

THE

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COPY

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IN THIS ISSUE:
Coir Spinning and The Production
of Sandbags
By EUGENIO CRUZ and FELIPE CORTES

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October, 1941

Manila

COPRA AND COCONUT PRODUCTS REVIEW

By E. L. GONZALEZ
Bureau of Commerce

COPRA.—Despite the heaviest copra arrivals on record which totalled 839,794 bags, Resecada averaged ₱9.91 in September which was 18.25% better than that of the previous month and also higher than any September of previous years except that of 1936. Receipts of copra in Manila for the first nine months of the current year exceeded those of last year for the same period by about 900,000 bags and were much greater than the totals for any year except those of 1938 and 1940. At the rate copra is being moved to Manila, the trade expects to find that copra receipts for 1941 would reach the highest mark in the entire history of the industry.

The local market started at ₱9.00 with the OPACS ruling on fats and oils injecting a note of caution among local mills and buyers. But on the strength of cottonseed oil and lard futures in America which indicated higher price levels for copra and coconut oil, local mills advanced gradually their bids to ₱10.25 in the first half of September, with second hand operators generally bidding at 25-50 centavos higher than the current quotations. Subsequently, important buyers held aloof due to insufficient warehouse space to cope with increased arrivals with the result that Resecada dropped nominally to ₱10.00 until the 23rd. Developments at the end of the month hinted at a more encouraging aspect for Resecada as the market closed firm at ₱10.50 with a strong possibility of doing business at slightly better prices for good parcels.

On purely local factors, prices of Resecada in September were rather slow in catching up with the improved tone of the American market. On the Pacific Coast, sales were made at 4.10-4.15 cents, sellers' space, but bids closed at 3.90 cents, sellers' space.

Manila, buyers, per 100 kilos, delivered:

	<i>Opening and Low</i>		<i>Closing and High</i>	
Resecada	₱9.00		₱10.50	

AVERAGE PRICES FOR SEPTEMBER, RESECADA PER 100 KILOS

1941	1940	1939	1938	1937	1936	1935	1934
₱9.91	2.85	6.73	5.75	8.28	12.52	7.32	4.81

ARRIVALS OF COPRA IN MANILA

This month	839,794 bags
Previous month	588,901 "
September, 1940	482,097 "

COCONUT OIL.—Business was slow in the United States but the market remained steady. Sales were recorded on the Pacific Coast at 6-1/2 cents, f. o. b. tank cars. New York was quoted at 7-5/8 cents for spot and 7-3/8 cents for deferred shipments. Local offerings closed at 22 centavos per kilo, delivered in drums, or an improvement of

(Please turn to page 6)

Coir Spinning and The Production of Sandbags

By EUGENIO E. CRUZ and FELIPE CORTES

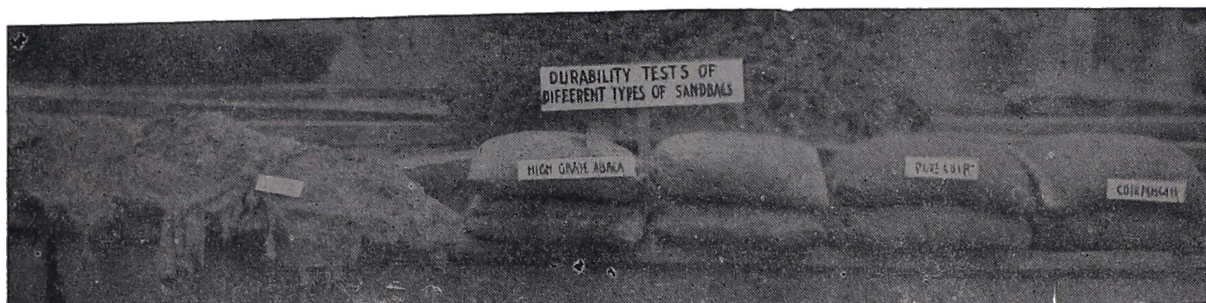
*Fiber Research Section
Bureau of Plant Industry*

(Editor's Note: *Additional illustrations for this article appear in the centerspread pictorial.*)

THE Philippines, in endeavoring to decrease her importation of foreign commodities, has embarked on industrial ventures with varying success. Some of these have been proved failures, others have been pronounced successful, while still others are yet in the experimental stage. To the last or so-called experimental ventures belongs the infant coir sack industry, which became a part of the country's industrial scene when sandbags were produced for the CEA on May 14, 1941. The government entity financially backing the enterprise is the National Coconut Corporation, which undertakes sandbag production principally through its Manila Coir Unit

this institution will help promote the coir industry, if properly guided, accommodated and financially backed up by enterprising industrialists.

Besides the manufacture of sandbags, this unit is currently conducting some researches on coir yarn spinning and coir sack burlap weaving, with a view to reducing the cost of production by increasing the speed of weaving and reducing the weight of sandbags. It may be mentioned, in this connection, that preliminary spinning work on coir was done by the Bureau of Plant Industry in 1933 upon the installation of the old Bohler coir defiberizing machine in the premises of its Fiber Research Section, where this unit is now located. Evidently, the present method of spinning practiced in this unit is an offshoot of this Bureau's previous exper-



A view of different types of sandbags after eighty-two days in the open. Note the busted jute sandbags at the left and the high-grade abaca sandbag, next, beginning to rot.

No. 1, located in the premises of the Bureau of Plant Industry, Manila, and which shoulders the turning into finished products, besides its own output, of coir yarns and burlap received from other units of the Corporation established in Manila, Tayabas, Laguna, Pangasinan, Rizal, Albay, Bulacan, Batangas, Mindoro and Marinduque.

The Manila Coir Unit No. 1, taking advantage of all the facilities offered by the Bureau of Plant Industry, has produced from May 14, 1941, to September 24, 1941, 7,206.5 kilos of coir yarn, 23,110.0 meters of coir sack burlap and 46,537 sandbags. It has served as an educational institution or model school to hundreds of people anxious to learn spinning or weaving while earning at the same time. At present, it maintains 54 laborers working on daily basis and some 50 weavers and 96 spinners on *pakiao* system, thus helping alleviate the unemployment problem in the city. Some 600 apprentices have already graduated or been dropped from the payroll; they learned either spinning coir yarns or weaving coir sack burlap or both. Obviously, those who left

experiments. Because efficient spinning and weaving work requires equally efficient devices to accomplish the utmost production of coir yarns and burlap, it becomes necessary to say beforehand something on spinning and weaving devices presently employed in this unit.

The spinning device, in vogue, is the Siltocruz spinning wheel, Siltocruz standing for Silayan, Torres and Cruz. This device is the result of ten-year research work on spinning of the Bureau of Plant Industry. It has undergone constant evolution and improvement and can aptly be regarded as one of the best, if not the best, available in the local market, for the time being. Properly intended for spinning ramie yarns for the production of ramie linen, which necessarily needs more twists per inch in the yarns produced, it has therefore the advantage over other spinning wheels in speed and twisting power (see Plate 2). Even in the spinning of coir, so noted for resiliency, it still can be expected to turn in, at least, the maximum amount of coir yarn, depending of course on

the ability and efficiency of its operator. The specification for this spinning wheel can be roughly stated, thus:

The frame of the spinning wheel should be made of tanguile, properly set and at least 18" deep, 25-1/2" wide and 31" high to the surface of the table to make the wheel easy to operate in sitting position.

The flywheel and drive pulley should be made of guijo, 1-1/2", the connecting rod, crank and shaft of the flywheel of yakal, and the pedal of tanguile.

The spool should be lathe turned and its flanges have a diameter of 7 1/2", made of narra and with a palosapis cylinder. The inside diameter should not be more than 3/4". Both flanges should be shellac-finished.

The driven pulleys attached to the spool should be made of mangachapoy, the one driving the spool at least 4" in diameter, and the outer one driving the plier not more than 5" in diameter. Both driven pulleys should be shellac-finished.

The plier arm should be made of tanguile and the spindle of guijo, properly sand-papered. The right arm of the plier should be provided with twelve 1 1/2" screws, each covered with copper tubing.

The body of the spinning wheel should be finished with a vermilion paint.

The handlooms currently used in the weaving of coir sack burlap are of four types; namely, (1) Cavite type, (2) Ilocano type, (3) Taytay type and (4) Visayan type (see plate 3, and plate 4, No. 2). Of these types, the Ilocano type is the one predominantly used, being more in number and already proven, while the other three types are yet under observation and experiment. Automatic handlooms of American make were tried but they were found to be better than the native handlooms only when weaving maguey warp, which is not as much affected by battening as the coir warp. With coir warp they were found more difficult to operate than the native handlooms. The mechanical loom of English make (see plate 5) was also tried but it was found expensive to operate, it being run by engine power

and can only operate on big yarns which make the sandbags as equally expensive as they are heavy.

There is not much improvement made in each type of native handlooms employed. In all cases, the pulley type of heddle horse is being used. The old Ilocano type of heddle horse, supported by cumbersome bamboo joints filled with stone weights, is completely done away with.

The dents of the reeds are made of plain galvanized iron, instead of bamboo, which quite often breaks under the stress and strain of the coir warp ends during intermittent battening. The warp roller is so made that a wooden flange is attached to one of its ends towards the inside and that when the coir warp is completely wound over it a big wooden spool, filled with warp yarn and proportionally placed, is formed. This warp roller is also made detachable so that it can be removed anytime and attached to the new warping frame (see plate 6).

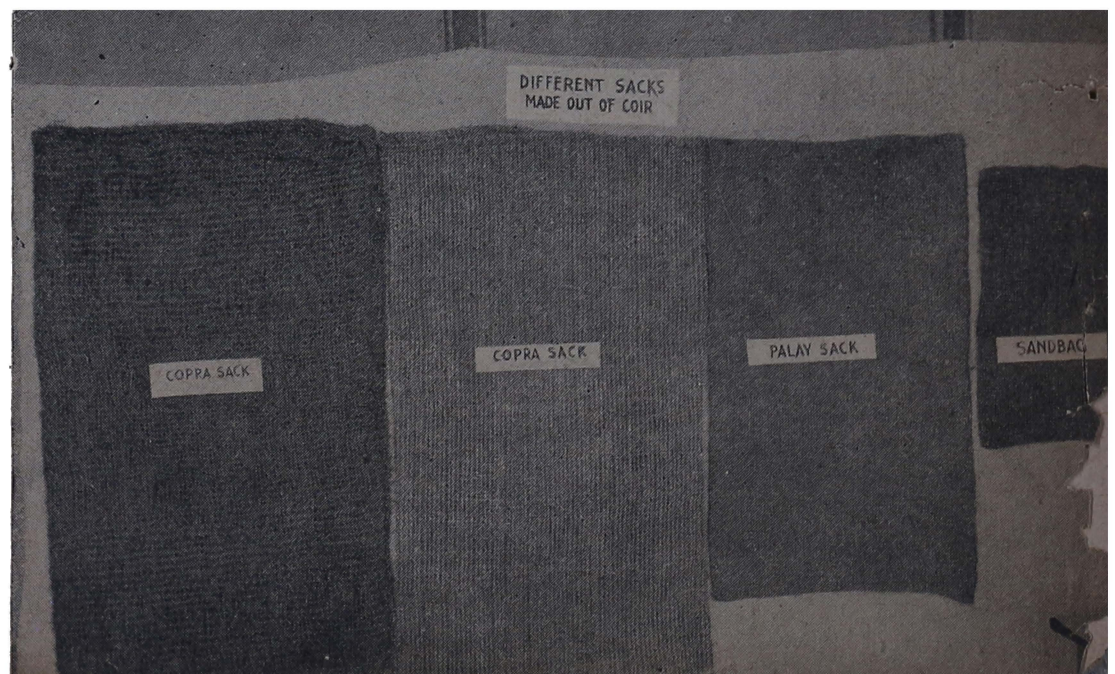
The new warping frame can be roughly described as follows: At the outset, spools corresponding to the number of warp ends to be warped are each filled with the desired yards and then placed in a warping rack in series. The warp ends from the spools are collectively gathered and made to pass through nail dents, 1 cm. apart, then the improvised reed and finally each equally tied inside the detachable warp roller, which is regulated by means of a wood lever and gradually rolled over and over again until the desired length of the warp yarn is attained to prevent the warp ends from going over their respective nail dents and the reed. The specifications for this warping frame will soon be published separately.

Spinning

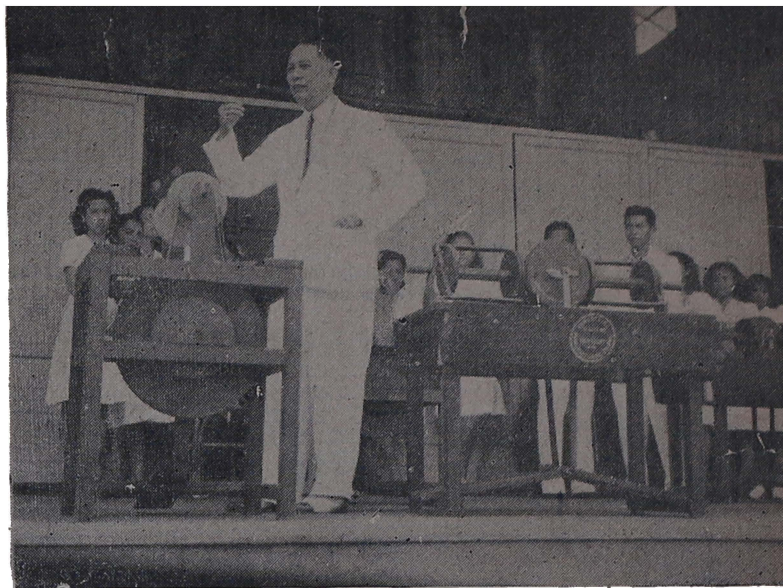
Efficient coir spinning is determined by several factors, among which is the quality of the coir used. If the coir is not first passed thoroughly through the carding machine, the pulps are not removed, thus the fibers cannot easily stick in unison with each other during in the spinning process, making the spinner

(Please turn to page 14)

A view of the different types of coir sacks produced. The copra sack second from the left has maguey warp bud and coir filling, while the other three sacks are made of pure coir warp ends and filling yarns.



Assistant General Manager Benitez addressing students of the Philippine Women's University on the occasion of a spinning demonstration by Nacoco instructors.



The Spinning Wheel:

A Symbol Of Personal Freedom

By CONRADO BENITEZ
*Assistant General Manager
National Coconut Corporation*

*(A speech delivered over Station KZRH during the
Nepa broadcast on October 4, 1941)*

Ladies and Gentlemen of the Radio Audience:

I am glad to have this opportunity tonight to make a public report on the present state of the coconut industry in this country, and on what the National Coconut Corporation is trying to accomplish to enlarge its usefulness.

By way of illustration, I want to tell you of a high school girl who a few days ago came to my office, asking for a job. Of course, we have no more clerical positions available, but I asked her if she could spin. And she replied that she could. I then suggested we could give her a spinning wheel which she could take home and use to spin the coir which we were willing to give her, with the offer that we shall buy the yarn produced. She consented, and now, instead of being a jobless girl, she has become one of the productive elements of this community, helping to utilize heretofore wasted by-products and making possible the establishment of the sack-making industry, and at the same time satisfying an immediate need for sand bags.

The other day also, I took one of our spinning instructors to a public institution where we have 100 spinning machines. The instructor in less than one-half hour was able to teach one of the members of that institution who, in turn, is expected to transmit what he had learned to his companions. In view of this demonstrated facility with which spinning can be taught, the superintendent of the institution asked for more spinning wheels and also for a few of our looms in order that the yarn produced may be converted into cloth, ready for sack-making. Only

this morning, a local university asked that a few of its girl students be taught spinning to enable these students to go back to their respective home communities and teach the wives and children of their *kasamas* this new productive occupation which utilizes a formerly wasted by-product of the coconut. I am inspired by this evidence of the growing social consciousness among our young people who feel that they owe a certain duty to their less fortunate countrymen, and who believe in making a definite contribution to the cause of national self-sufficiency, especially in these days of emergency. I regard the spinning wheel which has been associated with man from time immemorial, as a symbol of his personal freedom. With the advent of the machine age, man lost his freedom because he could no longer produce what he needed without securing the aid of a machine owned by others. But I look upon the spinning wheel that we are now giving to the individual for the production of coir yarn as a means of liberating and enabling him to create and produce something which he can call his own.

The Coconut Corporation is now engaged in buying yarn which is produced in increasing quantities by the hundreds of persons who are fast learning to spin. So through our efforts, we have converted a formerly wasted by-product of the coconut into something valueable, and have enhanced the earning capacity of the individual, thus contributing to the self-sufficiency of the nation.

In a way, I agree with Ghandi, the great Indian leader, who has an abiding faith in the spinning wheel as an instrument of individual liberation. But

I regard the spinning wheel which has been associated with man from time immemorial, as a symbol of his personal freedom. With the advent of the machine age, man lost his freedom because he could no longer produce what he needed without securing the aid of a machine owned by others.

let me not be misunderstood. I am not advocating a return to the primitive, nor am I antagonistic to the use of the machine. On the contrary, I am searching for a more efficient machine from anywhere in this country or abroad, a machine that will defiber the coconut husk in a more efficient manner. Thus the tempo of our campaign for the distribution of spinning wheels and the establishment of a home industry based on the utilization of the husk must necessarily be determined by our success in securing defibering machines which are modern and efficient. This is a challenge to the mechanical proficiency of our people, a challenge which I have no doubt will soon be successfully met.

By enabling therefore every willing person to produce something that has a market value out of the coconut husk, the spinning wheel of this Corporation has become a potent factor for the industrialization of the coconut as well as an effective instrumentality for the carrying out of President Quezon's policy of distributive justice. And right now, we have an understanding with the National Social Sec-



Learning the art of the spinning-wheel from a Nacoco instructor.

urity Administration that no man who is willing to work need be unemployed for he can be employed by means of the spinning wheel. It is possible to give every man something to do. Hence, there is no room for pauperism, if and when the great message of the spinning wheel is properly heard and acted upon by our people.

This is what we are doing with the husk and its industrialization is only a sample of what has been done by this Corporation in utilizing the other by-products of the coconut. We are pushing the making of charcoal also by building the kiln for the planter and buying his products. We are improving the quality of the Philippine copra by constructing the copra driers for the planters on the easiest possible terms. And incidentally, we have discovered the great American market for one of the minor products of this Corporation. I refer to the buri braids which can now be exported to the United States in unlimited quantities.

I have recently made a trip to the Visayas and Mindanao, calling on provincial governors and officials, and I offered to them the services that this Corporation is ready to render to the people. After the establishment of a few provincial coconut centrals, we have discovered that rather than rush the construction of new ones, it is more advisable to share with the planters the already known benefits of industrialization revealed in our present centrals. We are, therefore, going directly to the planters and offering them this great boon. I earnestly hope they will respond to our call.

COPRA AND COCONUT . . .

(Continued from page 2)

2 centavos during the month. The closing quotation in September almost trebled the price last year for the same period, which was ₱0.08.

Manila, sellers, per kilo, delivered in drums:

Opening	Low	High	Closing
₱0.20	₱0.20	₱0.22	₱0.22

COPRA MEAL.—The American market was nominal throughout at \$35.00 per ton, Pacific Coast in the absence of shipping space. Local offers were stationary at ₱18.00 per ton, ex-warehouse.

DESICCATED COCONUT.—The price list in New York was revised to 8½ cents, up ½ cent. The trade, however, was reported as taking orders at 1/2 cent lower for fine and medium cuts. Demand was considered fair, but the seasonal pick-up was expected. Another steamship line cancelled its diversions which was interpreted by the trade as an influence for higher prices.

"The income derived from coconut products is insufficient to meet the demands of a growing family... another possible source of income is goat raising. For milk alone, starting with two does and a buck at the rate of 1/2 liter per day from 100 to 200 days, family needs could be supplied."



If I Were A Coconut Planter

By FRANCISCO D. MARQUEZ

*Administrative Officer, Department of
Agriculture and Commerce*

COCONUT, variously described as "God's best gift to the Filipinos", "the brown man's burden"(1), and the "lazy man's crop", once had its heyday. There was a time when it was nursed and patted, like the legendary golden calf. Why not? It was turning raw nuts into gold in the fashion of King Midas.

Much of that boom is now but a faint memory of by-gone years. People in Laguna and Tayabas and of other coconut regions are still fond of recalling the days of the early twenties when fortunes were being made by men who did nothing but to literally watch their coconut palms grow and bear fruit. A little bit shop-worn but still vivid are the stories of how a man-about-town of San Pablo, Laguna, used to go around with rolls of coconut money and how he awed people by lighting his cigar with crisp twenty-peso bills, or who, on occasions, used to drop his diamond ring on the floor merely to attract notice. Coconut then was the Philippines No. 1 commodity and these coconut planters were then having plenty of fun with their fortunes.

But, as already stated, much of that is now nothing but of the past. Like most things in this world, coconut has its up and downs.

The coconut industry, as early as ten years ago, began its disheartening toboggan. It has been tobogganing since then, leaving in its path a coterie of disheartened planters who did not have the foresight to realize that coconut depends entirely upon a very fickle foreign market.

The history, and the heartaches of that toboggan, may be gleaned from the following statistical data:

In 1920, or thereabouts, coconut sold at from P90 or even P100 per thousand nuts. Today, it is selling only at P11 per thousand nuts. One or two years

back, it was selling at only P2.50 per thousand—and planters preferred to watch their nuts fall to the ground rather than bear the expenses of gathering.

The case of copra is just as dismal. What used to sell (Buen Corriente) at P32 per 100 kilos way back in 1918 and 1919, sell today for only P7 per 100 kilos.

All these are stark realities and form part of the lessons which the years have taught our coconut planters. If I were a coconut planter—and I am as such as one because I have taken the cause of the coconut planter at heart, — I would not be depressed over present conditions. Of course, having set a standard of living for myself and for my family, and having enjoyed a few luxuries during the days of plenty, it will be difficult for me to adjust myself to a new set of conditions. I have children to send to school. I have a duty to them and to myself. I shall therefore make an effort to improve not only my own economic position but also that of the community in which I live. For this reason, I would lay down for myself a rigid personal program.

Having lived the best years of my life on a coconut plantation as a coconut planter, and not having the courage to hew down my coconut trees for reasons both sentimental and practical, I shall stick to my own farm and improve my plantation. I shall draw from my past experiences and nevermore commit the same errors I committed in the past. I am now richer in experience, if not in money, and I know I shall be able to conquer those odds which beset every planter who, in the past, had the mistake of not thinking twice.

(1) Jim Marshall in "Collier's"



"Trees attacked by coconut bud-rot should be immediately removed. . . bud-rot-infested trees will not continue to produce fruits."

There is a patent need for getting the most profit out of one's coconut plantation. Coconuts, like most agricultural plants of the Philippines, could be made to yield the maximum number of nuts through scientific cultivation. The Government, as every coconut planter knows, has extended aids along this line. The result of years of experimentation and study of our Government experts are available today, unlike twenty years ago, to every coconut planter who wishes to draw from his plantation the maximum yield. If I were a coconut planter therefore, I shall not be indifferent — as many coconut planters still are — to the efforts of our Government in this direction. I shall not hesitate to consult the officials of the Bureau of Plant Industry of the Department of Agriculture and Commerce on my problems, particularly in checking the damages of insect pests and diseases which are constantly at work in my coconut trees. Coconut beetles commonly called "Uang" and leaf-miner cause much damage to trees. Trees attacked by coconut-budrot should immediately be removed not only in compliance with Government order but also because they are very dangerous to the rest of my coconut trees. Besides, a bud-rot infected tree will not continue to produce fruits. Every coconut tree that is affected by bud-rot is a focus of infection of 10-15 surrounding trees in one year. Therefore, I shall willingly follow the order of the government to have it cut down and burned. Then also, I shall resort to a more scientific method of taking care of my plantation not only in keeping away all unnecessary weeds that rob my plants of food elements but also in planting cover-crops which not only enrich the farm but also prevent the washing away of the soil and its fertility in the form of erosion. If my

plantation is flat and low and susceptible to water-logging, which is often manifested by the stunted growth of my coconut trees and yellowing of leaves, I shall try to provide proper drainage by digging canals all around for the purpose. In other words, I shall look into the proper development of my coconut plants so as to make them yield for me the maximum and at the same time expect them to be productive for a longer period of time. But I shall not confine my efforts to coconut production alone.

Every coconut planter has his own bitter pill to take, and one of them, to our recollection, happened way back in 1928 and 1929.

Just as we were dreamily brooding on the boom years and just as we were elatedly expecting the promised "better day around the corner," a new plant pest, the leaf miner descended upon us and wrought havoc in our plantations. The Government immediately came to our rescue to eradicate the pests spending over half a million pesos — and spared no efforts to save our coconut to which we coconut planters must all be grateful to this day. This disaster, if we can call it a disaster, proved to be a blessing in disguise to us for it made us wake up to the realization of the fallacy of one-crop system and the wisdom of "putting our eggs in more than one basket." Since then, coconut planters in certain regions of Tayabas and Laguna have started planting secondary crops to supplement their pest-infested coconut farms. The lesson was bitter but the result is sweet.

I shall no longer be a prey to usurers and Chinese middlemen. Profits in every merchandise sold through a middleman, go to that middleman and not to the producer. I shall avail myself of the services of the National Produce Exchange which is under the management of the Director of Commerce which, I understand, has all the facilities for handling goods direct from farmers. Or, I shall engage in a direct sale of my nuts for the desiccator or for food or for copra making. I shall also avail myself of the facilities of the National Coconut Corporation, a recently organized government agency intended to take care of the welfare and interest principally of the coconut planters. I shall take advantage of the services being rendered along improved copra production by using improved copra driers and the utilization of other coconut by-products and therefore properly utilize coconut husks and coconut shells which are being thrown away as wastes in many coconut plantations of the Philippines. I shall run my farm in the modern, model way and see to it that coconut by-products are not wasted. I shall join cooperative associations of coconut growers that have been organized or help organize one in my community for the purpose of enhancing or improving our economic welfare. Through an association of this nature, we can pool together our resources and energies in securing credit aids from the Agricultural and Industrial Bank or other banking institutions instead of becoming easy prey to unscrupulous money lenders. Through the same institution we could estab-

(Please turn to page 10)

NACOCO PLAYS HOST TO WRITERS

Novel Picnic to Atimonan Unit described as "Invasion of Talaba;" menu named after writers favorite columns.

By N. V. M. GONZALEZ
Staff Member, Graphic

SOME months ago, the National Coconut Corporation officials, in a characteristic mood, thought of the nation's writers and asked: "Do our writers know what the Corporation is doing and what it proposes to do in the future?"

Not content were the officials with what the general public, through the newspapers, have known and are made to know from time to time about the activities of the Corporation, Nacoco felt that it was essential that the writers, as a group distinct from newspapermen, should know and see what the Corporation's activities are.

Naturally, the writers themselves were only too eager to find out. And it turned out that the crowd which Nacoco officials, headed by Assistant General Manager Conrado Benitez and by Secretary-Treasurer Benjamin Salvosa, managed to muster represented the cream of the nation's newspaper and writing colony.

The writers launched what henceforth will remain in Nacoco history as the "invasion of Talaba"—an offensive that was successful from every point of view.

At Sariaya, Nacoco's biggest and most flourishing plant south of Manila, the writer-guests were shown how coconut products are made and so impressed were some of them that the Sariaya plant's showroom actually heard the trickle of cash!

It is known, for instance, that Mrs. Maria Luna Lopez, essayist and FEU professor of English and the wife of S. P. Lopez, Herald Associate Editor,

bought a couple of pesos' worth of Nacoco soap. The product had to be placed in a bayong. And ditto for Mrs. Angel C. Anden, who keeps house for Graphic's managing editor.

Mang Kiko of the Tribune is to-day the proud possessor of a Nacoco guinit helmet, while his photographer Manuel Alcantara to-day sports a Nacoco cowboy hat. Philippines Free Press' good, old boy Juan Collas bought a pair of bedroom slippers, and you shouldn't be surprised if he thinks they're simply comfortable. Of course, we wonder even to this day whether the purchase was the idea of Mrs. Collas, who was in the party.

After Sariaya, the party proceeded to Atimonan, and beyond: which is Talaba, where the Coconut Central Co., Inc. is located. This Central is being operated on funds advanced by the Nacoco. Here, the writer-guests picnicked, were treated to drinks, lechon, crabs and shrimps. They were surprised to find that the divine afflatus had hit the Nacoco chief, who named his dishes after the country's famous newspaper columns and columnists.

Thus, "Maybe" became the day's designation for the lechon. The caldereta went by the appellation "So It Seems." The shrimps and crabs borrowed for the nonce Herald's motto: "Always First, Always Fair and Always in Full," which was indeed fitting.

Mang Kiko, of course, scaled another run in popularity when a manok sa gata was named after him.



When the "invaders" of Talaba took time out. Group picture taken in front of the "Ceylon" drier at Talaba.

IF I WERE A COCONUT . . .

(Continued from page 8)

lish cooperative stores wherefrom we could buy our daily needs and other necessities at a much lower price. These may include different foodstuffs, clothes and even the implements needed on our farm work.

In view of the increasing necessities of a growing family I shall try to look for other sources of livelihood and for the education of my children not now possible from purely coconut income. I shall therefore resort to diversification of crops and animal products. For this purpose, the assistance of the Bureau of Plant Industry and Animal Industry will be needed. I have learned that there are now found many kinds of money crops both temporary as well as permanent that could be raised. I have seen during my trips to neighboring provinces that a number of coconut farmers among others, now successfully grow bananas, lanzones and mangosteens planted between coconut trees. All of these are now giving appreciable incomes to those who have them. As for temporary crops, I also see that camote, ginger and arrow-roots are grown successfully and even rice, corn and many kinds of vegetables. All available vacant spaces and open fields will henceforth be devoted to those crops if I ever expect to survive the pressing economic necessities being brought about by the changing economic conditions. I am now convinced that the income derived from coconut products is insufficient to meet the demands of a growing family even with the return of normal prices of copra and raw coconut products.

But I shall not be satisfied with that. I have also learned that animal products could be readily raised. The Director of Animal Industry now tells us that by starting with 2 sows or female pigs with one boar I can reasonably expect 20 small pigs after two breeding years. The food for these will only consist of coconuts supplemented with camote, corn and domestic refuse. I can readily imagine how much additional income I can derive from 20 litters sold at a minimum of ₱5 each of the improved breeds. They will only need around 60 to 100 square meters of ground of my farm. Another possible source of income is goat raising. For milk alone, starting with two does and a buck at the rate of 1/2 liter per day from 100 to 200 days, family needs could be supplied. Meat is likewise available. Then the raising of chicken comes in. Starting with 12 hens and 2 roosters one could readily have in a comparatively short time 1,000 chickens consisting of 600 layers and 400 for replacements. For egg pro-

duction alone this number could readily produce over 300 eggs daily. The chicken meat will be available from culled ones. Feed is not also expensive as it can consist merely of corn—darak, etc.—which can partly be raised in my own farm. I shall do all these because I have a primary duty towards my family—to my wife and to my children who should all go to school—and to the community in which I live. I shall not be a drag to the economic progress of my country. On the contrary, I shall exert all efforts to aid in the difficult task of building our nation's economy.

Reverses in the market will not daunt me. Neither has it daunted other coconut planters. This is borne out by the following facts: There has been a steady increase of hectarage planted to coconut. In 1934, only 608,200 hectares were planted to coconut. In 1938, this has increased to 643,110. There has also been an increase in the total number of trees planted, as well as in the total number of trees bearing fruits. In 1934, only 74,372,100 trees were bearing fruits; in 1938, the figure was upped to 91,178,800. The total value of production has increased from ₱27,146,650 in 1934 to ₱92,126,490 in 1938, or a gross income per hectare from ₱69.62 to ₱191.13.



Francisco D. Marquez
author of this article

The coconut is an important world commodity, and I should not be blamed if I had staked my own life and lot in its production. It must be understood that Philippine copra production represents approximately 34 per cent of the world's consumption of this commodity. It also represents 27% of the Philippine yearly export. In a recent report on the vital defense needs of America Secretary Frank Knox of the U. S. Navy said: "Coconut shell charcoal is used in the manufacture of gas masks. We have no production of this necessary material, importing most of our supplies from the Philippines."

Would you blame me, therefore, if my spirit refuses to yield to any other temptation? I still believe I can work out satisfactorily my economic salvation.

Flour Substitute From Coconut

By P. E. Torres, Rosita Jiao
and Teodora Gilbuena

Bureau of Science

AT the present time there exists a great shortage of bottoms for both our exports and imports. Only the very essential materials could be assured of being shipped. Although the Philippines is capable of producing the products for foreign and domestic consumption, she can not be so sure that all these products can be brought at once to the countries that need them. The same case exists with regards to our imports. With this view in mind, there arise problems of producing the products which we could hardly secure from abroad under the present circumstances. If, producing these needed products would not be profitable, then the problem resolves on how we can produce substitute for them.

Among the necessary imports that would be difficult to secure in case of blockade is wheat flour. We import annually around 107 million kilos of flour valued at nine million pesos. The Philippines do not grow wheat from which we can manufacture wheat flour. A substitute for wheat flour is necessary if the local demand is to be supplied. Locally, there are several materials from which flour substitute can be made, such as casava, corn, camote, etc. Comparatively speaking, there is very little area devoted to the growing of these starch bearing materials, and before a large scale production of flour substitute from these materials can be made possible, an extensive agricultural development will also have to be made.

Flour from the Coconut

The coconut, termed appropriately as the Tree of Life can furnish us a good material from which a flour substitute can be derived. Although Filipino, Dutch, American, and English investigators have mentioned and studied coconut flour in their respective publications, its commercial possibilities have not been thoroughly discussed. Extensive work on the nutritive value of the constituents of fresh coconut meat have already been done. This has been compiled and explained by Miss Orosa of the Bureau of Plant Industry in her article in the September issue of this *Journal*. From the pilot plant in the Bureau of Science, coconut flour has been produced, and this has been used in conjunction with other local flour materials in making bread, cookies and cakes. Several investigators (1) in Ceylon and the East Indies proved that the flour produced from coconut meat is nutritious, and as a result, coconut flour is being incorporated in the daily diet. Basing on all these known experimental facts, it can be safely stated that coconut flour would make a good flour substitute. It is the purpose of this short article to discuss the manufacture of coconut flour.

Methods of Manufacture

The analysis of fresh coconut meat is shown in Table I. This table shows that, if the oil and the

water are taken out from the meat, the remaining residue will consist mostly of protein and carbohydrates, the primary constituents of flour. The above-mentioned Ceylon investigators prepared their coconut flour by pressing out the oil from desiccated coconut. The analysis of this flour is shown in column 2, Table I. The process of making flour by this method is costly because one has to make desiccated coconut first before he can make the coconut flour.

Table I—Comparative Analysis of Coconut and Wheat Flours

	1	2	3	4	5
	Fresh Coconut Meat	Ceylon Coco Flour (From desiccated coconut)	Roller-Expeller Coco Flour (Lava process)	Continuous Press Coco Flour (Lava process)	Wheat Flour (Ave)
Moisture	48.0	5.7	6.0	6.0	12.0
Ether Extract	35.5	7.2	5.0	6.0	1.0
Proteins	4.3	20.4	11.6	4.3	11.4
Crude Fiber	2.1	9.2	14.7	18.3	1.0
Carbohydrates etc.	9.0	52.1	60.3	64.4	74.1
Minerals	1.1	5.4	2.4	1.0	0.5

The new Lava process of making oil and coco-milk directly from fresh meat yields a coconut meat residue from which most of the oil has been extracted, and from which flour can easily be made. The making of flour from this residue may be accomplished by two methods. As was mentioned in a previous article, (2) the new process involves the extraction of the "gata" or liquid emulsion from the meat. This may be effected either by (1) roller press-expeller-hydraulic press process or by (2) a continuous roller press method. In the first method the ground meat is passed through a roller press to separate the liquid emulsion from the meat residue. At this stage most of the oil and sugars in the fresh meat are extracted. The "sapal" or meat residue is dried in a continuous drier of the type used in the preparation of desiccated coconut. The dried "sapal" is fed into an expeller in order to take out the remaining oil. From the expeller or hydraulic press the "sapal" is passed through a pulverizer which reduces the size of the particles to that of flour. Northcutt, in a patented process claimed that the dried coconut meat could be ground in a high speed hammer mill to produce a product which can be emulsified
(please turn to page 19)

(1) Dr. Reginald Child, Director of Research, Coconut Research Scheme discussed the food value of the products obtained from the coconut Kernel in the July, 1939 issue of *Young Ceylon* (Coconut Number).

C. P. Jansen made a comprehensive study on the nutritive value of coconut presscake and his findings which were published in *Mededeelingen Burgerlijken Geneeskundigen Dienst in Nederlandsch-Indie* (1920) pp. 1-21, showed that the presscake can be used as human food in case of emergency

(2) The Commercial Possibility of the Lava Process—From the Standpoint of Machinery and Equipment by P. E. Torres, *Coconut Journal*, March, 1941.

Coir SPINNING AND WEAVING



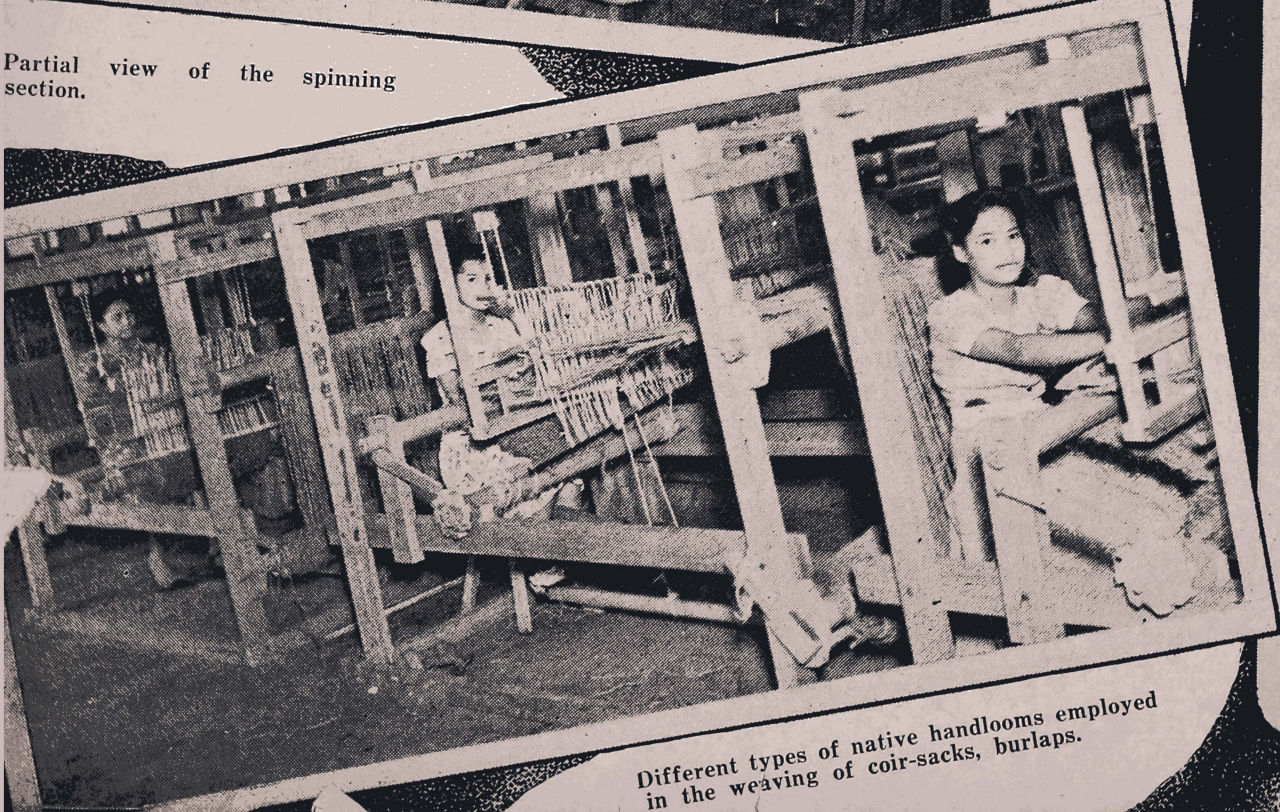
NACOCO General Manager M. Rodriguez observing the operation of the English Mechanical Loom.



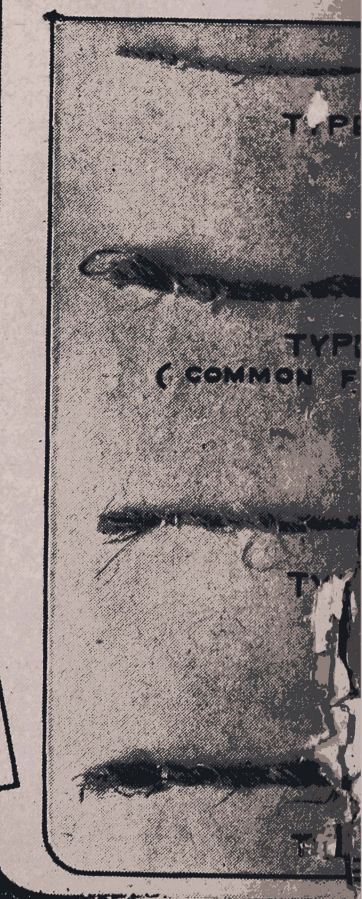
SILTOCRUZ spinning
The Lady is



Partial view of the spinning section.

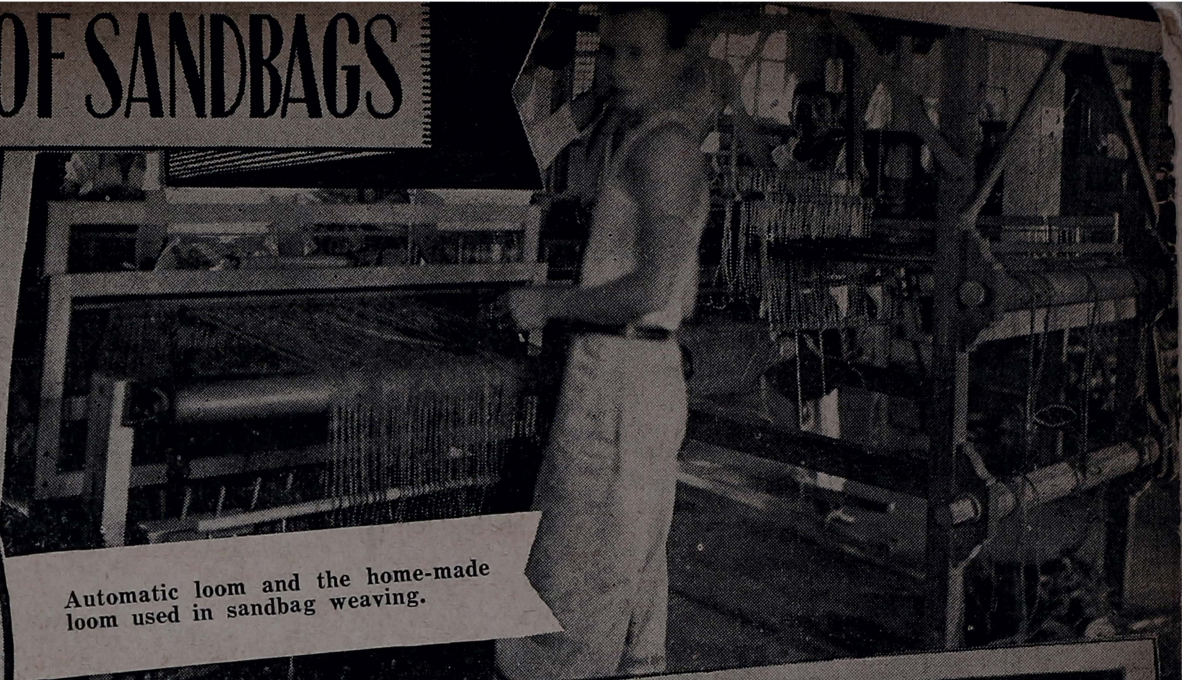


Different types of native handlooms employed in the weaving of coir-sacks, burlaps.

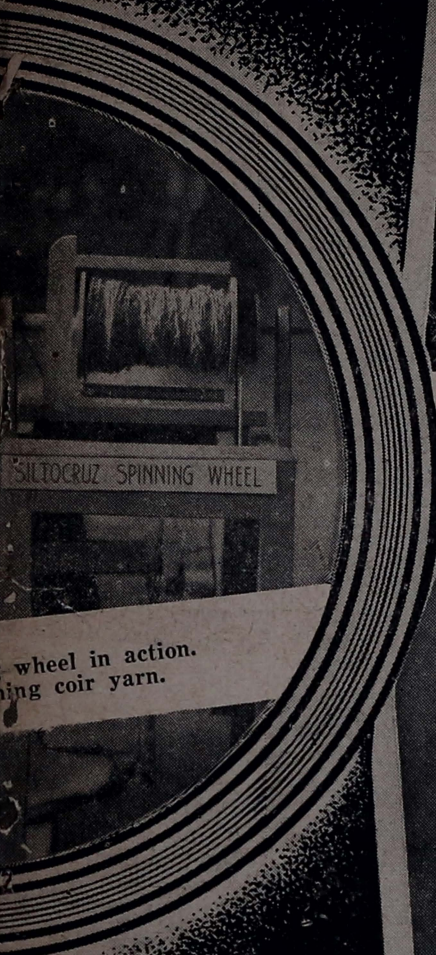


Four types the Manila

PRODUCTION OF SANDBAGS



Automatic loom and the home-made loom used in sandbag weaving.

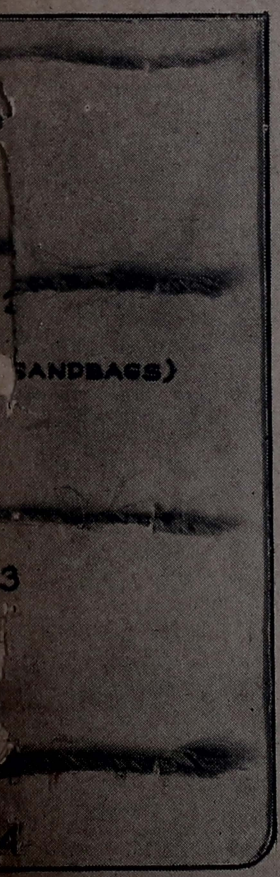


SILTOCRUZ SPINNING WHEEL

Wheel in action. Spinning coir yarn.



The sewing department. Note the three Goliath sewing machines in action sewing bags.



SANDBAGS)

3

Yarns for
No. 1.



View of the newly invented warping frames in operations.

The Coconut In Emergency Times

A prominent doctor of Dumaguete, Oriental Negros, the other week volunteered a piece of information to us which we may just as well transmit to our readers because of its value and significance to the coconut as part of our national diet. Our informant one day asked a farmer of his town this pointed question: "What have you in store in case of an emergency here?"

The farmer, fully aware of what he had on hand, replied: "Well, I have two sacks of rice, and besides, I have a coconut plantation, and I guess these will take care of me and my family."

The farmer was right. The nuts on his coconut plantation can very well take care of him in a time of crisis, provided he knew how to utilize certain parts of the same. For, if we consider the fact that the coconut is rich in fats, vitamins and other nutritive elements, and the further fact that western nations pay millions of pesos for the use of the coconut products in their food, their proper utilization by us will certainly play a leading role in the solution of the local food problem should an emergency develop in this part of the world.

Dr. Vicente Lava of the Bureau of Science recently computed that each mature coconut gives 15.1 grams of protein; 116 grams of oil; 10.7 grams of sugar; 8.8 grams of crude fiber; and 4 grams of mineral water. Laguna nuts were used in the analysis.

The work of Sherman showed that coconut is a poor source of vitamin A, but a good source of vitamins B, and G. The work of Miller showed that the soft spoon or young coconut has a higher vitamin A content than the mature one. And compared with other fats, the coconut oil contains the highest percentage of assimilable glycerides, and it is, therefore, even more digestible than the butter fat.

The foregoing facts certainly indicate that the Philippine coconut, found in abundance in this country, and seldom included in the daily diet of the Filipinos, may yet prove to be the key to our food salvation in times like these.

ence in the amount of spun yarn produced daily between the spinner working on daily basis and the one on *pakiao* system, both classes working under close supervision. The average daily spun yarn production per spinner of 24 spinners working consecutively for ten days on daily basis is 752 grams, while that of the same number of spinners working for the same length of time on *pakiao* system, is 1,669 grams. The production per day of the daily-wage spinner ranges from 142 to 1,495 grams, while that of the *pakiao* spinner from 300 to 5,050 grams. In both classes of spinners, the average daily production of spun yarn per spinner is generally on the increase and towards better workmanship from the first to the tenth day. The daily-wage spinner shows daily averages of 464, 609, 681, 750, 802, 835, 800, 636, 908 and 1,033 grams, while the *pakiao* spinner, the averages of 1,318, 1,363, 1,305, 1,740, 1,585, 1,522, 1,916, 1,875, 2,016 and 2,046 grams. These results apparently indicate that, in factory scale yarn production especially, it is not advisable to change spinners who have been on the job for ten or more days with new ones. For after ten or more days spinning work, a spinner has already acquired the skill and knowledge necessary for the work; changing him with a new one, who certainly has to begin to learn the A, B, C of the art, will only mean the employment of another inexperienced newcomer to take his place after he has been developed into a state of productivity.

There seems to be no difference in the quality of yarn produced daily between the daily-wage and *pakiao* spinners. In fact, experience with both spinners in the production of better quality yarns apparently shows that the *pakiao* spinner is even more controllable than the daily-wage in this respect. This is of course to be expected for, while the latter boldly assumes the "don't-care" attitude because of his sure wage in the pay-roll anyway, the former works at a disadvantage. He is duly bound to abide by the rules and regulations prescribed by the unit; if he does not produce the required standard of yarn or if he is caught cheating, his work is discounted payment. It has been found that some stones, and wet and unspun fibers were placed in some of the balls of yarn received from other units, probably done intentionally by some *pakiao* spinners desirous to put some more weight to their respective balls. Such a deceitful practice as this only occur because of poor supervision, and is not sure to happen when strict supervision, tagging and inspection of every ball of yarn turned in by each spinner are exercised daily.

In an attempt to gradually standardize the yarns mainly for the manufacture of various types of sacks, four types of yarn have been classified and set as standards, (1) Type 1 (1/16"), (2) Type 2 (1/8"), (3) Type 3 (3/32") from fresh husks and (4) Type 4 (3/16"). In practical yarn type differentiation, type 1 can be untwisted by roughly seven turns with the fingers; type 2, by four turns; type 3, by five; and type 4, by three.

COIR SPINNING

(Continued from page 4)

realize less spun yarn than he should at the end of day's work. Also, if the carded fibers used are of poor quality, too small amount of yarn can be spun out of them even by the average or topnotch spinner.

The preliminary results of observation and experiments bear out the fact that, even using good quality coir for spinning, there is a striking differ-

Of these four types, types 2 and 4 are the ones commonly used in sandbag production, while the other two types are still under observation and experiments. Type 2 is being used as warp and type 4, as filling.

Preliminary results of experiments on the production of type 2 yarn indicate that the *pakiao* spinner again shows better performance than the one on daily basis. It only takes the average *pakiao* spinner 3 hours and 7.6 minutes to spin a kilo of type 2 yarn, while it takes the daily-wage spinner 12 hours and 8.5 minutes to do the same work. It also takes the former 7 hours and 2.7 minutes to spin 500 meters of the same type of yarn, whereas the latter consumes some 14 hours and 51.6 minutes to accomplish the same yarn length. The reason for this difference in performance between the two classes of spinners is obvious. It is invariably due to the *pakiao* spinner's determined desire to get as much amount of money as possible from his day's work, thus accounting for his accomplishing more and longer yarn in less time than the daily-wage spinner who always receives a fixed wage for whatever amount and length of yarn he produces at the end of every day.

Even among the *pakiao* spinners themselves, there is also a difference in the amount of yarn produced daily between those producing type 2 and the ones working on type 4. The average daily production per spinner of type 2 yarn of a group of 20 spinners working consecutively for six days is 1,677 grams, while that of another group of the same number of spinners working for the same length of time on type 4 yarn is 1,893 grams. This difference lies perhaps on the sheer weight of the two types of yarn in question, type 4 yarn being heavier than type 2 and, therefore, accounting for the heavier yarn of the group producing type 4 than that of the group working on type 2.

It has been also observed that the average length of a kilo of type 2 yarn is 213.2 meters, with an average weight of 5.12 grams per meter, while a kilo of type 4 yarn has an average length and weight per meter of 156.6 meters and 6.5 grams, respectively. This preliminary results of observation seems to bring out the question of the possibility of paying by the meter of yarn spun, instead of by the kilo. At present, the price per kilo of spun type 2 yarn is twenty-five centavos and that of type 4 yarn, twenty centavos. If one centavo is paid for every ten meters of type 2 yarn, it will cost only around twenty-one centavos to spin 213.2 meters, equivalent to one kilo of this yarn type, instead of twenty-five centavos if it were paid by the kilo. Also, 156.6 meters or one kilo of type 4 yarn will only cost about fifteen centavos by the same method of meter payment, instead of twenty centavos by the kilo system. Besides its more economical money value than the kilo method, the meter payment system will ultimately encourage the standardized production of yarn, for the spinners will be forced to gradually reduce the size of their yarn in the rush of producing as much length of yarn as possible

every day. The draw-back, however, to the meter payment system is the absence of a handy device by which to determine the length of the yarn in a filled-up spool on sight. Unraveling of the balls of yarn to determine their respective lengths will mean additional hands which will incur added overhead to the factory. The present approach to the yarn length recording device is the observation that a spool tightly filled up to the brim with type 2 yarn contains an average length and weight of 293.1 meters and 1.375 kilograms respectively of this yarn type. The use of this finding is not yet availed of for the present, pending the discovery of more data regarding its efficacy in big scale yarn production.

It has been noted that not exactly one kilo of yarn can be spun out of a kilo of coir, for some percentages of this amount always go to waste during the spinning process. Some results of observation on the percentages of waste incurred by spinners during their work show that the per cent of waste per kilo of fiber ranges from 17 to 38. The better the quality of fibers used, the less the waste, and the poorer their quality, the more their waste. While researches designed to avoid wastage are being undertaken, the waste fibers are not all thrown away. Waste fibers which are still workable are given, in the absence of good ones, to *pakiao* spinners, who, anxious to finish as much amount of yarn as they could possibly do, make the most out of them.

Weaving

The efficiency of coir sack burlap weaving depends to a large degree on the quality of the warp yarns used and not quite as much as on the ability of the weaver. If the warp yarn is weak and not well twisted, it easily yields to the strain of continuous battening and finally snaps out of action, so that the intermittent breakage of the warp ends renders the weaving process slow and difficult for the weaver. On the other hand, if the warp ends don't break all the way through, even the amateur weaver can be expected to finish a considerable length of burlap daily. The need for desirable warp yarns, therefore, brings the idea of finding and employing some sizing materials in the strengthening of coir warp yarns but their use has been limited, in the meantime, only to experimental production of treated yarns, as it seems risky yet to immediately employ them in commercial scale warp yarn production because of their expensive nature. However, it is believed that, provided selected and good quality coir is used in the spinning of warp yarns, the need for proper sizing materials can altogether be dispensed with in the factory scale production of coir sack burlap.

As in spinning work, there is also a difference in the amount of coir sack burlap produced daily between the weaver working on daily basis and the one on *pakiao* system. Observations on this respect show that the average daily production of burlap per weaver of 15 weavers working consecutively for 15 days on daily basis is 7.35 meters, while that of the same number of weavers working for

Nacoco Copra Dryer Campaign Progressing

By A. C. MONTES
Staff Member, Coconut Journal

THE campaign of the National Coconut Corporation to encourage the use of modern copra dryers is making fast progress. The Nacoco has received many testimonials from enthusiastic planters regarding the benefits derived from the use of the modern dryers. We reproduce here one of them, from Judge Servillano Platon.

Judge Platon writes as follows:

"In connection with the Ceylon Drier constructed by the National Coconut Corporation in my planta-



Hon. Servillano Platon, an enthusiastic champion of modern copra dryers.

the same length of time on *pakiao* system is 9.74 meters. The production per day of the daily-wage weaver ranges from 3 to 16.35 meters, while that of the *pakiao* weaver, from 2.80 to 19.40 meters. The fifteen weavers of the daily-wage group show averages of 6.98, 6.25, 6.59, 6.66, 6.80, 7.34, 6.87, 9.15, 7.09, 7.99, 8.12, 8.41, 6.95, 7.32 and 7.75 meters, while the averages of the *pakiao* group were 11.52, 8.62, 12.35, 9.17, 9.49, 6.83, 9.91, 8.47, 10.00, 11.26, 9.17, 10.27, 9.17, 9.92 and 9.97 meters. This difference in performance between the two classes of weavers is, like in spinning work, always attributable perhaps to material ends.

The *pakiao* weaver, having no fixed compen-

tion at Camarines Sur, I am pleased to state that it produces a very good quality of copra—the kind that can stand competition in the open markets anywhere.

"I observed that the white copra produced from the Ceylon Dryer in my plantation commands a greater price than that produced from my old "tapahan". The difference in price ranges from fifty centavos (P0.50) to about one peso and twenty-five centavos (P1.25) per 100 kilos of copra. This is due to the decrease in moisture and other waste matter ordinarily found in copra dried under the old "tapahan" system.

"I further noticed that the copra is dried uniformly. Overheating and scorching of copra are eliminated. These are advantages which I do not doubt copra dealers will be willing to pay in order to get a better price for their copra.

"It is an admitted fact that heretofore, about 82 per cent of Philippine copra is bad copra. This explains why Philippine copra does not command a good price in foreign markets. I believe that your present campaign to improve the quality of Philippine copra must, and should continue until we uniformly produce copra of the highest quality".

Very truly yours,

SERVILLANO PLATON

Through the good offices of Judge Servillano Platon, the holding of a demonstration of the workings of modern copra dryers by the Nacoco on his plantation in Tinambac, Camarines Sur from Dec. 6 to Dec. 8 of this year will be made possible, following the approval of a resolution to that effect by the Municipal Council of that town.

Each councilor of Tinambac was enjoined in the resolution to take charge of inviting the coconut property owners in different districts of the province to attend this demonstration.

All the mayors of Camarines Sur have likewise been invited to be present at the affair.

sation as a daily-wage earner, naturally wants to obtain as much money as possible from his weaving efforts, hence his finishing more length of burlap than the latter. There is, however, an economic disadvantage in the former's daily practice. In his eagerness to accomplish as much as possible, he does not cut the correct length for an exact number of sandbags, hence considerable amount of burlap is wasted in this process. This is, of course, the problem of the management and can probably be remedied by daily measuring and cutting the exact length of burlap for an equivalent number of sandbags in the presence of the *pakiao* weaver himself, whether he entertains the idea or not.

As the vital life-line of the factory seems to lie on the weight of every sandbag produced, which would necessarily meet the management's estimate, otherwise face losses or dissolution ultimately,

there is the urgent need for the constant inspection of the filling yarns used by weavers. It has been observed that, if the number of filling is increased from one to four, the weight of the sandbag is considerably increased. Some results of observations on some burlap received from other units and all containing 1-ply warp ends and from 1 to 4-ply fillings indicate that the average weight per sandbag of 4-ply-filling burlap is 814 grams; 3-ply-filling, 783 grams; 2-ply-filling, 600 grams; and 1-ply-filling, 480 grams. These results apparently show that, in the profitable production of sandbags, only burlap with 1-ply warp ends and fillings should be woven. Of course, the number of fillings is not the only determining factor in increasing the weight of burlap for the number of its warp ends does increase its weight also. If the number of warp ends is more than that required for the exact weight of the burlap to be woven, the excess number automatically adds some weight to the finished product. This unprofitable practice may be avoided by rigidly enforcing the warping of the correct number of ends required for every loom in operation.

Waste

As equally important as the spinning of coir yarns and weaving of coir sack burlap in the profitable production of sandbags is the waste incurred in the processing from the fibers to the finished product. As discussed elsewhere in this paper, the percentage of waste in spinning per kilo of fibers ranges from 17 to 38. This result apparently indicates that from 620 to 830 grams of yarn is only spinable from a kilo of coir and some 170 to 380 grams of fiber go to waste, so that if one ton of fiber is spun, some 170 to 380 kilos of this amount are wasted; at ₱.07 per kilo this wastage will cost from ₱11.90 to ₱26.60 which means a lot of money to the factory. It becomes necessary, therefore, to avoid or minimize as possible the waste fibers from spinning. It has been observed that not all of the waste fibers are really waste in the strict sense of the word. They became so because they were carelessly thrown on the floor by the spinners themselves whose practice is to select the best fibers, especially when coir is abundant, in their mad rush to finish as much amount of yarn as early as possible. Observation bears out the fact that, in the absence of available fibers for spinning, the *pakiao* spinners used to muddle over the heap of fibers that once were called waste and still could make their average daily production of yarn from it. This finding evidently shows that the percentage of from 17 to 38 of waste per kilo of fiber can be lessened yet and that the minimizing of the waste fiber can probably be accomplished by strict rationing of fibers to each spinner, who must not be allowed to ask for more until all his fibers, without carelessly or intentionally throwing some, have been spun.

Some wastes are also encountered in the weaving processes. If the correct number of ends for the exact width of the burlap to be woven is not warped, either some of the warp ends or the woven burlap is wasted. For if more number of ends than

necessary is warped, the excess ends become waste and, if the number warped is less than required, the woven burlap turns useless as it lacks the needed width. There is not much waste, however, if the exact length of warp yarn for an equivalent number of sandbags is not made because, allowing for possible shrinkage and the cloth beam tyeing-up which is quite unavoidable, the remaining warp ends that cannot be woven anymore can still be knotted with those of the succeeding warp, in which case the knots so made are from the waste yarn. This knotting method has even some merit in that it precludes the need of another threading in the succeeding warp.

It seems that one way of minimizing the waste incurred in the processes of coir sack burlap weaving is the determination of the number of warp and filling yarns or the total approximate number of meters consumed in a burlap of sandbag size. It has been found through various tests that desirable sandbag-sized burlap contains an average number of 125 meters of 1-ply yarn, 67 warp ends and 101.4 fillings and weigh 447 grams on the average. This filling, besides its importance to the management and other interested parties in the estimating of the cost of production per sandbag, is equally important to the weaver himself. For ascertaining, at the outset, the requisite number and ply of warp ends and filling yarns in a sandbag will enable him to know the amount of yarn to warp and to use for fillings and also the equivalent of his finished burlap in number and approximate weight of sandbags, thus avoiding unnecessary waste yarn and expensive, additional burlap weight. Another method of avoiding waste yarn is perhaps to collect, knot and wind into balls again all the yarns scattered around the premises of each loom. The resulting balls will be useful, once more, as fillings.

The practice of not cutting the correct length of burlap for an equivalent number of sandbags from each loom also produces some waste. Some data on the waste from numerous burlap rolls received from other units indicate that the average length of burlap wasted from sandbag cutting is 0.326 meter per roll. This length of wasted burlap is indeed a big loss to the factory when we consider its money value in big scale production. For, out of every possible 1,000 meters of burlap, some 326 meters value at ₱22.82, if we pay ₱0.07 for weaving every meter, go to waste (cost of materials not considered). It becomes, therefore, imperative to effectuate some means of avoiding or at least minimizing some of the waste effected by indiscreet burlap cutting from every loom in operation. Probably

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(Continuacion de la pagina 24)

Cuanta verdad!

En Sariaya he visto un juego magnífico de té hecho de unas chiretas bien labradas. ¿Han visto ustedes algún ejemplar de esa clase, para exhibición siquiera, en los "tea parties" que se celebran por nuestras sociedades femeninas y masculinas?

(Continua a la pagina 19)

one of these means is the employment of graduated lengths of burlap to cut, ranging from one to twenty sandbags, using the sandbag length of 0.86 meter as a unit. A responsible and resourceful individual should do the burlap cutting job from each loom in the presence of the weaver, who, by all means, must not be allowed to make his own cutting. Another burlap waste-minimizing means is perhaps the unraveling of the warp and filling yarns from the wasted pieces, then knotting and finally winding them into balls again. Thus, they will be useful either as wrap or filling yarns.

Finishing

By finishing here is meant the calendering and cutting of coir sack burlap into sandbag sizes, then sewing the resulting cut pieces into sandbags, each of which is inverted and finally recalendered into a finished good. Efficient finishing, therefore, needs a complete, manufacturing outfit of power engine, calender, cutting devices, sewing machines, inverting materials and a crew of reliable men to operate these different mechanisms. The Manila Coir Unit No. 1 has practically this outfit. Besides the coir defiberizing and carding machines, it has one 10 horse-power engine, one corrugated calender, one plain calender, two pairs of big, cutting scissors, three Goliaths sewing machines, six sandbag inverting devices and a gang of twelve men, able to finish 1000 sandbags daily. It is believed that, with an addition of one more Goliath sewing machine, this outfit will be able to finish 2,000 sandbags in twelve hours' work.

Because it has been observed that sandbags sewed with cotton twine bust in 35 days after setting in the open, while those sewn with abaca twine still remain intact, the use of the latter twine is being availed of in sandbag sewing. Besides, it costs a sew with abaca twine only around ₱0.007 per sandbag, whereas it costs some ₱0.008 to sew the same with cotton twine. Some twine and fuel wastes have been also noted in sandbag finishing but they were quite insignificant, compared with the coir fiber, yarn and sack burlap wastes and also considering the fact that the amount of abaca twine and fuel used in finishing a sandbag cost only around ₱0.014. These wastes may probably be avoided or minimized by collecting the waste twines, using them for sewing again and also by strict fuel rationing daily.

Cost of Production

Because it has been the experience with several thousands of sandbags that the weight of materials used in a sandbag determines largely its cost of production, minimize as much as possible the weight of yarns to use in coir sack burlap weaving. For the heavier the yarns used and the higher the cost of spinning, the heavier the resulting burlap and the more costly the finished sandbags will be. The present cost of production of an average pure coir sandbag (16" x 22"), containing 1-ply warp ends

and filling yarns and weighing 447 grams, is as follows:

Materials:

Cost of spinning 0.447 kg. of yarn @ ₱.20 per kg.	₱0.089
Cost of 0.616 kg. of coir fiber for spinning 0.447 kg. of yarn @ ₱0.07 per kg.043
Cost of abaca twine007
Cost of fuel007

Labor:

Cost of warping, beaming, threading and weaving of 0.86 meter of burlap @ ₱0.07 per meter100
Cost of finishing (calendering, cutting, inverting and sewing)010

Total **₱0.256**

It is believed that the present cost per sandbag can still be reduced by further reduction of the size and weight of the warp filling yarns. In the provinces, where the standard of living is lower than that in the city, the weaving expense per meter of burlap, if done on home industry basis especially, can yet be lessened and, eventually, the cost per sandbag reduced further.

Recommendations

Because at the present writing the normal production of copra sacks is also under way—a step which is calculated to take part in the solution of one of the important national economic problems which the Bureau of Plant Industry has long endeavored to help solve, i.e., the cutting of around ₱5,000,000 worth of jute sacks and burlap annually, it becomes urgent to provide a definite subsidy for researches on coir in the Manila Coir Unit No. 1. An initial subsidy of at least ₱8,000 during the first six months would seem sufficient and justifiable, considering the economic aspect of researches along the line of producing various types of sacks from the coconut industry.

At present, it is quite premature to give a definite account of the cost of production per copra sack, as the enterprise has just began. However, it is believed that the improvement in the devices in use and the quality of the coir, coir yarn and coir sack burlap, with special emphasis on the reduction of their costs of production as designed in the researches to be undertaken, will place the coir sacks, especially that for copra, on a competitive basis with jute.

Present indication seems to point to the more economically advantageous employment of *pakiao* workers in coir yarn spinning and coir sack burlap weaving work than the daily-wage earners, as, provided strict supervision is daily enforced over them, the former can do more and better work in less time than the latter.

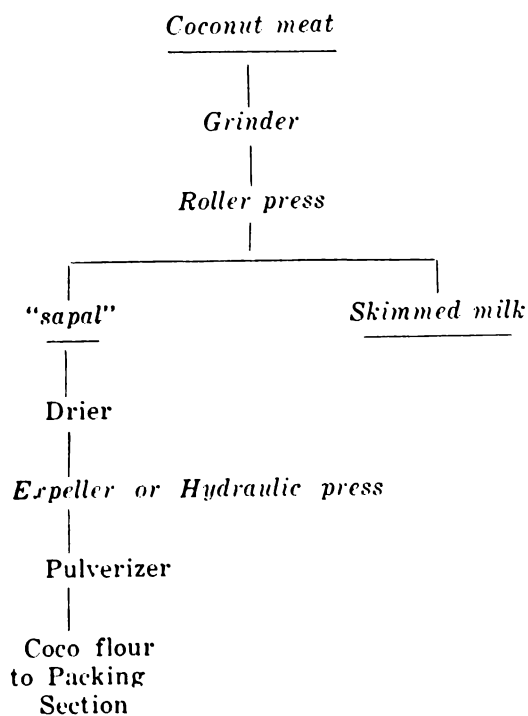
FLOUR SUBSTITUTE

(Continued from page 11)

easily in water. The analysis of the coconut flour obtained by the roller-expeller method is shown in column 3, Table I.

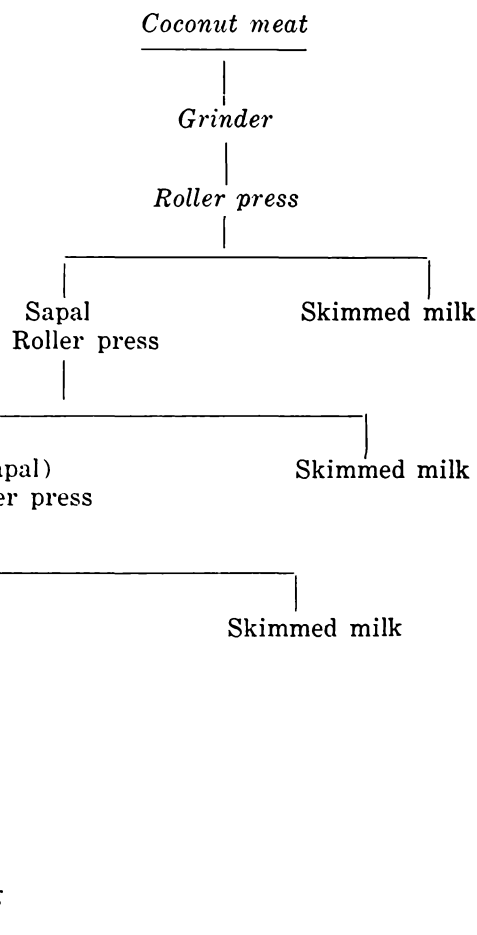
In the continuous roller press method, the fresh coconut meat is passed through a set of rollers to achieve the maximum extraction of oil. The meat residue from these rollers is dried in a continuous drier and then ground to flour particle size in a pulverizer. The analysis of this flour is shown in column 4, Table I. Flowsheet in Fig. 1 illustrate the two methods.

(Fig. 1—Flowsheets Showing the Methods of Coconut Flour Manufacture)



Increasing Coconut Income

The manufacture of coconut flour is one way by which the income from coconuts can be increased. Whereas, the meat residue from the copra method of oil manufacture has been sold as fertilizer and cattle feed, the coconut flour from either of the two methods mentioned above will be sold as human food, thereby commanding a better price. Furthermore, unlike the ordinary copra cake, we need not seek a foreign market to dispose of the coconut flour, as it will replace wheat flour in its uses. We cannot overlook the fact that in the near future we will have to find ways to replace our dwindling stock of imported materials. When that time comes, the coconut flour will be of great help in relieving the difficult situation caused by the shortage of foreign flour.



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(Continuacion de la pagina 17)

Creo que si fabricásemos vasitos con ese derivado del coco, para ser vendidos a precios populares en nuestro mercado, los muchos vasos de cristal que han roto mis niños podrían ser sustituidos con *lo nuestro*, que es más fuerte y duradero. Hasta el agua refrescante que da el *buco* que bebemos en la época de calor, bien presentada, conservada y preparada por un gran establecimiento de bebidas refrescantes como la Magnolia, encontraría una selecta parroquia, aparte de la gente del pueblo.

Esto ya va resultando un poco largo, amigos, y deseo dar punto final a este sermón sobre el evangelio del coco y sus accesorios, recordando de nuevo la frase humorística puesta por el novelista Sinclair

en boca de un fabricante de carne en conservas de Chicago, para subrayar la eficiencia de los métodos industriales: "Aquí no desperdiciamos ni el chillido de un cerdo que va al matadero."

Si pudieramos decir lo mismo con el tiempo en lo que se refiere a la industria cocalera, el Estado, convertido hoy en empresario por la Corporación Nacional del Coco, verá recompensados sus afanes, asegurando el porvenir de las novecientas mil familias que dependen de esa industria lucrativa.



La Corporación Nacional Del Coco Y Su Papel En La Economía

Por PEDRO AUNARIO

(Nos place reproducir aquí el siguiente artículo del Sr. Pedro Aunario, distinguido escritor y periodista, editor de "La Vanguardia", que contiene observaciones interesantes sobre el punto de vista de un observador imparcial acerca de los trabajos que esta realizando la Corporación Nacional del Coco.)

I

Antes de relatar mis impresiones obtenidas de una visita que hice hace poco a los establecimientos de la NACOCO en Laguna y Tayabas, deseo manifestar ingenuamente que apenas tenía una noción objetiva de los diferentes usos y aprovechamientos que se están obteniendo actualmente del coco y sus derivados. No hay nada que enseñe tanto como el ver las cosas en su realidad para corroborar o desmentir las teorías que tenemos en nuestra cabeza sobre las cosas materiales de la vida.

Fortaleciendo la idea Intervencionista

Después de la visita, la idea que he sostenido en varios artículos de que el Estado moderno debe intervenir hasta cierto punto en la economía de un pueblo y no dejar que las cosas se hagan al azar, cuando se trata de las cosas fundamentales para la vida de una nación en la lucha universal, por la supervivencia se ha fortalecido con esa visita. Después de todo, lo que dijo Bryan cuando era Secretario de Estado, contestando a la queja insistente de varios capitalistas de Nueva York de que el gobierno estaba interviniendo cada día más y más en la marcha de los negocios particulares o grandes empresas industriales, no carecía de fundamento real.

Bryan dijo:

"Cuando suceden grandes crisis industriales internas y externas, vosotros los capitalistas pedis la intervención de vuestro gobierno, demandais leyes protectoras para vuestros intereses contra la competencia desmoralizadora de vuestros enemigos hasta el extremo a veces de provocar complicaciones graves que

requieren el envío de algunos buques de guerra para intimidar, pero cuando el Estado tiende a regular la vida económica de la nación, o llevar a cabo por su propia iniciativa un plan industrial que asegure el equilibrio y el bienestar común, dando a cada cual la parte que justamente le corresponde, lanzais el grito de guerra diciendo que el Estado está haciendo unos experimentos muy peligrosos para el porvenir económico de la nación."

Me temo que lo que dijo Bryan para deshacer los prejuicios de la economía clásica, pueda aplicarse aún a muchos de nuestros compatriotas que creen — honradamente por supuesto—que aquello que dijo el difunto General Wood, esto es, que el gobierno debe contentarse con abrir escuelas, caminos y hospitales, y limitarse a mantenerlos, todavía es válido en estos tiempos. El General Wood dijo eso, como ustedes recordarán, para indicar que el gobierno filipino establecido bajo la Ley Jones había cometido una gran equivocación al concebir la idea de fundar el Banco Nacional y la Compañía Nacional del Cemento. Llegó a tal extremo el prejuicio del difunto Gobernador General Wood en esto de las empresas nacionales creadas por la Legislatura filipina, que quiso vender en pública subasta la Compañía Nacional del Cemento y disponer de la empresa del ferrocarril nacionalizada, colocándolas de nuevo bajo el capital extranjero.

Vindicación de una Política previsora

Creo que nuestros estadistas pueden estar orgullosos de la completa vindicación de su política intervencionista, dando al Estado el papel de empresario



Don Pedro Aunario

hasta cierto limite en determinadas empresas industriales, especialmente en aquellas que son de utilidad pública e indispensables para el bienestar general y la continuidad del progreso social y material del pueblo. Si nuestros hombres se hubieran arredrado ante las dificultades que han encontrado en su camino, y hubiesen vendido la fábrica de cemento por no haber podido realizar rápidamente dicha empresa estatal las ganancias que el difunto Gobernador Wood y sus consejeros financieros buscaban entonces con una linterna de Diógenes, con el fin de justificar la existencia de esa compañía, a estas horas, con la segunda guerra mundial, y con un comercio de importación y exportación muy limitado, o casi nulo, por la falta y la carestía del transporte, nuestro gobierno estaría comprando el cemento de fuera a un precio exorbitante, si hubiese, y la política de carreteras de cemento y de grandes mejoras públicas no se hubiese iniciado tempranamente, o hubiera comenzado muy tarde, y a un costo que sólo Dios sabe a qué hubiera montado, con notorio daño para los contribuyentes filipinos y extranjeros.

La vindicación, pues, de esa política está dando tal aliento a nuestros hombres que en estos momentos bien puede decirse que el Estado no solo planea otras empresas y dirige la explotación científica de una vasta colonia agrícola como la de Koronadal, sino que construye ciudades modelos, como la ciudad Quezon y la Universitaria, como han planeado y construido los americanos la hoy hermosa Ciudad de Baguio con fondos públicos, convirtiéndola en sitio de verano ideal para los tropicos y motivo de propaganda para el turismo en tiempos de paz, considerada la industria del turismo como una fuente de ingreso para el Estado, y la ciudad veraniega de Baguio como fuente también de salud y de riqueza para los individuos.

Digase, pues, en justicia, que a nuestros caudillos no les ha faltado vision en estas empresas, (los pueblos que no tienen visión perecen), que se han adelantado hasta cierto punto a las necesidades de su pueblo, y se han incorporado con espíritu progresivo a ese movimiento intervencionista inevitable de los modernos Estados en la vida económica de la nación, dejando a un lado ese rancio conservatismo estancadizo, y renunciado a la política de *dejar hacer, dejar pasar*, sin paralizar con ello las iniciativas audaces y constructivas del espíritu de empresa individual.

Con este preambulo, trataré de discuir lo más brevemente posible sobre el papel importante que la Compañía Nacional del Coco está llamada a jugar en la vida económica de nuestra nación en un futuro proximo, presentando en esta etapa inicial de su existencia algunas de sus más importantes actividades.

II

Para tener una idea de la labor que la Corporación Nacional del Coco está llevando a cabo de acuerdo con la ley que la dió vida, vamos a presentar esta sencilla imagen:

Suponed un hombre que tiene una mina y no sabe cómo sacar todo el provecho de esta fuente de ri-

queza. Suponed, además, que trabaja con las manos casi atadas por leyes que restringen sus actividades y castigan con un impuesto sus productos. Ese hombre naturalmente se sentirá ahogado en medio de tantas dificultades.

Ahora bien, si un barco que conduce muchos pasajeros está en peligro de naufragar, y se oyen llamadas urgente de auxilio, sería faltar a un deber de humanidad no responder inmediatamente a tales llamadas.

Esta imagen nos presenta el cuadro real de la situación en que se encontraban nuestros plantadores de coco cuando el Congreso aprobó una ley limitando la cantidad de aceite de coco que podemos enviar al mercado americano, y estableciendo el impuesto de sisa sobre sus productos.

El barco que lleva por nombre "Philippine Oil" estubo a punto de hundirse, y en él iban embarcadas numerosas familias que dependen de la industria del coco.

¿Qué ha hecho nuestro gobierno? Tenderle un cable por medio de la Corporación Nacional del Coco para que no naufrague, hacer que el barco llegue a la playa para que puedan desembarcar todos los pasajeros que estaban paralizados por el temor, e infundir en ellos nuevas esperanzas.

Ya estan en tierra, ya estan organizandose sobre nuevas bases, y reanimando sus fuerzas para mirar el porvenir con más confianza y valor.

Debemos formar una nueva mentalidad económica

La vida de un pueblo en estos tiempos de profunda revolución técnica y exaltado nacionalismo económico, se halla sujeta a muchas vicisitudes.

La experiencia amarga que han arrostrado nuestros plantadores que gozaron de la prosperidad en los días de las vacas gordas, cuando la copra obtuvo precios casi fabulosos en la pasada guerra mundial, para caer luego en la miseria en los siete años de las vacas flacas, debe servirnos de lección.

Esta lección nos enseña que no es buena política depender exclusivamente de las ventajas que nos ofrece un solo mercado, sino que debemos prepararnos y organizarnos cooperativamente para luchar en abierta competencia en el mercado universal, mejorando la calidad de nuestros productos con la ayuda de los progresos de la técnica.

Debemos asegurar también por todos los medios posibles la estabilidad de nuestro mercado interior para el consumo de los artículos industriales que nosotros producimos, y evitar con ello bruscas sacudidas en una industria nacional (propia) ya desarrollada, cuando las crisis que ocurren en los mercados del exterior con su acompañamiento de cuotas y medidas de exclusión, repercutan fatalmente sobre nuestro bienestar.

Y todo esto supone planeamiento por el Estado para regular de una manera racional la vida económica de un pueblo, porque el esfuerzo puramente particular aislado, no solo es exageradamente egoísta y anárquico, sino que crea conflictos y luchas de clase.

que rompen con la unidad nacional en momentos críticos.

Debemos cambiar nuestra mentalidad económica antigua, por otra nueva que esté en armonía con los ideales de la justicia social y la solidaridad humana dentro y fuera de nuestras propias fronteras.

Cuales son los objetivos de la Corporación

Haciendo un somero análisis de la Ley que crea la Corporación Nacional del Coco, vemos que entre sus principales objetivos figura el de efectuar el reajuste de la industria cocotera para colocarla en una situación independiente de las preferencias comerciales en Estados Unidos por medio del aprovechamiento de los productos accesorios del coco y el establecimiento de centrales cocaleras con este propósito.

¿Nos damos cuenta los filipinos de lo que supone este deseo de emancipación de una industria que ocupa una posición privilegiada en nuestro suelo?

En su más amplio significado, quiere decir que este solo objetivo—de propia determinación en lo económico diría yo—envuelve la consideración de todos los demás factores.

Una situación de independencia de las preferencias comerciales de América implica necesariamente la mejora de la copra que podemos colocar en los mercados del mundo, y la organización del crédito sobre la base de la producción para una nueva estructuración de la industria. El privilegio, por su propia naturaleza, parece que no da todos los estímulos para la lucha universal.

En una olimpiada, por ejemplo, donde nuestros escogidos atletas tienen que competir con los mejores atletas del mundo que toman parte en un concurso mundial, la preparación que damos a nuestros "players" es más acabada una vez conocidos los records de sus competidores. Ellos aprenden más.

Esto no significa que la preferencia comercial que da una nación a nuestros productos no tiene sus grandes ventajas, pero como éstas son más bien temporales, y dependen del gobierno que las otorga, en cuanto las perdemos nos desmoraliza. Tenemos que empezar de nuevo. Es mucho mejor que los filipinos aprendamos a luchar económicamente en el mundo, con el mundo y por el mundo. El entrenamiento es más intenso.

Propaganda por el método directo del ejemplo

Con estos dos objetivos especificados en la Ley podemos comprender también fácilmente el programa de actividades que gradualmente va desarrollando la Corporación.

Ha organizado centrales del coco en las zonas importantes cocaleras de Filipinas, donde se han construido varios tipos de resecadores modernos que hoy están en función y sirven de modelo para los pequeños plantadores.

Así, los métodos modernos para mejorar la copra nativa se están propagando con hechos y no con teorías ni folletos impresos solamente, para que aprendan más pronto por medio del ejemplo directo en la mente del plantador.

En cuanto al segundo objetivo, la utilización de los productos accesorios del coco, o sus derivados, el

Gerente Auxiliar de la corporación Dr. Conrado Benitez, ha dicho correctamente que es un reto magnífico a la capacidad de nuestro pueblo este objetivo. Espolea no solo los estudios e investigaciones de laboratorio sino también los recursos del ingenio y de la imaginación creadora para dar forma atractiva y artística a los artículos derivados del coco, combinados (el ingenio y la fantasía) con una suma utilidad práctica que satisfaga nuestras comunes necesidades.

III

Hubo un tiempo, dice el Presidente Quezon, en que la industria cocotera era más importante que la del azúcar. Mayor número de provincias y mayor número de familias, filipinas dependían de esta industria, que de la azucarera. Sin embargo, no habéis aprendido a organizaros, como han aprendido los azucareros. Estos conocen perfectamente el poder de la organización. Cuando empiezan a agitarse por sus intereses, sentimos todos—que el mundo entero se viene abajo.

El coco es el producto más versátil (de variadas aplicaciones prácticas) que tenemos en nuestro país, según la opinión unánime de todos los expertos.

Aquella frase humorística de Sinclair al referirse a los fábricas de conservas alimenticias en Chicago, que decía que "ni el grito de un cerdo en el matadero se pierde," bien podríamos aplicarla también al coco. Nada se desperdicia de este producto, que lo mismo sirve "para un fregado que para un barrido."

Veis un árbol de coco cargado de frutas, y teneis una idea más o menos aproximada del milagro de la multiplicación de los panes de que nos habla la Biblia.

Del coco sacaban nuestras dalagas antiguamente el aceite para el cabello, dejando un residuo, el *latik*, que yo devoraba cuando era un chiquillo. Del coco viene el "*matamis sa bao*" que mi esposa da a mis niños cuando van a la escuela. En vez de acostumarles a comprar comestibles mal preparados de la tienda de un chino, les da un par de sandwiches de *matamis sa bao* envueltos en una servilleta de papel, que les dejó contentos y satisfechos.

Del coco sacaban también nuestras abuelas la palma religiosa que el cura se encargaba de bendecir en Domingo de Ramos, y con sus hojas se hacían estrellitas y pájaros que iban con las palmas en ese día, y que se agitaban como estandartes o banderas de la fe que nos inculcaron nuestros padres.

Yo tengo grabados en mi mente todos estos recuerdos felices de mi niñez que reviven hoy en mi corazón al hablar del frente económico, muy extenso, que la Corporación Nacional del Coco está estableciendo en Filipinas.

Las variadas aplicaciones de este producto

Ahora quiero dar a nuestros lectores las impresiones sobre las espléndidas oportunidades que ofrece la industria cocotera hoy en desarrollo bajo un plan de actividades concebido por los dignatarios de la NACOCO, plan susceptible naturalmente de enmiendas y rectificaciones, como todos los planes trazados por el hombre, aún aquellos que el Estado Mayor más inteligente de un ejército prepara para una guerra.

Ya no se trabaja con principios dogmáticos en estos tiempos. Se trabaja con curiosidad, que es la madre del progreso, exponiéndose a equivocaciones.

Todo supone proceso de experimentación, errores y éxitos.

Durante el breve período de un año, dice un artículo del señor Salvosa publicado en el "Coconut Journal" correspondiente al mes de septiembre último, la Corporación ha demostrado que el coco tiene una extensa variedad de usos industriales y comerciales. Ahora ya es posible fabricar guangoches, tejas, sacos, tablonos para la pared, tablonos plásticos y aisladores; la chireta se puede utilizar para la fabricación de botones, hebillas, lámparas para luces eléctricas y utensilios del hogar; la "copra cake" se puede utilizar en la fabricación de abonos mixtos y alimentos de ganados, y el carbon de la chireta es útil como absorbente en la máscara contra el gas, y como sustituto del carbon mineral capaz de proporcionar fuerza motriz para motores, coches y máquinas.

El coco se consume constantemente en forma de jabón, manteca y mantequilla. Unas 300 fórmulas culinarias que utilizan el coco como ingrediente principal, van ganando popularidad en los hogares filipinos. Las demandas locales y de ultramar en cuanto a productos del coco, son tan grandes, que se puede considerar como el factor más halagador sobre el cual puede depender la salvación de la industria.

El yute, el bonote y otros productos

Un mercado lucrativo tanto en el país como en el extranjero podría desarrollarse para sacos, guangoches, tablonos, colchones y tejas. Una exportación anual de P100,000,000.00 puede realizarse en sacos solamente. Estados Unidos de América gasta \$50,000,000.04 en sacos de yute anualmente, para fines de defensa nacional y obras de presa. Las importaciones locales de sacos de la India ascienden al promedio de cuatro millones de pesos al año. Filipinas tiene todas las facilidades para eliminar estas importaciones de sacos en el país, así como para ganar dominio de su rico mercado en los Estados Unidos de América.

El yute necesita ser sembrado, cosechado, enriado, desfibrado y tejido en sacos. Las fibras de bonote, siendo un mero producto accesorio, no necesitan ser sembradas para producirlas. Unas cuantas semanas de enriamiento, desfibración e hilación las pondrán listas para la máquina de telar.

Tomando en cuenta la existencia de las industrias del arroz, azúcar y del coco que necesitan grandes abastecimientos de sacos, mientras por otro lado aún se halla en espera de su desarrollo el mercado de los Estados Unidos de América, no hay razón porque los 300,000 toneladas de fibras de bonote abandonadas a pudrirse anualmente en nuestras plantaciones cocaleiras no han de ser utilizadas tomando en cuenta que equivalen aproximadamente a unos P75,000,000.00 anualmente.

El mercado filipino para aisladores, tablonos y productos de asbestos, que valían P1,969,168 en 1940, es bastante grande para justificar la fabricación de estos productos en escala comercial. Los compradores filipinos de hilazas, guangoches, alfombras, cepi-

llos, petates, sacos, y redes para pescar compraron el año pasado P971,781 valor de estos artículos. Las fibras de coco conservarán este dinero en circulación dentro del país.

La corporación ha demostrado que las tejas de asbestos y fibras de bonote así como los tablonos plásticos pueden ser sustituidos a los materiales para el tejado y para el suelo que son de origen extranjero.

La "copra meal," el residuo en el procedimiento de la extracción del aceite de la copra, debe tener su base en la buena parroquia que puede proporcionar la industria del ganado. Aunque no fuesen alimentados más que el 10% del total de estos animales, alimentados con "copra meal," el consumado anual de este producto accesorio ascendería a 491,971,211 kilos —que equivalen a centenares de miles de pesos.

Lo que gastamos en abono.—

El carbón de chireta

Las importaciones de abonos en Filipinas, ascendió a P4,731,618.00 en 1940. La industria cocalera del país puede ser habilitada plenamente para abastecer las necesidades locales del abono.

La "copra cake," un producto accesorio del coco, es una fuente bastante buena de nitrógeno, ácido fosfórico y potasa, los cuales elementos son importantes para la manufactura de abonos mixtos.

El establecimiento de una industria de obonos, utilizando la "copra cake" como materia prima resultaría lucrativa, a lo menos por dos razones; primera, la "copra cake" como materia prima abunda en Filipinas y segunda, mejores abonos mixtos se obtienen por medio del uso de la "copra cake" que por medio de los ingredientes importados.

La importación del carbón mineral en 1940 ascendió a P3,145,647.00, y la eliminación de esta partida en la lista de importaciones beneficiará grandemente a la industria cocalera. El carbón de chireta comprimida en ladrillos que dan mayor calor que el carbon mineral, bien puede ser utilizado en lugar del carbón mineral, como combustible en las calderas.

Las posibilidades industriales del carbón de chireta son inmensas. Como absorbente de las máscaras contra el gas, es vital para la guerra. Muchas industrias lo necesitan en su forma activada. Es origen del carbón, de los electrodos y grafitos, los cuales son muy esenciales en el sistema del alumbrado y comunicaciones, así como para la fabricación de lubricantes, carbón para soldar, papel carbón, polos eléctricos, pinturas, baterías y talleres de fundición. La demanda de estos productos, traducidos en compras actuales en los mercados domésticos y extranjeros, sube a millones de pesos.

El coco es un mosaico de formulas alimenticias

El coco alcanza la cumbre de su utilidad como artículo comestible. Debemos aprender "reforzar, nuestro arroz con productos del coco," como dijo el Presidente Quezon a un grupo de plantadores taya-benses. "El coco, después de todo," añadió, "es más nutritivo que el arroz."

El coco contiene toda la cantidad necesaria del amino ácido (amino acids) que es esencial para el desarrollo normal, y siendo así por naturaleza, pode-

mos confeccionar alimentos deliciosos con el coco. Su aceite es materia prima para la margarina, mantequilla y manteca. Su pulpa puede ser convertida en harina. Mezclada con harina de trigo, produce panes deliciosos. La leche desnatada puede convertirse también en leche en polvo y sus productos derivados. Las importaciones filipinas de productos de lechería (dairy products), y de panadería, que en conjunto ascendían a ₱26,130,219 en 1940, representa un mercado enorme—precisamente el mercado que la Corporación aspira desarrollar.

La divulgación de unos 300 recetas culinarias que utiliza la leche del coco y el coco verde (buco), se está emprendiendo por la Corporación con vistas a aumentar el consumo por cabeza en Filipinas, que es de noventa cocos solamente, a la cifra de la de Ceylon que es de 150 por cabeza. Esto representa incremento en el consumo del aceite en la comida filipina y una reducción en la importación local de aceites comestibles extranjeros. Si la Corporación pudiese aumentar el consumo local con 50 cocos más por cabeza, esto significaría un consumo de 800,000,000 de cocos al año—o sea 160,000 toneladas de copra.

La copra es la más importante sin embargo

Sin embargo, la copra sigue siendo el producto principal de exportación. Como quiera que esta no puede ser suplantada por cualquiera de sus productos accesorios como una partida comercial, habrá necesidad de ejercer todo empeño para mejorar su calidad. *Las Islas Filipinas han mantenido consecuentemente su reputación de ser el peor productor de copra en el mundo.*

El desarrollo de este nuevo mercado exige que la copra producida sea de calidad bastante elevada para que pueda soportar los embates de la competencia.

Europa es capaz de absorber 200,000 toneladas de la copra filipina. El Japón que consume 30,000 toneladas de aceite de coco en su industria del jabón, es un mercado potencial para 100,000 toneladas más. No hay razón alguna por qué Filipinas no deberá aprovechar del comercio europeo y del comercio japonés después de la guerra.

IV

Me he dado esta semana tal atracción de literatura sobre el coco y sus derivados, que sin querer me he acordado del ilustre Dr. Pardo de Tavera, ya difunto. Este gran erudito filipino dijo hace unos veinticinco años en una charla amena que tuvo con los jóvenes del "Philippine Columbian" en su casa-club de nipa al lado de las playas de Pasay, que el cultivo del coco en nuestro país no era agricultura, sino *dejicultura*.

Fijaos en esta palabra acuñada por el ingenio agudo, muy culto, del gran conversacionista: *dejicultura*. Quería decir el eximio polígrafo, que nuestros plantadores, después de sembrar el coco, *dejaban* los intereses de su hacienda al cuidado de la divina Providencia. Esto sería magnífico si el hombre practicase aquello de "A Dios rogando, con el mazo dando."

Mas no era ésta la cualidad del carácter que el sembrador de coco revelaba en sus empresas. Fal-

tabale iniciativa, agresividad, sentido de innovación o de progreso. Los más conservadores sentían quizás una repugnancia instintiva hacia todo lo nuevo, o todo aquello que podía sacarlo de los caminos trillados.

El coccalero del tipo antiguo era un individualista empedernido que no tenía la menor idea de los adelantos de su industria en otros países. Vivía en "su mundo" rumiando su propio conservatismo, aislado de sus afines en la vocación, sin los estímulos alentadores de las sociedades cooperativas para una ayuda mutua y un cambio de ideas, impresiones y sentimientos en el comercio de las cosas materiales de la vida humana.

Aquella campanada de alarma, pues, que el Dr. Pardo de Tavera dió hace veinticinco años al presentar con frase incisiva el cultivo del coco como una *dejicultura* en vez de agricultura en el concepto científico de la palabra, fué la nota y nos trajo de algún modo los presentes beneficios de la organización empujada por la palanca impulsora del Commonwealth Filipino.

Yo estaba leyendo los buenos artículos sobre el valor nutritivo del coco y las diferentes recetas culinarias ya preparadas para nuestros hogares, y me he hecho esta pregunta: "¿Por qué no se utiliza nuestro sistema de educación para inculcar en nuestros niños *los hábitos de consumo de lo nuestro* o de todo lo que se produce industrialmente en nuestro país?"

Cuando veo a un asiático alimentarse de lo que es suyo, o de un plato de esos que llamamos chino o japonés, usar de su cuchara de loza, de sus palillos y de sus platos, me hago la siguiente reflexión:

—Esos chinos habrán aprendido desde niños a nutrirse *de lo propio*, que por la experiencia ha resultado bueno por su valor nutritivo, tan bueno a menos como el producto alimenticio importado, hasta formar sus propios hábitos de consumo. Una vez arraigados ya cuesta trabajo desarraigarlos, pero los hombres, cuando llegamos a cierta edad ya madura, con dificultad cambiamos de costumbre en cuanto a los gustos.

Me refiero naturalmente al consumo en masa que cae de lleno sobre la clase media y la clase obrera. De la aristocracia no se puede esperar mucho en estas cosas. Sería nepa talmente, si las recetas culinarias preparadas con los derivados de coco entrasen en circulación en esos grandes núcleos de población que forman la espina dorsal de un pueblo.

En un artículo titulado, "El amor a lo nuestro y el fomento de nuestras industrias," una distinguida dama decía:

—Nos encontramos con la dificultad de que no existe material disponible de venta cuando una persona busca lo que necesita; hay necesidad de esperar porque la tela se tiene que tejer todavía, esto es doloroso. Tenemos buenos productos, pero por falta de una buena organización no encuentran mercado, y son sustituidos con productos importados.

(Continúa a la página 17)

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