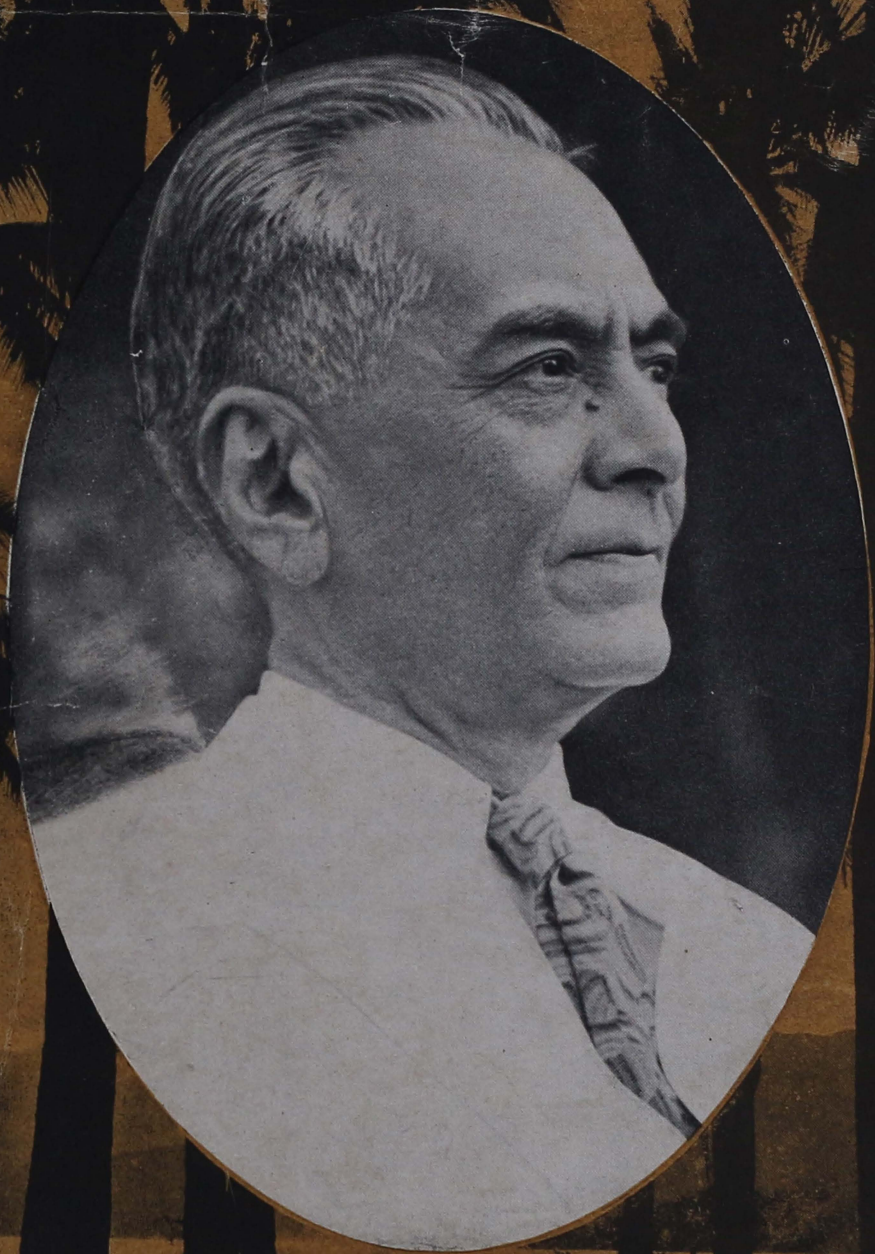


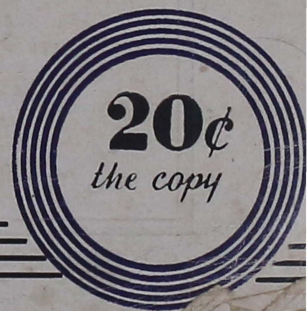
THE COUNCIL JOURNAL



*His Excellency, Manuel L. Quezon
President of the Philippines*

NACOCO ANNIVERSARY NUMBER

v. 1 no. 8



HOUGHTON

OILS

*Yours for
Better
Lubrication*

Sole Distributors

PHILIPPINE ENGINEERING CORPORATION

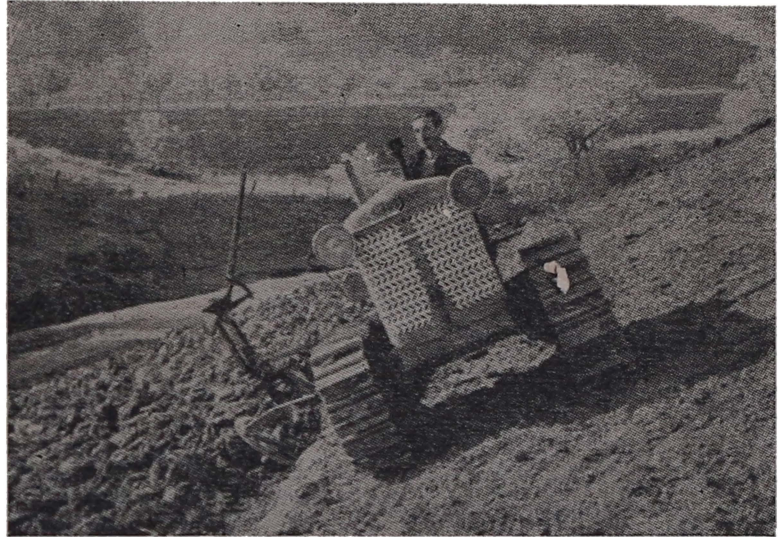
MANILA

CEBU

ILOILO

La Arada Con **Cletrac**

Trabajando en laderas empinadas los Cletracs no se vuelcan. Aradas de contorno... preparación de cuadros de cultivo... en tierra terraplenada, etc., nada hay que iguale la estabilidad, el pié firme del ancho centro de gravedad de un Cletrac, su tracción positiva y su leve presión sobre el suelo.



MARSMAN TRADING CORPORATION

MANILA

Baguio . Cebu . Bacolod . Davao . Iloilo . Mambulao . Cotabato

COMPLIMENTS

of

S. STADLER

CONSTRUCTION AND MECHANICAL ENGINEER

For The

COCONUT INDUSTRY

P. O. Box 1380

Telephone: 5-55-43

Manila

THE COCONUT JOURNAL

Published monthly by the

NATIONAL COCONUT CORPORATION

Benjamin Salvosa, Editor
Pedro M. Gimenez, Business Manager
Godofredo Zanduetta, Associate Editor

VOL. I Manila, Philippines No. 8

CONTENTS

Evaluating Our Worth (Editorial)	4
<i>By Pedro M. Gimenez</i>	
President Quezon and the Coconut Industry	5
<i>By Sol Gwekoh</i>	
Board of Directors	8
CONRADO BENITEZ, Executive	9
The Role of the Philippine Coconut Industry in De- veloping a Self-sufficient National Economy . . .	11
<i>By V. G. Lava</i>	
Copra Price Fluctuation in Two Decades (1921-1940)	13
Fiber Cocotex from Coconut Husk	15
<i>By Angel B. Abad</i>	
The Need of Cooperation in the Coconut Industry .	16
<i>By Felipe Jose</i>	
DECENTRALIZATION: Key to Economic Defense	18
<i>By Hilarion Henares</i>	
Unlocking the Treasure in Coconut Shell	20
<i>By W. Orland</i>	
Producer Gas Fundamentals	22
Babassu	25
<i>By Pedro A. David</i>	
Coconut Statistics	32
<i>By Ricardo Bonilla</i>	
A Survey of Legislation Affecting the Coconut In- dustry in the Philippines	34
<i>By Maria Abalajon</i>	
Marketing Copra and other Coconut Products . . .	36
<i>By R. Bonilla</i>	
Location Factors in the Commercial Coconut Industry	40
<i>By George F. Deasy</i>	
SECCION CASTELLANA	
Los Primeros Logros de la Corporación Nacional del Coco	54
<i>Por Juan M. de Castro</i>	
Los Préstamos Sobre Cosecha Una Bendición	54
Una Resecadora Portatil Doméstica	60
<i>Por Pedro A. David</i>	
A Traves de las Hojas	62

The picture on our cover is the latest photograph of His Excellency, President Manuel L. Quezon furnished to us by Malacañan for this issue.

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

August 1941

Manila

Evaluating Our Worth

By PEDRO M. GIMENEZ

Comptroller

National Coconut Corporation

IN evaluating the net worth or accomplishments of an institution just born, like the National Coconut Corporation, or any other corporation, private or government-owned, monetary profits or loss should not be used as the only yard-stick to gauge its future. For as a matter of fact, the National Coconut Corporation is a new and pioneering enterprise designed to exploit a vast field hitherto unexplored and yet with so many obstacles placed by the law in its path. If to accumulate profit should be its only mission, the Nacoco Board could have simply allocated the whole capital of the Corporation to money lending which it is authorized to do under the charter, thereby enabling it to proclaim to the four winds that it has in its ten months of operation realized gains instead of loss as is common to any new business enterprise. But money making is not its principal mission. The National Coconut Corporation is by the mandate of the law, required to resuscitate a "dying man," to undertake a difficult operation yet with some vital instruments held up from its use. It is not authorized to buy and sell copra nor to give subsidy or loans to those engaged in the processing of copra or oil. The implication of all these prohibitions which are contained in its charter simply mean that this corporation is powerless from stabilizing the price of copra in the Philippines, hence, the price of this vital commodity is dictated not always by the usual factor of supply and demand, but by the wishes of certain elements. Under the circumstances, the National Coconut Corporation has to look for entirely new fields and, thanks to the genius of its Board of Directors, it has found new uses for the different by-products of the coconuts.

As may be recalled, the National Coconut Corporation was created under Commonwealth Act No. 518 with the principal aim of rehabilitating the coconut industry and placing it in a position independent of the trade preferences with the United States. It has an authorized capitalization of ₱20,000,000.00 of which only ₱2,000,000.00 is paid up and ₱2,500,000.00 already appropriated but not released. Of the paid up capital, the National Coconut Corporation has expended from the time of its organization on August 20, 1940, for capital assets ₱547,245.55, for researches ₱10,351.60, for loans ₱7,905.00, for copra driers constructed on installment basis ₱1,320.51, for the spinning wheels and hand looms for making sand bags as part of the National Defense program ₱75,957.65; ₱98,016.89 for organization expenses, and

(Please turn to page 64)

PRESIDENT QUEZON AND THE COCONUT INDUSTRY

By SOL H. GWEKOH

(Editor's Note: — This issue of the "Coconut Journal" commemorates the first anniversary of the organization of the National Coconut Corporation and is dedicated to His Excellency, President Manuel L. Quezon, who celebrates his 63rd birthday on the 19th of this month. It was due to the tireless determination of the President to help the coconut industry that made possible the enactment of Commonwealth Act No. 518 creating the National Coconut Corporation.

As a Coconut Planter

COMING from the province of Tayabas, which is within the largest coconut-growing region in the Philippines, President Manuel L. Quezon has become a coconut planter, one of the thousands in the Phil-

pendent for their living, he has time and again shown great interest in the matter and has not allowed any opportunity to pass by without trying to be of help to the coconut industry in general and to the planters in particular. He has sponsored legislation, recommended missions, has gone out of his way to talk personally to the coconut growers, and has appeared before coconut conventions in order to apprise himself of the actual needs and problems of the industry.

Under his presidency the coconut industry has progressed greatly; the Government has exerted all efforts and utilized all means in order to resurrect it from its once morbid condition. Today, through

his unceasing efforts and initiative, the coconut industry is once more back to its former commanding position in the market both domestic and foreign. Through the National Coconut Corporation it is bound to live again those days when a coconut man would not mind giving away a ten-peso bill for a pair of shoes or the like.

Coalition Platform Pledges Support to Industry

As far back as 1935 when the political moguls of the Philippines found the necessity of merging the two political factions — the antis and the pros — for the sake of putting up a united front in the first presidential elections in the country,

the leaders had already realized the precarious situation of the coconut industry, so that in the Coalition platform the coalesced parties pledged their support on the organization of the producers of coconut for the defense and promotion of their interests. "We shall help industries based on the coconut and its derivatives, and we shall continue working for the elimination of unjust burdens imposed in the United States upon these products," they declared. At the same time the Coalition announced its desire to remedy the situation by finding a sure and profitable market for coconut, "and if necessary with the financial assistance of the government."



The President inspecting a coconut plantation in Zamboanga

ippines today. He has a plantation in Baler, Tayabas. Several years ago when copra business was brisk, the President could get as much as ₱3,000 a year, but in these days when there is a lull in the market, he confesses that it yields him an income of only some ₱150 annually.

Debt of the Coconut Industry

Aside from this, President Quezon has no other personal holding in the coconut industry. However, as he knows that the industry is one of the most important in the Philippines and upon which millions of his countrymen in the provinces are de-

Pledges Aid to Coconut Growers

President Quezon himself, as the candidate of the Coalition for the presidency, did not forget the pathetic plight of the coconut growers and in his acceptance speech he assured the people that he would work for the repeal of the excise tax on coconut oil. Mr. Quezon, was, of course, referring to the provision of the Tydings-McDuffie independence act when he made mention of the excise tax. This provision states that "there shall be levied, collected, and paid on all coconut oil coming into the United States from the Philippine Islands in any calendar year in excess of two hundred thousand long tons, the same rates of duty which are required by the laws of the United States to be levied, collected, and paid upon like articles imported from foreign countries." (Sec. 6-b)

Labors in the United States

In the face of such a situation the President met squarely the planters to whom the excise tax on coconut oil has always been unpopular. To them he related his efforts to stop the enactment of the measure by the Congress of the United States. When the move to levy the tax on Philippine products exported to the United States was started by some legislators, President Quezon went to America and presented his arguments protesting the measure before President Franklin Delano Roosevelt. "I induced him to send a message to the Congress expressing the opposition of the Philippines," he revealed. "But, despite our joint opposition, the Congress approved the measure."

President Roosevelt even went to the extent of informing the proper committees of the House of Representatives and the Senate that "the tax would work difficulties to four million Filipinos. But the American legislators saw that the price of copra went up soon after the excise tax was imposed, and it convinced Congress that the excise tax not only would not lower the price of copra but also would prove beneficial to the Filipinos."

Planters Urge Abolition of Excise Tax

As the coconut producers have always entertained the feeling that the excise tax on coconut oil is working difficulties on them, they once urged President Quezon to recommend its abolition. On February 19, 1938, a big delegation of coconut planters came to the Malacañan Palace and the President entertained them at a tea party. Later he answered their request and told them frankly his views on the matter. The coconut growers made also another request: that the proceeds be used to aid the industry. Said President Quezon on this occasion:

The Stand of the President

"I was against the imposition of this tax on coconut oil coming from the Philippines. I opposed it and the President of the United States in a spe-

cial message to Congress and through conferences with leading members of Congress, also made known his opposition to the proposed tax. Congress, however, did not listen to the appeals of the President and imposed the tax just the same. This, in my opinion, is an indication of the impossibility of securing the abolition of the tax because I do not know of any influence in Congress greater than the influence of the President of the United States; and I seriously doubt that Congress, after failing to follow his recommendation on this subject, will proceed to repeal the tax.

"I am willing, nevertheless, to support you in your request that the tax be abolished. I have not changed my attitude in this respect although I confess that I am not as positive today as I was before that the tax has done any harm to the industry, or that if it did, the harm was not as much as I had thought it to be. I say this because after the tax had been imposed the price of copra went up one time, which indicates that the price of copra is not necessarily affected by the excise tax, and it may therefore go up be there a tax or not. As a matter of principle, however, and regardless of the effect that it may have on the price of copra, I am willing to cooperate with you and to support you in your petition that the excise tax on coconut oil be abolished, because I consider the tax not only contrary to, but also a violation of, the provisions of the Tydings-McDuffie Law.

Application of Proceeds from excise tax

"Regarding the other matter, I am not willing to give my support to a petition that would permit the return of the tax collected from the coconut oil industry to the producers of copra. I am not willing to do that much less support a petition of the sugar producers that the excise tax be given



President Quezon addressing Tayabas coconut planters at the inauguration of the Quezon National Forest Park in Atimonan, Tayabas on August 23, 1939.

only to themselves. The tax is being spent for the welfare of the whole country, which is as it should be; a tax, after all, should not be collected only to be given back to the people who paid it, for if that were the case, then it would be better not to collect the tax at all. But if what you want is to have the ban which prohibits our Government from using, directly or indirectly, any part of the coconut oil excise tax for the benefit of the copra industry lifted, then I have no objection to it. It really looks unfair that the people who pay the tax are the ones specifically deprived of the benefits that may be derived from the use of the money collected from that tax. I suppose that the purpose of Congress in inserting this provision is to prohibit us from giving the money to the producers of copra, or, specifically, to the manufacturers of coconut oil. I do not believe that the members of Congress will have any objection if we produce as much copra as we may want. Congress does not concern itself with the copra industry; its opposition is directed towards the coconut oil industry because there is a general belief in America, which I believe to be wrong, that our coconut oil is competing with certain articles produced by the farmers in the United States. I do not believe that coconut oil competes with butter, but certain American interests think so, hence they want to put a clamp on the coconut oil industry in the Philippines. As I have said, they make no objection towards copra. You can send copra to the United States free of duty, but the minute you convert copra into oil, you will find them against you. Now, by doing away with coconut oil, I do not know if there are many other uses upon which our copra industry may thrive. All I know is, harm to the copra industry will result the minute they try to reduce the usefulness of the industry; so that ultimately it is the producer of copra who suffers from this opposition to the coconut oil industry. That is the reason why I am with you in your desire to have the tax abolished, or to have a part of it used for the promotion of the coconut industry in the Philippines, such as making researches leading to the discovery of new uses for the coconut that will revitalize our copra industry.

Coconut people not organized

"There was a time when the Philippine coconut industry was more important, incomparably so, than the sugar industry. More provinces and more people depended on this industry than on the sugar industry, and yet you have not made yourselves perfectly organized to cope with situations that may be detrimental to the coconut industry. Consider the sugar people—they are well organized, and when they start an agitation you think the whole world is going down. They have been organized for many years.

"It is perfectly right for you people to be organized. You will be able to exert your influence better not only here but also in the United States.

You can present your grievances in the proper way, you can present them in public, and you will be immediately heard. What do you do in your respective towns? You simply talk among yourselves and say "nalintikan na." Although we understand that expression here, no one in the United States will understand it, much less know what you want, if you always talk that way. And I believe I need not do anything for fellows who are willing to remain passive.

"Gentlemen, let me tell you this: Organize yourselves, study your problems and acquaint the peoples of America and the Philippines with a few plain facts; firstly, that the coconut industry, as one of the main industries in the Philippines, affects more people than those of the sugar industry; secondly, that our coconut oil is not really competing with any industry in the United States in such a way as to harm it. I repeat, you have to educate the American people on that."

Benefit derived from excise tax

When President Quezon made an inspection trip to Mindanao in 1938, shortly after his 60th birthday anniversary, he visited Cagayan, capital of Oriental Misamis, among many other places he went. In that southern port, the President was confronted by the coconut growers who took advantage of his presence by presenting him a petition for relief against coconut taxes. When the President spoke to the big crowd present, he made plain his attitude on the matter. Aside from that, he explained to the people the benefit derived from the excise tax on coconut oil. Pertinent portion of his speech follows:

"Of the oil excise tax which is levied and collected in the United States, every cent is returned to the Government of the Commonwealth. From this tax we have been able to accumulate over one hundred million pesos which are now being spent to open roads, mainly in Mindanao, and to build schools. Part of that money will also be used to carry out a program of economic development which will permit the Philippines to face, without much harm to ourselves, the change that will come about when complete independence is granted and the free trade relations between America and the Philippines are fully terminated. In returning the oil excise tax to the Philippines, Congress provided that the Government of the Philippines shall not, directly or indirectly, help the coconut industry.

Counsels Patience

"I sympathize with the situation of the coconut industry; I know that this industry is in a very sad plight. My own people are suffering tremendously from it. My heart is with you. I wish I could do something for you.

"The Joint Preparatory Committee on Philippine Affairs has recommended to Congress to con-

(Please turn to page 29)

BOARD OF DIRECTORS

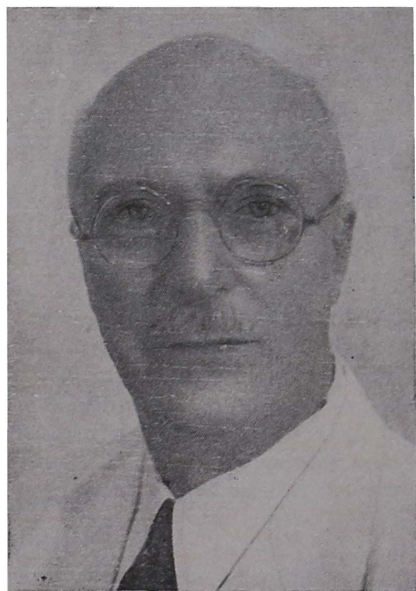
NATIONAL COCONUT CORPORATION



Gen. Manager **MAXIMO RODRIGUEZ**
Chairman



Director **BENITO RAZON**
Member



Director **JOHN R. SCHULTZ**
Member



Director **RAMON SORIANO**
Member

*All the members of the Board of Directors of the National Coconut Corporation have been re-appointed by His Excellency, the President of the Philippines, for another term.
The vacancy created by the resignation of Director Jesus Montenegro some months ago has not yet been filled.*



Taking the oath of office before Secretary Vargas. In the picture are left to right, Mena Quinto, Assistant to the Manager Hilariion Henares, Assistant General Manager Benitez, Assemblyman F. Lavi-des, General Manager Maximo Rodriguez and Secretary Jorge Vargas.

CONRADO BENITEZ, EXECUTIVE

AS much as any other man before the public eye in the Philippines today, Dean Conrado Benitez newly appointed Assistant General Manager of the National Coconut Corporation belongs to that select group of men known as liberal. For not only is he a man of wide vision and solid intellectual fitness but with him the sheer logic of calculating reason is tempered with the mellowing warmth of understanding.

Distinguished Career

He joins the National Coconut Corporation after a career of such distinction that notwithstanding the fact that he is far from being a politician, his eminence as a national figure was demonstrated by the spontaneous inclusion of his name in 976 ballots in the nation-wide poll of candidates for the Philippine Senate conducted by the chain of the T.V.T. Newspapers.

The eminence of Dr. Benitez is no accident. It is but the net result of a consistent record of

personal effort and achievement. He is a noted economist, an educator of high reputation, an author and a newspaperman, a lawyer, a former delegate to the National Constitu-

tional Convention and now as a coconut planter with a record for integrity and ability he joins the National Coconut Corporation.

Love for Coconut Industry

In this new field of action he is certainly not a neophyte. "The coconut industry is my first love," he says, and anyone who knows the constructive and fruitful labors which he contributed as organizer, director and secretary of the Philippine Coconut Planters Association can not but agree that here is a man in his element.

He was born in the great coconut province of Laguna, and from the cradle the warm breezes of the tree of life fanned in his blood a passionate love for this unsurpassed plant—the pride of tropical lands. He therefore brings with him a knowledge of the coconut possessed by few and this, together with his vast comprehension of

the economic problems of the country, make him ideally the right man in the right place.

In the course of a discussion of his plan he

CONRADO BENITEZ

From "Distinguished 100" By S. H. Guekoh

COLLEGIATE education for business in this country was started by the University of the Philippines, but it was not given its professional standing until in May 1934, when its school was converted into a college. Made dean of the new College of Business Administration was Professor Conrado Benitez, director of the old school and first dean of the College of Liberal Arts of the University of the Philippines.

At 23, Professor Benitez joined the University of the Philippines as instructor in economics. That was in July 1912. At the time he was already holder of the degrees of bachelor of philosophy and master of arts from the University of Chicago. In order to give him the broadest conceivable preparation not only in his teaching of economics but also in his college administration work and present connections with the outside world, he handled a variety of social science courses up to June 1917. This broad foundation was again extended when he got the degree of bachelor of laws from the University of the Philippines.

As a tangible result of this all-round academic preparation, Dean Benitez has written several books, principally the *Philippine History*, which is used by the fourth year high school students; *Economic Development of the Philippines*, used by the second year university students; *Philippine Civics*, used by the fourth grade elementary pupils; and *A History of the Orient* (as co-author), used by the third year high school students. Of equal importance were his editorial writings while first editor of the *Philippines Herald* and his *Food for Thought*, a daily column in the

(Please turn to next page)

reminded thoughtfully of the times when he was associated with General Manager Maximo Rodriguez in the Philippine Coconut Planters Association.

"The Philippine Coconut Planters Association," he said, "had practically the same objectives and plans as the present National Coconut Corporation, namely the alleviation of coconut planters and the rehabilitation of the coconut industry, but it was handicapped by lack of funds. The Philippine Coconut Planters Association had the will, but not the means. The National Coconut Corporation, however, has both the will and the means. With the funds placed at its disposal by the government and with reasonable foresight, ambition and planning there is no reason why it should not succeed in its mission."

Requisites for Success

According to him, success in this enterprise as in every other enterprise, may be attained by the observance of three fundamental points namely: Cooperation, control by men of the resources of nature and capacity for high ideals.

These are not new ideas, he confesses, yet as in the case of the person who looks but does not see, they are often overlooked and neglected. He says that "cooperation is the binding force that unites the efforts of many into a common channel. Where there is dispersion of labor; the results are inconclusive and the goal, however definite, may eventually appear farther off instead of coming nearer attainment. Hard work is admirable but where the common goal is as vast as the

one before us the toil of individuals must be united with that of others; otherwise it will be aimless."

Dr. Benitez used a common and effective simile to give point to his words. He cited the example of

a team which must pull together to win. The captain of the team directs it but unless the individual players give him a helping hand, unless there is teamwork, the team cannot win.

It is no flattery to state that Dr. Benitez himself possesses to a high degree the rare gift of evoking in others the spirit of cooperation. With quiet tact and resourceful handling of men, he attracts in others the willingness to give freely of their best efforts. Of such stuff are leaders made.

Warns recalcitrants

For those, however, who will not cooperate he has harsh words.

"We do not need people who do not want to harmonize their work with that of others. They are a liability and will deter us in our march to progress. If we ever have such people in our midst, we should get rid of them immediately and tell them that they are free to go elsewhere. The organization must function like a well-oiled machine, each cog doing its part to make the machine be on the move."

Harness Nature Through Science

The harnessing of nature through the medium of science is the second fundamental that Assistant General Manager Benitez lays down in assaying the Elements of success for the organization. This carries particular importance for the National Coconut Corporation which is embarked on

Tribune for several years, which reflect his deep understanding of human nature and the social process.

In recognition of his scholarly work, he was made dean of the College of Liberal Arts of the University of the Philippines on May 3, 1918; then director of the School of Business Administration, and dean, when it was converted into the College of Business Administration.

His thirst for knowledge cannot be satisfied. In November 1913, he did research work at the Philippine Assembly so as to give him "that broad experience which one does not acquire from the classroom alone." Again, in October 1916, he became legislative researcher in order to enrich his theoretical knowledge of economics with governmental problems. He went to Japan in the summer of 1917 to continue the study of that country's economic development started by him a year before; twice he made trips to Mindanao to enhance his knowledge of the economic conditions in that region.

Professor Benitez attended the Farmers' Congress in 1915. He was appointed technical adviser to the First Philippine Mission by President Quezon and Speaker Osmeña in February 1919. A good deal of his time in the United States was devoted to the study of American college administration. Aside from his work as technical adviser, he also organized the publicity work in Washington, of which he became the first head.

In 1919 he pointed out to President Villamor of the University of the Philippines the need of a survey of the institution. President Benton ordered the survey two years later. He was likewise instrumental in the appointment of a registrar. His suggestion for the university to have a permanent source of income unaffected by the whims of politics, such as mill-tax, formed the basis of Dr. Benton's proposals to the Philippine Legislature.

Through his efforts, experts on higher education in the Bureau of Education of the United States have included the University of the Philippines in their educational surveys since 1919, thereby giving the university a formal recognition in the United States.

Another important feature of his work was in getting help for research from the Carnegie and the Rockefeller Foundations, and for this purpose he succeeded in contacting Dr. Vincent. He also looked in the possibility of taking advantage of a Congressional law that awarded the sum of \$50,000 a year to graduates of agricultural and mechanical arts colleges.

Although he was dean of the College of Liberal Arts for two years only, yet he accomplished a great deal in stimulating the growth of certain activities. He started the first weekly convocations of his college, an institution which Dr. Benton continued and enlarged. Finding that the college was receiving the miserable sum of P500 a year, he asked for an appropriation of P10,000 and got it. He also succeeded in getting bigger sums for technical equipments.

As director of the School of Business Administration, he lent the services of students and faculty to the business firms that needed their services.

With this rich experience and these educational thoughts, Professor Benitez assumed the deanship of the College of Business Administration. Indeed, he is more than a mere head of his college; he founded the collegiate course in business; he developed it; he got the School of Business Administration to administer the course; he built the business library for the school and the business community; and finally, with the support of Regent Carlos P. Romulo, he succeeded in having this type of university

(Please turn to page 38)

THE ROLE OF THE PHILIPPINE COCONUT INDUSTRY IN DEVELOPING A SELF-SUFFICIENT NATIONAL ECONOMY

By V. G. LAVA

Bureau of Science

ALTHO the copra industry was one of the major export industries of the Philippines even before American occupation, its actual value was small, amounting to only around 1.5 million pesos for the year 1899. The reciprocal trade relations between the U. S. and the Philippines which have been in effect since 1907, and the world war of 1914-1918, however, changed this status of the Philippine coconut industry. From a position of minor importance in Philippine national economy as compared to our basic staple and most important product, rice, the coconut has become the third most important agricultural product in our country, and is now affecting the lives of 25 per cent of our population.

There is, however, one very grave difference between the roles of rice and coconut in our national economy. We consume all the rice we can produce, and in fact import rice on special occasions when we have drought, flood, or locust or other infestations during our rice season. But in the case of coconut, we consume only around 8 per cent of our production, and of our total export of coconut products, more than 80 per cent goes to only one country, the U. S.

This situation makes it very hard for our coconut producers to obtain high prices for their goods and to maintain a semblance of economic independence. And this precariousness becomes the more aggravated when the U. S., because of its inability to stabilize its own internal and external markets, is forced to impose a system of quotas, excise taxes, and export taxes on our products, and to grant reciprocal trade relations to other countries which produce oils and oil products competing with our coconut products.

Even at the present moment, when, because of the exigencies of war there is a great demand for coconut products in the U. S., lack of bottoms prevents a great outflow of these products, and high costs of transportation and insurance prevent our producers from cashing in on the high prices these coconut products command in the U. S. market. And after the present war, with the inevitable chaotic shifting of war-time industries to peace-time industries, it can be expected that a world economic crisis far greater than any ever yet witnessed in the past, will ensue, and that our coconut industry will be beset with hard times, the like of which have never yet been experienced here.

At the same time, because of the artificial development of our export industries, we have been habi-

tuated to import products from other countries, notably the U. S., to balance our export trade. *But the significant and (especially to the coconut producers) important fact about these Philippine imports is that there are possibilities that a great portion of these imports may be derived from the coconut.*

Consider the following export and import statistics of the Bureau of Census and Statistics and the Bureau of Customs, relative to coconut products and products directly or indirectly related to them:

Table I. Export of coconut products for July 1939—June 1940

<i>Product</i>	<i>Weight in Kilos</i>	<i>Value in Pesos</i>
Coconut oil	170,124,004	19,864,837
Copra	402,276,983	26,943,593
Desiccated coconut	41,541,317	8,737,169
Copra meal and cake	118,323,330	4,189,598
Total		59,730,197

Table II. Import of products related to coconut for July 1939—June 1940

<i>Product</i>	<i>Weight in Kilos</i>	<i>Value in Pesos</i>
Milk	243,323,924	7,920,559
Flour	106,419,776	8,977,012
Gasoline (liters)	221,332,711	9,193,950
Kerosene (liters)	88,302,270	3,282,221
Fuel Oil (crude) (liters)	468,605,401	7,191,598
Glycerine (kilos)	24,259	13,115
Cottonseed oil (kilos)	803,782	265,268
Olive oil (kilos)	102,759	49,921
Total		36,893,654

It will be seen from Table I that in the fiscal year 1939-1940, around 60 million pesos worth of coconut products were exported in the form of copra, coconut oil, desiccated coconut and copra cake. For the same fiscal year it will be seen from Table II that we imported milk, flour, gasoline, kerosene, fuel oil, glycerine and edible vegetable oils other than coconut to the extent of around 37 million pesos, or around 62 per cent of our exportation of coconut products.

Now coconut milk is not cow milk, but preliminary experiments have indicated that by proper adjustment, coconut milk may be made as nutritious as cow milk. Furthermore, coconut meat may have other desirable physiological properties.¹ And if in other countries, such as China and even the U. S., soy bean milk is

being extensively used to take the place of cow milk, why not coconut milk, especially when vitamins and mineral constituents can now be added to it in synthetic form?

In the Bureau of Science laboratories coconut milk having the properties of a stable emulsion like cow milk, has been successfully prepared. And small-scale preparations show that coconut milk can even be canned, evaporated, condensed, and probably even produced as powder. In times of emergency, coconut milk may have to be substituted for cow milk, and its uses for drinking, for daily cooking and for preparing milk products can be expected to become more universally accepted from then on.

And let us not forget that this milk, being a by-product in the manufacture of edible oil from fresh coconut meat, its market price could be adjusted so as to be within the purchasing power of the masses.

In the case of flour, a similar situation obtains. We import around 9 million pesos worth of flour. But a flour can be produced from the coconut cake by-product of coconut oil that has more crude fiber and proteins than wheat flour but less soluble carbohydrates. Mixed with wheat flour it produces good bread, cake and cookies. By substituting coconut flour for wheat flour to the extent of 20 per cent, we can save more than 1.5 million pesos for the coconut industry. The Bureau of Science is carrying on further studies on the utilization of coconut cake for food purposes. The Bureau of Plant Industry has also been carrying on intensive investigations on the utilization of local plant products, including coconut flour, as partial substitutes for wheat flour. Their efforts are obtaining encouraging results, which, if put into commercial production, will greatly contribute to the curtailment of our flour importation.

The preparation of motor fuel and other light spirits from vegetable and animal oils has been the subject of many investigations in many countries, notably France, Italy, U. S., Japan, and China. These investigations have shown that gasoline and kerosene fractions can easily be obtained from these oils. But considering the high initial cost of the oils themselves, and considering the comparatively low cost of the gasoline motor fuel, it is evident that gasoline and kerosene manufactured from vegetable or animal oils cannot compete with gasoline and kerosene obtained from crude mineral oil, unless the initial cost of these vegetable or animal oils can be lowered.

Now, if coconut oil is manufactured directly from fresh coconut meat, the by-products of this oil such as coconut milk and coconut flour can be processed and reinforced with the proper constituents to serve as nutritious foods. Coconut protein, another by-product,

can be sold as animal feed, or further processed for human consumption. Then, too, the coconut husks can be processed to yield marketable fiber and materials for wall board, sound-proofing, etc. The industrialization of these by-products will tremendously increase the income of our coconut industry. But another way of looking at this advantage is that with all this added income from the by-products, we shall be in a position to lower the cost of our coconut oil to such a low level as to place it on a competitive basis even with mineral oils.

The lowering of the cost of production of coconut oil is an important consideration in the technology of motor fuel. It is possible that a time will come when, because of a prolonged world economic crisis after the present war, no adequate foreign market may be found for our export products. If we cannot sell, we cannot buy, and we certainly will have difficulty in buying our gasoline and kerosene requirements from abroad. But since we cannot sell our coconut products abroad, and since we shall by then be getting more income from the by-products of oil, why shouldn't we manufacture our gasoline and kerosene requirements from our surplus coconut oil? In this way, we can always be assured of a market for our coconuts, when foreign markets and monopolies fail us or try to control and depress the prices of our coconut products to very low levels.

Furthermore, if we can commercially produce
(Please turn to page 48)

¹ Dr. Weston A. Price, dean of American dentists, in his book, *Nutrition and Physical Degeneration. A Comparison of Modern Diets and their Effects* (Published in 1939 by Paul B. Hoeber, Inc.), makes the following interesting observation in one of the Pacific Islands: Until the last World War of 1914-1918, copra in this island was cheap and the inhabitants lived on native food. The price of copra was then suddenly boosted to 400 dollars per ton which was paid for in 90 per cent white wheat flour and refined sugar and 10 per cent cloth and clothing. The effect was that dental decay made its appearance for the first time in the island. When after the war, the price of copra dropped to 4 dollars per ton and trading ships no longer called, tooth decay stopped. For observations on medicinal properties of coconuts see Tavera, *Philippine Medicinal Plants*.

Compliments

of

**MANILA MACHINERY
& SUPPLY CO., INC.**

675 Dasmariñas, Manila

Main Office
MANILA

Branch Branch
BAGUIO SAN FRANCISCO

- *Fluctuations of Copra prices and their corresponding underlying causes within the last two decades reviewed.*

COPRA PRICE FLUCTUATION IN TWO DECADES (1921-1940)

COPRA price fluctuations in two decades had affected in many ways and instances the modes of life in the leading coconut provinces. In the prosperous peaks and unusual bulges of the copra trade, possession of a few coconut groves was more than adequate for the sustenance of an average-sized family, with enough to spare for the luxuries of the modern world. During the lowest ebbs of the market, about a quarter of the populations of the country led a niggardly way of life, the vast majority clamoring for government aid and support. Hence, for those whose fortunes were made or whose life-long plantations were lost, the gyrations of the copra market during the 1921-1940 period provide an interesting chapter for retrospection.

The major trends of the copra market may be grouped, as follows: (1) That post war readjustment period of 1921-1925; (2) The steady decline from 1926 which culminated in the bearish days of 1934; (3) The abnormal bull of 1935-1937; and (4) The incidence of the present European War.

The post war readjustment period of 1921-1925.—

The declaration of armistice in Europe on November 11, 1919 brought a welter of readjustment problems to the economic world. Activities which were geared and set up to cope with the needs of the warring countries were hampered. Demand for materials vital to the ends and purposes of the war slackened. Prices of commodities the world over slumped as an aftermath. Factory hands were gradually laid off; unemployment problems arose everywhere, the situation being sooner aggravated by the return of soldiers from the battle front to their respective countries and later mustered out from active service.

Copra, which had been riding high while the 1914-1919 war was intensified with fury, toboganed at an accelerated pace. Coconut oil, too, was no exception and followed the general downward trend. A number of local oil mills were gradually shut down, some haunted with insolvency proceedings. Financial stringency became more felt. That was in 1920.

The slump in 1920 was carried over in 1921. Copra prices oscillated between a high of ₱21.07 and a low of ₱14.04 per 100 kilos, Resecada basis, the annual average for the year being made at ₱16.95. This average was more than 50 per cent lower than the prices which prevailed during the war. Values in 1921 would have been lower were it not for the scarcity of free parcels at the closing months of the year. Some mills were caught short of supplies and

hence were compelled to pay better terms, the improvement in exchange rates and lower freight schedules to Europe being regarded as contributory factors which prevented further declines in values.

The year 1922 was no better. In fact, the annual average for 1922 was 5 centavos less than that for 1921. Day to day fluctuations of the market were narrow as the trend closely followed that of 1921. The interisland shipping strike of 1922 did not materially contribute to the enhancement of values, despite lower copra arrivals from the South. The American market was on the downward grade; ocean rates to the Pacific Coast were hiked from \$6.00 to \$7.00. Local mills were unable to work on the oil market profitably. Several Philippine oil mills were forced to withdraw from the market either by closing temporarily or by working on part time basis.

The year 1923-1925 marked a reversal of the trend in 1920-1922. The copra market reacted as the European outlets began to absorb enormous quantities. Heavy buying for Europe's account inflated prices, and as coconut oil in the United States gained strength, local oil mills were forced to move values above the parties in the consuming centers overseas.

As the foreign markets continued to offer substantial encouragements, price peaks were established in 1925. Resecada per 100 kilos averaged ₱23.12, the high for the same year being ₱26.34. The lowest price at which copra was traded in 1925 was ₱20.63.

The steady decline from 1926 which culminated in the bearish days of 1934.—

The years 1926-1934 witnessed gradual yet unprecedented declines in the copra market. From one year to the other, average prices hit lower marks, culminating finally in 1934 when Resecada average price dipped to as low as ₱4.28. Disappointing were the factors that intervened and influenced the slide in values.

Large arrivals of copra in 1926 weighed heavily on the market. Offerings outstripped the demand by a wide margin as the American market fell off. Average prices in 1926 netted a 2-peso loss compared with the preceding year. The highs and lows in 1926 were beginning to dishearten the copra traders. The market at its best could do no better than ₱25.91, Resecada basis, the lowest price for the same year slipping to ₱17.39.

The situation turned from bad to worse in 1927-1928. Large stocks of fats and oils in the United States were more conservative in their commitments. There was less demand from the soap kettle. Local

copra production was more than abundant, despite the insufficiency of rainfall in 1928.

The unsettled position of the oil market became more acute in 1929. Heavy sales of palm kernel oil at lower prices depreciated other oils. Exportation of copra from Philippine outports were abandoned. Wall Street finally crashed in October, 1929. Stocks and securities fell off violently, casting a pall over the markets throughout the world. The slogans "a chicken in every pot" and "two cars in every garage" which catapulted Herbert Hoover to the Presidency faded away as "breadlines" were formed throughout industrial America. Copra prices slipped in succession. The 1928 average at ₱19.69 gave way to ₱16.65 in 1929 for a further loss of about three pesos.

Uncertainty of tariff legislation in the United States in 1930 made American buyers hesitant. Stocks of fats and oils were fairly heavy for the depressed business condition everywhere. And as oil seeds and oils both in London and the United States receded in endless procession, heavy selling pressure in the foreign markets steadily pulled down the price of F. M. M. Drastic cuts were effected locally in the price of copra, coconut oil, cake and meal. The 1929 average was penetrated, 1930 annual average falling off to ₱13.59. The highs and lows for 1930 were recorded at ₱16.60 and 10.67, respectively.

Pessimism still prevailed in 1931 as the local market continued to struggle against the force of the depression. Demand for copra and coconut oil in the United States was still negligible. Coconut oil receded sharply as attempts to get business failed in most instances. Supply of whale oil and tallow was enormous. London traced a downward curve, the fall of the pound sterling giving an unsettling effect to the market. While local mills bought sparingly, many a producer lost hopes when copra changed hands as low as ₱5.13, the best done during the year being ₱10.67, Resecada basis. The average price for 1931 was ₱7.78, which was barely half of the annual average ten years earlier.

Coconut oil made on hearway in 1932 either in price or volume. Exports of copra and coconut oil dropped abruptly. In fact Philippine copra exports in 1932 totalled only 136,078 metric tons, the lowest made since 1921. Coconut oil shipments also declined to 113,614 metric tons or about a decrease of 30.51 per cent as against 1931. Important buyers overseas were aloof. America presented no encouraging aspect, while London was quiet and uninterested.

The United States market was still in the doldrums in 1933. Exports of copra were heavier but at no price advantage. The slight recovery in the shipments of coconut oil placed one difficulty after another in moving coconut oil at profitable terms. Support was lacking in the price movements of other fats and oils. London market fluctuations were sharp due to the rates of exchange. Prices locally drifted to lower levels, the annual average being made at ₱5.02, or about ₱1.50 less than that of 1932,

New lows were touched at ₱4.00, while prospects continued dim.

A hostile American congress depressed the market in 1934. The levy of a 3-cent excise tax on coconut oil coming from the Philippines produced a telling effect on copra prices until a little over the mid-year. Resecada in July was scrapping bottom at ₱3.30 and then improved in the last quarter as a severe drought penalized continental United States. Tapering supplies at the closing months of the year steadied the market. The destructive typhoons of October and November, 1934 curtailed production and in the struggle to have copra, Resecada leaped to ₱7.20, the average for the year being made at ₱4.28.

The abnormal bull of 1935-1937.—

The pendulum swung back and extra-ordinary appreciations in values transpired in 1935-1937. The severe droughts in the United States, accentuated by crop failures in other parts of the world, lifted copra and coconut oil prices, aided materially by the low production locally which reflected the effects of the 1934 typhoons. Shortage of fats and oils in the United States was felt.

In 1935 Resecada's annual average was more than twice of the previous year. The scarcity of local supplies was so acute that local mills had to import about 3,000 tons of copra from the Dutch East Indies. Buying activity on the part of local de-siccators lent support to the copra market.

Local prices scored advances in swift succession as the United States Congress failed to act on the Kleberg Bill which proposed a 10-cent tax on margarine containing non-domestic oils, but passed a compensatory tax on free fatty acids. Threats of a major war in Europe reflected the oscillations of London.

Shortage of edible fats and oils in America in 1936 made itself felt with increasing stringency. Relief, bonus money, and increased wages enhanced the purchasing power of the American people and recovery made a rapid pace. Sustained demand from Europe augmented the deficiency of edible fats and oils in America. High prices were maintained locally as the market featured a continuous dearth of offerings. The Bailey amendments which placed excise taxes on oils theretofore exempt exerted bullish influences. Average prices made further upward strides. Resecada was traded as high as ₱20.50 in 1936, the lowest being ₱7.00, which was still higher than the lows of the previous five years.

The shortage of edible fats and oils were still felt at the beginning of 1937 and the Pacific Coast shipping strike enhanced the scarcity of coconut oil in the United States. Prices of copra and coconut oil early in the year went beyond the levels, of competing oils. Resecada was successfully sold as high as ₱23.00.

Under the stimulus of high prices at the beginning of 1937, increased plantings of oil seeds throughout the world set in. This resulted in larger exportable surpluses in the producing centers. The United States alone produced record crops of cot-

(Please turn to page 49)

● A lucrative fiber board industry can be set up from coconut fibers.

FIBER COCOTEX FROM COCONUT HUSK

By ANGEL B. ABAD
 Technical Assistant
 National Coconut Corporation

THE utilization of agriculture waste as raw material for manufacturing processes with the aim of eliminating and converting it into commodities of great economic value has attracted much attention in recent years. Disposal of these wastes, long considered worthless, or practically so, and whose accumulation presented oftentimes an unsightly situation, has challenged our men of science and engineering skill. And today, thanks to the tenacity of these men, many of such waste products are now being transformed into articles of surprising value and usefulness.

Almost all waste products today, whether from industrial or agricultural processes, are subjected to close scrutiny. One such class of waste materials is the woody and fibrous structure of plants. This is particularly noticeable in the fiber, wallboard and insulation board industry which utilizes as raw materials the surplus mill bagasse, corn stalks, straws, eel grass and wood wastes. In fact, almost any fibrous waste material which could be obtained in fairly large quantities and under steady supply is now being industrialized.

In keeping up with this trend of science to un-

cover suitable and marketable forms with which the by-products of the coconut industry can be disposed of, it is only natural that the coconut husk, an economic waste and a poor sort of fuel, should be tried as raw material for fiber board manufacture. The necessity of putting up a fiber board industry of our own becomes more imperative when we realize that our import of this product, classified as wallboard and corkboard, amounts to hundreds of thousands of pesos annually. The following data will give a better idea of the flow of this material into the local market:

Year	Wallboard	Corkboard	Total
1935	₱ 98,869	₱19,780	₱118,649
1936	207,017	6,233	213,250
1937	327,319	18,848	346,167
1938	298,734	29,525	328,259
1939	421,328	12,944	434,272
1940	291,566	33,086	324,652

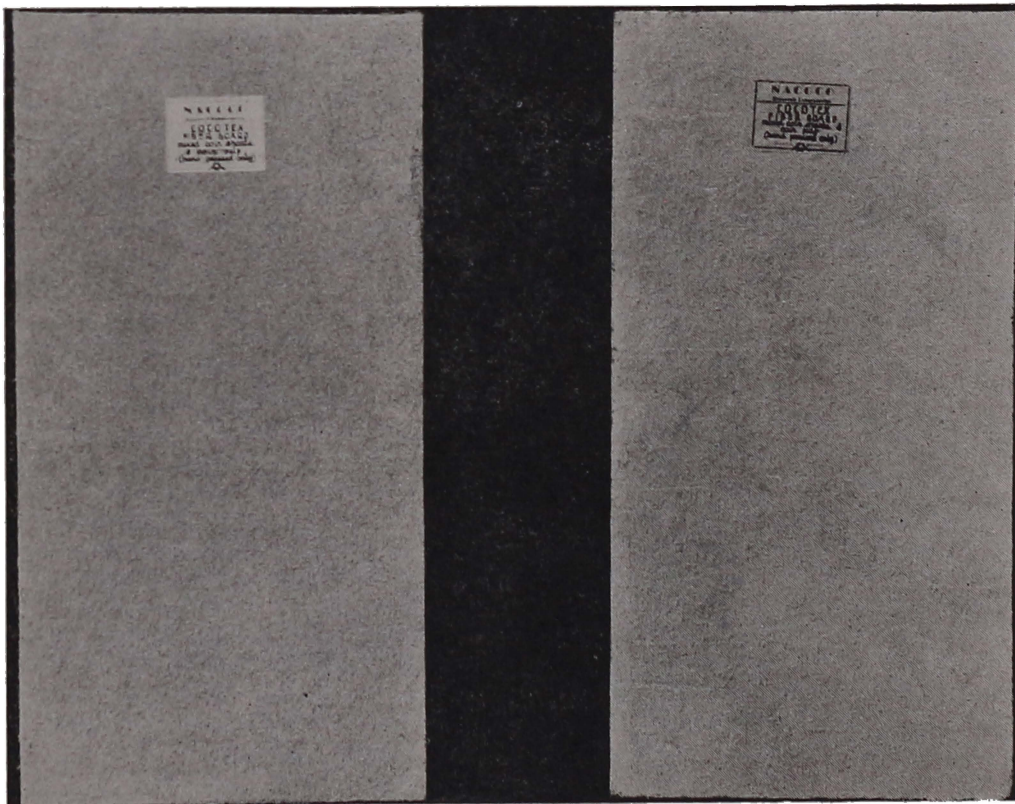
The above figures illustrate that the importation of these products which could be wholly manufactured locally out of our abundant raw materials is on the increasing trend except for abnormal times as in 1940. The acceleration with which the Philippines adopts modern living conditions, such as protection from cold, heat and noise, relays a correspondingly increasing demand for this structural insulating materials. The development of this fiber board industry promises, therefore, a bright aspect.

What Fiber Board Is

Before we embark on a conscientious study of the suitability of coconut fiber and pulp as raw materials for board making, a thorough knowledge of this material and the industry itself is essential.

Fiber board is not paper, nor can it be termed

(Please turn to page 52)



Nacoco Finished wallboard from coconut fibers

● Cooperation will solve many of the planters' problems.

THE NEED OF COOPERATION IN THE COCONUT INDUSTRY

By FELIPE E. JOSE

Chief, Field Service, Cooperatives Department,
National Trading Corporation

IF nothing unforeseen takes place between now and 1946, the Philippines will be left alone to decide its own fate. The closing of the American market after independence will inevitably usher in an era of industrial chaos with the consequent result of widespread unemployment and misery if nothing is done between now and the day of the political separation of the Philippines from the United States. All government's efforts at cushioning the shock to be brought about by the political change will be of no avail if the people directly affected by the abrupt loss of the American market will not undertake their share in the task. The government will be unable to carry out an effective economic readjustment program without the cooperation of the people whose general welfare will be the foundation-stone of a strong political and economic structure. The separation of the Philippines from the United States could be made painless if the government and the people will collaborate in the economic readjustment work.

Among the major industries that will be hard hit by the loss of the American market will be the coconut industry. Over 4,000,000 people depend for work and livelihood on this industry. About ₱420,000,000 is invested in it. It is the only industry that is in the hands of Filipinos. If properly taken care of, according to Assemblyman Kalaw who toured in the coconut countries of the world, "the agricultural export products of the Philippines that can best stand the shock of independence is the coconut product. If the necessary preparation is made, it will be our greatest bet in the open markets of the world."

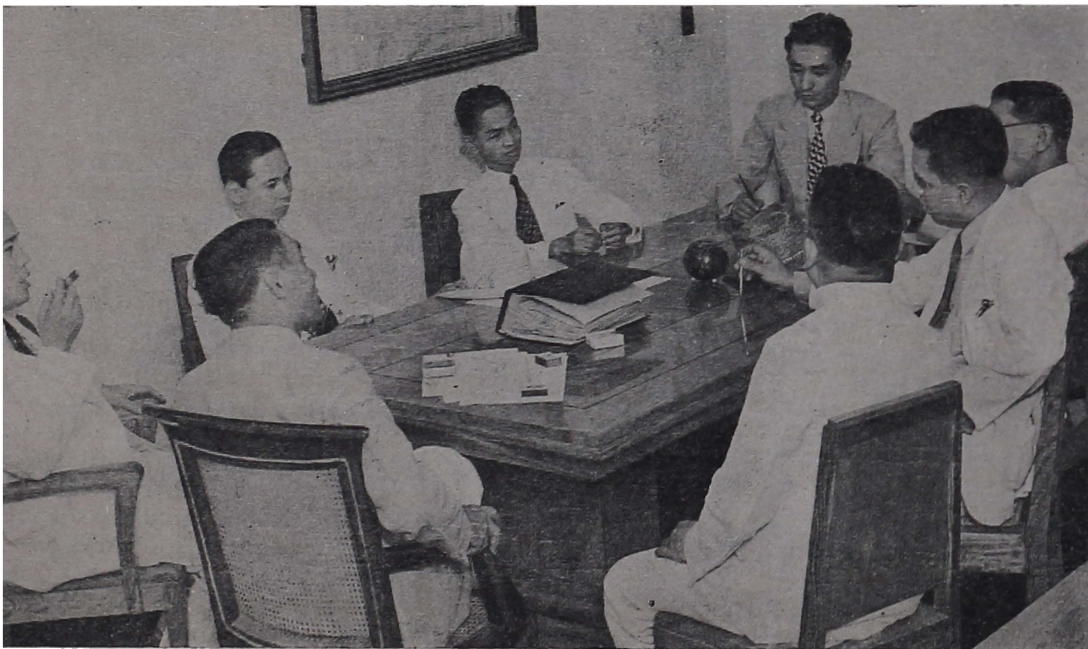
How Planters Can Solve Their Problems

As to how the coconut industry could stand the shock of independence is the problem that remains to be solved. It could be solved effectively by the coconut planters themselves with the government providing them with facilities.

The problems of the coconut planters, as in other industries, are: (1) Financing, (2) Transportation, and (3) Marketing. These problems could be solved through cooperation. If the Swedish wheat farmers were able to establish their own flour mills and the Danish dairy farmers were able to build their own dairy plants through cooperation, there is no reason why the coconut planters would not be able to improve their lot by pooling their resources together for their common good. The Kooperatiba Forbundet in Sweden, which operates the flour mills in that country, solved the problems of financing, transportation and marketing for the farmers. In like manner the Danish Federated Cooperative Dairies solved the problems of the dairy farmers.

Solution Of Financing Problem

The financing problem in the coconut industry could be solved largely by the coconut planters themselves if they only have the initiative to do so. They should create their own credit facilities. This could be done by organizing credit cooperative societies or credit unions. This is being done in England, Denmark, Germany, Sweden, Finland, United States, Japan, etc. In Japan, there are about 7,000 of these



When local helmet makers called on the National Coconut Corporation to seek aid against the ruinous competition of alien manufacturers operating under dummies. The group was led by Celso Icasiano. Included in the picture are Engineer Hilarion Henares, Comptroller Gimenez and Secretary-Treasurer Benjamin Salvosa of the NCC.

societies, having a circulating capital of over Y1,000,000,000; in the United States about \$1,000,000,000 circulate in some 6,000 credit unions; in Finland, the cooperative bank reserves amount to about P184,000,000; and in England, the cooperative societies operate three biggest banks in that country. These banks were started by people who do not belong to what we may term "moneyed class".

If properly managed, this type of cooperative society would prosper in the Philippines. The Batac Credit Union, organized a few years ago by the members of the Church of Christ in Batac, Ilocos Norte, started with P1.00 capital. At present, it has over P40,000 circulating capital.

Transportation And Marketing Problems

The second problem, transportation, could be remedied through cooperation among the coconut planters. Their cooperative societies, under a federated body, could operate trucks and other types of transportation.

And the third problem, marketing, could be solved by organizing cooperative marketing associations. These associations, federated under a central body, will handle the marketing of the products. This will eliminate middlemen who, for centuries, exploit the producers and the small farmers. Along side the cooperative marketing associations will be the consumers cooperative stores where the planters and workers could obtain their daily necessities at cost.

The central body of all coconut cooperative societies, therefore, will provide credit, transportation and marketing facilities. It shall also operate factories and manufacturing plants to convert coconut by-products into finished goods. With the improvement of copra through the installation of modern copra driers, the use of defiberizing machine to convert the husks into fibers, the employment of machinery to obtain wood preservative from the charcoal of the coconut shells, etc., the industry will surely enjoy a new life. The planters will then have larger income and more people will be provided with work.

**Cooperation Must Implement Efforts
Of Government**

If the organization of coconut cooperative societies could be undertaken by coconut planters and workers, in cooperation with the Government, the economic readjustment program now being carried out by the Government preparatory to eventual independence in 1946, the coconut industry will surely "stand the shock of independence." Without the cooperation of the coconut planters and workers, all government's efforts to improve their conditions will not give impressive results.

LOANS TO COCONUT PLANTERS

The policy of the National Coconut Corporation to extend loans to coconut planters and copra producers is of far-reaching significance. The rehabilitation of the coconut industry in this country is a long-way program demanding joint efforts of the government and the coconut planters themselves. The improvement of the quality of copra so that better prices could be demanded is vitally a reconditioning factor in the process of giving a new lease of life to the industry that is demanded upon for livelihood by millions of people.

One thing is to be noted, in effect, that a good number of the regulations governing the granting of loans to the coconut planters are not totally necessary as they are bordering on red tape. What is needed in remedial processes is quick action without unnecessary delay. Of course, it is highly in order to stand firm by adopting strict regulations not only to protect the interest of the Coconut Corporation but to find out the reactions that may be registered from the coconut planters themselves. For, as a matter of fact, there is nothing wrong in the whole policy as there is nothing wrong to give full trust to and faith in the planters.

At any rate, however, the National Coconut Corporation is doing a great task in the direction of accomplishing the greatest good for the coconut industry. Such broad and long-range policy of the government needs practical translation to the masses of the coconut planters and copra producers in the Philippines.—
From "The Cebu Advertiser"

*Compliments
of*

Mrs. Maxima Clemente
SPINNING & WEAVING CONTRACTOR
for the
NATIONAL COCONUT CORPORATION
Shop: Concepcion, Malabon, Rizal

- Let us learn a lesson from China. By a decentralized production of vital war materials she has kept up an unflinching resistance against superior forces.

DECENTRALIZATION: KEY TO ECONOMIC DEFENSE

By HILARION G. HENARES

THE leading theme of the day is War. The leading problem National Defense. But National Defense is itself reducible to military and economic preparedness. We are concerned, at the moment, with the economic phase of the problem.

In the light of present-day events, it seems to me that our industrial set-up needs revamping if we expect to survive the existing crisis. Not that industrialization, in its modern concept, is no good *per se*. Rather, its application here is inappropriate, or at least premature.

In the United States, mass production is both effective and necessary. By mass production I refer to the large-scale output of commodities by a big corporation utilizing automatic machines to supplant human labor. This method has been proved effective in every phase of economic activity, from automobiles to canned salmon, from tooth-brushes to electric bulbs. It was necessary to resort to mass production because human labor in America costs high. To cut down overhead, to reduce unit cost, manufacturers were practically forced to turn to precision machines.

The desired result was achieved, all right. Cost of labor per unit product was cut to a minimum. The

these demands or else close down their plants. By way of retaliation, however, engineers and inventors are hired by capitalists to create better automatic machines capable of reducing human labor to a minimum without curtailing production. These new machines will again bring increased profits for capitalists, inducing further demands from labor. And so on around the vicious circle till a breaking point is reached, or till there are left only a few privileged workers earning \$10.00 or more. Against this handful aristocrats of labor will be armies of unemployed.

I have watched breadlines in America—lawyers, doctors, engineers, line up with common hoboes to get their relief checks. It is a pathetic sight. It knocks the pride off any man. One night, I saw a husky man parading down Broadway with a placard on his back that read: I DON'T WANT GOVERNMENT HELP; I WANT WORK.

The experience of America and England should not be repeated here. They were forced into mass production because of high living standards and high cost of labor. But here in the Philippines, conditions are different. Our mode of living is simple. Labor is cheap. Moreover, agricultural masses periodically increase the supply of Philippine labor due to the seasonal nature of their crops. Still another reason why mass production is not essential to our economy is that unlike the United States and other highly industrialized countries, we are not out to compete in the world market. We strive primarily to produce locally what we ordinarily import from abroad.

To take a concrete example: say we want to produce coir sacks or sand-bags under the American industrial system. We put up a highly mechanized plant capable of turning out 10,000 bags a day. But this factory will require around 500 men who will have to be paid from ₱1.00 to ₱3.00 a day, all in all a total investment of at least two million pesos.

By harnessing home industries, and taking advantage of "in between" labor made idle by seasonal crops, the same production can be effected with an investment of half a million pesos and the labor of 30,000 men, women and children. Of course they will consume more time, and they will not earn as much as the 500 workers in the factory unit, but we shall have the consolation of knowing that more people are being kept busy, are given the chance to earn a livelihood, and that unnecessary exodus of labor to crowded industrial centers such as Manila is being prevented.

Moreover, in the event of war, a single bomb can wipe out an entire factory or industrial district. We know by now that the crippling of factories engaged



Engineer Henares with Mr. Van Der Jagt. Photo taken at a sack factory in Amiens, France.

public rejoiced at the flooding of the market with goods at low prices. But the nation had to pay for benefits derived. Mass production created the spectre of Technological Unemployment.

Why? Because mass production means bigger profits for capitalists. This in turn induces labor to demand high wages. Capitalists have to accede to

in producing war-supplies is as important an objective for air-raiders as strafing a battalion of infantrymen. Successful bombings of these objectives demoralize troops dependent upon them, interfere with planned strategies, and tip the scales of war in favor of the enemy.

Large factories, under the American system of mass production, are usually clustered together, concentrated in urban centers. They are not difficult to locate from the air. Tall chimney stacks, large buildings, rows of laborers' dwellings mark them out to the enemy's bombs.

Let us learn a lesson from China. For years, she has withstood invasion by Japan. Militarily, she uses guerilla warfare to advantage. Industrially, she has decentralized production of vital war materials, yet keeping up an unflinching resistance against superior forces.

Instead of concentrating her raw materials in large factories and making use of bulky, stationary machineries, she has organized small but well-coordinated cooperative factories in every village and town. Household factories are mobile units, with portable tools and equipment, whose output are assembled into finished arms or supplies "somewhere in China." Just where, Japanese bombers never can locate—for the simple reason that it has no permanent location.

When one, or two, or more household factories are blown up, others spring up elsewhere. There is no permanent concentration of either labor, raw mate-

rial, or finished products. Yet production is unceasing. This is what decentralization is doing for China. For a country like ours, scattered and far-flung geographically, decentralization can do no less.

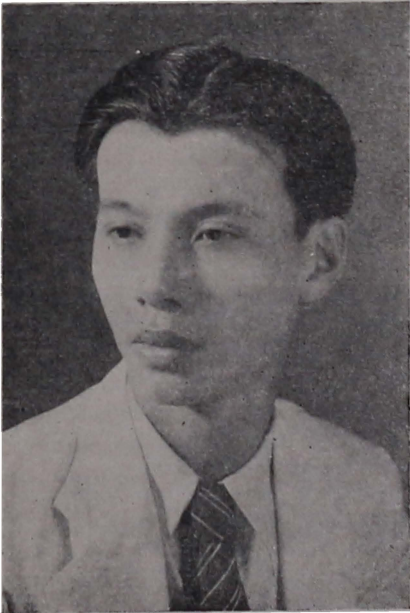
Nor is this system good only during war-time. In the Philippines, it could be utilized to keep our idle man-power from unnecessarily crowding urban and industrial centers; it could solve seasonal unemployment; it could increase the earning capacity of laboring masses as well as inculcate in our people the spirit of industry. It is not a backward step. It is a corollary to economic progress.

Compliments
of
A. Z. SALVACION
General Merchant & Hardware Dealer
Exclusive distributor of "Salvación"
Brooms & Push Brooms in the Philippines
*Manufacturer of Spinning Machines
and Handlooms for the
NACOCO*

Lucena Tayabas

COMPLIMENTS
of
UN SING TABLERIA AND HARDWARE

WHOLESALE AND RETAIL



H. S. Gomez
Manager

**Building Contractor for
Private, Government
Corporations**

Road Construction

Cable Address:
Manager H. S. GOMEZ
P. O. Box 6
Washington Street
Atimonan, Tayabas, Philippines

Dealers in All Kinds
of Philippine Lum-
ber and galvanized
sheet. Black Pipes
Plumbing fixtures,
Building fixtures
agency Petroleum,
Gasoline Diesel oil
and flour Sampan
Brand.

UNLOCKING THE TREASURE IN COCONUT SHELL

By WM. J. ORLAND
*President
National Electric Corporation
(Manila)*

THE manufacture from Coconut Shells and Husks, on a commercial basis, of certain products which enjoy a world wide market with prices which are not only lucrative, but quite staple the year round is now a reality in Manila.

Coconut Shells which in the past have been considered of little utility, is today the basis of a new industry which will bring great returns to the people and do much toward the industrialization program and the rehabilitation of the Coconut industry.

The year 1940 marked the beginning of a new Era of prosperity for the Coconut industry, and may well be called the year in which the unlocking of the Coconut Shell began.

This new Era was brought about by men who believed that the rehabilitation of the Coconut industry would be brought about largely by the utilization of the so-called Coconut waste products, determined men, who had faith in the ability of its people to overcome any obstacle, be they ever so great, thus the National Coconut Corporation was organized.

As an illustration, the following will give you some idea of a sad picture which is on the way of being remedied.

The Philippines imports annually a large amount of Carbon products, such as Flashlight Batteries, Telephone Batteries, Radio Batteries, Carbon Electrodes, Motor Brushes, Graphite etc.

These items drain the Philippines of an enormous amount of money, which in turn helps to create an unfavorable trade balance for the country.

Realizing the importance of utilizing Coconut Shells, the National Electric Corporation, co-operating with the technical staff of the National Coconut Corporation, have brought to a successful conclusion a series of long experiments, and finally established a factory to manufacture the above products on a commercial basis.

The National Electric Corporation factory in Manila, is now operating, using 100% Filipino labor and American methods of mass production.

The Factory has a daily capacity of:

- 25,000—Flashlight Batteries
- 2,000—Telephone Batteries
- 300—Radio "B" Batteries
- 100,000—Carbon Electrodes



William Orland

All the above products contain from 30 to 100% ingredients made from Coconut Shells.

The Coconut industry and the people in general are indebted to the Officers of the National Coconut Corporation for their vision and efforts in making this new industry possible. When one considers the fact that approximately 24,000 ordinary size Coconut Shells, the equivalent of one ton, (Coconut Shells were formerly considered waste) has now a minimum value of P165.00 pesos after treatment, it becomes exceedingly difficult to place a value on the vision and foresight of those men who made this a reality.

The process of converting Coconut Shells into the various grades of Carbon is rather complicated. The following is written merely to give the layman a picture of what happens to the Coconut Shell after it is taken from the "Tree of Life," and starts on its long and hot journey to be unlocked. I say hot journey, because, in the first operation, the shells are placed in a retort and remain there for several hours under terrific heat. We are now forcing the shell to give up its wood preservative, while at the same time we are converting it into high-grade charcoal under the process known as destructive distillation.

The charred Shells are now taken from the retort and placed into a specially designed apparatus to receive special treatment under pressure. Thus activated carbon for Gas Masks is produced.

Other charred Shells after leaving the first retort are again placed in another retort for further carbonization and to reduce its electric resistance to the passage of current.

After the above treatment, the Shells are ground to various mesh, and placed in bins, later to be mixed with other ingredients, or used alone depending on the product to be manufactured. This product is known as Carbon.

In the manufacture of Electrodes, the Carbon is mixed with other ingredients and heated, while still hot, it is compressed into desired shapes under terrific pressure by a specially designed hydraulic press, later to be marked for proper lengths by machine, and again packed in containers and placed in special kilns to be baked for several days.

Later when the Electrodes have cooled sufficiently to handle, they are cut, and the ends properly shaped by machine, they are now packed and ready to serve the many and varied uses of industry.

(Please turn to page 38)

Compliments

of

THE EDWARD J. NELL CO.
MACHINERY, MILL SUPPLIES, MINES
& ETC.

P. O. Box 1640

Manila, P. I.

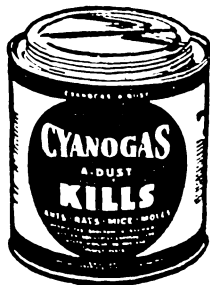
Compliments

of

MANILA LEATHER GOODS

450 P. Gomez, Sta. Cruz

Manila



CYANOGAS

KILLS

Rats	Field Mice
Moles	Snakes
Ants	All Insect Pests

For detailed information call on

BOTICA BOIE

95 Escolta
Manila

PEERLESS **HI-LIFT** PUMP

A MAJOR DEVELOPMENT IN
LOW COST WATER LIFTING
METHODS

for

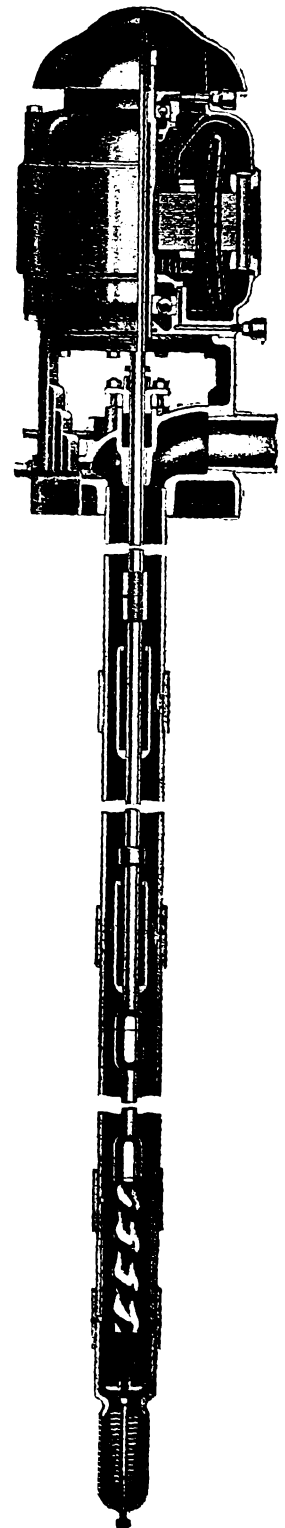
**COMMERCIAL
AND
DOMESTIC
USE!**

- NEW IN PRINCIPLE
- NEW IN VALUE
- NEW IN DESIGN

NOT A TURBINE PUMP
NOT A PLUNGER PUMP

**HI-LIFT
PUMP GIVES
THE ADVANTAGES OF BOTH**

—
THE MOST
EFFICIENT PUMP
OF MEDIUM CAPACITY FOR HIGH
AND LOW HEADS



MECHANICAL SUPPLIES, INC.

Tel. Nos. 2-40-85—2-40-86
320 13th ST. — PORT AREA — MANILA

- *New gasoline substitute and its mechanism showing how inconspicuous coconut charcoal can produce motive power derivative.*

PRODUCER GAS FUNDAMENTALS

THE making of producer gas consist essentially of drawing a limited quantity of air through a bed of red hot fuel (coal, coke, charcoal, wood, & c.).

If a container is filled with charcoal and ignited it can be fanned to a glowing mass by supplying an abundance of air to the fuel. If now the amount of air supplied to the heated bed of charcoal is reduced, there will be a quantity of charcoal at a sufficiently high temperature to combine with oxygen readily, but for which insufficient oxygen is available. The combustion of the carbon, which is the principal element of charcoal, will be incomplete, and a gas, carbon monoxide (CO), will be formed. This gas is capable of burning to carbon dioxide (CO₂) when mixed with more air and again ignited. Consequently, if a gas producer be arranged with a limited supply of air, the hot charcoal will combine with less oxygen than it would in an ordinary open fire thus forming a combustible gas which can be burned elsewhere. Hot carbon possesses another ability; it is able to dissociate the elements of water or steam to give hydrogen and oxygen. The hydrogen remains free, but the oxygen combines with carbon to give carbon monoxide. This reaction is also used in a gas producer.

It is simplest to assume that in a gas producer the first reaction is to form carbon dioxide, which is then reduced to monoxide, but whatever the case may be the results are the same and may be set out as below:

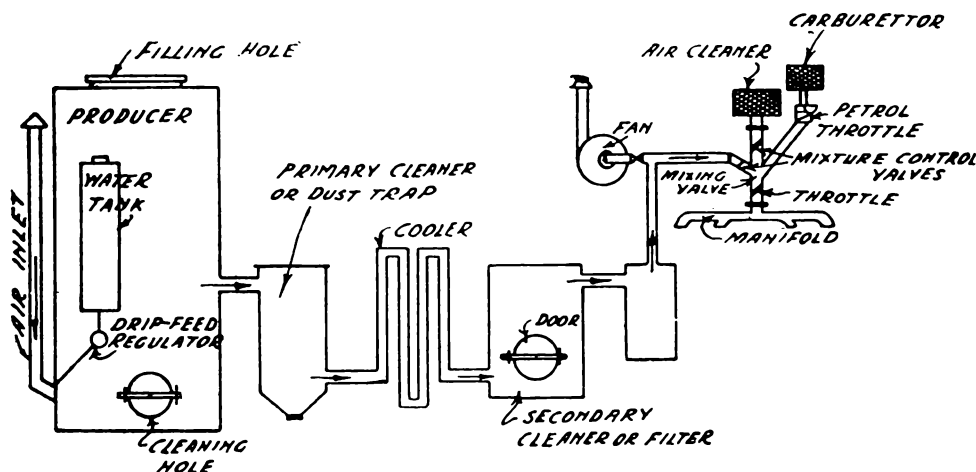
- (1) $C + O_2 = CO_2$
 - (2) $CO_2 + C = 2CO$
 - (3) $H_2O + C = H_2 + CO$
- C = Carbon
O = Oxygen
H = Hydrogen
CO₂ = Carbon Dioxide
H₂O = Water

The first reaction (1) is that which normally takes place in an open fire. The second (2) and third (3) will only take place at a high temperature in the absence of oxygen, and it will be seen that the first and second could be combined as follows without altering the result.



The reaction (4) or (1) combined, gives off heat (is exothermic) and this heat is used to maintain the temperature of the fuel bed and to bring about the reaction (3) which absorbs heat (is endothermic). A balance must be set up between the heat evolved in reaction (4) and that absorbed in (3) so that the

temperature of the fire does not fall, consequently the amount of steam or water admitted to a gas producer must be carefully controlled. For Australian conditions the admission of steam is considered to be very desirable as the hydrogen evolved improves the quality of the producer gas. Further, oxygen obtained from steam is not mixed with nitrogen or other diluents as in the case of atmospheric oxygen used in reaction (1), thus a greater concentration of combustible gases is developed.



In brief, the essentials to making producer gas are—A hot bed of fuel in a suitable container and through which a limited amount of air may be drawn together with a controlled supply of water or steam. The result will be the generation of a mixture of gases: Nitrogen, hydrogen, carbon monoxide, and a small percentage of impurities. This is the mixture known as producer gas. Such a gas, when mixed with the right proportion of air, can be exploded in an internal combustion engine in exactly the same way as an air-petrol mixture.

Quite a large number of producers have been evolved in an endeavour to obtain the best possible gas with any particular fuel. The principle is the same in every case. Designers try to produce a gas which burns with great heat (high calorific value) and then to deliver this gas to the engine, free from any tar, soot, dust or other solid matter and cooled to the temperature of the surrounding air, or lower if possible.

Producer Furnaces

Furnaces have been constructed in a great variety of shapes and sizes. The older types were almost invariably lined with fire-brick or similar material. This lining frequently led to trouble as it was affected by vibration, and it has survived only in stationary plants. In vehicular plants it has been found possible to so

arrange the air inlet and the gas outlet in the furnace that the container is protected by an envelope of charcoal which surrounds the fire and through which little or no air passes. The charcoal actually acts as an insulator for its own casing. Special precautions in design have to be made at the point where the air enters the fire, as high temperatures are invariably met at such points.

Furnaces may be divided into three types according to the direction of the draught in them, i.e., down draught, up draught, and cross draught. The first type is not normally used for charcoal plants and needs no particular explanation. In the up draught producers air is admitted at the bottom of the furnace through a grate, and considerable engenuity has been displayed on the part of designers in making a grate which will withstand the high temperatures at this point. The furnaces are usually surrounded by a false shell which acts as an ash hopper, and the air supplied to the furnace is pre-heated in the space from a "drip feed" of water supplied it. Gas is drawn off at the top of the furnace and passed on to the cleaning pro-

ducers the furnace, and means of controlling the rate of water supply are provided.

Gas is drawn off to the cleaning system through a grate or grill on the side of the furnace opposite the tuyere, and a second grate or similar device is usually provided below the path of the gas in the furnace for the ash and clinker. As in the case of up draft producers, it is essential to see that air enters the producer only at the correct point or points and that all other openings are sealed. Clinker removal is necessary as in up draught furnaces.

CLEANING SYSTEM

When the gas leaves the furnace it carries with it particles of dust, soot, ashes, fine charcoal, etc., and it is essential that these impurities should not be allowed to reach the engine. The gas must, therefore, pass through a series of scrubbers or cleaners.

Many types of scrubber have been used by different makers, and only most successful will be described here.

With stationary plants the practice is to use a large cylinder filled with coke or similar material as a scrubber. The gas passes from the producer upwards through the coke with which it mingles intimately and a shower of water is passed downwards through the scrubber. The coke and running water combine to clean and cool the gas very effectively.

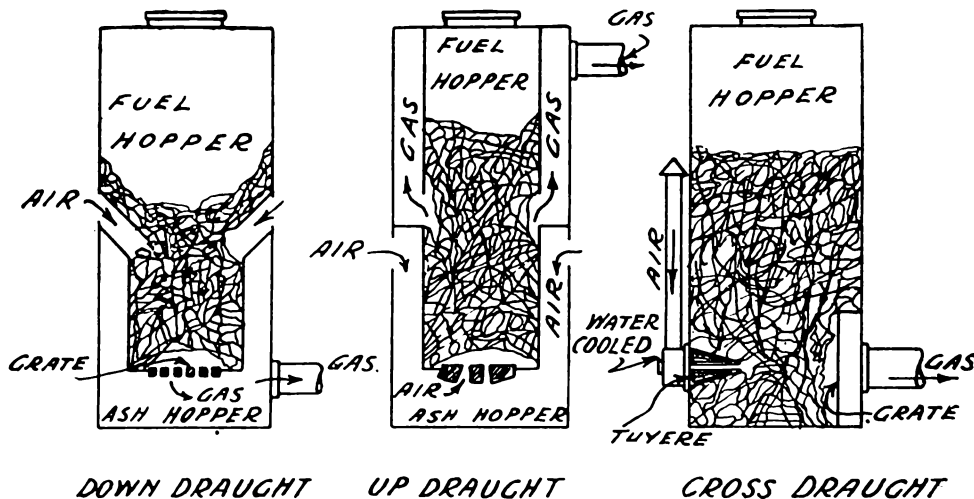
For vehicular work the weight of the equipment is of great importance and so the coke and water scrubber has had to be discarded and replaced by dry scrubbers and dust traps. With a number of designs the gas passes straight into the dust trap and there baffles

are placed to cause the heavier particles to be deposited. In another type of trap the gas passes through baffles in which the openings are shaped to impart a swirling motion to the gas, and the heavier particles are separated by centrifugal action to the outer portion of the scrubber. They then fall to the bottom of the vessel where they collect and can be removed at regular intervals.

Filters are also considerably used as gas cleaners. Pads for these filters have been made of many materials such as wood wool, metal wool, sisal, hair felt, etc., and they are usually packed into trays or cages to facilitate cleaning. In some cases the pads are soaked in oil or water, and in others they are dry. The filters must be regularly cleaned and the pads washed so that their effectiveness is not impaired. In many cases the pad material has to be teased from time to time to prevent its becoming so tightly packed as to impede the passage of the gas.

Various oil scrubbers are also used as a final stage, in the cleaning process. In some the gas actually

(Please turn to page 26)



cess which will be discussed later.

In the maintenance of up draught producers it is necessary to see that air is admitted through only the proper air inlet and that all doors, inspection holes, and filling holes are securely closed and sealed. The grate must be kept free of clinker as this seriously hampers the operation of the producer. Makers usually provide the necessary tools for this work, and it should be attended to at regular intervals depending on the quality of the fuel used.

In the cross draught producers the air is let into the furnace through special openings in the side of the casing. In most cases only one air inlet or tuyere is provided, and in all cases special arrangements have to be made to cool the tuyere. Some makers provide water cooling, either in conjunction with the engine-cooling system or by means of a separate water tank connected to the tuyere and operating on a thermosiphon system. Some tuyeres are cooled by the air supply to the producer, which passes round a tortuous path through the tuyere on its way into the furnace. Either steam or water is admitted with the air as it

*“Make White Copra Only
By Nineteen Forty Three”*
With a Modern Copra Dryer

A modern copra drier 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.

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

“TECK CHUAN HARDWARE”
AND AUTO SUPPLY

General Hardware Dealer And Contractor

P. O. Box 107
Quezon Avenue

Telephone No. 88
Lucena, Tayabas

SOCONY SERVICE STATION

The best in the province

Washing, Greasing, Spraying And
General Mobilubrication Jobs

EXCLUSIVE DISTRIBUTOR FOR

SOCONY Gasoline

GARGOYLE Mobiloil

STANVAC Diesel Oil

GOODYEAR & KELLY Tires

FORD & CHEVROLET Spare

Parts And Accessories Etc.

*Complete stock of general hardware
materials*

*For Detailed and exhaustive
information regarding the
problems, possibilities and
potentialities of the
coconut industry —*

Read The

COCONUT JOURNAL

● *The coconut tree has a thousand and one uses but so has the Babassu of Brazil.*

BABASSU

By DOMINGO B. PAGUIRIGAN
Bureau of Plant Industry

BABASSU is genuine Brazilian Palm which forms vast and dense groves in various states of the country particularly in Maranhao and Pisui.

Its habitat covers an extensive area, which includes the Amazon and Mato Grosso, down to Bolivia.

It also occurs in the state of Minas Gerais growing simultaneously with the Macaubapalm (*Acrocromia sclerocarpa*).

Scientific Classification—*Orbignia speciosa* (Barbosa Rodrigues), Family, Palmae.

Regional Distribution—It is in the state of Maranhao that one finds the largest area covered with Babassu palms, forming very large groves with approximately 13 billion palms—an extension of some 8,655,400 hectares (21,387,493), each palm yield an average of 1,000 nuts which means a total of Maranhao is estimated at 195 million tons of kernels, the yearly Brazilian production capacity is estimated at 300 million tons of kernels.

Uses—Practically all of the Babassu is used. The leaves are used in the manufacture of straw hats, purses, mats, sieves, and baskets.

The nut is burned green to smoke up latex, as it produces a thick smoke.

The kernel has several uses. A fiber having various uses is scutched from the epicarp. The yellowish fecula extracted from the mesocarp is a nutritious meal from which beverages similar to chocolate, and mushes for children and convalescents, are made. The endocarp, which represents 75% of the nut, can be used as a substitute for vegetable ivory where this is used in place of horn for making small articles, such as buttons, insulators, etc.

Tests made in the United States showed that the absorbent substance (fuller) can be used in the composition of dynamites. The mesocarp is also used as insulating material.

From the shell the following products can be obtained, Calcium acetate, Methyl alcohol, acetic acid, vinegar from pyrolignous acid, light and heavy lubricating oils dyes. Carboic acid, creosol, iron inks, tars, rossins, and a high-quality fuel.

The oil is used both as lubricant and as fuel; in the perfume industry, it is used in the manufacture of quality soaps; in cooking, it substitutes lard and olive oil. The butter made from babassu as good and nutritious as that made from milk, is already used.

The stalks of the palms are used as stays or props.

Chemical and composition—The babassu nut is composed of the following parts:

Epicarp	11%
Mesocarp	23%
Endocarp	57%
Kernel	9%

The epicarp is composed of resistant fibers, that cover the mesocarp.

The mesocarp is composed of a compact, pulpy substance, violaceous white with a high percentage of starch and tannic acid.

The endocarp is the enclosure of the kernel if is a compact tissue of ligneous cells, it can be used in the making of buttons, etc., it contains hydrochloric acid, silica, iron phosphorus, magnesium, and alka-line metals.

The seed is actually the kernel which yield and oil of a high industrial value, the analysis of which reads as follows:



Looming as a Competitor to the Philippine coconut from which Vegetable Oil is made in the babassu tree of Brazil.

Density at is degree C9218
Melting Point	23.2 C
Acidity index	237.4
Saponification index	12.82
Iodine value	14.11

The cake—After the extraction of the oil from the kernel the residue, which still contains a certain amount of oil is pressed into cakes, used as cattle food, enjoying a great demand in foreign markets.

Te epicarp, the mesocarp and the endicarp can be actually used as fuel for various tests have been made with positive, encouraging results.

A methodical study concerning the treatment of babassu coke gave the following results:

30 %	metallurgical coke
60 %	acetic acid
8 %	tar
1.5 %	methyl alcohol

The coke analyzed in the laboratory of the "Escole dos arte et Metiers" in France, gave the following results:

90 %	pure carbon
5.4 %	volatile matter
4.4 %	ashes
0.85 %	total humidity

As a dry fuel it gives 7,700 calories. It is considered a most excellent fuel because it does not contain sulphur or arsenic and has but a very small percentage of phosphorus.

Status of Industry.—The babassu oil industry in Brazil is still in its primary stage, in spite of the existence of a few mills, especially in the State of Maranhao.

The United States and Europe give a preference to babassu nuts yielding from 65% to 66% oil.

Trade.—Following is a list showing exports of babassunuts, during a period of live years.

Year	Tons	
1933	613	\$
1934	214	\$
1935	9,809	\$
1936	30,276	\$
1937	21,777	\$
Dollars	Average value	
Paper	Per Ton	
28,499	\$ 46	
15,234	\$ 70	
769,433	\$ 77	
3,365,33e	\$109	
2,467,538	\$112.	

—From *Agricultural-Commercial-Industrial Life*

PRODUCER GAS . . .

(Continued from page 19)

passes through the oil, the inlet being submerged in the liquid. Another type depends on the splashing of the oil on to plates over which the oil and on maintaining the oil at the correct level.

Coolers

It is of the greatest importance that the gas should be cooled to as low a temperature as possible before entering the engine. Adequate cooling ensures that the gas delivered to the engine is at its maximum density, giving the greatest charge (by weight) for the cylinders. Some makers have provided special coolers for this purpose in the form of radiators or nests of pipes through which the gas passes and so placed that they are cooled by the air as the vehicle moves. A separate cooler is not always necessary if the scrubbers afford ample cooling, but it can usually be classed as highly desirable. Coolers should not require any attention apart from occasional inspection to see that no soot is accumulating.

Fans Or Blowers

With some producer equipment it is usual to supply a fan or blower to be operated by hand in order to heat the furnace before starting. The fans are very similar to those used on the blacksmith's forges and need no description. Other makers depend on the engine to supply the draught for starting the fire and start the engine on petrol. This method of starting

COMPLIMENTS
of
LA NUEVA ECIJANA AGRICULTURAL AND INDUSTRIAL ASSOCIATION

EXPORTER OF BURI BRAIDS
SAN ANTONIO, NUEVA ECIJA

<p>★ Josefina Fine Hat Store and Beauty Parlor</p> <p>★ Kalayaan Studio and Branches</p> <p>Telephone: 5-23-59</p>	<p>★ Josefina Studio and Branches</p> <p>★ The Real Studio and Branches</p> <p>Telephone: 2-82-95</p>
--	---

D. V. SURIO
General Manager

197 Calle Libertad Pasay, Rizal

will be dealt with later, but it should be noted here that on every producer which is not equipped with a fan provision should be made for the temporary connection of one for testing purposes. This can be done by fitting a tee-piece in the gas line just before the line reaches the mixing valve (see below). The branch of the tee should be extended to a convenient position and there closed with a blank flange. Such an arrangement would allow a fan to be connected, and in the event of starting difficulties, would enable the gas to be tested and the resistance in the gas line ascertained.

Mixing Valves

On a producer gas engine the mixing valve takes the place of the carburettor on the petrol engine. In essence, it consists of a "Y" piece with a butterfly valve in each branch and a throttle valve in the stem. The gas line coming from the cleaning system is connected to one branch is coupled to the air cleaner or left open to the air. By varying the position of the two butterfly valves the ratio of gas to air can be adjusted to the best position at any time, according to the performance of the engine. It is, therefore, usual to couple the two valves together with levers and bring a control into the driver's cabin on a vehicle.

The throttle valve is of the usual type and is connected by levers to the driver's cabin in just the same way as the accelerator is connected to the throttle of the carburettor in the ordinary vehicle.

Where a converted vehicle is to be started on petrol it is also necessary to retain the entire petrol system. This means that an inlet system consisting of the induction pipe, carburettor and mixing valve have to be re-arranged so that either gas or petrol can be admitted as necessary, and although the location of the parts may vary considerably it is the equivalent of adding a third to the Y-piece and connecting the carburettor to this branch.

Starting Up With Blowers

In a producer plant fitted with a blower the starting-up process consists of igniting the fuel bed with a kerosene wick or similar arrangement, and then operating the blower until the producer has reached a temperature high enough to make gas. Care must be taken to see that all the valves at the mixing box are closed, so that the blower does not merely draw air back from the engine. When the gas is ready the mixing valves are set to correct positions and the engine started in exactly the same way as a petrol vehicle.

Starting On Petrol

On vehicles without a blower the engine is started on petrol, with all mixing valves closed and the producer ignited. With the engine running at a fair speed the gas valve is opened a little to set up a draught in the furnace. The temperature of the furnace rises; gradually gas is produced and the controls are manipulated so that the engine gets more and more gas and less petrol until the petrol throttle can be closed right off and the vehicle driven on gas. The process of changing from petrol to gas requires a little prac-

tice, but after a time it should be found possible to make the change with the vehicle in motion.

Once the vehicle is settled down on gas the petrol is turned off and gas is used entirely. It should be noted that the tap for turning off the petrol should be placed in a convenient position between the petrol pump and the carburettor, and that it is advisable to have the petrol pump overhauled at the time of conversion of the vehicle.

Most users prefer to get their vehicle running on gas before they start the water feed to the producer, and this may be considered good practice, as it facilitates raising the furnace temperature.

Operation

Once the plant is changed over to producer gas, the driving of the vehicle is in every way similar to that of a petrol vehicle. Plants have been built to give a range up to 200 miles on one filling of fuel, depending on the fuel, but an average figure of 100 miles between fuel recharging is more usual. The plant in most cases has to be stopped for refuelling, and in opening up the hot furnace some care is needed, as the hopper is likely to be filled with gas, which promptly burns. The resulting flames are too short-lived to be dangerous, but can be very unpleasant.

Maintenance

The routine maintenance of the ordinary petrol vehicle has been reduced to an absolute minimum in recent years. A little more trouble has to be taken in attending to a producer gas vehicle, but this is only to be expected and the success of any vehicle depends to a large extent on the care exercised by the user. The important points are set out below:—

1. The furnace must be regularly cleaned out to remove all clinker or ash.
2. The scrubbers must be emptied and inspected.
3. Filter pads must be washed as required.
4. Oil scrubbers must be recharged.
5. All joints in the gas line must be kept absolutely air tight, so that air enters the system only to two points, i.e., at the air inlet to the furnace and at the mixing valve. The importance of this point cannot be over-stressed, and supplies of spare jointing material should always be on hand.
6. Supplies of clean water for cooling the tuyere and feeding to the producer must be maintained.
7. The usual maintenance required for a petrol vehicle should be given to a producer gas vehicle.

The time involved in the additional work required to maintain a producer gas vehicle will vary with the fuel quality and the capacity of the scrubbers. A reasonable estimate for a vehicle working a full day would be about ten minutes each day and an extra thirty minutes once a week. These figures should not be exceeded with plants at present available.

Choice Of Fuel

Producer gas users are advised to be careful in the selection of the fuel for their units. The idea that "anything will do" is a misguided one and often leads to trouble. Experiments indicate that any sound timber can be successfully converted into charcoal, but hardwoods are probably the best. The important points are as follows:—

1. The charcoal should be free from any unburnt portions of wood or bark.
2. The charcoal should be evenly graded with a minimum of fines. (Suggested size, 1/2 in. to 1-1/2 in. mesh.)
3. A charcoal with good mechanical strength and giving a metallic ring is preferable.
4. The greatest care should be taken to avoid sand or earth impurities in the fuel, as these impurities form clinker in the furnaces. Clinker presents by far the greatest problem to be overcome in the furnace, and it can be largely avoided by using only fuel free from the above impurities.

Suitability Of Vehicles

Any petrol engine can be converted to run on producer gas. Whether the conversion will be satisfactory or not depends to a large extent on the power reserve of the engine in regard to the work performed on petrol. A definite loss of power is unavoidable, and with engines of low compression ratio, this may be as high as 40 per cent. The loss may be reduced to about 20 per cent by increasing the compression ratio, to 7 to 1, or the power loss can in some cases be completely overcome by boring out the cylinders and fitting larger pistons.

For vehicle work the power loss is often not of vital importance, as modern vehicles have fairly high compression ratios and ample power reserves. The only effects of the conversion are: A reduction in speed on hills, in acceleration, and possibly in abso-

lute maximum speed. It follows that many vehicles could be converted to producer gas without seriously reducing their utility. On account of the necessity of maintaining a high furnace temperature, it may generally be stated that the larger the vehicle and the more uniform the load on the engine the better the results will be under these circumstances a more effective current of air passes through the producer.

Ignition System

The ignition system of petrol vehicles is quite suitable for producer gas, except that arrangements must be made to increase the angle of advance of the spark when running on producer gas. Angles of advance up to 45 deg. before top dead centre have been found satisfactory, but the correct position varies with each engine and must be found by adjustment in each case.

Precautions

All users of producer gas should remember that the gas contains carbon monoxide, which is highly poisonous and difficult to detect. There is no fear of the gas harming anyone during the normal running of a producer gas vehicle, as there is never a positive pressure in the gas line. Nevertheless, care should be exercised whenever the system is opened up for cleaning of scrubbers, &c., to avoid breathing the gas.

When an equipment is provided with a blower, the greatest care should be exercised to see that the blower is not operated in a closed room or shed, and that wherever it is operated the outlet or exhaust from the fan is not inhaled. The handle of the blower should always be removed so that the uninitiated cannot do any harm either to themselves or others.—
Reprinted from New Guinea Agricultural Gazette (February, 1941)

★

COMPLIMENTS

★

Main Office
Rizal St., Sariaya,
Tayabas, P. I.

of

TABLERIA SARIAYA

LUMBER DEALER

LUMBER AND FURNITURE STORE

We sell all kinds of
Modern Furniture
at low price
Batibot Chair Agent

★

Sariaya, Tayabas, Philippines

★

PRESIDENT QUEZON AND . . .

(Continued from page 7)

tinue giving us the money of the oil excise tax but without the provision that the money may be used to help the coconut industry or the coconut producers. If we do something now that would make Congress believe that we are not complying with its present injunction, Congress may not make the proposed change. So I counsel you to be patient; wait for one year more, for I think Congress will listen to our request to use the money from the tax on coconut oil to help the coconut industry and that from the excise tax on sugar for the sugar industry. We cannot violate the condition imposed by Congress because we have promised to comply with it."

In his own province, Tayabas, President Quezon once found himself in the course of a week-end visit, face to face with coconut planters at the provincial capital in Lucena. The people were insistent to know why the excise tax on coconut oil is not being abolished and like the good people of Oriental Misamis they blamed the tax for the poor prospects of the industry. So President Quezon had to do some explanation. The President elaborated on his reply in this self-explanatory and self-convincing manner:

Low Prices of Copra not due to excise tax

"You must understand that if I have not done anything so far to improve the price of copra or to remove the excise tax, it is because two years ago the prices of copra rose up at the very time when the excise tax was already in force. Within the first year after Congress had passed the tax on coconut oil, the prices of our copra surpassed those which had prevailed during the World War. You cannot deny, therefore, that the excise tax is not to blame for the present low copra prices, for if such were true those prices would have never risen anymore.

"The price of any of our export commodities depends upon the foreign market. Copra, as you all know, is sold in the United States, not here. Its price is set by the purchasing country and by other oil-selling competitors; it is not fixed by the Commonwealth Government. If our copra were only sold and consumed here we could then name our own prices. Since it is not sold here, can we then say to our foreign buyers that this or that should be the price for our copra? Or can we tell them that we will not sell them our product if they cannot meet our price demands? What shall we do if nobody pays the price we ask?

"It would have been also possible for Congress, without anybody being able to stop it, to decree that the excise tax collections should accrue to the Treasury of the United States. However, I made the request that collections from the tax be returned to the Philippines. Congress granted this request, but it placed a proviso that upon return of

the collections to us the money be not used to benefit the coconut planters; and should that proviso be violated, the refund of the excise tax collections would be stopped immediately. If I had not agreed to it, even under such restriction, the tax money would have remained in the United States. The power to decide the matter rested with them, not with us. And if I did agree to the refund — as it is being refunded today — even under a restrictive condition, is it not anyway for the welfare of the Philippines? The welfare of the Philippines, let me tell you, is also the welfare of Tayabas; hence, I believe I made no mistake in my decision regarding the excise tax refund.

Study possibilities of Coconut

"What we Filipinos should do is study the different possibilities of the coconut. We may even learn to supplement our rice with coconut products. The coconut, after all, is more nutritious than rice. When I was a young boy, we ate coconuts whenever we did not have any rice. Let us again make the **bukayo** (coconut sweetmeat) because it is very delicious. Also the **matamis sa bao** (coconut jelly). When I was a young student, I always asked money from my mother with which to buy **matamis sa bao** from the Chinese store near the school. The trouble with us Filipinos is that we forget what is truly our own. We have so many needs and used for our coconut. Why don't we rediscover them so as to increase not only our export but also our local consumption of coconuts? The National Development Company has several expert chemists studying the different uses of the coconut; more important, however, is to have our coconut planters take full initiative on this matter.

Advice to Coconut Planters

"One of our defects is that when a proprietor has two hundred, four hundred, or a thousand coconut trees, he no longer personally harvests his nuts or converts them into copra. Another man does the work for him; hence his income is lessened. In the United States the landowner farms his own land; here in our country many of our landowners spend their time in the town or in the cockpit.

"If a planter with a thousand coconut trees works his own grove, he will make bigger profits from his copra sales. That is the first secret of making a living; the more work we do the greater our profit. It is imperative, of course, that we work. If our land is small it is needless to hire a laborer because we can do it by ourself; if our land is big, however, then it is the time to call in hired help. We should strive to work, we should forget foolish pleasures and stop wasting time in town fiestas."

The Fight for the excise tax money

At the joint convention of coconut and abaca producers on February 22, 1939, the President recounted how he fought to get the proceeds from

the coconut oil excise tax for the Philippines. He recounted thus:

"The Government has done everything possible for the copra industry and for all the other industries as well. After the tax had been imposed, we were faced with this question: Should we take advantage of it or not? Had I been away from the United States at the time, it would have been extremely difficult to get the money. In the first place, American taxpayers complained about it. The case was taken to court and it reached the Supreme Court of the United States. On my arrival in New York, a delegation that was waiting for me there proposed a compromise; namely, inducing the Philippines to accept a percentage of the funds upon which they would withdraw the case. I told them that if we are entitled to receive the money, we would demand every centavo of it. Otherwise we would not ask for it at all. After the Supreme Court had decided the case, the United States Treasurer decided not to turn the collections over to the Philippine Government. Had I not been in Washington then, it would have been very hard for our Government to get the money. As a matter of facts, the money could not be disbursed while the case was pending, and after so many millions of pesos were collected the Federal Treasury resented turning the sums over to the Philippine Government. The total amount which had accumulated was eighty million pesos. They proposed to keep the money there till Congress should meet, have a report submitted to said body, and later perhaps ask Congress to legislate on the manner of spending the money.

"I know that, with the influence in Congress of those who succeeded in securing the enactment of the tax, they realize only too well what they were up to. They tried to regulate the sums to be disbursed out of the eighty million pesos — that is, to have it paid out little by little. We had not then come to the point of being able to make out a definite program regarding the use of that fund. I had to take the matter up with the Secretary of State, the Secretary of War, and the Secretary of the Treasury. It was only after I had signed a written promise to the effect that no portion of the money would be disbursed to aid the copra industry, that I was able to have the money turned over to me. You see that not only the Philippine Government but I personally had to enter into a solemn promise under the law."

In reply to the charge that the excise tax has reduced the price of copra, President Quezon declared that it is the present oversupply of copra in the world markets that is responsible for the situation. The buyers have not increased in number and yet the sellers have increased their products.

Non-edible Coconut oil exempted from tax

Upon the insistent request of coconut planters the President recommended to Washington

authorities the repeal of the coconut oil excise tax act, and fortunately enough his appeal was heard and the Senate Committee recommended the exemption from payment of the excise tax of coconut oil used for nonedible purposes. But even the President himself doubts the benefits to be derived from this matter. As he told his hearers at the farewell banquet given in honor of Assemblyman Quintin Paredes at the Malacañan Palace recreation hall on May 22, 1939. "It must be borne in mind that the tax will not be eliminated completely. It will be eliminated only in those cases where coconut oil will be used for nonedible purposes. Now, can you be sure that they will pay one price for coconut oil that will be used for butter, and another price for that which will be used in the manufacture of soap? Will there not be just one price for all the copra that may be bought? Which will be that prices? Will it be the difference between the price of copra which pays tax and the price of copra without tax. Or, will it be such difference, but bearing in mind the proportion between the copra utilized for nonedible purposes and the copra for all other purposes? That, however, involves a tremendous mathematical operation and I am afraid that, to save themselves from such bother, the manufacturer will simply pocket the difference in prices. In other words, the benefit to be derived from the elimination of this tax, instead of aiding the producers of copra, will only go to the pocket of the purchaser in the United States. The benefit may go to the soap distributor in America and, in turn, to the consumer; but I am not sure that it will be of any good to the producers in the Philippines."

Amendment to Tydings-McDuffie Act

Almost at the same time, in his desire to correct the objectionable features in the Tydings-McDuffie act related to the trade relations between the United States and the Philippines, President Roosevelt created the Joint Preparatory Committee that made a study on the matter. As a result of the studies the committee recommended the amendment of the Tydings-McDuffie law so that our exports, including copra and coconut oil, would be exempted from paying export taxes in the United States, reasoning that if this were not done, it would be impossible to sell these products in America at a profit and to compete with similar products in other markets; thus the coconut industry would face ruin, resulting in the impoverishment of the Filipinos depending upon it for their living.

The amendments also make the proceeds from the coconut oil excise tax now available for economic readjustments even in the coconut-producing provinces.

So the Congress passed a law amending the Tydings-McDuffie act on this matter which, after its approval by the Filipino people in the plebiscite of October 24, 1939, took effect. Under this act coconut oil enters the United States on an annual duty-free quota.

Advantage of excise tax on coconut oil

That the excise tax on coconut oil has proved advantageous to the Philippines can be shown mathematically. Up to May 10, 1938, the fund had an unappropriated current surplus of P88,538,100, and this sum the President recommended to be spent to carry out his four-years' public works program.

Not only that, but the proceeds have been used for other purposes. Under Commonwealth Act No. 369, P4,800,000 was appropriated for the purchase of bonds, while Commonwealth Act No. 403 authorized the sum of P10,000,000 to constitute a revolving fund to be invested in loans to provinces, municipalities, and cities for the construction of permanent public markets, slaughterhouses, and water works.

Legislation to Combat pests

President Quezon, desirous of helping the coconut industry, urged the first National Assembly the immediate consideration of Bill No. 1913 appropriating P100,000 to finance the campaign of controlling budrot and other coconut pests. Because he knew that the amount was necessary in carrying on the drive against coconut pests he certified to the Assembly the importance and urgency of this bill in two separate messages — one on September 23 and the other on October 7, 1936 — since the legislative body was about to close its sessions.

Complying with the request of President Quezon the National Assembly also acted favorably on the money-measure to combat budrots. The bill became Commonwealth Act No. 110 on October 30, 1936.

Act Providing for Copra Warehouses

It is a fact that for some years now the price of copra has been very low and as a result it has discouraged many planters who have either neglected and abandoned their plantations or have turned their attention to other more profitable industries. When copra prices are low — and not even enough to meet the expenses of manufacturing it — the producers prefers to store their product until better prices come.

In such cases the big volume of stock that is accumulated becomes a problem. Usually storage space is lacking. So to remedy the situation the National Assembly considered bill No. 734, which President Quezon approved on October 14, 1936, and subsequently became Commonwealth Act No. 50. The act directs the Secretary of Agriculture and Commerce, the Philippine National Bank, and the National Development Company to establish, operate, and maintain warehouses for copra, the same to be deposited at reasonable rates of fees. Undoubtedly, this act has proved beneficial to the thousands of coconut planters in the Philippines.

Coconut Mission

Deeply concerned with the welfare of the coconut industry and in his desire to ameliorate the condition of the planters, President Quezon sent a message to the second National Assmby on May 17, 1939, urging the Assembly to consider the necessity of sending a member of that body on a mis-

sion to undertake a study and investigation abroad of the best means of promoting the coconut industry in the country. Heeding his request, the Assembly delegated the Honorable Maximo M. Kalaw to undertake the task.

Measures to help Planters

In realizing the present economic situation of coconut planters which deserves the immediate attention, the government has taken the necessary steps to alleviate their condition. It has created the National Economic Council and other agencies of the government in order to safeguard their interests. They are now "making a study to determine the degree by which prices for coconut products in the Philippines are being depressed because of speculative activities of dealers and brokers of this commodity in the open markets of the world." Other studies are under way, as the plan of establishing a single sales agency so as to eliminate objectionable speculative transactions, the question of excessive transportation rates, the possibility of improving the quality of the products, and the introduction of greater efficiency in the production.

Responsible for the new lease on life of the coconut industry is the National Coconut Corporation which was created by the National Assembly upon the initiative of President Quezon who has had the welfare and interest of the coconut planters at heart. The corporation aims to extend help, financially and morally, to the coconut growers, find new markets and revitalize the present ones, and discover new and more uses of the different by-products of coconut.

President Admonishes Coconut Planters

"There was a time when the Philippine coconut industry was more important, incomparably so, than the sugar industry. More provinces and more people depended on this industry than on the sugar industry, and yet you have not made yourselves perfectly organized to cope with situations that may be detrimental to the coconut industry. Consider the sugar people — they are well organized, and when they start an agitation you think the whole world is going down. They have been organized for many years.

"It is perfectly right for you people to be organized. You will be able to exert your influence better not only here but also in the United States. You can present your grievances in the proper way, you can present them in public, and you will be immediately heard . . .

"Organize yourselves, study your problems and acquaint the peoples of America and the Philippines with a few plain facts; firstly, that the coconut industry, as one of the main industries in the Philippines, affects more people than those of the sugar industry; secondly, that our coconut oil is not really competing with any industry in the United States in such a way as to harm it. I repeat, you have to educate the American people on that".

COCONUT

IMPORTS INTO THE U. S.—1940 (In tons) 1 Ton=2,240 lbs.

	Seeds, Nuts & Kernels			Oil Equivalent of Seeds, Nuts, Kernels, Tallow, Oil, Fats, Etc.		
	1938	1939	1940	1938	1939	1940
Castor seeds	50,924	72,593	106,155	21,388	30,489	44,585
Copra	229,116	191,986	374,718	144,343	120,951	173,072
Flax seeds	384,000	400,750	295,636	115,200	120,225	88,691
Sesame seeds	3,044	5,464	6,517	1,370	2,459	2,933
Poppy seeds	4,308	2,593	2,708	2,068	1,245	1,300
Palm kernels	10,866	4,518	13,273	4,890	2,033	5,973
Rape seeds	4,085	3,366	2,240	1,430	1,178	784
Other oil seeds	26,968	61,844	50,236	8,090	18,553	15,071
Total	713,311	743,114	751,483	298,779	297,133	332,409

IMPORTS INTO U.S.

Oil Equivalent of Seeds, Nuts, Kernels,
Tallow, Oils, Fats, Etc.
(In Tons)—1 Ton=2,240 lbs.

	1938	1939	1940
Chinese wood oil	47,973	35,145	43,325
Perilla oil	14,205	22,893	5,065
Coconut oil	162,473	150,357	165,483
Maize oil	9,929	6,085	190
Linseed oil	53	22	5
Olive oil (edible)	31,736	28,067	22,357
Olive oil (inedible)	12,410	17,625	13,221
Palm Oil	121,125	127,866	100,463
Palm kernel oil	1,147	1,000	—
Peanut oil	6,942	1,687	1,392
Rapeseed oil	2,645	4,133	5,767
Soya bean oil	1,900	1,843	2,165
Sunflower seed oil	36	85	—
Cotton oil	34,600	13,147	5,370
Other vegetable oil	32,473	34,772	24,909
Whale oil	9,843	9,033	9,936
Code & Cod liver oil	27,723	29,433	8,688
Other fish oil	230	433	320
Tallow	550	670	611
Beef & Hog fats & Wool grease	800	1,860	1,284
Total	817,572	788,347	747,154

FOREIGN COUNTRIES IMPORTS

Oil Equivalent of Seeds, Nuts, Kernels,
Tallow, Oils, Fats, Etc.
(In Tons)—1 Ton=2,240 lbs.

	1937	1938	1939	1940
United Kingdom	932,736	1,046,018	1,113,786	—
U. S. A.	—	817,572	738,347	747,154
France	—	610,631	556,928	94,018
Holland	—	390,264	395,778	79,071
Germany.	995,343	1,061,562	606,751	not available
Italy	228,894	163,795	93,176	—
Belgium	126,027	141,073	141,448	—
Denmark	—	155,659	135,549	15,928
Sweden	—	90,734	112,467	80,094
Japan	164,739	165,775	154,854	—

Note: Compiled from Fats and Oils Review—U. S. Domestic
Commerce 1939

Review of the oilseed, oil, oil cake
markets for 1940 { Hank Fehr & Company
Holland House, Bury Street,
London, E. C. 3

By RICARDO B. BONILLA
National Coconut Corporations

SHIPMENTS OF COPRA (In Tons) 1 Ton=2,240 lbs.

Year	Manila	Java	Macassar	Sangir			Ceylon	Malabar Coast	Total
				Menado & Gorontalo	Paddang	Other Dutch East Indies Ports			
1930	166,780	7,364	76,843	134,832	156,335	181,319	89,410	None	812,883
1931	178,043	3,848	72,982	125,685	157,202	176,460	88,800	"	843,920
1932	133,867	62,620	72,605	142,014	202,295	183,900	46,625	"	843,926
1933	302,492	14,490	151,072	124,188	196,420	192,600	64,500	"	1,045,762
1934	346,156	3,747	147,801	111,788	153,401	167,242	105,681	"	1,035,816
1935	252,883	3,708	185,433	104,753	189,562	180,761	48,661	"	965,761
1936	259,892	4,251	184,789	118,203	199,963	157,319	51,813	"	976,230
1937	232,511	7,201	185,703	100,799	200,541	165,030	67,650	"	959,435
	342,631	3,244	228,434	104,834	216,855	166,177	75,265	"	1,137,440
1939	395,460	200	212,756	113,972	201,578	157,429	52,920	"	1,134,315
1940	327,168	3,139	93,606	48,610	120,916	93,142	78,284	"	764,865

STATISTICS

WORLD PRODUCTION OF COCONUT OIL In Tons 1 Ton = 2,240 lbs.

Production	1940	1939	1938
India	—	9,282	13,161
Strait Settlements	70,027	61,897	49,499
Ceylon	29,825	62,562	75,834
Java	14,140	8,965	19,851
Philippines	175,723	164,482	161,938
U. S. A.	173,072	120,951	144,343
Great Britain	—	95,369	71,803
France	19,769	88,389	88,578
Germany	—	94,360	172,098
Holland	21,450	47,565	33,476
Denmark	6,178	47,137	47,443
Italy	—	9,534	18,481
Sweden	—	16,950	25,175

LARD

U. S. A.	752,678	631,241	518,900
------------------	---------	---------	---------

MARGARINE

U. S. A.	142,970	134,285	171,260
Great Britain	—	215,000	210,236
Holland	—	75,000	70,866
Germany	—	375,000	390,748
Denmark	—	80,000	79,921
Norway	—	57,000	54,232
France	—	35,000	32,538
Sweden	—	55,000	58,800

COPRA

Ceylon	78,284	52,920	75,265
Straits Settlement	93,142	157,429	166,177
Philippines	327,168	395,460	342,631
South Sea Islands	75,000	120,000	150,000
D. E. I.	266,271	528,506	553,367
East Africa	35,000	53,000	60,000

BUTTER

U. S. A.	807,143	784,553	798,335
Holland	—	135,000	130,000
Denmark	—	185,000	190,000
Sweden	—	78,000	80,000
Norway	—	31,000	32,000
Germany	—	400,000	425,000

TOTAL IMPORTS OF COPRA INTO THE FOLLOWING COUNTRIES

	1937	1938	1939
United Kingdom	79,398	113,941	151,380
Holland	46,379	53,137	75,513
Italy	23,874	29,336	15,134 (Jan/July)
France	135,437	140,600	140,300
Denmark	74,292	75,307	74,821
U. S. A.	240,067	229,116	191,986
Germany	206,240	273,173	149,778

MONTHLY SHIPMENTS OF COPRA FROM THE PHILIPPINE ISLANDS

(In Tons) 1 Ton=2,240 lbs.

	1938	1939	1940
January	16,375	22,358	37,463
February	28,937	21,790	28,607
March	22,204	45,053	49,635
April	23,472	38,206	23,642
May	19,972	31,737	29,351
June	31,319	32,183	17,170
July	28,644	37,655	17,565
August	40,192	49,866	13,054
September	31,828	26,618	18,611
October	44,998	28,094	40,118
November	21,842	32,867	40,294
December	32,848	29,033	11,658
	342,631	395,460	327,168

FORECAST OF 1941

Metric Ton = 2,240 lbs.

Copra	1,050,000	617,400	—
Cottonseed	11,170,000	1,729,000	—
Palm kernels	701,000	311,800	305,000 Groundnut Oil
Ground nuts	5,423,600	1,395,700	305,000 Coconut Oil
Linseed	3,977,700	1,006,500	—
Rapeseed	1,300,000	291,200	585,000 Palm Oil
Soya beans	6,908,500	754,400	—
Sesamum	465,000	168,800	—
Olives	3,200,000	750,000	50,000 Maize Oil
Hempseed	610,000	16,000	40,000 Wood Oil
Sunflower	2,150,000	471,600	—
Castor seed	371,000	140,700	—
Other seeds unclassified	335,000	60,000	753,000 Lard 398,000 Tallow 350,000 Whale
Total	37,661,800	7,713,600	2,521,000 = 2 10,234,600

TOTAL IMPORTS OF COPRA INTO THE FOLLOWING COUNTRIES

	1937	1938	1939
United Kingdom	79,398	113,941	151,380
Holland	46,379	53,137	75,513
Italy	23,874	29,336	15,134 (Jan/July)
France	135,437	140,600	140,300
Denmark	74,292	75,307	74,821
U. S. A.	240,067	229,116	191,986
Germany	206,240	273,173	149,778

MAIN WORLD CORPS—1941 OIL SEEDS

(In Tons) 1 Ton=2,240 lbs.

Argentina	1,905,000 tons
India	8,070,000 "
U. S. A.	8,676,100 "
Canada	79,700 "
Brazil	980,000 "
Spain	1,750,000 "
Italy	800,000 "
Greece	300,000 "
Philippines	250,000 "
Other countries	1,025,000 "
Other S. A. countries	285,000 "
British West Africa	670,000 "
French West Africa	695,000 "
Other West African possessions	115,000 "
Egypt	720,000 "
Ceylon	60,000 "
East African Poss.	260,000 "
Straits Settlements	161,000 "
Java and D. E. I.	750,000 "
South Sea Islands	100,000 "
China & Manchukuo	3,980,000 "
Japan	510,000 "
Other Asiatic countries	716,000 "
Russia	4,890,000 "
Total	37,661,000 "

Amount of that part of the crop which would normally be crushed —200,00.

MAIN WORLD CROPS—1941 OILS AND FATS

(In Tons) 1 Ton=2,240 lbs.

Argentina	40,000 tons
India	24,000 "
China & Manchukuo	146,000 "
U. S. A.	1,800,000 "
Brazil & Uruguay	5,000 "
Australia	50,000 "
Japan	51,000 "
Ceylon	30,000 "
Malaya	140,000 "
Philippines	170,000 "
Java & D. E. I.	250,000 "
Spain	300,000 "
Egypt	55,000 "
Other countries	50,000 "
Italy	200,000 "
British West Africa	170,000 "
French West Africa	40,000 "
Other West African Poss. Territories	85,000 "
Russia	500,000 "
Arctic & Antarctic	350,000 "
Total	2,521,000 "

A SURVEY OF LEGISLATION AFFECTING THE COCONUT INDUSTRY OF THE PHILIPPINES

By MARIA ABALAJON

No Legislation on Coconut During Spanish Regime

During the Spanish regime in the Islands, the coconut industry had not assumed so important a role as to be the subject of monopoly, as was the tobacco industry, by the Royal Government of Spain. Although the copra production and exportation of the Philippines contributed in an appreciable measure to the coffers of the Spanish Government, there was no particular legislation on the coconut industry.

However, upon the implantation of American sovereignty in the Philippines in 1899, the conditions for copra production and exportation changed. The wide avenues of the vast American markets were opened to our coconut producers and planters. The demand for our copra and coconut oil exportation increased by leaps and bounds and reached its peak during the entire period of the First World War. During this time the Philippines was supplying the whole world with one-fourth of its copra consumption.

The Coconut Products Board

But although we were heavy producers of copra, we were not selling the best quality. Ceylon and India were producing copra of better quality. To remedy this deficiency, the now defunct Philippine Legislature saw for the first time the need of legislation in that direction. Act No. 2598, passed on Feb. 4, 1916, was the first major legislation affecting the coconut industry. Its comprehensive objective was to encourage the improvement of coconut products, both in quality and in variety.

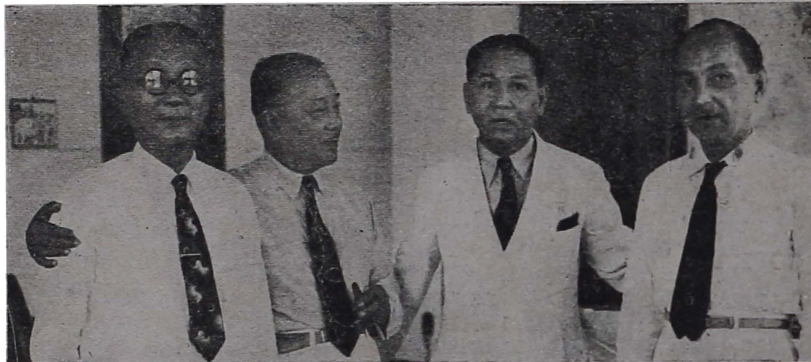
The Act established the Coconut Products Board composed of the Governor General, the Speaker of the Philippine Assembly, or their authorized representatives, and one member appointed by the Governor General with the advice and consent of the Upper House of the Philippine Legislature. The primary duties of the Board were threefold: (1) to improve production of copra by aiding in the establishment of copra driers in suitable places and bringing the producers in touch with the consumers or exporters in order to enable the former to determine the quality of copra in demand in the market; (2) to promote and aid in

the establishment of factories for the extraction of coconut oil, or for other industries derived from the coconut, or for the utilization of their waste products; and (3) to organize corporations or cooperative societies among the owners of the coconut plantations in order to facilitate the accomplishment of the mentioned objectives.

To attract coconut planters and producers the Coconut Products Board was empowered to guarantee to the concern constructing a copra drier or factory for the extraction of coconut oil, or for the utilization of coconut by-products, the payment of the value of its plant and equipment, and interest thereon out of the fund to be created by a deduction from the net profits of the trans-

actions of the drier or factory to be determined by the Board, which fund would be sufficient to liquidate the capital invested therein in 20 years or less counting from the date on which such drier or factory has begun operation, and to provide for the proper annual interest thereon. Any surplus in the fund would be distributed proportionately among the owners of the land and coconuts, with whom the concern operating the drier or factory had entered into any contract, provided, that such guarantee would be granted only on condition that the drier or factory would finally become the property of the owners of the coconut land.

The board was also empowered to purchase, from a corporation or corporations composed of owners of land planted in coconut trees, bonds issued upon the security of the property of said corporation, or upon the security of the first mortgages upon the lands or part of the lands of individual owners who are stockholders in the said corporation, or upon both securities mentioned; and to make loans secured by first mortgage to a corporation or corporations owning and operating a drier or factory already established for additions and improvements thereto. However, before such purchase of bonds could be made, the Coconut Products Board must exact from the Corporation certain conditions which among others are: (a) that the amount of bonds issued by the corporation shall not exceed 60% of the value of the property offered



Governor Tomas Confesor with the NCC Directors. Left to right, Director Ramon Soriano, General Manager Rodriguez, Governor Confesor and Director Benito Razon.

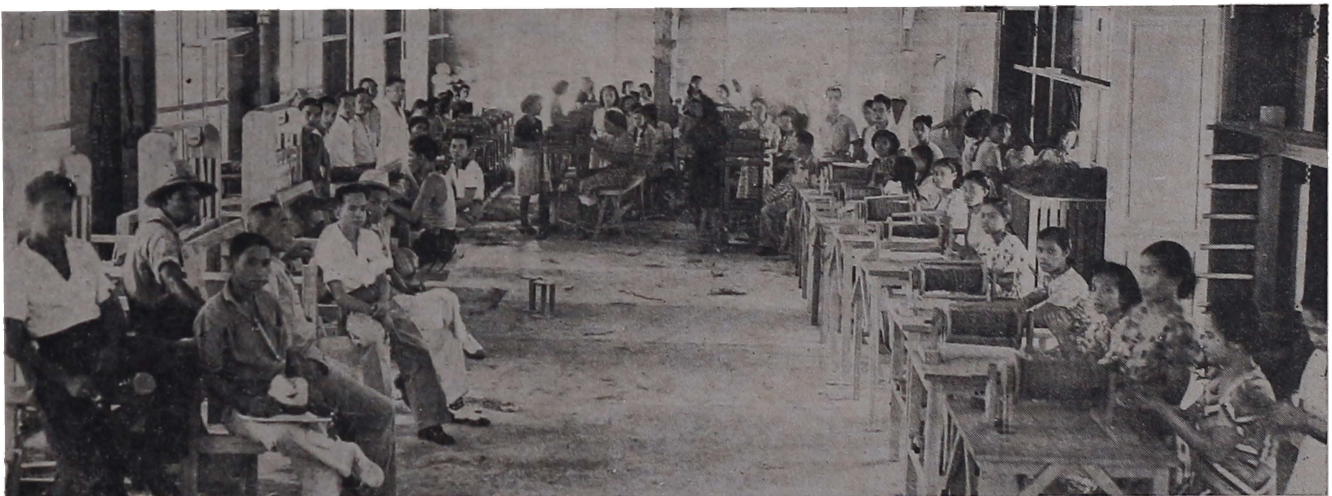
as security; (b) that before such purchase be made such corporation should have contracts with the owners to deliver and sell to the corporation all the coconuts produced on their land or copra made from said nuts, and to convey to the corporation such rights of way that the corporation might deem necessary for roads and railroads connecting the drier or factory with the field; (c) that the majority of the owners of said lands *should be stockholders in the corporation which* should provide for a sinking fund to be deposited with the Insular Treasury for the retirement of the bonds; and that the payment for the retirement of the bonds would have preference over any dividends or profits of the stockholders and would be sufficient for the total extinction of the *bond debt within a period not exceeding 20 years*; and that until all money sufficient to pay the same has been safely deposited for the purpose with the Insular Treasurer, no dividend in excess of 10% per annum would be paid the stock of such corporation, and the net earnings, over and above said dividends, should be used in *betterments of* additions, or improvements to the property offered as security, or in the redemption of the bonds of such corporation.

It was further provided that the Board should not make any loan except upon first mortgage on the drier or factory and the land or part of the land of the corporation, or both, and only for a sum not to exceed 60% of the value of the property offered as security, and that the corporation would provide for the payment of an annual installment *on said loan*, such annual installments to have preference over any dividends or profits of the stockholders and to be

sound economic operation of the drier or factory be guaranteed; to establish rules and conditions under which it would furnish aid to the *owners of* coconut driers or factories for the extraction of coconut oil, or *for* the utilization of the waste products of said factories; to make proper provision for the training of technical supervisors, employees, and laborers, who *may* take part in the work of a drier or factory receiving the benefits of the Act.

The Board exercised supervision over the driers or factories constructed or operated under the Act. But this supervision *terminated* when the capital and interest invested by the government *had* been paid off and the government *thereby* completely disengaged itself from the obligation contracted in connection with the guarantee granted by it. In the particular case of the purchase of bonds or of a loan granted to the corporations taking advantage of the benefits of the Act, the Board had the right to appoint a person who would have a direct hand over the operation of the drier or factory and whose compensation as fixed by the Governor General *were* paid by the corporation concerned.

The bonds of any drier or factory were subject to examination by the Bureau of Audits. It was the duty of the Board to report to the legislature at *every* session the result of its work, setting forth among other things, the names of the driers or factories which received government aid, the sum invested for each, the sum received for the payment of the capital and the sum owing therefor, the interest paid and owing, and the losses or profits of each drier or factory.



Student spinners at work in the Marinduque

Coconut School of the N.C.C.

sufficient *to provide* for the total extinction of the debt *within a term* not exceeding 20 years.

In line with the proper discharge of its powers, the Board was authorized among other things to enter into negotiations with, receive propositions from, and make contracts on behalf of the corporation, taking advantage of the benefits of the act, with the constructing firms or concerns engaged in the establishment of coconut driers or factories for the extraction of coconut oil, or *for* the utilization of the waste products of said driers or factories; to demand that the minimum production of coconuts necessary for the

The Act provided that except by permission of the Board, no owner of land or of coconuts which had contracted for a drier or factory may, within 25 years from and after the date of the contract, give, sell, alienate or in any other manner dispose of, or engage his production of coconuts to any person other than the drier or factory, and likewise, no proprietor of land under contract with a drier or factory may, within 25 years from and after the date of the contract, give, sell or alienate, or in any other manner dispose of, or engage his property without the consent of the Coconut

(Please turn to page 50)

● The problems involved in the marketing of copra and various coconut products.

MARKETING COPRA AND OTHER COCONUT PRODUCTS

By R. B. Bonilla

COPRA, like most Philippine products, has its problems — among them the methods of production and marketing. Copra, or the dried meat of the coconut, is produced by means of artificial drying processes (smoked-copra) or by sun drying methods (sundrier). Smoked copra is generally produced in Tayabas, Laguna, Mindoro and in other neighboring provinces, while sun-dried copra is produced in the South, especially in Cebu. The total output or production annually in the Philippines is approximately 828,000 tons. Of that total it is estimated that around 392,665 metric tons of copra were milled to produce approximately 235,599 metric tons of coconut oil.

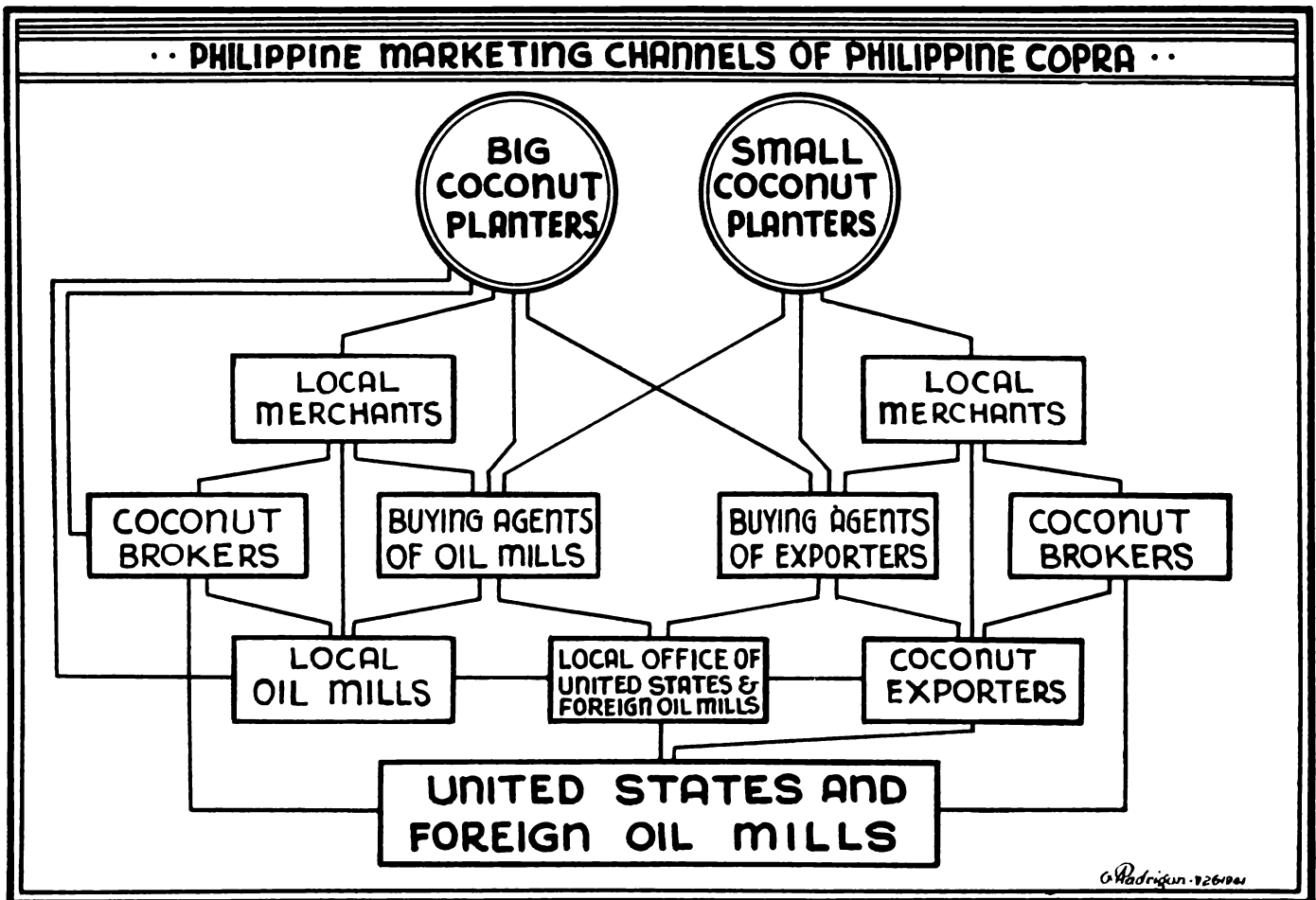
Problems of Marketing

Copra is classified in the local market under four or five grades. **Corriente** which is the very common grade and considered by all copra dealers as the lowest grade; and the highest grade called **resecada**. It is generally estimated that the **corriente** contains moisture from 14.5 to 20% or more

while the **resecada** contains from 5 to 6% moisture. In foreign markets, copra is classified into two grades: the **Merchantable Manila** and the **Cebu Sundried**. The buying and selling of copra in the Philippines is carried on with great disadvantage to coconut producers. Most of the coconut planters or growers sell their products to local merchants in their respective localities. In all coconut regions, agents, middlemen or brokers representing copra exporters in Manila and oil mills in the Islands handle the buying of copra from coconut planters. Inasmuch as the farmers can not obtain the best prices, due to lack of government trading centers, they are forced to sell their products at the best prices obtainable, which are offered by the local buyer or rural middleman.

Hazards of Sales Through Middlemen

Where buying agencies cannot be found, coconut producers of copra sell their produce to rural middlemen. In this kind of transaction coconut producers are usually the victims of usurious



practices by the rural buyers, mostly Chinese that from 15% to 25% of the selling price is deducted from the producers for every 1,000 nuts or 100 kilos.

In plants where there are no middlemen or rural buyers, big producers buy all the output of the small producers at a price lower than what they can get from the provincial exporters. Generally, all middlemen or small merchants engaged in buying copra and other coconut products sell their produce to the nearest provincial exporters. Sometimes, they ship all their produce directly to Manila brokers or to local manufacturers of oil. Every copra broker gets around five centavos per picul for his service. In many instances, provincial brokers or exporters as well as wealthy producers ship their produce on consignment to Manila or Cebu commission merchants or brokers after having accumulated enough stock in their bodegas or warehouses. The broker or commission merchant finally disposes of it, either to a direct exporter or to a manufacturer.

According to latest statistics, the volume of copra which arrived in Manila last June, 1941, amounted to 456,428 sacks or 27,375,680 kilos and the exports from Manila, Zamboanga, Cebu and Legaspi ports amounted to 9,789 tons. The amount of copra which arrived in Manila for the month of July were 482,630 sacks or 28,957,800 kilos.

The National Produce Exchange

One of the highest developments in modern commerce being introduced to the Philippines for the benefit of coconut growers is the trading exchange of local commodities. It was organized under a legislative act in 1936 and called the National Produce Exchange. Thru this organized marketing agency, coconut planters are now able to sell their coconut products, especially copra, for a better price instead of selling their produce to middlemen or local buyers at very low prices. Small coconut growers may take advantage of this National Exchange facilities by combining their products with those of other small planters and selling under a cooperative system. Cooperative associations among coconut growers are very indispensable at present because only through them can planters obtain true prices and other marketing facilities such as small loans at lower rates of interest than those charged by coconut buyers or middlemen who give advance amounts on future crops, taking advantage of the planters' need of money for their daily maintenance.

The National Produce Exchange renders valuable service to the farmers. It gives reliable information regarding daily prices and conditions of the market. Agricultural products like copra can be sent to the exchange by consignment. It receives

bills of lading or warehouse receipts, sells the planters' crop at the best price obtainable in the market and offers many other facilities of the Exchange.

Oil

With respect to oil, the channels of distribution are not so complicated and difficult as those of copra. The great bulk of coconut oil produced in the Philippines goes to the United States and a very small amount remains for local consumption. In most cases, local oil manufacturers deal directly with importers in the United States or thru representatives here in the Philippines. During the past eight months all of the shipments of coconut oil went to the United States with the exception of eighty nine (89) tons which went to Japan and China.

In marketing the coconut oil, the standard unit in pound is used on the e. i. f. basis. Those manufacturers who have no connection abroad usually sell their produce thru local brokers to exporters who in turn ship it to foreign countries. Locally, the coconut oil is sold by kilo, extank or f.o.b. The small manufacturers of soap, butter, edible oil and other by-products. The oil is sold in drums or in barrels and delivered by the seller to the establishments or factories.

Copra Cake

Copra cake is traded similarly to oil. Factories sell their cakes direct to foreign importers by the ton c.i.f. in American and other European ports. Sometimes they sell their cakes thru local brokers to local exporters who ship the cake to foreign countries. The annual exports of copra cake amounts to 114,399,346 kilos valued at ₱4,250,146., but due to war conditions in Europe and in China, the present exports have declined a great deal, particularly the exports to Denmark, Germany, Norway, and other European countries. The United States is the only large potential market at present for Copra Cake and Meal. The Pacific Coast prices are from ₱32.50 to ₱33.50 per ton c.i.f.

Dessicated Coconut

Desicated Coconut is marketed directly to United States importers and the basis of transactions is the pound. Dessicated coconut is packed in wooden boxes of different sizes as follows: (a) 18 1/2" by 18 1/2" x 23"; (b) 18 1/2" x 18 1/2" x 24" and (c) 18 1/2" x 18 1/2" x 18 1/2". Each case weighs 130 pounds net or 74 kilos gross. The transactions are negotiated directly by the exporters and importers cable communications or thru their representatives here in Manila. Sometimes foreign ships call on our ports from time to time to pick up whatever coconut products may have been accumulated.

BENITEZ, EXECUTIVE . . .

(Continued from page 10)

a vast program of industrialization of the coconut and its by-products. The nearly illimitable reservoir of industrial riches which the coconut tree holds in its various parts fill one with amazement at the potentialities which the industrialization of this plant holds. Scientific experimentation and research along this line be said to be still in their swaddling clothes in the Philippines, yet we are already attaining surprising results. What scientific research will unlock in its advanced stages in future years may well be something to marvel at.

He considers the ability of our coconut people to adopt themselves to a changing environment in their attitude towards the coconut a challenge to their education and progressiveness.

"It is a real challenge to the capacity of our people," he says. "I say it is a real challenge to our capacity, because it constitutes a trial of our ability to adjust ourselves to a changing environment. An essential pre-requisite to that utilization is training and experience. I believe whole heartedly in the value of scientific research and I believe that every encouragement should be given to scientists in their effort to utilize various coconut by-products. And not only is the application of scientific methods valuable to the exploitation of the by-products of the coconut but also to improvement in our methods of coconut farmin."

Because one of the main objectives of the National Coconut Corporation is the greater utiliza-

tion of coconut by-products he feels that it should lead the way in the search of scientific methods whereby the potentialities of these by-products will be more fully exploited. The best means of assuring this, he says, is by having a strong and progressive scientific department which shall unceasingly labor on the scientific problems involved and reflect its progress in a continued expansion of its field of research.

The Need for Ideals

Speaking of the objectives of the Corporation, he came to the subject of ideals. It might appear at first blush that ideals have no relevant connection with the activities of the Corporation but Dr. Benitez quickly disabused the listener of any such notion. Ideals cannot be dissociated from every worthy enterprise, he said, and in the case of the National Coconut Corporation, the task entrusted to it is a noble one. That task, according to him, is a heavy responsibility in itself.

"We who are entrusted with the task of carrying out the work of the Corporation must never forget that the Corporation has a mission. That mission is the rehabilitation of the coconut industry. It is a trust resposed in us. Therefore we should make the realization of that mission our ideal."

—G.Z.

CONRADO BENITEZ...

(Continued from page 10)

work given by the college of business.

Because of his wide interest in educational matters that vitally concern the University of the Philippines, his name was mentioned when the Board of Regents was engaged in the task of selecting a successor of the late President Ignacio Villamor.

He is well-known in Japan, China, and Canada for being twice delegate to the conferences of the Institute of Pacific Relations, and for being the executive secretary and director of the institute in the Philippines.

Dean Benitez was member of the Filipino participation in the Joint Preparatory Committee on Philippine Affairs appointed by President Franklin D. Roosevelt of the United States in consultation with President Quezon of the Philippines, for the purpose of studying the trade relations between the United States and the Philippines with a view to an orderly and adequate adjustment of the Philippine national economy.

Once president of the Jose Rizal College, Dean Benitez was formerly partner in the Abad Santos and Benitez law firm at Manila, and alumni regent of the University of the Philippines.

In the National Constitutional Convention he was chairman of the committee on industry, and member of the committees on public instruction, national defense, agricultural development, sponsorship, and selection of the resident commissioner under the Commonwealth. He was also member of the committee of seven that drafted the Constitution.

He is member of the Historical Research and Markers Committee, Board of Indeterminate Sentence, Pardon Board, Philippine Economic Association, and of the executive council of the Philippine Academy of Social Sciences. He is editorial correspondent of the *Pacific Affairs*; Philippine representative of the World Alliance for International Friendship; secretary and director of the Philippine Coconut Planters' Association; adviser of the International Club, U.P.; and organizer of the International Relations Club of the Philippines.

UNLOCKING THE . . .

(Continued from page 20)

Thus the coconut shell has been unlocked, mostly through the efforts of the National Coconut Corpora-

tion Officials, who had faith, vision and dared to attempt.

THE NATIONAL COCONUT CORPORATION

is supplied by us with

REBUILT SINGER SEWING MACHINES

Rebuilt Family and Industrial Sewing Machines

Cash or Terms

● Installations ● Repairing ● Rebuilding

All Works Guaranteed

FIDELITY SUPPLY COMPANY

Member, National Economic Protectionism Association

FELIX Z. TIONGCO,
Proprietor

Telephone: 2-52-76
830 Rizal Avenue, Manila

EPIFANIO L. VASQUEZ,
Manager

COMPLIMENTS

of

BIO & CHUAN, INC

COPRA EXPORTERS AND DEALERS

C. L. TAN

General Manager

Central Office:
683 Calle Benavides
Binondo, Manila

Telephone:
4-96-61
P. O. Box 974

Branches In
All Coconut
Growing Regions

- A study of the most significant factors which make certain parts of the oriental tropics a great concentration point for the Commercial Coconut Industry.

LOCATION FACTORS IN THE COMMERCIAL COCONUT INDUSTRY

By GEORGE F. DEASY *

WELL over nine-tenths of all the copra and coconut oil that enters world commerce from primary producing areas comes from five centers: the Philippine Islands, the Netherlands East Indies, the South Sea Islands, British Malaya, and Ceylon (Figure 1). No other part of the Tropics offers serious competition to these five regions in commercial coconut production (Table 1). (It is estimated that some forty per cent of the annual coconut harvest of the world is consumed in the countries of origin. The remaining sixty per cent enters international trade.)

The factors determining this concentration of the commercial coconut industry within a restricted segment of the Tropics have never been systematically and comprehensively stated in geographical literature. Complete lack of explanation of the situation, or over-emphasis of one or two factors, has been the common method of treatment. In a few instances, the factors involved in the localization of the coconut industry within a particular island or group of islands have been adequately discussed, but the application of these and other factors to the world situation has apparently thus far not been undertaken.

The purpose of this paper, therefore, is to indicate and briefly evaluate, in so far as data are available, those environmental, economic, political, and ethnic factors that have operated and are operating in unison to make certain portions of the Asiatic and

Pacific Tropics the outstanding commercial sources of one of the world's major vegetable-oil raw materials.

Temperature Factor

The coconut palm is a true tropical tree; it cannot withstand cool or cold weather. A mean annual temperature of about 68 degrees F. is necessary, and the optimum yearly temperature for best growth and maximum yields is 80 degrees F. or higher. The diurnal temperature range should be small, preferably not exceeding 10 degrees F. The minimum temperature that the tree can withstand is approximately 45 to 50 degrees F. In a word, the coconut palm is limited to regions that are "always hot".

Despite these limitations, however, a glance at the map in Figure 2A will show that there is a vast area in the Tropics which meets the temperature requirements of the tree. This includes most of the land between the Tropics of Cancer and Capricorn, exclusive of the highland regions. The temperature factor, therefore, merely sets the outer limits, beyond which the culture of the coconut palm is usually impossible. Other factors must operate to bring about the greater localization of the commercial coconut industry.

It should be noted in connection with the temperature factor, however, that the poleward borders of the "Always Hot Zone," with their lower mean an-

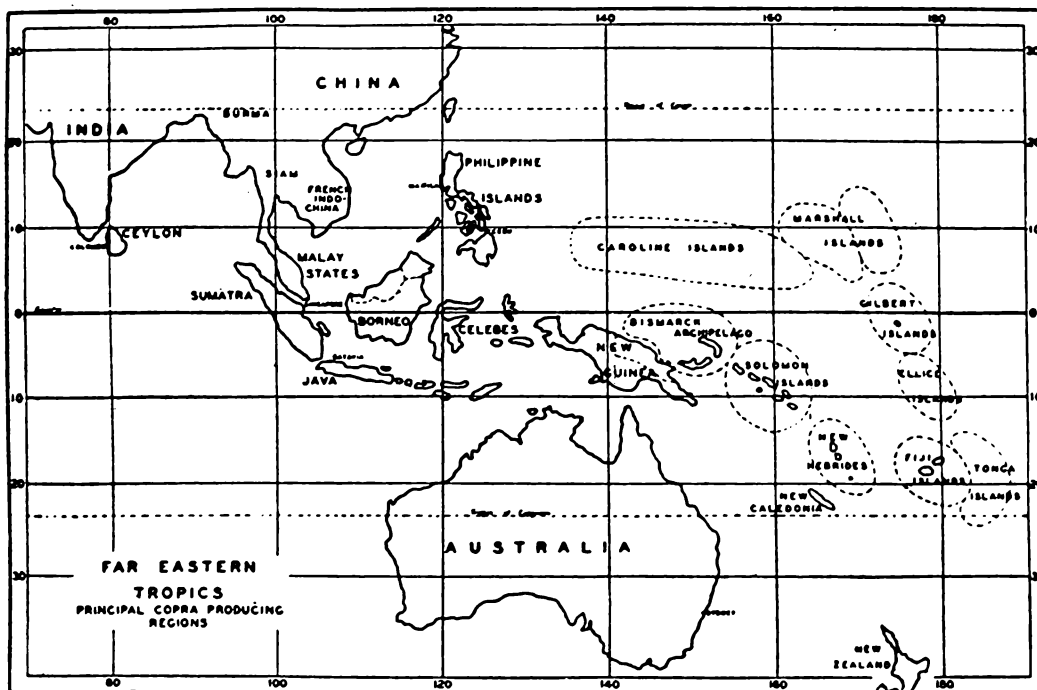


Fig. 1. Showing Far Eastern Tropics: the principal copra production regions.

nual temperatures, their greater daily temperature variations, and the possibility of "cool spells" during periods of invasion by temperate-zone air masses, are not so favorable to widespread and successful coconut production as are those parts of the zone lying closer to the Equator. Hence, other things being equal, such regions as the northern West Indies, northern Peninsular India and Indo-China, southern Brazil, southeastern Africa, and northern Australia are not likely to be major coconut-producing centers.

Precipitation Factor

In addition to constantly high temperatures, the coconut palm requires heavy rainfall. The tree can survive and produce a little fruit with an annual precipitation of as little as 40 inches, but for profitable growth and yields a yearly rainfall of at least 60 inches is required. Optimum conditions would necessitate a rainfall of 80 inches or more. Precipitation apparently cannot be too great, for there are records of thriving groves in regions receiving as high as 190 inches a year.

The rainfall likewise must be well distributed throughout the year. The tree stores little moisture and it lacks a tap root; hence it is not suited to regions with a long and pronounced dry season, in which the water-table drops some distance below the surface level. However, if the yearly rainfall is very high, and if surface conditions are such that the ground-water level remains high, the tree is able to survive and produce abundantly in areas with several months of dry weather.

The application of the above precipitation restrictions to those regions with suitable temperature characteristics results in a considerable reduction in the potential commercial coconut-producing areas. Figure 2B indicates those portions of the "Always Hot Zone" receiving an average annual precipitation of 60 inches or more. In most cases this rainfall is well distributed throughout the year. In a few instances, however, there is a distinct dry season (the Indian and Indo-Chinese areas, for example), but the total fall of rain is sufficiently great to maintain soil moisture at appropriate levels throughout the year. All remaining parts of the "Always Hot Zone" either receive too little rainfall, or that which occurs is too distinctly seasonal in character. The precipitation factor, therefore, removes from consideration as possible major coconut-producing centers: (1) much of the Mexican, Central American, and northern West Indian regions; (2) a considerable proportion of the South American area; (3) most of the African section; (4) all of the Arabian section; (5) much of the Indian and Indo-Chinese regions, and (6) all of the Australian section. The only segments of the "Always Hat Belt" that remain essentially unchanged are the East Indian and Pacific areas. Decided differences in rainfall exist between the wet windward and dry leeward sides of many of these islands, but they cannot be indicated on the small-scale map used.

Soil, Ground-Water, Plant Propagation and Transportation Factors

Even though the climatic factors are favorable for the coconut palm, certain ground-water and soil

conditions must exist for the tree to thrive. Generally speaking, for best results the following are necessary: (1) a loose, porous soil and sub-soil, preferably sand or alluvium (heavy clay soils are detrimental to growth and yields); (2) a continuously high water-table, and (3) rapid and continuous movement of ground-water (stagnant ground-water is very injurious to the palm).

Such a combination of soil and ground-water conditions can exist in a number of different sites. Perhaps the most common place where they are simultaneously encountered, however, is along seashores backed by highlands. Porous sandy beaches experience rapid and constant movement of ground-water caused by the ebb and flow of the tide, and are the last to react to a period of drought by a lowering of the water-table. Hence, while the coconut palm will grow and is actually found in many inland sites within the wet tropics where suitable soil and drainage conditions exist, the seacoasts seem to offer the largest expanses of favorable territory and the coconut industry tends to be concentrated there. In India, for example, coconut groves are located over three hundred miles from the sea, and at altitudes ranging up to several thousand feet.

Furthermore, many of the present producing palms were not planted by man but are instead natural growths. Such trees are invariably found along coasts, since the coconut fruit is lighter than water and is frequently washed to adjacent shores where it takes root and grows. No other simple method of seed dispersal exists to produce extensive inland natural growths. Hence, this factor also tends to localize the coconut industry along coasts.

Finally, copra is a bulky, cheap commodity. It is not well adapted to long and costly overland shipments in tropical regions, where transportation costs are excessively high. Therefore another factor—that of location or accessibility—tends to localize the commercial coconut industry of the world along coasts.

The map in Figure 2C shows the net results of the operation of all the above factors. The major potential commercial coconut-producing areas are seen to be confined to the coastal portions of those parts of the Tropics possessing suitable temperature and rainfall characteristics. All parts of these coastal districts shown on the map do not have suitable soil and drainage features, but local data are lacking in most cases to differentiate the areas on this basis. The main argument, however, that it is coastal rather than inland districts that are most suitable for commercial coconut production, still stands. In this way all of interior South America and Africa can be eliminated from consideration.

Political Factor

In so far as natural environmental conditions are concerned—i.e., temperature, precipitation, soil, drainage, and accessibility—all the coastal areas previously indicated in Figure 2C are apparently equally well adapted to the commercial production of coconuts. The introduction of the political factor, however,

changes this picture.

Certain of these tropical coastal areas are colonial possessions of some of the major copra and coconut oil importing countries of the world. The remainder lack political affiliations. It is only natural that the mother countries should favor the coconut products of their dependencies, either by direct tariff regulations and processing taxes or by the more intangible and elusive but equally effective business, commercial, and shipping ties that exist between the various parts of an empire. It is not coincidence that enables the Philippine Islands to furnish the United States with most of its copra and coconut oil, or Malaya, Ceylon, and the British South Sea Islands to supply the British Empire with its imports of similar products, or the Dutch East Indies to find their major market in the Netherlands (Tables II, III, and IV). Colonial possessions, therefore, possess a very real and tangible asset over their potential non-colonial competitors.

The colonial areas benefit in still another way from their status as wards of the Great Powers. Their internal financial and political life is generally stable. Hence, when large purchasers of coconut products who have no tropical colonies, such as Germany and Denmark, look about to establish suitable commercial contacts, they usually favor the stable colonial countries to the exclusion of the unstable non-colonial areas. Likewise, when investments are being made in modern coconut plantations, it is generally the colonial areas that are chosen for development.

Figure 2D shows the results of the political factor as it modifies the potential commercial coconut-producing areas. All of Central and South America except British Honduras and the Guianas, as well as some of the West Indies islands, lack the necessary political ties. It is chiefly the Asiatic, Pacific, and African coastal areas that possess assured middle-latitude markets (Siam is an exception).

Labor Supply, Competitive Crop, and Ethnic Factors

For a region to become a truly large producer of coconut products it must possess not only the basic environmental complex to permit production and the necessary political connections to stimulate production, but it must also have a sufficiently large and dense population adequately to utilize the favorable existing opportunities.

Table V shows the total population and population density per square mile of each of the remaining potential commercial coconut-producing countries, excluding Oceania. Population figures for the actual potential producing areas within each country are not available, but labor within the confines of individual political units is usually rather highly mobile, if conditions warrant the movement. The total population of all African colonies having suitable coastal areas is about 71 million, but the average population per square mile of these countries is less than 14. The Asiatic countries have a total population, excluding India, of over 110 million and an average population density of about 92 per square mile. Including India,

the Asiatic segment has a total population of 464 million, and a population density of 153 per square mile. In addition it has easy access to the Chinese millions. The South and Central American areas have a combined population of approximately one-half million, and an average population of only slightly over three per square mile. The colonial West Indies have a total population of only some four and one-half million, but a population per square mile of over 260. The total population and the population density of Oceania is not known, but both must average fairly low.

Analyzing these figures, we find that all of the potential producing colonies do not have a sufficiently large and dense population for extensive coconut production. This is especially true in view of the fact that the coconut industry is only one of many types of economic activities carried on in most of the countries concerned. In general it may be stated that the population of the South and Central American colonies is both too small in total numbers and too sparse to make those areas outstanding producers of coconut products, even though the whole populace were to engage in that industry to the exclusion of all others. In the case of the colonial West Indies, while the population density is sufficiently great to permit adequate exploitation of available coconut-producing possibilities, yet the total population is only four and one-half million, and only a small fraction of these is engaged in the coconut industry. So far as population is concerned, however, the West Indies offer greater promise of becoming an important commercial coconut center than any other part of the New World. The potential coconut countries in Africa have a fairly large total population, but they are spread over such an enormous area that the population density is quite low. The result is that many possible coconut-producing areas are left undeveloped.

Only in the Asiatic section do we find a favorable combination of dense and large total population. Even excluding India, the population of this section is almost one and one-half times the combined populations of all other potential producing countries, and the density is over six times as great. Including India (and China as a potential labor source), the predominance of the Asiatic section in labor supply is overwhelming. This large total population means that even though only a small fraction of the people engage in this particular line of economic activity, the resulting production will be extremely large. The great density of population means that the potentialities for coconut production will be utilized to a far greater degree than they would be in a sparsely populated region.

The net result of the population factor is to exclude as major potential coconut producers (1) the Central and South American colonies; (2) the colonial West Indies, and (3) the potential African areas, and to favor the predominance of the Asiatic areas. This leaves only the Pacific segment to be accounted for.

Oceania, with a few exceptions, is unlike most other potential coconut-producing countries in that it can produce few alternative crops or products of commercial value. (There are a few exceptions to this

statement. Sugar, for instance, is the major crop of the Fiji Islands, and crops or mineral products other than copra constitute the major exports of a few additional islands.) Many of the South Sea Islands are coral reefs or sandy stretches which are suitable for coconut cultivation but absolutely unfit for most other types of crops. Hence, almost the total productive population of Oceania is obliged to engage in commercial coconut production if it wishes to obtain the benefits to be derived from international trade (Table VI). Consequently, despite the relatively small total and the low density of population, one might still class Oceania as a major potential commercial producer of coconuts.

This same situation holds true for many of the smaller islands of the Netherlands Indies, where des-

pite the relatively sparse population the export of copra is great because of the lack of alternative economic pursuits. It does not apply to the larger islands of the Indies Archipelago, where more varied environmental conditions give the occupants a choice of export products.

The competitive crop factor operates in exactly the opposite fashion in the case of the tropical West African region. This section has long been the center for the oil palm, the second most important vegetable-oil plant of the Tropics and an excellent substitute for the coconut palm. Hence, greater apathy to the cultivation of the coconut palm is probably found there than anywhere in the Tropics. It is significant to note that the only parts of Africa supplying appreciable

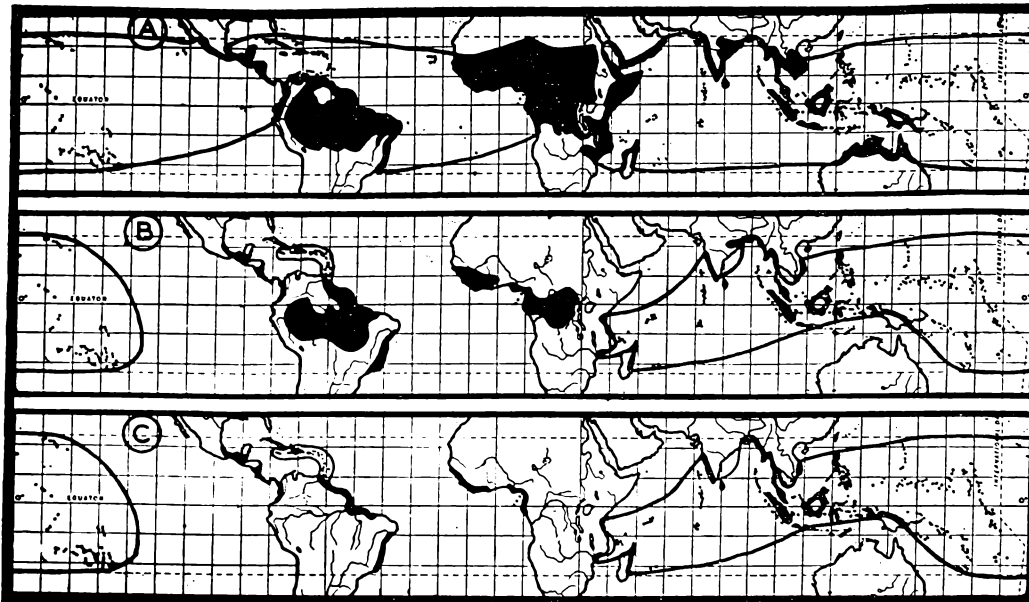
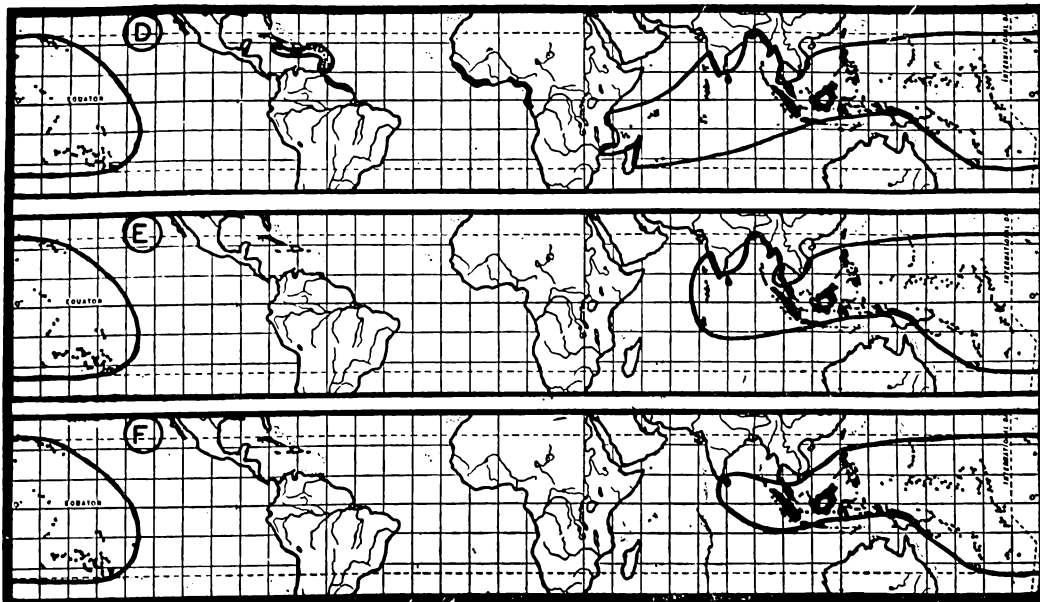


Fig. 2. Showing how environmental, economic, political, and ethnic factors have operated and are operating in unison to make certain portions of the Asiatic and Pacific Tropics the outstanding commercial sources of the world's major vegetable-oil raw materials.



quantities of coconut products to commercial channels are found on the eastern coast of that continent (Mozambique, Zanzibar).

In addition to the labor and competitive crop situations, the ethnic factor must here be considered. The Asiatic and Pacific segments of the Tropics are chiefly populated by Malayan and Polynesian races, peoples steeped in centuries of coconut culture and possessing the necessary knowledge and skill for tending the crop. The African and American segments, on the other hand, have a predominant Negroid population which lacks the traditions of coconut culture found in the Orient. The results of this factor, while intangible and difficult to evaluate, undoubtedly tend to foster the commercial coconut industry in the Asiatic-Pacific sections and to retard the industry in Africa and the New World.

Mapping the conclusions arrived at in the discussion of the above factors (Figure 2E), it is found that: (1) the Central American, South American, West Indian, and African potential colonial coastal areas are excluded from becoming major commercial coconut-producing centers because of the labor supply, competitive crop, and ethnic situations; (2) the Asiatic coastal areas remain potential commercial coconut centers because of their large available labor supply and ethnic background, and (3) Oceania compensates for its deficient labor supply by its ethnic background and by being forced to concentrate on the coconut crop to the almost complete exclusion of all others. The net result is the retention of the Asiatic and Pacific sections as potential major commercial producers of coconuts.

Domestic Market Factor

In all the areas designated in Figure 2E, the cultivation of the coconut palm is widespread and of great importance. India (including Burma), French Indo-China, Malaya, the Netherlands East Indies, the Philippines, and the South Sea Islands all produce vast quantities of coconuts each year. However, the commercial coconut industry, with its emphasis on exports, is not developed in certain of these areas—particularly India, Java, and French Indo-China. Instead, in these three countries, most or all of the yearly crop is consumed at home. In the remaining areas, copra and coconut oil exports account for a large percentage of the total production.

This situation appears to be largely a function of the relationship between size of population and total area of potential coconut land. If the population of one of the producing countries is excessively large with respect to the available coconut areas in that country, then local consumption of coconut products will account for all or most of the domestic output and little will be left over for export. This is the case in India, Java, and French Indo-China. India's 353 million people form an almost unlimited market for the products of her restricted coconut-producing coastal sections (note small size of potential coconut areas in Figure 2B). Likewise, Java's 42 million people consume most of the coconut products of an island that is but little larger than the state of Ohio, and only limited parts of which are suitable to the produc-

tion of the palm. Furthermore, while the population of French Indo-China is not excessively large (23 million), yet in relationship to the very restricted coastal coconut-producing areas available (Figure 2B), it is sufficiently great to consume most of the local product.

On the other hand, the relationship between total population and potential coconut-producing land in the remainder of the Oriental Tropics permits the export of large quantities of copra and coconut oil. The Malayan Peninsula has a population of but five million, the island of Ceylon has but six million, all the Outer Possessions of the Dutch East Indies (i.e., all but Java) have total population of only nineteen million—less than one-half that of Java alone, and the Philippine Islands combined have only thirteen million people. All of these regions are islands or peninsulas, with extremely long coastal coconut areas that have a productive capacity far in excess of local demands (Figure 2B). Hence, all of these regions are major exporters of coconut products.

The population question, therefore, is seen to be critical in the commercial coconut industry. If population is either too sparse in density or too small in total numbers, then coconut output is insufficient to permit a region to rank as an outstanding source of coconut exports. This is the case in almost all the potential colonial coconut-producing areas outside the Oriental Tropics. If, on the other hand, population is too great in comparison with available coconut land, then domestic demands absorb all or most of the local production. This appears to be the case in the Indian, Javanese, and Indo-Chinese portions of the Oriental Tropics. The intermediate population situation that exists in the remainder of the Asiatic and Pacific regions appears to be most favorable to the export of large quantities of coconut products.

Length Of Coastline

It is sometimes stated in geography texts and agricultural works dealing with the subject of coconut production, that the coconut industry is centered in the Orient rather than other parts of the Tropics because the many islands of the East Indies, the Philippines, and the Pacific, as well as the long Malayan Peninsula afford tens of thousands of miles of coast well suited to the growth of the palm. This statement infers that it is merely lack of suitable coastal sites with the necessary climatic and soil conditions that has prevented the development of a large commercial coconut industry in the extra-Oriental Tropics. That such reasoning is fallacious can readily be proved by reference to a few maps and figures.

Ceylon exported, in 1936, a total of 108,000 metric tons of copra and copra-equivalent of coconut oil; British Malaya, during the same year, shipped 152,900 metric tons of similar products (including reexports). The whole of South America exported only 700 metric tons; the whole of Africa only 74,000 metric tons; the whole of Central America and the West Indies only 5,400 metric tons, during 1936.

However, reference to Figure 2C shows immediately that the coastal areas of both Ceylon and

TABLE I
MAJOR COPRA AND COCONUT OIL
EXPORTING REGIONS,
1936*

ASIA	1,339,800	
Philippine Islands	542,800	(First)
Netherlands Indies	509,600	(Second)
British Malaya	152,900	(Fourth)
Ceylon	108,000	(Fifth)
British Borneo	11,400	
French Indo-China	10,700	
Siam	3,700	
Timor	600	(1935)
Portuguese India	100	
India	
OCEANIA	217,300	(Third)
New Guinea	67,800	
Fiji Islands	35,100	
Solomon Islands	25,500	
French Settlements in Oceania	22,100	
Western Samoa	13,200	
Japanese Mandated Islands	12,200	
Tonga	12,100	
Papua	10,700	
New Hebrides	10,600	
Gilbert and Ellice Islands	5,200	
New Caledonia	2,800	
AFRICA	74,000	
Mozambique	34,200	
Zanzibar	13,200	
Tanganyika	7,600	
Togoland	7,400	
Seycheles	5,100	
Gold Coast	2,600	
Madagascar	1,600	
Mauritius	1,200	
Nigeria	200	
Others	800	
CENTRAL AMERICA	5,400	
Trinidad and Tobago	4,300	
West Indies	1,000	
British Honduras	100	
SOUTH AMERICA	700	
British Guiana	700	
WORLD TOTAL	1,637,200	

* Metric Tons; coconut oil in terms of copra.
Source: International Institute of Agriculture, 1939.

TABLE II
PERCENTAGE OF UNITED STATES IMPORTS OF
COPRA AND COCONUT OIL COMING FROM THE
PHILIPPINE ISLANDS*

YEAR	PER CENT
1929	79
1930	76
1931	80
1932	70
1933	81
1934	93
1935	99
1936	99
1937	94
1938	98
1939 (Jan.-June)	100

* Coconut oil in terms of copra.
Source: United States Department of Agriculture.

British Malaya are far shorter than the potential coconut-producing coastal portions of Africa, or South America, or Central America and the West Indies. Obviously, if the coastlines of the three non-Oriental areas are each longer than the coastlines of the third and fourth largest exporters of coconut products in the world, then length of coastline by itself cannot be employed to explain the lack of development of a commercial coconut industry in the New World and African areas. If the potential coastal coconut zones of these latter regions were fully employed, they would rank the New World and Africa well up among the leading coconut producers. Factors other than length of coastline must be invoked, therefore, in order to explain the present retarded condition of the industry in those areas. These factors have been previously discussed in this article.

Incorrect Interpretation of the Competitive Crops Factor

A statement occasionally used in explaining the predominance of the Oriental Tropics in commercial coconut production is: "The great coconut areas are not very well suited for the establishment of other export crops such as coffee, tea, cacao, rubber." This is an incorrect application of the competitive crops factor.

If the "great coconut areas" signify the Oriental

TABLE III
PERCENTAGE OF COPRA AND COCONUT OIL
EXPORTS OF THE PHILIPPINE ISLANDS GOING
TO THE UNITED STATES*

YEAR	PER CENT
1929-33	85
1934	65
1935	90
1936	78
1937	93
1938	79

* Coconut oil in terms of copra.
Source: United States Department of Agriculture.

TABLE IV
PERCENTAGE OF UNITED KINGDOM IMPORTS
OF COPRA COMING FROM BRITISH EMPIRE
PRODUCTS*

YEAR	PER CENT
1927	74
1928	76
1929	71
1930	68
1931	62
1932	91
1933	100
1934	98
1935	100

* Source: International Institute of Agriculture.

coconut-producing countries, one has only to recall the vast tea and rubber exports of Ceylon, the rubber and tin of British Malaya, the sugar and Manila hemp of the Philippines, the rubber and petroleum products of the Netherlands Indies, to understand the inaccuracy of the above statement. Only in Oceania and certain of the smaller of the Dutch East Indies is it true that the environment is "not well suited for the establishment of other export crops."

If, on the other hand, the "great coconut areas" referred to above mean the actual sandy coastal sections of the Oriental producers, then the statement holds true for both non-Oriental as well as Oriental producers. Ideal coconut land is seldom well suited to the growth of other export crops. For instance, most coastal coconut areas experience high winds.

TABLE V
POPULATION FIGURES FOR POTENTIAL
COCONUT-PRODUCING COLONIES *

	POPULATION	DENSITY PER SQ. MILE
AFRICA		
French West Africa	14,702,000	8.1
Liberia	2,000,000	46.5
Gold Coast	3,269,000	41.5
Sierra Leone	1,890,000	67.7
Nigeria	19,365,000	57.2
French Equatorial Africa	3,423,000	3.6
Belgian Congo	10,067,000	11.2
Kenya	3,262,000	14.8
Tanganyika	5,147,000	14.0
Mozambique	4,006,000	13.5
Madagascar	3,798,000	16.0
Total	70,929,000	13.4 (average)
ASIA		
India	338,172,000	214.7
Burma	14,667,000	62.8
British Malaya	5,137,000	96.5
Ceylon	5,780,000	228.2
Netherlands Indies	64,540,000	87.7
French Indo-China	23,030,000	80.8
Philippine Islands	13,099,000	114.5
Total	464,335,000	153.6 (average)
CENTRAL AND SOUTH AMERICA		
British Honduras	56,000	6.5
British Guiana	333,000	3.7
French Guiana	37,000	1.1
Netherlands Guiana	169,000	3.1
Total	595,000	3.2 (average)
WEST INDIES		
Puerto Rico	1,806,000	525.8
British West Indies	2,204,000	174.8
French West Indies	551,000	494.6
French West Indies	551,000	49.46
Netherlands West Indies	91,000	225.8
Total	4,652,000	265 (average)

*Figures for years between 1931 and 1938.
Source: "Foreign Commerce Yearbook, 1938."

TABLE VI
VALUE OF COPRA AND COCONUT OIL AS
PERCENTAGE OF TOTAL EXPORTS,
1936

	PER CENT
Netherlands Indies	7.7
Philippine Islands	19.6
Ceylon	8.2
British Malaya	4.2*
Oceania	
Solomon Islands (av. 1931-35)	75.6
Tonga	86.8
Western Samoa	61.6
Fiji Islands	19.0**

*Including reexports.

**Fiji is one of the exceptional South Sea Islands that depend chiefly on the export of products other than copra (in this case sugar).

Source: International Institute of Agriculture, 1939.

Consequently they are usually unfit for a tropical lowland crop like cacao. Furthermore, the ground-water in many coconut sections is brackish in character, which fact absolutely excludes most other crops such as sugar cane thrive best where a definite and pronounced dry season is part of the climatic regime. These liabilities, however, are not exclusively restricted to the Asiatic-Pacific sections; they occur throughout the potential coconut regions of the world.

Either interpretation of the original statement

PHILIPPINE MECHANICAL SHOPS

MACHINERY CONTRACTORS AND
MANUFACTURERS

*Manufacturers of
Coconut Defibering Machines
for the
National Coconut Corporation*

D. S. PONGOS

Manager

7th Ave. Corner Rizal Ave. Ext.

Grace Park, Caloocan, Rizal

Tel. Cal. 285

thus proves it to be incorrect. Hence, the competitive crop factor alone cannot be used to explain the outstanding position of the Orient in the commercial coconut industry.

Conclusions

The coconut palm (*Cocos nucifera*) shows a circum-equatorial distribution. It is a common coastal tree, and to a lesser extent a tree of the interior, throughout the Tropics. Extensive stands exist in tropical Central and South America, in the West Indies, and in Africa. The widespread presence of the tree in tropical Asia and Oceania is proverbial.

However, the coconut palm, like most other crops, has its half-dozen or so major centers of production, consequent upon the fact that only in narrowly restricted areas is there to be found that almost ideal set of natural and human conditions which result in maximum production with least cost and effort, and which give to those limited areas the necessary advantages to produce leadership.

This study attempts to select and evaluate those environmental, economic, political, and cultural factors which are most significant in accounting for the great concentration of the commercial coconut industry in certain parts of the Oriental Tropics. No claim is made that the factors considered are the only ones involved in the problem, nor is it claimed that the selected factors have been appraised as to their precise function and value. Lack of anything approach-

ing complete data and the fallibility of human judgment prevent such exactitude. Nevertheless, the author does feel that the major factors involved in the localization of the commercial coconut industry have been dealt with more adequately than in any previous publication, and that a more coherent and comprehensive picture of the distribution of the industry has been presented.

* Reprint from "Economic Geography" (April, 1941 issue) published by Clark University, Worcester, Massachusetts.

Compliments

of

Manila Office Equipment Co.


24 David, Manila, Philippines
Tel. 2-15-96

Compliments

of

FRED WILSON & CO., INC.

MACHINERY & SUPPLIES



Manila

Cebu Iloilo

Compliments

of

ACME ENGRAVING PLANT

Maker of Fine Cuts

Owned and Operated

By

RAMON ROCES, INC.

Publishers * Printers * Engravers

1049 Soler Tel. 2-43-61

RAMON ROCES BUILDING

Manila, Philippines

THE ROLE OF THE PHILIPPINE . . .

(Continued from page 12)

gasoline and kerosene from coconut oil, we should also be able to produce our crude fuel oil requirements, amounting to around 7 million pesos, from coconut oil, or in fact, use our coconut oil directly as fuel oil. Preliminary studies in the Bureau of Science show that we can utilize our low-grade coals in conjunction with crude mineral fuel oil for possible use in internal combustion engines and in boilers. The substitution of coconut oil for mineral oil in such power requirements will not only help to stabilize our coconut industry further, but may also help in the more efficient utilization of our low-grade coals.

Again, we see from Table II that we still import vegetable oils to the extent of around 300,000 pesos. These oils are essentially for table purposes, probably as salad oil and as cooking oil. By special processing we can produce salad oil from coconut oil, and also give the right flavor to coconut oil to make an olive oil substitute. The substitution of coconut oil for olive oil will not only take care of our local importation, but may also open up a vast opportunity to divert a great portion of our coconut oil exportation to the South American countries, where no restrictions on our products exist.

Only brief mention need be made here of glycerine and stearine from coconut oil. In peace times glycerine is used in the manufacture of dynamite

for road and bridge building, and for mining activities; glycerine is also used as a softening agent in the tobacco industry, as a constituent of plastic materials, as a basic ingredient of film in the moving-picture industry, and as a basic material of viscose in the rayon and cellophane industries. In war times glycerine is used mainly in the manufacture of explosives. In 1940 the Philippines imported more than 4 million kilos of dynamite worth around 2.3 million pesos. This suggests the possibility of local manufacture of dynamite from glycerine, which can be produced as a by-product in the manufacture of soap.

Stearine, better known in the trade as coconut butter or chocolate fat, is used extensively in vegetable lard manufacture and in the manufacture of candy. Disregarding our present exportation of vegetable lard and butter to other countries, in 1940 we imported 147,357 kilos of chocolate candy alone, which shows that we can start the manufacture of stearine for local consumption.

Needed: A Dynamic Philippinism

The concretizing of the above possibilities for a self-sufficiency program depends upon our own initiative and energy. There are required: first of all, a great amount of completed groundwork of technologic investigations which can be immediately translated into plant or at least semi-commercial plant practice—fortunately in the case of coconut oil, we already have a great deal of this technological work; secondly, a competent body of marketing experts and salesmen to popularize aggressively and market coconut products, as soon as the production stage is reached; thirdly, a strong body of executives who could direct the work of immediate industrialization and of long-range planning for the coconut industry; and fourthly, an extensive organization of coconut producers to accelerate their program of industrialization and take whatever steps are necessary to protect their own interests.

Of all the agricultural export industries in the Philippines, the coconut industry has up to now the best possibilities of stabilization and of playing an important role in the economic self-sufficiency of the country. Let dynamic Philippinism translate these possibilities into concrete realities!

Compliments

of

AGUINALDO'S
MAIN STORE • 500 JUAN LUNA • MANILA

Compliments

of a

**National Coconut Corporation
Supplier**

COPRA PRICE FLUCTUATIONS . . .

(Continued from page 14)

tonseed and soyabeans, which later influenced copra price movements at the close of the year in the face of obscure international situation and legislative uncertainties in the United States.

Europe in the meanwhile remained uncompetitive, being more pre-occupied with the tense political atmosphere. Shortage of space to the Mediterranean ports made it difficult to market F. M. M. in Europe. Periodic increases in ocean rates to European points entailed the necessity of selling Philippine copra and coconut oil in the United States.

The inability of the American market during the last quarter of the year to absorb Philippine offerings except at declining prices in view of the abundance of domestic fats and oils depressed the copra market. Values locally dropped, hastened further by the general political uncertainties in the United States. The Sino-Japanese conflict in China generated a slight influence over the market. Resecada averaged P12.93.

The incidence of the present war

The sharp break of the American commodity and security prices scared away oil buyers in 1938. Europe sympathized with the decline. The meal and cake market was deteriorated, while the fundamental aspects of the fats and oils situation over America remained weak. Copra prices fell off. Average values suffered abruptly. 1938 annual average was less than half of 1937 as it staggered to P6.02. The best price obtainable for that year was P8.25, while trading was made as low as P5.00.

European support was lost in 1939, while coconut oil in the United States labored under the influence of surpluses of fats and oils. As the European tension tightened, the London market was disturbed, accompanied by the violent drop of the pound sterling. The minor ups and flurries in 1939 were the results of speculative activities which swept the markets everywhere as war broke out in September. No sooner, however, the wave of speculation died away as large buyers failed to respond. Shipping losses mounted and gradually bottoms became scarce. War risks and marine insurance rates were revised upwards; freight schedules hiked. With London closed due to the war, the United States remained as the only outlet of our coconut products. But as the American market writhed under a plethora of various fats and oils, Resecada average price for the year dropped to P5.87.

The year 1940 was the darkest period of the copra trade. Allied reverses in France as well as the invasion of the Low countries and the successful closure of the Scandinavian area constituted direct blows to the industry. Normal outlets of cake and meal were barred, plugged. Large quantities of feedstuffs glutted the American market. Huge stocks of lard unsettled the entire fats and oils situation in the United States. Space situations became more stringent. Freight schedules suffered further revisions.

The intensification of war in Europe failed to

boost copra and coconut oil prices. The trend of prices was quite the contrary of that which prevailed during the first world war. Large American buyers were withdrawn. The related markets were inactive. Copra touched unprecedented record lows. At no time in the entire history of the trade was the condition of the market so drepressed. Resecada moved to levels lower than those of the bearish days of 1934. Quotations were as low as P2.50 per 100 kilos. People in the provinces, in certain cases, gave their coconuts to the hogs, instead of making copra. There were even instances recorded where the people in remote barrios of coconut provinces failed to have three square meals. Resecada in 1940 averaged P3.87 as day-to-day price variations hit starvation levels. In fact, coconut growers almost lost their shirts in 1940, and not a few threw up their hands in despair. The 1940 prices were the lowest on record.

The fluctuations of the copra market during the last twenty years should teach coconut planters one lesson: They should not be dependent on copra alone. Copra and coconut oil are sold largely in the world's markets. Prices are governed by factors over which we have no control. A legislative fiat cannot stabilize the price of export commodities such as copra and coconut oil. Hence, the need for the utilization of all the by-products of the coconut industry. There is more money in these by-products. The manufacture and use of these coconut by-products, under the guidance and direction of the National Coconut Corporation, constitute nothing but a short tail of the copra industry at present.

YEAR	COPRA PRICES, RESECADA PER 100 KILOS (*)		
	ANNUAL average	HIGHS	LOWS
1921	P16.95	P21.07	P14.04
1922	16.90	19.75	15.36
1923	19.17	22.83	16.67
1924	20.40	23.71	18.22
1925	23.12	26.34	20.63
1926	21.52	25.91	17.39
1927	19.73	20.55	18.18
1928	19.69	20.94	17.78
1929	16.65	19.36	14.62
1930	13.59	16.60	10.67
1931	7.78	10.67	5.13
1932	6.44	7.80	5.40
1933	5.02	5.90	4.00
1934	4.22	7.20	3.30
1935	8.89	13.50	6.00
1936	10.78	20.50	7.00
1937	12.93	23.00	7.00
1938	6.02	8.25	5.00
1939	5.87	8.25	4.80
1940	3.87	6.00	2.50

(x) Prices from 1921 to 1931 were adjusted to conform to Resecada basis per 100 kilos.

COCONUT LEGISLATION

(Continued from page 37)

Products Board.

Penalty for Coconut Thieves

At the time that Act No. 2598 was enacted another measure was also passed to curb the rampage of thieves and despoilers on coconut lands, which had fast become an extreme annoyance to coconut landowners. This was Act No. 2609 which penalized a person who *gathers* two or more coconuts that have fallen or been left on the ground, or *takes* them off the trees without the knowledge and consent of the owner, or *steals* them in any other manner, or cut the young nuts or the trunks of coconut trees, in order to appropriate their nuts to his own use and consumption. The Act provided that the penalty was that found in Article 518 of the Old Penal Code, later incorporated in Article 310 of the Revised Penal Code as amended by Commonwealth Acts Nos. 273 and 417, Section 2, under the offense described as qualified theft.

Legislation to Combat Coconut Pests

In 1933 the coconut leaf-miner presented a vicious threat to the coconut plantations throughout the Philippines. This necessitated the prompt passage of Act No. 4047 on February 18th of that year. *This Act authorized the Director of Plant Industry, subject to the approval of the Secretary of Agriculture and Commerce, to use such amount from the ₱200,000 already appropriated under Act No. 3924, as may be necessary to accomplish the destruction and eradication of the coconut leaf-miner and other pests and diseases of coconuts.*

The pests wrought such havoc on the coconut plantations that the industry did not feel the immediate adverse and harmful effect of the U.S. Revenue Act passed the following year, *because of the greatly decreased exportation of coco-oil.* This Act, which took effect on May 10, 1934, imposed a tax of 3 cents on every pound of oil extracted in the Philippines or in the United States from copra of Philippine origin, and 5 cents on every pound of oil extracted from copra of foreign origin. The Philippines, however, regained its enviable position of preference when the U.S. Revenue Acts of 1935 and 1936 *which amended the previous revenue act by increasing the original rates of tax imposed on some of the oils were subsequently passed, to the advantage of the Philippine Coconut Oil.*

Toward the extermination and control of locusts, bud-rot, and other coconut pests, the need for legislation was not felt until 1936 when Commonwealth Act No. 110 was enacted on October 30, 1936. This Act created an appropriation of ₱100,000.00 to be spent for carrying out the campaign against those pests and diseases. Under the Act, the Secretary of Agriculture and Commerce shall submit to the National Assembly within 15 days from the opening of the coming session a report giving a detailed information as to the manner the amount appropriated has been spent, as well as the results thereby accomplished. Any unexpended balance of the fund appropriated shall revert to the Philippine Treasury on December 31, 1937.

Acts of Congress

Immediately after the termination of the first World War, there followed a slight decline in our exportation of copra and coconut oil as the demand for their use lessened. But it was not until the years from 1920 to 1922 that our exportation of copra and coconut oil to the United States became alarmingly reduced. The chief cause of this heavy downward trend was the passage of the Emergency Tariff Act of 1921 by the U.S. Congress, which imposed a duty of 20 cents on every gallon of our coconut oil. As a result, several coconut oil mills in the Philippines were forced to shut down. However, the coconut industry was saved from total liquidation by the timely passing of the U.S. Tariff Act of 1922, which repealed the prior Act and imposed a duty of 2 cents only *on* per pound of *Philippine* coconut oil, giving preference, therefore, to the Philippines by excluding imported coconut oil from foreign sources other than the Philippines.

Coconut Included Among Staple Crops

Act No. 3443 was enacted on November 28, 1928, appropriating the sum of ₱50,000 to finance the establishment and maintenance of seed farms. This Act was amended the following year which provided for additional funds in order to extend the operation of the former act to *include* the establishment and maintenance of experimental stations. It is noteworthy that the coconut was not included *in the enumeration of staple crops* primarily mentioned in the foregoing acts. This was, perhaps, due to the fact that the coconut industry as previously stated was not greatly affected by or suffering from the economic depression prevalent the world over. It was only on November 29, 1932, *when* Act No. 3944 was enacted to amend Act No. 3443 by including the coconut *in the rank and file of rice corn, sugar cane, abaca, etc. that coconut fell within the meaning of staple crop.* This later Act provided for another sum of ₱50,000 to be used in the establishment, maintenance, equipment, and operation of seed farms and experimental stations for the purpose of raising selected and pedigreed seeds *of the enumerated staple crops* to be distributed to the farms throughout the Archipelago.

During the Commonwealth, the coconut having already been considered a staple crop, Commonwealth Act No. 50 passed on October 14, 1936 provided for the establishment, operation, and maintenance of warehouses for copra and, if space is available, other marketable products. Under the Act, the Secretary of Agriculture and Commerce, the Philippine National Bank and the National Development Company may, under such rules and regulations as they will promulgate, charge reasonable rate of fees for deposits made in the warehouses established by them under the Act. For this purpose they are directed to acquire, by lease or otherwise, suitable warehouses in place where, in their opinion, the establishment and operation of such warehouses are justified, and they may employ the services of any officer or employee of the government with the approval of the respective Department Head, or if such officer or employee is not available, they may employ the services of any other suitable person for the operation of *u.* warehouses. Any officer or employee or person in charge

Officials and students in the Marinduque Coconut School for Home Industries of the National Coconut Corporation.



of any of the warehouses created under this Act shall have the privilege of being bonded in the Fidelity Fund.

The Philippine National Bank and the National Development Company were directed to invest out of the funds under their control such amount as may be needed for the establishment, operation, and maintenance of the warehouses with such arrangement as may be agreed upon between them and the Secretary of Agriculture and Commerce. Upon the request of a municipality, the latter may acquire and operate any of the warehouses located within its jurisdiction and establish, operate and maintain the same in accordance with Acts numbered 3929 and 3932 and under such arrangements as may be agreed upon between said municipality and the government institution and authorities concerned for the reimbursements of the money invested in the establishment of the said warehouses.

The Tydings-McDuffie Law on the Coconut

Rejection of the Hare-Hawes-Cutting Act by the Philippine Legislature resulted in the passage of the Tydings-McDuffie Law, known as the Philippine Independence Act.

The provisions of the rejected Act affecting the coconut industry were wholly incorporated in the latter. According to the Tydings-McDuffie Law, there shall be levied, collected, and paid on all coconut oil coming into the United States from the Philippines, in excess of 200,000 long tons, *in any calendar year* the same rates of duty which are required by the laws of the United States to be levied, collected and paid upon like articles imported from foreign countries, and in case the limit has been reached, the amount or quantity of coconut oil shall be allocated, under export permits issued by the Government of the Commonwealth, to the producers and manufacturers, on

the basis of their exportation to the United States in the preceding year. Moreover, the Government of the Commonwealth shall impose and collect an export tax on the exportation of coconut oil entering the United States free of duty, i. e., within the limitation of the quota of 200,000 long tons, beginning and during the 6th year after the inauguration of the new government, at 5% of the rates of duty which are required by the laws of the United States to be collected and paid on like articles imported from foreign countries; and thereafter at a yearly progressive increase of 5% on the rate of the preceding year, until the expiration of the 9th when the export tax shall be at 25%.

The Tydings-Kocialkowski Act

Nevertheless, by the passage of the Tydings-Kocialkowski Act, otherwise known as the Philippine Economic Adjustment Act, on August 7, 1939, the economic provisions of the Tydings-McDuffie Law affecting the copra, coconut oil and other products exported to the United States were to a great extent amended. According to this later law, no export tax is to be imposed and collected upon coconut oil and copra, without however exempting the quota of coconut oil from the excise tax provided in Section 2470 of the Internal Revenue Code. The amending law took effect on November 15, 1940, and shall end on July 4, 1946.

The aforementioned law reaffirms the quota of 200,000 long tons provided in the Tydings-McDuffie Law for the year 1940, and furthermore, provides that for each calendar year thereafter up to calendar year 1945, said *annual* quota shall be the same as the corresponding quota for the year immediately preceding, less 5% of the corresponding original quota, and for

FIBER FROM . . .

(continued from page 15)

the period from January 1, 1946, to July 3, 1946, the *annual* quota shall be one-half of the corresponding quota specified for the calendar year 1945.

Act Establishing the National Coconut Corporation

The following year, the National Coconut Corporation was created by Commonwealth Act No. 518, approved by the National Assembly on August 7, 1940. It is subject to the provisions of the Corporation Law in so far as they are compatible with the provisions of Act No. 518, and enjoys the general powers mentioned in the said Corporation Law in addition to the specified powers mentioned in Act No. 518. The National Coconut Corporation is managed by a Board of Directors appointed by the President of the Philippines with the consent of the Commission on Appointments of the National Assembly.

According to this Act, the National Coconut Corporation shall have the following objects: (a) to establish, keep, maintain, and operate, or help establish, keep, maintain and operate drying plants, or copra driers, or coconut centrals with a view to adjusting the coconut industry to a position independent of trade preferences in the United States and to provide facilities for the better curing of copra products and the proper utilization of coconut by-products, provided, that no subsidy, direct or indirect, shall be paid to producers or processors of copra, coconut oil, or allied products; and (b) to afford facilities for bona fide production loans to Philippine coconut planters and copra producers.

To carry out the foregoing purposes, the aforesaid corporation is empowered and authorized: (a) to grant bona fide production loans to Philippine copra producers upon the security of coconut crops or products; and (b) to buy, sell, assign, establish or operate rent or lease presses, warehouses, buildings, and any other equipment and materials necessary and proper to carry out its purposes. In accordance with the Tydings-Kocalkowski Act, a special fund known as the "Coconut Industry Fund" was created by appropriating a certain amount out of the Coconut Oil Excise Fund collected on and after January 1, 1939. The total sum available to the corporation for the accomplishment of its undertaking shall not exceed ₱20,000,000.00.

The Coconut Products Board and the National Coconut Corporation Compared

It is significant to note that the purposes for which the National Coconut Corporation has been organized are in general parallel to those of the Coconut Products Board of 1916. A notable divergence, however, lies in the fact that in the former organization the principal objective was superiority of coconut production, while the one recently established, while not neglecting to place emphasis on the quality of production aims principally at securing for the industry a position independent of trade preferences in the United States.

a pure building board, although it resembles lumber wallboard in many respects. It is a composition board made essentially from wood or any other vegetable fibers by a process of felting in which countless fibers are interwoven and matted to form a rigid product. In other words, it is a synthetic lumber in which strength, resistance to moisture and fire, insulating and acoustical properties have been built in. It is a new material, an insulating lumber, rather than a mere substitute for wood.

Millions of square feet of it are produced annually to satisfy demands that its originators never foresaw. It has been given qualities in a wide variety of combinations to serve specific purposes. It enters primarily in the manufacture of cabinets, marine partitions, railroad coaches, toys, in trailers and motor vehicles, air-conditioning, refrigeration, theaters, etc. As a building material, fiber board is notable in its handiness and ease of application. It presents no waste, since they are delivered in specific sizes and contains no knots, sappy pieces or cross-grains. Moreover, its close texture renders it resistant to attacks from insect vermin.

Two distinct objects of paramount importance are solved in the fiber board industry, namely: (1) the manufacture of a substitute building board material having a large unit surface area which consequently reduces handling and installation costs, and (2) the utilization of waste fibrous products.

Fiber boards can be classified into two different groups—(1) the homogenous and (2) the laminated. Under the former class, sometimes called the uniform consistency board, are found the insulation and acoustical boards. The latter class which is a board built up from several layers to impart strength includes the composition boards used for flooring, cabinets, railroad coaches, etc.

Manufacturing Process

The process of board making as practised by many manufacturers today, is based upon the principle of "felting" or the production of a rigid board of interlaced fibers. The treatment, however, is sometimes modified according to the kind of raw materials used and products desired.

Generally, the raw material is subjected to a mechanical or chemical pulping process sufficient to loosen incrusting casing materials for the fibers, but not to reduce the fibers into pulp. The fibers are recovered, washed, refined and finally pumped into a stock chest which feeds the molding machine.

From the board machine, the wet board formed passes thru a series of rollers, suction boxes, and finally under powerful presses, whence it is taken to a long continuous drier. Sometimes, however, instead of the long continuous drier, the wet board is cut to specific sizes and loaded into a platen-press, the number of plates varying as to the number of boards pressed at one time. The driers deliver boards which are nearly bonedry and are, therefore, either treated in a humidified or simply sprayed with water to bring its moisture content in equilibrium with the moisture content of the air, thus insuring minimum of swelling and shrinking. The finished boards, after rigid inspection, are stored away ready for delivery.

Basis Of Study

The technique involved in the manufacture of this insulating fibrous product is to felt the fibers and to subject it only to such pressure as to entangle minute air cells which secure the insulating value and lightness of the board. The idea is to entrap in each square foot of board millions of sealed air-cells which are held captive in the fibers themselves and in the interstices between fibers. It is these cells which inhibit the insulating property of high efficiency. Formerly, air spaces between walls were regarded as the best possible insulator of heat and cold (air having a thermal conductivity constant of 0.24 B.T.U. per pound much more efficient than cork) Science has proven, however, that this holds true only, and this air is efficient merely, if it can be securely confined or rendered "dead."

Experimental Procedure And Results

With the foregoing fact as a working guide, together with the recent findings that coir pulp or dust exhibits properties similar to cork, that is, it shows excellent insulating quality, is soft, light and compressible, plus the merits of the coconut fiber or coir for being long, tough and springy, experiments were conducted to determine the suitability of these waste materials for making fiber boards.

Unfortunately, the work was not as easy as was predicted. It was fraught with difficulties. In fact as early as the experiments were started, problems presented themselves. For instance, it was found out that, unlike the bagasse fibers with its serrated saw-tooth surface and the presence of microscopic hooks which give to it its tenacious ability to cling to each fiber and which qualities facilitate its felting to a great extent, the coconut fibers on the other hand are devoid of these hook-like structures, has a smooth surface, and are decidedly rounded in cross-section. Moreover, unlike the abaca fibers which can be shredded to its fine, filmy original minute fibers, the coconut fibers, once defibered, can not be shredded to any further extent. That is, each individual fiber is already the ultimate fiber itself. In structure, it resembles a short ordinary wire and no pounding action could give any shredding effect. Instead, it merely flattens the rounded fiber. A careful study was therefore necessary to overcome these drawbacks as well as to evolve, if possible, a process of board manufacture suitable to the use of coir as raw material.

Working on coir shorts, the first step was the mechanical preparation of the fibers. This consisted, primarily, of cutting the fibers in a fiber mill of the blade type, thus reducing the length of the fibers to one-fourth or about three-fourth inch long. To compensate for the absence of hairlike hooks and to offset the objectionable smooth surface of the rounded fibers, the cut fibers were given a permanent curl or a sort of wave in another mill of the hammer type which also broke up any bundle of fibers that might have been left. By virtue of the hammering action of this mill, the desired effect was produced which evidently helped in the interlacing and interweaving of the fibers into a greater degree than if the fibers were allowed to remain as short, straight ones.

The mixture of fibers used comprised of primary fibers from ($\frac{1}{2}$ to $\frac{3}{4}$ inch long) which were interlaced to form the framework and secondary (shorter

fibers) which give rigidity. The space between the fibers were then filled with coir pulp or the pith-like particles to increase the insulating quality. Finally, a little paper pulp from old newspapers, previously beaten in a separate beater was added to hold the coir pulp and other fibers in place, besides, supplying the necessary fine aggregates.

The above mixture in exact proportions was delivered to a beater. Additional water and waterproofing materials made up of rosin and alum, as well as insecticides to render them resistant to dry rot and termites were mixed at this point. Two desirable effects obtained in the beating process were:

1. Shortening of the fibers necessary for ease of uniform distribution. This was purely a mechanical process which further refined the mixture of fibers in the stock.

2. A change in the character of the stock, resulting in increased density and tensile strength. This property appeared as the feel and appearance of the stock became more and more slimy and soft, an effect produced by the rubbing and pounding action of the beater

After 30 to 45 minutes in the beaters or after such time when the feel become slimy and the individual fibers were thoroughly coated with the waterproofing and termite-proofing materials, the stock was transferred to the wooden press-molds. Care was taken that the wet mixture was evenly distributed. The bulk of the water was extracted by pressing down a wire screen which left a wet lap of the material. This was finally pressed down by a wooden plate to the desired thickness. After the board has set, usually from 4 to 7 hours, it was taken out of the press to dry.

The drying process (air drying in this case) took from 3 to 6 days. This was the best that could be done under present conditions although the drying operation could be greatly facilitated by the use of steam heated hydraulic platen-press as previously mentioned. This apparatus has the advantage of taking care of two steps of the process in one operation, namely, the drying and the pressing operations, besides imparting a glossy finish to the surface of the board.

Boards made by the above developed process has a smooth surface, which indeed is a decided improvement over boards previously made by the dry method that employed different kinds of binders. It has the desirable properties of taking on paint economically, and can be sawed or nailed, just like ordinary lumber. The fact that the above wet process does not employ any kind of adhesive has tremendously lowered the cost of production.

Acknowledgement

The author deeply appreciates the cooperation rendered him by both the Industrial Engineering Division and the Wallboard Sections of the Division of Tests and Standards of the Bureau of Science, and is especially indebted to Mr. F. D. Masamba, Chief of the Industrial Engineering Division, and Mr. Moises Lucas for their valuable and helpful suggestions. He is likewise grateful for the constructive advices received from Mr. R. Aguilar, Chief of the wallboard Section.



LOS PRIMEROS LOGROS DE LA CORPORACION NACIONAL DEL COCO

Por J. M. DE CASTRO

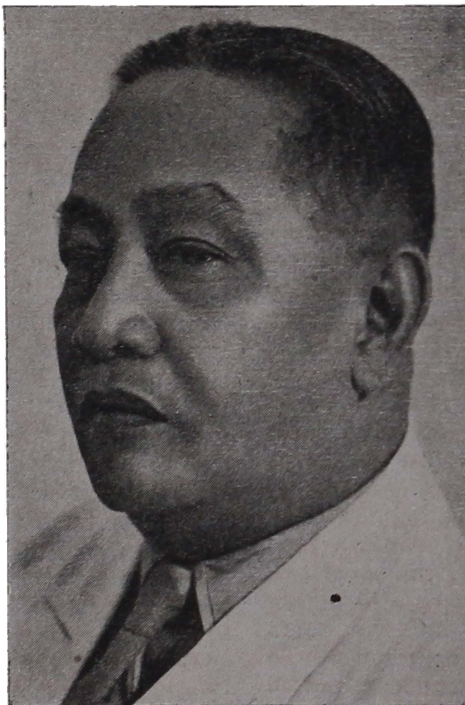
HACE apenas quince meses desde que la Asamblea Nacional creó la entidad gubernamental hoy conocida por la Corporación Nacional del Coco en virtud de la Ley del Commonwealth número 518. Para ser más exacto, los registros demuestran que el advenimiento de la corporación salvadora de los cocoteros fué en Mayo de 1940. Pero ésta no dió muestras de vida sino hacia Agosto del mismo año, cuando en acto nada ceremonioso se inauguró sus funciones en el anterior edificio ocupado por la Corporación Nacional Mercantil. Fué elegido Gerente el conocido plantador de coco de Tayabas Hon. Maximo Rodriguez, un tiempo ejecutivo de su provincia, cuya elección celebramos por acertadísima, tomando en cuenta sus cualidades y conocimientos que hacen de él la persona idónea para llevar las riendas de la Corporación. Esta de más decir que como productor de coco, el Gerente Rodriguez sabe lo que tiene entre manos al asumir el cargo que le ha encomendado su Excelencia, el Presidente de Filipinas.

Hace exactamente un año desde que la entidad dió señales de vida, por tanto, diremos; doce meses de duro bregar para los dirigentes de la Corporación en el establecimiento de los cimientos donde estribará todo cuanto venga después, una vez erigida y en función normal y corriente. No es de negar que las fundaciones son los más difíciles de llevar a cabo, y es motivo de felicitación para el Gerente Rodriguez el que haya salvado felizmente la parte de suma prueba para todo emprendedor—la organización. En la actualidad se puede decir que la Corporación ha entrado en su segunda etapa de operación, y por lo que se ve, la nave de la Directiva navega viento en popa.

Entrando en lo tangible sobre los logros de la Corporación, comenzaremos dando resúmen abreviado de lo que es el coco para muchos filipinos. El coco no es ningún producto nuevo; ha constituido desde tiempo inmemorial uno de los productos principales del país que ha dado no solo alimento sino hasta lujo y grandeza para muchos, y muy en particular, ha constituido fuente única de vida, no a miles, sino

a millones de filipinos dependientes exclusivamente del coco. El coco es el producto más versátil bajo la mano del agricultor filipino; es la planta cultivada en Filipinas que puede dar el mayor número de productos accesorios sin excepción, solo que este hecho es ignorado aun por los mismos plantadores de coco. No porque fuera necesaria la iniciativa de grandes científicos para descubrirlos, sino más bien es debido a la natural indolencia, resultado de las bonanzas sin igual de la naturaleza en las paradisíacas islas tropicales de la Océania. De hecho Filipinas jamás ha conocido el hambre como lo ha conocido muchos países menos agraciados por la bondad Divina. En contraste a estos países donde las inclemencias del tiempo, durante ciertas determinadas estaciones del año, dejan a la madre tierra incapaz de nutrir vegetación alguna, Filipinas, al igual que las demás islas hermanas, nutre en su seno la flora tropical de perenne y eterno verdor, y entre las rítmicas palmeras cocoteras no se oyen más que

los murmullos de la abundancia. He aquí las razones porque han permanecido ocultas innumerables fuentes de riqueza, industrias que encierra la maravillosa palmera del coco, abandonadas a la apatía e impericia del agricultor e industrial filipino que desde tiempos ignotos se han contentado en tomar de ella su aceite y su fruto como productos comerciales, y para sus



MAXIMO RODRIGUEZ
Gerente General

necesidades bucólicas el santan, el bucayo, el gatá, y el ubod—y en casos extraordinarios, cuando se les ocurren honrar al dios Baco, sustraen también del coco la espirituosa bebida de la "Tuba".

La verdad, hasta últimamente, unos cuantos años antes de la creación de la Nacoco y comercialmente hablando, desde luego, no se conocían productos del coco mas que el aceite y la copra. Pero aquí tenemos la Corporación Nacional del Coco cuya creación infunde esperanzas en la hoy marchita industria coquera.

El personal de la Corporación encabezado por su habil é incansable dirigente, Hon. Maximo Rodriguez, se ha propuesto no dejar piedra por mover para conseguir la completa rehabilitación de la industria del coco. Se ha propuesto movilizar todos los recursos colocados al alcance de la Corporación para efectuar la tan deseada y esperada iniciativa de la presente administración del Commonwealth. Los adelantos y logros alcanzados hasta el presente, son dignos de encomio; pero aún hay largo trecho que recorrer antes de poder llegar a la meta del triunfo, y solamente con la buena voluntad de todos, especialmente con la cooperación de los plantadores de coco, se podrá alcanzar los lauros por la completa rehabilitación de la industria. Los primeros esfuerzos de la Corporación fueron dirigidos hacia la adopción de ciertas normas que tienden a efectuar cambios radicales en la industria. Normas que parten del antiguo principio de concentrar todos los esfuerzos en la explotación del aceite y de la copra como únicos productos principales del coco. La nueva pauta seguida, desviando de esta antigua norma, descubre y crea nuevos productos del coco que disputan en importancia a estos dos productos que en la actualidad parecen no hallar mercado bastante bueno en ninguna parte del mundo. Las circunstancias políticas y comerciales predominantes en la actualidad acompañan favorablemente al bonote y a la chireta en su curso ascendente como producto comercial mientras resulta todo lo contrario en cuanto respecta al aceite y la copra. Se puede decir que desde la creación de la Corporación Nacional del Coco, tanto el bonote como la chireta, ambos se han colocado al nivel del aceite y de la copra, con todas las perspectivas de ganar la preponderancia sobre estos últimos en cuanto a la demanda. Es aún de esperar que estos nuevos productos dieran al plantador del coco lo que en tiempos de bonanza rindieron la copra y el aceite.

El uso del carbon de la chireta y de las fibras de bonote tanto como material de guerra así como material puramente comercial, está plenamente establecido. Las actuales contiendas que arrasan los suelos del continente Europeo han redimido al bonote y a la chireta del cúmulo de desperdicios y los han colocado sobre las gradas de la exaltación comercial. Ahora, de los bonotes se extraen las fibras con que se tejen los tejidos para los sacos de arena para fines de defensa militar. Fibras muy apropiadas para este fin debido a sus propiedades de flexibilidad y elasticidad. En cuanto a la perspectiva de su utilidad comercial, se puede imaginar cuanto traería una industria

que se dedique a la fabricación de sacos para el arróz, el maíz, la patata, el cacao, el cacahuete, etc. tanto en el país como en la extranjero. Filipinas sola, importa de la India sacos de yute al rededor de ₱4,000,000.00 cada año. Además del saco, hay un sin fin de artículos que utilizan las fibras del bonote como material principal, entre estos se encuentran las esterres, alfombras, cepillos, jarcias, etc. También es utilizado como material de las obras de calafateado y como material de relleno para colchones, cojines, almohadillas, etc. Pero en la actualidad la necesidad por la fabricación de los sacos para fines de defensa nacional es tan enorme que no se puede abastecer la demanda en su debido tiempo. Tocante a la chireta, se puede decir otro tanto a su favor. Hay una infinidad de artículos confeccionados de la chireta; desde el boton mas pequeño hasta las canastillas, bandejas y teteras, todos fabricados de la chireta. El mas importante sin embargo, es el uso de su carbon que tiene todas las perspectivas de ser el producto mas lucrativo entre los varios productos considerados como productos accesorios del coco. Desde que se ha conocido el coco, la chireta con todo el bonote, nunca ha prestado utilidad al hombre salvo su uso como combustible de la tradicional "bibinquera" durante las Pascuas de Navidad y ocasionalmente en la cocina del hogar en defecto de la acostumbrada leña cuando falla de suministrar el leñador. Pero desde que estalló la guerra mundial en el año de 1914, cuando la barbarie arrasó una vez mas la tan asolada Europa, culminando al uso de los gases mortíferos, la chireta surgió elegido entre el caudal residuos del coco como material adaptado para la producción del carbon activado de las mascararas contra el gas. Desde entonces el carbon de la chireta ha sido y seguirá siendo un elemento principal en el conjunto de ese artefacto conocido por mascara contra el gas y con ello la chireta ha efectuado el salto de registro, de la basura a las alturas de la importancia por ser material de vital uso tanto en el campo de batalla como en el campo del mercado comercial. La Corporación, por tanto, cuenta con esto un campo preparado para la disposición de una buena parte del carbon de chireta filipina. En verdad se han recibido pedidos por mayor, en anticipación a los planes de la Corporación de explotar esta industria en gran escala. A pesar de las inconveniencias que ha causado y sigue causando al presente las guerras actuales, entorpeciendo los planes trazados por la Corporación, particularmente lo que respecta a la adquisición de maquinarias, pronto entrará en operación el ramo de la producción de electrodos, grafitos, pilas secas, etc. donde se utilizarán grandes cantidades de carbon de chiretas. Con el continuo desarrollo de la electricidad, particularmente en el ramo de la radio, estos artículos estan destinados a desarrollarse en una escala proporcional, y de consiguiente hacen del carbon de la chireta una materia prima de perspectivas excepcionalmente lucrativas. He ahí los dos nuevos productos del coco creados por la Corporación con trazas evidentes de adquirir ventajas en los mercados domesticos y extranjeros.

(Continúa a la página 63)

EN MENOS DE UN AÑO LA NACOCO HA OBTENIDO MARCADOS Y CONCRETOS LOGROS

En un discurso pronunciado recientemente en un programa de radio dado en su honor, el nuevo Gerente General Auxiliar, Dr. Conrado Benitez, ha expuesto los mercados y concretos logros que la National Coconut Corporation ha alcanzado en menos de un año.

En su discurso el Dr. Benitez explicó los objetivos de la Corporación diciendo:

“Deseo dar las gracias a la administración de la radio donde se disemina este programa en mi honor dándome la oportunidad de poder decir algunas palabras sobre los objetivos de la Corporación Nacional del Coco.

“Al principio, permítanme expresar públicamente mi gratitud a Su Excelencia, el Presidente de Filipinas, por asignarme a la Corporación Nacional del Coco dándome una oportunidad de servir a la industria cocotera. Considero esta asignación un privilegio, y espero sinceramente ser digno de la confianza depositada en mí.

“Los objetivos de la Corporación Nacional del Coco están especificados en una ley de la Legislatura (Ley No. 518 del Commonwealth) y pueden ser clasificados como sigue:

“Primero, mejorar la copra filipina por medio del establecimiento y operación de resecadores de copra;

“Segundo, para efectuar el reajuste de la industria cocotera en una situación independiente de las preferencias comerciales en los Estados Unidos por medio de la utilización de los productos accesorios y el establecimiento y operación de centrales cocoteras para ese propósito; y

“Tercero, la extensión de préstamos sobre producción a los plantadores de coco y productores de copra.

Logros marcados y concretos en menos de un año

“Es aparente que la Corporación Nacional del Coco es una entidad creada por ley para ciertos propósitos específicos y limitados. No es idéntico a las corporaciones de negocios ordinarios cuyo objetivo principal es adquirir ganancias. De hecho no está autorizado ni siquiera para comprar y vender copra y crear ganancias de esa corporación comercial. Tal vez el nombre “National Coconut Institute” (Instituto Nacional del Coco) podría haber sido adoptado para expresar sus objetivos. Tal como está, la Corporación Nacional del Coco es el instrumento creado por el gobierno para el propósito de ayudar a la industria cocotera y reajustar la misma a una situación independiente de las preferencias comerciales en los Esta-

dos Unidos.

“¿Cómo se ha esforzado la Corporación Nacional del Coco a llevar a cabo los objetivos a ella asignados por el gobierno? No abusare de vuestra paciencia citando cifras y estadísticas, pero deseo simplemente, señalar que en la ejecución de los trabajos asignados a ella, la Corporación, en menos de un año, tiene a su crédito mercados y concretos logros.

“En relación con el primer objetivo, cual es, el mejoramiento de la copra, tiene organizadas escuelas y centrales del Coco en varias partes de Filipinas en donde se han construido varios tipos de resecadores modernos que hoy están en operación. De la misma forma, por medio de la ayuda financiera y técnica de la corporación, los plantadores particulares han construido resecadores de copra y están en la actualidad produciendo mejores calidades de copra para el mercado. Así que, la primera obra asignada a la corporación se está llevando a cabo actualmente a paso acelerado, para que los plantadores pequeños puedan ver las ventajas demostradas por las resecadoras modernas, y estos se animen a adoptar los métodos modernos. Mi apelación es que mas y mas plantadores deberan decidir en la alteración de sus métodos de resecar copras y tomar ventaja de la ayuda financiera y técnica de la Corporación Nacional del Coco para habilitarles a mejorar sus productos.

Un reto a la capacidad del pueblo filipino

“En logro del segundo objetivo, cual es, la utilización de los productos accesorios, es realmente un reto a la capacidad de nuestro pueblo. Digo un reto a nuestra capacidad, porque es una prueba para nuestra habilidad a adoptarnos a un ambiente que cambia, un ambiente que exige habilidad científica. Estamos ungidos a utilizar los productos accesorios del Coco. Un requisito esencial a esa utilización, es la experiencia y conocimiento científico. Es muy alentador el que nuestros científicos ya han conseguido producir nuevos productos accesorios del coco. En nuestras escuelas y centrales llevamos a cabo demostraciones que además de la copra, la carne del coco puede también producir artículos comerciales útiles como la manteca, jabón, mantiquilla, glicerina, leche de coco y aceite no solamente para combustible, sino también para la comida. Del bonote, se ha hecho posible la fabricación de tejidos en escala comercial tales como sacos que están en gran demanda debido a la actual emergencia, jarcias y tejas compuestos de fibras de bonote y asbestos. Del polvo extraído del bonote, el científico ha conseguido producir tabloncillos plásticos (plastic board). Y de la chireta, carbón, juntamente con el preservativo de la madera son también fabricados en escala comercial. Del carbón de chireta también es posible fabricar productores de gas



Fotografía tomada en Malacañan en ocasión al juramento de cargo del nuevo Gerente General Auxiliar, Dr. Conrado Benitez. De izquierda a derecha aparecen: H. G. Henares, Comisionado Jose Gil, Gerente Auxiliar Benitez, Secretario Vargas, Gerente General Rodriguez, Dr. Jose Fabella, Diputado Lavides y Diputado Abellana.

y electrodos para pilas secas. El guinit ya es muy conocido como material para sombreros y capacetes. Tengo mencionado solamente algunos de los más importantes productos accesorios de coco que la Corporación Nacional del Coco piensa producir en mayor escala para satisfacer a las demandas del país y del extranjero. Es el propósito de esta corporación tomar ventaja del servicio de las otras unidades del gobierno dedicadas a las investigaciones científicas hacia ese fin que, tan pronto como una investigación sobre el producto específico del coco se haya adelantado más allá del periodo del laboratorio, la Corporación Nacional del Coco establecería sin pérdida de tiempo una fábrica industrial adecuada para la producción de cada artículo para consumo comercial.

El objeto es conseguir la rehabilitación económica

“Esta corporación en su afán de poder cumplir con su cometido, está dispuesta a dar ayuda a las investigaciones específicas sobre productos accesorios del coco llevadas a cabo por otras unidades del gobierno. Me doy cuenta del valor de la industrialización científica, y creo que todo aliento y cooperación deberá ser extendido a los científicos en sus esfuerzos de poder utilizar los varios productos accesorios del coco. También me doy plena cuenta del valor de la cooperación y, hablando en nombre de la Corpo-

ración Nacional del Coco, deseo manifestar que estamos preparados plenamente para extender nuestra cooperación a las otras agencias de nuestro gobierno mientras imploramos idéntica cooperación de ellos.

“En relación con el tercer objetivo de esta corporación, cual es, la concesión de préstamos sobre cosechas a los plantadores de coco y productores de copra, deseo simplemente expresar que la liberalidad y prontitud caracterizan nuestra norma, pero deberá ser recalcado, que los préstamos sobre producción son solamente corolarios a los otros objetivos de esta corporación. Estos son concedidos liberalmente y con prontitud a aquellos que están en la actualidad dedicados a mejorar su copra o en producir productos accesorios del coco.

En conclusión, deseo dejarles la impresión de una idea fundamental—que la corporación Nacional del Coco es una de las agencias instrumentales del gobierno para rehabilitar la economía de Filipinas, y que bajo el caudillaje que inspira Su Excelencia, el Presidente Manuel L. Quezon, estas agencias deberán poner en correlación sus respectivos trabajos para la consecución de los objetivos comunes. De su parte, la Corporación Nacional del Coco está empeñada a contribuir su participación de la responsabilidad a la labor vital común de rehabilitar la economía de Filipinas.

LOS PRESTAMOS SOBRE COSECHA UNA BENDICION

AVISO SOBRE PRESTAMOS A BASE DE COSECHAS

Deseamos informar al publico en general y a los plantadores de coco en particular que nuestro personal de oficina trabaja mas tiempo de lo ordinario para despachar las solicitudes de prestamos sobre cosechas. Se da preferente atención a las solicitudes y los solicitantes quedan por la presente avisados que no tienen necesidad de venir a Manila para perseguir con ahinco sus asuntos. Ellos incurrirán gastos innecesarios en la trasportación y alojamiento durante su estancia en la ciudad. La oficina de la Corporacion Nacional del Coco avisará a todos los solicitantes por correo de cualquiera acción que se haya tomado de sus solicitudes. Se advierte de nuevo a los solicitantes que no hay necesidad de emplear los servicios de abogados o intermediarios para la aprobación de sus solicitudes. Todas las solicitudes son juzgadas de acuerdo con sus meritos.

MAXIMO RODRIGUEZ
Gerente General

EL Departamento de Préstamos Sobre Cosechas, es una actividad recientemente creada por la National Coconut Corporation. Con su establecimiento se espera que habrá un cambio de aspecto económico en las regiones cocaleras al igual que cuando se dieron a conocer los primeros resultados de la industrialización del coco. Si bien esta pequeña ayuda tiende hacia en camino de la rehabilitación de la industria cocalera del país, resulta una bendición para los pequeños plantadores por tener donde acudir para mejorar su situación que por mucho tiempo se ha ahondado debido al bajo precio de la copra.

Al par que los plantadores de coco han seguido paso a paso el desenvolvimiento de todas las actividades de la Corporación, para ver hasta donde llega el esfuerzo del gobierno para mejorar sus condiciones financieras, los dirigentes de esta empresa por un lado han estudiado la forma para que la ayuda fuese más directa al plantador en vez de ser de un modo indirecto como han calificado los otros procedimientos. Pero todo este afan resulta baladí si no ya acompañado al deseo de mejorar la calidad de la copra, que es el eje principal, la base más bien de toda esta nueva tarea que se brinda a los plantadores sin distinción con tal que cumplan las reglas y demas procedimientos que ha establecido el Departamento de Préstamo.

Las reglas y regulaciones que gobiernan la concesión de Préstamo Sobre Cosecha, se dan a continuación:

(a) Es esencial que el solicitante haga constar el propósito o propósitos por los cuales se solicita el préstamo a fin de proporcionar a la Corporación Nacional del Coco una base que determine si el préstamo es un préstamo de producción de buena fé. Cualquiera desviación del fin o de los fines declarados en este formulario dará lugar a la rescisión del contrato.

(b) La solicitud deberá estar acompañado por una información posesoria, Título Real o Título Torrens, o declaración del impuesto del terreno sobre el cual se hallan las cosechas que se ofrecen como garantia. Si el terreno está hipotecado, una copia certificada de la hipoteca debe someterse. Si el solicitante posee el terreno en su capacidad de arrendatario, una copia certificada del arriendo debe someter. Si el solicitante es miembro de una Asociación Cooperativa del Coco, deberá asimismo someter por escrito el consentimiento de la asociación para el préstamo.

(c) Los gastos de inspección serán sufragados por el solicitante quien depositará una cantidad suficiente para cubrir los necesarios gastos actuales del Inspector de Préstamos Sobre Cosecha. Cualquier exceso del depósito será devuelto al solicitante en cualquier momento.

(d) Si fuese concedido el prestamo, este no del setenta por ciento del valor de las garantias ofrecidas al tiempo de la aprobación de la solicitud. Si la plantación está gravada, del préstamo no excederá del setenta por ciento del valor de las garantias ofrecidas a la discreción del Gerente General.

(e) El préstamo será para un periodo que no excederá de un año desde la fecha de la aprobación de la solicitud. Al deudor se le permitirá hacer pagos parciales durante la recolección de cada cosecha. En casos de calamidad, fuerza mayor, o cualquier otro suceso imprevisto, el Gerente General puede a su discreción, conceder al deudor un periodo adicional que no exceda de seis meses para pagar el préstamo.

(f) El préstamo ganará interes al tipo de 6% al año. Todas las cantidades adelantadas por la Corporación Nacional del Coco ganarán asimismo 6% de interes al año.

(g) El prestamistas en cualquier tiempo que haga la recolección deberá depositar sus cocos, copra o productos del coco, en una bodega afianzada o en un camarín que será designado por la Corporación Nacional del Coco. Las garantias asi depositadas pueden ser aceptadas por la Corporación Nacional del

Coco como pago del préstamo cuando llegue la fecha del vencimiento. En tal caso deberán ser avaluadas de acuerdo con el valor del mercado al tiempo de la entrega y tal porción del mismo como fuese suficiente para pagar el plazo vencido será aplicada al pago del préstamo.

(h) La solicitud se presentará al Departamento de Crédito de la Corporación Nacional del Coco para su examen y verificación, después de los cuales la solicitud será enviada al Contralor quien ordenará la inspección e investigación de la garantía y/o garantías ofrecidas. Los gastos por la inspección serán sufragados por el solicitante quien depositará una cantidad suficiente para cubrir los actuales gastos necesarios del Inspector del Préstamo Sobre Cosecha. Cualquier exceso en el depósito será reintegrado al solicitante. El Inspector de Préstamos Sobre Cosechas someterá su informe al Departamento de Crédito a tiempo y sin ninguna dilación. El Departamento de Crédito enviará entonces sus recomendaciones a la oficina del Secretario-Tesorero para la aprobación del Gerente General o a la Junta Directiva. Préstamos que no exceden de P5,000 estarán dentro de la discreción del Gerente General. Los que excediesen de esta cantidad serán actuados por la Junta Directiva.

(i) En caso de la renovación del préstamo, la rellención de una nueva solicitud y reinvestigación de las garantías serán dispensadas; pero la ejecución de un nuevo contrato de Venta con Derecho de Recompra será requerida.

Compliments

of

PINEDA & AMPIL MFG. CO., INC.

997 M. de la Industria

Binondo, Manila

Tel. 2-15-93



Manufacturers of the well known waterproof, fire-proof and insects-proof "PAMCO BOARDS" used for ceilings and partitions of buildings.

COMPLIMENTS

of

TAN TUCO GROCERY STORE

WHOLESALE & RETAIL

Grocers, Hardware, School
and Electrical Supplies
etc.

Tan Eng Tiak

Manager

Talavera Corner P. Gomez St.

Tel. 161

Sariaya, Tayabas

Compliments

of a

National Coconut Corporation

Supplier

Una Resecadora Portatil Domestica

Por PEDRO A. DAVID

*Colegio de Agricultura,
Universidad de Filipinas*

Por cortesía del Servicio de Informacion de la
Universidad de Filipinas
(Traducido al Castellano)

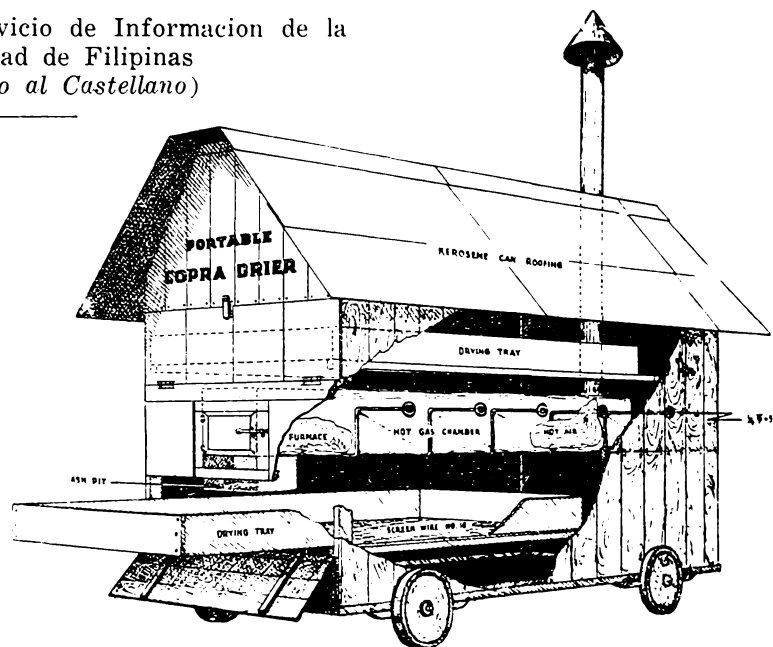
SE ha prestado atención especial para el mejoramiento de la calidad y la reducción del costo de producción de la copra filipina así como el mejoramiento de la calidad y reducción del costo de producción de la mayoría de los productos agrícolas e industriales. La preparación de la copra de calidad estriba grandemente sobre la utilización de una ressecadora satisfactoria. Del mismo modo, el límite mínimo al cual se podría reducirse el costo de la ressecación de la copra, depende del costo de la ressecadora y su operación. El tipo de la ressecadora de copra descrita en este artículo ha sido hallada satisfactoria desde ambos puntos de vista; calidad de los productos fabricados y economía en la producción. Los plantadores de coco deberán interesarse de este tipo de ressecadora.

Se han confeccionado varios tipos de ressecadoras de copra, tales como la Chula, la Cooke, la del Colegio de Agricultura, la McCord, la Tan, y la Villegas. Todas estas han sido sometidas a prueba en el país, y cada una reclama ser un adelanto sobre el método anticuado del TAPAHAN con el cual se efectúa el ressecamiento por medio de fuego directo. No obstante haber sido mejorado grandemente el procedimiento de la ressecación de la copra, aun queda mucho que hacer para llegar a la perfección. Respecto al tipo de la ressecadora presentada en este informe, puede que este no produzca el producto de alta calidad deseado, pero puede servir de base para una ressecadora de copra mejorada y más eficiente.

Un característico de esta ressecadora de copra, es la de ser portátil; todos los demás tipos mencionados más arriba son fijas. Ha sido diseñada para ser transportada en medio de una plantación cocalera. Así que, la transportación de todos los cocos, tal como se hace en el caso de las ressecadoras fijas, es eliminada; solamente el producto fabricado que se extrae de la carne del coco, necesita ser transportado, y los residuos (bonote, chireta, etc.) que constituyen de 81.8 hasta 84.2 por ciento del coco pueden ser utilizados como combustibles ó abandonados en el lugar.

El tipo portátil de la ressecadora de copra puede construirse con facilidad y es económico tanto en su construcción como en su operación. El costo de los materiales que se necesitan en la construcción de una ressecadora del tamaño que aparece en la ilustración es como sigue:

24 latas de petróleo vacías @ ₱0.15	₱3.60
13 cajones de petróleo vacíos @ ₱0.20	2.60
26 pies de madera (6' x 6" x 1") @ ₱0.08..	2.08
23 pies de cabilla de 1/4" @ ₱0.20 Kl.	0.27
40 pies cuadrados, tela metálica 1-1/2cm., malla @ ₱0.05	2.00
1 kilogramo de clavos	0.20



4 ruedas viejas tomadas de los cortadores
de césped inservibles, @ ₱0.25

Total ₱12.18

La ressecadora consiste de dos compartimientos: uno está debajo y el otro está encima del nivel del horno y cámara de gas caliente. En cada uno de los compartimientos ressecadores se halla colocada una bandeja ressecadora que se puede sacar libremente que haya necesidad. El fondo de las bandejas está hecho de tela metálica para permitir la circulación libre del aire caliente. Las aberturas de descarga no son herméticas, para que el aire del exterior pueda introducirse y tenga contacto con la superficie de la copra recalentada. Los muros y la base de la ressecadora son de madera; los bandejones son de marcos de madera y fondos de tela metálica; el tejado, el horno, la cámara de gas caliente y la chimenea, todos están construidos de latas de petróleo vacías; y las ruedas son ruedas viejas tomadas de cortadores de césped inservibles.

La capacidad de la ressecadora, la cual mide 2.10 metros de largo, 1.00 metro de ancho, y 1.40 metros de alto, es de doscientos cocos. Según observaciones hechas en el Colegio de Agricultura, se necesitan de 18 a 19 horas para ressecar 100 "cakes" de copra, consumiendo en el horno como combustible 75 bonotes enteros y 25 chiretas enteras. Esta cantidad de combustible es suficiente para mantener una temperatura de 35.5°C. hasta 61°C. dentro de la ressecadora.

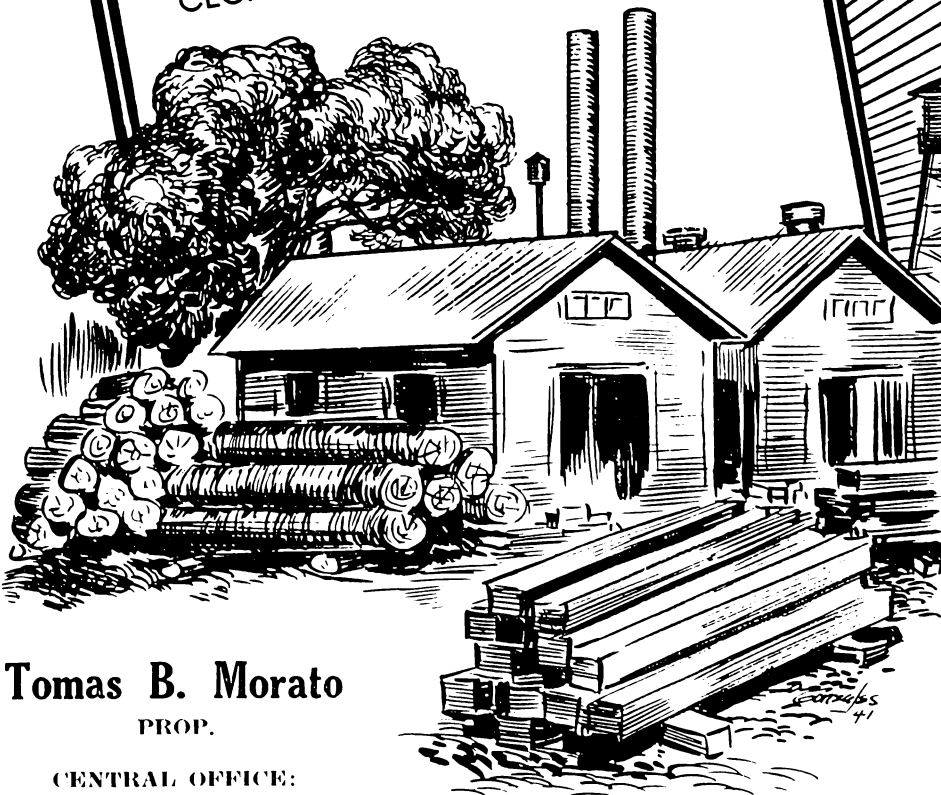
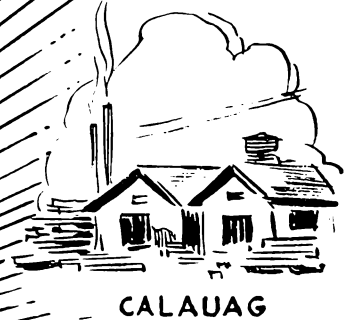
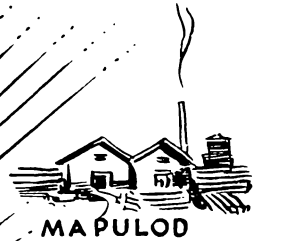
La calidad de la copra producida en esta ressecadora podrá clasificarse como de primera clase ó sea la clase designada como "ressecada". De los 22.2 kilogramos de copra producida de 100 cocos, 19.2 de kilogramos fueron hallados, limpias y blancas, y solamente 3 kilogramos fueron halladas algo coloridas. La humedad puede reducirse hasta el 3.1 por ciento.

STA. CECILIA SAWMILLS

• MANUFACTURERS OF PHILIPPINE HARDWOOD •

• ON THE OCCASION OF PRESIDENT MANUEL L. QUEZON'S BIRTHDAY AND THE FIRST ANNIVERSARY OF THE NATIONAL COCONUT CORPORATION, WE EXTEND OUR HEARTIEST CONGRATULATIONS . . .

• STA. CECILIA LUMBER SAWMILLS . . . MANUFACTURERS OF PHILIPPINE HARDWOOD . . . WITH SAWMILLS AT ALONEROS, CALAUG, TAGKAWAYAN, MAPULOD, AND STA. CECILIA, TAYABAS . . .



Tomas B. Morato
PROP.

CENTRAL OFFICE:
TAGKAWAYAN, TAYABAS

DR. N. HIDALGO
General Manager

•

MANILA OFFICE:
Maritima Bldg.
121 Dasmariñas

Telephone Nos.
2-31-56
2-48-21

• NACOCO ADV. ART •



A Traves de las Hojas

Ha sido nombrado Gerente General Auxiliar de la National Coconut Corporation, el que hasta hace poco era secretario auxiliar del Presidente de Filipinas, Dr. Conrado Benitez. Ha terminado sus estudios en la Universidad de Chicago con el titulo de Bachiller en Filosofia y Letras y bachiller en Leyes en la Universidad de Filipinas. Ha sido Decano del Colegio de Comercio o Administracion en esta ultima institucion y mas tarde Decano del Colegio de Artes Liberales. En 1919 fué miembro tecnico de la Mision encabezada por el Presidente Quezon y por el Speaker Osmeña. Ayudó en los estudios del Carnegie y del Rockefeller Foundation y dos veces fué miembro en la conferencia del Institute of Pacific Relations y miembro de la participacion Filipina en el Joint Preparatory Committee on Philippine Affairs, nombrado por el Presidente de los Estados Unidos. En la National Constitutional Convention, fué chairman del Comite de Industria y miembro de los otros comites, instruccion publica, y defensa nacional. Actualmente es miembro del Historical Research and Markers Committee, Board of Indeterminate Sentence, Pardon Board, Philippine Economic Association y del Consejo Ejecutivo de la Philippine Academy of Social Sciences, representante de Filipinas en el World Alliance for International Friendship, secretario y director del Philippine Coconut Planters' Association, consejero del International Club de la Universidad de Filipinas y organizador del International Relations Club of the Philippines. Fué un tiempo presidente del Jose Rizal College y socio del Bufete Abad Santos y Benitez. Siendo hombre de letras y escritor ha escrito varios libros como la Historia Filipina, Economic Development of the Philippines, Philippine Civics y coautor del A History of The Orient. No siendo politico profesional, el Gerente General Auxiliar Benitez ha obtenido en el escrutinio final de los periodicos TVT 976 votos para el cargo de senador.

Mr. Paul P. Steintorf, comisionado comercial americano de los Estados Unidos, ha enumerado los siete futuros desenvolvimientos economicos de Filipinas como sigue:

1. Un cambio notable en la naturaleza y direccion del comercio de exportacion con mayor énfasis en materiales estrategicos y con una dependencia mayor del mercado de los Estados Unidos.

2. Una creciente dificultad se experimentará en la consecucion de muchos productos de importacion de-

bido a las condiciones de guerra en algunas partes.

3. Mayor restriccion del gobierno sobre los precios, y posiblemente un control radical se ejerza por el mismo gobierno para poner coto al alza de precios y evitar el agiotaje.

4. La probabilidad de que el gobierno de Filipinas se vea en la necesidad de extender ayuda a las industrias que han sido adversamente afectadas por la guerra.

5. Introduccion de cambios en la produccion de varios productos de primera necesidad a fin de afrontar las circunstancias reinantes.

6. Estimulo para los fabricantes locales a fin de poder sustituir los suministros que ya no pueden obtenerse del extranjero debido a la guerra, y asegurar la politica de propia-suficiencia.

7. La posibilidad de que haya inflacion como resultado de los precios excesivos y de la escasez de productos.

Se nota cierto entusiasmo de entre los dueños de cocales de mejorar la calidad de su copra por medio de un resecador moderno. Cuando este interes cunda entre los plantadores, entonces el sistema del "tapanan" habrá pasado a la historia.

Nuestras actividades durante estos tres meses pasados en relacion con la fabricacion de sacos por medio de la estopa del bonote, se ha suspendido temporalmente debido al alto costo de la produccion. Nuevos planes y estudios se están haciendo para mejorar la calidad de las fibras. Anualmente importamos jute para la fabricacion de sacos por valor de P4,000,000, pero tan pronto como se obtenga resultados satisfactorios los experimentos que se están haciendo actualmente, no solamente dejaremos de importar dicho material sino que nuestro pais se beneficiará grandemente por la nueva industria.

Los siguientes son los que están al frente de nuestras sucursales en provincias:

D. Jesus Montenegro, Gerente de Sucursales de Bisayas y Mindanao, con oficina central en la Ciudad de Cebu.

Hector Palma, Superintendente, Laguna Coconut Central, Alaminos, Laguna.

Moises Kalaw, Superintendente, Negros Oriental Coconut School, Ayuqitan, Negros Oriental.

Pedro Pica, Superintendente, Sariaya Model

ool, Sariaya, Tayabas.

Marcelino Garcia, Superintendente, Pangasinan Coconut School, San Carlos, Pangasinan.

Pedro Madrigal, Superintendente, Marinduque Coconut School, Boac, Marinduque.

Conrado Morente, Superintendente, Mindoro Coconut School, Calapan, Mindoro.

Jose Alvarez, Superintendente, Coconut Central Company, Atimonan, Tayabas.

LOS PRIMEROS LOGROS . . .

(Continuacion de la pagina 55)

Mientras estos logros pueden considerarse como pasos agigantados de la Corporación hacia la meta, que es la completa rehabilitación de la industria cocotera, sus dirigentes lejos de reposar sobre sus laureos, no se detienen ni por un momento y estan resueltos a sacar partido de todos los materiales asequibles del coco, desde la yema de sus hermosas frondas hasta la punta de sus recios raices. En este punto particular, aplaudimos los esfuerzos desplegados por los tecnicos industriales y por los tecnicos alquimistas empleados todos por la Corporación. En las escuelas para industrias caseras establecidas por la Corporación, los tecnicos industriales no cesan de crear articulos ingeniosos dignos de admiración, mientras por su lado los alquimistas tecnicos en los laboratorios de la Nacoco no cesan en sus trabajos de estudio e investigación descubriendo metodos ventajosos para los diversos procedimientos adoptados para la fabricacion del aceite, de la copra, del carbon de chiretas, la extracción de fibras del bonote y demas productos accesorios del coco, asi como el descubrimiento de nuevos productos obtenibles de esta maravillosa palma. En las escuelas de industrias caseras son de interes las creaciones de diversos articulos originales, productos verdaderos de ingenio, como los articulos de fantasia hechos de chireta; entre estos se encuentran platillos, tazas, azucareras, ceniceros, teteras, canastillas, bandejonas, alfileras, botones, etc.; de las hojas se confeccionan sombreros, bolsos, abanicos, carpetas, etc.; de los palillos que se sacan de las hojas se confeccionan canastillas, fruterias, etc.; del "guinit" (tejido que sostiene las palmas tiernas) se fabrican los capacetes ahora muy comunes en el ejército, en la costabularia y en el cuerpo de policia; del tronco se confeccionan mobiliario, cuadros, bandejonas, etc. En cuanto respecta al ramo culinario de las industrias caseras, hay una infinidad de confecciones culinarias que resultaría una letania interminable el nombrarlas todas. Para el beneficio del publico se han impreso folletos de recetas culinarias que abarca numerosisimas confecciones culinarias del fruto y de la yema del tronco del coco. Por parte de los tecnicos alquimistas, mucho se ha logrado tanto en procedimientos como en los trabajos de exploración sobre nuevos productos con buenas perspectivas de ser explotadas en el campo comercial. Dicho sea de paso que en esta empresa particular, mucho ha contribuido el Surco de Ciencias que cola-

bora con la Corporación Nacional del Coco en sus pesquisas en el campo industrial del coco, con mención especial al Dr. Vicente G. Lava quien mas empeño ha prestado a todo cuanto sea de interes para la industria cocotera. Los siguientes son los logros parciales de los incesantes estudios en el ramo:

1. Conversión del aceite del coco en combustible de motores de combustión interna, y en lubricante de maquinas.
2. Extracción de la harina del bagazo (sapal) del coco; harina propia para la confección de confites.
3. Extracción de las proteinas de la carne del coco para la fabricacion del sustituto del "Toyo."
4. Preparación del sustituto de la leche por medio del jugo ó leche del coco, tanto en forma liquida como en polvo.
5. Tablones aisladores fabricados del polvo del bonote.
6. Tejas a prueba de fuego y calor, compuestas de fibras de bonote y asbestos.
7. Ladrillos de carbon de chiretas.
8. Tablones plasticos (plastic boards) compuestos de estopa de bonote.

Ante estos logros alcanzados por la Corporacion Nacional del Coco en un lapso de tiempo marcadamente corto, no es mas que justo el reconocer y dar crédito a quien crédito se deba—a la Directiva encabezada por el gerente, a los consejeros tecnicos y al cuerpo de ingenieros. El dia 20 del presente mes de Agosto cumplirá la Nacoco un año de vida; dia de júbilo para el personal y directiva de la corporacion, asi como tambien para todos cuantos tengan interes por la existencia y éxito de la mencionada entidad. Por parte nuestra, los espectadores de todo cuanto ocurre en el orden natural de los acontecimientos, con interes especial a todas las empresas y medidas constructivas que lleva a cabo nuestro gobierno, nos hacemos copartícipes en el júbilo, y compartiendo en la celebracion de tan fausto acontecimiento, extendemos nuestros mas sinceros y cordiales parabienes y deseos por los continuos éxitos en la empresa hasta que consigan la completa rehabilitacion de la industria cocotera.

COMPLIMENTS
of
FLORENCIO REYES & CO.
Importers & Distributors
BUILDER'S HARDWARE
WATERWORKS MATERIALS

Main Office:
733 Asuncion, Manila
Tels.—4-90-30—4-79-08—4-70-91

Branches:
Harrison, Baguio—Tel. 328
A. Borromeo, Cebu City—Tel. 458

EVALUATING OUR WORTH . . .

(Continued from page 4).

₱26,369.75 for educational campaign to propagate the home industry, or a total expenditure of ₱899,247.65, including all other miscellaneous items, as of June 30, 1941. During the same period, it has made a total sales of the by-products of the coconut in the amount of ₱30,698.13, consisting mostly as follows: charcoal, hats, shells, copra, fiber, footwears, novelties, furniture, edible products, sacks, doormats, filters, handbags, wood preservatives, soap, lye, and various kinds of fiber products. At this writing, there are in operation schools in the following provinces: Tayabas (Sariaya and Atimonan) and Laguna. Others are being constructed in Capiz, Mindanao, Samar, Leyte (under construction), Cebu and Bicol provinces. In all these centers, coconut by-products are being utilized for useful home articles such as doormats, kitchen brushes, floor mops, hats, ladies handbags and fans, etc., coir fibers for ropes, sand bags, oil filters, and coconut shell charcoal.



Comptroller P. M. Gimenez

Prospect of the Industry

The Bureau of Science, the National Development Company, and the Nacoco have under experiments for sometime new phases of the industry such as the manufacture of roof tiles, insulating boards, plaster boards, all from the coir fibres; activated carbon for gas masks and decolorizing purposes, and electrodes for dry batteries and flashlights, all from coconut shell charcoal. Given more time to complete these different experiments and with the policy of our Board to produce them commercially at a minimum cost, I venture to state in all earnestness that the coconut industry will soon have a new lease in life, vigorous and independent of our trade relations with the United States. Of course, as we have previously stated, the efforts of the corporation toward this end will be futile unless the public cooperates by patronizing the products of our industries.

GREETINGS to His Excellency—*from*

INDUSTRIAL MANUFACTURING CO., INC.

Manufacturers of the well-known BAYAN LOOM, SPINDLES, and other industrial and household devices.

100% Filipino Enterprise

Dedicated to the development and intensification of the country's household industries.

Address communications to

P. O. Box 1913, Manila

Compliments
of
S. STADLER
CONSTRUCTION AND
MECHANICAL ENGINEER
For The
Coconut Industry



P. O. Box 1380

Telephone: 5-55-43

Manila

Dr. C. Jährling's
CALCIOGEN

For Pulmonary Tuberculosis in all
stages. Ideal, pleasant in taste,
with high content of
CALCIUM



Botica de Santa Cruz
Plaza de Goiti, Manila

Formula: Calx. 33 Gm., Acid Lact. 33 Gm., Ac'
Phos 43 Gm., Acid Hydrochloric 13 Gm., Arse-
triox 0.0065 Gm., Excipient ad. 1 liter
Form Approv. No. 7269

WE DO...

*Expert Blue Printers, Nice prints,
such as:*

- BLUE PRINT
- AIR MAIL PAPER
- BLACK & WHITE PRINTS
- OZALID DRY WHITE

—(O)—

Try our Wickes Machine to give you good
and quick service Reasonable prices offered.
Free collections & Deliveries. Ring up—

Mrs. P. I. Nazareno
Manager

If you want Rush Work call up the—

Central Blue Printing Company

Tel. 2-72-39—700-702 Misericordia—Soler
Sta. Cruz, Manila

COMPLIMENTS

OF

**Smith Bell & Co.,
Ltd.**

Machinery Department
P. O. Box 311, 229-13th Street
Port Area

Head Office:
Trade & Commerce Bldg.
123 Juan Luna
Manila, P. I.

Phones: 2-29-54
2-31-31
P. O. Box 311

Branches: — CEBU — ILOILO
LEGASPI — TABACO — CAGAYAN

Atlantic Gulf & Pacific Co.

OF MANILA

—oOo—

ENGINEERS

MANUFACTURERS

CONTRACTORS

MILL and MINE SUPPLIES

Telephone 2-40-61

71-77 Muelle de la Industria

Manila, P. I.

For Top Performance!



Mobilgas and Mobiloil

Standard-Vacuum Oil Company
Philippines