

DATE SENT : DATE RETD. : (LETTERING ON BACK)
: : Coconut Journ
: : (TITLE)

THE

Coconut

JOURNAL

20¢

The
COPY

v. 1 no. 11
November, 1941

IN THIS ISSUE:

● Coconut Pests and Diseases
By F. Q. OTANES

Money For Christmas--

The SWEEPSTAKES may give you the answer to your prayers for a MERRY X'MAS—one which will bring good cheer to you, your family and fellowmen.

LAST SWEEPSTAKES OF THE YEAR
CHRISTMAS DRAW — DEC. 21

P877,500 in PRIZES
on sale basis of P1,500,000

ONE FIRST PRIZE OF	P200,000
1 Second Prize of	100,000
1 Third Prize of	50,000
6 Fourth Prizes at	8,000
50 Fifth Prizes at	3,000
100 Sixth Prizes at	1,000
200 Seventh Prizes at	500
95 Eighth Prizes at	200

CONSOLATION PRIZES TO tickets the last two digits of the numbers of which are the same as the last two digits of the number winning First Prize, at P8.00

BUY YOUR TICKETS EARLY AND HELP COVER THE SALE QUOTA SO PRIZES MAY NOT BE REDUCED

FORTHCOMING DRAWS FOR THE YEAR 1942

Feb. 15 — For the benefit of the Filipino Veterans
FIRST PRIZE — P75,000

Watch for announcement of issue of tickets:

April 19 — June 21

For the benefit of Charity and Welfare Institutions

BE AN AUTHORIZED RE-SELLER AND make extra money, the regular commission of P3.76 for each booklet of 12 tickets sold at P2 per ticket, plus sellers' prizes, from P5,000 down to P100 if tickets sold by you win any of the five major prizes in the draw.

SAVE A LIFE AND WIN A PRIZE

Philippine Charity Sweepstakes

P. O. Box 141 National Charities Building Manila

MORE

APO

ACCREDITED ARCHITECTS' PREFERENCE
"APO" CEMENT

CEMENT

"BEST BY TEST"

THE PERFECT SYMBOL OF ENDURING
PERMANENCE

Manufactured by

CEBU PORTLAND CEMENT COMPANY

MANILA OFFICE: AZCARAGA (Corner)
E. ANGELETA, Q. APO, CEBU

MANILA BUSTON FACTORY, INC.

ALL ENTERPRISING PROVINCIAL STORES ARE INVITED TO WRITE FOR SAMPLES AND PRICES OF THE NEW CEMENT BOOKETS TO THE OFFICE OF THE FACTORY IN DEPT. TO THE MANUFACTURERS AT 460 DASMARINAS

MANILA BUSTON FACTORY, INC.

460 Dasmarias

P. O. Box 107

For details, exhaustive and vital information regarding the Coconut Industry—its problems, possibilities and potentials—

Read—

THE COCONUT JOURNAL

Published quarterly by

National Coconut Corporation

201 B. D. Road, Manila, Philippines

USE NACOCO WOOD PRESERVATIVE

and protect your HOUSES from ANAY and other
wood-destroying insects

“Keep The Termites away”

NACOCO WOOD PRESERVATIVE

protects costly houses at a very cheap price.

Manufactured and Sold by

National Coconut Corporation

Banco Hipotecario Bldg.
Plaza Cervantes, Manila

Compliments

of

S. STADLER

CONSTRUCTION AND MECHANICAL
ENGINEER

For The

Coconut Industry



P. O. Box 1380

Telephone: 5-55-43

Manila

COMPLIMENTS

of

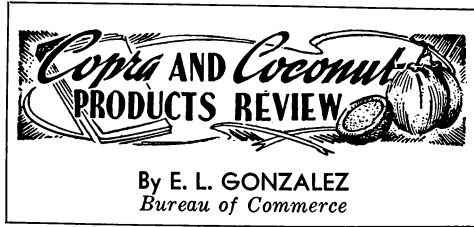
Tableria La SUERTE



Dagupan, Pangasinan

The Coconut Journal

Published monthly by the
NATIONAL COCONUT CORPORATION
 Benjamin Salvosa, Editor
 Pedro M. Gimenez, Business Manager
 Godofredo Zandueña, Associate Editor



VOL. I Manila, Philippines No. 11

CONTENTS

ENGLISH SECTION

Copra and Coconut Products Monthly Review	2
<i>By E. L. Gonzales</i>	
Coconut Pests And Diseases	3
<i>By F. Q. Otones</i>	
Good Times Ahead For The Coconut Industry	6
<i>By Bernardino Ronquillo</i>	
A Practical Program for Home Industries in Baler	7
<i>By Cenen Cajucom</i>	
The Role of Coconut In Our National Defense	8
<i>By Dr. Isabelo Concepcion</i>	
The Mineral and Vitamin Content of the Coconut	8
<i>By Ruth Darby</i>	
Nutritive Value of Coconut	9
<i>By Alicia Palma Bautista</i>	
Coconut Oil as Shortening	9
<i>By Maria Orosa</i>	
Expanding Markets For Philippine Vegetable Lard and Butter	10
Something Out of Nothing	11
<i>By Maria Orosa</i>	
The Month in Pictures	14-15
Coconut Journal Making Headway	19
With Our Correspondents	19
Statistics Section	16
Question Box	21

SPANISH SECTION

Tablones "Cocotex" Fabricado Del Bonote	24
<i>For Angel B. Abad</i>	
Sabe Usted	25
<i>For M. R. Quinto</i>	
De Nuestro Buzon	25
Noticias Del Extranjero	27

Address articles and communications to the Editor, Coconut Journal, P. O. Box 290, Manila. Subscription rates, P2.00 a year. \$2.00 in U. S. \$3.00 Foreign. P.20 the copy.

November, 1941 Manila

COPRA.—Resecada traced an irregular course in October, with price oscillations during the month closely hinging on the availability of warehouse space at local mills. But average price for the month not only made a new high for the year at P10.54, which is 6.35 per cent over September, but also exceeded the five-year (1936-1940) monthly average for October which was P7.52, or representing an improvement of 40.15 per cent as against the average of the preceding five year period. At the same time, October's average this year is still the highest since August, 1937.

The local market opened firm at P10.75-P11.00 in the absence of offerings, but the reluctance of holders to do business at this level did not prevent prices from gradually sliding to P10.50 in a week. On the 10th of the month, however, bids were revised upwards to touch anew at the 11-peso mark, maintained at this point for week, following the firming up of the American market on the Japanese Cabinet change. After considerable sales were made at about this price, local mills became hard-pressed for warehouse space to cope with day-to-day arrivals, with the result that values shaded to P10.00-P10.25 in the succeeding days, with some buyers temporarily refraining from active participation in the market. At the close of the month, although the situation was fundamentally unchanged, a better sentiment was felt, with Resecada steadying at P10.25, with a strong indication that buyers might concede a little more for good sized parcels.

Copra arrivals this months slackened to 758,407 bags. Despite the drop of about 10 per cent as against those of the previous month, receipts in October stood as the highest still for any year corresponding to the same month. Cumulative receipts for the first ten months of the year amounted to 5,904,569 bags, thus breaking all precedents and the totals for any past year, with two more months to go until the end of the year.

On the Pacific Coast, after F. M. M. made an advance of 10 points to 3.50 cents, buyers' space, at about mid-October, bids sagged off to 3.35-2.40 cents, buyers' space, the market closing at levels.

Manila, buyers per 100 kilos, delivered:
 Opening High Low Closing
 Resecada .. P10.75-11.00 P11.00 P10.00-10.25 P10.25
AVERAGE PRICES FOR OCTOBER, RESECADA

PER 100 KILOS
 1941 1940 1939 1938 1937 1936 1935 1934
 (Please turn to page 23)

COCONUT PESTS AND DISEASES

By F. Q. OTANES

Asst. Chief, Plant Pest and Disease Control Division
Bureau of Plant Industry

ALTHOUGH the coconut palm is considered a herby plant and grows or thrives in different types of location, yet, like certain other palms, it has one great disadvantage in that normally it has only one growing point. Once this growing point (the cabbage or "ubod") is vitally hurt, the plant succumbs. This fact is important to bear in mind in the control of coconut pests and diseases some of which, unfortunately, attack this vital part—the cabbage or "ubod". The maladies that damage this vital part of coconuts are the black beetle or "uang" and the so-called coconut bud rot disease. There are several others, however, that attack other parts of the plant to such an extent that its vitality may be impaired temporarily for several years or permanently as to cause it to be unproductive or sterile as to be practically useless. Among these are the coconut leaf miner, scale in-

sects, slug caterpillars and stem bleeding disease of coconut and the so-called "cadang-cadang" disease.

The Black or Rhinoceros Beetle or "Uang" and Red Beetle

This insect is so common that every coconut planter is familiar with it. Its body is horny and has strong jaws or mandibles and legs and strong projection on top of its head which enable it to dig into piles of decaying organic matter where it lays its eggs or tearing its way into the crown of coconut where it feeds.

The favorite breeding places or media of this beetle are dead coconut trunks, compost, manure and sawdust piles. Hundreds, nay thousands, of the grubs are often encountered in such places. In localities where these media abound, many coconut trees often suffer from serious injury and later succumb. The life cycle of this insect is estimated to be about a year.

Different stages of the black beetle or "Uang"
Oryctes rhinoceros.

Control

The first requisite in the control of this pest, therefore, is cleanliness in coconut groves. In order to protect coconut trees, the Government, through the Bureau of Plant Industry, has promulgated an administrative order by which all parties concerned can be compelled to keep their premises and coconut groves free of all decaying organic matter in order to prevent the breeding of the insect. Sawdust piles in particular breed countless numbers of grubs and, therefore, sawmill owners can be compelled to dispose of their sawdust piles.

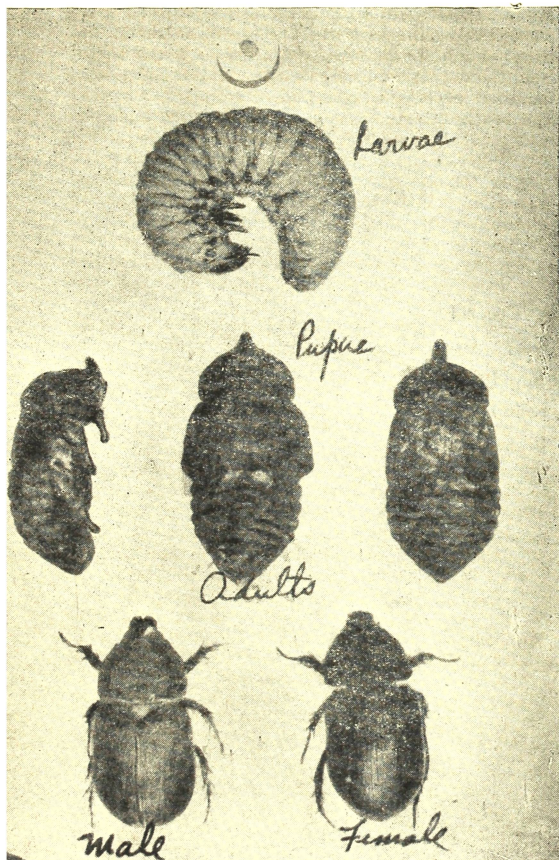
It is only by keeping the coconut groves clean that it pays to get after the beetles that are in the trees. These can be collected from the trees with hooked wires or rods and traps. One way of trapping the beetles is to construct rectangular pits in the groves. Compost, pieces of coconut trunks, etc., are put into the pits and these are provided with covers with slits in the middle which will allow the beetles to get into the pits but will prevent their getting out. Such traps should be examined now and then so that the insects caught therein may be destroyed.

The Red or Asiatic Palm Weevil

Another destructive beetle—a weevil—is the so-called red or Asiatic palm weevil, known in science as *Rhynchophorus ferrugineus*. The insects lay their eggs in the trunks of the trees, especially in injured portions of coconut trees, and the resulting larvae or grubs may tunnel their way into the young or growing portion of the coconut. Trees attacked by the grubs usually succumb.

To prevent attack by this beetle, coconut trees should not be injured in any way. Where the beetles are prevalent, the practice of making cuts on the coconut trunks should be stopped as this predisposes the trees to attack. Trees in which larvae are pres-

(Courtesy Dept. of Agri. & Com.)



ent may be treated with carbon bisulphide to kill the insects. The chemical may be injected into the trees by means of syringes.

The beetles may also be trapped as in the case of the black beetles.

The Coconut Leaf Miner

Because of its extensive ravages in Laguna, Tayabas and Batangas during 1929, 1930 and 1931, no other insect of the coconut has received as much publicity as the coconut leaf miner, known in science as *Promecothea cumingi*. The insect is a yellowish brown beetle of the size of a firefly. The insect lays its eggs in the coconut leaflets and these hatch into footless, flattish and whitish larvae which feed within the leaves causing blotches or mines; hence the name of the pest. The adult beetles feed on the surfaces of the leaves. If the beetles and their larvae are abundant their combined attack cause the rapid drying up of the coconut leaves and the trees may not bear any fruits for one or two years.

The methods of control employed under the Bureau of Plant Industry and which are recommended to coconut planters are as follows:

1. Systematic cutting off of the infested leaves under close and expert supervision in order to destroy the larvae and pupae.
2. Collecting the beetles.
3. Spraying infested trees and those around them with soap solution and lead arsenate to destroy the adults.
4. Rearing and liberation of the parasites that attack the eggs, larvae and pupae.

Scale Insects

There are several scale insects that have been observed rather harmful to coconuts. One of these is the Florida red scale. The insects suck the juice of the leaves. In some places, they often become abundant and cause the drying up of the leaves of many trees.

Closely allied to the red scales are mealy bugs and white flies. These also suck the juices from the leaves. These are quite common and destructive in certain provinces.

Control

The chief method of control against these insects is periodical spraying with soap solution or oil emulsion. Cutting of the badly infested leaves also helps. Under proper technical supervision, the rearing and liberation of the parasites that attack the insects may be undertaken as has been done and is being done in other countries.

Caterpillars

There are at least four kinds of caterpillars that at times become abundant as to cause considerable destructions. Two of these are two kinds of caterpillars, known as slug caterpillars, because they resemble slugs in shape and in habits—being slow moving. These are green in color about 2½ centimeters long when full grown and with spines, which when touched, cause skin irritation. The other two caterpillars are the young of certain moths known

as skippers. These are light greenish or whitish caterpillars which fold the coconut leaves.

Control

1. Spraying with soap solution either with lead arsenate or derris.
2. Collecting the caterpillars and pupae.
3. Encouragement of insectivorous birds in the plantation.
4. Rearing and liberation of insects that are parasitic and predatory on the eggs, caterpillars and pupae.

Oriental Migratory Locust

The Oriental Migratory Locust is not a regular pest of coconuts. However, whenever there is an outbreak coconut groves, especially those along the paths of invasion, often suffer from the attack. The defoliated coconuts may not bear any fruits for one or two years.

The migratory locust is known to breed into enormous swarms chiefly in the out-of-the-way places, that is in the vast isolated grasslands, especially in Mindanao. Outbreaks of this pest occur at intervals of ten or eleven years and each outbreak usually lasts for several or many years, depending upon natural factors and the campaigns waged against the pest.

Between outbreaks (that is when there are no migratory swarms in cultivated and populated areas), the insects are known to live as solitary locusts, like ordinary grasshoppers. When certain unusual conditions of climate obtain, such as drought conditions, these solitary locusts are known to come together in certain areas and their getting together apparently stimulate their mating instinct and they

Coconut trees destroyed by both black-beetle and leaf miners.

(Courtesy Dept. of Agri. & Commerce)



produce small or loose swarms called **transiens**. Where conditions appear to be most favorable for their multiplication, these small swarms go on increasing into huge migratory swarms, which invade the cultivated and populated areas. Such swarms persist for sometime, the length of the period of their existence depending on natural factors, such as those of weather, natural enemies and the campaigns waged against the insects. When their numbers are greatly reduced, those that are left sooner or later produce progeny consisting of solitary forms that live and behave like ordinary grasshoppers. Such solitary forms look so different from the migratory that they were previously considered as a distinct species, when in reality they constitute merely a phase of the same species to which the migratory forms also belong.

Control Measures

1. Catching the flyers with nets and coralling the hoppers into pits. These methods are effective, especially in more or less well populated provinces and where the people comply strictly with the provisions of the Locust Act (Act No. 2472).

2. Spraying the hoppers with contact poisons, such as soap solution.

3. Dusting with poison, such as calcium arsenate, derris powder, etc.

4. Application of poisoned bait—such as bagasse bait.

Factors Essential to Locust Control

1. Better compliance on the part of the provincial and municipal officials with the provisions of the Locust Act.

2. Wider application of the scientific methods of control, such as the use of various effective poisons.

3. More financial outlay for the locusts at the sources, that is at their outbreak or breeding places. The locust evil should be combatted at its very roots, so to state.

Other Pests of Coconuts

Rats cause considerable damage at times to young coconuts. These can best be controlled by the use of poisons such as white arsenic, strychnine, etc., which are mixed with attractive baits, such as boiled rice and fish or grated coconut.

Wild pigs, like rats, also cause havoc to young coconuts in many places. These can also be controlled by certain poisons, like phosphorus compounds, strychnine, white arsenic, etc. Hunting them will also help minimize damage. Fencing is resorted to in some places.

Large fruit bats are at times harmful in some places by eating the young fruits. The most effective way of controlling these is by shooting them in their roosting places during the day time. Poisoning against these is not considered practical. The use of certain devices to scare away the bats is also practical.

Coconut trees showing leaf miner devastation.

(Courtesy Dept. of Agri. & Com.)



Bud Rot Disease

The most serious disease of coconut is the so-called bud rot disease. It is so called because it attacks the bud causing it to rot. The causal organism is known to be a fungus.

Control

The most effective control for this disease is sanitation and persistent cutting down and thorough burning of the affected parts, for it is known that the disease is infectious. Proper cultural measures should be practised so as to increase the vigor of the trees.

Spraying the healthy trees around infected ones with Bordeaux mixture may also be practised as a preventive measure. The control of insects, such as black beetles, will also help minimize, if not prevent the dissemination of the disease.

Cadang-Cadang Disease

This disease manifests itself in the general yellowing and stunting of the growth of the trees. It is known to be chiefly a physiological disease owing to water-logging, malnutrition, etc.

The chief remedies are proper drainage and application of fertilizers or green manuring.

Concluding Remarks

In the control of pests and diseases of coconuts the preventive and cultural measures should be given due attention. Remedial measures are, of course, effective but because of the size of the trees such measures may entail considerable expenses. They should be timely and properly applied and under expert advice at first. All coconut planters should co-operate especially with the Government

(Please turn to page 21)

Good Times Ahead For The Coconut Industry

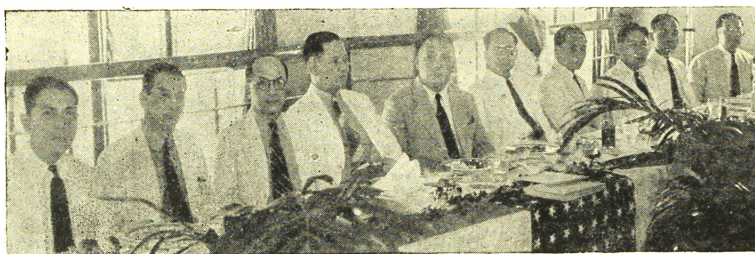
By BERNARDINO RONQUILLO
Staff Member, Manila Daily Bulletin

WAR conditions notwithstanding, good times are ahead for the Philippine coconut industry. This is not only because of the higher prices now being paid to planters and producers and the broadening market for coconut products abroad but more so because of the increasing utilization of the by-products of the industry. In the very near future, the full benefits of the government's industrialization program are bound to be felt by coconut planters all over the Islands.

Recently, Dean Conrado Benitez, assistant manager of the National Coconut Corporation, spoke on the coming "revolution" in the coconut industry which will give employment to many people and improve considerably the lot of coconut planters all over the country. He painted this picture before members of the Foreign Policy Association of the Philippines at the Avenue Hotel during that organization's monthly luncheon meeting. Dean Benitez' speech covered essentially the NA-

he received for his copra six months ago.

In connection with the promotion of the coir industry, Dean Benitez disclosed an ambitious program of the NACOCO to distribute spinning wheels in the coconut regions for the production of the coir fibers. To help boost this industry, the corporation has already ordered a defibering machine in the United States. This plant will be installed at the heart of the coconut region from where the distribution of the coir to spinners will be made. The coir fiber has been found to have several uses, and the by-products obtained from this raw material have already found a growing domestic market, with possibilities of developing a potential market abroad. Incidentally, during these war times, the coir has come to occupy a strategic position in the national economy, the NACOCO having found it useful in the large-scale production of sandbags to be used by the Civilian Emergency Administration in the country's preparations for national de-



Head table at the monthly meeting and luncheon of the Foreign Policy Association held at the Avenue Hotel on Oct. 20.

COCO's contribution to the industrialization program and also the effects on the industry of various major factors arising from the war, including export control, shipping shortages and world conditions.

This coming revolution, he said, will be brought about by the industrialization program mapped out by the government some time ago to solve the problems confronting coconut planters and producers. He singled out the coir industry particularly as growing into a major industry giving employment to thousands of people. Although he also pointed out the benefits being derived by producers from the standardization of copra, he gave special emphasis to the fact that this industrialization of the by-products of the industry, particularly the coconut husks, will give the planter more than what

fense.

Reflecting the bright outlook of this industry is the increasing demand noted for the fiber from abroad as well as from the domestic market, Dean Benitez revealed the NACOCO also will buy from local producers "buri" braid (a product belonging to the coconut family) in any quantity. Owing to the closing of former sources of similar fibers suitable for making women's hats and other allied products, the United States has been inquiring into the possibility of importing from the Philippines buri fibers in commercial quantities.

Other essential by-products enhance the position of the coconut industry in America's war economy. The coconut charcoal is the most important raw material in the manufacture of gas masks. It

(Please turn to page 22)

A PRACTICAL PROGRAM FOR HOME INDUSTRIES IN BALER

By CENEN CAJUCOM
Nacoco Industrial Organizer

BALER, situated in northern Tayabas, is an ideal seat for home industries. The people have the spirit of industry which has been handed down from father to son through generations. A small but progressive town of more than 12,000 inhabitants, these simple people are very adept at the art of home industry—the spinning and weaving of coconut coir into sacks for commercial purposes and sandbags for national defense. Under the management of the National Coconut Corporation, a great impetus is being given to a once declining industry which in its day may yet prove to be the key to the economic salvation of the country.

Spinning Coconut Coir, a new industry

Spinning and weaving is as old as history itself, but the spinning and weaving of coconut coir is a new industry in the Philippines. But any industry in its incipient stages is always confronted with problems of its own. In this particular case, the people of Baler want to work and yet they cannot always to do so. It is not because of lack of labor. They have spinning machines and weaving looms and the willingness to work, but the problem arises from the fact that the raw materials they are to work on are not enough for the trained scattered corps of weavers and spinners whose humming wheels and busy looms echo from one home to another; for Baler depends for its supply of coir materials on Sariaya, Tayabas and on Calasiao, Pangasinan.

And yet, this need not be the case. Baler has enough nut-husks to produce 105 tons of coir fiber every three months, or over 1000 kilos a day and this rate of production can be maintained for many years to come. Should she want a greater output, the neighboring towns of Casiguran and Polillo

Delivering copra to the Spencer, Kellog Co., in coir sacks manufactured at the Baler Industrial Center. Copra producers of Baler are now using coir sacks to transport their copra. There is now a heavy demand from Tayabas planters for these sacks as they have been found more durable.

can jointly supply her with around 90 tons of coir fiber at every quarterly gathering as shown in the figures below based upon the following statistics:

Town	Total Area Planted	Total No. of Trees Bearing	Total No. of Nuts Gathered Quarterly
Baler	1,482.00 Ha.	100,671	700,984
Casiguran	703.79 Ha.	55,000	190,000
Polillo	2,783.67 Ha.	180,000	473,000

Mechanization

After a careful survey of the situation in Baler, a proposed plan whereby the continuity of coir supply may be effected has been drawn and approved in principle by the people of Baler. The plan consists of having the Corporation establish a defibering plant which is to be managed or owned by a planter or group of planters. This plant will be supplied with husks gathered from the entire district. Once defibered, the produced coir will be sold to the Corporation which, in turn, will distribute it among the spinners and weavers. The finished products will be bought by the Corporation to be sold in the form of sacks or sandbags. Such mechanization will utilize countless numbers of husks which are usually thrown away as wastes and will also utilize the idle hours of the people for a profitable industry in the homes.

Pioneer

One of the leading planters in Baler, Mr. Pedro Lopez, has voiced his willingness to put up a defibering plant as planned above. He has asked the Corporation to install a defibering machine on his estate on a credit basis with his coconut crops pledged as security and paying in equal monthly installments for it until the account is fully paid. Thus, the people of Baler are assured of a steady supply of coir which the National Coconut Corporation has contracted to buy from Mr. Lopez for resale or distribution to spinners and weavers.

In assuming the risks of production, Mr. Lopez is induced by the prospect of a reasonable percentage of profits as well as the expectation of owning his own defibering plant. Following is a brief prospectus for a defibering plant with a capacity of 350 kilos a day:

Capitalization ..	₱4,500.00	350-kilos capacity
Daily Expenses	14.50	Daily production
Cost per kilo .	.04	10-hours. Spindable coir.
Selling price		
rate p. k.07	
Net profit-		
per kilo03	

At this writing, there are already 150 spinning machines in Baler. Some 150 more are still needed. This means that, at the rate of a little over one kilo of coir per machine, the total production of Mr. Lopez' projected plant has already an assured market.

(Please turn to page 18)



THE COCONUT

The Role Of Coconut In Our National Defense

By Dr. ISABELO CONCEPCION

*Consultant in Nutrition
Magnolia Dairy Products Plant*

MODERN war as well as modern defense involve mobilization of the entire population and adjustment of the whole economic structure of the nation. Since food is a vital element in the lives of people, proper nutrition is therefore of paramount importance in the defense program of any nation.

It is now acknowledged by military strategists that the value of food as a vital factor in life is much more significant in times of war than in time of peace. The need for a well fed army requires no argument. To be strong and sturdy the soldier must be well nourished. In times of emergency it is equally important that the civilian population should be well fed to maintain the morale. A diet, therefore, consisting of local materials which will offer the essential requirements but at a cost within the reach of the poor people should be sought by the government.

According to the latest statistics, we are importing a monthly average of 3,247,896 kilos of vegetables and 1,231,495 kilos of fruits and nuts. This volume must be reduced if not actually avoided. Ours is a tropical country where vegetables and fruits grow easily and luxuriantly all year around. We have a fruit grown abundantly in this beautiful isles rightly called the "fruit of life". This fruit is coconut and is entirely neglected by many of our people. I am not going to speak of the several uses of coconut for war purposes. Because of the limited time at my disposal I shall limit myself to say a few words on the food value of the coconut.

Human being requires for satisfactory nutri-

tion and growth air (oxygen), water and food. The food that we consume must contain the following factors:— proteins, fats, carbohydrates, minerals and vitamins.

The Mineral and Vitamin Content of the Coconut

By RUTH DARBY

*Asst. Professor of Home Economics
University of the Philippines*

It is surprising how little work has been done in the Philippines on the nutritive value of the coconut. Some investigations, however, are in progress at the present time. As a source of minerals, the coconut contains an appreciable amount of phosphorous, a smaller amount of calcium and a very small amount of iron (1). According to the work of some investigators, the young coconut or "buko" is slightly higher in these minerals than the mature coconut (1). The availability of these minerals to the human body when they are furnished by the coconut is still unknown.

Coconuts also contain a small amount of some of the vitamins. Investigators have reported the presence of vitamin B₁ and riboflavin in the coconut. Analysis also show that some vitamin C is found in the water of the green nut having soft pulp (2), (3), (4). The juice of the coconut palm is higher in vitamin

(Please turn to page 22)

The kernel of the coconut contains all three of the major constituents namely, protein, fats and carbohydrates, though it is not equally good source of all of them.

By special process, it has been found possible to extract the protein from coconut in a pure form. This protein is valuable in animal and human nutrition. Unlike a number of plant proteins, (such as those of corn and barley) that of the coconut is fairly satisfactory. Studies in America have shown that the globulin fraction of the proteins of coconut produces normal growth when used as the sole source of protein in an otherwise complete diet.

But the coconut's highest contribution to human and animal nutrition is its oil or fat. Among many other values, coconut oil has been found to be the most easily digestible of all the edible fats in general use, and that margarine made from this oil is more readily digested even than butter. Recent work on the rate of digestion of fats by Miss Hartwell of King's College, London, seems to corroborate the above view. Coconut oil may prove a more valuable food than has hitherto been supposed. Coconut oil as a source of fat in the diet is more satisfactory than other fats in economizing vitamins E and B₁.

Estimates from various sources indicate that

(Please turn to page 22)

IN FILIPINO DIET

Nutritive Value Of Coconut

By ALICIA PALMA BAUTISTA

Home Economics Department

Far Eastern University

ABOUT a year ago I spoke on the radio regarding the good qualities of our good friend, Mr.

Coconut. To show the value of proper nutrition, I pictured a woman "with a flight of double chins, and who waddles through a room instead of walking across it." Tonight, I have brought to you her sister "Skinny". You can picture her to yourselves. She is all bones, whether she is tall or short, her waistline is so small you can encircle it with your two hands. She looks fragile so much so that you feel that a strong windy blast may carry her off any minute. She is flat chested, with high cheek bones, and her arms and legs dangling like a twine of rope suspended from a flag pole. To put some flesh into this walking skeleton is bound to be a nutritional achievement and here is a steady job for Mr. Coconut.

It was sheer luck which took me to the Bureau of Animal Husbandry on a morning when one of the doctors was cutting up a hog which had been on a hundred per cent coconut diet for some time.

The doctor told us that it was an experiment which they had undertaken to determine whether coconut, being as cheap as it is, could be utilized in hog-raising intended for hams and bacon. He cut up the

hind legs for the ham, he trimmed the flank for the bacon and there was our coconut fed hog with practically no steaks of pink, almost pure white fat clear through to the skin with only a very thin streak of lean meat. It's no "go" for sure in hog raising, but it is never wise to live on a one-sided diet. But to one on a fattening diet it would be very effective. If we were to put "lanky bones", whether child or adult on a coconut rich diet, couldn't we expect similar results from the experiment? This statement is not without a scientific basis. It is a fact, that granted a perfectly normal body free from parasites and a will power exerted to the utmost in the desire of increasing one's weight, coconut would be a perfect ally of milk, eggs, cod

Coconut Oil As A Shortening

By MARIA OROSA

*Chief, Plant Utilization Division
Bureau of Plant Industry*

Our recent experiments proved that COCONUT OIL may be satisfactorily used as a substitute for expensive shortenings.

We found that an average nut when grated measures about 3 cups and gives about 1/3 cup of oil. If pandan leaves, grated lemon, orange or lime peel is added to the COCONUT milk while it is being made into oil, the natural COCONUT OIL flavor is masked. Cakes made with this oil are very palatable and cannot be distinguished from "butter cakes" baked with butter.

Dozens of experiments in butter cake baking were performed using the COCONUT OIL as shortening. Some of these were flavored with caramel, with coffee, with chocolate, with vanilla, and in all cases, when compared with those made with butter or other expensive shortenings, the samplers all agreed that the cakes baked with the COCONUT OIL cannot be distinguished from those baked with butter.

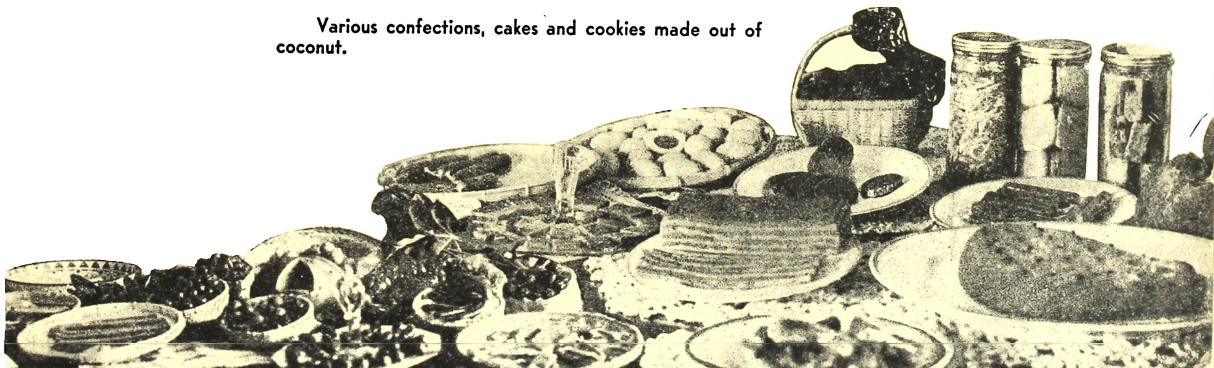
The procedure used in baking with the CO-

(Please turn to page 18)

liver oil, whole cereals, fruits and vegetables.

(Please turn to page 20)

Various confections, cakes and cookies made out of coconut.



Expanding Markets For Philippine Vegetable Lard And Butter

RADICAL changes have taken place in our lard and butter trade during the last two decades. While Philippine exports of vegetable lard and butter have increased tremendously, our imports of animal lard, lard compounds and lard substitutes, oleomargarine, and frozen and canned butter are fast shrinking to insignificance. Locally produced lard and butter, with coconut oil as base raw material, have become not only very popular to Filipino homes thereby replacing to a considerable extent the imported ones, but also have gained favor and approval in the overseas markets.

When our coconut oil industry was still in its infancy and local production of lard and butter regarded as an experiment, Philippine imports of lard in 1921 reached as high as 3,143,997 kilos, lard compounds and lard substitutes, 107,022, oleomargarine, 64,386, and canned and frozen butter, 331,277 kilos. These imports constituted the highest on record and were valued at over two million pesos. But from that time on, Philippine imports of these items, with certain exceptions in the case of frozen and canned butter, have declined steadily in quantity and value. Last year, total imports of the same articles shranked to a little over 600,000 pesos, with lard amounting only to 14,937 kilos, lard compounds and lard substitutes, 47,358, oleomargarine, 10,780, frozen butter, 566,260, and canned butter, 64,204 kilos. Import figures for the first seven months of the current year are very much lower. Lard imports, for instance, have barely reached 7,259 kilos and lard compounds and lard substitutes, 21,541. Oleomargarine has dropped to 8,324 kilos and canned butter has lagged behind to 33,054 kilos. But frozen butter may be considered an exception. Imports of this item from January to July, 1941 have a slight edge over those for the whole period of 1940, the quantity 581,469 kilos, or 15,209 kilos more than those of last year. Owing to war conditions at present and the generally unsatisfactory shipping conditions throughout the world, imports of lard, butter, and oleomargarine will be very much lower this year and for the duration of the war. Table I of this article shows the declining importance of the Philippines as a market for imported lard, butter, and oleomargarine.

Prior to 1924, Philippine shipments of vegetable lard and butter were insignificant and for this reason these items were not separately classified in the list of Philippine exports. It was only in 1924 that exports of lard and butter in commercial quantities were made. In that year, 202,944 kilos of lard and 14,359 kilos of butter were recorded as exported to the United States and her territories, British East Indies, China, Hongkong, and Canada. These quantities exported gradually expanded and the list of

Philippine customers lengthened in the subsequent years.

Our annual exports of vegetable lard from 1924 to 1941 fluctuated from a low of 141,958 kilos in 1925 to a record high of 3,347,855 kilos in 1936. From 1924 to 1934, Philippine shipments were less than 500,000 kilos. But the shortage of various fats and oils felt the world over in 1935 pushed our lard exports to 1,349,806 kilos and these were almost trebled in 1936. Our exports for the last five years had been steady at about one and a half million kilos. The first seven months of the current year deserve special mention. Despite the shortage of ocean going bottoms, exports have already reached over 2-1/2 million kilos and there are indications that before the year is over, the peak made in 1936 would be duplicated, if not exceeded. The following Table II shows the quantities and value of our lard exports from 1924 to 1941, while Table III indicates the first three leading buyers of Philippine vegetable lard.

Vegetable butter exports of the Philippines were small previous to 1930. In 1924 only 14,359 kilos were shipped to the overseas markets, declining abruptly in 1925 to 3,159 kilos, and eventually scratched off the list of exports from 1926 to 1929. In subsequent years, however, shipments rose steadily. Starting in 1930 at 11,985 kilos which were absorbed wholly by the British East Indies and Hongkong, exports exceeded 3 million kilos in recent years. Vegetable butter exports from 1936 to 1940 varied from a high of 3,801,802 kilos in 1938 to a low of 1,887,422 kilos in 1936. Shipments from January to July of the current year are already over 1-1/2 million kilos. Table IV shows the growing exports of vegetable butter and Table V indicates the principal countries of destination in the order of importance.

Philippine shipments of vegetable lard and butter prior to and during the present war are shown in the Tables VI and VII.

It will be observed from the above tables that lard exports for the first seven months of the current year have exceeded the totals in 1939 and 1940. Shipments of vegetable butter have approached the levels made in 1940 and 1939.

The list of Philippine customers is lengthening at expanding volumes. Latin American countries are now included among our buyers of lard and butter. Costa Rica has to her credit for the current year 38,220 kilos of lard as against 22,588 kilos in 1940.

The Republic of Panama purchased last year 30,847 kilos of lard and for the current year 7,350 kilos. While so far no exports of butter have been
(Please turn to page 12)

SOMETHING OUT OF NOTHING..

COCO-MEAL

By MARIA Y. OROSA

OF WHAT use was coconut sapal before? I mean, grated coconut after extracting the milk from it. Well, for one thing we fed it to the pigs. Then, some very resourceful housewife would polish her bamboo floors with it. Most of the time we threw it away. Coconut sapal is still just coconut sapal. Only today we may bake delicious cakes and cookies from it because we can turn it into flour by a very simple home method.

We had many uses for coconut oil, but whoever thought of using it as shortening in place of butter or margarine and as salad oil? The Plant Utilization Division made attempts and found it as reliable and good and, very definitely, more economical. Wonderful emergency stand-bys, aren't they?

How To Make Coco-Oil

Grate coconut fine. Squeeze the milk, using hand pressure. Add small amounts of hot water; work with hand to extract as much milk as possible, and squeeze out milk. Repeat this operation twice.

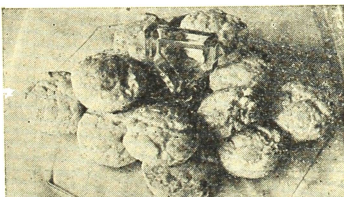
For every 3 cups of grated coconut use about 1 cup of hot water. (Use 1/2 cup of hot water per operation, or 1 cup for the two operations). Combine all extract (milk) and cook over a slow fire. When the oil begins to appear, add to the formula 1 pandan leaf, or about 1 teaspoon of grated lime peel or lemon peel and continue cooking until all oil is extracted.

From many experiments made, the following results have been obtained:

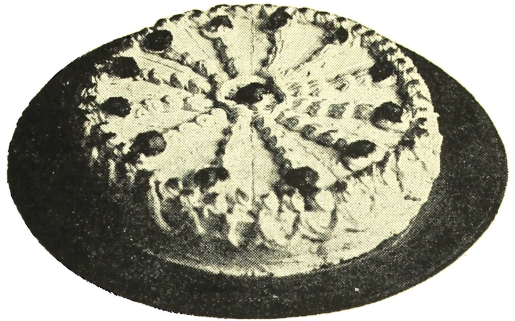
One regular sized coconut yields about 3 cups of grated meat, and about 1/3 cup of coconut oil. The oil made by the above process is very pleasant, and may satisfactorily be used as a shortening and as salad oil. Cakes and cookies were made with this oil and proved to be very palatable. They cannot be distinguished from cakes made with butter. Mayonnaise made with this oil was found to be as tasty.

How To Make Coco-Meal

After extracting the milk from the grated coconut, the residue or sapal may be washed with hot water, dried in the sun or in a slow oven, ground to flour-consistency and there you have coco-meal or coconut flour.



Cocomeal hot cakes



Cocomeal Cake

COCONUT "SAPAL" CAKE WITH COCONUT OIL

3/4 cup coconut-sapal flour

1/4 cup cassava flour

1/3 cup coconut oil

4 eggs

1 cup sugar

2 1/3 teaspoons baking powder

1 teaspoon vanilla

1/2 cup coconut milk

Pinch of salt

Beat egg yolks and add oil gradually beating continuously. Add sugar and mix well.

Sift coconut flour, cassava flour, baking powder, and salt three times. Add to first mixture alternately with milk. Add vanilla. Fold in stiffly beaten egg whites. Pour in greased cake pan and bake in moderate palayok-oven 20 minutes.

COCONUT MAJA BLANCA

1 cup cocomeal

1 cup corn flour

1 cup sugar

4 cups coconut milk

Anis and latik to garnish

Mix cocomeal and corn flour. Add coconut milk. Stir well, and cook in an open vessel, stirring while cooking. When half done, add sugar and continue cooking until very thick.

Place on a well greased plate. Garnish with latik and anis.

COCOMEAL HOT CAKE

1 cup cocomeal

1 cup flour

1 cup water

1/2 cup milk

2 eggs

4 teaspoons baking powder

1 teaspoon salt

2 tablespoons sugar

2 tablespoons melted purico or butter

2 teaspoons sugar

Beat eggs, add sugar, salt, milk, purico, water and mix well. Then add the sifted flour, cocomeal, and baking powder.

Grease a hot frying pan and drop the dough from a spoon. When the dough bubbles and shows holes, turn pancake upside down to brown the other side. Remove from pan. Serve with coco honey or syrup and butter.

EXPANDING MARKETS...

(Continued from page 8)

made to the Republic of Panama, it is gratifying to note that 30,491 kilos went to that sector last year and 10,324 in 1939.

Venezuela bought last year 6,259 kilos of lard, while Ecuador was contented with a trial shipment of 111 kilos of lard and 26 kilos of butter. Guatemala imported from the Philippines last year 1,828 kilos of lard, already increased this year to 2,940 kilos, representing an improvement of 60.83% over the previous year.

China, Hongkong, and Malaya are competing with each other for first honors in displacing the United States and her territories as our principal lard buyer. China is normally an exporter of animal lard, but war conditions in her country doomed to extinction her hog industry which consequently reduced lard for export. Thus, the necessity of increasing her fats and oils purchases from a next door neighbor—the Philippines. For the first seven months of the current year, China has become our leading buyer of lard, having imported during the said period 748,793 kilos, valued at ₱156,160.

Demand for lard from Hongkong has picked up rapidly. Her imports from the Philippines last year amounted to 444,188 kilos. This year the totals from January to July have reached 530,600 kilos, or 86,412 kilos more than those of last year.

Malaya is among our new list of buyers. Her first imports of Philippine vegetable lard and butter were made in 1939. Starting with 251,614 kilos of lard and 584,918 kilos of butter in 1939, these volumes expanded rapidly in the case of lard which totalled 434,174 kilos in 1940 and 420,536 kilos for the current year. Philippine exports of butter to Malaya last year were slightly lower than those made in 1939. Exports in 1940 amounted to 850,011

kilos as against 584,918 in 1939. Expectations this year, however, are bright, shipments to Malay for the first seven months of the current year having reached 440,203 kilos.

Of the larger countries which have turned to the Philippines since the outbreak of the present war, India merits special mention. Importing from the Philippines for the first time in 1940 which consisted of 95,758 kilos of lard and 39,819 kilos of butter, these quantities have attained new high marks for the current year. January to July shipments to India have reached 124,267 kilos of lard or about 30% more than those of last year, and 88,519 kilos of butter which represent more than a 100% gain over the 1940 figures.

It may be pointed out, therefore, that unless the shipping situation improves, our imports of lard, oleomargarine, and butter will decline to lower levels and eventually these imports may be reduced to a minimum quantity. Domestic consumption of Philippine vegetable lard and butter is increasing. We are now fast making up for lost time in patronizing made-in-the-Philippines products and the steadily growing popularity of our vegetable lard and butter in Philippine homes is a juicy example.

The new outlets for our vegetable lard and butter in the overseas markets may eventually find permanence in those sectors. The termination of the present war will create new demands from Europe. Our old customers will also likely remain in the list of buyers of vegetable lard and butter. In other words, the expanding markets for Philippine vegetable lard and butter may cushion, to a certain extent, the expected fall of the coconut industry when the curtain drops in 1946 terminating free trade relations with the United States.

**PHILIPPINE VEGETABLE BUTTER EXPORTS
BEFORE AND DURING THE PRESENT WAR**

Destination	1941(x)		1940		1939	
	Quantity (kilos)	Value (Pesos)	Quantity (kilos)	Value (Pesos)	Quantity (kilos)	Value (Pesos)
U. S. & Territories	546,558	189,839	1,598,618	497,616	1,467,810	434,726
Dutch East Indies	66,746	20,149	892,779	304,629	1,236,376	445,962
Malaya	440,203	127,829	580,011	179,586	584,918	172,828
British East Indies	19,687	6,200	209,055	47,106	296,684	83,137
Thailand	67,730	16,101	131,386	34,680	113,383	37,173
Hongkong	237,204	53,570	125,774	25,782	52,376	10,482
India	88,519	21,995	39,819	9,367	—	—
Panama, Republic of	—	—	30,491	8,075	10,324	2,396
Burma	—	—	8,457	1,937	—	—
British Africa	—	—	4,525	1,190	2,284	603
West Indies, Dutch	47,212	14,431	3,543	906	—	—
French East Indies	24,178	8,136	1,485	500	28,561	9,808
China	6,240	2,974	1,551	390	8,830	1,940
Great Britain	—	—	1,003	272	—	—
Ecuador	—	—	26	10	—	—
French Oceania	—	—	—	—	256	83
TOTALS	1,544,277	461,224	3,628,523	1,112,046	3,801,802	1,119,138

(x) January to July, 1941 only.

LEADING BUYERS OF PHILIPPINE VEGETABLE BUTTER

YEAR	FIRST	SECOND	THIRD
1924	United States and Territories	Canada	China
1925	Hongkong	Egypt	"
1926	No exports	No exports	No exports
1927	" "	" "	" "
1928	" "	" "	" "
1929	" "	" "	" "
1930	British East Indies	Hongkong	
1931	" " "	"	China
1932	" " "	"	"
1933	" " "	"	Dutch East Indies
1934	Dutch East Indies	British East Indies	Thailand
1935	" " "	" " "	"
1936	United States and Territories	Dutch East Indies	British East Indies
1937	" " " "	" " "	" " "
1938	Dutch East Indies	United States and Territories	" " "
1939	United States and Territories	Dutch East Indies	Malaya
1940	United States and Territories	Dutch East Indies	Malaya
1941(x)	United States and Territories	Malaya	Hongkong

PHILIPPINE IMPORTS OF LARD, OLEOMARGARINE, AND BUTTER

Year	Lard (Kilos)	Lard Compounds and		Frozen Butter (Kilos)	Canned Butter (Kilos)
		Lard Substitute (Kilos)	Oleomargarine (Kilos)		
1941(x)	7,259	21,541	8,324	581,469	33,054
1940	64,973	47,358	10,780	566,260	62,204
1939	99,862	44,909	32,537	505,346	107,587
1938	85,575	59,798	40,746	671,028	83,149
1937	159,793	41,988	48,617	502,919	97,905
1936	139,809	132,034	65,698	634,944	81,766
1935	131,969	100,731	50,865	634,819	77,179
1934	307,873	69,660	39,761	554,461	211,956
1933	853,482	40,250	65,969	522,024	93,098
1932	2,603,591	42,324	114,382	494,085	111,996
1931	2,680,313	71,544	396,436	654,187	143,303
1930	2,134,741	61,846	346,672	357,951	180,700
1929	2,657,773	85,472	503,392	425,101	181,955
1928	2,221,006	143,032	460,442	445,740	194,928
1927	2,370,215	179,048	363,696	314,256	171,939
1926	1,899,493	148,146	386,289	305,547	233,520
1925	1,735,359	138,456	296,829	(a)	449,438 (b)
1924	2,093,252	185,542	278,022		588,649 (b)
1923	2,034,251	104,723	177,400		387,028 (b)
1922	2,333,806	82,118	167,995		468,206 (b)
1921	3,143,997	107,022	64,386		331,277 (b)
1920	2,080,891	191,671	111,898		593,690 (b)
1919	2,342,675	93,655	35,956		522,298 (b)
1918	1,061,014	115,401	10,235		242,291 (b)
1917	477,064	299,063	34,747		239,034 (b)
1916	461,047	531,377	70,247		222,751 (b)
1915	1,107,665	854,709	69,638		268,406 (b)

(x) January to July, 1941 only.

(a) Not separately stated prior to Jan. 1, 1926

(b) Including Frozen Butter.

(Please turn to page 17)



Nacoco Assistant General Manager Benitez with Saburu Kurusu, Japanese diplomat upon the arrival of the latter in Manila. Dr. Benitez received Mr. Kurusu in the name of President Quezon.



President Manuel L. Quezon delivering his speech at the Sixth Commonwealth Anniversary Celebration.

The MONTH *in* PICTURES •



Nacoco float which participated in the Sixth Commonwealth Anniversary Parade on November 15.

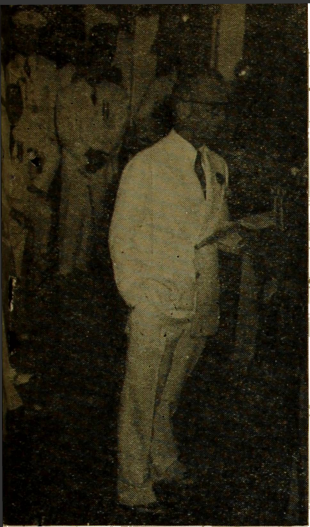


Employees and student of Industrial School of Coconut Corporation.

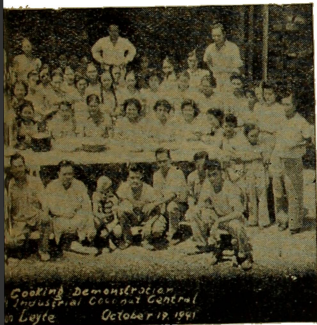
Assistant Manager demonstration of copra drier—a by-product which can be converted into turbinol.

Nacoco Secretary Salvosa handling plant utilization of Plant Industries recipes.

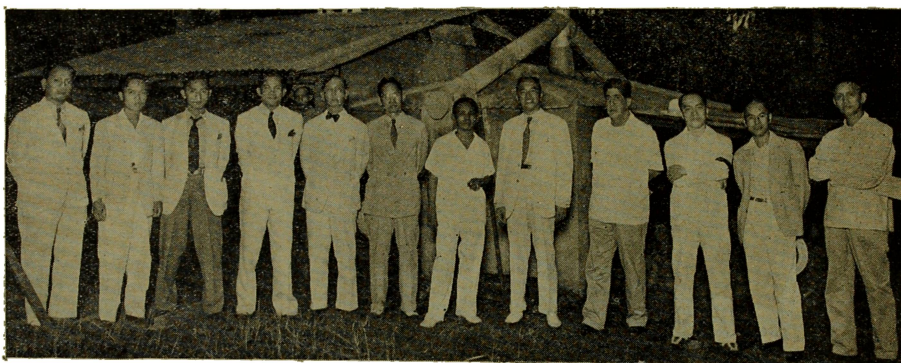




Students and employees in the industrial unit of the National Coconut Corporation.



Cooking Demonstration
 Division of the National Coconut Corporation
 in Leyte, October 19, 1951

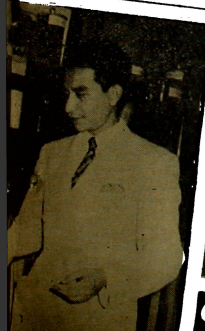


Provincial officials and planters of Tayabas standing in front of the new Bayan-Agramon improved copra drier. Dr. Agramon, president of the Tayabas Planters Association and well known drier enthusiast, may be seen seventh from the left.

Nacoco representatives and guests of the plant utilization Division of the Bureau of Plant Industry at a demonstration of coconut recipes by Miss Maria Orosa, head of the plant utilization division.

Representatives of the Leyte
 Division of the National Coconut Corporation

Manager Benitez watching a demonstration of the Ceramic Nacoco copra drier enterprise where Tapanahan copra driers may be seen in operation. The first class copra drier was awarded to the National Coconut Corporation by Treasurer Benjamin Benitez, who won the first prize in the contest conducted by the Bureau of Plant Industry for the best coconut drier.



STATISTICS SECTION

By RICARDO B. BONILLA

Table 1—ESTIMATED NUMBER OF PERSONS DEPENDENT ON THE COCONUT INDUSTRY 1/

OCCUPATION	Total	Laguna	Tayabas	Cebu	Zamboanga	Leyte	Misamis Oriental	Misamis Occidental	Albay	Other Provinces
Total	3,080,000	181,120	256,610	272,430	100,880	203,030	101,855	61,605	121,590	1,780,800
Percent	100.00	5.88	8.33	8.84	3.28	6.59	3.31	2.00	3.95	57.82
AGRICULTURE:	1,485,000	97,100	190,600	53,000	60,100	101,200	72,700	38,700	67,600	804,000
Farmers and farm managers	750,000	46,500	99,600	18,500	28,300	55,000	38,700	24,300	32,900	406,200
Farm laborers	735,000	50,600	91,000	34,500	31,800	46,200	34,000	14,400	34,700	397,800
	61,000	20,930	7,440	3,920	2,320	380	30	150	250	25,580
MANUFACTURING:										
Brooms and brushes	2,000	200	—	100	50	200	—	—	50	1,400
Breweries	2,500	50	—	—	—	—	—	—	—	2,450
Candle	1,000	30	—	100	30	60	—	50	30	700
Candy and caramels	7,500	150	20	120	10	100	—	—	100	7,000
Coconut oil	10,000	750	—	3,150	—	—	20	70	10	6,000
Desiccated coconut	21,500	13,500	8,400	—	—	—	—	—	—	2,400
Fats 2/	2,000	—	—	—	—	—	—	—	—	2,000
Liquor and beverages	1,500	30	—	50	—	—	—	—	20	1,400
Soap	3,000	220	20	400	30	20	10	30	40	2,230
Laborers (industry not stated)	3/ 10,000	6,000	4,000	—	—	—	—	—	—	—
DOMESTIC SERVICE:	1,047,000	29,400	27,400	119,900	21,000	85,900	23,800	17,900	37,800	683,900
PROFESSIONAL SERVICE:	59,000	13,000	13,200	25,800	7,000	—	—	—	—	—
CLERICAL:	23,000	3,000	3,500	13,000	3,500	—	—	—	—	—
TRANSPORTATION:	363,000	16,600	12,000	49,300	6,600	15,100	5,200	4,300	7,300	246,600
Bus and truck 4/	52,000	3,000	1,600	5,500	1,000	1,500	1,300	1,000	1,600	35,500
Calesa 3/	59,000	8,000	2,200	9,400	1,000	2,000	1,000	1,000	200	34,200
Chaffeurs (private) 3/	75,000	3,000	1,900	7,500	1,500	3,000	1,700	1,100	2,400	62,300
Railroad 4/	24,000	2,100	3,200	1,000	—	—	—	—	—	16,500
Water 4/	153,000	500	3,100	25,900	3,100	8,600	1,200	1,200	2,000	107,400
TRADE:	42,000	1,090	2,470	7,510	360	450	1,200	1,200	2,000	shrc 20,800
						450	125	555	8,640	
Candy and caramel	1,000	40	10	60	10	50	5	5	20	800
Coconut and copra	5,000	850	1,460	350	50	100	50	120	20	2,000
Warehouses	4/ 36,000	200	1,000	7,100	300	300	70	430	8,600	18,000

Table 2—PERSONS DIRECTLY AND INDIRECTLY ENGAGED IN THE COCONUT INDUSTRY

OCCUPATION	Total	Laguna	Tayabas	Cebu	Zamboanga	Leyte	Misamis Oriental	Misamis Occidental	Albay	Other Provinces
Total	6,16,029	36,253	51,385	54,549	20,120	40,630	20,418	12,302	24,289	356,083
AGRICULTURE:	297,045	19,418	38,132	10,605	12,016	20,242	14,565	7,739	13,513	160,815
Farmers and farm managers	149,927	9,284	19,915	3,700	5,654	10,989	7,735	4,846	6,569	81,233
Farm laborers	147,118	10,134	18,217	6,905	6,362	9,253	6,830	2,891	6,944	79,582
MANUFACTURING:	12,131	4,207	1,546	773	450	58	4	25	34	5,034
Brooms and brushes	353	32	—	14	9	26	—	—	1	271
Breweries	523	5	—	—	—	—	—	—	—	518
Candle	179	4	—	15	4	10	—	5	3	138
Candy and caramel	1,498	30	3	22	1	18	—	—	19	1,405
Coconut oil	1,933	145	—	629	—	—	3	15	1	1,140
Desiccated coconut	4,311	2,707	687	—	431	—	—	—	—	486
Fats 2/	341	—	—	—	—	—	—	—	—	341
Liquor and beverages	311	7	—	33	—	—	—	—	3	288
Soap	597	45	3	80	—	—	—	—	7	447
Laborers (industry not stated)	2,085	1,232	853	—	5	4	1	5	3	—
DOMESTIC SERVICE:	(2) 209,481	5,886	5,489	23,984	4,223	17,195	4,770	3,584	7,564	136,786
PROFESSIONAL SERVICE:	11,756	2,588	2,642	5,153	1,373	—	—	—	—	—
CLERICAL:	4,702	648	697	2,676	681	—	—	—	—	—
TRANSPORTATION:	72,598	3,290	2,406	9,855	1,307	3,055	1,054	844	1,460	49,327
Bus and truck	(3) 10,490	620	338	1,115	206	317	273	196	323	7,102
Calesa	(2) 11,708	1,570	435	1,883	159	409	197	177	33	6,845
Chaffeurs (private)	(2) 15,923	604	372	1,507	310	611	330	224	475	10,590
Railroad	(3) 4,731	403	632	172	—	—	—	—	—	3,308
Water	(3) 30,646	93	629	5,178	632	1,718	254	247	216	21,482
TRADE:	8,316	216	473	1,503	70	80	25	110	1,718	4,121
Candy and confectioneries	219	8	3	13	2	10	1	1	5	176
Coconut and copra	980	165	291	66	9	18	9	23	4	395
Warehouses	(3) 7,117	43	179	1,424	59	62	15	86	1,709	3,550

(1) Hat manufacture in Manila only. (2) Data correspond to 32 coconut producing provinces only.

(3) Data correspond to 32 coconut producing provinces and Manila.

EXPANDING MARKETS...

(Continued from page 13)

PHILIPPINE VEGETABLE LARD EXPORTS BEFORE AND DURING THE PRESENT WAR

Destination	1941 (x)		1940		1939	
	Quantity (Kilos)	Value (Pesos)	Quantity (Kilos)	Value (Pesos)	Quantity (Kilos)	Value (Pesos)
Malaya	420,536	86,686	434,174	89,760	251,614	53,139
Hongkong	530,600	117,206	444,188	86,110	291,481	59,714
U. S. & Territories	576,755	135,638	320,503	65,435	839,503	177,015
China	748,793	156,160	198,358	38,198	48,438	10,485
Dutch East Indies	4,067	974	115,668	33,821	136,622	38,479
British East Indies	5,821	1,237	132,947	29,853	36,607	6,637
India	124,267	27,083	95,758	26,253	—	—
Thailand (Siam)	30,205	4,658	63,276	12,515	53,895	12,069
Egypt	—	—	46,074	11,405	6,222	1,647
Panama, Republic of	7,350	1,671	30,847	8,208	14,700	4,200
West Indies, Dutch	11,759	3,268	22,588	5,362	—	—
Costa Rica	38,220	7,265	22,204	4,699	—	—
Venezuela	—	—	6,259	1,671	—	—
China, Portuguese	—	—	7,350	1,430	—	—
Burma	4,088	1,042	6,700	1,320	—	—
Guatemala	2,940	568	1,828	404	—	—
Japan	272	60	544	126	340	150
Ecuador	—	—	111	19	—	—
British Africa	—	—	—	—	47	15
France	—	—	—	—	4,934	1,200
French East Indies	2,932	720	—	—	3,532	683
Kwantung	1,466	315	—	—	—	—
TOTALS	2,510,071	544,553	1,949,377	416,589	1,687,935	365,433

(x) January to July, 1941 only.

LEADING BUYERS OF PHILIPPINE VEGETABLE LARD

YEAR	FIRST	SECOND	THIRD
1924	United States and Territories	British East Indies	Hongkong
1925	British East Indies	United States and Territories	China
1926	United States and Territories	British East Indies	Japan
1927	" " " "	" " "	Hongkong
1928	" " " "	" " "	"
1929	" " " "	" " "	Dutch East Indies
1930	British East Indies	Dutch East Indies	Hongkong
1931	Dutch East Indies	United States and Territories	"
1932	" " "	Hongkong	British East Indies
1933	" " "	United States and Territories	Hongkong
1934	United States and Territories	Dutch East Indies	"
1935	" " " "	" " "	"
1936	" " " "	" " "	"
1937	" " " "	Hongkong	Dutch East Indies
1938	" " " "	"	" " "
1939	" " " "	"	"
1940	Hongkong	Malaya	Malaya
1941(x)	China	United States and Territories	United States and Territories
			Hongkong

(x) January to July, 1941 only.

COCONUT OIL AS...

(Continued from page 9)

CONUT OIL is as follows:

Beat 1 cup of sugar with 4 egg yolks. Add gradually 1/2 cup of COCONUT OIL, beating constantly until smooth and lemon colored. Add in small amounts at a time, and alternately, 1-1/2 cups of flour previously sifted with 3 teaspoons of baking powder, and 1/2 cup of diluted evaporated milk. Fold in 4 egg whites, stiffly beaten, and bake in moderate OROSA-PALAYOK-OVEN 15 minutes.

Another procedure that may be used is as follows:

Beat 2 egg yolks and add 2/3 cups COCONUT OIL, and beat until smooth. Add 2 cups sugar and beat until creamy. Then add 2 egg yolks and beat until fluffy. Add 3-1/2 cups flour previously sifted with 4 teaspoons baking powder, alternately with 1 cup diluted evaporated milk, adding small quantities of each at a time, and fold in 4 egg whites stiffly beaten. Bake in moderate OROSA-PALAYOK-OVEN 15 minutes.

A PRACTICAL PROGRAM...

(Continued from page 7)

Role of the Nacoco

The National Coconut Corporation has a triple role to accomplish: first, as an industrial partner supplying the machines and technical assistance; second, as a contractor for the coir produced by the plant; and third, as an organizer of home industries.

The Corporation covenants with a planter or a group of planters forming a cooperative to put up a small defibering plant. If the necessary cash is not available, the Corporation offers small production loans to the planter or cooperative, who pledges his or its coconut crops as securities. The machinery will then be paid for by the planter or cooperative in equal monthly installments until the whole amount has been paid. Installation of the machinery up to the time of its operation will be supervised by a technical man sent over by the Corporation, whose salary will be paid by the Corporation, but whose transportation expenses and per diems will be paid by the planter or cooperative. When the machinery has been installed and the owners of the plantations are familiar with its operations, the planter or cooperative can then take over the full management.

Everything produced from the machines will be bought by the Corporation, provided of course the fiber is of the stipulated quality. The coir fiber is in turn distributed to the spinners in domestic factories. Following are figures showing how home industrialists will be benefited:

Price to be paid by spinner per kilo
for material P0.07
Amount to be paid spinner for labor .. P0.15

Amount received by spinner for material & labor P0.22
If material is furnished on credit:

Price per kilo of material P0.07
Amount to be paid spinner for labor .. P0.15
Amount received by spinner P0.15

Note: In this case material is supplied and not paid by spinner.

The Corporation has a Field Agent or Organizer in charge of coordinating these activities. He sees to it that the defibering plant is working efficiently and producing the expected quantity of coir of standard grades. He supervises the distribution of coir among the local spinners and weavers and sees to it that homes are supplied with materials, that labor is contented, and prevents dictation of prices by either party.

Farmers' Financing Agency

Coinciding with the work of the Corporation, the Department of Labor is extending aid to indigent

FUNDAMENTAL FACTS

The program for the Home Industries in Baler includes the following points:

1. The National Coconut Corporation will establish a plant for coir production.

(a) Total amount of the plant will include cost of machinery, shed (camarin), and installation in the amount contracted by the planter or cooperative.

(b) Management and operation of the plant will be under said private concern.

(c) Manufactured coir will be contracted by the Corporation.

2. Organization of Baler as center for the Home Industries program.

(a) Baler can be easily supplied with husks from the towns of Casiguran and Polillo.

(b) Organization of the inhabitants for a specific activity.

(c) The Corporation's Field Agent will supervise.

3. Joint cooperation of the National Coconut Corporation and the Farmers' Financing Agency (FFA).

(a) Economic and efficient administration.

(b) Consignment of the Corporation's saleable products to the FFA Cooperative Store.

4. A cooperative system of activities is instilled.

(a) Socialized distribution of income.

farmers and workers in Baler by opening a unit of the Farmers' Financing Agency. This agency can be of immeasurable help to the home industries program by acting as sales medium for our finished products.

The coir spun into yarn; the yarn woven into sack-cloth; and the cloth sewed into finished sandbags or copra sacks, may be consigned to the Farmers' Financing Agency (FFA) Cooperative Store

Coconut Journal Makes Headway

Indicative of a growing interest in the progress and possibilities of the coconut industry in the Philippines is the steady increase in the number of subscribers to the **Coconut Journal**. Among the subscribers to this publication are public branch libraries, throughout the city and the provinces, and the libraries of both private and public schools in many parts of the Philippines. Director Salvador of the Bureau of Education has endorsed the inclusion of the **Coconut Journal** in the Approved Library List for general reading of teachers and students in the high school.

The **Coconut Journal** is coming to be recognized as a scientific publication of general interest and as a medium of educational value. Among the schools subscribing to the **Journal** are the following: Assumption Convent of Manila; Bicol Institute, Naga, Camarines Sur; Naujan Farm School, Naujan, Mindoro; San Jose No. 1 Int. School, San Jose, Mindoro; San Jose No. 2 Elem. School, San Jose, Mindoro; San Agustin Elem. School, San Agustin, Mindoro; Borbocolan Int. School, Borbocolan, Mindoro; Pinagsabangan Int. School, Pinagsabangan, Mindoro; Anuling Int. School, Anuling, Mindoro; Pola Elem. School, Pola, Mindoro; Bongabon Central School, Bongabon, Mindoro; Masaguishi Barrio School, Bongabon, Mindoro; Paclasasan Elem. School, Paclasasan, Mansalay, Mindoro; Mansalay Elem. School, Mansalay, Mindoro; Bulalacao Elem. School, Bulalacao Mindoro; Abra de Ilog Elem. School, Abra de Ilog, Mamburao District, Mindoro; Libang Central School, Viga Barrio School, Malilig Barrio School, Tagbac Barrio School, Cabra Barrio School, Binacas Barrio School and Tilic Barrio School, Mindoro; Silliman University, Dumaguete, Or. Negros.

The **Coconut Journal** reaches the different branch libraries of the National Library in Iloilo, Zamboanga, Camarines Sur, Bohol, Tayabas, Ilocos Norte and Tondo.

for resale to the people and copra producers of Baler. Other products of the National Coconut Corporation such as soap, hats, slippers, handbags, etc. may also be displayed and sold at the store.

This coincidence will save the Corporation considerable organization, sales and personnel expenses. As has been tentatively agreed upon, the FFA Store personnel is willing to undertake the job of paying the spinners and weavers their piece-work, crediting same to the Corporation.

With the National Coconut Corporation as its connecting link, there is a cooperative system of industrial activities in progress in Baler. The planter, responsible for the production of coir fiber, receives a sound income for his product; the industrial workers (the spinners and weavers) with human labor as their invested capital, receive an income and net gain for utilized time; while the Corporation initiates the home industry and utilizes one of the principal by-products of coconut—the coir fiber.



The Editor,
The Coconut Journal
Sir:

So much has been said and written both in the public prints and over the radio about "quality soaps" manufactured from the so-called "costly oil" that a few words to correct the misleading impression created by this propaganda are called for.

What is a soap?

Soaps are alkali salts of fatty and resin acids, soluble in water and capable of giving a lather. Inasmuch as they are generally made from vegetable or animal oils, they consist of the alkali salts of such acids as occur in these oils. In other words costly olive oil is no olive oil any longer when made into a soap, but saponified acids and as such, they do not have the beautifying properties and superior qualities of a good soap made from our own coconut oil.

All eminent authorities on the subject of soap-making agree, that no oil in the world can beat coconut oil as a prime material for soap. The reason is plain. Coconut oil contains LAURIC ACID, an acid of the HIGHEST SAPONIFIED VALUE. "Costly olive oil" contains no Lauric Acid, consequently does not give the rich lather of coconut oil soap, *ergo*, it is not the prime material for the best quality soap.

Now let the truth be stated. Prime olive oil is never used in soap making. What is used is the "bagasse oil" or sometimes called "enfens" very high in free fatty acids. This oil is the last expression of the fruit and is not costly at all, as it is not edible, but residual oil suitable only for cheap soaps.

No oil in the world gladdens the heart of the soap maker more than our own good coconut oil.

The desired action of a good soap is that it be a good detergent, or in plain language, it must emulsify greasy material and increase the brownian movement. Soap made from "costly olive oil" does not do this as well as the "cheap" coconut oil. In fact "costly oil," or what goes into soap of this fruit, is not costly at all, but the refuse part of it.

Yours truly,
E. M. GROSS, Ph. D.
Chemist

P. O. Box 154 Davao, Philippines

The Editor,
The Coconut Journal
P. O. Box 290, Manila
Sir:

The Information Service of the University of the Philippines desires to have a complete file of your excellent magazine, **The Coconut Journal**. On looking up our records, we discovered that we lack
(Please turn to page 23)

ROLE OF COCONUT . . .

(Continued from page 8)

90 coconuts per capita are consumed annually in the Philippines compared with 150 per capita in Ceylon. The importance of utilizing coconut as a supplementary food in our daily diet may be summarized as follows: First, and foremost, the contribution of fat to the diet, is considerable. If we take into consideration that the main defect of Filipino diet is the low fat intake, the increase consumption of coconut oil or fat by our people will supplement this deficiency. Furthermore, fat as you all know, is high in caloric value. One gram of fat yields 9.3 calories, compared with 4.1 calories for each gram of either carbohydrate or protein. This country is importing fat for food purposes to the value of many thousands of pesos annually. A large part of this amount can be saved by utilizing coconut fat and oil as food in our daily meals. Second, coconut provides, biologically, good protein, some carbohydrates, particularly sugar, and little water soluble vitamins B and C in toddy. On the other hand, it contributes little or none of the fat-soluble vitamins and mineral salt requirements of diet, which must be provided by other foodstuffs particularly milk and eggs.

I believe the great majority of our people are yet to realize the value of good nutrition. Somehow or some way, as a nation, we have to adjust our food habits and our diets to the newer knowledge of nutrition. This adjustment, even if it takes a long time to filter through the entire population should be continued.

We need to make the Filipino people nutrition-conscious in terms of nutritional science of today. If the great mass of our people could be brought to understand the relatively simple, basic principles of the modern science of nutrition and understand our deficiencies, the unsatisfactory nutritional status of no less than 50 per cent of our population may be improved.

The human resources of the nation must be maintained to a high degree of reserve status, so that it can give its best if called upon in time of emergency and national crisis. If this nation should be forced into war, it is absolutely necessary that every man, woman and child in this country should be prepared by being in the best physical and mental condition to maintain, preserve and defend our democratic ideals. We can only accomplish this if our people are properly fed.

NUTRITIVE VALUE . . .

(Continued from page 9)

One of the facts known about coconut is its oil content. A single mature coconut yields in oil alone about 116 grams or in terms of calories about one thousand and forty-four calories. From its protein we could get sixty calories and from its sugar content about forty-two calories. This gives us a total of one thousand two hundred and forty-six calories. Each person requires a particular amount of food for perfect health and vigor—which means so much in terms of calories. We take any person and knowing his age, height and occupation, we determine the total calories required. Let's take a girl of eighteen, five feet two and we know that she needs from 1,800 to 20,000 calories from food a day. If she is "skinny," she is probably twenty or thirty pounds underweight. If she took to eating any of the varied coconut confections, she would be getting additional calories not only from the coconut itself but also from the sugar used in the confection. She might take her coconut in the form of a refreshing glass of the young spoon or "buko" and taken three or four times daily this would insure her the much needed additional calories.

To a thrifty housewife with the limited allowance of sixty cents, eighty cents or even a peso a day, this food is certainly a God-send. For every two or three centavos invested in a coconut she gets one thousand and two hundred calories. A tablespoon of the coconut eaten with our rice cakes could give us two hundred and eighty-four calories. In preparing diets for our poorer classes we have found the greatest problem in providing sufficient calories for the whole family. There are usually so many members, and a family of twelve living on sixty centavos a day finds a great difficulty in adjusting food needs with the money on hand. Where one half of the money is spent for rice, the three centavos spent for coconut could give her as much heat as five pork sausages which might cost her from eight to ten centavos.

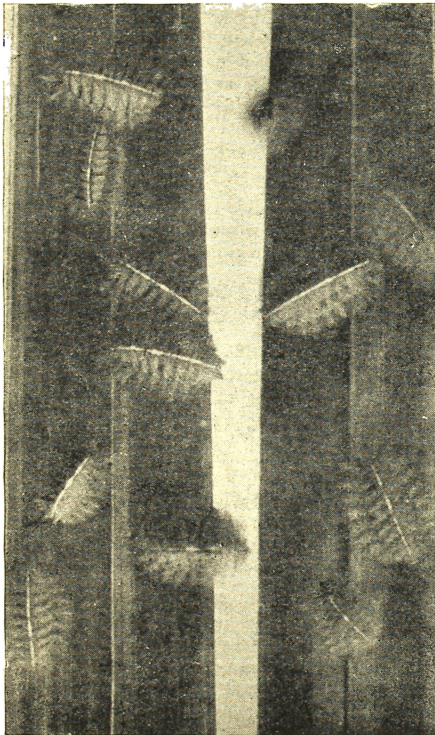
In case of emergency, the coconut would be a worthy substitute for whatever we may have to forego. The other speakers have given you all plenty of things to think about and so, I close asking all to join hands together in building up our youth with proper food habits and urging them to maintain the attitude that whatever eventuality may take place, it shall be faced with faith and courage.

COCONUT PESTS AND . . .

(Continued from page 5)

in its efforts to prevent the spread of such maladies as leaf miner, locusts, black beetles, scale insects and bud rot, which may vitally affect the coconut industry if they occur as epidemics. This is bound to occur if planters in particular slacken in their joint efforts to stamp them out while still greatly localized.

In no other phase of agriculture is cooperation more greatly needed than in the control of plant pests and diseases. The efforts of any individual planter in controlling beetles, bud rot and the like in his grove may not be of much avail if his neighbors neglect the infestations and infections in their own groves.



Slug caterpillars attacking coconut leaves.

(Courtesy Dept. of Agri. & Com.)



*The General Manager,
National Coconut Corporation
Manila.*

Dear sir:

I write to seek information with regards to the current price of buri-braids as paid by your Corporation. I am of the information that at present you are paying a good price for such merchandise. For this reason, I beg to ask you the prices for the different kinds of braids, and if possible to furnish me with the detailed list of them all and the dates of good prices.

As the braid industry here is our important source of livelihood, I am requesting you for their exact prices as you buy them together with the quantity you need in case we intend to send them to you directly.

Thanking you in advance and hoping for your kind attention and reply, I remain,

Very respectfully yours,
Antonio M. Rose

In reply to your letter, please be informed that we are in the market for the following buri braids;

1. *Apatan-Khaki 20 mm. wide and 60 yards long @ ₱.28 per roll-already pressed and packed.*
2. *Siyaman-Khaki 18-to 20 mm. wide and 60 yards long @ ₱.45 per roll-already pressed and packed.*

As we will need about 10,000 rolls of each type mentioned above, please let us know as soon as possible if you could supply us these braids at the prices quoted and also indicate how many rolls you can supply in one month.

*The National Coconut Corporation
Manila.*

Dear sirs:

In your "Coconut Journal" of April, 1941, my attention was called in the article MAKE YOUR OWN SOAP AT HOME THE NACOCO WAY. Since then I have tried to buy Nacoco Sosa and Nacoco Langis Ng Niyog (beer bottle size) but sorry to inform you that I cannot find any in the market. In this connection, I hereby respectfully request that I be furnished with the names of persons or stores from where I can be able to buy the above mentioned articles.

Furthermore, I want to inform you that I want to try the SIMPLE METHOD of soap making you have published in that Journal, which interested me more.

Very respectfully yours,
(Mrs.) Mercedes Pagtalunan

*We are selling Nacoco Sosa right in our office.
You may buy your coconut oil from Chinese stores or direct from oil manufacturers like, Spencer Kellog & Sons, Philippine Refining Co. and Luzon Industrial Corporation.*

GOOD TIMES AHEAD...

(Continued from page 6)

is understood the Philippines is so far the only source of United States requirements. According to Dean Benitez, the production of charcoal from coconuts is already a big industry here, and the military authorities in the Philippines have been assured that the NACOCO can step up output and turn out the product in any quantity should the necessity arise.

In improving the position of the major industries, particularly copra production, the coconut corporation has done, and is still doing a lot, for the benefit of planters and producers. While the appreciable pickup in prices during the fast few months has been due largely to the bullish influence of the overseas markets, to a certain extent the improvement in the method of production here has been an important factor, having maintained the good name of Philippine copra in the world's market. However, copra produced in Luzon is considered the poorest in the world, and the corporation is therefore doing all it can to improve the present method of drying and thus eliminate this grade of the product for the good of the industry as a whole.

Coconut planters in the Islands can now obtain crop loans from the National Coconut Corporation. It was disclosed that most of these loans are around P500 and below P1,000. These loans have been found to be a powerful weapon against usury, fast eliminating middlemen who heretofore have been responsible for the miserable plight of the coconut planters.

Copra and coconut oil are major items in America's economy which may assume increasing importance as they are also vital raw materials in certain industries, particularly in the manufacture of munitions and explosives. So far they have not been accorded full priority, but it was reported some time ago that the Office of Production Management in Washington were considering revision of the priority schedules to include these commodities. In spite of shipping shortages, however, the Philippines has actually shipped larger quantities of these products to the United States. For one thing, demand in the United States has broadened considerably, more than offsetting the loss of the European market. The diversion of P. I. ships previously calling at Atlantic ports to unload their cargoes only on the Pacific coast has been decided by the U. S. Maritime Commission to remedy the shipping shortage. Although there have been less bottoms, therefore, there have been more voyages. It is believed, however, that the industry has not been able to take full advantage of the heavy demand for copra and oil in the United States.

Besides feeding American industry which is now being geared to the defense effort, the Philippine coconut industry is actively doing its part in America's economic warfare against the Axis. Since the outbreak of the war in Europe, no copra, copra cake or meal, or coconut oil has been shipped to Ger-

THE MINERAL AND VITAMIN...

(Continued from page 8)

C than the green kernel (5). Although we do not emphasize the use of coconuts for mineral and vitamin content, we do recognize the value of the coconut as a source of fuel for the body, for the value of coconut fat in sparing vitamin B, in the body, as a source of vegetable protein and for its value in enhancing the flavor of products made from other foods.

- (1) *Handbook of Philippine Agriculture, Los Baños, Manila Bureau of Printing, 1939*
- (2) *Biswas, H. G. and Ghosh, A. R. Investigator on the Vitamin C Content of the coconut. Science and Culture vol. 1, p. 518 (1936)*
- (3) *Ganguli, S. K. Chemical Examination of Water from Cocco Nucifera Science and Culture vol. 2, p. 224 (1936) Chemical Abstracts vol. 31, p. 4684 (1937)*
- (4) *Banerjee, H. N. Ascorbic Acid Content of Some Plant Fluids Current Science vol. 4, p. 28 (1935) Chemical Abstracts vol. 29, p. 7385 (1935)*
- (5) *Banerjee, H. N. Chemical and Physiological Investigations on the Chemical Abstracts vol. 32, p. 5036 (1938) Presence of Vitamin C in certain Substances in Plants. Trans. Bose Res, Institute, Calcutta vol. 10, p. 145 (1934-1935)*
- (6) *Salmon, W. D. and Goodman, J. G. Alleviation of Vitamin B Deficiency in the Rat by Certain Natural Fats and Synthetic Esters J. Nutrition vol. 13, p. 477 (1937)*

many. Italy likewise has not been getting any of these raw materials since her entry in the war. Then came the export control program, which is perhaps so far the best weapon of America against Germany's junior partner in the Orient. Application of the control schedule resulted in the cessation of shipment of copra and oil to Japan and Russia. The Soviet Union, being now on the side of the Democratic Allies, can undoubtedly have access to these raw materials; but not so in the case of Japan. Japan particularly bought heavily this year before the setting up of the export control machinery.

Statistics gathered by Dean Benitez show that for the first half of this year Japan purchased P1,632,758 worth of copra and P299,111 worth of coconut oil; there was no importation of copra for the same period of last year and only P156 worth of oil. Russia imported P760,240 worth of copra for the first half of 1940, the first shipment to that country since the first world war; but for the corresponding period of this year, her purchases dropped to P261,000. Provided bottoms are available and Russia should stay in the war indefinitely, there is a good possibility of that country improving her importation of this product from the Philippines. The experience of the first world war shows that Russia needs copra in wartime.

While suffering from the closing of the European market, therefore, the Philippine coconut industry has, on the other hand, found new opportunities and new horizons. But the revolutionary changes in the industry that are foreseen for the near future are to come from the current industrialization program which is already bearing results and which is expected to further better the lot of the coconut planters and producers and give employment to more people.

WITH OUR CORRESPONDENTS . . .

(Continued from page 19)

Nos. 1 to 4 of the **Journal**. Will you be good enough to send us the missing numbers?

Sincerely yours,
(Sgd.) **BERNABE AFRICA**
Chairman

Pinamalayan, Mindoro
October 14, 1941

The Editor, Coconut Journal
P. O. Box 290, Manila

Sir:

This is to inform you that the undersigned has received copies of the **Coconut Journal** for the months of March, April, July, and September, 1941 respectively, and found it to be one of the most helpful magazines in print at the present time, especially to the coconut growers.

In this connection, as I don't wish to lose a single copy that you have already printed, and inasmuch as my subscription begins from the time this **journal** comes to print, may I therefore request that I be supplied with the following issues: January, February, May, June and August, 1941.

Thanking you for this favor, I am

Very sincerely,
(Sgd.) **MATEO RIEGO**

"REMURE"
GREGORY ROAD.

Colombo, August 15, 1941

The Editor, Coconut Journal
P. O. Box 290
Manila, Philippines

Dear sir:

I enclose herewith draft for two (American) dollars in your favor as subscription for the **Coconut Journal** for the year 1941. Please send me the past numbers forthwith and the future ones as they are published.

I am a coconut planter myself and am a member of the Board fo **Coconut Research of Ceylon**.

I must congratulate you on your excellent publication.

Yours faithfully
A. F. R. GOONEWARDENE
Catholic Rectory
Sumilao, Bukidnon
Mindanao, Philippines

The National Coconut Corporation
Banco Hipotecario Bldg.,
Manila.

Gentlemen:

Along with our remittance for a year's subscription to your **Journal**, I include ₱0.04 stamps to cover mailing of the pamphlet with recipes for use of green as well as mature coconuts, as announced in

COPRA AND COCONUT . . .

(Continued from page 2)

₱10.54 3.02 6.88 5.52 8.94 14.25 8.66 5.50

COPRA ARRIVALS IN MANILA

This month 758,407 bags
Previous month 839,794 "
October, 1940 582,229 "

COCONUT OIL.—After featuring a lead of 1/2 centavo to ₱0.22-1/2 per kilo in mid-October, influenced largely by developments in copra, the early gain was erased in the second half of the month. When copra weakened nominally to ₱10.00-₱10.25, offerings of coconut oil in Manila dropped on the 22nd to 21-1/2 centavos for a net loss of 1/2 centavo during the month. In the American market, values improved 1/4 cent earlier in the month, with few scattered sales made on the Pacific Coast at 6-3/4 cents, f. o. b. tank cars. Later, in sympathy with other markets, coconut oil gradually shaded to lower grounds, touching by mid-month at 6-1/2 cents, the trade apparently upset by the Argentine Trade Pact which lowered the U. S. duty on tallow, linseed oil, and sunflower oil. With lard futures and cottonseed oil staging sharp declines, coconut oil offerings dipped further to 6-3/8 cents on the Pacific Coast, recovering later to 6-1/2 as the markets firmed up on the Japanese Cabinet change. At the end of the month, there were buyers at 6-1/4 cent as against sellers at 6-1/2 cents, Pacific Coast. Manila, sellers, per kilo, delivered in drums:

Opening	Low	High	Closing
₱0.22	0.21-1/2	0.22-1/2	0.21-1/2

COPRA MEAL.—Nothing of importance developed abroad. In the overseas markets, the main consideration still hinged on the shipping situation. On the Pacific Coast, quotations were nominal at \$35.00 per ton. Locally, offers dropped slightly to ₱17.50 per ton, ex-warehouse, for a 50-centavo loss compared with the previous month.

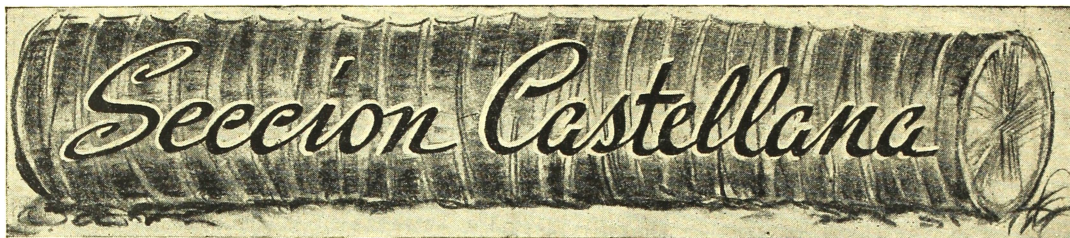
DESICCATED COCONUT.—While concern over the shipping situation continued, the base price in the American market was revised for an increase of 1/2 cent to 8-1/2 cents, the new price list taking effect on Monday, October 13th. Sales at the new level were slow, heavy purchases being made prior to the increase in prices. Little activity is expected by the trade until the end of the year.

the interesting article of Miss Orosa on "Coconut as Food" in your September issue.

Though we have hardly any coconut trees on this high Bukidnon territory, we are interested in your ideas and in your accomplishments for the general good! Please send us a year's subscription of **THE COCONUT JOURNAL**. Enclosed is a money order for TWO PESOS (₱2.00) in payment of the same.

With thanks for this pamphlet and with best wishes for the further success of your work, I am,

Very sincerely yours,
C. HAUSMANN, S. J.
Director Little Flower School



Tablones "Cocotex" Fabricados Del Bonote

Por ANGEL B. ABAD

*Técnico Auxiliar
Corporación Nacional del Coco*

Traducido al Castellano

LA utilización de los desperdicios como materia prima para convertirlos en artículos de valor económico, ha atraído gran atención estos últimos años. La disposición de estos desperdicios, hasta ahora considerados de ningún valor, y cuya acumulación muchas veces causa un aspecto desagradable, ha intrigado a nuestros hombres de ciencia. Sin embargo, ahora, gracias a sus esfuerzos, un gran número de tales productos desperdiciados son transformados en artículos de valor y utilidad sorprendentes.

En estos días, casi todos los residuos, ya sean de origen industrial ó agrícola, son sometidos a cuidadosos escudriñamientos. Uno de esos materiales es la estructura leñosa y fibrosa de las plantas. Esto es notable particularmente en la industria de tablones de fibras para tabiques y tablones aisladores, también de fibras, que utilizan como materia prima el exceso de bagazo en las fabricas, troncos de maíz, pajas, hierba marina conocida por "eel grass" (hierba anguila), y desperdicios de la madera. De hecho, casi cualquier residuo fibroso que se podría obtener en bastantes cantidades y bajo un aprovisionamiento constante, se está industrializando estos días.

De acuerdo con el progreso de la ciencia para descubrir formas propias y mercantilizables, por medio de la cual se podría disponer de los productos accesorios de la industria cocalera, se han buscado medios para el empleo del bonote como materia prima para la fabricación de tablones de fibras. La necesidad del establecimiento de nuestra propia industria de tablones de fibras, se hace mas imperativo cuando nos damos cuenta que nuestra importación de este producto, clasificado como tablones para tabiques y tablones de corcho, ascienden a centenares de miles de pesos cada año. Los siguientes datos dará mejor idea del flujo de este material en los mercados locales:

1937	327,319	18,848	346,167
1938	298,734	29,525	328,259
1939	421,328	12,944	434,272
1940	297,566	33,086	324,652

Las cifras arriba acotadas demuestran que las importaciones de estos productos que podrían fabricarse enteramente en el país por medio de nuestros materiales primas en abundancia, está en su curso ascendente excepto en tiempos anormales como los del año de 1940. La rapidéz con que adopta Filipinas las comodidades modernas, tales como la protección contra el frío, el calor y el ruido, da lugar a una demanda correspondiente de estos materiales aisladores. El desarrollo, por tanto, de esta industria de tablones de fibras tiene un futuro halagador.


LO QUE ES UN TABLON DE FIBRAS

Antes de hacer un estudio concienzudo de la utilidad de las fibras y de las pulpas de bonote como materia prima para la fabricación de tablones, un conocimiento completo de este material y de la industria misma es esencial.

El tablon de fibra no es de papel, ni tampoco puede denominarse un tablon puro de madera de construcción, aunque se parece a los tablones de madera en varios aspectos. Es un tablon compuesto fabricado principalmente de la madera ó cualesquiera otras fibras vegetales por medio de un procedimiento con el cual se forma una greña de innumerables fibras formando un producto rígido. En otras palabras, es un madera sintética que encierra propiedades aisladoras y acústicas además de las cualidades de resistencia contra la humedad y el fuego y la solidéz que lo hace resistente. Es un material nuevo, una madera aisladora, y es mas que un mero sustituto a la madera ordinaria.

Millones de pies cuadrados de este material son fabricados anualmente para satisfacer demandas que sus originadores nunca previeron. Este material se ha fabricado en diferentes calidades, con innumerable variedad de combinaciones para ser utilizados a usos específicos. Entra principalmente en la confección de gabinetes, compartimientos ma-

Año	Tablon/tabique	Tablon de Corcho	Total
1935	P 98,869	P 19,780	P118,649
1936	207,017	6,233	213,250



¿SABE Usted?

Por M. R. QUINTO

QUE las hojas de las palmas de coco tienen usos interesantes y variados?

- * que los tallos de las palmas son utilizados para combustible?
- * que las lacinias secas sirven de antorchas para los peatones por la noche?
- * que las venas de las lacinias son atadas en manojos y son utilizadas como escoba en la casa así como también en el jardín para barrer las hojas caídas?
- * que las venas de las lacinias son utilizadas en la confección de mobiliarios ligeros de fantasía, tales como taburetes, cestas, bandejas y muchos artículos de fantasía?
- * que las venas de las lacinias son también atadas en forma singular que sirven de armadillos eficaces para los peces y langostinos?
- * que las hojas del coco se usan en la confección de las bardas para albergues? Para este fin, las lacinias son partidas en medio por donde esta la vena de las lacinias, y estas tirillas son tejidas pulida y ceñidamente y luego colocadas de dos sobres los cabrios, cada par traslapando al otro formando una cubierta a prueba de las inclemencias del tiempo.

rinos, coches ferroviarios, juguetes, coches de remolque (trailer) y vehículos de motor, y también entra en las instalaciones de aprovisionamiento de aire fresco (air-conditioning), instalaciones frigoríficas, teatros, etc. Como material de construcción los tabloncillos de fibras se destacan por la facilidad de su manejo y aplicación. No presenta desperdicios, por lo mismo que se sirven en tamaños específicos y no contienen nudos, partes resinosas ó vetas atravesadas. Además, la solidez de su textura lo hace resistente a los ataques de los insectos y sabandijas.

Dos objetivos distintos de suprema importancia se resuelven en la industria de los tabloncillos de fibras, a saber: (1) la fabricación de un sustituto de tabloncillos de madera para construcciones que abarca mayor área superficial por cada unidad que consiguientemente reduce el costo de la manipulación é instalación, y (2) la utilización de los desperdicios de productos fibrosos.

Los tabloncillos de fibras pueden clasificarse en dos diferentes grupos — (1) el homogéneo y (2) el laminado. Bajo la clase anterior, algunas veces conocido por tabloncillos de consistencia uniforme, se hallan los tabloncillos aisladores y acústicos. La clase posterior que es un tabloncillo fabricado por medio de varias capas para dar resistencia, incluye los tabloncillos compuestos utilizados para el piso, los gabinetes, coches ferroviarios, etc.

De Nuestro Buzón

Manila, Octubre 30, 1941.

Sr. Editor
The Coconut Journal
Manila

Muy Señor mío:

He leído con singular interés el artículo del Sr. Pedro Aunario, reproducido en la Sección Castellana de vuestra Revista en su número de este mes.

Hablando de la utilización de la Copra Cake, yo no sé si Vds. saben que este producto derivado del coco también es útil como combustible. Esto es un hecho que ya ha pasado de un mero experimento, pero que, debido a la falta de publicidad, muchos todavía lo desconocen. Pues se sabe que varias compañías, entre ellas la Meralco, la Philippine Match Co. y otras, utilizan actualmente la copra cake como combustible para alimentar sus calderas.

De los datos recogidos por el que suscribe sobre este extremo se demuestra que la copra cake puede desarrollar 4,313 kilogramos de calorío equivalente a 7,763 libras de unidades termales inglesas (British Thermal Units), y contiene más de 70% de materia inflamable, 16% de carbono y 5% de ceniza.

La copra cake, por tanto, no es tan solo útil como alimento de animales, y como materia prima para la fabricación de abonos, sino también como combustible barato y de fácil adquisición en el país. Es de esperar que, si su uso llega a generalizarse con el tiempo, contribuirá grandemente a la eliminación de la cantidad considerable que pagamos anualmente por el carbono mineral importado, en beneficio de la industria cocalera en particular y de otras industrias en general.

Soy de Vd. atto. y s. s.

(Fdo.) G. LITTAUA
P. O. B. 2383, Manila.

PROCEDIMIENTO DE FABRICACION

El procedimiento de la fabricación de tabloncillos tal como se practica hoy, está basado sobre el principio de la greña ó sea la producción de tabloncillos rígidos de fibras entrelazadas. El tratamiento, sin embargo, es a veces modificado según la clase de la materia prima utilizada y los productos deseados.

Generalmente, la materia prima es sometida a tratamiento mecánico ó químico, lo suficiente para desligar el material que incrusta y encaja la fibra, pero que no reduce en pulpa las fibras sueltas. Las fibras son recobradas, lavadas, refinadas y finalmente conducidas por medio de una bomba (pumped) en una cámara de abastecimiento que alimenta a la máquina para moldear.

Desde la máquina que forma los tabloncillos, la pieza formada pasa al través de una serie de rodi-

llos, camaras de succion, y al ultimo bajo prensas poderosas y desde alli puesta dentro de un desecador. Algunas veces, sin embargo, en vez de un largo y extendido resecamiento la pieza mojada es cortada en determinados tamaños y colocados en una platina, variando las planchas segun el numero de tabloncillos prensados en un mismo tiempo. Los tabloncillos salen del resecador casi enteramente secos, y por tanto, ó son metidos a tratamiento a traves del humedecedor ó son simplemente rociados con agua para equilibrar su humedad con la humedad de la atmósfera, asegurando de este modo una expansion y contraccion mínima. Las piezas acabadas son almacenadas para su distribucion, despues de una inspeccion rigida.

BASE DE ESTUDIO

La técnica envuelta en la fabricación de este producto fibroso aislador, es entrelazar (felt) las fibras y someterlas a presion hasta cierto punto que enrede celulas pequenísimas de aire las cuales producen la cualidad aisladora como tambien la cualidad de peso reducido. La idea es encerrar en cada pie cuadrado del tabloncillo millones de celulas selladas que son tenidas cautivas en las mismas fibras y en los intersticios formados entre las fibras. Son estas celulas de aire las que inhiben la propiedad aisladora de elevada eficiencia. Anteriormente, espacios de aire entre muros eran considerados como los mejores aisladores de calor ó del frío (teniendo en cuenta que el aire tiene un contante de conductividad termal de 0.24 B.T.U. — Unidad Termal Britanica — por cada libra mucho mas eficiente que el corcho). La ciencia tiene probado, sin embargo, que esto podria ser cierto si se podria confinar el aire en una forma segura ó tenerlo "muerto".

PROCEDIMIENTO EXPERIMENTAL Y RESULTADOS

Tomando por guía lo que antecede juntamente con los hallazgos recientes en el sentido de que la

pulpa ó polvo del bonote exhibe propiedades similares al corcho, esto es, que ello revela excelentes cualidades aisladoras, es suave, liviano y es compresible, mas la ventaja de la fibra del bonote de ser larga, resistente y flexible, se ha llevado experimentos para determinar la adaptabilidad de estos desperdicios para la fabricacion de tabloncillos de fibras.

Desafortunadamente, el trabajo no era tan facil como fué pronosticado. Estaba encido de dificultades. De hecho apenas comenzado los experimentos, se presentaban tambien problemas. Por ejemplo, se ha hallado que, a diferencia de las fibras del bagazo que tienen la superficie dentellada a modo de sierra y la presencia de ganchitos microscopicos que proporcionan su habilidad tenaz de adherir entre sí unas a las otras, las cuales cualidades facilitan en gran parte su greñamiento, las fibras de bonote por otra parte estan desprovistas de estos simulados ganchitos (hook-like structures), tienen una superficie liza, y son decididamente redondas en su sección transversal (cross-section). Además a diferencia del abacá que se puede deshilar (shredded) hacia una fibra fina, membranosa, y pequenísima, las fibras de bonote, una vez desfibradas, ya no se pueden deshilar mas. Esto es, cada una de las fibras, ya son en sí sus respectivas ultimas fibras. En su estructura, se asemeja a un pedazo ordinario de alambre corto y ninguna trituracion podria reducirla en fibras mas finas. En vez de reducirlas ulterior trituracion solamente aplastarian las fibras redondas. Era, por tanto, necesario un estudio cuidadoso para salvar estos inconvenientes asi como para desenvolver, si es posible, un procedimiento de fabricacion de tabloncillos adaptables para las fibras de bonote como materia prima.

La preparacion mecanica de las fibras era el primer paso en la utilizacion de las fibras cortas de bonote. Esta consistió primeramente, en cortar las fibras en una maquina cortadora del tipo cortador con filos (blade type) reduciendo de este modo la longitud de las fibras a un cuarto ó a unos

Tabloncillos cocotex de la Nacoco.



NOTICIAS DEL EXTRANJEROS

por

Ricardo B. Bonilla

JAVA Y MADURA

Se calcula que la producción anual en Java y Madura ascendió a 6,908,209 cocos y 3,494 toneladas métricas de copra en 1939. Existen unos 44 fábricas de aceite con una producción anual de 154,053 toneladas métricas de aceite.

INDIAS HOLANDEASAS

Según noticias recibidas, los cocos recolectados en las Indias Holandesas correspondientes al año de 1939 asciende a 11,872,232 y la copra producida es de 37,674 toneladas métricas. Las fábricas de aceite se aumentaron a 69 dentro de dos años con una producción de 182,594 toneladas métricas de aceite.

NUEVA GUINEA

La Junta de Gobierno para la Copra En Nueva Guinea ha sido creada por el gobierno del Commonwealth de Australia. Sus funciones son distintas de las funciones de la Corporación Nacional del Coco en Filipinas. Su propósito principal es la compra, combinación mancomunada, y disposición en el mercado para un mejor precio de la copra producida en la Pacífico del Sur. Los miembros recientemente elegidos de la Junta de Gobierno de la Copra consisten de los Sres. G. Hogan, Presidente, J. C. Archer, miembro ejecutivo y F. J. McKenzie, miembro financiero. Aparece que hay buena perspectiva para la industria cocallera en Nueva Guinea.

CANADA

Sir Walter Carpenter debe ser felicitado. Se ha sabido que él es el creador y fundador del Nuevo Molino de Copra Carpenter que es el primero y único molino de copra en el Dominio. Canadá cuenta con 12,000,000 de habitantes. El molino está situado en la ribera de Vancouver, parte occidental del Canadá. Se

estableció por 600,000 pesos y tiene una capacidad de 40,000 a 50,000 toneladas. Comenzó sus operaciones desde el 27 de Mayo, 1941. Es mantenido con copra de primera clase procedente de los territorios australianos, de Fiji y las Islas del Sur.

NUEVA ZELANDIA

Sir H. B. Gibson, Miembro por la División Oriental, Concejo Legislativo de Fiji, abogado recientemente que la copra debe ser utilizada en la producción de la mejor carne de cerdo y tocino. Fue hallado eficaz durante los experimentos llevados a cabo por los plantadores de coco en Auckland. También se ha visto en la granja de Tikorangi, que los cerdos alimentados con copra gozan de inmejorable salud. Es utilizado como alimento de caballos, cerdos, y del ganado. También en Filipinas los agricultores deben hacer mayor uso de la copra como alimento para cerdos y ganados.

CEYLON

La industria del coco en Ceylon afronta problemas similares a los que afronta los productores de copra en Filipinas. Los miembros de la Junta del Coco del gobierno están procurando aumentar el consumo local del coco así como también la fabricación de los productos accesorios. La propaganda de la Junta del Coco alienta el consumo del coco fresco como artículo de primera necesidad en el alimento por parte del pueblo labriego. Este es el mismo "GRITO DE COMBATE" lanzado por la Corporación Nacional del Coco: "Comed Mas Cocos". En Ceylon pusieron en el camino una caravana motorizada como una exposición ambulante y visitaba aldeas y ferias con el propósito de popularizar el uso del aceite para el cabello, aceite para la cocina, jabón, margarina, dulces, y otros productos accesorios del coco.

tres cuartos de una pulgada. Para compensar la ausencia de los pelillos en formas de ganchitos (hair-like hooks) y para neutralizar el efecto objeccionable de la superficie liza de las fibras redondas, las fibras cortadas fueron rizadas permanentemente, u ondeadas en otra máquina del tipo de martillo (hammer type) que también deshacía cualquier bulto de fibras que pudiera haberse quedado. En virtud de la acción del martilleo de esta máquina, el efecto deseado fue producido, el cual evidentemente ayudó en el entrelazamiento y entretrejimiento de las

fibras en un grado mayor que cuando las fibras se dejaban cortas y rectas.

La mezcla de las fibras utilizadas se componía de fibras primarias de (1/2 hasta 3/4 de pulgada de largo) que se intercalaban para formar el armazón y de fibras secundarias (fibras cortas) que producían rigidez. El espacio entre las fibras era entonces atestado con pulpas de bonote ó sea las partículas parecidas al meollo (pithlike particles) para aumentar la cualidad aisladora. Finalmente un poco de pulpa de papel tomada de periódicos viejos,

previamente batida en un batidor separado se ha agregado para sujetar la pulpa de bonote y otras fibras, ademas de proporcionar los agregados finos que fueren necesarios.

La mixtura mencionada fue introducida en un batidor en proporciones exactas. En este punto se mezcla agua adicional y materiales impermeables compuestos de resina y alumbre, asi como tambien insecticidas para hacerla resistente al deterioro en seco y a los ataques del anay. Dos efectos deseables fueron obtenidos en el procedimiento del batido:

1. La reduccion de la longitud de las fibras para facilitar la distribucion uniforme. Esto era puramente un procedimiento mecalico que refina mas la mezcla de las fibras en el conjunto.

2. Un cambio en el caracter de las fibras resultante de la densidad y resistencia tensora aumentadas (increased density and tensile strength). Esta propiedad apareció al tiempo en que el tacto y la apariencia del material resultó mas suave y viscoso, un efecto producido por la restregadura y por la accion del batidor.

Despues de 30 ó 45 minutos en los batidores ó despues de un tiempo, cuando se convierte viscoso al tacto y cada fibra individual estaba completamente cubierta con el material impermeable y con el material que la reduce a prueba de anay, la mezcla fue trasladada a los moldes de presion hechos de madera. En este punto se tomaba la precaucion para que la mixtura fuese bien distribuida. La mayor parte del agua fue extraida experimentandola por medio de una criba de tela metalica dejando una masa mojada (wet lap). Esta fue prensada finalmente, por medio de una plancha de madera, al espesor deseado. Despues de que el tablon se haya asentado, por lo general de 4 á 7 horas, es llevado a la prensa para secar.

El procedimiento de la resecacion (en este caso por medio del aire) duró de 3 á 6 dias. Esto era lo mejor que se podia hacer bajo las condiciones actuales, aunque el procedimiento de la resecacion podria ser facilitado mas, por medio del uso de las prensas platinas hidraulicas calentadas por medio del vapor tal como se menciona mas arriba. Este aparato tiene la ventaja de efectuar dos pasos del procedimiento en una sola operacion, a saber, la operacion del prensado y la operacion de la resecacion, además de impartir brillo en la superficie del tablon.

Los tablonos confeccionados por medio del procedimiento desarrollado mencionado mas arriba,

tiene una superficie liza que constituye un adelanto decidido sobre los tablonos confeccionados previamente por medio del metodo en seco que empleaba diferentes clases de ingredientes incorporadores (binders). Posee la cualidad deseable de absorber pintura economicamente, y puede ser aserrado ó clavado, tal como se hace con las maderas ordinarias. El hecho de que el mencionado procedimiento al mojado no emplea ninguna clase de adhesivo, reduce grandemente el costo de su produccion.

RECONOCIMIENTO

El autor agradece sinceramente la cooperación prestada por la Industrial Engineering Division y la Wallboard Section de la Division de Pruebas y Medidas del Buró de Ciencias, y por los Sres. F. D. Maramba, Jefe de la Industrial Engineering Division. Es asimismo agradecido al Sr. Moises Lucas y al Sr. R. Aguilar por sus valiosas y oportunas sugerencias y por sus consejos constructivos respectivamente. El Sr. Aguilar es el Jefe de la Wallboard Section del Buró de Ciencias.

Cocaleros!

Lean y Suscriban al

"COCONUT JOURNAL"

Se Publica una vez al Mes
por la

NATIONAL COCONUT
CORPORATION

₱2.00 al año E.U. \$2.00

*"Make White Copra Only
By Nineteen Forty-Three"*

With a Modern Copra Dryer

A modern copra dryer has the following great advantages:

- It produces white copra and therefore commands much better prices.
- The copra is dried uniformly and overheating and scorching which are injurious to its production are eliminated.
- The moisture content is low, varying from 6 to 8%, as compared to 17% in the old "tapahan" method.

WE ARE READY TO INSTALL FOR YOU ANY OF THE
MODERN TYPES OF DRYERS ON EASY MONTHLY
PAYMENTS SPREAD OVER TEN YEARS.

Let this our slogan be the slogan of all Philippine copra producers:

"Make White Copra Only By Nineteen Forty-Three"

National Coconut Corporation

201 Banco Hipotecario Bldg.

Manila, Philippines



An Opportunity In The Philippines

COURSES offered by the CENTRAL COLLEGES & SCHOOLS, through the Central Extension Division, have been designed to enable ambitious men and women in the provinces to start or continue a part of their university education while they attend to their respective jobs in the provinces. The plan of study as approved by the Government permits the student to complete as many as 50% of the required units for a regular university degree or title. Enrollment is open any time of the academic year.

Subjects Offered this Quarter

English — History — Political Science — Social Science — English Literature — Education — Psychology — Spanish — Child Study — Tagalog — Economics — Philosophy — Health Education — Character Education — Accounting — Mathematics — Sociology — Short-Story Writing — News Writing — Retail Merchandising — Junior Normal Courses.
(SELECT ANY THREE SUBJECTS AT A TIME!)

Not Too Late

"It is too late!" Ah, nothing is too late—
Cato learned Greek at eighty; Sophocles
Wrote his grand 'Oedipus', and Simonides
Bore off the prize of verse from his compeers,
When each had numbered more than four score
years;

And Theophratus at four score and ten
Had begun his 'Character of Men.'
Chaucer at Woodstock, with the nightingales,
Goethe at Weimar, toiling to the last,
At sixty wrote the 'Canterbury Tales',
Completed 'Faust' when eighty years were past.
What then, Shall we sit idly down and say,
The night hath come; it is no longer day?
--For age is opportunity no less
Than youth itself, tho in another dress.
And as the evening twilight fades away,
The sky is filled with stars invisible by day."

—LONGFELLOW.

FOR the information of public school teachers, we are quoting hereunder the self-explanatory letter of the acting Director of Education to the Director of Education:

September 13, 1941

The Director of Education
Manila
Sir:

With reference to an indorsment of this Office dated July 26, 1941, relative to the status of the correspondence courses offered in the Central Colleges and Schools, it is desired to state that on August 4, 1941, the said Central Colleges and Schools was given government authority to operate an Extension Division and offer by correspondence, aided by radio, courses in liberal arts, commerce and education.

Very respectfully,
(Sgd.) D. M. SALCEDO
Acting Director of Private Education

Hon. MAXIMO M. KALAW

A.B., LL.B., Ph. D.
President

Dean GABINO TABUÑAR, B.S.E., M.A.
Director, Extension Courses

Prof. ADEUDATO J. AGBAYANI, B.S.
Foreign Service, M.A., Ph.D.
Ass't. Director, Extension Courses

Prof. HOMOBONO A. AGUILING,
B.S.E., B.D., A.B., M.A.
Registrar

ALL COURSES AUTHORIZED BY THE GOVERNMENT

CENTRAL COLLEGES & SCHOOLS

The Professors' "University" of the Far East and Malaysia

Operated under Government Permit by the Central University, Inc. 232 FLORIDA ST., MANILA

Listen to Radio KZRH station on Tuesday evenings, 9:00-9:15 o'clock for announcements