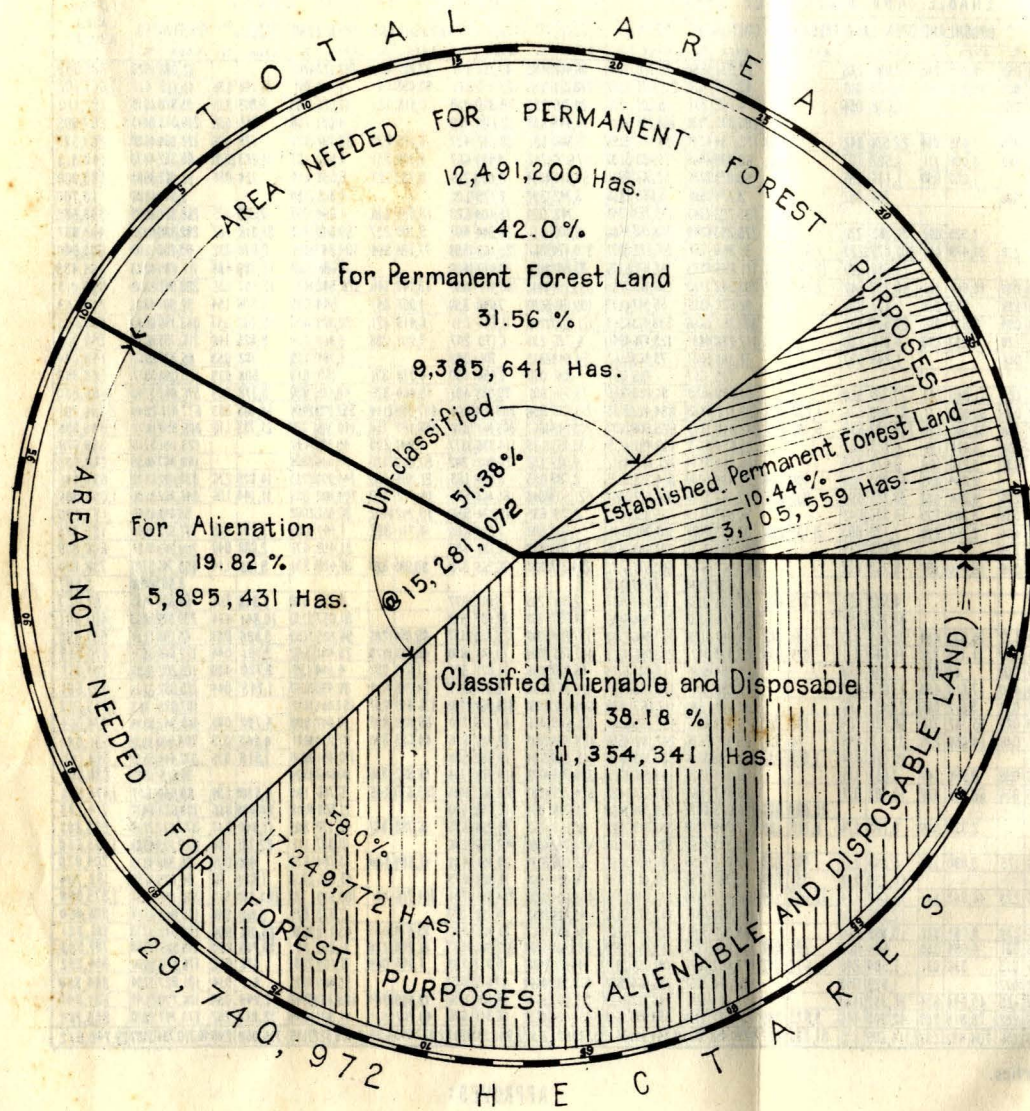
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BUREAU OF FORESTRY

STATUS OF LAND CLASSIFICATION IN RELATION TO
ITS GOAL
AS OF JUNE 30, 1957



@ This includes areas classified but not certified.

Joselyne R. Amor
DIRECTOR 1957
Md-219-A

Prepared by: Socorro L. Avilla August 23, 1957



Portion of a Residual Forest Stand at Nasipi
(Courtesy of Nasipit Lun)

• Excerpts & Abstracts •

NATURAL REGENERATION OF TROPICAL MONSOON FOREST: THE PHILIPPINE DIPTEROCARP FOREST*

By MARTIN R. REYES
Senior Forester, B.F.

ABSTRACT

The dipterocarp forest of the Philippines, a monsoon forest, occurs throughout the Islands, from the plains to an altitude of about 800 meters, covers 8,968,000 hectares — 30% of the total land area and 57% of the forests of the country, and is the basis of a major industry. Its composition, density, form and distribution vary by regions and climatic types. It has a generally unevenaged form varying from balanced to unbalanced distribution throughout a wide range of diameter classes. Dipterocarp species need partial shade during germination to pole stage, gradually becoming light-loving towards maturity and intolerant upon reaching the dominant position. Such form, size distribution and growing habit lends itself to a selection system of silviculture.

Observations on natural regeneration show that: (1) In the virgin dipterocarp forest there are abundant reproduction and generally a good number of young trees, (2) plenty of reproduction are left after logging, (3) there is more reproduction in the logged-over area where same big trees were left after logging, (4) reproduction is much favored where the ground has been disturbed but with partial shade accorded by bigger sized trees, (5) if left undisturbed, the logged-over area will again be dominated by the climax vegetation (dipterocarps) through stages of plant succession, the length of time depending on the degree that the forest environment has been changed by logging, (6) reproduction and severely injured young trees die due to intense insolation by sudden opening of the canopy brought about by cutting most of the big trees and damaging most of the trees not felled, and (7) where logging has not abruptly changed the forest environment and where partial opening were made by partial cutting as in selective logging, development of reproduction and young trees is fostered.

Selective logging for harvesting the mature timber harmonizes with and promotes successful natural regeneration of the dipterocarp forest.

* The paper was submitted to the Ninth Pacific Science Congress to be held in Bangkok, Thailand on Nov. 18-Dec. 9, 1957.

Such method of harvesting has been adopted as the program of the Government in dipterocarp forest. The minimum residual stand required of timber licenses under this program is 60% of the Philippine mahogany species, other softer dipterocarps, *Dipterocarpus* and *Anisoptera* species. The method of controlling cutting is tree marking. Felling and yarding techniques are being applied to minimize damage and destruction to the future crop trees. Disciplinary measures consisting of a fine on trees designated as residual growing stock which are destroyed or severely injured, confiscation of bond deposits, suspension of operation or cancellation of license are intended to insure success of natural regeneration and protection of the residual stands. About 7,700 hectares of logged-over areas have good residual stands as a result of selective logging measures undertaken to promote natural regeneration.

Available growth data, though inadequate, indicates the possibility of continuity of operation of forest industries through the selection system of silviculture.

* * *

HAGAKHAK (DIPTEROCARPUS WARBURGII) AND PALOSAPIS (ANISOPTERA THURIFERA) STANDS IN THE PLANTATION

By:

Eulogio T. Tagudar
BUREAU OF FORESTRY
ABSTRACT

The study on the life history of any species is indispensable if it is to be put under sustained yield management. In fact no sound management can be effected without a fair knowledge of the silvicultural characteristics of the species. The present paper which deals with the behavior of hagakhak (*Dipterocarpus warburgii*) and palosapis (*Anisoptera thurifera*) in the Makiling National Park Dipterocarpus plantation covers chiefly the growth of the species. The study was conducted from July, 1950 to February, 1951, covering a period of eight months.

Growth measurements of the diameter, total heights, clear length and crown width were taken. Diameter measurements were taken at breast high (1.3 meters from the base of the tree) with the use of a caliper. Total heights and clear lengths were measured with the use of an Abney hand level calibrated in per cent.

Crown width was measured to the nearest tenth of a meter with the use of standard chain.

The results found in the study are the following:

1. Young hagakhak trees in plantation showed a comparatively fast rate of growth, consequently, five years difference in age will mean a significant difference in the sizes of trees.

2. The total heights of hagakhak trees 17 years old, and larger than 5 centimeters in diameter, were greater than those of the 16-year-old palosapis trees; in the smaller trees, the heights of the seventeen-year-old hagakhak trees were significantly larger than the 16-year-old palosapis trees in the Bureau of Forestry Plantation, Makiling National Park. Based on mean annual growth, the former species has a faster rate of growth than the latter species.

3. The 17-year-old hagakhak trees do not have longer clear length development than the 16-year-old palosapis trees.

4. The development of clear length tends to increase in rate with the increase in diameter of 17-year-old hagakhak trees and 16-year-old palosapis trees.

5. For every meter increase in crown spread, there is a corresponding increase of 0.22 meter in length in the younger hagakhak trees, 1.44 meters in the older hagakhak trees, and 0.75 meter in the palosapis trees.

* * *

PREPARATION OF LOCAL VOLUME TABLE FOR MOLAVE (VITEX PARVIFLORA, JUSS.)

By
Felipe B. Abraham, Jr.

A B S T R A C T

A volume table is a very valuable tool for general inventory and management purposes. It facilitates the determination of volume of trees in the forest or in the plantation for the calculation of growth and construction of yield tables.

But the preparation of a volume table requires lengthy and tedious calculation so that its method of preparation should also be considered.

This paper proposes a new method, the simplicity, practicability and comparative accuracy of which are essential needs in the Philippines or in other regions where there is a shortage of trained mensurationists.

The construction of this volume table was based on diameter breast high, merchantable length and form factor of 319 trees measured in the molave plantation, Ha. 13-A and 14-B of the Makiling National Park, College, Laguna.

In this study, it was found that the form factor or taper of the molave trees in that particular area decreases as its stem increases in length, that the average form factors under each height class show lesser variation than within each diameter class; and that the form factors within each diameter class regardless of the height show greater variation than the form factors under each height class regardless of diameter.

The usefulness of this volume table or any volume table is greatly governed by its efficiency. This table has an error of —.153 cu. meters or .329% which is very negligible. Therefore, the use of this volume table could be strongly recommended in determining the volume of Molave Trees in the Makiling National Park, Los Baños, Laguna.—V.P.V.

* * *

IDENTIFICATION OF FOREST TREES BASED ON PURELY MORPHOLOGICAL AND ECOLOGICAL CHARACTERS

Francisco N. Tamolang

F. P. R. I.

College, Laguna

A B S T R A C T

Timber and its derived products are indispensable necessities in everyday life so that often times their identity is required to satisfy the specifications and purposes of the customer, the forest industry and its allies. To be able to meet this requirement, the correct identification of forest trees which produce them is obviously necessary. This calls for a practical, convenient and satisfactory method such as the use of prepared keys which should be as non-technical as possible, and based on characteristic features which are easily observed. Unfortunately, the present system based on sexual reproductive structures seems impractical because the presence of these organs depends on the season as well as the age of the plants. On the other hand, morphological and ecological characters are usually present throughout the life of the trees so that as taxonomic organs, identification becomes practical yet scientific in making much more distinct the species cleavage.

In the identification of the common forest trees in the Philippines, the following morphological and ecological character should be learned: (1) of growth; (2) habitat; (3) nature of the bark; and (4) gross features of the leaves.

Two keys are presented to be used for forest tree identification. The first key is based principally on the gross characters of the leaves and is intended for use when the leaves are accessible as in the case of small trees that can be

(Continued on page 72)

• Sunshine Corner •

PA: "Its a terrible thing. I sold my car and mortgaged my house and land, all to send my son to the University. And all he does there is smoke, drink, and take girls out to parties."

PAL: "Oh, so you're regretting it?"

PA: "Certainly. I should have gone myself."

* * *

"My husband has been drinking steadily for two months—ever since I left him."

"Yes, so I heard. Don't you think he's carrying the celebration too far?"

* * *

It was after the examination in a university and the professor was waxing sarcastic over the results.

"Will those who know nothing whatsoever about this subject kindly stand?" he inquired.

After a long pause, a young man at the side of the room rose lazily to his feet.

"So," said the professor grimly, "you know nothing, eh?"

"It's not quite as bad as that sir," said the truthful one, "but I just hated to see you standing there alone."

* * *

Joe sat beside his dying partner, keeping the deathbed watch. Suddenly the dying man began to speak.

"Joe," he wheezed, "I have a confession to make to you. I robbed the firm of \$10,000. And that's not all, Joe. I sold a secret formula to our competitors, and I stole the letter from your desk that got your wife her divorce, and Joe . . ."

"That's okay, old man," Joe murmured. "I'm the one who poisoned you!"

* * *

Customer: "Have you a book entitled 'Man, the Master of the Home'?"

Sales girl: "The fiction department is on the other side, sir."

* * *

The busy executive asked his secretary where his pencil was.

"Its behind your ear," she replied.

"Come, come," snapped the big shot, "Im a busy man. Which ear?"

* * *

MAN: "My wife has the worst memory I ever heard of."

FRIEND: "Forgets everything, eh?"

MAN: "No, remembers everything."

The circus strong man had never lost a contest with the local yokels. One day he heard about a farmer who was supposed to be incredibly strong. The circus man got on his horse and rode to the farm to challenge the local Hercules.

He rode into the farmyard, tied up his horse, and walked over to the farmer.

"Hey," he cried, "I've heard a lot about you, and I thought I'd see who is the better man."

Without a word, the farmer seized the intruder and hurled him bodily over the fence into the road and returned to his work.

When the loser had recovered his breath and dusted himself off, the farmer growled:

"Got anything else on your mind?"

"No," the circus man said meekly. "But, perhaps you'd be good enough to throw me my horse."

* * *

Making preparation for filming *The Good Earth*, the late Irving Thalberg suggested to Arnold Schoenberg that he compose the score, but Mr. Schoenberg couldn't warm up to the idea.

"Look!" persuaded Thalberg, "this picture will be an epic. Take this one scene alone—a great storm across the good brown earth, the field of wheat beaten to the ground, then an earthquake! In the middle of all this O-Lan bears her first child! What music you could write for that."

Schoenberg shrugged. "With all that going on," he murmured, "what do you want with music?"

* * *

Down on the Kanawha River, in the by-gone days when stern-wheeler steamboats were familiar sights, navigation became a problem in the dry season. During one low-water stage, a steamer was attempting to scrape its way over a treacherous sandbar. Her engines were straining, her paddle wheels churning madly, and every member of the crew held his breath as the vessel crept inch by inch over the bar.

Just then, a river bank resident chose to leave his cabin and come down to the stream's edge for a pail of water. As he turned away, his bucket brimming, he caught the captain's eye.

"Hey," roared the fuming skipper, "dern you. You put that water back."

EXCERPTS . . .

(Continued from page 70)

easily climbed. The second key is based principally on the nature of the bark and is an alternative to the former when the leaves are inaccessible as in the case of matured and over-matured trees. To the bushman and the forester, who have to depend cruising, scaling and logging work, have to depend mostly on the bark features, the latter key may prove to be more useful.

Identification may be also achieved by the use of the conspectus of these species. A conspectus of a number of our forest trees is also presented in this paper.

Inasmuch as morphological and ecological character may prove to be essentially valuable in tree identification, it is hoped that further study along this line be carried on to obtain a more comprehensive information about our for-

est trees for the preparation of a card—sorting perforated key which may be handier and easier to use in the field, and perhaps more suitable for the use of the forester and the laymen.

* * *

UPWARD TRENDS IN FOREST PRODUCTS OUTPUT

Rome, 13 November—Although little change was recorded in the total timber harvest from the world's forests, the output of wood for industrial purposes in 1956 increased by about 20 million cubic meters (two percent) over that of 1953, the Food and Agriculture Organization (FAO) reported today.

The FAO Yearbook of Forest Products Statistics
(Continued on page 76)

* Yearbook of Forest Products Statistics, 1957 (Rome, November, 1957) US \$2.50 or 12/6-FAO/-57/11/7792.

Subscribed and sworn to before me this 29th
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Department of Public Works and Communications
BUREAU OF POSTS
Manila
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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 September, 1957; Volume X, No. 1.

Sent to paid subscribers	520
2. Sent to others than paid subscribers	480
Total	1,000

MODESTO T. TOBIAS
Business Manager

Subscribed and sworn to before me this 23rd day of September, 1957, at Los Baños, Laguna the affiant exhibiting his Residence Certificate No. A-4187406 issued at Los Baños, Laguna, April 1, 1957.

GENARO CATALAN
Mayor, Los Baños, Laguna

NOTE: This form is exempt from the payment of documentary stamp tax.



November 5, 1957

The Editor
Forestry Leaves
U.P. College of Agriculture
Los Baños, Laguna

Dear Sir:

Your publication is one of the most important magazines selected for inclusion in our *Index to Philippine Periodicals*. This *Index* is being distributed to libraries in the Philippines and abroad and also to researchers and scientists needing it.

Issues of the *Index* are being sent to you as soon as they are out. However, our record shows we are not receiving your publication. May we request you to include us in your free mailing list if possible?

To insure prompt and correct delivery of your publication, please address it as follows:

Inter-Departmental Reference Service
Institute of Public Administration, U.P.
P.O. Box 474, Manila

Very truly yours,
MAXIMA M. FERRER
In-charge, IDRS

* * *

1 October 1957

His Excellency Carlos P. Garcia
President of the Philippines
Malacanang Palace
Manila

Dear Mr. President:

This is to express to you the individual and collective feelings of gratitude of the members of the Mindanao Federation of Labor for your quick action regarding the release of portions of the national forest reserve in Basilan City to the companies operating lumber concessions in this region.

With your intervention 10,000 workers and their families have been directly served and their means of livelihood assured. Have you dilly-dallied, these workers and their families would have been thrown out of work and experienced extreme privations.

We interpret your action as evidence of your sensitivity to the needs of the poor man and your willingness to alleviate his sad plight.

Moreover, we wish to call to your kind attention the good work done by Secretary Juan Rodri-

guez and his legal assistant Atty. Salvador Cunanan in expediting the papers of release following your directive.

We wish you greater success in your avowed purpose to serve the masses and we pray for your good health.

Very respectfully yours,
MINDANAO FEDERATION
OF LABOR (MFL)

By:
CIPRIANO C. MALONZO
President

cc:

Secretary Juan Rodriguez
Department of Agriculture & Natural
Resources
Manila
Atty. Salvador Cunanan
Department of Agriculture & Natural
Resources
Manila

* * *

MAKILING REFORESTATION PROJECT
College, Laguna

Forest Planting (Gen. Recapitulation of
Inventory) September 16, 1957

The Director of Forestry

Manila

Sir:

With reference to our letter of "August 27, 1957" designated "Forest, Plantation (Inventory of Plantation)":

I have the honor to submit herewith the general recapitulation of the inventory of the forest plantations (alphabetically arranged) in the (4) blocks (Pili, Puting-Lupa, Maitim and Sulokin Blocks) of the Makiling Reforestation Project for your information and record.

Very truly yours,
CARLOS CUNANAN
Forester-in-Charge

Makiling Reforestation Project
(See Table on page 74)

A real home is a shelter from the storms of life, a place to enjoy, a place in which to relax, a place of peace and rest. A true home is the center of all human hopes and ideals. It does not have to be a mansion.

— Dr. Clifford R. Anderson

**GENERAL RECAPITULATION OF INVENTORY
OF TREES (ALPHABETICALLY ARRANGED) IN THE FOUR (4)
BLOCKS OF THE MAKILING REFORESTATION PROJECT,
COLLEGE, LAGUNA AS OF AUGUST 27, 1957 ***

SPECIES	PILI BLOCK				TOTAL	Puting Lupa	Maitim Block	Sulokin Block	GRAND TOTAL
	A	B	C	D					
Acassia	9	68	7		84				84
Almon			36		36				36
Akleng parang			5		5				5
Amugis	24	213	84	124	445	1,746	248		2,439
Anuling	3	69	12		84				84
Apitong			91	592	683				683
African tulip						25			25
Agoho						81			81
Akle						2			2
Bagtikan		19	568	3217	3,834	102			3,936
Baguilumbang	369	3		12	384	2			386
Bakauan-gubat			2		2				2
Balakat-gubat			16		16				16
Banaba		245	1		256	347	70		673
Banuyo				36	86	130			166
Betis	2			12	14	170			184
Bitao	66		19	10	95				95
Brazilian Fire Tree	2	1			3	7			10
Caballero						1			1
Casia spectabilie	121				121	179			300
Cedrela	147	8	6		161	2,519	1,139	6,055	9,874
Cutch tree	2				2				2
Dalingdingan			34	14	48				48
Dita	3	20	11		34	31			65
Duñgon		3			3	252			255
Garcinia sp.			22		22				22
Gubas		285	350		635	236	17		888
Guija		15	40	1,152	1,207				1,207
Hagakhak			157		157				157
Ipil	1,571	5,764	203	105	7,643	1,142	12		8,797
Jatoba						12			12
Kalumpit	11	10	2		23				23
Lamog		14	9		23	4			27
Lamio						96			96
Lanutap	135	54			189	1,307			1,496
Lumbang	131	54	210	6	401	1,665			2,066
Lañgil	117	83			200				200
Mahogany	3,751	4,340	2,038	126	10,255	10,359	11,020	2,299	33,933
Malapapaya	13	111	75	72	271	8			279
Malaruhat						1,360			1,360
Mayapis				11	11	216			227
Molave	62	45	1,075	25	1,207				1,207
Madre Cacao	94				94				94
Narra	8,367	2,048	151	22	10,588	18,795	11,159	2,025	42,567
Olayan						95			95
Pahunan			104		104				104
Palosapis			152		152				152
Palomaria						93			93
Palosanto	57				57	37			94
Panso			173	7	180				180
Pañgi	5	11			16	253			269
Panglomboien	117	86	296		499				1,092
Paper Mulberry	365		727		1,092				1,092
Para rubber		165			165				165
Supa		1	1		2				2
Teak		157	169		326	58	5		389
Tindalo		5			5	213			218
Tusi						4			4
White Lauan		238	1,860	839	2,937	57		46	3,040
Yakel			224		224				224
TOTAL	15,544	14,135	8,940	6,412	45,031	41,604	23,670	10,425	120,730

(* Table accompanying Forester Cunanan's letter on page 73.)

Something About Our Authors

TIMOTEO QUIMPO—

District Forester, Bureau of Forestry

No other district forester has written more and spoken more for the cause of forest conservation than Forester Quimpo. Being an eloquent speaker and a prolific writer, he succeeded in driving home the urgent need of conserving our remaining forest resources.



* * *

FRANCISCO N. TAMOLANG—

Chief, Wood Technology Division, FPRI

One of the youngest chiefs in the FPRI, he has perhaps written more popular articles and

conducted more researches than any of his colleagues. He is at present the President of the Los Baños Biological Club. Aside from his teaching in the College of Forestry, he still finds time to direct and supervise the investigation studies of the students assigned to him, often staying at the laboratory after office hours. His studies and training at the

forest school at Canberra, Australia have proved very valuable in the research work he is at present conducting.



* * *

MANUEL R. MONSALUD—

Chief Chemist, FPRI

When one has to consider that the Philippines is spending millions of pesos annually for paper, an article from Mr. Monsalud on the prospects of our infant pulp and paper industry materials is indeed heart-warming. That is one reason why studies on potential pulpwood materials from our forests are being undertaken in the FPRI.

Mr. Monsalud who spent a year's training in the Forest Products Laboratory at Madison under the ICA-Philcusa program specialized in pulp and paper production.



AGAPITO CENABRE—

Consulting Forester

Professor Valentin Sajor, in his great desire to have the Forestry Student Body meet and hear a product of the old school, invited Forester Cenabre (now Consulting Forester) to talk on the subject, "The Consulting Forester, his Qualifications and his Problems". No happier choice could have been made. First because Forester Cenabre is heart and soul a FORESTER. Secondly because as a forester he devoted forty-six years of his life in continuous service in the Bureau of Forestry.



By nature, a very modest man, he was asked to give a brief description of his life as a student and as a forester so as to better impress upon the minds of the students the necessity a good foundation and background for the private practice of the forestry profession as a *consulting forester*.

* * *

FAUSTINO C. FRANCIA—

Acting Entomologist, FPRI

Upon his graduation from the College of Forestry, he took up a job with the Botany Dept. of the College of Agriculture. He later joined the FPL and was then sent to Syracuse University where he took his Master of Science in entomology. He was a former staff member of the *Forestry Leaves* and frequent contributor after his graduation.



* * *

NORA S. ALDA—

Librarian, FPRI

Aside from her work in the FPRI library, Miss Alda helps the press relation officer of the institute in writing articles and press releases. In her student days, she was a member of the *Collegian* and *Philippensian* staff.



EULOGIO TAGUDAR—

Bureau of Forestry

Forester Tagudar (Class '51) is an ICA grantee. He left for the United States on September 2, 1957 where he will visit the United States Department of Agriculture and Forest Service, Washington International Center and the School of Forestry of Yale University. He will also observe logging operations in leading American firms.

He was in charge of the implementation of selective logging and timber management in Agusan and is the author of the "Selective Logging Techniques and Guides Practiced in the Nasipit Lumber Company."



ROSALES A. JUNI—

*Chief, Silvics and Silviculture Section,
Research Division, B. F.*

Forester Juni's article on the need of forest genetics offers a very valuable food for thought. It is high time we were thinking of applying the science of genetics in our forest nurseries and plantations.

As an FOA grantee Forester Juni undertook studies on the administration of forest experiment stations and watershed management in the Southern and Pacific States and Puerto Rico. He is in charge of the 5th Forest Experiment Station for Mindanao and Sulu.

(Continued on page 81)



EXCERPT & ABSTRACTS . . .

(Continued from page 72)

tistics* says that removals of fuelwood, however, were estimated to have decreased by about three percent, and notes that this is an indication of the world-wide change from wood fuel to other sources of energy.

The estimated market value of all the main primary forest products reached \$27,700 millions, surpassing by \$600 million the value of these products in 1955.

The yearbook, containing production and trade data from 135 countries and territories, is the most comprehensive report yet published in this FAO series. Figures have been compiled for several countries not previously covered, and new data have been made available by forestry and statistical authorities, particularly for countries of the Far East. Although comprehensive statistics were still unavailable for China, a few figures are included as a country note.

The total world sawnwood output in 1956 was slightly more than 295 million cubic metres, of which coniferous species accounted for about 80 percent. The United States was the leading producer with 88.5 million cubic metres; the Soviet Union followed with 76 million and Canada reported 19 million cubic metres.

About 58 percent (6.58 million cubic metres) of the total world plywood production of 11.30 million cu.m. came from North America. The greatest percentage growth, 22 percent, was reported in Asia. Plywood output in Japan increased from 683,000 cu.m. in 1955 to 852,000 cu.m. in 1956.

Industrial growth continues throughout the

world in the direction of wood fibre products, the yearbook says. Wood utilized for paper, paperboard and fibreboard in 1956 was about three percent greater than in 1955, whereas wood used for sawnwood and plywood decreased by about one percent.

Wood-pulp production in 1956 increased by six percent over the previous year, reaching nearly a record 49 million tons. The North American share in this output was about 60 percent. Production of pulp products—newsprint, paper other than newsprint, paperboard and fibreboard—totalled nearly 63 million tons. North America and Europe (excluding the USSR) produced more than 86 percent of this volume. Of the pulp products, newsprint showed the greatest growth in output, from 11.18 to 12.04 million tons (about eight percent), followed by fibreboard, which increased by six percent from 3.15 to 3.34 million tons.

Some production and trade figures for particle board appear for the first time in the yearbook. World output was estimated at 705,000 tons, of which nearly 70 percent was produced in Europe. The largest volume, 162,000 tons, was reported from the Federal Republic of Germany, and the United States was second with 125,000 tons.

World trade declined in both sawnwood and plywood. According to the figures reported to FAO, world exports of sawnwood were nearly 10 percent lower in 1956 than in 1955, and plywood exports were down about four percent. Wood-pulp exports increased by nearly three percent, newsprint by more than five percent, and paper other than newsprint six percent. Paperboard exports declined by five percent.

WOODMAN! SPARE THAT TREE

This cartoon which appeared in the Manila Times several months ago was intended to convey to the laymen that unless the logging of our timber reserves is regulated, we must watch out for the consequences. Accordingly, there are 15,875,700 hectares of forest areas in the Philippines containing 1,082,000,000 cubic meters of standing timber valued at P27,860,610,000.00. However, only about 3.5 million hectares are fairly heavily timbered for profitable large scale logging.

The Bureau of Forestry is presently enforcing sustained yield management thru selective logging to forestry licenses principally in the dipterocarp forests.

It is high time that the people who have invested their money for the exploitation of these forests exercise care in logging so that sufficient young trees are left undamaged, otherwise, wood supply, the very basis of their business, will be exhausted. And it is not only they who will suffer but also the people who own this common patrimony. — MRR



The Staff of the FORESTRY LEAVES

*Organ of the Student Body and Alumni of the College of Forestry
College, Laguna*

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IT'S NOW UP TO THE BUREAU OF FORESTRY

The Congress and the Chief Executive have given the long-sought fund needed to implement selective logging more effectively by approving a P10.3 million Bond and Loan Issue Fund for reforestation of which P3 million is for natural, and P7.3 million is for artificial reforestation.

With the P3 million bond fund for expenditures in 3 years, forest management work will be accelerated. The objective to be accomplished is: intensification of scientific management of commercial forest areas, particularly those under operating concessions in order to assure faster replenishment of the timber supplies and to promote natural regeneration of cut-over lands through the institution of acceptable logging practices, which otherwise, will have to be planted at tremendous expense; improvement of stocking of old logged-over areas and the protection thereof, all with the aim of keeping these lands in productive condition as sources of timber and other forest products for future generations. The goal for 3 years is 132,000 hectares and for this fiscal year, 29,000 hectares. To carry out this objective, 45 timber management stations are now being organized whose main functions will be tree marking and application of logging techniques to save young trees from injuries and destruction; residual inventories; planting unavoidably cleared landings and cableways with forest seedlings; and improvement of stocking of understocked, previously logged-over areas in permanent forests by transplanting forest seedlings, killing of defective trees, etc. The residual stands and forest planned for operations under license will be more adequately protected.

Now that the most pressing need of the Bureau of Forestry has been met, it is greatly hoped that it will accomplish its goal. Forest management is its main work which heretofore had not been adequately financed thus the little work accomplished along this line. Timber production is its responsibility. It can now do much to the proper discharge of that responsibility with the funds available. — MRR

FORESTRY DAY THOUGHTS

Forestry Day comes again to mark another milestone in the history of our college. As a milestone, it should serve to make us pause and reflect over the significance of forestry and the role the graduates of our College play in the economic life of our country. Ours has been and always will be a task of gigantic proportions, a continuous and thankless task: to keep a vigilant eye on an important source of our national wealth; to make it produce richly and in abundance; to see to it that it is wisely exploited; and at the same time to preserve it as a permanent asset for future generations.

The forest is and has always been essential to the economic stability and social development of a country. Its preservation and development means national prosperity and welfare. It also serves to protect a great deal of the wildlife of the nation for our national parks. In this present age when efforts are exerted in finding ways and means to lengthen man's life span, wildlife provides necessary health and recreational opportunities and national parks stimulate our sense of beauty and help enrich our lives. It furnishes avenues for a better utilization of our leisure.

Forestry Day also serves to point to us that the Government has been sadly negligent in providing adequate funds for giving the Bureau's operating expenses. Its appropriation is out of proportion to its importance as a money producing instrumentality

(Continued on page 81)

Incidentally . . .

Forestry Day (the 16th) is here again. This tradition so auspiciously started by Class '37 has somewhat lost the spirit that impelled the Class to found it. In the old days, every member of the Student Body was there to pitch in, the Student Officers, led by the President, at the forefront. Recent forestry days showed the officers sitting back with folded arms, while the members did the dirty work. There were students who were also observed running away when their help was badly needed. The poor Adviser had to constitute himself into a Committee of One (Utility Committee) and had to plug for the "Slackers", to be sure that the affair would not flop. Advisers have found out too that it always paid to bear in mind the old saying that "If you want a thing well done, do it yourself." But the forestry day is a forestry student body affair, and they will be recreant to their duties as members of the FSBO if they insist in following the line of least resistance, by folding their arms, and sitting pretty, and when asked to help, say with nonchalance, "Let George do it!" Of course, it is easy to get a caterer to prepare the luncheon, but when Class '37 decided to butcher the pigs, dress the chickens, barbecue and cook, as well as serve the meals they themselves prepared, it was not for economy's sake, but it was to give a chance to every Forestry student to cooperate wholeheartedly and readily with their officers and the faculty in the big traditional affair. Every cog doing its bit so the machine would work without a hitch. It is a good test of the student's sense of loyalty to the Alma Mater, his attitude towards his duties to the FSBO, his initiative, diligence and above all his "college spirit". A slacker in college will always be a slacker in the Bureau or anywhere.

GONE ARE THE CAPS . . .

We happen to be the only college observing (or trying to observe) the wearing of the



The New College of Forestry Building

green cap by the freshmen. Every year at the opening of classes, the idea of wearing the cap as demanded by tradition is hammered into their grey matter. Docilely, they try to observe the tradition. The Vigilance Committee is formed to see to it that they follow the tradition to the letter. A new broom sweeps clean, often you have heard that told. But as days flow into weeks, and these into months, the glamor of seeing the plebes' bonnets wear off. What happens, well, nobody seems to care. . . and before the end of the first semester, green caps become as rare as hen's teeth. If we cannot honest-to-goodness observe traditions religiously, we might as well junk it into the ash heap.

* * *

May we also ask what happened to the Flag Ceremony on every first Monday of the month? Are we too busy that we have not time enough to salute the flag once a month, and to remember what it stands for, as it waves gloriously in the breeze, high above us?

* * *

We consider ourselves very fortunate and should congratulate ourselves for having with us two American professors, Drs. Farnsworth

and Pentoney. They are here to help strengthen the faculty and observe local forestry conditions.

* * *

A chance meeting with Alumnus Esguerra Class '27 brought us good luck. Upon learning that the self-winding grandmother clock (Heacock) which he donated before World War II to the College had been looted, he made a pledge that he would replace it. The college alumni are known for their great love for their Alma Mater, and Engineer (Forester) Esguerra is one of them. Congratulations and thanks in advance.



Egr. P. Esguerra

* * *

Soon the older members of the faculty will be retiring. We need replenishment. We need young blood. So far we have only three

young men in the faculty: a good many have either passed the forty-year line or are now approaching the mid-century mark. We have to attract our promising young graduates... we have tried to... but then there is the keen competition. The Bureau is in need of their services... and we should not be surprised to see them prefer the Bureau... there's the per diem (some of them refer to this as PER DAYA)... others go to the Forest Products Research Institute... the present scale of salaries at the UP... and the thought that promotion has always been slow... as experienced by the older members of the faculty has somewhat "scare crowd" them... it is no wonder that many have been called... but only ONE has answered. The trouble with most young men... they are generally attracted by high sounding and alluring Wapco B.F. allocations... They have failed to consider the fact that generally the seemingly high and alluring Wapco allocation is not what they will actually get... it is a goal towards which they will have to be working... but for how long? Maybe longer than at the U.P.

LAST CALL!

Alumni..... This is station FCUP..... the Golden Book Jubilee Alumni Directory awaits your p.d... if you have not as yet submitted your personal data, please send them NOW. If you have not as yet received your personal information sheet, please contact your nearest forester, and after filling it, send it immediately to Prof. Gregorio Zamuco, Secretary, College of Forestry. *Please act right away.*

Compliments

of

**Mindanao
Sawmill Co.**

Agdao, Davao City

Compliments of

**PERSONNEL FOREST
DISTRICT NO. 26**

San Jose, Antique

FORESTRY DAY . . . (Continued from page 78)

for besides receiving indirect taxes on forest dependent industries, our forests bring to the public coffers an annual income of six million pesos.

Our forest officers are among the most neglected public servants. The public has failed to appreciate fully the value of their services, and the dangers and difficulties they encounter in the performance of their duties. Because their profession lacks the glitter and glamor found in others, the people has shown indifference to their lot.

Forestry service includes protection of soil and watershed, a function as far-reaching as forest conservation. We consider it urgent to bring it to public notice and comprehension.

The Bureau of Forestry and the men under it, the guardians of one of the most essential sources of our national wealth, deserve the cooperation of the community and the government in their great task of conserving and developing one of the most priceless resources of our land.— m. t. tobias

SOMETHING ABOUT . . .

(Continued from page 76)

VICENTE AGALOOS—

District Forester, Antique

Forester Agaloos holds the distinction of having passed the Assistant Forester's Examination without actually taking the BSF course in the College of Forestry. Hard working, conscientious, and "a live wire", he was rewarded with his appointment as district forester of Antique. In his reminiscences, the students now in college, will be able to compare the "hard way" by which rangers were made in pre-war days with their college work and dormitory life.



* * *

CARLOS CUNANAN—

Forester, Bureau of Forestry

To forester Carlos Cunanan belongs the honor of being the proud Father of two brilliant sons:

One at West Point, the other at Annapolis. A former editor in chief of the *Forestry Leaves*, he was one of those selected rangers from the field to continue his studies in the College for the BSF degree. After his graduation, he was assigned to take charge of various reforestation stations. At present he is in charge of the Bureau of Forestry Nurseries and



Plantations at Los Baños, besides furnishing all planting materials to the different reforestation projects all over the Philippines.

TEOFILO A. SANTOS—

Personnel Officer, Bureau of Forestry

As PRO, he had done much in selling forestry to the public. The success of the in-service training of the Bureau of Forestry employees was due to him, and for his work was given an award for being one of the most active personnel officers in the government service. From his prolific pen came the "Forests and Floods" which appeared in the *Sunday Times* and should serve as a warning against unregulated cutting in some of our forest concessions.



* * *

ALFREDO VIR. SANCHEZ—

Forester-I, Bureau of Forestry

FORESTER-I Sanchez (new designation of the Wapco) was one of the selected Valedictorians to study in the College of Forestry about five years ago. After finishing the Ranger course, he and his pensionado classmates were sent to the different forest stations of the country. Forester-I Sanchez since his graduation has enjoyed writing about his experiences in the field.

Compliments of

Siniloan Lumber

GENEROSO GUALBERTO
Prop.

Siniloan, Laguna

Compliments

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**Ormoc Sugar Co. Inc.
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Rosario Sugar Mill**

Ipil

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Compliments of

**Juliano Trading
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(FIREWOOD)*

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Compliments of

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Timber Licensee and Contractor

Bugasong, Antique

Compliments of

Dr. Amando A. Gurango

O.T. Licensee

Gen. Nakar, Quezon

Compliments of

Mercedes Vda. de Alba

*O.M. Licensee and Dealer in
Charcoal and Firewood*

Hondagua, Quezon

Compliments of

Irenio Recio

P.W.R. Operator

Infanta, Quezon

Compliments of

Valerio Pasumbal

*Businessman, O.M. Licensee, and Dealer in
Charcoal and Firewood*

Hondagua, Quezon



From the Mail Bag

BONTOC
ST. JEAN CAP FERRAT (A.M.)
FRANCE

August 9, 1955

Dear Cenabre:

The "Filipino Forester", Vol. VI, has just arrived, and on page 2 I am most interested to see the announcement of "Agapito L. Cenabre, Consulting Forester"; and of course the mere name brings back so many memories, all pleasant, of the days when we both were young and so closely associated in the Bureau, of our trips together in the provinces and of a friendship which began so happily more than 40 years ago. Especially I want to send sincere congratulations to you for the success which now crowns your career as a forester. May all good things long continue to be yours!

When you next see Felipe Amos please give him my best regards and tell him that I hope he received the letter of congratulations I wrote a year ago when I first heard of his appointment; and of course that too opens the door to so many happy memories. I was so glad to get a card from him and his wife last Christmas.

The best of all good wishes to you and to all my other old friends whom you may meet; and believe me always,

Very sincerely,

(Sgd.) FORSYTHE SHERFESSE

Gaze in Wonder at a Tree

THE GREATEST force in the natural world is growth. And the noblest example of that force is a tree. Springing from a trilling seed, it can split rock and soar skyward a hundred feet and more. It draws up water against gravity all its height, and spreads at last in an architecture of boughs and twigs splendid as a Gothic vault, but living to the outermost leaf. Under that shelter man finds healing and strength. Wonderful are the ways of life of a tree.

— D. C. Peattie

Compliments of

Mr. Francisco Plaza

O. T. Licensee

Sulat, Samar

Sells Lumber at Reasonable Prices

ERRATA

Inside Front Cover—Caption “Edge of Virgin Forest under Selective logging of Nasipit Lbr. Co.” should be “Portion of a Residual Forest Stand at Nasipit, Agusan”

Page 2, column 2 . . . named in my honor the following species:

Corrections are:

2. **Arthorphyllum cenabrei** Merr. N. Sp.
7. **Knema cenabrei** Merr. Quia N. Sp.

Pictorials “Here and There”

Forest District No. 14 — **Forester Nemesio Jucaban** should be “Forester Felix Jucaban”

Picture Before Excerpts & Abstracts (p. 72)

Caption — “Portion of a Residual Forest Stand at Nasipit, Agusan” **should be** “Edge of Virgin Forest under Selective logging of Nasipit Lbr. Co.”

Page 8, column 1 — 8th line from bottom: **beileve** should be “believed”

Page 39, column 1 — 11th line from bottom: **ganied** should be “gained”

Page 40, column 1 — 3rd line from bottom: **prepare** should be “prefer”

Page 40, column 1 — 13th line from bottom: **prepare** should be “prefer”

Page 40, column 2 — 19th line from top **oe** should be “be”

Page 49

F.P.R.I. HIGHLIGHT should be F.P.R.I. HIGHLIGHTS

Page 43

by FORESTER VICENTE AGGALOOS should be FORESTER
VICENTE AGALOOS

Page 41, column 2 — Literature Cited

2. D.D. Lewison, should be J.J. Levison