

MECHANIZING PHILIPPINE AGRICULTURE

(Continuation)

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(Ed. Note: We wish to thank Dr. Teodoro for his kind cooperation in making available to us and the waiting public, this valuable information in this article. We wish to thank also the cooperation of the College of Agriculture authority. Dr. Teodoro is Head of the Engineering Department, College of Agriculture, and is considered one of the country's leading authorities in Mechanization of Farm Operations.)

Mechanization as applied to land preparation¹ shows how tractors and modern steel plows and harrows may be used to save time and to reduce tillage costs. In this article, the effects of mechanization on other farm operations are briefly discussed.

PLANTERS AND PLANTING

Rice, corn, sugar cane, tobacco, cassava, camotes, peanuts, cowpeas, and soybeans are generally planted by hand. Rice may be transplanted, broadcast, or sown. The proper spacing and setting of certain number of seeds or of seedlings in a hill depend largely on the skill of the men and women who are hired during the planting season.

In lowland rice field, some 20 to 25 man-hours are spent per hectare to pull, bundle, top, and transport the seedlings from the seedbed to the paddies. Planting which requires from 60 to 70 man-hours per hectare, is facilitated by hiring gang of planters varying from five to ten persons per paddy. It takes about 20 man-hours to furrow, from 3 to 5 man-hours to broadcast, and from 30 to 40 man-hours to cover a hectare of upland rice field. In "bakal" system where skillful planters dig first a hole by a pole, then plant and cover, greater number of man-hours

than the transplanting system are required to plant a hectare.

A mechanized unit that may be used to replace the transplanting method has not as yet appeared in the market. Special devices which will enable the prime mover and the planter to work efficiently on a very well puddled mud to a depth of not less than 15 centimeters will be needed for this purpose. In upland fields, no difficulty will be found in the use of seeders, of transplanters, or of any power driven planting machinery to replace the animal and hand operated devices.

Mechanized seeding machinery accomplish the work of distributing the seeds uniformly, planting them at uniform rate and depth, and covering them. Some devices are provided with attachment to spread controlled amount of fertilizers at some proper distances from the seeds. To suit various farm conditions, mechanical planters are made available either as walking or as riding machinery. The walking types include devices that can be pulled by single, double, or by pairs of teams of horses, carabaos, and bullocks. The tractor-driven drills, planters, and seeders vary in sizes depending upon the number of rows that can be planted in one operation.

Of all the upland crops, sugar cane needs the greatest amount of work for planting. The land which has previously been plowed and harrowed from three to five times is next furrowed. It requires at least two plowings using special wooden mold-

board that can throw the dirt up on both sides of the harrow, to prepare a satisfactory furrow bed of about 20 to 30 centimeters deeps. From 60 to 80 man-and-animal hours are needed in this preparation. Hauling of the cut points requires from 60 to 65 and planting from 75 to 85 man-animal hours per hectare. The cost of harrowing, hauling of points, and of planting per hectare of cane field in the College of Agriculture using man-and-animal labor, was computed to be from ₱20 to ₱25. A mechanized furrower and planter with fertilizer attachment can plant a hectare for less than 5 hours at a cost not exceeding ₱6.00.

The cost of furrowing, broadcasting, and covering of seeds per hectare of upland rice was estimated to be about ₱6.00. The use of a tractor-driven grain drill which planted eighteen rows at a time in a 3-meter cut required only about 2 hours to plant a hectare at a cost not exceeding ₱3.00.

Corn requires from 15 to 20 man-animal hours for furrowing and about 20 man-hours for planting at a cost of about ₱3 to ₱4 per hectare. With a single-row planter furrowing and planting requires about 35 to 40 man-animal hours. Tractor drawn three-row planter requires only 3 to 4 hours at a cost not exceeding ₱4.00.

Tobacco needs about 60 man-animal hours for furrowing at a cost between ₱5.00 and ₱6.00 per hectare. Planting requires from 130 to 140 man-hours at about ₱15.00 per hectare. With mechanically driven

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tobacco transplanter. the time may be reduced considerably at a slightly less cost.

CULTIVATORS AND CULTIVATION

Cultivation makes it possible to reduce the soil particles to a fine state thus regulating the water-holding capacity of the soil. By pulverizing the soil, aeration, is enhanced, soil temperature is modified, and plant food is freed. Weeds are destroyed, the depth of the seed bed is increased, and a certain means of adding green manures is accomplished by proper cultivation. The importance of using efficient cultivators within a certain specified time cannot thus be over-emphasized.

In lowland rice fields weeding is generally done by hand or by the use of a metal pointed weeder which cuts or digs the weeds. When properly done very efficient work is accomplished with this tool. Considerable man-hours are however, spent in very weedy areas. A mechanical weeder that can be adapted to a very wet soil offers an important problem for investigation towards the mechanization of lowland rice fields.

In producing upland rice no less than 150 man-hours is needed to weed a hectare of land. What modern cultivators of the walking or traction type can do in upland rice fields has yet to be investigated.

Fields grown to sugar cane, corn, cassava, camotes, and soybeans are generally cultivated by means of the native plow. In the College of Agriculture some 270 to 300 man-and-animal hours are needed at an expense of from ₱25 to ₱30 to hill-up, to off bar, and to hill-up again a hectare of cane field. Corn requires from 50 to 60 man-and-animal hours at a cost of not less than ₱5 to cultivate, one hectare of land. With tractor drawn cultivator, the time required was only from 4 to 5 hours at an expense not exceeding ₱4.00.

Modern cultivators vary from one-animal cultivators to multiple-row tractor-drawn types with either peg-tooth or shovel-tooth points. Different attachments are used to make soil pulverization easy and to kill weeds effectively. Some could be raised or lowered depending upon the size of the plants grown.

HARVESTERS AND HARVESTING

Hand and hand-operated tools are principally used to harvest most of the Philippine field crops. Rice is cut by several types of hand cutters, corn is plucked by hand, sugar cane is cut by bolos, and root crops are dug either by mattocks or shovels, or are plowed up. Mechanized har-

vesters have been developed to make the work less laborious, to save time, to economize, and to combine several harvesting jobs.

Harvesting and threshing of rice requires from 200 to 250 man-hours per hectare. Harvesting corn requires from 170 to 180 man-hours, sugar cane topping 120 to 125 hours, sugar cane cutting 180 to 190 hours and cassava over 700 man-hours by using mattock-axe and 190 to 200 man-animal hours by plowing. Tests made in the College of Agriculture showed that a rice mechanical harvester and binder hitched to a team of three animals cut approximately 2.5 hectares within eight hours. Plowing up cassava roots using tractor required about 50 man-hours and 16-tractor-hours to harvest one hectare.

The writer's experience in a California rice field showed that grain binders with at least a 7-foot cut pushed by a tractor could easily harvest 10 hectares per day. Large combined harvesters and threshers were noted to be capable of harvesting no less than 35 hectares per day.

The cost of harvesting rice in the College of Agriculture by hand cutters is estimated to be between ₱20 to ₱25 per hectare. Harvesting corn costs from ₱15 to ₱20; sugar cane, ₱10 to ₱15 for topping and ₱18 to ₱20 for cutting; and cassava about ₱70 by using mattock-axe and ₱20 by plowing. The estimated cost with the use of animal-drawn rice binder was not higher than ₱4 per hectare. The writer estimates the cost of rice harvesting by tractor and binder to be not more than ₱2.00 per hectare.

THRESHERS AND THRESHING

The methods employed to thresh rice grains in the Philippines are by trampling with human feet, or with animals, by "hampas," by flail, and by power-driven threshing machines. The rice bundles are first either shocked or stacked and then laid on bamboo slatted platform or on the ground usually lined with carabao dung, to be trampled by feet. Wind is utilized to blow the chaff away. "Hampas" system requires the use of wooden sticks to serve as handle for hitting the bundled rice straw against a rock. In the "flail" system, the rice bundles are laid on the ground and are hit by a revolving bamboo stick which is freely fastened to another pole by a short peg. The separated grains are then winnowed.

Tractor-driven rice threshers are used extensively on the big rice farms in the Philippines. The machines

worked so well in loosening the grains from the straw in separating the chaff from the grains, and in cleaning the palay, that many farmers find its use better than the hand or foot operated threshers. Not only are the grains shelled out of heads without cracking the kernels but the weedseeds are sifted out and only clean grains are obtained.

Studies made in the College of Agriculture gave approximately 115 man-hours as the labor requirement in threshing rice harvest from one hectare of land by trampling by feet, 80 man-animal hours by trampling by driven animals, 81 man-hours by flail, 63 man-hours by "Hampas" and only 8-man hours and about 1 tractor-hour by power driven threshing machine.

MISCELLANEOUS MACHINERY

Hullers and polishers. Rice hullers, whether of the locally so-called "kiskisan" or "cono" type have met with great success and are thus used in nearly all rice-growing regions of the Philippines. Except in small barrios or in mountainous regions where the mortar pestle, and the "gilingan" are found to the great advantage of individual farmers, modern hullers and polishers are meeting with a great deal of favor. It is not uncommon to see two or three hullers in a certain town that are operated by some kind of power units. It is the practice to carry the palay to town and pay either by cash or by certain percentage of the rice per cavan or per ganta for having it hulled.

Pumping machinery. Some farms or a group of farmers frequently find it to their advantage to irrigate their farm from small streams either by the use of temporary dams or by pumping. The common use of small power units, as gasoline or kerosene engines from 1.5 to 10 horsepower has made the use of centrifugal pumps not only desirable but profitable.

Special machinery. Individual farmers also find it of great advantage to mill his canes to make "panocha," to grind some of his agricultural products, to pull stumps, to cut wood, and to strip his abaca or ramie. Possessing a power unit similar to the one used for pumping machinery becomes desirable for the proper handling of these jobs.

ADVANTAGE OF MECHANIZATION

Very slow progress has been made in farm methods and machines here in the Philippines. Our farmers, have not used extensively power-driven machines for tilling the soil.

(Continued on page 11)

THE PROBLEM OF THE HOUR

By. R. R. DE ARANA

Is it agrarian? Many say it is—we believe otherwise. After some careful analyses, you will find out too. Some say it is a ticklish problem. It is not so because it does not hurt anybody in particular. The growth of any nation and its people is fraught with ticklish problems. It is the law of nature, and "cause and effect" solves these ticklish problems and advances the nation. Mistakes correct the peoples' ills. We must accept them as such and with vigor and thought, overcome them. It is the only wise course to follow to be content and happy people.

A poor man who acquires wealth in the long run, after a fling at travel and city life finally settles in the country on a farm. A rich man necessarily longs for a country home for relaxation. It seems that at the back of every man's mind, if he could afford it, is to buy a farm big or small, with that beautiful country home surrounded by tall trees and gardens and lawns. The proverbial swimming pool must be there and where chicken, vegetables, fruits, and milk abound. This dream to those who don't have the money becomes a reality when they acquire wealth. The Hollywood stars are examples of this. Clark Gable, Gary Cooper, Bing Crosby, and a legion of stars who were once poor realized that dream. Rich men of America have their farms. As a matter of fact the great men of America were raised on the farm and those who were not raised there, have farms just the same. And this observation is true of the English Lords, French Counts, German Barons, Argentine Gaucho Kings, Australian Ranchers, Russian peasants, Oriental philosophers, etc. Land is the backbone of every country whether rich or poor. The poorest to the richest country, agriculture is the firmest foundation of food, shelter, and clothing. And for this reason, as man comes from "dust," he is attracted by nature and is always subconsciously seeking in life to work and profit and derive happiness from it.

Agriculture is truly from time immemorial, the most noble, most profitable materially and spiritually or otherwise, profession. It is the most romantic for that matter and the most healthy. It is not only the Philippine backbone but any country's backbone in peace, and more so in war. Ame-

rica with all her industrial developments still depends on her farms for food. Without her farms today, she would not be able to feed the world in spite of all her industries. Without her farms, she could not have won the war. It is perhaps the farm that will win for her and for all of us, our peace. Russia's might today is in a large measure due to her agricultural development and progress. Germany wanted her for her farm produce, her wheat granary, not her might or industries. It was what her land gave and gives that communism is what it is today. As it was the farm and its produce that made America and democracy what it is today. The fat of the land is the secret of life, liberty and the pursuit of happiness." Land is the body and its produce the soul of every country. It is agriculture that lays the golden egg. It is the true source of life and not gold or silver or iron or factories. It is the only profession that can stand alone without all the rest. From it, all other professions can come and grow but not vice-versa.

When the Spaniards conquered the Philippines, Spanish Dons were gifted by the king of Spain with large tracts of land here. The Spanish Generals assigned governors, practically owned the country. The Filipinos were mere slaves and because of this customary state of affairs, even Filipinos who became big and rich because of their friendship with high Spanish dignitaries of the church or state, developed an attitude of servility.

It was a common practice of the "Españoles" to use their cane with candor on the hide of the native if the native displeases them either in the privacy of their domicile with their "muchachos", and in public, if the native neighbor happens to forget to say "buenas noches Amo." This attitude of the Spanish masters therefore was acquired by the Filipinos when they too, acquired wealth or high government positions and became masters themselves. This mental outlook for generations became a national habit. With that habit also came the habit of "gifting lands" to Filipino favorites with Spanish titles, disregarding the real owners of the land—small farmers who by birthright worked that land for generations. He had no say when the "Ca-

besa de Barangay" or the "Guardia Civil" ejected him and his family out of the property unless he acceded to work as a tenant slave. Because the poor people were helpless, they bore all the injustices and humiliations with resignation. From such a resignation to fate, came the saying "once a tenant, always a tenant." Older people are familiar with this history.

Suffice that for a long time the people of the farms were not able to extricate themselves from this situation and their courage to voice out their feelings became lower and lower. They consoled their lot by their homespun philosophies and looked up to heaven and prayed and feared God and waited for miracles to happen. Their minds became stagnated it is true, but not their hearts. In their hearts they kept a prayer that someday, justice would be done them by God. They suffered the land grabbers, the irresponsible rich, the indifferent government. But they believed also that a future day would come when a showdown would happen, they knew not how, as they did not have the mind to reason it out, only their instincts told them so—it was a belief like their belief in their religion. This was the seed that later on would grow and fruit.

In the meantime, the rich hacenderos sucked all the fat of the land and loan sharks manipulated with lending money to their tenants to the extent that the grand-children-to-be of the head of the family of some tenants were buried in debt, so much so that there was no way of their leaving the land and work elsewhere for them, and their children to be, were tied down to work there until they paid up with their labor, and that was until their dying day. And these were not exceptional cases either. These were common in big haciendas in the Philippines. This state of affairs was often referred to by Dr. Rizal in his writings.

But as time passed on, some of the intelligent farmers' sons who had the opportunity to have some schooling started thinking. During the time of Rizal and thereafter, the poor began to have more courage to think of their lot. Their pent-up dreams of justice began to flicker.

America came and conquered the Philippines—freedom of thought was encouraged. Better government jobs were created and many "provincia-

nos" came to the city and studied and worked in government offices. The city became a land of paradise to them. And so, labor on the land became a shameful, lowly profession, in their opinion. White collared or office job was the thing they thought. On the other hand, the rich hacenderos at this time, began to build beautiful homes in the city, acquired "caruajes" and cars later on, and left their haciendas to their "encargados". These "encargados" with the exception of a few, also plundered the poor tenants with their authority to enrich themselves in turn, although in most cases they were of the blood of the tenants.

But the city contact and studies bore fruit for the tenant cause. Lawyers became plentiful and some of these lawyers became the medium of awakening the lethargy of the poor tenant. Their plight was reasoned out to them by these jobless young lawyers.

"Agitators" were born. Leader-agitators of tenants were all right in principle but in practice were generally racketeers who also took advantage of the poor tenants. Tenant Associations sprouted. An example of this group as the lawyer-leader-agitator would put it:

1. Any member or any member of his family would be defended free of charge, should he, or any member of his family, have a case in court (which never happened, if ever, very seldom).
2. All their grievances would be voiced by him in the papers and other means to prove their rights.
3. All members would be treated equally.
4. All they had to do was give as contribution to their association from one cavan of palay to four cavans, depending on their generosity during harvest.

To be sure, this was very good, the tenants thought. They would have a protector. What was one or two cavans of palay at harvest time? That was nothing. But a group of several hundreds, or a few thousand members, as in some cases with these associations, gave security in income and assured the lawyer-agitator from hunger. This is mentioned as historical detail because they, although immoral in principle, had their psychological effect on the tenants. Because of these associations, the tenants were set to thinking now more reasonably. The tenants began to have courage and recognized the wrong done them for scores of years.

They began to have confidence, to at least voice their rights. They knew they had a right now.

In Central Luzon, Associations grew. Socialism came in and complicated matters. The people did not recognize the difference. But because the poor "tao" like a floating mass of debris or a mother cricket in an inundated river in a storm of ignorance and doubt, had to grab and hang on to something like a sheltering rock, or they would sink and drown. They had to hang on to something, no matter what it was in principle, as long as that group or association defended their rights and protected their harvest share.

The landowners on the other hand, except for a few, continued leading a life of ease in the cities. These absentee landlords did not care what happened to their tenants as long as they received their usual share of the crops at harvest time, not recognizing what was transpiring in the hearts of their tenants. The seed of the belief of their ancestors that justice would be done them and themselves, became now a growing plant. It was now a reality.

Democratic form of life with the Americans, became a God-sent gift to them. Now, the tenants could go to the "municipio" and file a case against his own landlord. They now were their equals before the law. Added to these democratic rights, the government established nurseries and farms and opened up the eyes of the tenant to the wealth that could come from their labors.

In the Central Luzon provinces in the 1920's, democracy was on the march. But all along this time, the inhibitions of the tenants were not given freedom of expression in their farm practices as the absentee landlords threatened them with expulsion or court summons. They had not yet enough courage to face their masters in a court of justice. Therefore, outbursts of their passions once in a while, took the form of silent action of murder or theft or animal slaughter, at which the rich influential landlords hammered with the

law as unjust, ungrateful tenants, bunch of "outlaws to the hand that feeds them", and all sorts of complaints that drove the officers of the law, the constabulary then, to deal with an iron hand with the unfortunate victim or victims and with harshness at times.

The advent of President Quezon's "Social Justice Program" inspite of the Tenancy Law, was a step higher still in the ladder of the growing support to the interest of the tenant farmer. But tenant insistence of their prerogatives did not really bloom and took solid form until the Japanese subjugated and occupied the Philippines.

The Japanese regime drove the hacenderos from their farms. Life was cheap then and cheaper still in the provinces. This was the main reason why the rich, because of their means, stayed continuously in the cities, where there was some semblance of law and order. Now, the tenants began to have real control of their work and harvest. The encargado now for fear of being denounced and be a victim of the guerrillas by information to the effect that he is pro-Jap or, conversely, be a victim of the Japs by his name being given as supporter of the guerrillas, loosened up in his vigilance of tenants. And the landowners, valuing their lives after all more than their property, did not mind their losses, completely resigned to their fate because of fear of death. Now, for more than three long years, the tenants took of the fruit of the land to themselves. Now, the harvest was all theirs. Now, the dream of justice was fully realized. Now, they became obsessed with ownership of the land, for it was good to feel secure in the abundance of food. This was the climax to the new order of thought. Now, they developed courage and confidence in themselves, strong enough, to face their landlords in any court and for that matter, in majority of cases, with arrogance. This was the result of pent-up inhibitions for so long that now had free expression.

(Continued on page 19)

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Rizal As An Agriculturist

By HERMINIA M. ANCHETA

A country, like ours, after its rehabilitation and reconstruction has to cast her eyes and appraise her industries which among them can be of immense help in these processes. The Philippines is by and large an agricultural country.

Agriculture is of a paramount importance in the reconstruction of its ruthless destruction wrought by the invader. There is gold in the agricultural lands, vast virgin soil in our country. To speak of agriculture is to call to mind Jose Rizal's many sided-genius whose interest in farming was prominent. In the execution of this industry one necessarily has to fall upon some model. Rizal, that highest denominator of Filipino genius really creeps into our lives at all times and all reasons. He could very well serve as an inspiring spirit and a pattern of emulation for the

youth in particular. For it especially behooves the youth to strive to help preserve the remnants of human dignity and life.

The interest of Rizal in farming was evinced in his early years by his love of nature and outdoors. A charming description of his childhood home—a little cottage of nipa in the middle of a garden under the shade of the bananas and other trees reveals this interest.

Rizal concretely showed his liking for farming when he was deported to Dapitan. Being a scientist at heart, he discovered wonderful sources of specimens in Dapitan and the other parts of Mindanao. Some of the specimens he gathered from the coasts were shells, bugs, and new varieties of plants. He once wrote to his unforgettable friend, Blumentritt:

"In order to be happy I lack

only my liberty, my family, and my books... But in recompense, I am very near nature, the murmur of the leaves, and I see the continuous waving of the palms agitated by the breezes."

As an agriculturist Rizal wanted others to love nature. When he taught his boys in Dapitan he included nature study in his curriculum. This subject consisted in helping Rizal collect his specimens of flowers, shells, insects, and reptiles.

He required his pupils to engage in practical farming activities. The recess period was then spent in building fires in the garden to smoke the plants and drive away the insects, or in manuring the soil and pruning the lanzones, nanca, and other trees.

The adult people of Dapitan were taught the use of modern agricultural implements which he had bought from abroad. He taught the Dapitan farmers how to use them to a great extent.

Once luck came along his way when a lottery ticket which he and the Commandant F. Equillen bought together won a second prize, the share of each being P6,000.00. Part of this money he spent in buying a piece of land along the bay a few hundred meters east of the town of Dapitan, and here he constructed his home made of bamboo. Here he lived with his wife Josephine.

Later on, however, he bought a rather extensive piece of land. Here he dreamed of building another Kalamba. He gave his sister Trinidad an attractive picture of the site to inspire her to join him. He wrote to her: "My land is half an hour from the sea... it is very poetic. There are *dalag* and *pako*."

To interest his mother, he told her of his land with 6,000 abaca plants, of their beauty, and of the fertility of the soil. Rizal could not be blamed for his enthusiasm because there came a time when his lanzones, cacao, caluno, mango and nanca were heavy with fruits.

This desire to build a new Kalamba was expressed in some fragments of a letter to his brother-in-law, Manuel Hidalgo. They run as follows: "You can come here and have a big hacienda. The government is going

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to grant three months' exemption from service ... All the people of Kalamba, Tanawan, Lipa, etc. can come with their implements. We will establish a new Kalamba!"

This was one of the instances when Rizal dreamed of establishing an agricultural colony. On one occasion, a colony was intended in Mindanao. It was in the sitio of Ponot where he thought of planting coco, coffee, and cacao. On this site he had in mind to raise four to five thousand heads of cattle. There was a good port nearby and plenty of water in the streams. The government gave him authorization for this project but later for unknown reasons the same government placed obstacles on the way.

Once again, when Rizal planned to found a Filipino colony in Borneo, his aim was to establish an agricultural colony. Among the plants he wanted to cultivate there was sugar cane.

There were other reasons which prompted Rizal to become a farmer. He did not want to dedicate himself to anything else but to agriculture. The only means by which he could assure his future. To quote his own words: "Although of speaking of agriculture I myself am not one by profession, I would remain here and dedicate myself very willingly to the soil..." "I am turning agriculturist because I hardly practice medicine here."

According to Father Pastells, this kind of manual labor was too common and vulgar for Rizal, but Rizal engaged in this work because he thought that planting coffee and cacao was one way of cooperating with God.

Rizal wanted his people to be farmers because he wanted them to love real manual work. It was his one great desire to make them see that real wealth in life is in the soil and that there is gold and life in farming. To engage in farming is to be nearer God, for are we not a part of nature itself?

In this time of scarcity of food and clothing one should learn lessons from Rizal's attachment to the soil. One way of solving the problem of food is to dedicate more time to planting vegetables and crops such as corn, rice, sugar cane, and others.

We likewise wished the people to engage in hard manual labor, which planting involves, in order to give them practice in the hardening process.

As an agriculturist Rizal was modern and scientific, a fact proved in the first paragraphs of this article. He was diligent and practical. For instance, from his sixteen hectares he could obtain an annual income of approximately two thousand pesos.

He delved into the secrets of plant, land, and discovered wonderful riches which he contributed to the progress of knowledge. He once turned his attention to horticulture and in

less than a week he planted over 500 pineapples in the lot near the government house, in addition to bananas and a few coconut trees. For a simple man to accomplish this in less than a week needs extraordinary diligence and will of iron. With the help of this students he formed a good-sized herbarium and noted the characteristics of each species.

He was loyal to agriculture, for he was a man not given to defeatism. On these occasions, he wanted to found an agricultural colony.

He was also economical. Rizal's activities as an agriculturist were part of the Rizal way. Thus if we wish to live the Rizal Way we should learn to like farming as Rizal did.

Nature never failed to stir the poetic urge in Rizal's soul. When he was in Dapitan he wrote a poem entitled: *Hymn to the Talisay Tree* as an indication of his love for tree planting. Recall the following lines:

*"Hail, O, Talisay!
Firm and untiring,
Ever aspiring,
Stately, thy gait
Things everywhere
In sea, land and air,
Shalt thou dominate."*

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Questions And Answers On Turkey Raising

By CARLOS X. BURGOS
Chief, Livestock Extension Division Bureau of Animal Industry

(With the last issue we finished with *Livestock and Poultry Questions and Answers*. We start with this issue *Questions and Answers on Turkey Raising*. After this set, we will publish *Questions and Answers on Duck Raising*, *Goat Raising*, *Rabbit Raising* and *Fish Culture*.)

1. From what country did the turkeys originate?

The turkeys originated from America, where they are still found in a wild state. They were first domesticated by the Aztecs in Mexico, from which country they found their way to Spain in the 16th century and then to England. Later, turkeys were re-introduced into America from Europe as new breeds.

2. How did the name "turkey" originate?

Some believe that it originated out of the resemblance of the fowl to a Turk with his fez on, or, possibly, from the fact that the Moors known as Turks brought it to England from Spain. In Spain the turkey is known as "pavo." This fowl is related to the pheasant.

3. Where did the Philippine turkey come from?

Most probably, it came from Mexico, as Spain governed the Philippines largely through that colony.

4. What do the census figures show about the turkey population in the Philippines?

In 1903 there were 9,201 turkeys in the Philippines; in 1918, 27,754; and in 1939, 43,419.

5. What were the leading provinces in turkey production according to the 1939 census?

They were, together with their respective populations, as follows:

a. Pampanga	5,586
b. Bulacan	4,494
c. Negros Occidental	4,139
d. Nueva Ecija	3,883
e. Laguna	3,640
f. Pangasinan	3,542
g. Rizal	3,457
h. Cebu	2,928
i. Tarlac	2,162
j. Iloilo	1,685

6. What are the most important breeds of turkeys?

In Europe, they are the White Holland, a continental popular breed, and the Black Norfolk, an English breed, both of which played an important part in the development of

the domesticated turkey. In the United States, they are the Mammoth Bronze, the Medium White, the Bourbon Red, Narragansett, and Slate. The last is a blend produced from the crossing of the Black and White turkeys of Europe.

7. Why do not many people raise turkeys in this country?

Because of the general belief that too much hand feeding is essential to the successful raising of turkeys.

8. Is that belief based on facts?

No. Turkeys can be raised as easily as chickens. In fact as to the growth of meat the turkey is a faster grower than the chicken, and once it is over one month old and it gets well accustomed to the range, especially a suitable range, it is very economical and easy to raise.

9. What do they like most to eat in the range?

Tender grass, shoots, berries, fruits, grass seeds, beetles, grasshoppers, worms, frogs, tadpoles, and lizards. If left to range over newly harvested fields of palay or corn, they will pick up fallen grains and other seeds that had escaped the eye of the harvester. For this reason, in California, many rice growers use turkeys to clean their fields after harvesting.

10. Can turkeys be raised on a large scale in the Philippines?

Yes, and this has been done. Early in 1939, a man from Bataan who had never raised turkeys started with a few dozen turkey eggs. He raised his poults (young turkeys), guided largely by instructions furnished by the Bureau of Animal Industry. By Christmas in 1940, he had over 200 Bronze turkeys. In some barrios of Tuguegarao, Cagayan, before the war, farmers preferred to raise turkeys in flocks of fifty or more. In Binangonan and Angono, Rizal; and in Hagonoy and Paombong, Bulacan; there were also many raising them. Likewise, many farmers in Cebu City; Janiuay, Iloilo; and in some towns of Occidental Negros were successful in raising them.

11. Describe the Bronze turkeys.

They are the largest breed of turkeys; they weigh 13.5 to 15 kilos for toms and 7 to 9 kilos for hens. In the Philippines, they weigh only 10 to 13 kilos for full-grown toms and 5 to 6 kilos for hens. Exceptionally large Bronze turkeys in the United States

weigh as much as 22 or 23 kilos. In color, they are black or brownish-black, with a copperish sheen or brilliance. There are also narrow white barrings on the wings, tail feathers, tail coverts, and breast.

12. Describe the native turkey.

The native turkey is very small compared with the Bronze. The toms weigh, on the average, 5 to 8 kilos; and the hens, 3 to 4 kilos. The black turkeys of Bulacan may weigh a little heavier than these. The average native turkey, however, resembles the Bronze in appearance, except that it does not have that metallic sheen the latter has.

13. How may the males be distinguished from the females?

The males, even when very young, are usually larger than the females, especially as to size of shanks and body. As they grow older, their difference in size becomes more marked and the face caruncles of the males appear to be more prominent. Likewise, the fleshy appendage over the nostril that shortens and elongates at will is much more developed in the male than in the female. Moreover, only the male, when full grown, grows spurs and a tuft of tough hair over the crop.

As to behavior the male, when adult, may easily be distinguished from the female, especially in the presence of the latter by his various showy ways—the spreading of the tail feathers into fan-shaped forms, his strutting gait, and his long-drawn gobbles which he emits when hearing sharp and piercing sounds. The female sometimes imitates the strutting of male, but she is a poor imitator.

14. What is a satisfactory place for turkeys?

A place that drains easily during the rainy weather and where no stagnant water collects. If possible, the soil should be sandy loam if it is not in a rolling country. The range should be wide and rich in green feed, tender edible buds, fruits, berries, weed seeds, grasshoppers, and other insects. Wild or semi-wild surroundings with no predatory animals help to reduce the cost of maintenance and to promote successful turkey production.

15. If the range is limited what is the best policy to follow?

Divide it into at least two parts so as to rotate the range and let the

plants of one part recuperate.

16. *Is a house necessary in raising turkeys?*

It is always better to have at least a shed with one or two sides covered as protection against the prevailing winds that usually accompany heavy continuous rain. Some people raise turkeys in the open. Even in such case, however, their roosting place should be also provided with a wind-break against the prevailing winds which are accompanied by heavy continuous rain.

17. *Are enclosures important for turkeys?*

Yes, when there are neighbors nearby. But where there are none or they are far away, the turkeys will do better if allowed to roam as they please in the open fields.

18. *Will turkeys return to roost in the same place as chickens do?*

They will; but as a precautionary measure when the flock is fairly big, a boy or some other person should herd them, keeping them where food is plentiful and making sure that they are not lost or molested. Turkeys can be easily herded in the same way as goats and sheep. But it should be remembered that they have a higher market value than the ordinary goat.

19. *How many eggs do the native turkey hens lay?*

They lay ordinarily a clutch of 14 to 16 eggs, which may be increased when feed of better quality and greater variety is available. They lay two to three clutches a year.

20. *What is the egg production of Bronze turkey hens?*

The Bronze turkey hens lay 16 to 20 eggs to a clutch. If the eggs laid are removed so that only one is left in the nest at a time, they will lay as many as 26 eggs or more to a clutch. If the nest is removed at the end of a period of a clutch, they will lay again in 10 days to 2 weeks. The average number of eggs laid in a year by a small flock of 20 hens, frequently supervised by the Bureau of Animal Industry during 1940 and 1941, was over 90 eggs per hen. It may be stated here that this flock was fed a laying mash similar to that given to the White Leghorn commercial flock kept by the same owner.

21. *Where do turkey hens prefer to lay their eggs?*

They prefer to lay them in nests that are well concealed and difficult to find. In fact, whenever they lay, they leave their roost early in the morning and go quietly direct to their nests.

22. *Describe their eggs, as to size,*

shape, and color.

Their eggs are large, oval, very much more pointed than the average chicken egg, whitish, and abundantly spotted with reddish brown dots. The Bronze turkey eggs are much larger and have a more prominent coloration than those laid by the native stock. In fact, there are times when many of the native turkey eggs are almost spotlessly white so that they may be mistaken for White Leghorn eggs.

23. *How, then, may nests be placed to control egg production?*

Empty barrels or fairly big boxes, used as nests, may be arranged in dark places in the turkey house or shed, or they may be spread and fairly concealed among the shrubbery. It is important, however, to visit such places daily to collect the eggs, or if other nests are put in other places they should be protected against rain or against attack by pigs or any other predatory animals.

24. *How may the eggs be collected without disturbing the hen?*

This may be done by first locating the nesting place of the hen at a distance early in the morning. When the place is located, one should wait until the hen leaves. It is easy to tell when she leaves, because she continually calls out the flock to know its whereabouts. The gobblers, as soon as they hear her call, will inform her of their whereabouts by their typical answer call.

25. *What is the procedure in collecting the eggs?*

An egg should be dated as soon as it is laid, and the egg last laid is left in the nest, unless there are available China eggs or other artificial eggs which should, of course, be left in the nests.

26. *Are turkey eggs as palatable as chicken eggs?*

Yes. If the turkeys have continuous access to a laying mash or are fed daily with a grain mixture, the fresh eggs laid by them cannot be distinguished from chicken eggs except for their larger size. Older eggs, kept away from feeds or other products emitting odors which may be absorbed by eggs, will have the same flavor as chicken eggs similarly kept.

27. *How many eggs may be set under a turkey hen?*

Generally, about 15 turkey eggs. If there are broody chicken hens at the time the turkey hen sits, as many as nine eggs may be set under each of these hens. When the poults hatch they may all be given to the turkey hen. On the seventh day after the

infertile or dead germ eggs have been removed, two or three chicken eggs should be included to hatch. The reason for this will be explained later. Older large turkey hens that have proved to be good mothers may be given as many as twenty eggs, but their nests should be well made.

28. *What is the incubation period of turkey eggs?*

The incubation period of turkey eggs is 28 days. This is the reason why chicken eggs, to be incubated with turkey eggs, are included after the 7th day of incubation, for both kinds of eggs to hatch at the same time.

29. *What is the reason for including a few chickens eggs with the turkey eggs?*

To have chicks in the same hatch that will teach the poults to eat. Chicks readily learn to eat the mash feed placed before them and the poults try to imitate whatever the chicks do.

30. *What precautions should be taken in setting eggs under turkey hens?*

The same precautions taken with chickens. See to it that the nesting material is sufficiently thick and that the nest is well made. That the hen in alighting on its nest does not break any egg. That the necessary measures are taken to get rid of lice and mites before placing the eggs under incubation. That steps are taken to protect eggs from ants, crows, snakes, rats, and such other animals that may cause disturbance to the sitting hen.

31. *What months are most favorable for raising poults?*

In places where weather conditions are similar to those in Manila, incubation may be started as early as the middle of October and as late as the middle of January.

32. *What is the reason for this?*

Generally, the conditions in these parts of the year are more favorable for raising poults. From November onward, there are longer spells of good weather. Green, especially tender greens, are easily available, and there are usually plenty of insects. Continuous rainy weather and coarse pasture feeds are not favorable to turkey production. The period for raising young turkeys, however, could be extended if in spite of adverse weather conditions, they could be properly sheltered and given tender green forage.

33. *Can turkey eggs be hatched under artificial incubation?*

Yes, but to be successful in ordi-

(Continued on page 17)

PROGRESSIVE FARMING

Preparation And Application Of Compost

Prepared by GREGORIO S. CHAN
(Prov. Agric. Supervisor of Bataan)

Introduction: The addition of compost or artificial farm yard manure from organic matter has never been a generalized farm practice in the Philippines. Although its effects in improving the physical, chemical and biological properties of the soil and increasing crop yields are known, yet most of our farmers as well as gardeners fail to use compost in renovating the depleted soil. From field observations as well as literature on the subject, it appears that the preparation of this artificial farm yard manure from agricultural wastes and city garbage is not common in this country.

According to literature, Switzerland is credited as the originator of making compost. Once upon a time every home in Switzerland either urban or rural had a compost pit as it was a national requirement to every family home. Later, the system spread to other countries of Europe through immigration and colonization.

Definition: Compost is defined as a mixture of earth along with every sort of decayed organic matter or refuse.

Systems of composting: There are three systems known; namely, the shed, the tomb and the pit. The first two are considered standard types, and they are used by the most civilized countries of the world. The third type which is the open pit system is a practical one, and is being adopted gradually nowadays by practical farmers and gardeners in this country. As the third type is the most economical of all, it will be discussed lengthily in this article.

Procedure of preparing the compost by the open pit system: Select a place in the garden, on the farm, or in the orchard, preferably under a shade where you will not grow food crops. A shady place is preferable because shades foster quicker fermentation. The place should be high enough so that it will not be flooded during the rainy season. It should be located at the side, corner, or rear of a garden or farm. The size of the pit depends upon the availability of garden refuse or agricultural wastes. The recommended one is 3 meters by

4 meters for a large size pit and 2 meters by 3 meters for a small size pit. Dig the portion selected to a depth of two to three feet. The depth of course depends upon the water table. If the water table is shallow or near the surface of the soil, the excavation should be shallow, and vice versa. This is an important factor to consider because the presence of water in the pit will interfere greatly in the decomposition of the organic matter to be dumped into the pit. A clay wall of about two to three feet high may be constructed around the pit to prevent the compost materials from falling off and avoid leaching. See the first sketch.

Dump the garden refuse into the pit to a foot high as the first layer. The garden refuse before dumping it should be sprinkled uniformly with water in order to hasten the decomposition. Put on any animal dung or excrement, two to four inches thick, covering entirely the first layer. Earth may be substituted with animal dung if this is not procurable in the locality. Wood ashes can be mixed with animal dung. Ashes, besides supplying the soil with potash, are also deodorizers. They relieve the foul odor from the pile. For the second layer, place another sufficient quantity of agricultural wastes to a height similar to the first layer. See to it that they are also moistened with water before dumping them. Animal dung and ashes should be alternated after every layer of garden wastes. Continue building the pile until it reaches a height of six feet. Make a shallow concave surface at the top of the pile to hold moisture when it rains. (See the first sketch.) The rain water accumulates in the basin-like top which percolates and ramifies through the different parts of the pile; thus moistening uniformly the entire pile. On the top of the whole pile, spread enough soil two inches thick to serve as covering to prevent drying up of the compost materials within. It would be better if a vine (squash or cucumber) is allowed to creep on the top of the pile to minimize the evaporation of water from

the heap. (See the second sketch.) Under field or open air conditions, the compost is ready for use within four to five months. If there is an abundance of garden wastes around, it is preferable to build a new pile rather than to exceed the prescribed height which is six feet.

When the compost is used to fertilize a large area, it is advisable when taking it away, to leave a thin layer of the old compost on the ground. Then build up the new pile on this residue. This residue will serve as a starter and help greatly in the early decomposition of the agricultural wastes to be deposited later. All sorts of plant refuse free from pests and diseases, chaffs from threshing, kitchen garbage containing peelings of fruits and chicken offals, road scrapings free from stones and sticks, seaweeds, hedge trimmings, slaughter house refuse with horns and hoofs, and bone meal can be used as compost materials.

Uses and application of compost: It is recommended that compost should be used only in backyard gardening owing to limited quantity that can be produced. For practical application, for every garden plot with an area of 10 square meters, use six to ten petroleum canfuls of the compost. Mix it thoroughly with the soil by using a spading fork.

Compost is used also to conserve soil moisture. It increases the moisture-holding capacity of soils and prevents gullyng, washing away and baking.

Additional information: 1. Different periods of the decomposition of compost materials under laboratory conditions as experimented by Mr. Isidoro Romero, College of Agriculture, University of the Philippines—

- a. From 81 to 85 days—straw with soil
 - b. From 96 to 100 days—straw with ash
 - c. From 78 to 84 days—straw with carabao dung
 - d. From 75 to 79 days—straw with horse dung
2. Mr. Ehrenfried Pfeiffer does not recommend the use of concrete, grass,

(Continued on next page)

Mechanizing...

(Continued from page 3)

The products of the farm are not yet sufficient to feed the ever-growing inhabitants.

Modern farm motors and power machinery have the definite advantage of giving better quality of work and of doing the job in much less time than by the man and animal labor. By increasing the area under cultivation with the use of mechanized units, it is possible to supply food to our millions of population plus food for additional millions outside of the Philippines.

The use of carabaos and of bullocks as the main source of native power has the disadvantage of being slow, weak, and subject to attack of pests and diseases. With mechanized units unnecessary delays can be minimized or ultimately cut out, and land preparation, planting, cultivating, harvesting, threshing, preparation of finished agricultural products, and delivery to market will all be done on time.

Although estimates made in the College of Agriculture always indicate better economy with the use of modern implements it is difficult to figure comparative costs owing to different rates of local wages and of unfixed prices of motors and machinery. In large sugar centrals and in Koronadal Valley where power-driven machinery have been found to be an absolute necessity and where no other tools are used or called upon to do various heavy farm work for so many days in the year, the utilization of modern farm mechanical equipment proved desirable and profitable.

MECHANIZATION PROBLEMS

There are thousands and thousands of individual farmers in the Philippines at present who consider the native plow the one and only tool that seems to be able to do good tillage work on their small farms. The College of Agriculture has gathered plenty of local data to prove the suitability of tractors and of some agricultural machinery in raising some crops. Some big sugar centrals, the Government owned Land Settlement Administration at Cotabato few big landed estates, and the Bureau of Plant Industry have demonstrated to some extent the efficient and profitable use of some of some mechanized units in large tracts of land. Where men and women are still to be had for planting and harvesting by hand, where method of

FOOD FOR THOUGHT

(Reprint)

"The progress of the Western civilization is marked by the improvement of the plough. The pre-historic plough was the crooked stick drawn by man. It was merely a scratching tool. Every man was his own draught animal. Somehow the farmer and his family could manage to eke out their existence with this crude method of tillage. In India too we find reference to this kind of tool in the hands of Balaram, the brother of Sri Krishna who is considered to be the father of Indian agriculture. Balaram used to carry a plough as his emblem and was also called by the name of Haladhra or the carrier of a plough.

"In ancient Egypt a form of hoe made from a crooked stick used to serve the purpose of a plough.

"The Roman plough which Virgil describes used to be made of two pieces of wood meeting at an acute angle and plated with iron.

"In the middle ages no improvement of the plough was noticed. The Dutch were the first people to greatly modify the Roman plough. They first conceived the fundamental ideas of the modern plough. They made their plough with a curved mouldboard, a beam and two handles. In England in the beginning of the eighteenth century the Dutch plough served as a model...

"In America after the Revolution-

farming, specially that for lowland rice, has to be carried on in small plots of well puddled mud or on limited areas, and where farmers are still available to work with the meager returns that they get from their farms either as part owners or as tenants, it will not be an easy matter to generalize the use of mechanization. A very thorough process of proving, approving, disapproving, and improving of various farm power and farm machinery will still have to be carried out extensively. What types of farming can best be mechanized, what size of land and machines must be secured to suit various farm conditions, what engines and devices will give the most efficient and profitable return, and what will be the ultimate effect of mechanization to the mode of living, happiness, and welfare of the Filipino people, are the problems that must be well considered in relation to the mechanization of Philippine agriculture.

ary War the English plough was gradually replaced by ploughs made in the United States. Among those who gave first thought to the improvement of the plough, the names of Thomas Jefferson, Daniel Webster, Charles Newbold and Jethro Wood are prominent...

"The Indian plough is a wedge-shaped toothed implement provided with one handle, a long wooden beam and a long iron pointed share all attached to its wooden body. It stirs the soil all right but inverts it very little. It closely resembles a medieval plough. It takes much time and labour to prepare a seed bed with this plough..."

—The Allahabad Farmer. (India)

Preparation And...

(Continued from next page)

or turf as floors of the pit. He believes that these materials are obstacles for the earthworms to get access into the compost materials. Earthworms and microorganisms in the soil aid greatly in the decomposition of the compost materials. Earthworms provide fertilizing substance when they die after performing humus formation activity.

3. The maintenance of the proper amount of moisture is one of the most important requirements of the compost.

4. The fermentation occurring inside of the pile is a life process, hence the pile must be allowed to breathe, and it should be well aerated.

5. A compost pile that is too dry requires watering. Dry compost gets hot very easily and fermentation is destroyed.

6. The guiding principle is the fact that the compost pile itself must be treated as a living organism because of the bacterial content and its internal fermentation.

7. In the case of a big compost heap, turning the pile is necessary. In turning, the outside of the original heap should be made the inner part of the new, and the former inner part now becomes the new outside. It results into a uniform decomposition of the compost materials in the same heap.

8. Weeds should not be allowed to grow on the compost pile. A growth of grass on the pile is harmful because it prevents the air from coming into the pile due to its thick root system, thus precluding fermentation.

COOPERATIVE MOVEMENT

By HILARION S. SILAYAN

HOW TO ORGANIZE A FARMERS' COOPERATIVE ASSOCIATION

INTRODUCTION

There is no fixed formula for organizing a farmers' cooperative association. The organization of a cooperative in itself is not a hard task. But to make of the cooperative a going concern, that is, to maintain and run it for the attainment of maximum benefits to the organizers and members and the community in general is a task that requires all the planning and executive ingenuity of the organizers and officers of the association. It is necessary that the pitfalls of hasty organization be avoided. This can best be accomplished by conducting a survey of economic conditions in the area to be served by the cooperative.

PRELIMINARY SURVEY

The preliminary survey of economic conditions may be undertaken either by cooperative supervisors of the Bureau of Plant Industry in close collaboration with organizers of the proposed association, or by a committee formed from among the organizers. An important feature of this survey is information regarding the quantity of agricultural products available in the territory. The agricultural extension service of the Bureau of Plant Industry, teachers of vocational agriculture, and other agencies may be of material assistance in planning the survey. A form that may be used in obtaining such information is shown hereunder:

with organization, a more detailed survey including history of cooperative efforts in the territory should be made.

SURVEY

It is essential to understand the farmers' present and past experience in cooperation.

1. Number and kind of cooperatives operating in the area, if any:— There are four basic kinds of farmers' cooperatives, to wit: (a) producers' cooperative, (b) marketing cooperative, (c) financing cooperative, and (d) consumers' cooperative. Is any or are all of these cooperatives organized and functioning in the area? Study each cooperative. Are there other cooperatives? What are the effects of the associations on the community?

2. How long has each been in operation?—In order to determine the causes of failure or success of an association or associations, their length of service should be looked into carefully.

3. Estimated volume of business handled by each.—The life of the association is practically, if not largely, dependent upon the volume of business to be handled. Sufficient volume of business is essential to permit economical operation and competition with other existing market agencies, and for realizing reasonable margin. If, on the other hand, the

4. Facilities for operation, such as warehouses, etc.—Of equal importance as the volume of business, are the facilities for operation. There should be a warehouse for storage, classification and standardization of the products is seasonal and it varies in accordance with the presence of the various factors affecting it. Thus a certain product may be abundant at a certain season and its supply insufficient at another. This condition results in either periodical surplus or shortage of the product. On the other hand, consumption is relatively uniform. Storage then of the products is essential in adjusting the variable supply to the relatively constant needs of consumers. Do these cooperatives have warehouses of their own or are they leasing them? Do they use other buildings? Give estimated cost and rent of each.

5. Sources of finance, whether private or governmental.—Are the sources of finance adequate? What are the sources of finance in the proposed area? Farmers and producers of all kinds of commodities have need of the service of financing. Without the cash or credit which financing provides, both commercial farming and marketing are utterly impossible. The service of financing should be adequately rendered to provide capital for efficient operation of the business of the association. Macklin⁽¹⁾ classified the capital needs of an as-

NAME	ADDRESS	KILOMETERS FROM MARKET	TOTAL No. OF HEC-TARES PLANTED	TOTAL PRODUCTION OF MAJ. CROP	TOTAL PRODUCTION OF SECONDARY CROP	SELLS WHERE NOW	NEW UNDER CONTRACT	REMARKS		ATTITUDE
								Favorable	Unfavorable	
Pedro Santos	Munoz	4	4	120 cav.	P100	Cabanatuan	No	Yes		Will assist in organization work

The information called for in the aforementioned form may be easily obtained at local meetings. Ordinarily it will not be necessary to make a house-to-house canvass.

If the preliminary survey shows a volume of business sufficient for the purposes of an association, and the farmers manifest a desire to proceed

volume is inadequate, the costs of operation are greater than those of private concerns. The very farmers then who established the association soon find that the financial advantages from private concerns are greater than those gained through the association and as a result their interest in the association wanes.

sociation as (a) need for equipment or relatively fixed and permanent capital, as office equipment or relatively fixed and permanent capital, as office equipment, machinery, buildings, and all permanent facilities for transacting and housing the business or storing its raw materials and finished products; and (b) need for sup-

plies or relatively free and therefore changeable or circulating capital. The second need for capital refers to the money required for supplies of raw materials handled or stored, to meet operating expenses, and to cope with all unforeseen problems confronting the business, including the storage of products as may be required to stabilize prices and marketing. What are the sources of capital of these associations? Individual members? Banks or other institutions of credit? Furnished by the government? Or furnished by moneyed individuals. Are they adequate?

6. Do the farmers feel that these associations have been successful?—Jones⁽²⁾ gives three outstanding indications of the success of cooperative associations: (a) sound financial set-up and financial operating policies; (b) skill in merchandising; and (c) satisfactory membership relations. Are these indications strongly manifested in the association? If they are, the farmers will feel that the associations are successful on account of the beneficial effects that could be derived therefrom.

7. If the farmers are not satisfied with the association, what are the causes for the dissatisfaction?—

The failure of an association may be due to the following causes as given in "Formation of Cooperative Associations":

(a) Organization mistakes: (1) Failure to study the needs of an organization and the problems to be met; (2) creation of an organization out of proportion to the business to be handled; (3) organization extravagance in the matter of equipment needed, promotional expenses, and initial salaries paid.

(b) Mismanagement: Due to (1) lack of understanding of local conditions, (2) marketing problems, (3) financial requirements, and (4) inexperienced officers and managers.

(c) Lack of membership support: Due to (1) dissatisfaction with results obtained, (2) loss of interest, and (3) failure of association to establish local points of contact with members, all of which results in an insufficient volume of business.

(d) Economic conditions: Such as price declines and falling off in demand either in domestic or export markets.

(e) Internal dissensions: Due to

selfish motives and the playing of politics on the part of officials.

The other causes of failure of cooperatives according to Burley⁽³⁾ are:

- (a) Small Capital.
- (b) Small Membership
- (c) Small business volume.
- (d) Conflicting methods, particularly as regards
 - (1) Extension of credit
 - (2) Pricing policy
- (e) Lack of strong wholesale groups.
- (f) Poor location of stores.
- (g) Lack of proper accounting and auditing methods.
- (h) Lack of adequate education in cooperation.
- (i) Waning of enthusiasm of members, frequently because of failure to receive large dividends.
- (j) Chain store competition.

Summarizing the causes of failure of cooperatives, Burley⁽³⁾ made four general classifications:

- (a) Faults of management.
- (b) Inadequacies surrounding membership.
- (c) Industrial and economic factors in general.
- (d) Acts of God.

8. What percentage of the farmers in the area utilize the services of the cooperatives?—The percentage is determined by the number of farmers affiliated with the association. Non-members may utilize the services of the association in proportion to the benefits they derive from the cooperative.

9. Transportation facilities for the products—farm to warehouse or assembling points; farm to market centers; warehouse or assembling points to market centers.

Transportation facilities very often spell success or failure for the business organization. What transportation facilities are used by these associations in transporting their products from the farm to the warehouse or assembling points; from the farm to the market centers; from the warehouse or assembling points to the market centers; and other busi-

In Lighter Vein

SHOT DOWN IN FLAMES

By PAQUITO SERRANO, Albay
On the table top
A pile of old letters lays
Beside is a note
Returned with pleasure—it says.

Seated at the table
Is a fellow of ewntny
Whose handsome face is now
A pic of gilded misery.

FLIGHT

A MOON,
A BOY,
A GIRL,
A BENCH.

THE MOON SHINES IN ALL
HER SPLENDOR...

THE BOY AND THE GIRL SAT
IN CLOSE FORMATION.

MY PIN-UP GIRL

P—is for PULCHRITUDINOUS...
You make the other girls
look like apologies

I—is for INTOXICATING...
That is what I always think
of your kisses

N—is for NYMPHAL...
The proofs are your pics
in thrilling poses,

U—is for UNCTUOUS...
Your voice haunts me
whenever you call

P—is for PANACEA...
Indeed you are to an
afflicted soul.

ness places? What are the freight or transportation charge or charges? Are all means of transportation, e.g., carts, sledges, trucks, railroad or water, available? Are the roads good?

P. P. GOCHECO & Co., Inc.

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MANILA

MARCH OF EVENTS

OFFICE OF UNITED STATES HIGH COMMISSIONER TO THE PHILIPPINE ISLANDS

Highlights of Mr. McNutt's Service as High Commissioner.

During First Term of Service 1937-1939

1. Organization of Office of High Commissioner from Staff of Governor-General.
2. Round-Robin Letter to Foreign Consuls
3. Rebuke to German Consul for activities in connection with Anschluss Plebiscite.
4. Support of congressional appropriation for construction of Residence of High Commissioner.
5. Proposal for re-examination of Philippine Independence.
6. Proposal for development of continued economic relations with Philippines on preferential basis.

During Second Term of Service

1. Formulation of proposal for post-independence trade relations with and advocacy of Philippine independence with free trade and post-independence aid and cooperation.
2. Direction of administration forces and successful campaign for passage of Bell Act.
3. Formulation of war damage payments proposal.
4. Direction of administration forces and successful campaign for approval of War Damage Bill by House including amendments increasing War Damages from 435,000,000 to 620,000,000.
5. Advocacy of benefits for Philippine veterans and formulation of interim emergency veterans bill known as Philippine Veterans Bill of 1946.
6. Securing administration pledge to provide additional benefits for Philippine veterans in the form of educational and employment opportunities.
7. Advocacy of settlement of emergency currency obligations and definition of obligations for guerrilla money.
8. Mission to Washington with President-elect Roxas and support of loans for Philippine Government.
9. Arrangement for establishment of Embassy in Manila.
10. Organization of Council of Federal Agencies and coordination of all Federal activities under supervision of High Commissioner.
11. Arrangements for transition of Federal agencies to new status un-

der independence.

12. Initiation of congressional mandate for holding national election in Philippines.
13. Arrangement for settlement for collaborationist question by decision to place responsibility in Philippine hands.
14. Public advocacy, by speech and statement, of the following
 - a. Elevation of status of the Tao and elimination of economic feudalism.
 - b. Industrialization of Philippine economy and diversification of agricultural enterprise.
 - c. Avoidance of super-nationalism.
 - d. Maintenance of "hands-off" policy in national election.
 - e. Maintenance of intimate Philippine-American relations after independence.
 - f. Support of American aid to repair ravages of war in Philippines.

Commonwealth of the Philippines
DEPARTMENT OF AGRICULTURE AND COMMERCE
BUREAU OF PLANT INDUSTRY
OFFICE OF THE PROVINCIAL AGRICULTURAL SUPERVISOR
Cebu, Cebu

May 23, 1946

The Officer in Charge
Manila
Sir:

On May 24 and 25, 1946, there will be a Farmers National Convention in Manila as per attached copy of the letter of invitation from the Philippine Farmers Association. We have sent copies of this invitation to some prominent farmers near Cebu City, because the invitation came rather late. Inasmuch as we cannot attend the convention I wish to state here thru you and for the Farmers National Convention the points vitally important for the immediate rehabilitation of agriculture in Cebu and possibly throughout the Philippines:

1. Cheap commercial fertilizers within reach of the ordinary farmer.
2. Baby tractors with pneumatic tires to be operated by the government and to be rented to small farmers or planters at operating cost.
3. Easy long term loans to farmers.

Very respectfully,
(Sgd.) ANTONIO DERECHO
Act. Prov. Agric. Supervisor

Biographical Sketch of Honorable Paul V. McNutt

Paul Vories McNutt, appointed first American Ambassador to the Philippines, celebrated in January of this year the middle mark of his career, thirteen years of which he spent as a law professor and law school dean, and thirteen years in public life.

He received his law degree from Harvard University in 1916, after completing his undergraduate studies at the University of Indiana in 1913. But even before attending Harvard, McNutt was admitted to the Indiana State bar, as a result of his having "read" law in the office of his father, a distinguished lawyer and political leader of Indiana.

Just as he was graduating from Harvard, the United States began preparing for possible eventualities arising from the conflict then raging in Europe. Young McNutt was commissioned a captain in the Field Artillery reserves.

Just before America became involved in the war, McNutt was named an assistant professor of law at Indiana University, less than a year after his graduation from Harvard. McNutt was called into active service, and rose during the war to the rank of Lieutenant Colonel in the Field Artillery. In 1923 he was promoted, in the reserves, to the rank of Colonel.

Although active in the organization of the American Legion and in other similar activities, McNutt remained primarily a teacher. In 1925 he was named dean of the law school of the University of Indiana. At 34, he was one of the youngest law school deans in the nation.

In 1928, Dean McNutt became national commander of the American Legion, becoming overnight a national figure. In 1932, the Democratic Party, by unanimous vote, nominated him to run for Governor of Indiana. His name was placed in nomination by his own father.

Overwhelmingly elected, Governor McNutt proceeded to institute a "new deal" in his state, even before the New Deal was taking shape in Washington. He established social security, a workmen's compensation board, and converted a heavy state deficit into an unprecedented surplus by the time his term was ended in 1936. Prohibited by the state constitution from being a candidate to succeed himself, McNutt campaigned for the reelection of President Roosevelt.

Early in 1937, President Roosevelt named McNutt, who had never been

Revolution In The Corn Belt

(Condensed from Harper's Magazine—Kurt Steel)

west of San Francisco, as American High Commissioner to the Philippines to succeed Commissioner Frank Murphy. Already one of the rising figures on the national political horizon, McNutt came to the Philippines in the midst of national press predictions that his stay here would be short and that he was being "groomed" for other assignments.

He remained in the Philippines for two years, became deeply interested in the Philippines, and even after he left the High Commissioner's post to become Federal Security Administrator with cabinet rank, Governor McNutt maintained his contacts with Filipino leaders and his great interest in Philippine affairs. He frequently spoke on the Far East and on the Philippines during the war. Mrs. McNutt was one of the leading figures in the Philippine War Relief drives, and McNutt, himself, was prominent in many organizations interested in Far Eastern matters, including the United China Relief.

In 1942, Governor McNutt was named by President Roosevelt to be "czar" of civilian manpower in the United States with title of War Manpower Commissioner, retaining his post as Federal Security Administrator. He served as War Manpower Commissioner throughout the war, being the only one of the war-time "czars" to finish the assignment he started.

In late summer of 1945 President Truman sent Commissioner McNutt to Manila to study conditions here and to report on legislative and economic needs of the Islands. Shortly after McNutt returned and reported, the President asked him to return to Manila for a second term as High Commissioner.

NATIONAL LIBRARY HEAD REQUESTS DONATION OF JULY 4TH SOUVENIRS FOR POSTERITY COLLECTION

Stressing the historical importance of the date July 4th in the history of our country, Assistant Director Luis Montilla is appealing thru the columns of all our metropolitan newspapers to urge everybody to donate for the Library's posterity collections of at least six samples of any commemorative object that they may issue in connection with the inauguration of our Republic. "It is our obligation to posterity," he said, "to conserve every object of whatever kind, whether it be a medal, book, pamphlet, picture, coin, stamp, etc. that has some relation with the birth of our new independent state. Future generations shall find in these objective testimonials of the great day inspiration to patriotic impulses and cause for the veneration

Four and a half million American farmers have put 13,000,000 bushels of seed corn into the ground this year. If all of it were planted in one field, that field would be about the size of the state of California. The harvest will be more than three billion bushels—enough to fill a freight train stretching half-way around the world. Corn is our greatest crop by any measurement—acreage, bulk or value. It is usually worth about as much as our cotton, wheat and oat crops combined.

The story of corn is more exciting than any list of statistics. To begin with, it is a mystery story. No one knows how corn originated. It is an orphan among grains, belonging to no known family. As if to make up for this, corn has attached itself so devotedly to man for unnumbered centuries it has depended on man's help for its survival. No corn has ever been found growing wild. Why? Look at an ear, its kernels tightly packed together and wrapped in many layers of husk. When it falls to the ground, this wrapping prevents the individual kernel from sprouting. Or if by accident they do sprout, there will be so many in a hill that they will starve each other out.

We do know that the birthplace of corn was somewhere in North or Central America. Probably Mexico or Guatemala. It has been continuously cultivated in the Western Hemisphere for perhaps 20,000 years. Taken to

of their sires who made freedom a reality through sacrifices not alone in battle but also in peace."

The National Library is maintaining the Gallery of Art and History Division where not only works of art are kept, preserved and exhibited but also historical objects. It is the plan of Mr. Montilla to maintain eventually a special collection of July 4th souvenirs or commemorative objects, and works or publications for the daily inspiration of future generations who may desire to visit the gallery. In America, according to Mr. Montilla all the souvenirs of July 4th in 1776, are priceless rarities which are zealously kept and preserved by collectors and museum curators.

Each donation will be exhibited with individual legends hearing the names of the donors so that the future may know its benefactors, said the Library Chief.

Europe in the 16th century, corn rapidly made itself at home. Today it is the one global plant. It can be grown in every land where man carries on agriculture.

Thus a revolution in corn culture should be of incalculable value in feeding and rehabilitating a war shattered world. And just such a revolution is taking place. Its cyclonic is "hybrid" corn.

This scientific revolution can be seen from a train window in all but four states. In Illinois, Indiana, Iowa, and Ohio the change has been so complete as to leave almost no traces of the old order. In the other eight states of the corn belt, and to a lesser degree in the rest of the 48 states the revolution is still going on.

What the traveler sees is first a field with the same ragged unbarbered look that cornfields have had for thousands of years—and 200 yards beyond, a second field where the tasseled crest is as neat and trim as a crew haircut.

In the first field some stalks are lofty and spindling, others short and stocky; the ears grow high, low and middling; and hundreds of stalks have been broken and uprooted by wind and hail. In the second field the plants are like identical paper dolls, not a single stalk is bent over, and the ears hang uniformly at waist height.

At harvest time, since no machine can reach high and stoop low to gather ears, the first farmer must bring in his crop by hand, and it will take a good man to husk as much as 100 bushels a day. But in the second field any two high school boys able to drive a tractor can bring in the harvest with a machine which picks and husks 1000 bushels of corn a day. In many sections of Illinois and Iowa 90 per cent of the corn is husked by machinery. In 1925 it took 14 man-hours of hard work to grow an acre of corn. Machinery on the best farms has cut this to six man-hours of labor.

Last fall the old-fashioned farmer laid out no cash for seed; he used the most likely-looking ears saved from his own crop. The progressive farmer this spring paid a commercial producer about \$80 for enough hybrid seed to plant his 60-acre field.

(Continued on page 19)

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WITH OUR CROPS

ALBAY B. P. I. AGENTS vs. RICE ARMY-WORMS

PAQUITO SERRANO, Albay

At no other time has the adage—"Necessity is the mother of invention"—been more fully illustrated than at present when rice cut—and army-worms are doing great havoc to the seedlings in four municipalities of Albay. Up to this writing, the number of sacks of palay seedlings attacked by these pests is nearing the 900 mark.

At the inception of the infestation, the local B. P. I. agents were virtually sailing smoothly in combating the crawling saboteurs due to the fact that at the time one drum of calcium arsenate, used in dusting, was available in the office of the Provincial Agricultural Supervisor.

Farmers began to feel the pinch of the sabotage as soon as the arsenical poison got exhausted. And since the worms threatened to decrease the production of palay for this regular season and the requisitioned calcium arsenate from the B. P. I. at Manila was long in coming, the farmers and the field agents had no other alternative but to apply practical control measures in a concerted effort to suppress the ravages immediately.

Aside from overflowing, brooming, picking, crushing and burning the worms, the other measures recommended by the Bureau men proved, to some extent, effective. Some of these are—

1. *Application of coconut meal, binlid or tiki-tiki.*

The infested area is dried for a period of two or three days by altering the course of the water supply. Broadcast evenly tiki-tiki, binlid or finely shredded coconut meat over the dried area. The theory here is: These materials will at first attract the ants whose next objective will then be the destructive worms. They are either murdered or gorged in by the ants.

2. *Application of tubli (fish poison), kanda or madre de cacao.*

Dry thoroughly the seedbed attacked. Pound to a pulp a sufficient

quantity of either of the three above-cited plants, pack inside a sack (burlap preferable) and shower a handful of lime. At one corner of the paddies where the water rushes in, make a small depression on where the sack should be inserted in such a way that when the stream flows into the seedbed, the water will carry the aroma of the concoction in the sack, suffocating and poisoning the worms.

3. *Application of cement.*

Drain the seedbed well and spread the powdery cement over the seedlings.

Although an Albayano farmer rubbed in this control measure, which according to him is successful especially in non-irrigated places as he had experimented already on his infested seedbeds, the field workers of the B. P. I. are skeptical as to the advisability of this method inasmuch as the cement, if used excessively, might prove fatal not only to the enemy but to the tender seedlings as well.

The inadequacy of control laborers (no available fund to hire them) and calcium arsenate coupled by the increasing scope of infestation that tend to spread like butter to other rice-growing localities of the province, spur the local field workers of the B. P. I. to unfurl new discoveries in combating the noxious rice plague.

Commendable is the recent revelation of Plant Sanitation Inspector Julian C. Ilagan who pulled off a test on the mixture of ricebran (darak) and white arsenic in three different harassed seedbeds owned by three different cooperators in Legaspi.

The mixture was in the proportion of one petroleum can ricebran to one-fourth salmon can of white arsenic. Found to be 95% effective, this combination is broadcast over the seedbeds, drained of the last drop of water two or three days previously. In four hours the pests succumbed. The treated seedbeds were then re-irrigated or overflowed to wash the leaves of the seedlings in order to circumvent any possible bad effect of the arsenical poison. To produce tangible results, the application of this poisonous compound should be done early in the morning or late in
(Continued on page 17)

A. PEÑA OTEYZA

REAL ESTATE BROKER
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197 Gastambide St., Sampaloc, Manila

Questions And...

(Continued from page 9)

nary incubators it is necessary that only turkey eggs of the same size be set and that the bulb of the thermometer be placed on the same level with the uppermost portion of the eggs. All other factors to be considered, such as age of eggs, moisture, and heat should be the same as those for chicken eggs.

34. *What is the best ratio of toms to hens?*

Use one vigorous tom for as many as ten hens in small flocks. In large flocks use one tom for every 6 to 8 hens.

35. *What is the percentage of fertility in turkey eggs?*

Usually, it is 90% to 100%, which is higher than the percentage in chicken eggs, but sometimes all the eggs in a clutch are infertile.

36. *Why is this so?*

It appears that a successful breeding is sufficient to fertilize the whole clutch of eggs. However, when one tom is too big and heavy for the hens or if other toms continually interfere during mating, the turkey hen lays infertile eggs.

37. *How many turkeys can be raised in a hectare of pasture land?*

It is from 20 to 30 hens, depending on the luxuriance of plant growth, and on the number of toms to be used. If most of the food, however, can be given in well-balanced concentrated feed mixtures, even 500 turkeys may be raised per hectare.

Albay B. P. I. ...

(Continued from page 16)

the afternoon.

In one of these experiments conducted on the 15 cavans seedlings of Tomas Alianza of Bagumbayan, Legaspi. Mr. Ilagan found the seedbeds studded with cracks or slits where the worms absconded. Broadcasting of the compound was accomplished around 6:30 p.m. but on account of these slits which practically sheltered the pet peeve of the farmers, success was about 80% only.

Several kilos of white arsenic have been requisitioned from the Manila office of the Bureau of Plant Industry and with the farmers themselves ready and willing to furnish the rice-bran, it would not be amiss to avert that this simple mixture may prove a real substitute for calcium arsenate in subjugating the rice cut- and army-worms that today are proving real thorns on the side of the rice planters.

WITH OUR 'TENANTS'

New American Farm Machinery Will Help Farmers Everywhere

By HAROLD FAIR

Reuters' Special Correspondent

NEW YORK, June 6 (Reuter)—New farm machinery designed in the experimental workshops of the United States Government's Tennessee Valley Authority project, a \$740,000,000 hydro-electric power and flood control development, will benefit farmers throughout the world.

The new machinery is being made available for manufacturer by commercial concerns, much of it considered useful for increasing food production in Europe and Asia. The United Nations Relief and Rehabilitation Administra-

It should be remembered that the more birds there are, the more shoots, buds, fruits, and insects are needed for feed every day.

38. *Give a poult mash feed mixture.*

Mix the following according to weight:

3 parts, first-class tiki-tiki

2 parts, finely-ground yellow corn

1 part, finely-ground mongo (or soybean oil meal)

1 part, blinlid

1 part, fish meal (or shrimp meal or meat meal)

To every 100 kilos of the above-given mixture add 3 kilos of finely-ground oyster or clam shells and 1/2 kilo of salt.

39. *When should the teeding of poults start?*

The teeding of poults should start 36 to 48 hours after hatching. Like chicks there is sufficient food in their bodies to keep them from getting hungry.

40. *Where is the mash feed placed when given to the poults?*

On the second and third days small amounts of poult feed may be spread over clean newspaper or other clean surface or directly in the feed trough. From the fourth day on, the feed should be given in the trough and it should be either dry or in moist form but never wet. If moist, the amount should be such that the poults may clear in 15 minutes; they should be fed every three hours. Larger amounts if not consumed are liable to spoil and do harm.

(To be continued)

tion has ordered 500 units of a new threshing machine for use in Central Europe. Another 250 units have been ordered by South American buyers.

Models of the machinery have been placed on public exhibition for manufacturers' inspection and some are on factory assembly lines. The new developments will help farmers thresh wheat mill flour, dry hay, irrigate fields and shell peanuts.

One machine considered suitable for UNRRA and South American use is a trailer thresher. It can be towed behind an automobile from one small hill field to another and threshes—wide variety of grains. A feed grinder has been developed to meet the needs of the small farm. It weighs only 45 pounds exclusive of hopper motor and control attachment automatically regulates the flow of grain into the mill and does not require the constant attendance of the farmer.

Tests have shown this mill can grind all the grain required during the year for an average size farm.

A new machine also has been devised to scarify seeds—to break the hard seed coating to speed germination. Laboratory experiments show 85 to 90 per cent of bush clover seed will germinate within 21 days if it has been scarified. Only 20 per cent of the unscarified seeds germinate in the same period.

Driven by a one-horsepower motor the machine consists of an abrasive disc and fan. It has a capacity of 200 to 300 pounds of seeds per hour.

A special peanut harvester is tractor-drawn and equipped with a series of moving forks that pull the peanuts (ground nuts) from the ground, shake the dirt from them and throw them into loose rows for effective drying. One man can operate this harvester and by working two rows at a time can pull and shake 15 to 30 acres of peanuts a day.

Another new devise is a portable sprinkler for irrigation. It consists of a motor-driven pump, a series of sprinklers and durable lightweight pipe with connections that can be readily detached so distribution lines can be easily moved from one place to another over the fields.

WITH OUR GOVERNMENT

SECOND NATIONAL ASSEMBLY
FIRST SESSION

B. No. 1022
(COMMONWEALTH ACT No. 542)
PASTURE LAND ACT

Be it enacted by the National Assembly of the Philippines:

SECTION 1. This act shall apply to all lands which are adapted to pasture purposes.

SEC. 2. No person shall occupy or use any parcel of public land for pasture purposes without first securing therefor a lease or permit from the Director of Forestry in accordance with the provisions of this Act.

SEC. 3. The Bureau of Forestry shall have jurisdiction and authority over the administration, protection, and management of pasture lands and over the granting of leases or permits for pasture purposes to any citizen of lawful age of the Philippines and any corporation or association of which at least sixty per centum of the capital stock belongs wholly to citizens of the Philippines, and which is organized and constituted under the laws of the Philippines for an area of not more than two thousand hectares in accordance with the provisions of this Act. Such leases shall run for a period of not more than twenty-five years, but may be renewed once for another period not to exceed twenty-five years, in case the lessee shall have made important improvements, which in the discretion of the Secretary of Agriculture and Commerce justify a renewal.

SEC. 4. The Director of Forestry, with the approval of the Secretary of Agriculture and Commerce, shall promulgate rules and regulations consistent with this Act, as may be necessary and

proper to carry into effect the provisions thereof.

SEC. 5. All parcels of public land applied for grazing purposes shall be investigated by the Bureau of Forestry and if the same are found to be within certified alienable or disposable land suitable for grazing purposes, said Bureau shall request the Bureau of Lands that said parcels of land be reverted to the category of public forest land. Upon such reversion, the Bureau of Forestry shall take proper action on the pasture applications in accordance with the provisions of this Act.

SEC. 6. Upon the approval of this Act, all subsisting pasture leases granted by the Bureau of Lands shall continue in full force and effect until the date of their expiration: *Provided, however*, That upon being advised by the Bureau of Lands of the expiration or cancellation of any pasture lease, the Bureau of Forestry shall request the said Bureau of Lands that the area be reverted to the category of public forestland and thereafter said land shall be subject to disposition for grazing purposes in accordance with the provisions of this Act. All other pasture lease applications which are still pending action in the Bureau of Forestry shall be referred to the Bureau of Forestry for appropriate action.

SEC. 7. The annual rental of the land under lease or permit shall not be less than three *per centum* of the appraised or re-appraised value of the land and one *per centum* of that of the improvement thereon, if any, based on the appraisal and reappraisal made by the Director of Forestry with the approval of the Secretary of Agriculture and Commerce.

(Continued on next page)

"The Prosperity Of A People

... mainly depends on its sound economy"—Editorial of a Manila daily.

And there's no denying the fact that the possession of land constitutes an important factor in the economic prosperity of a family.

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Home & Women's Corner The Market

1. We wonder why the fare of buses now are 30% higher than last month. This fare hike started during the last week of June when the gasoline stations' ration stopped awhile. Then, it was understandable to pay more as gasoline had to be bought from the black market and hoarders charged as high as P15.00 per 5-gallon can. But now that gasoline companies and Malacanan have announced that there is enough gasoline for everybody at controlled prices, why have the private buses maintained the 30c for the former 20c rate and the former 30c rate to 40c or 50c? This is like Japanese days.

The private operators it seems do not understand that they are in the Utility business and unless they charge service at a reasonable fare they are mushroom businessmen who do not see beyond their noses. A little thought on their part guided by good conscience will do them good.

2. Prices in the markets of commodities, fluctuate at a minimum reduction of 30% and a maximum increase of 50%.

	Average
1. Rice:	<i>per ganta</i>
Elon-elon 1st class	P2.38
" 2nd "	2.23
Macan 1st class	2.18
" 2nd "	2.08
2. Sugar:	<i>per kg.</i>
Centrifugal (brown)	P1.50
Refined	2.35
3. Meat (beef 1st class)	P5.00
Pork (Pure meat)	3.75
4. Chicken (undressed)	<i>each</i>
Hen	P5.50
Rooster	4.25
5. Eggs:	<i>per doz.</i>
White Leghorn	P2.50
Native Hen	2.65
Duck	4.20
Balut	7.60
6. Lard:	<i>per kilo</i>
Vegetable	P2.45
Animal	4.10
7. Coconut:	
Assorted (per 100)	P6.50
Each	0.11
8. Lumber:	<i>per Bd. Ft.</i>
Guije	P0.90
Tangile	0.55
Red Lauan	0.55
Apitong	0.55
Palosapis	0.55
Almon	0.48
White Lauan	0.48
3. Executive Order No. . .	prohibits

(Continued on next page)

With Our...

(Continued from next page)

Should the term of the lease be ten years or more, a reappraisal may be made every five years from the date of the approval of the lease or permit. The Director of Forestry may request the assistance of the provincial treasurer or assessor of the province in which the land lies or may appoint a committee for such purpose in the province or in the municipality in which the land lies.

SEC. 8. Before any lease or permit is issued under the provisions of this Act, the applicant may, as guaranty of good faith in filing the application and for the satisfactory compliance with the terms and conditions of the lease or permit and the payment of rental charges due thereon, be required to deposit with the Director of Forestry a cash bond, a Philippine National Bank Bond, or a bond of the Government of the Philippines, or any political subdivision thereof in an amount to be determined by the Director of Forestry with the approval of the Secretary of Agriculture and Commerce. In case the bond required exceeds two hundred pesos, a bond duly executed by a reputed surety company may be accepted, but in such case it shall be increased by not less than twenty-five per centum nor more than seventy-five per centum in the discretion of the Director of Forestry. This bond may be confiscated by the Government in case of any violation on the part of the lessee or permittee of any of the terms of the lease or permit.

SEC. 9. The Director of Forestry may, with the approval of the Secretary of Agriculture and Commerce, grant pasture lease agreements by auction or bidding after proper investigation of the areas applied for has been made, subject to such conditions as may be prescribed by him. All bids must be sealed and addressed to the Director of Forestry and must have enclosed therewith cash or certified check, Treasury Warrant, or post-office money order payable to the order of the Director of Forestry, for a sum equivalent to the rental for at least, the first three months of the lease. No bid shall be considered in which the proposed annual rental is less than three per centum of the appraised or re-appraised value of the land and one per centum of that of the improvements thereon, if any, in conformity with section seven of this Act.

SEC. 10. Upon the final expiration of the lease or permit all immovable and other permanent improvements made by the lessee, his heirs, executors, administrators, successors, or assigns shall be-

The Market...

(Continued from next page)

exportation of 41 items to other countries except to continental United States of America. At its first publication in local news, copra and hemp were not included. Two days later, these two items were included barred from exportation to foreign countries except to the U. S.

Business speculated on the idea that perhaps some "Big Man" complained to the President why copra and hemp were not included and immediately the President included these two items.

In some business group, its components argued that perhaps the President's hand are tied because so far the ₱800,000,000 loan for Government use to keep it going, is still pending in Congress. The President, for diplomacy and tact, would not want anything to pass that may jeopardize the granting of that loan to the young Philippine Republic. And he is right at that. But the question arises, if we export, say hemp and copra alone, to foreign markets except the continental U. S., would the government not make more money than ₱800,000,000 to keep the government running, with other markets like Central and South Americas, and China offering us prices at least double what U. S. pays for copra and hemp? It is simple arithmetic.

Or perhaps, the present world situation has a bigger meaning to the Phil-

come the property of the Government.

SEC. 11. Any person or association of persons occupying or using any part of the public domain for grazing purposes without lease or permit in violation of the provisions of this Act or of any rules or regulations promulgated thereunder shall be liable to the payment of twice the regular rental charges now or hereafter provided for by regulations during such time that the area is illegally used or occupied. For failure to pay the rental charges due within thirty days after they had become due and payable, the respondent shall be penalized by an additional charge of fifty per centum of such rental charges.

SEC. 12. This Act shall take effect upon its approval.

Approved, June 8, 1939.

Revolution In The...

(Continued from page 15)

His yield will be some 25 bushels per acre more than that of his neighbor—or enough to bring him an additional income of \$900.

Scores of other advantages offered by hybrid corn are less apparent but even more important in the long run. For example the University of Illinois has produced strains containing twice as much protein and three times as much oil as ordinary corn. Other strains especially rich in certain elements have enormously speeded up the mass production of penicillin, of which corn steep liquor—a by product of starch making—is an essential ingredient.

Ten years ago, less than half of one per cent of the corn planted in Illinois was hybrid. This year 98 per cent of Illinois corn will come from hybrid seed; in Iowa, just under 100 per cent.

(To be continued)

The Problem...

(Continued from page 5)

Naturally it was passionate and often unreasonable. Life of cruelty and injustice and intrigue during the Japanese time twisted many a Filipino virtue of hospitality, timidity, tolerance and liberality. Suppressed bad traits came to the fore instead.

(To be continued)

ippine-U. S. relationship-protectionism than the monetary gain the Philippines will make exporting to foreign markets for the quicker rehabilitation of our country? There is something serious really in this question.

True, our copra and hemp bought at much higher prices than what U. S. pays for them may go to places where we don't want them to go and may be used for purposes that might be harmful to the U. S. and the Philippines later on?

But there is news too that the Chinese nationals buy plenty of U. S. goods and sell them to Communists at fabulous profits. But that is only "news"—we have no proofs.

LEE TAY & LEE CHAY, INC.

LUMBER DEALERS & MANUFACTURERS

533 T. ALONZO

EDITORIAL

Soil Conservation--And Profitable Farming

There is now a widespread talk about soil conservation. Before the war, the government started giving aid toward soil conservation by appropriating liberal sums of money for the organization of soil survey activities. Then it started propagating information on soil fertility conservation through green manuring and fertilizer application. To prevent soil erosion it started soil conservation through the help of terracing. The fundamental basis of soil conservation has been laid down since liberation. Serious attention has been given by the government to soil conservation and the soil conservation office has been one of the government offices that was early organized. Its offices are now active in the field helping farmers to undertake soil conservation through terracing and planting legumes.

This is a very fundamental service if the present generation is to save soil for posterity.

But to make soil conservation program attractive to farmers there is still a major adjustment necessary in the system of production. The cost of terracing and planting legumes must be paid for by the farming system to be established on terraced land. From time immemorial the rice farmers have practiced terracing to a degree not even approached in quality and extent by any soil conservation project in any country. The Banaue terraces of the Igorots are world renown as great engineering feats. But this is only a small project compared to rice terraces all over the Philippines. The rice terraces of Rizal, Bulacan, Batangas, Bataan, Zambales, Tarlac, and Pampanga are equally admirable as engineering achievements. But because the system of farming practiced on them is, invariably palay planting, the farmers have not attained a standard of living comparable with dairy farmers of other lands.

Merely terracing the land and planting legumes will not make terracing pay nor improve our farming enterprises. What is necessary is to develop a scheme of farming which will make the terraced lands render great income to the farmers. We point to a farming system with a combination of fruit trees, dairy cattle, hogs, and poultry for the rolling lands and a limited palay in the flat lands. The farming system that utilizes the cow that gives the manure, that fertilizes the soil, that makes the grass grow, that feeds the cow, complimented with the terracing of land and the rotation of crops is the most effective method of soil conservation and maintaining soil fertility.

Soil conservation projects deserve every help and encouragement but the development of a system of lucrative farming on lands under soil conservation is an imperative necessity. The government should play its leadership in this direction in a practical way by showing the farmers what is the proper system and how to establish it on their farms. The time to assert this leadership is now.

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Publisher: PHILIPPINE FARMERS ASSOCIATION
Staff: HILARION S. SILAVAN, Editor; R. R. ARANA, Managing Editor and Business Manager; L. DE SANTOS, *Asst. Managing Editor*; JESUS A. ZACARIAS, Advertising Director.

Editorial and Business Office:
1055 Arlegui, Manila, P. I.
Subscription Rates:

One year	P6.00
Half year	3.00

Entered as second class matter at the Manila Post Office on Dec. 14, 1945.

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